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Conference

In Idaho Conjunctive Administration of Surface and Ground Water is Thundering Down the Tracks – Are Municipalities Ready?

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May 6, 2011

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Prediction...

Relative to water delivery in many basins in Idaho...

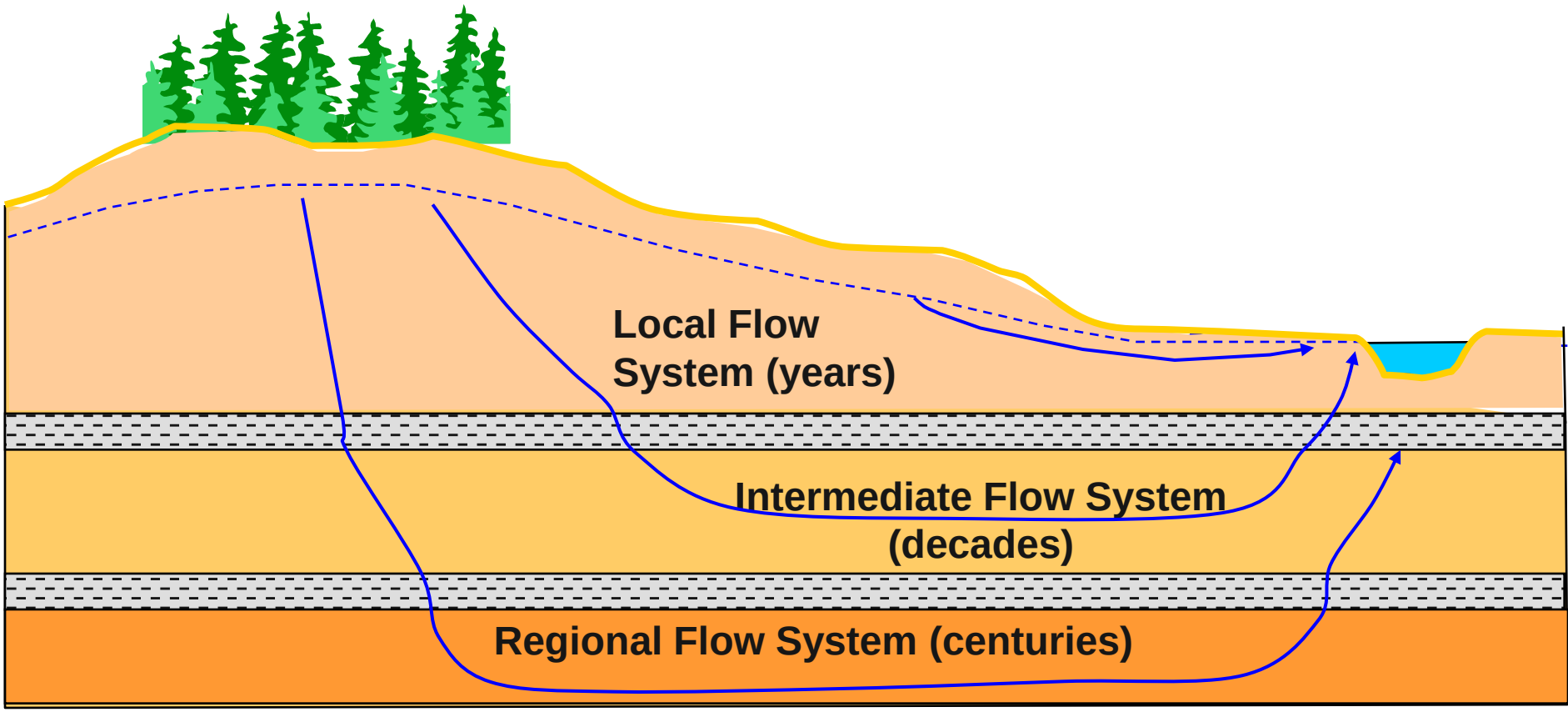
Change

is coming
between now and 2020

Outline

- Water administration basics in Idaho
- Evolution of surface water management
- Evolution of ground water management
- Implementation of conjunctive administration (CA)
- How municipal providers can deal with implementation of CA

