



COLORADO  
**WATER CONGRESS**  
INFORM | CONNECT | TRAIN | ACT



# Demystifying Colorado Water for Legislators

January 13, 2023



# HEADWATERS

OF THE COLORADO WATER RESOURCES BOARD

## DROUGHT 2002

COLORADO'S DRIEST  
YEAR ON RECORD

HARD TIMES ON THE WHITE RIVER  
LESSONS FROM HISTORY LAW & DROUGHT  
2003 LEGISLATIVE UPDATE

# Legislative founding – HB02 1152



WELCOME FROM DIANE HOPPE  
INAUGURAL ISSUE, HEADWATERS MAGAZINE

Welcome, readers, to this inaugural issue of *Headwaters* magazine published by the Colorado Foundation for Water Education. I certainly hope you enjoy it.

The Colorado Foundation for Water Education was established legislatively by the Colorado General Assembly in 2002, during one of the state's worst droughts. The purpose and mission of the Foundation is to promote a better understanding of water issues through educational opportunities and resources, so Colorado citizens will understand water as a limited resource and make informed decisions. The Foundation does not take an advocacy position on any water issue.

*Headwaters* magazine is designed to provide up-to-date information on recent events and fundamental concerns related to Colorado's water resources. Growth, legal developments, drought, floods and the use of water in the everyday lives of Coloradans are some of the very public and personal themes we will explore in every quarterly issue.

The feature of this inaugural issue is drought, a very timely topic in the fall of 2003. In this issue we recount the 2002 drought – its severity and what it says about our vulnerability to future droughts. Thank you, Roger Pieke, our State Climatologist, for presenting us with important information on just how little precipitation we did receive during last year's withering dry spell. Reagan Waskom, Colorado State University, provides us with critical information on how

severe drought conditions in 2002 had significant impacts on the state's economy and natural resources. And, as Justice Hobbs recounts, drought events have profoundly shaped our state's water laws and institutions.

Our "Profiles" section features individuals from around the state whose lives are shaped by their relationship and dependence on our water resources. In this issue we highlight residents from the small town of Meeker who all managed to "give a little bit" so that the community as a whole could survive in tough times.

In our special section "Voices" we ask writers and poets to submit their original work. Thank you, Mary Crow, Colorado's Poet Laureate, for creating the poem "Colorado Drought" especially for this inaugural issue of the magazine. Also, thanks to Katie Post, for sharing your River Of Words prize-winning poem, "I Am the Headwaters."

I hope you will consider becoming a member of the Foundation and subscribing to *Headwaters* magazine.

The Foundation for Water Education is a non-profit organization, and proceeds from your membership or subscription will be used to fund additional water education efforts.

Thank you!

*Diane Hoppe*

State Representative (R-Sterling)  
& President, CFWE



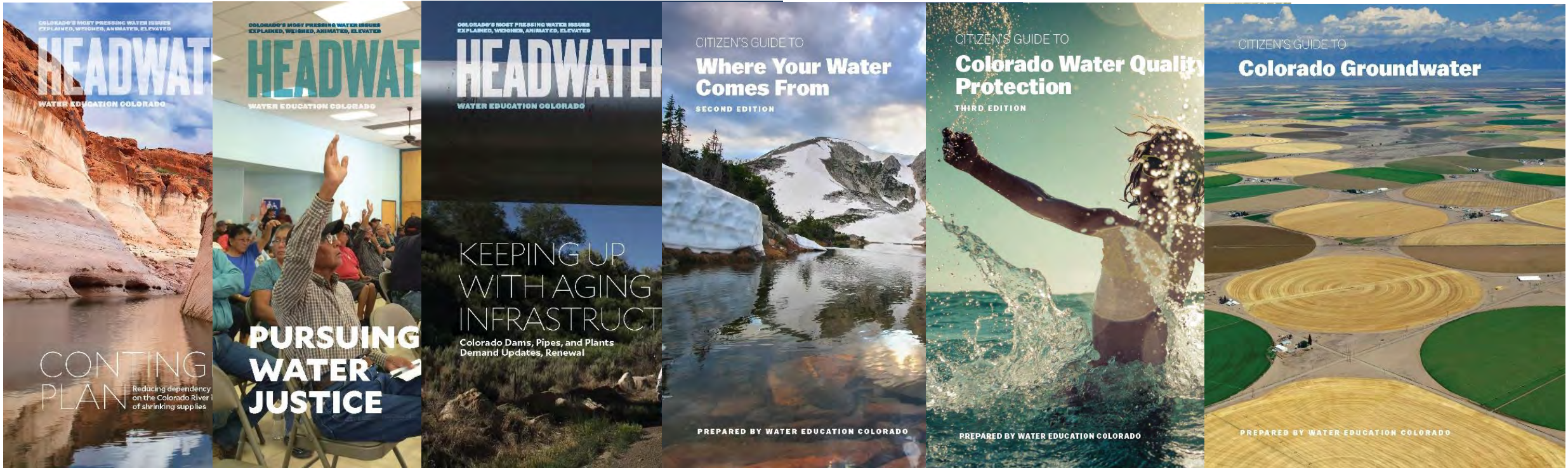
Elk Tops Wilderness,  
Upper Colorado River Basin

*"Growth, legal developments, drought, floods and the use of water in the everyday lives of Coloradans are some of the very public and personal themes we will explore in every quarterly issue."*

# PUBLICATIONS

Cultivating a water-aware community that is committed to helping secure a sustainable water future and quality of life for Colorado

- Three Headwaters issues per year, plus complementary content
- Updated Citizen's Guide Library with 10 guides to water topics!





# NEWS SERVICE



## FRESH WATER NEWS

An independent nonpartisan news service on Western water

### Colorado farmers, ranchers hit by double, triple whammy

by Allen Beat | August 26, 2020



### Colorado River, St. Vrain districts asking voters for millions in new tax revenue

August 19, 2020 by Sarah Kutz

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### News Digest

New Mexico eyes water projects to replace failed Gila River Diversion

August 10, 2020

Colorado's West Slope now a major climate change hot spot

August 9, 2020

\$1B coastal desalination plant new Los Angeles faces new delays

August 6, 2020

Feds promise \$1.2M to research science behind Klamath River allocations and farmers' concerns

August 3, 2020

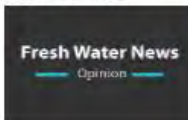
COVID-related rise in electricity

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[Sign up](#)

### Top Headlines



### Opinion: When we work together, all of Colorado can benefit

August 26, 2020 by Chris Wood and Brad Wind

- Your No. 1 source of Colorado water news!
- Weekly reporting with email news editions delivered every Wednesday
- Member of the Colorado Press Association
- Sign up for free at [wateredco.org/fresh-water-news-signup](https://wateredco.org/fresh-water-news-signup)

Feb. 22, 1991

Rocky Mountain News

PEANUTS


Charles M. Schulz



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2-22

-Eagle



# Water Quality

## Demystifying Colorado Water for Colorado Legislators

Nicole Rowan, Director, Water Quality Control Division, CDPHE  
Jojo La, Acting Director, Environmental Boards and Commissions, CDPHE









# What We Do

## FEDERAL ACTS

CLEAN WATER  
ACT



SAFE DRINKING  
WATER ACT

Primacy & delegated authority

Delegated  
Authority

Primacy

## STATE LEVEL

Water Quality Control Commission

Colorado Water  
Quality Control Act



Colorado Primary  
Drinking Water  
Regulations

## DIVISION PROGRAMS

Water Quality Control Division

Clean Water  
Program

Safe Drinking Water  
Program



# Pressing issues

- Core work→ workforce and budget analysis
- Environmental justice
  - CC/ND
  - Mobile home parks
- Bipartisan infrastructure law
- PFAS
- Lead and copper
- Nutrients and harmful algal blooms



# The Water Quality Control Commission

9  
Appointed  
Volunteers



Appointed  
by Governor



Confirmed  
by Senate



Serve 3-Year Rolling Terms  
Type-1 Commission  
(Independent Rulemaking)

