Association of Western State Engineers

Fairbanks, Alaska
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Innovative Water Administration in Colorado's South Platte River Basin

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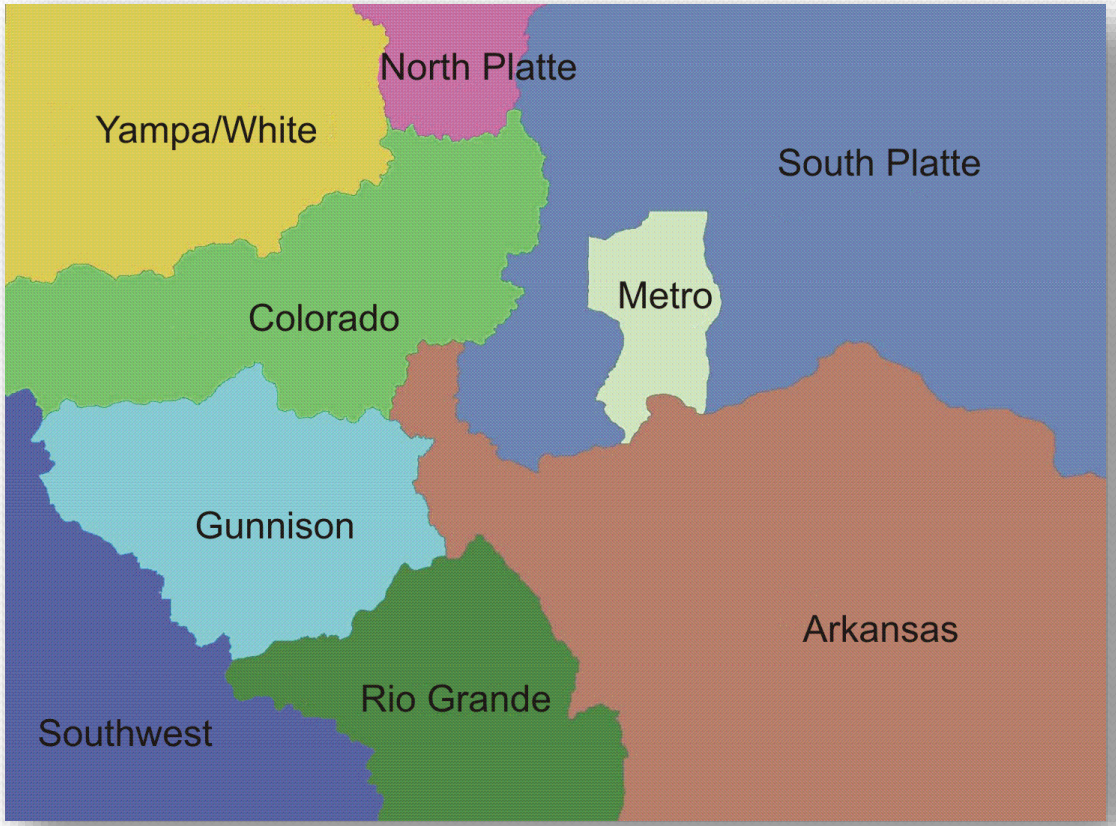
Major Challenges

1. Location of the people versus ***LOCATION OF WATER***
2. The water is fully ***COMMITTED***
3. Permits for New Storage are ***ONEROUS***

Result: Innovative Water Administration

2005 Water for the 21st Century Act (HB1177) Created Nine Basin Roundtables



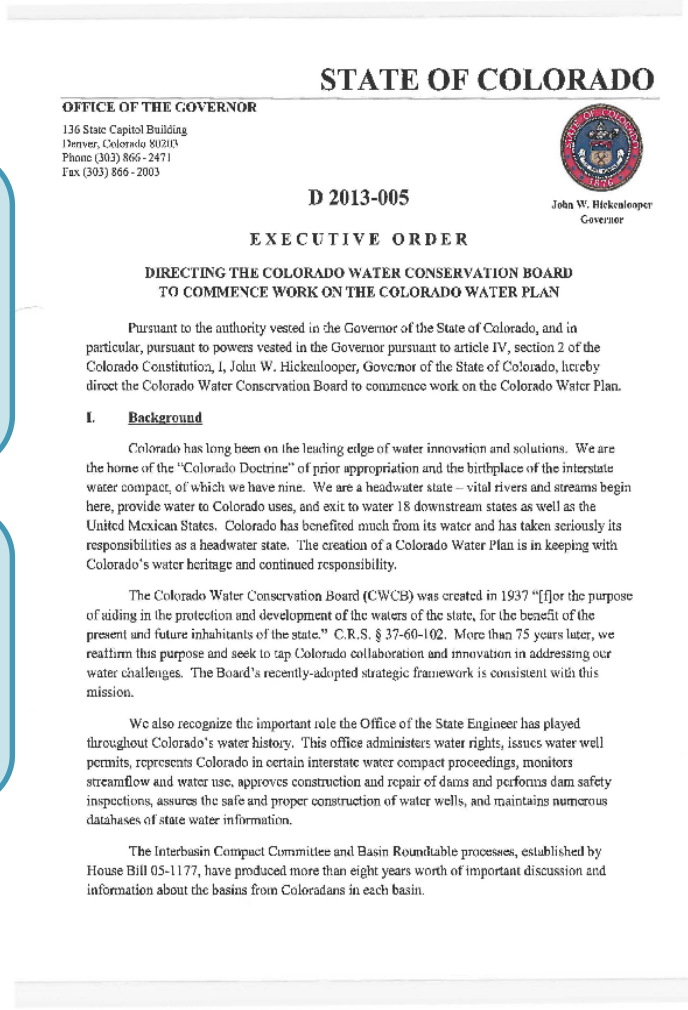
- Forums for locally driven, collaborative solutions
- Broad range of stakeholders

COLORADO'S WATER PLAN

Governor's Executive Order for Colorado's Water Plan

- Supply Gap >500,000 AF by 2050
- Largest is in the South Platte
- Most populous AND most agricultural production

- Rate of transfer from irrigated agriculture ("buy-and-dry") is unacceptable
- Reduction in acreage estimated at 20%



STATE OF COLORADO

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John W. Hickenlooper
Governor

D 2013-005

EXECUTIVE ORDER

DIRECTING THE COLORADO WATER CONSERVATION BOARD TO COMMENCE WORK ON THE COLORADO WATER PLAN

Pursuant to the authority vested in the Governor of the State of Colorado, and in particular, pursuant to powers vested in the Governor pursuant to article IV, section 2 of the Colorado Constitution, I, John W. Hickenlooper, Governor of the State of Colorado, hereby direct the Colorado Water Conservation Board to commence work on the Colorado Water Plan.