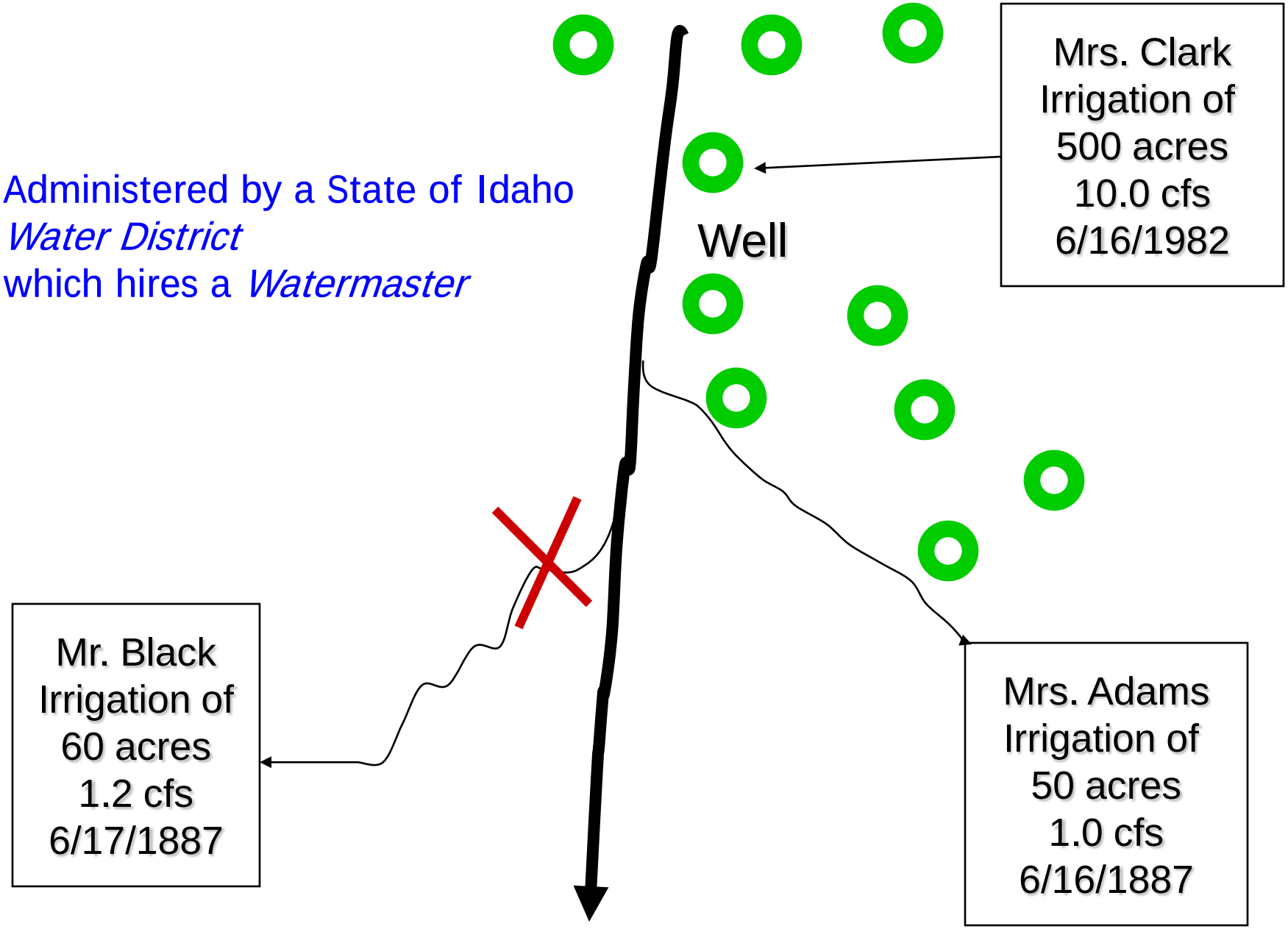
Ground Water Flow Systems



Why consider conjunctive relationships between ground water and surface water?

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"