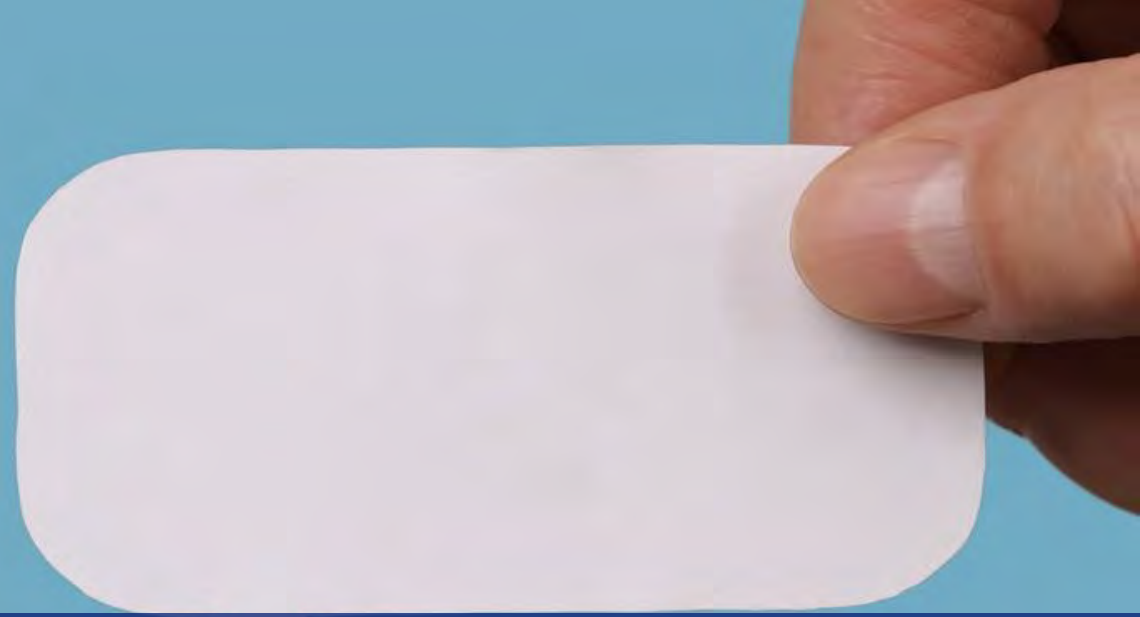


# Commission's Authority to Make Rules

- **Comes from the Legislature**
- **The Water Quality Control Act**  
(C.R.S. 25-8-101 *et seq.*)
- **Administrative Procedure Act**  
(C.R.S. 24-4-101 *et seq.*)

# What has the Commission Done with its Authority?

- Drinking water regulations
- Surface water quality classifications and standards
- Groundwater quality classifications and standards
- Financial assistance regulations
- Point source discharge permit and control regulations
- Watershed protection regulations
- Other control regulations
- 303(d) list of impaired waters



Questions?





# Demystifying Water Water Administration

January 13, 2023

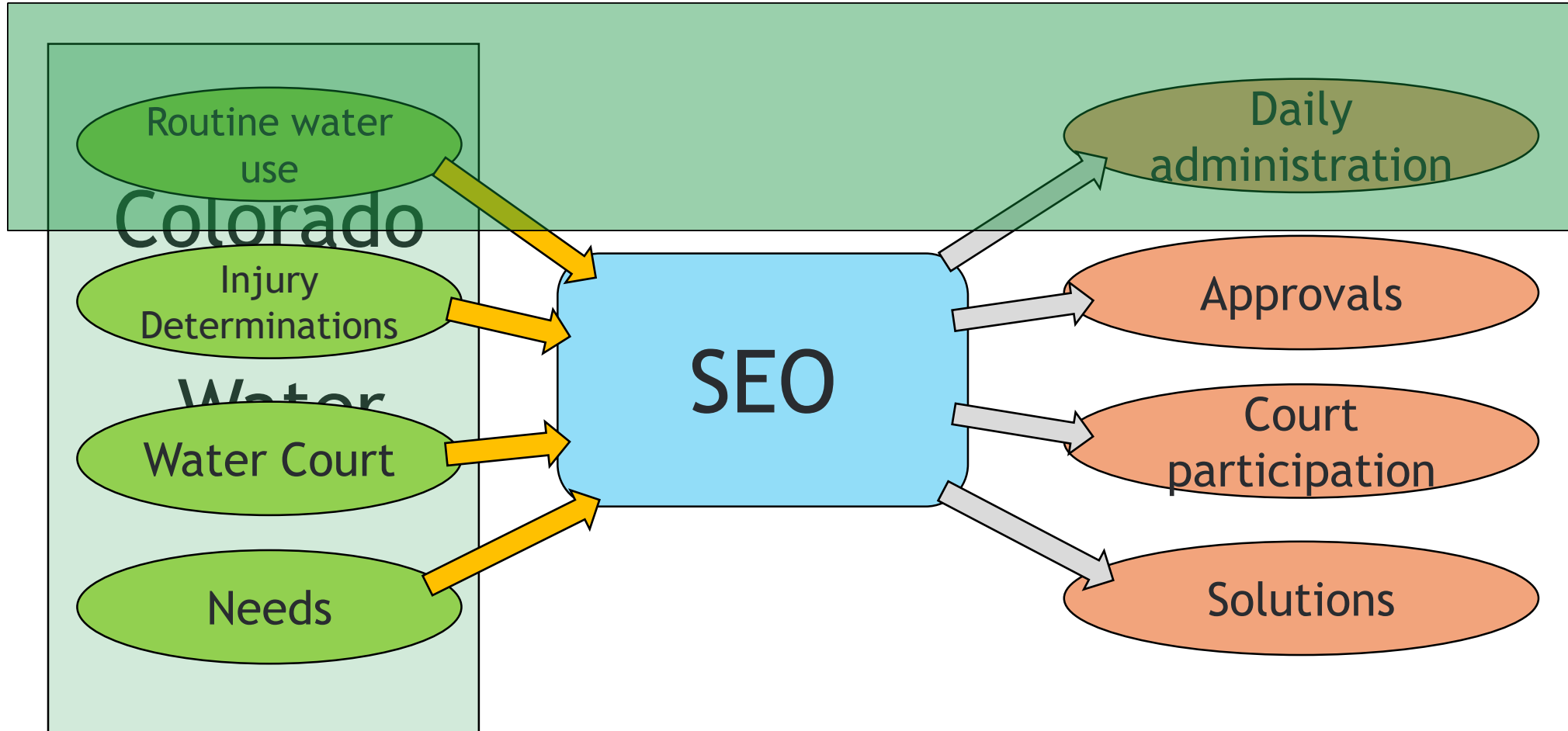
Kevin G. Rein, P.E., State Engineer  
Division of Water Resources



# Discussion

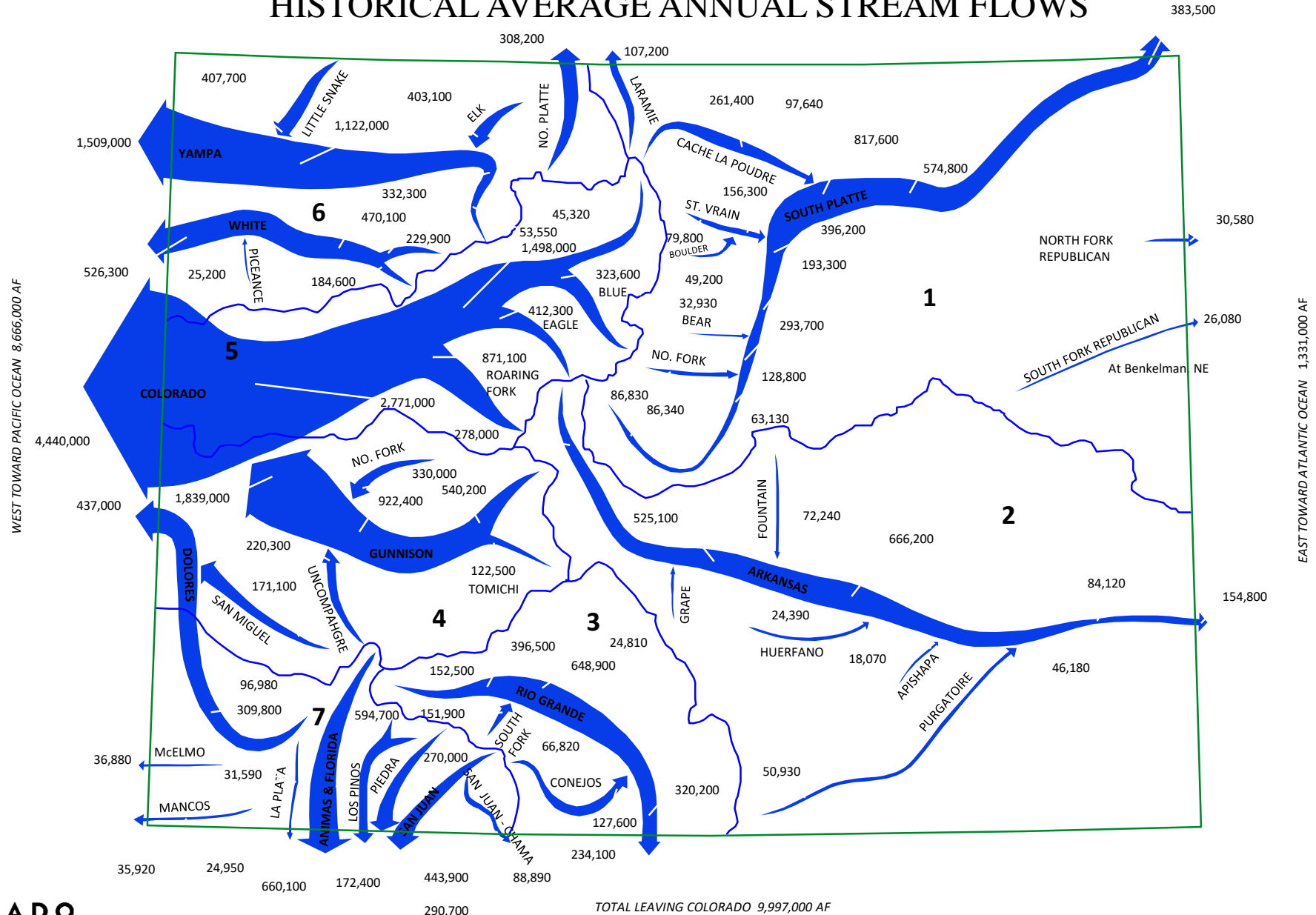
- Specific topics:
  - Beginnings of *Prior Appropriation*
  - State Engineer's Office, Roles and Responsibilities
  - Water Administration 101
  - Change of Water Rights
  - Augmentation Plans
  - Interstate Compacts