I. Background

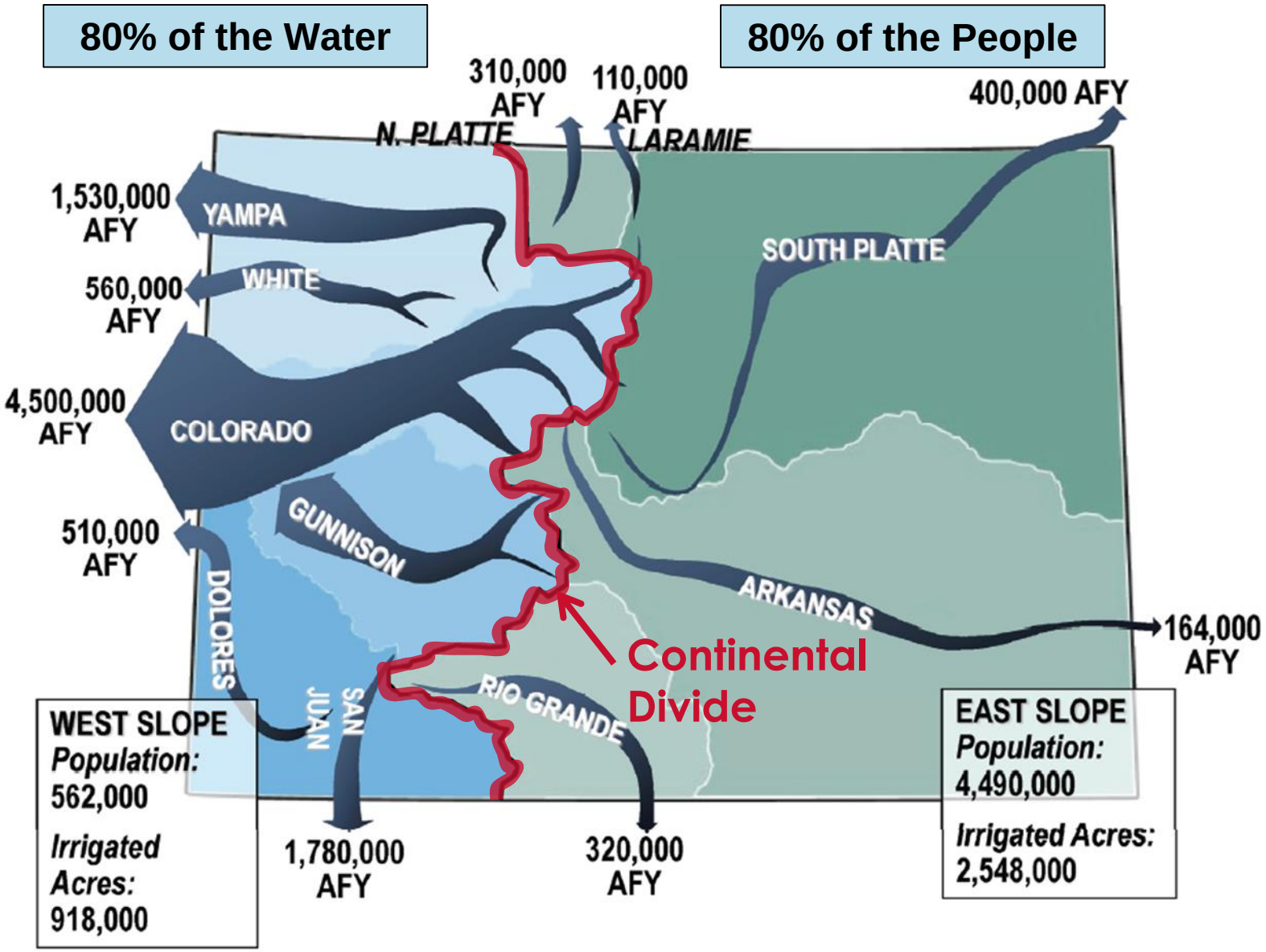
Colorado has long been on the leading edge of water innovation and solutions. We are the home of the "Colorado Doctrine" of prior appropriation and the birthplace of the interstate water compact, of which we have nine. We are a headwater state – vital rivers and streams begin here, provide water to Colorado uses, and exit to water 18 downstream states as well as the United Mexican States. Colorado has benefited much from its water and has taken seriously its responsibilities as a headwater state. The creation of a Colorado Water Plan is in keeping with Colorado's water heritage and continued responsibility.

The Colorado Water Conservation Board (CWCB) was created in 1937 "[f]or the purpose of aiding in the protection and development of the waters of the state, for the benefit of the present and future inhabitants of the state." C.R.S. § 37-60-102. More than 75 years later, we reaffirm this purpose and seek to tap Colorado collaboration and innovation in addressing our water challenges. The Board's recently-adopted strategic framework is consistent with this mission.