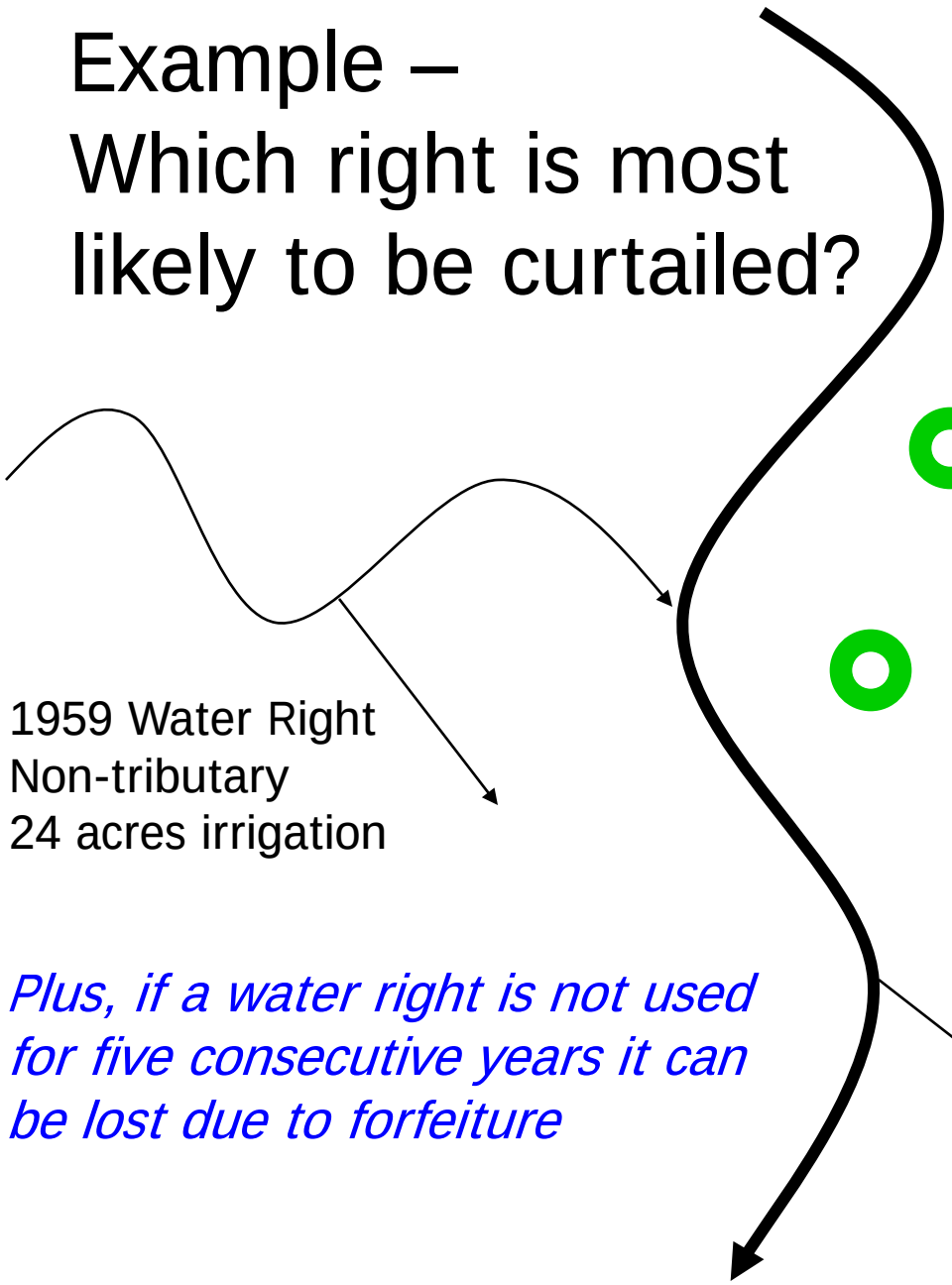
1 miner's inch = .02 cubic feet per second = 9 gallons per minute

Example – Which right is most likely to be curtailed?

Scenario 1 – during 2010

Scenario 2 – during 2014

Scenario 3 – during 2020



1954 Water Right
Ground Water
City of Ketchum, Municipal

1956 Water Right
Ground Water
½ acre lawn irrigation

1959 Water Right
Non-tributary
24 acres irrigation

1886 Water Right
Big Wood River
32 acres Irrigation

Plus, if a water right is not used for five consecutive years it can be lost due to forfeiture

Hold on – Aren't Municipal Water Rights Special??

- Yes
  - Not limited in volume – just rate
  - In-house (non-consumptive portion) not subject to a call
  - "Domestic" water is highest in constitutional hierarchy
- No
  - Consumptive portion subject to delivery based on priority date
  - Any condemnation must be compensated

Article XV Section 3, Idaho Constitution

SECTION 3. WATER OF NATURAL STREAM -- RIGHT TO APPROPRIATE -- STATE'S REGULATORY POWER-- PRIORITIES. ... Priority of appropriation shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall (subject to such limitations as may be prescribed by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes. And in any organized mining district those using the water for mining purposes or milling purposes connected with mining, shall have preference over those using the same for manufacturing or agricultural purposes. But the usage by such subsequent appropriators shall be subject to such provisions of law regulating the taking of private property for public and private use, as referred to in section 14 of article I of this Constitution.

Surface Water Evolutionary Cycle – Typical Idaho River Basin

Addition of Storage – 1900's – 1960's

Instream Requirements – 1980's

Rental Pool – 1990's

Initial Diversions – 1800's

Initial Decrees – about 1900

Initial Water District – 1920's

Ground Water Evolutionary Cycle – Typical Idaho River Basin

Surge of Supplemental Wells – 1977

Initial Irrigation Wells – 1940's

Initial Municipal Wells – 1890's

Initial Domestic Wells – 1860's

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
- Increased needs of endangered species
- Water needs for energy production
- Impacts of climate change?
- A need to coordinate land use planning with water use planning