# State Engineer's Office Role

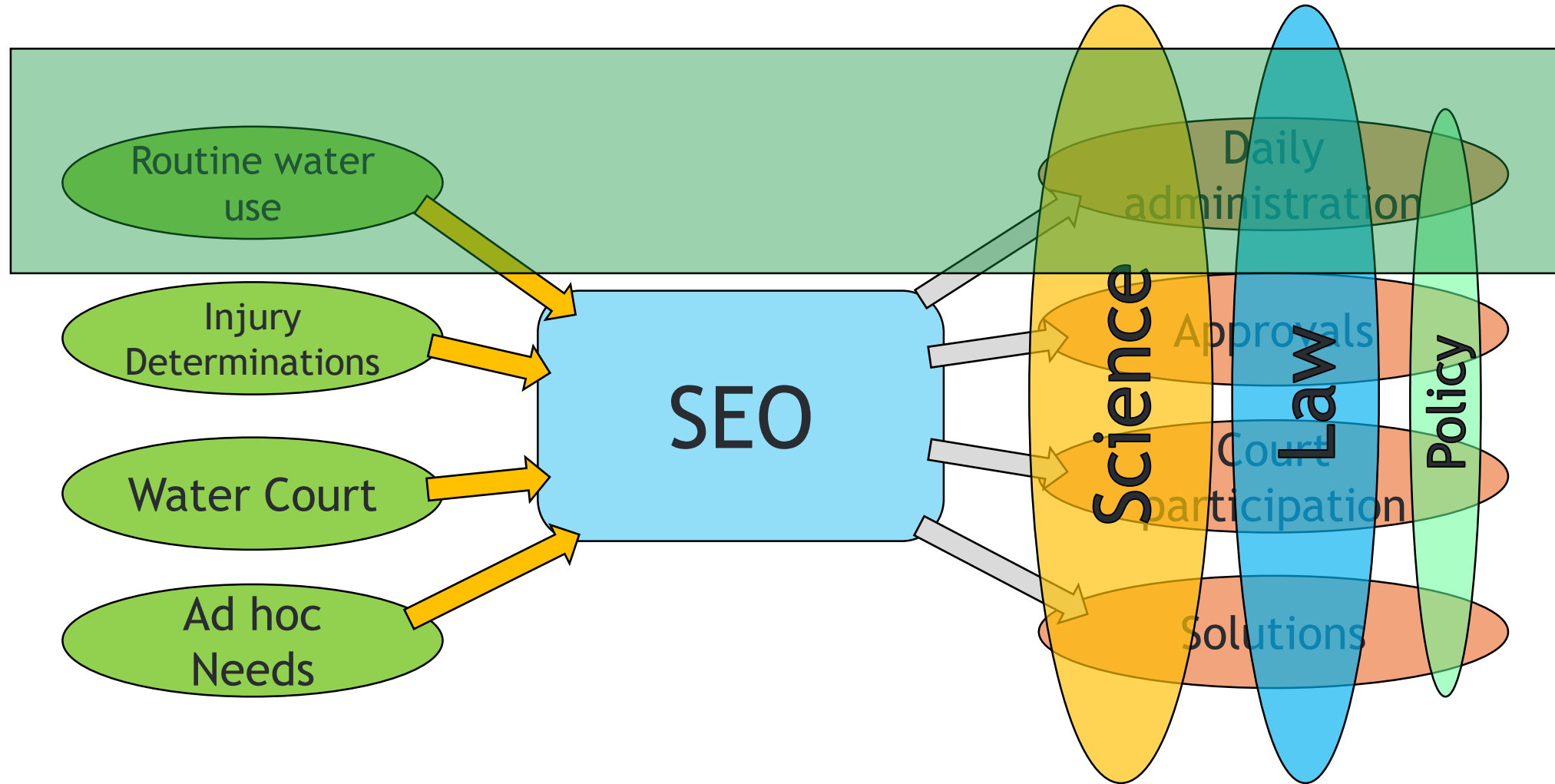


# COLORADO

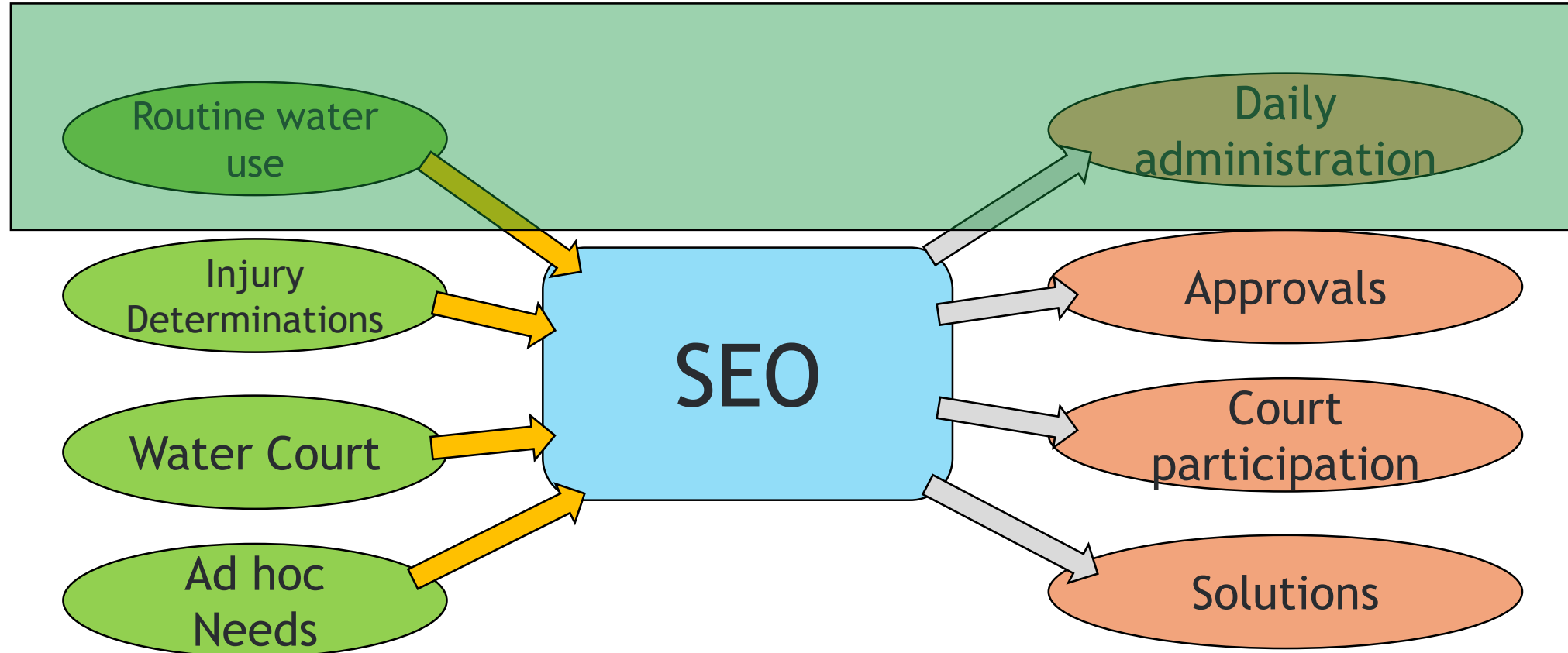
## HISTORICAL AVERAGE ANNUAL STREAM FLOWS