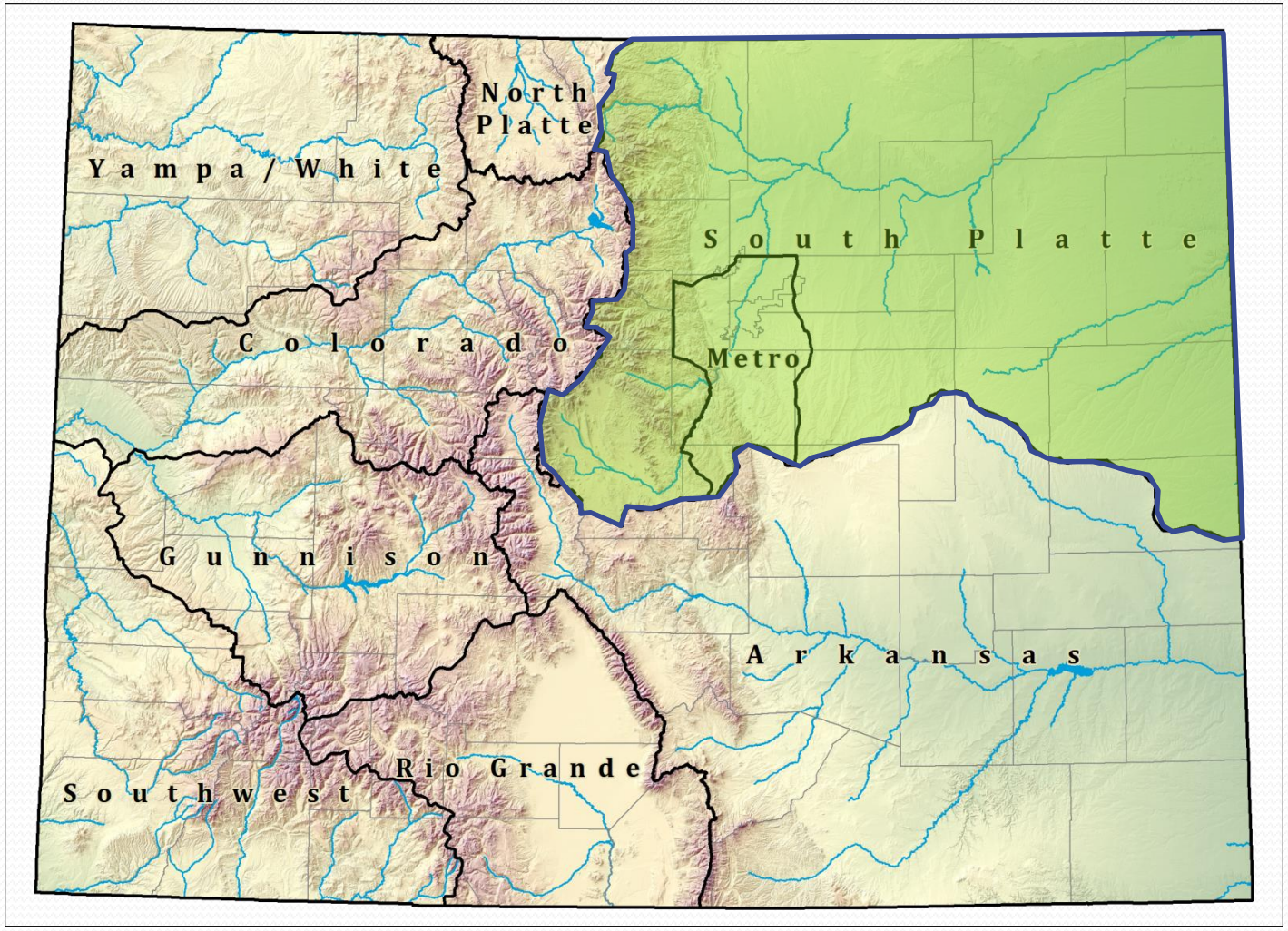
We also recognize the important role the Office of the State Engineer has played throughout Colorado's water history. This office administers water rights, issues water well permits, represents Colorado in certain interstate water compact proceedings, monitors streamflow and water use, approves construction and repair of dams and performs dam safety inspections, assures the safe and proper construction of water wells, and maintains numerous databases of state water information.

The Interbasin Compact Committee and Basin Roundtable processes, established by House Bill 05-1177, have produced more than eight years worth of important discussion and information about the basins from Coloradans in each basin.

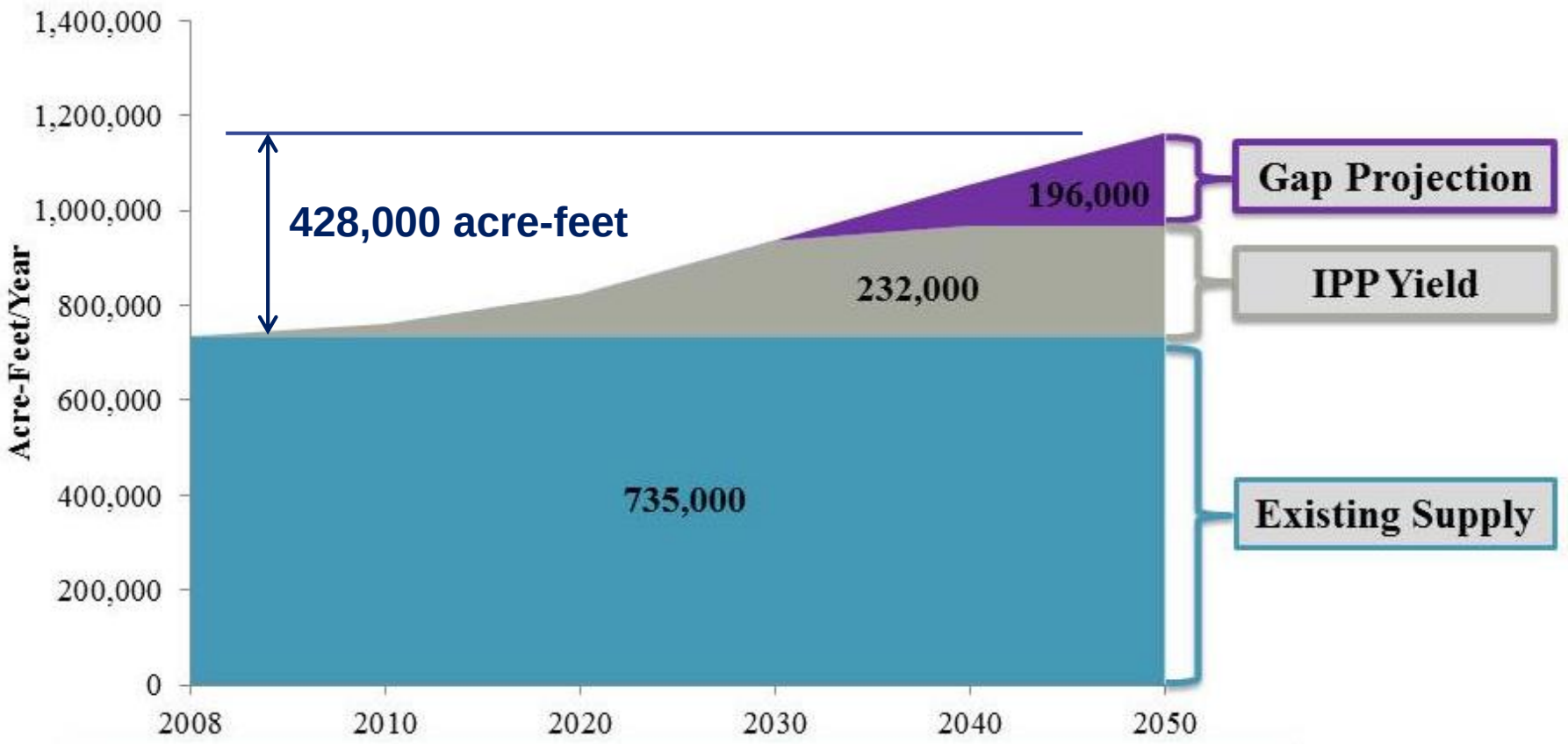
1. *LOCATION* of water versus location of people