Implementation of Conjunctive Administration

Remaining unresolved Recommendations: Fewer than 2,000

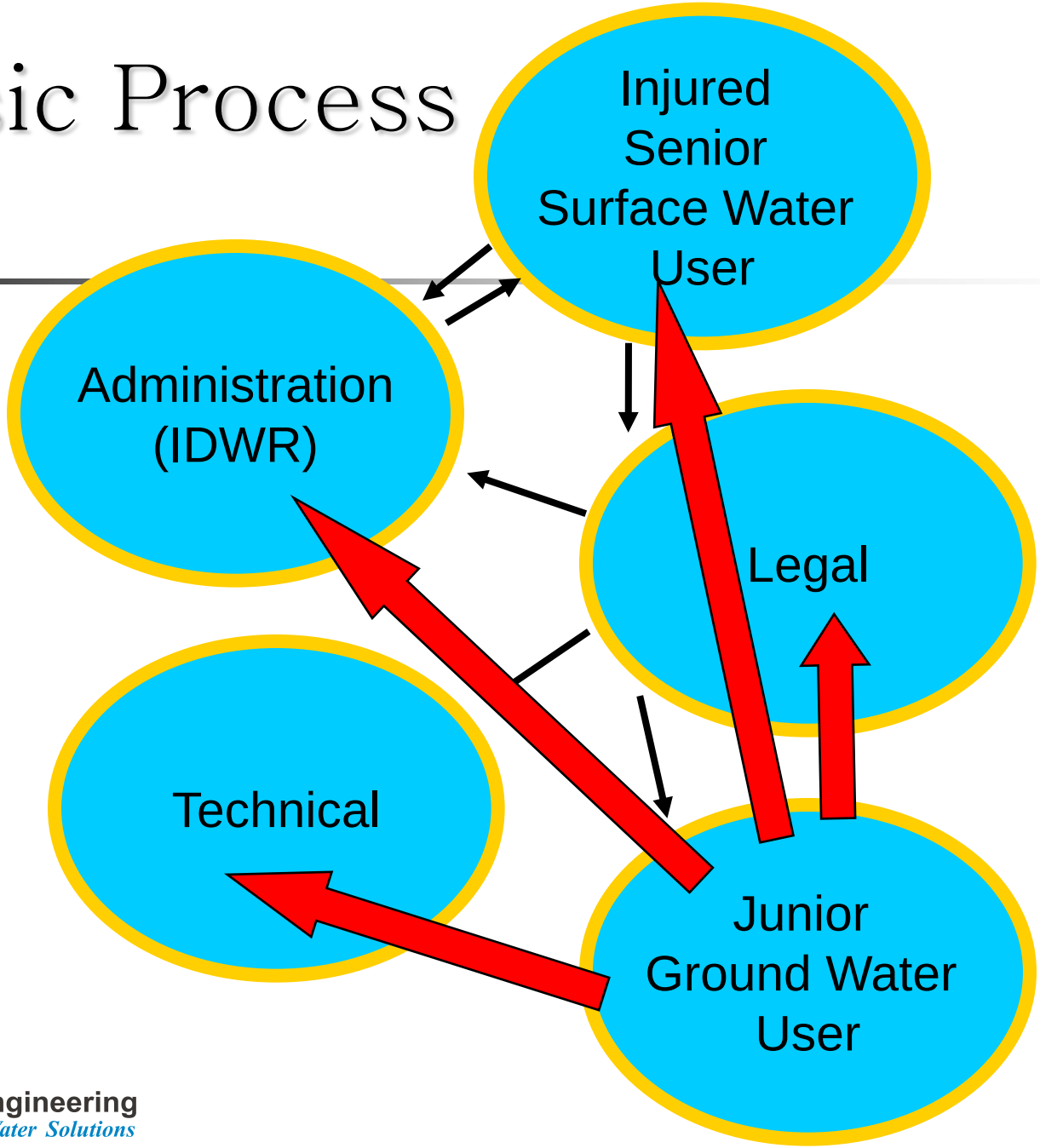
Basins within Idaho are poised for Implementation of Conjunctive Administration

Recommended water rights in the Snake River Basin Adjudication: 150,000+

Snake River Basin Adjudication initiated in 1987

Creation of water rights from surface water and ground water

Classic Process



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Three ways to implement Conjunctive Administration

"... or, the Ugly, the Bad and the Good..."

Method No. 1. The Ugly

- Ignore the issue

State owes for 'stolen' water
By Bill McAllister Denver Post Washington Bureau Chief

Tuesday, June 12, 2001 - WASHINGTON - In a ruling that could reduce Colorado taxpayer refunds, the U.S. Supreme Court ruled Monday that Colorado must pay Kansas about $23 million in damages for water

Method No. 2. The Bad

- React
- Conduct emergency negotiations – narrowly averting disastrous “Orders of Curtailment”