# State Engineer's Office Role



# State Engineer's Office Role





Mining Diversions

# Historic Basis for Water Administration

Surface water administration:

- Territorial Law
- State Constitution
- Adjudication act of 1879, Water Commissioners,
- Adjudication Act of 1881, Office of the State Hydraulic Engineer
- 1887, Superintendent of Irrigation

Beginning in 1887, the fundamental structure for water administration is already in place





# Current Statutes

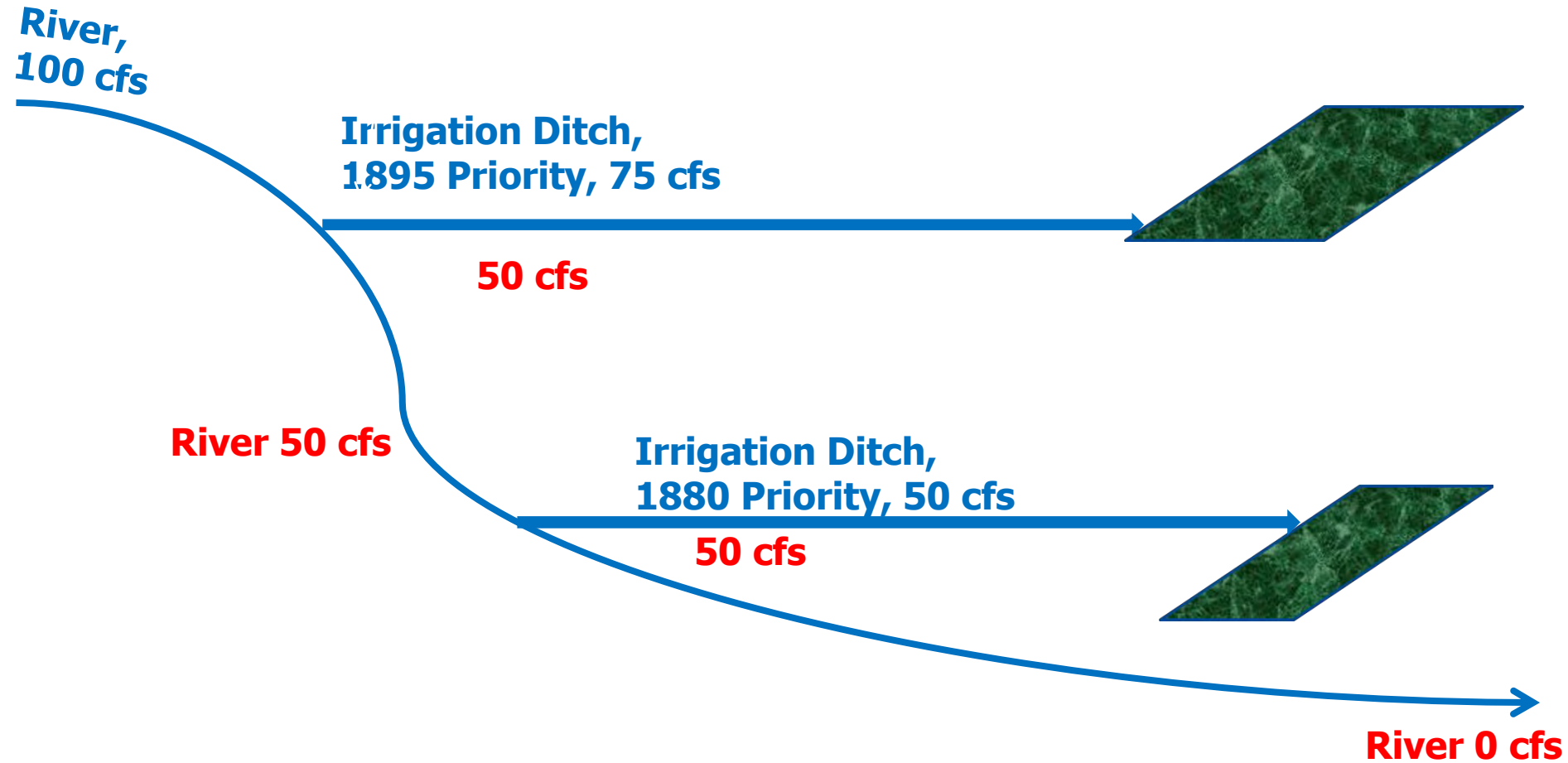
Surface water administration:

- Section 37-92-501(1), C.R.S.

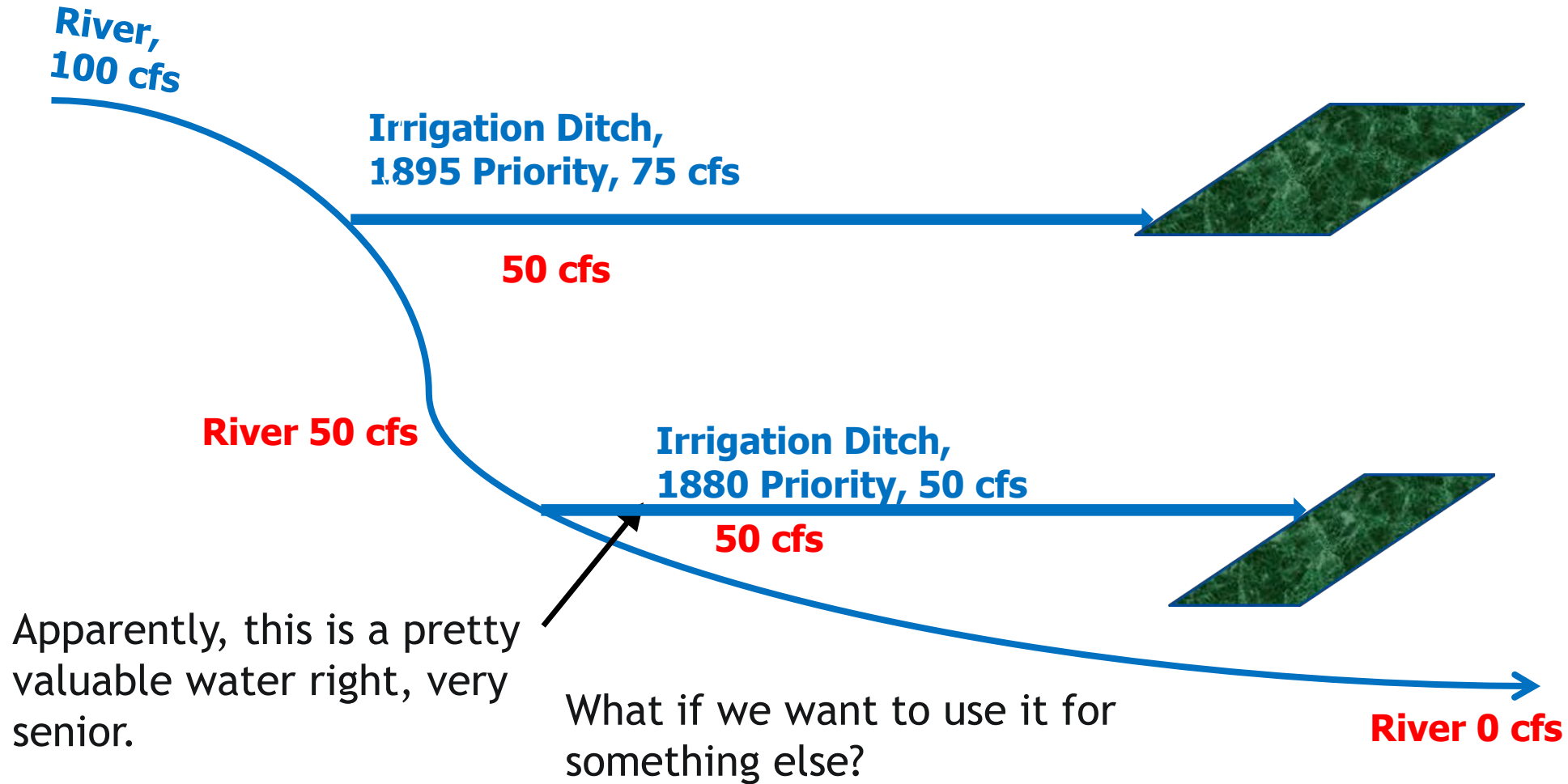
*“The state engineer and the division engineers shall administer, distribute, and regulate the waters of the state in accordance with the constitution of the state of Colorado...”*