The South Platte Basin

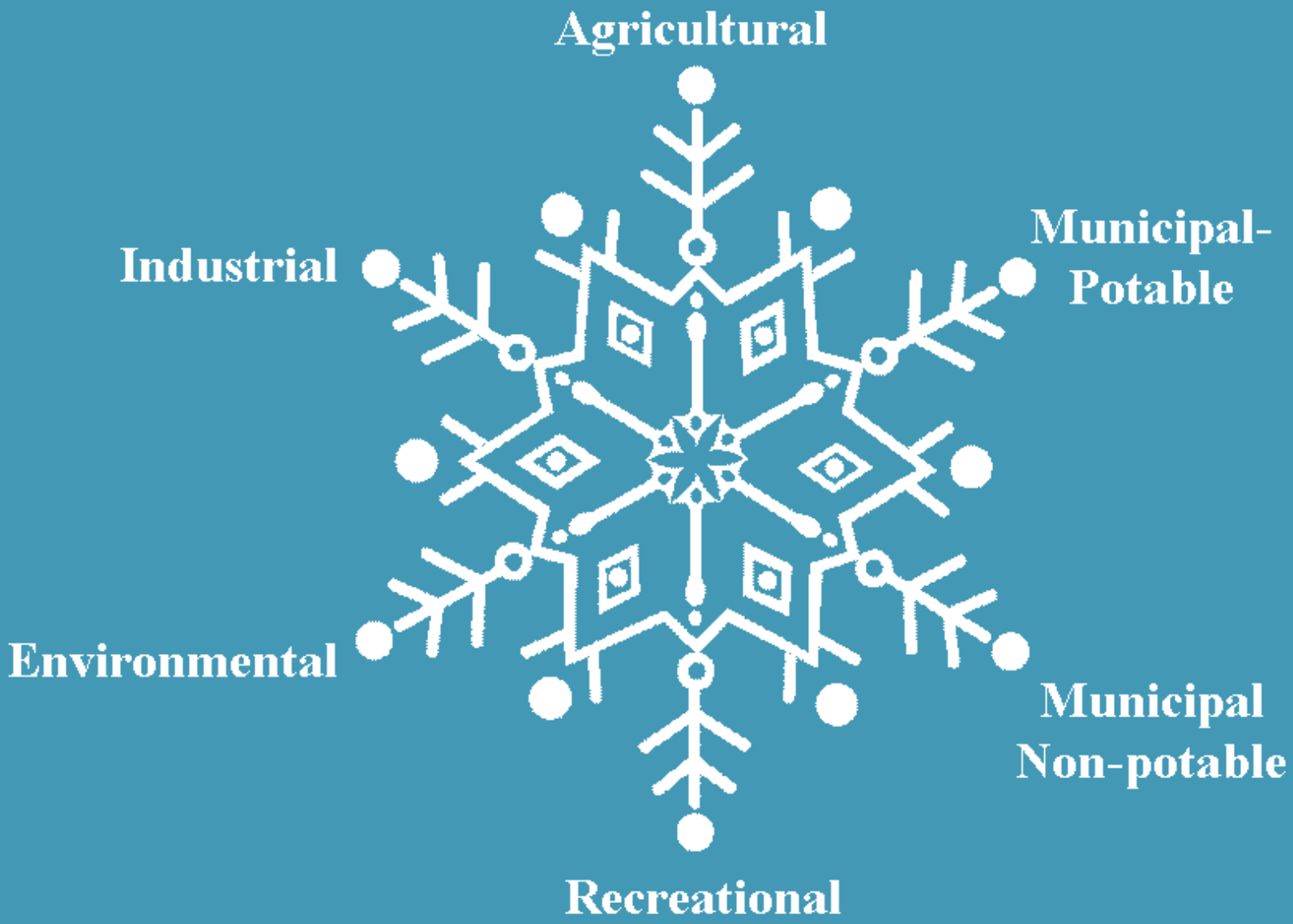


South Platte M&I Water Needs



"IPP = Identified Projects and Programs

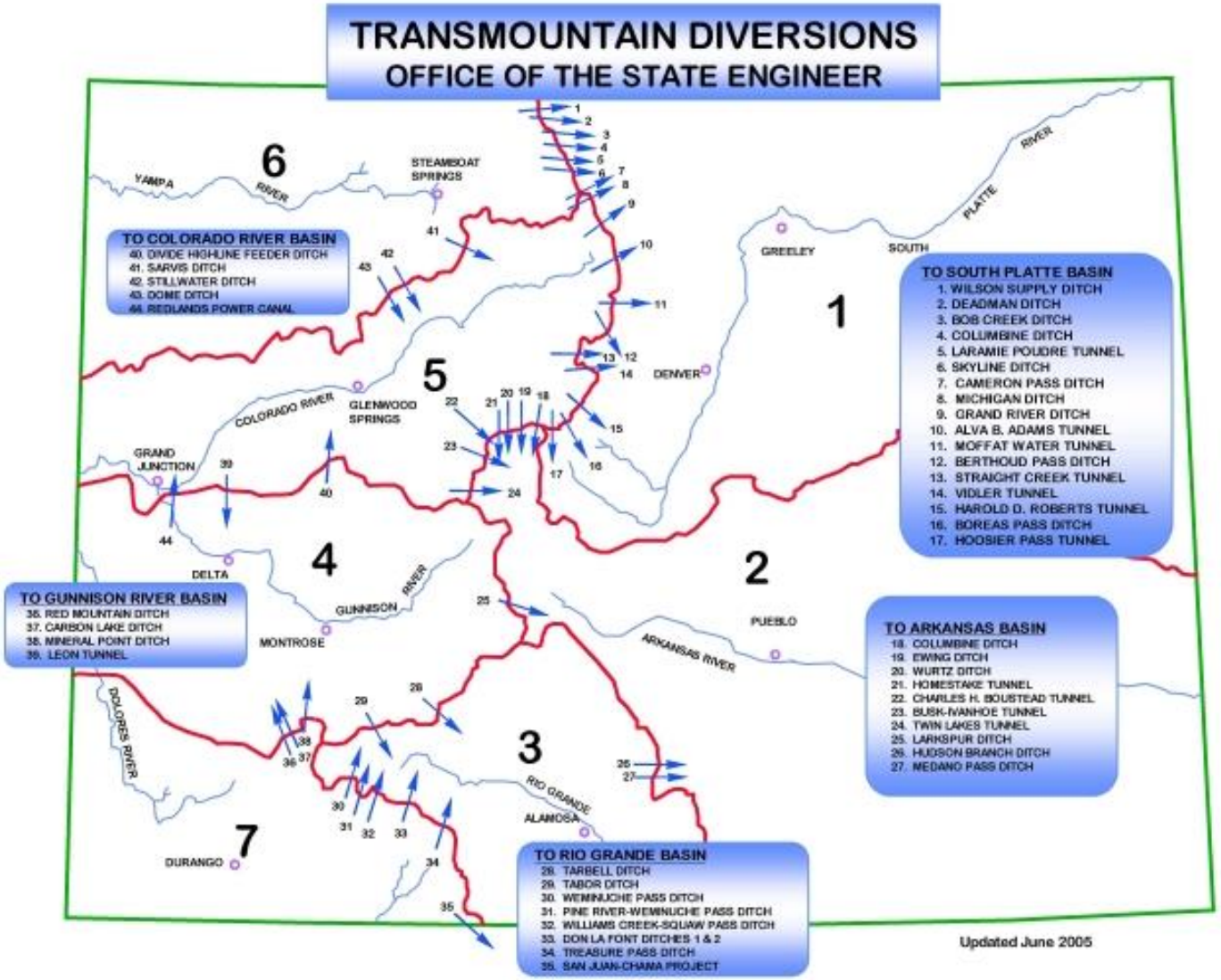
2. The water is fully COMMITTED