State halts water orders. Deadline passes

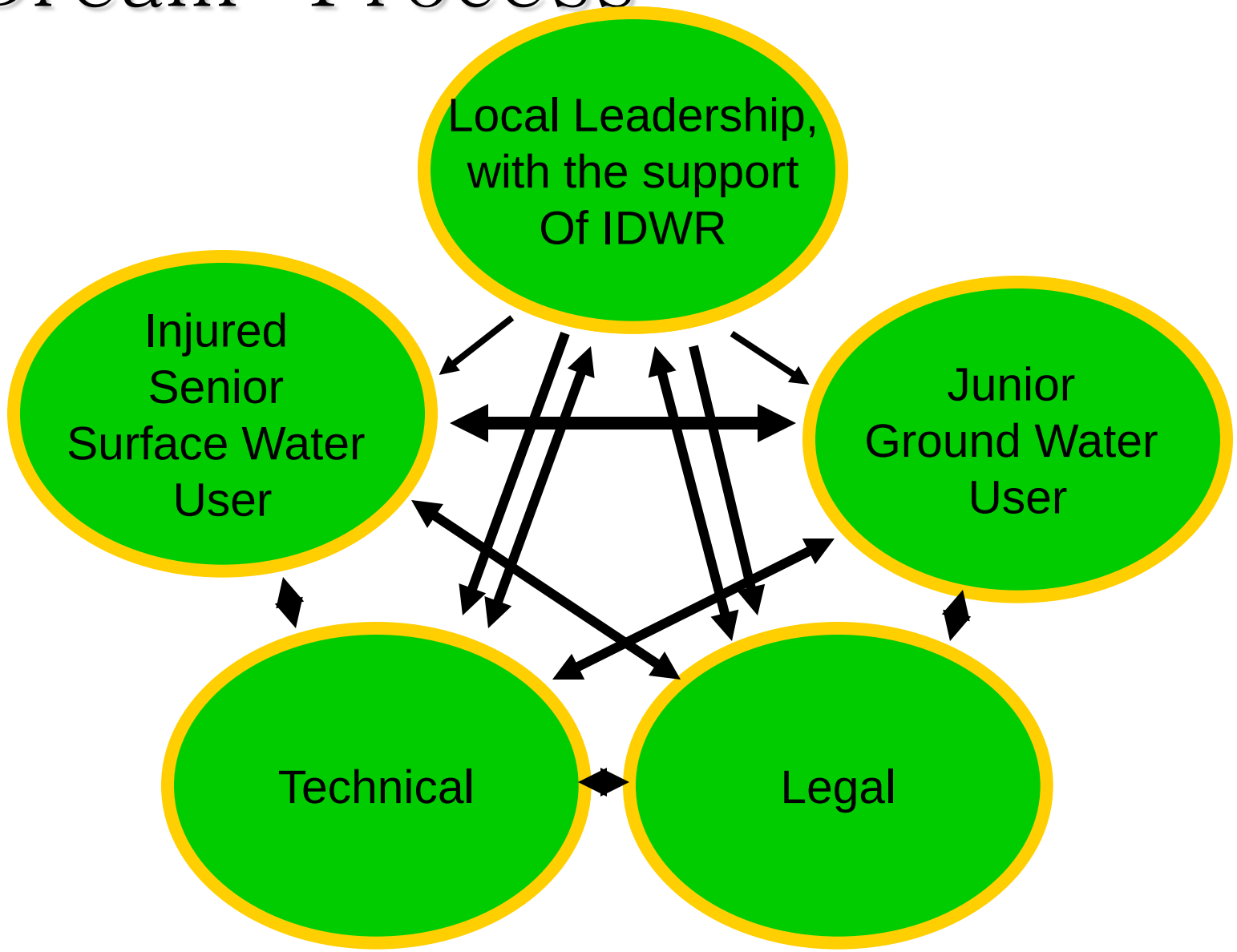
Twin Falls Times News September 1, 2001

TWIN FALLS -- Irrigation, commercial and municipal well owners don't need to check their mailboxes yet.The Idaho Department of Water Resources Friday put on hold plans to send out curtailment orders for up to 1,300 wells in southern and eastern Idaho.

Method No. 3. The Good

- Be proactive
- Plan for a long-term implementation before a battle begins.

"Dream" Process



With the CA train coming down the track, what is an Idaho municipal water provider to do?

1. Recognize that conjunctive administration is coming

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

2. Know very clearly what you have

- Water Rights
- Flow rates
  - Diversions
  - Return Flow
- Other water rights from your source