- Balance: Maximize beneficial use, no injury

# Prior Appropriation Administration



# Prior Appropriation Administration



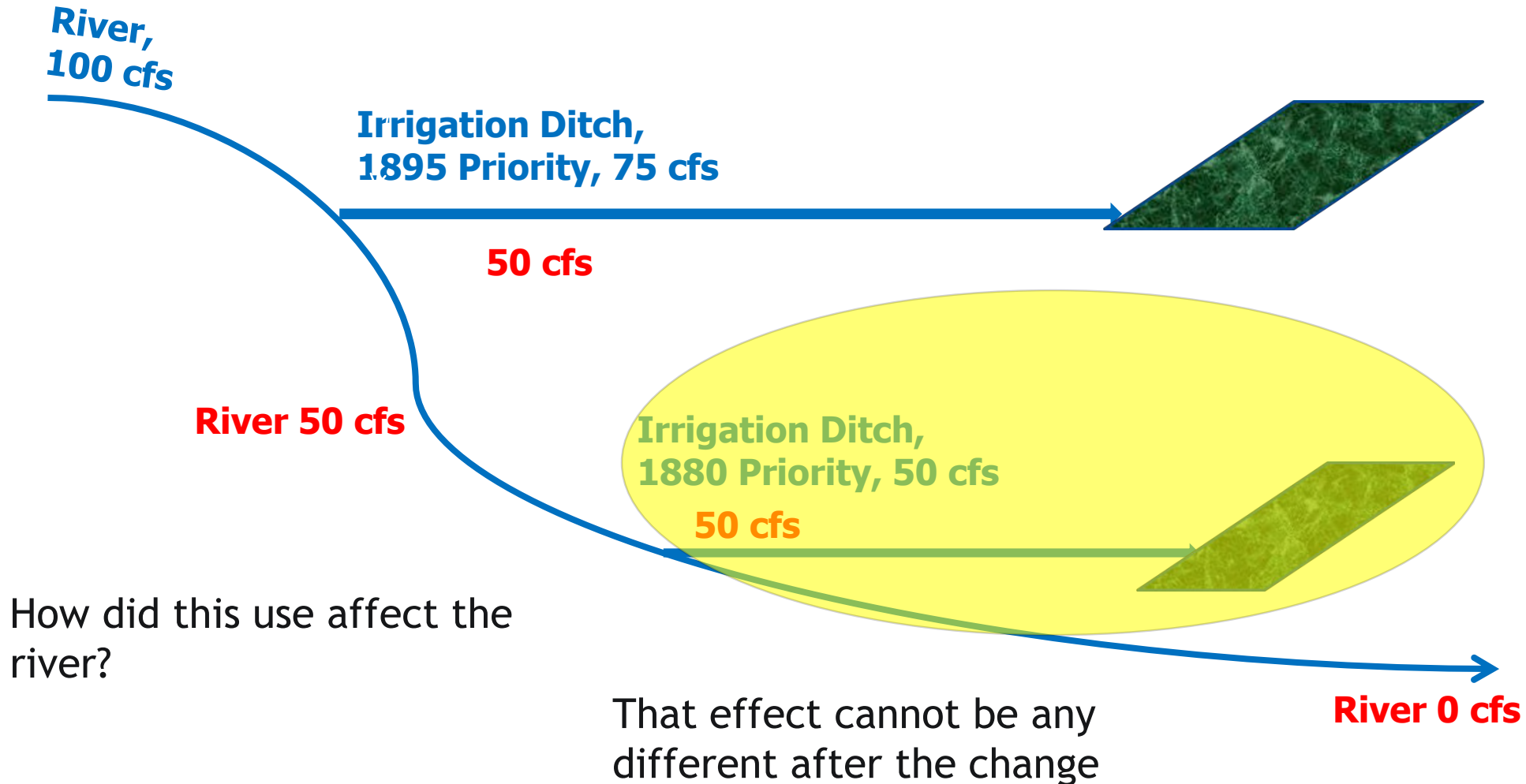
# Change of Water Right Original Direction from Court

1888, *Fuller v. Swan River Placer Mining Co.*:

- Changed water rights
  - Authorize a change: type of use, place of use, time of use, point of diversion
  - Retain priority
  - “...*absence of injurious consequences*...”



# Evaluation for Change of Water Right



# Change of Water Right, Current Law

## Statutory Law

- Section 37-92-305(3)(a), C.R.S.
  - “...*not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right...*”
- Section 37-92-305(3)(d), C.R.S.
  - “...*actual historical use during a representative study period...*”



# Over-appropriation

## Not enough water to satisfy all rights

What do you do if you are “*out of priority*?”



# Current Statutes

Water Administration:

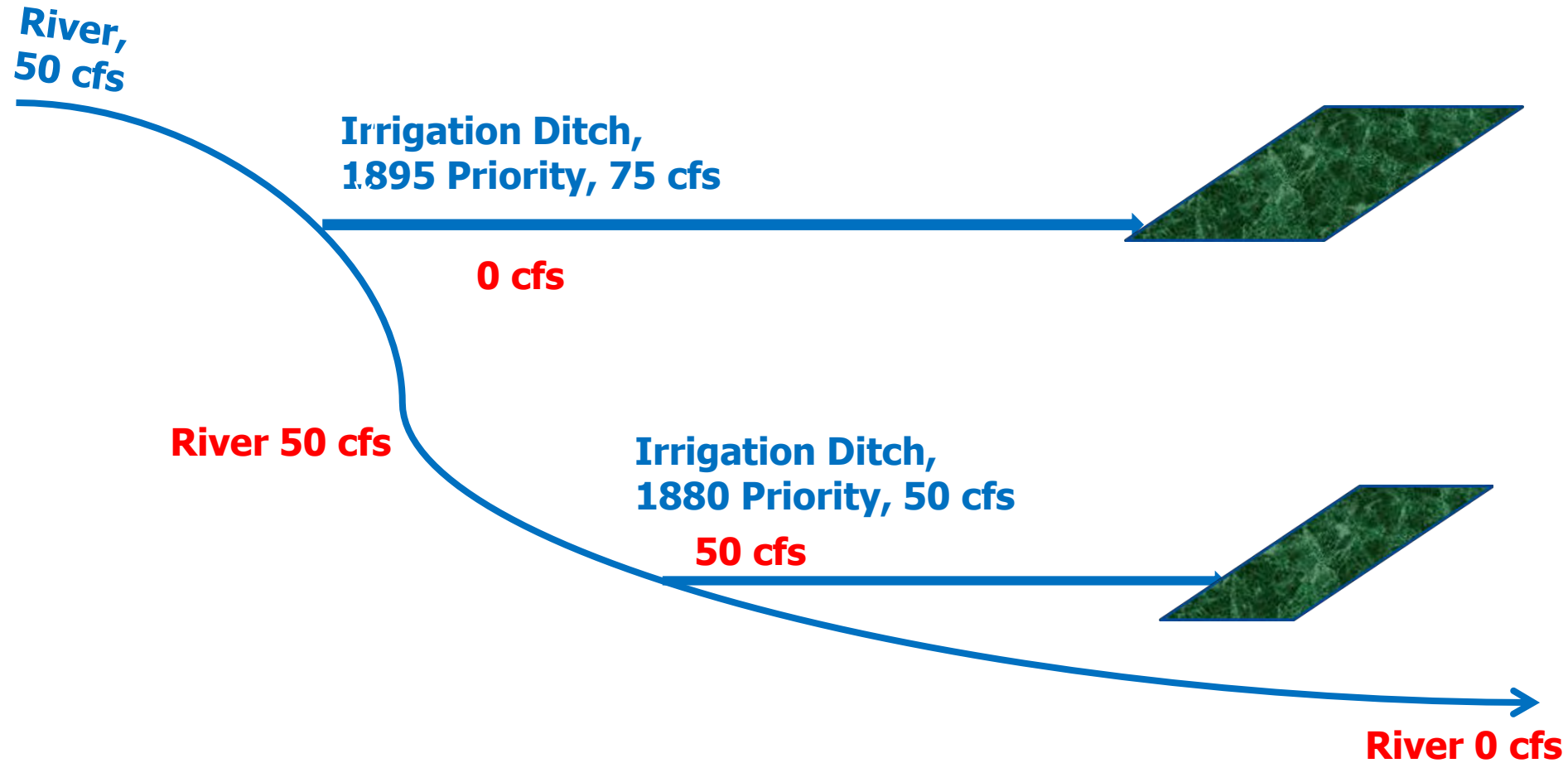
- Section 37-92-502(2)(a), C.R.S.