Already Stretching Supplies

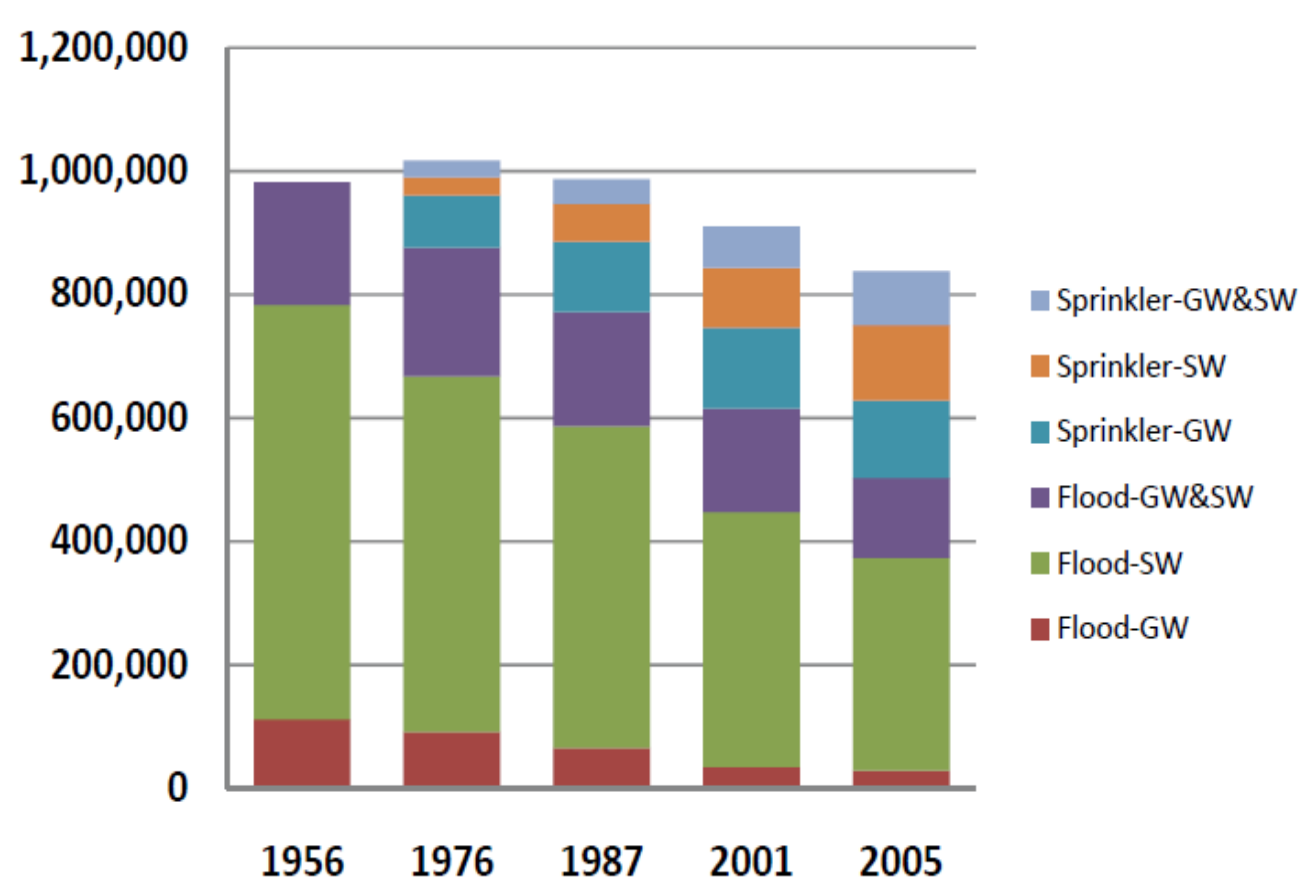
- Municipal conservation
- Agricultural efficiencies
- Delivery system efficiencies
- System integration
- Sharing data and regional water planning