3. Know very clearly what you will need in the future

- Conduct a future needs study
- Include climate change possibilities

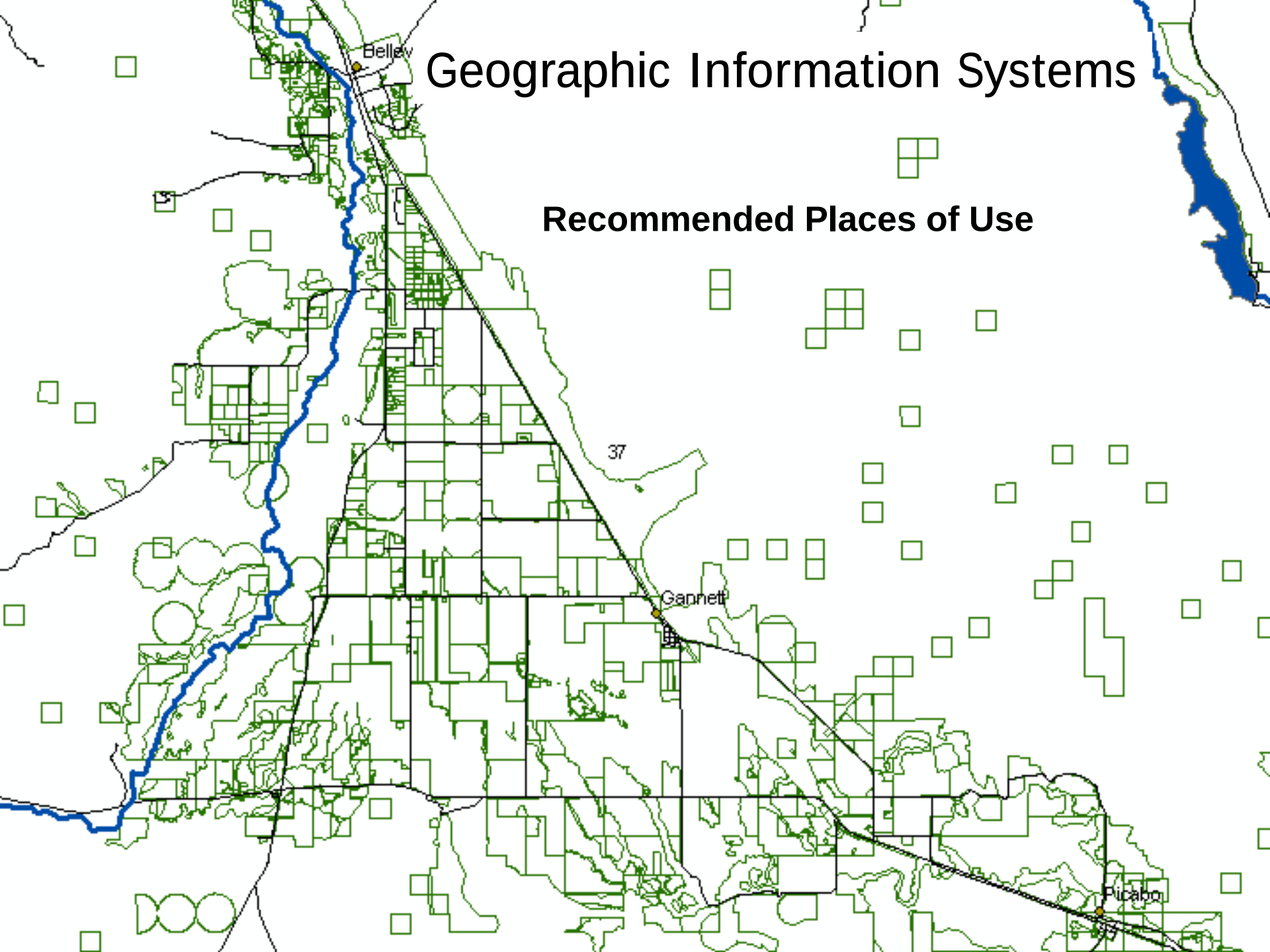
4. Conduct a SWOT Analysis

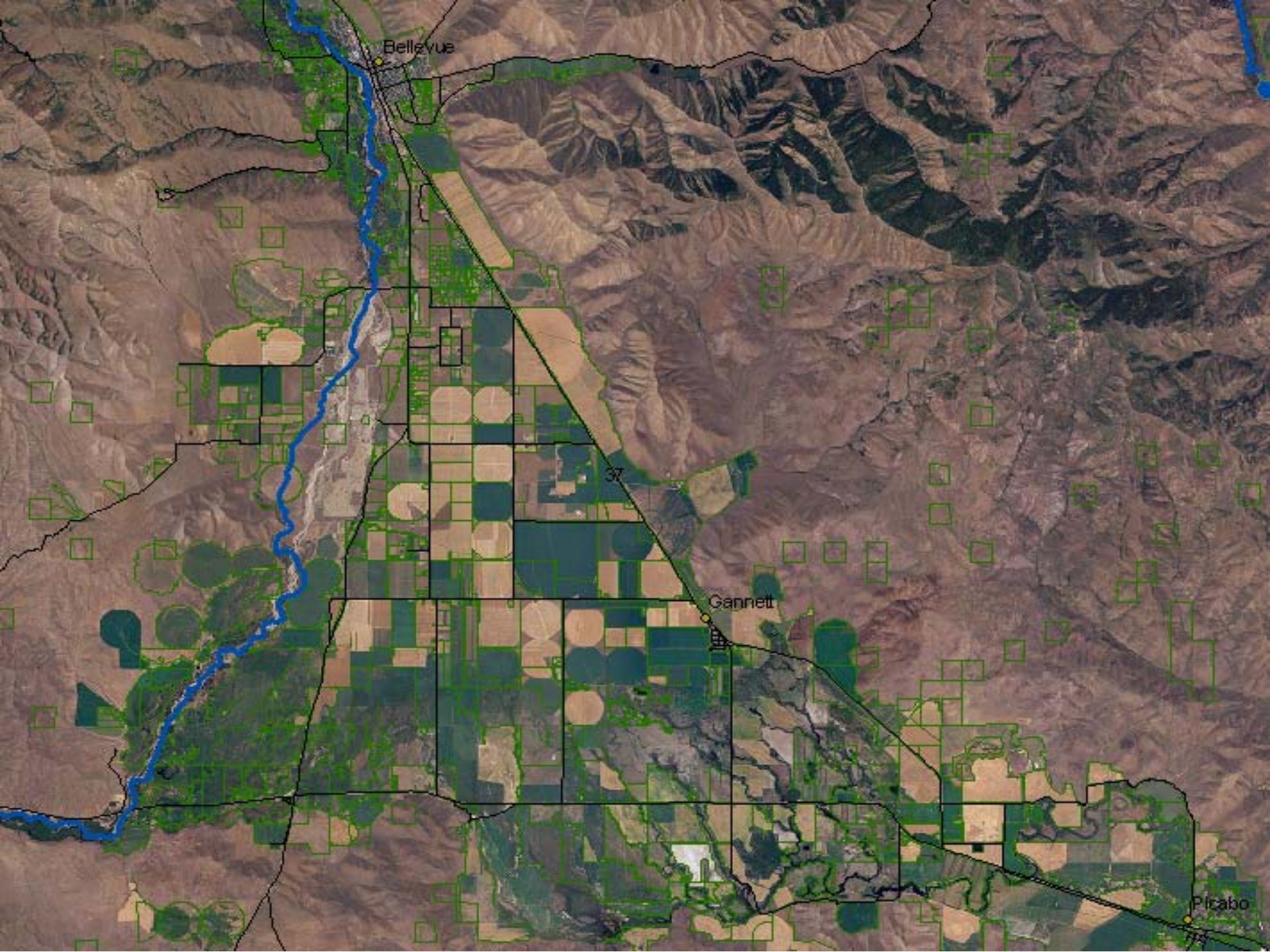
- Strengths
- Weaknesses
  - Include priority date considerations
- Opportunities
  - Include conservation
  - Include teaming with the irrigation community
- Threats
  - Include implementation of CA