*“Each division engineer shall order the total or partial discontinuance of any diversion in his division to the extent that...”*





# Out of priority, Curtailment



# Water Administration

## Plans for augmentation

# Replacing Depletions

- In plain language

*Augmentation Plan is a plan to replace induced stream depletions using a substitute supply of water*



# Replacing Depletions

- Actual objectives of augmentation:
  - Statewide; replace stream depletions caused by out-of-of priority diversions, notably, well pumping

# Current Law

- Section 37-92-305(8), C.R.S.
  - Consider injury caused by out-of-priority diversions,
  - Allows continuation of diversions,
  - Provide replacement water in time, location, and amount.



# Current Law

- Distinguish Augmentation from *Exchange*
  - Plan for Augmentation,
    - Allows continuation of diversions,
    - Uses a substitute supply decreed for the purpose of allowing such diversions



# *Compacts*

*(Some Comparisons)*



# Colorado's Treaty and Compact Obligations

Colorado is bound by:

## National Treaty

Mexican Treaty on Rio Grand, Tijuana, and Colorado Rivers - 1945

## Interstate Compacts

Colorado River Compact - 1922 (Shared responsibility with the CWCB)

La Plata River Compact - 1922 (SEO responsibility)

South Platte River Compact - 1923 (SEO responsibility)

Rio Grande River Compact - 1938 (SEO responsibility)

Republican River Compact - 1942 (SEO responsibility)

Costilla Creek Compact - 1944 (Rev. 1963) (SEO responsibility)

Upper Colorado River Compact - 1948 (Shared responsibility of the CWCB)

Arkansas River Compact - 1948 (Shared responsibility with the CWCB)

Animas-La Plata Project Compact - 1969 (Shared responsibility with the CWCB)

## U.S. Supreme Court Decrees (SEO responsibility)

Nebraska v. Wyoming - 1945, 2001 (North Platte River)

Wyoming v. Colorado - 1957 (Laramie River)

## Agreements/Understandings

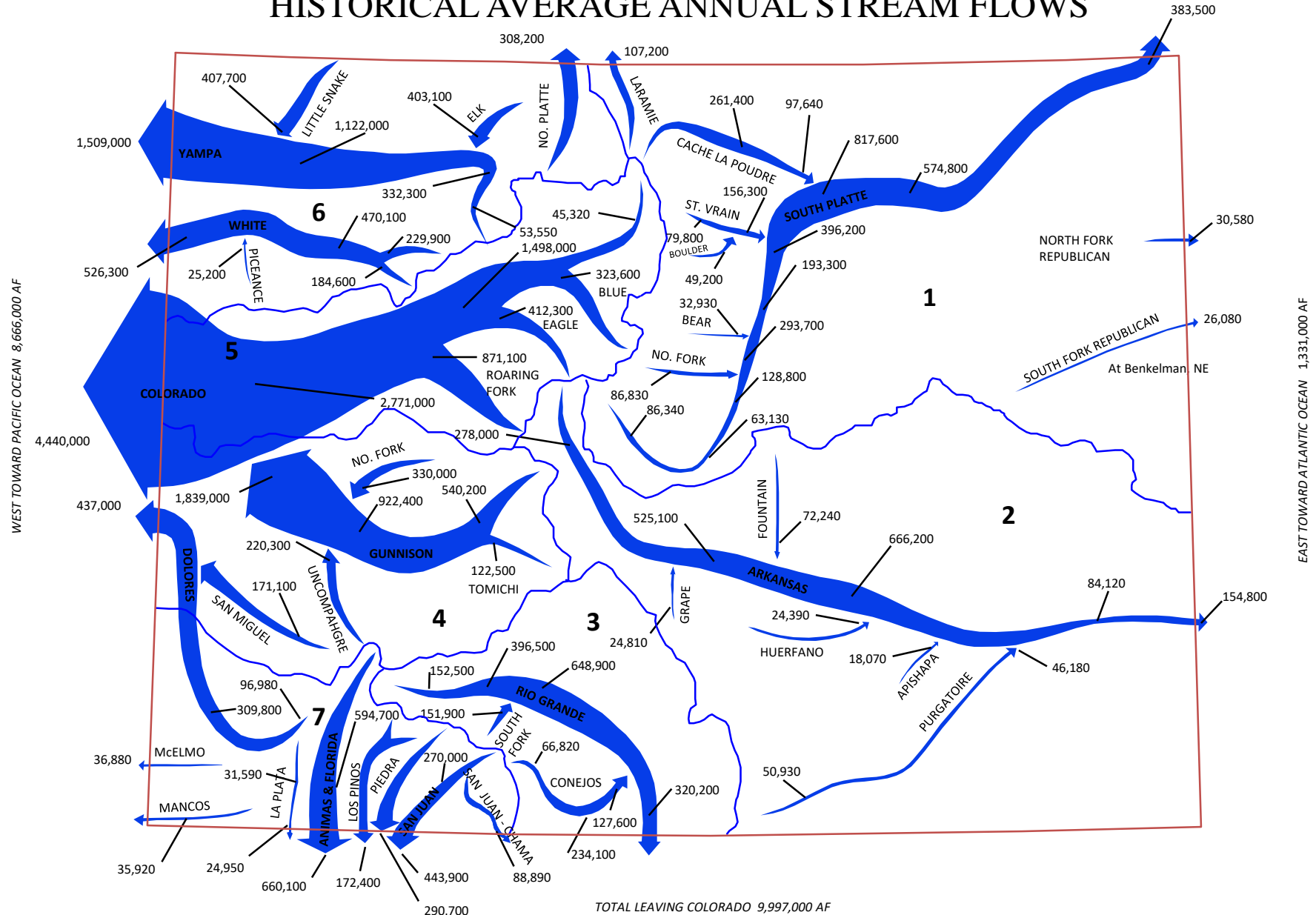
Pot Creek Memorandum of Understanding—2005 (1958)

Sand Creek Memorandum of Agreement—1997



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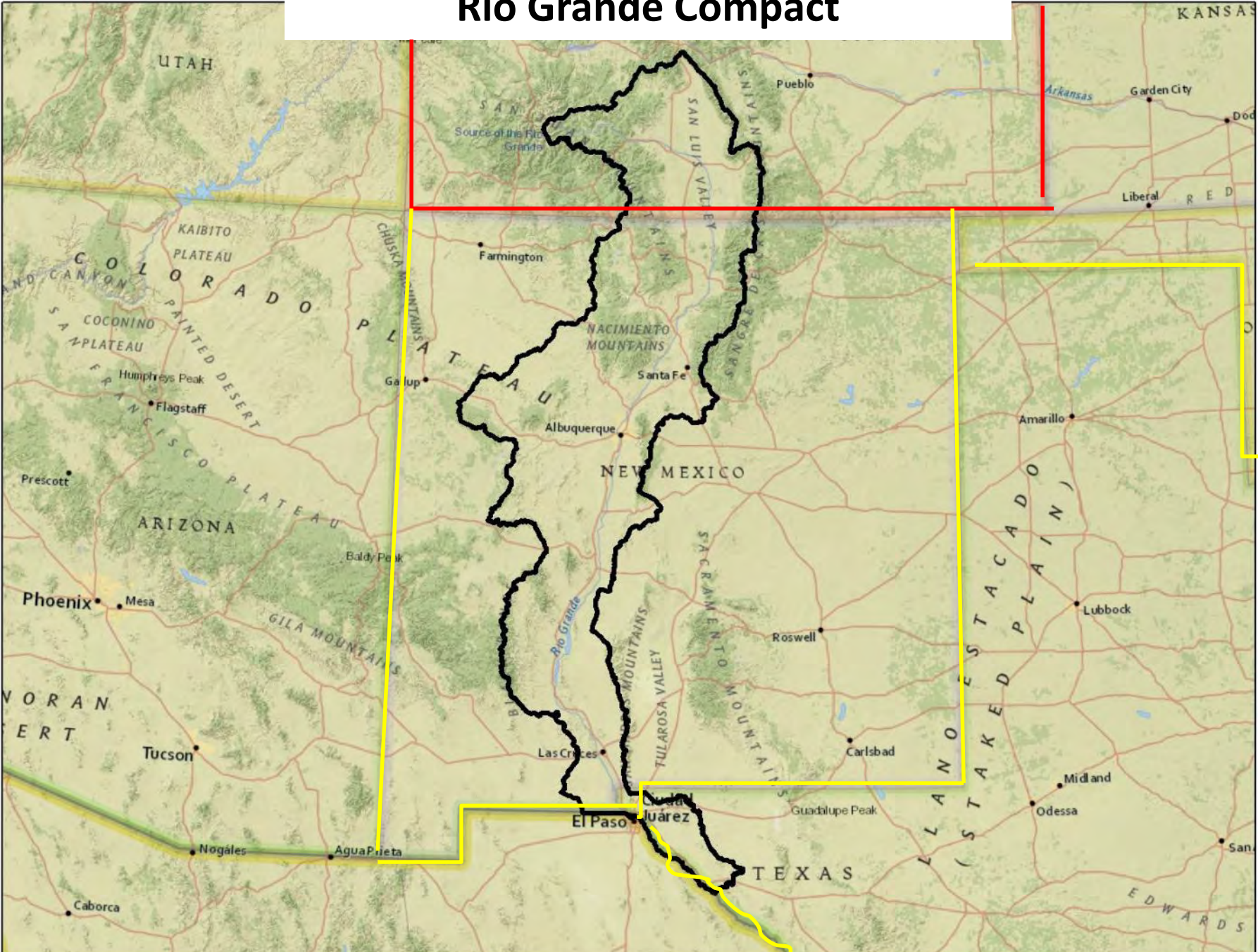
## HISTORICAL AVERAGE ANNUAL STREAM FLOWS