Already Relying Heavily on Colorado River Imports



Source: Colorado Division of Water Resources. June 2005

Already Reducing Irrigated Acreages



Many Issues with Agricultural Water Transfers

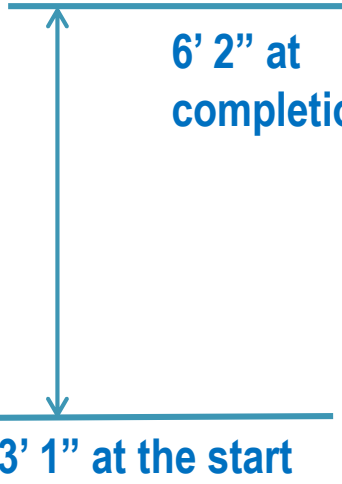
- **Impacts of traditional "buy-and-dry"**
- **Property rights**
- **Water administration**
- **Equity**
- **Overall well-being of the Basin and the State**
- **Better methods?**

3. Permitting New Storage is ONEROUS

- At least 8 major storage and conveyance projects - each took 10+ years to plan and permit
- Enlargements of existing dams, "off-channel" reservoirs, or changes in the operations of the reservoirs
- ***We need environmental laws and regulations***!
- We ***must*** find ways to comply more efficiently

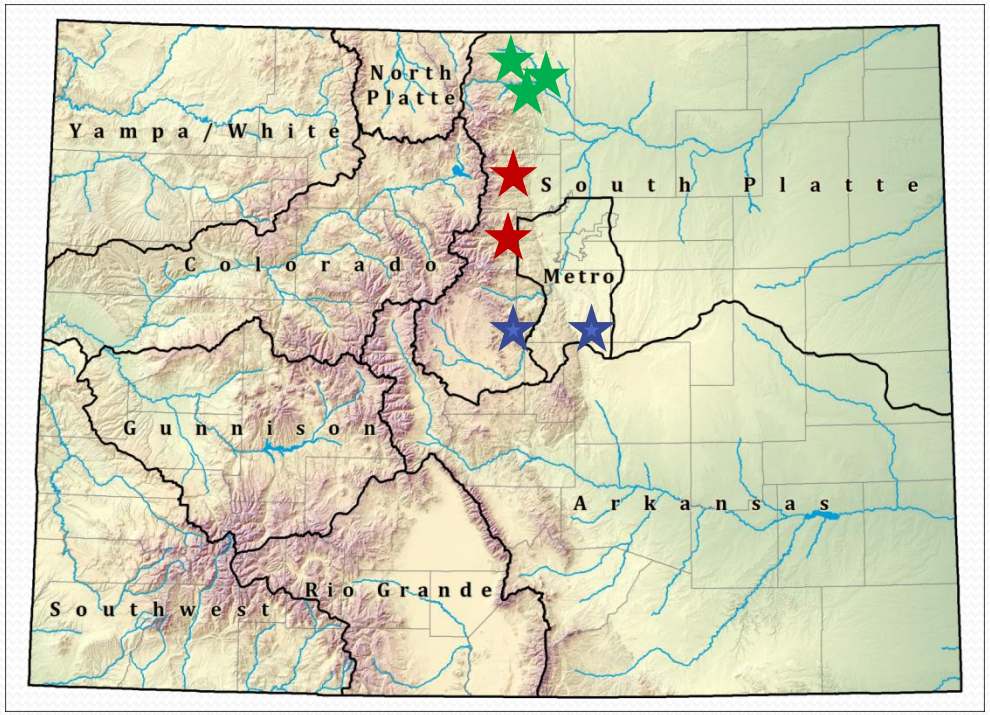
Q: How long does it take to do an EIS for a water supply project?

A: Too long!
- **13+ years**
- **3 feet of human growth!**



Major Dam Projects

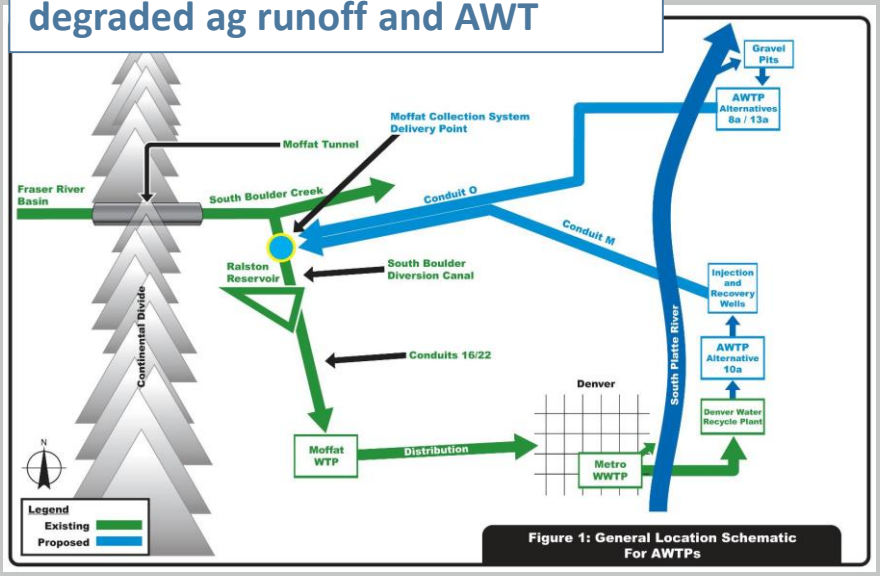
- Halligan
- Milton Seaman
- Northern Integrated Supply Project
- Windy Gap Firming
- Moffat Collection
- Reuter Hess Reservoir
- Chatfield Reservoir Reallocation



Moffat Collection System – Gross Dam

- **Denver Water – add 18kAF of firm yield to north system**
- **14-years for the EIS & ROD**
- **EIS is over 5 feet thick – comment response appendix is 5,000 pages**
- **Extremely diverse alternatives**
- **Raise existing 340 foot-high concrete dam to 475 feet**

Alternatives including blending high-quality mountain water with degraded ag runoff and AWT



Windy Gap Firming – Chimney Hollow Dam

- New 90,000 AF reservoir to "firm" existing "junior" supplies
- Extensive alternatives – surface and GW, ag transfers, etc.
- On-site environmental characterization for 177 reservoir sites
- 14 years for EIS & ROD
- New 380 foot-high dam
- 1,100 foot-head pipeline

Requires Complex Water Administration & Management

The Colorado River Cooperative Agreement[1]