5. Ensure that Staff Stay Abreast of Advances in Technology

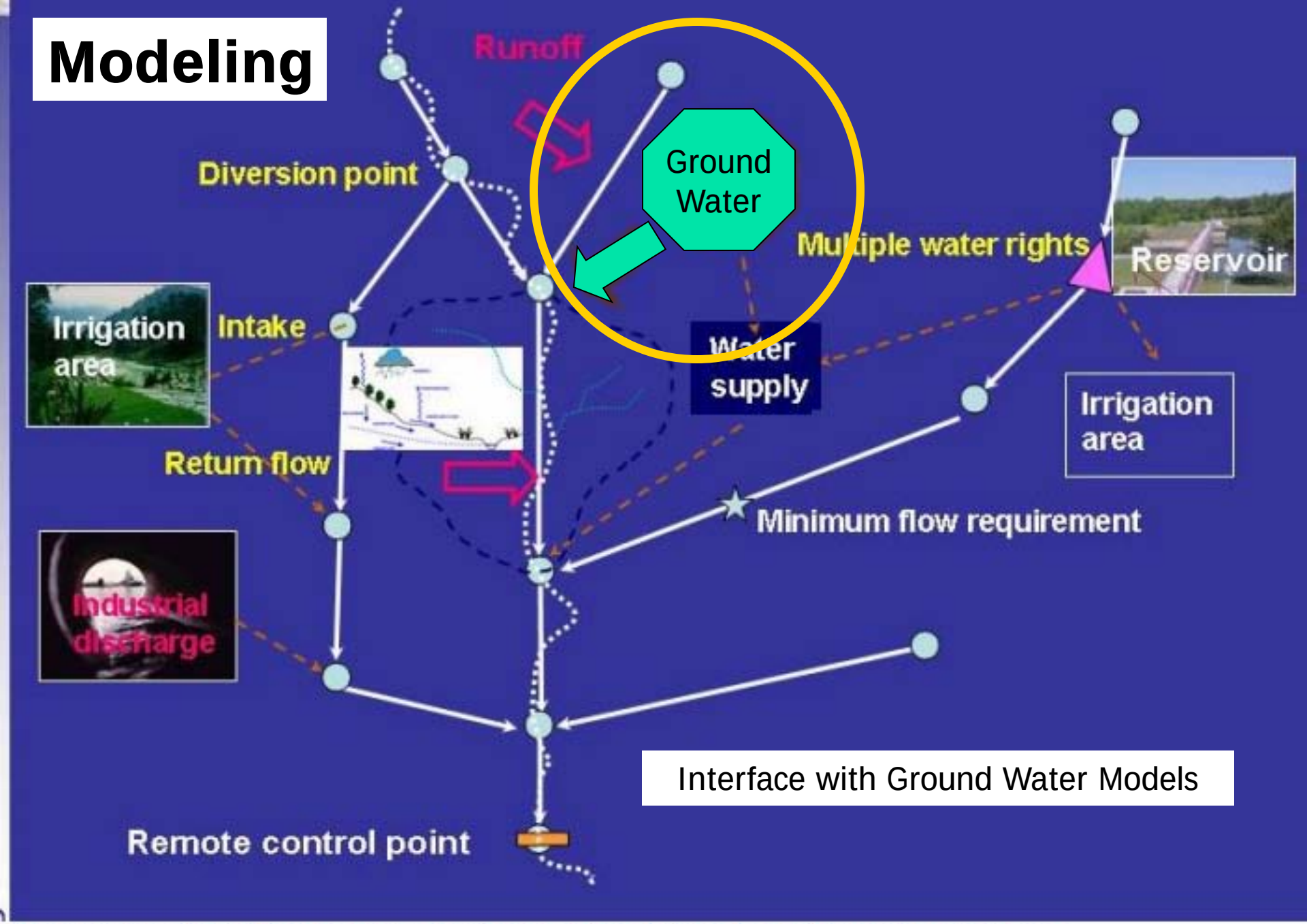
Geographic Information Systems

Recommended Places of Use




Bellevue
37
Gannett
Picabo

Modeling



Interface with Ground Water Models

Figure 1.1 Simplified schematization of the MIKE BASIN model network

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	YNNNNNNNNNNNNNNNNNNN
AGENCY_USE	I
DATA_TYPES	
INSTRUMENT	
CONSTRUCTI	
INVENTORY_	
DRAIN_AREA	
CONTRIB_DR	
TZ_CD	MST
LOCAL_TIME	Y

MIKE BASIN

Gaging Stations

5. Collaborate

- Academic
- Local Government (including municipalities)
- State Government
- Federal Government
- Private Sector

6. Incorporate “Out of the Box” Thinking

- Team with Irrigation Districts and Canal Companies for mutual benefit solutions
- Water Reuse
- Combine water and nutrient considerations

Boise River Daily Flows (USGS Data)

Thinking Outside the Box to address the Phosphorus Problem in the Boise River -- Hypothesis

1. Reduction of high P drainage flows in the lower Boise River will reduce non-point source P loads
2. Installation of automation on the Treasure Valley irrigation systems will reduce drainage flows
3. Be prepared to see some P reduction options in the nutrient trading program

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Automation

Summary

- Gone are the days of:
  - easy water rights
  - wells pumping merrily away without anyone taking notice
  - municipalities focusing exclusively on water quality issues
- Hello to the 21st Century – it should be interesting, and successful for the collaborators!

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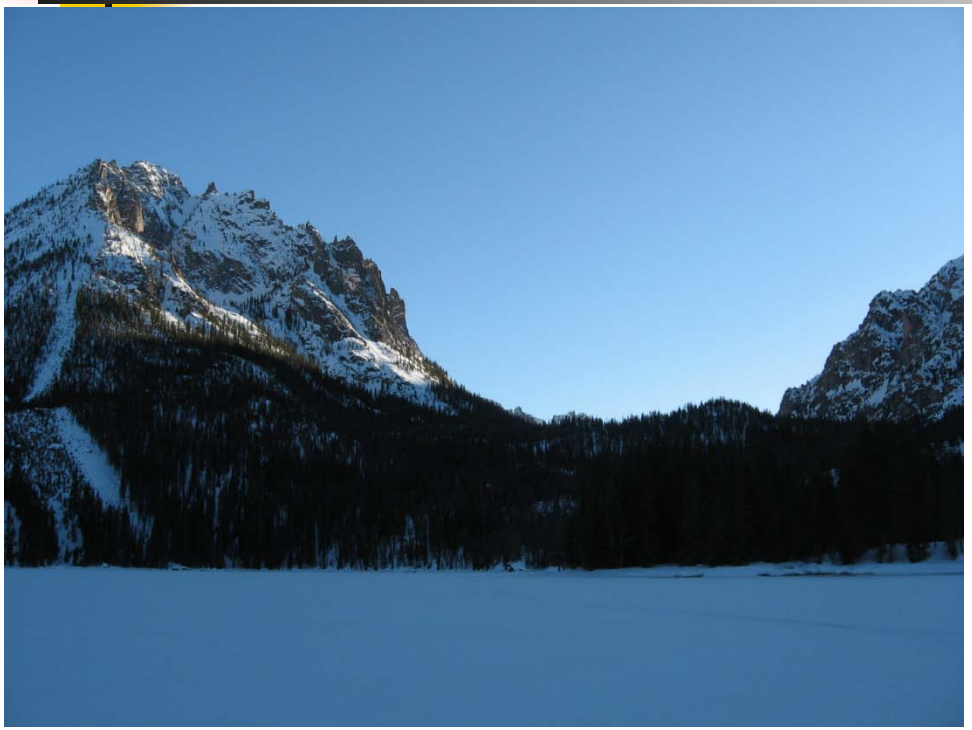

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