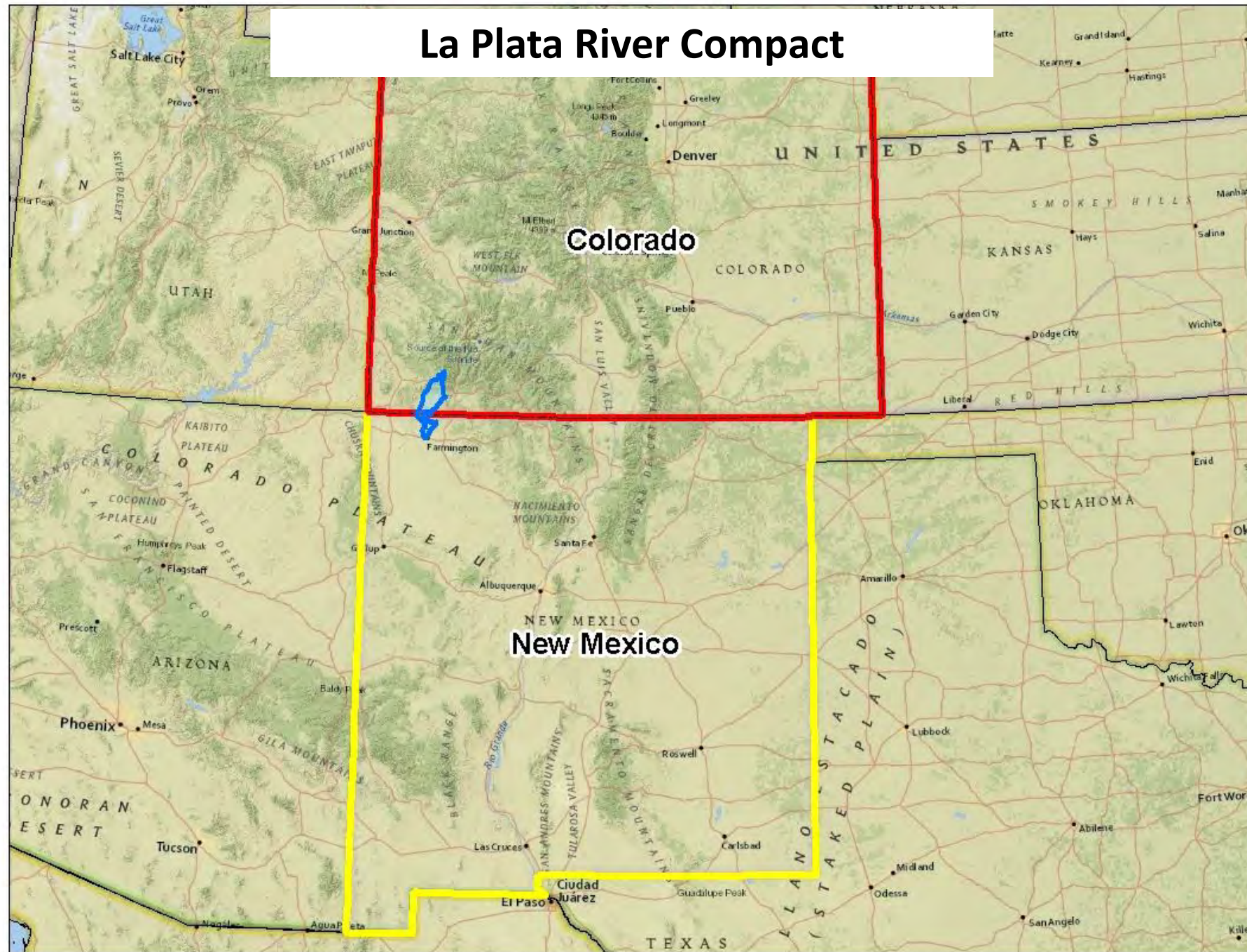
Prepared by the Hydrographic Branch (2011 Revision)  
[all values in acre feet (AF)]