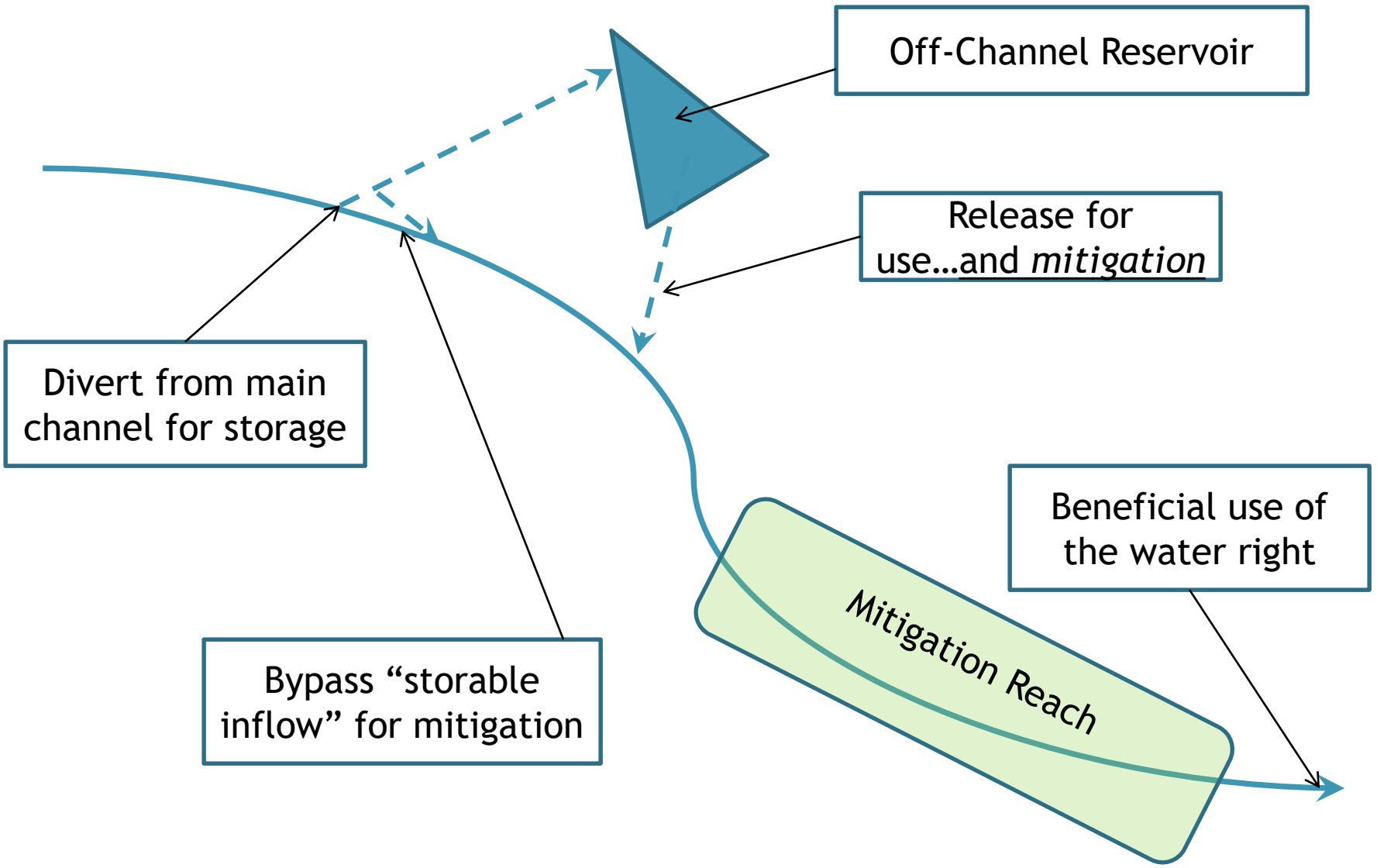
May 15, 2012

- **Four primary agencies plus 39 others**
- **Driven by permitting for new projects and by diligence applications**

Colorado River Cooperative Agreement

- Changes in existing water rights & limits on locations of use
- Agreements not to oppose creative operations
- Out-of-priority diversions
- Changes diversions for in-stream environmental uses
- Operations as if there was a senior call on the river
- Use of existing facilities to convey water from other water rights
- Changes operations of federal facilities
- Agreements to not oppose water court applications
- Limits on reducing bypass flows
- “Learning by Doing” - administration challenges for many years

Sample Scenario



Sample Scenario

Two potential questions:

1. Release water for mitigation reach
   - Paper fill? Planned, applied to beneficial use so there is no impact to the ability to store.
   - What is the mechanism, how is the water protected in the reach?
   - May need legislation.
2. Bypass water for mitigation reach
   - Potential impact to the to ability to store.
   - Reservoir Administration Guidelines, Paper fill.
   - Administrative allowance, can be done without legislation.

Comments / Questions?

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Alternative Transfer Methods(ATM)

*"**minimize the impact** on the local economy, provide other funding sources to the agricultural user, and optimize both the agricultural and nonagricultural benefits of the remaining lands…"*

SWSI 2010

Types

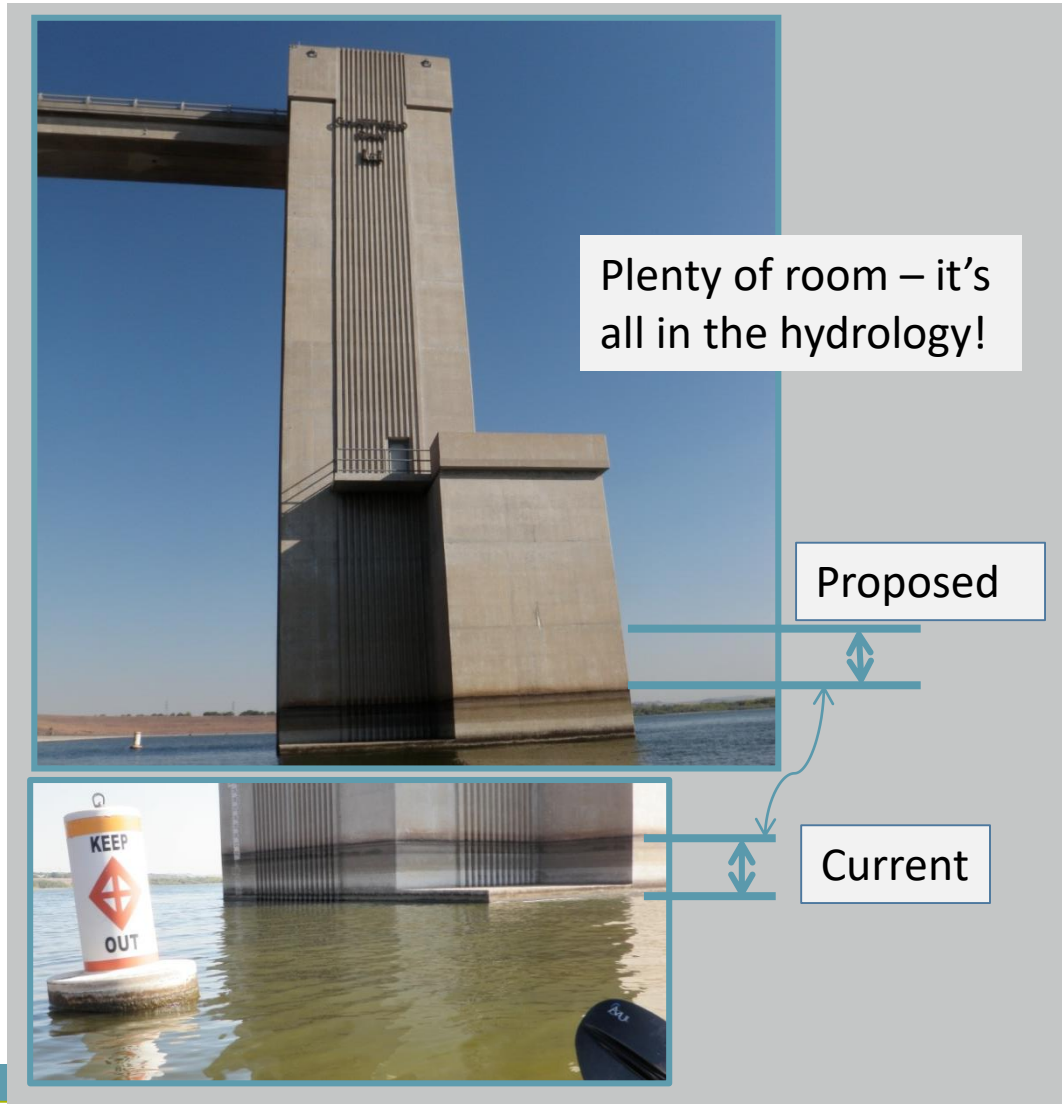
- Water banks
- Purchase and leaseback
- Deficit irrigation
- Changing crop type

Potential Benefits

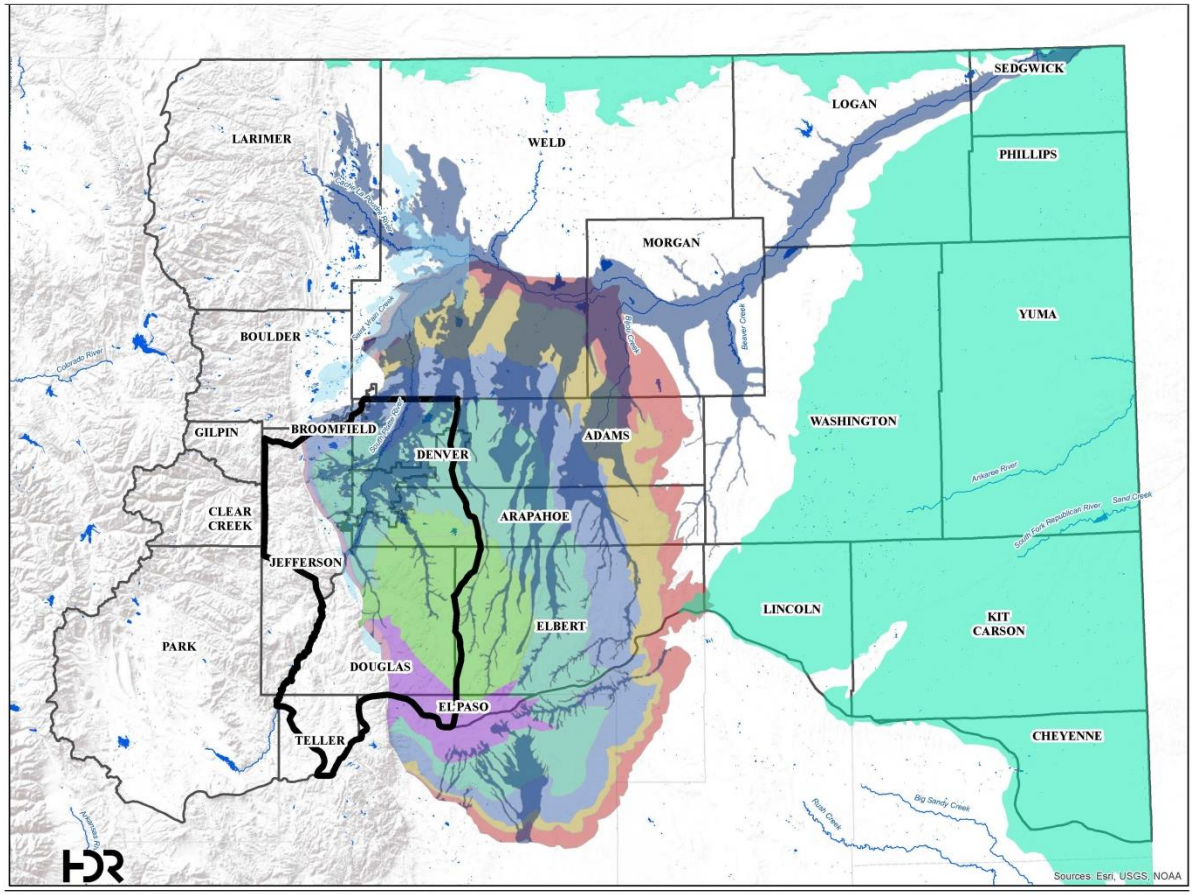
- Cooperative relationships between water irrigators and municipalities
- Temporary increase in income
- Optimizes limited water resource
- Preserves agricultural open spaces
- Greater food security (than w/o ATMs)
- Wildlife habitat

Chatfield Reservoir Reallocation

- Existing USACE flood control and recreation reservoir
- A “pond” with 2 million visits per year
- Federal nexus –authorization to allow 20kAF of water storage
- $5 million, 8-year EIS!
- $60 – 70M in facility relocations



Groundwater management



Does Colorado's Water Plan require:

- Changes to **Colorado's water rights system and water administration**?

- Restrictions on a water right owner's ability to **change or sell water rights**?

NO – to both!