OFFICE OF THE STATE ENGINEER  
COLORADO DIVISION OF WATER RESOURCES

# Rio Grande Compact



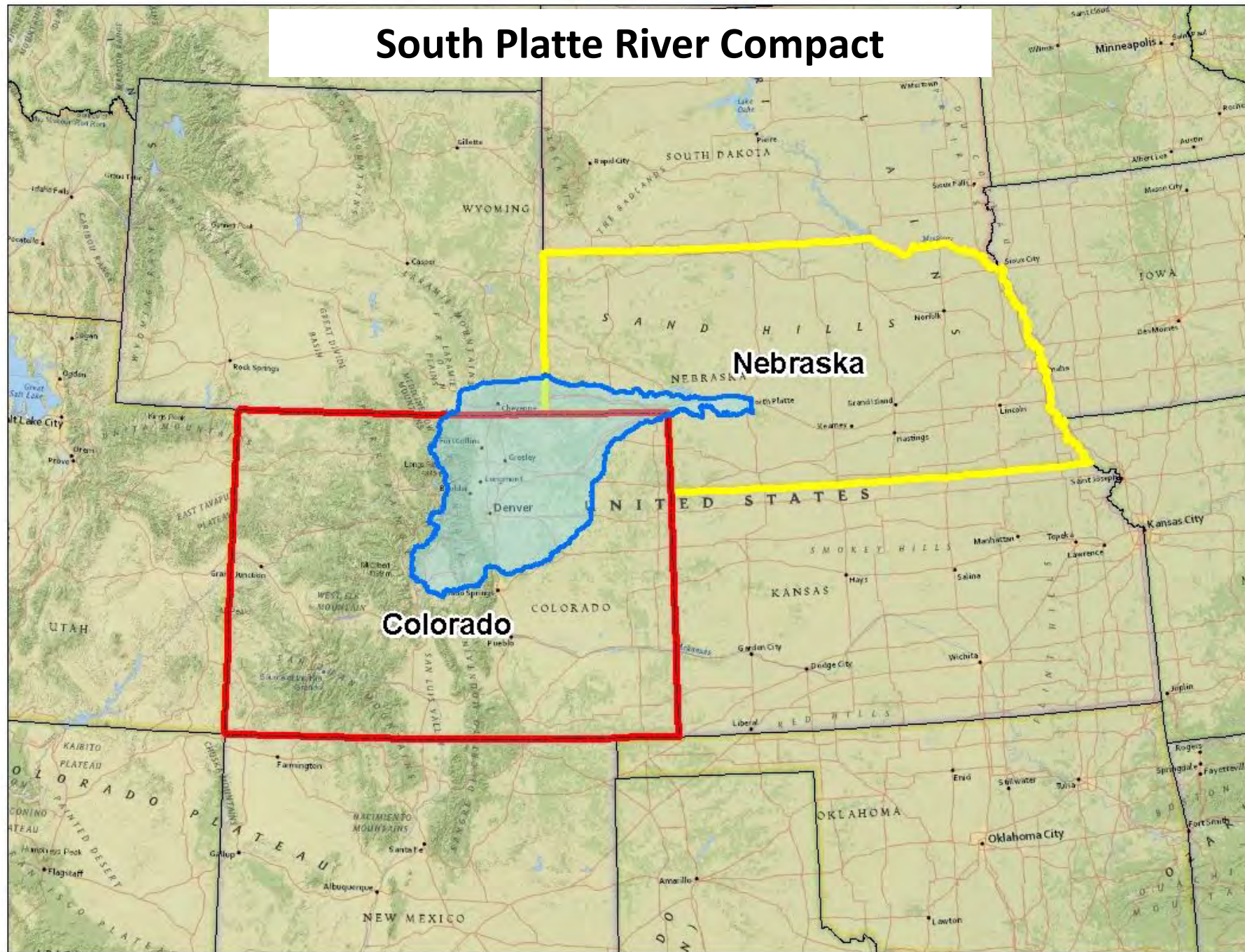
# La Plata River Compact



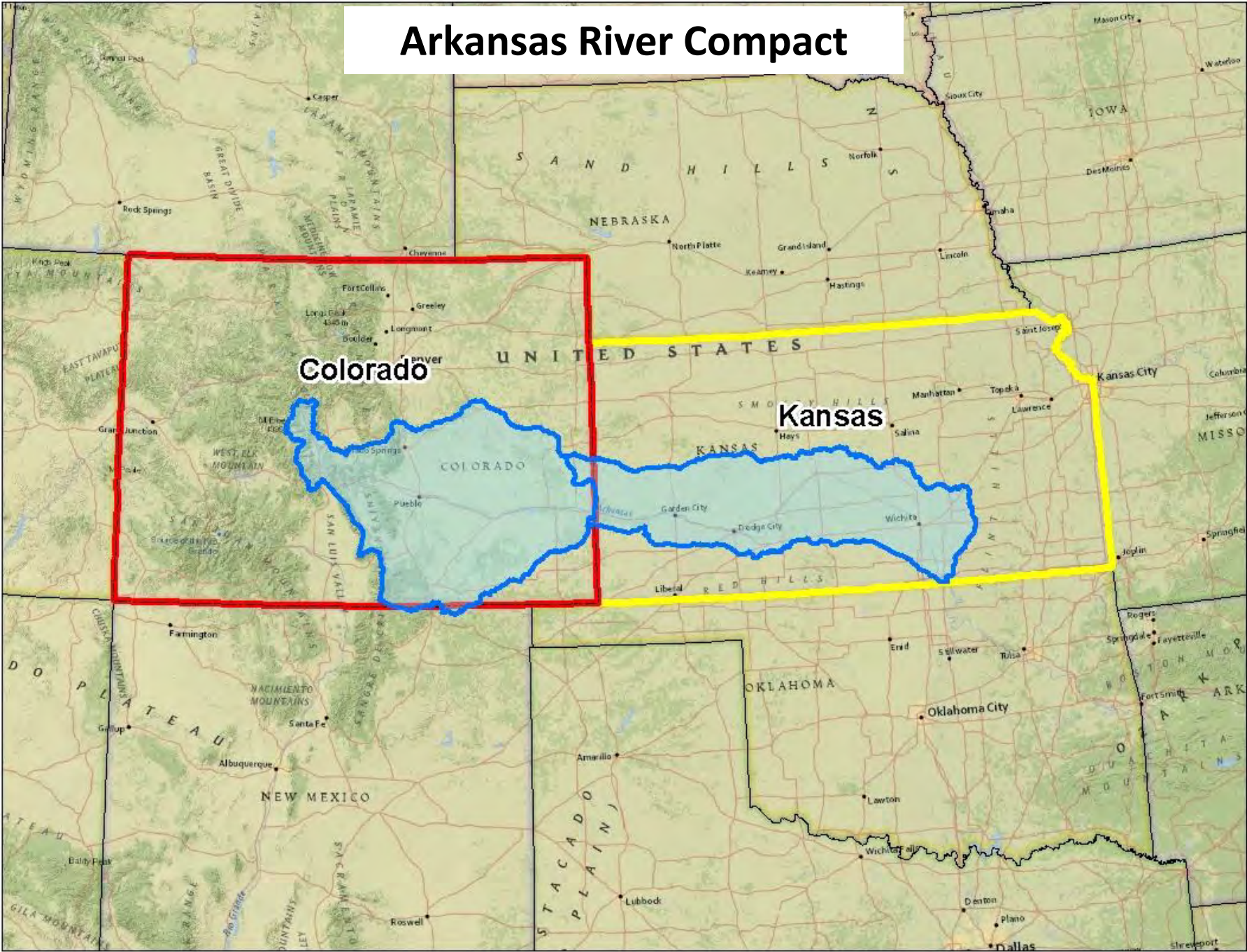
# Costilla Creek Compact



# South Platte River Compact



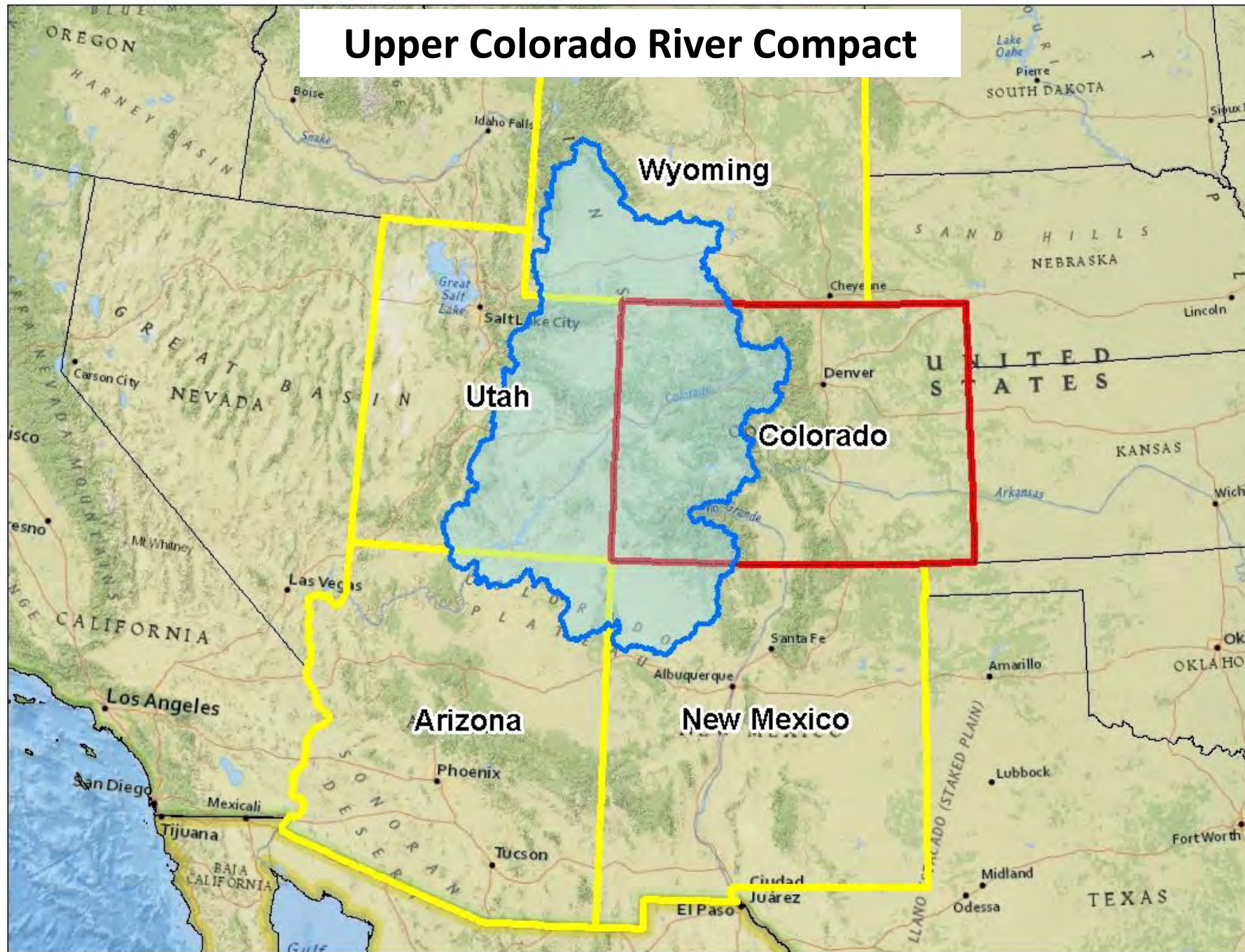
# Arkansas River Compact



# Colorado River Compact

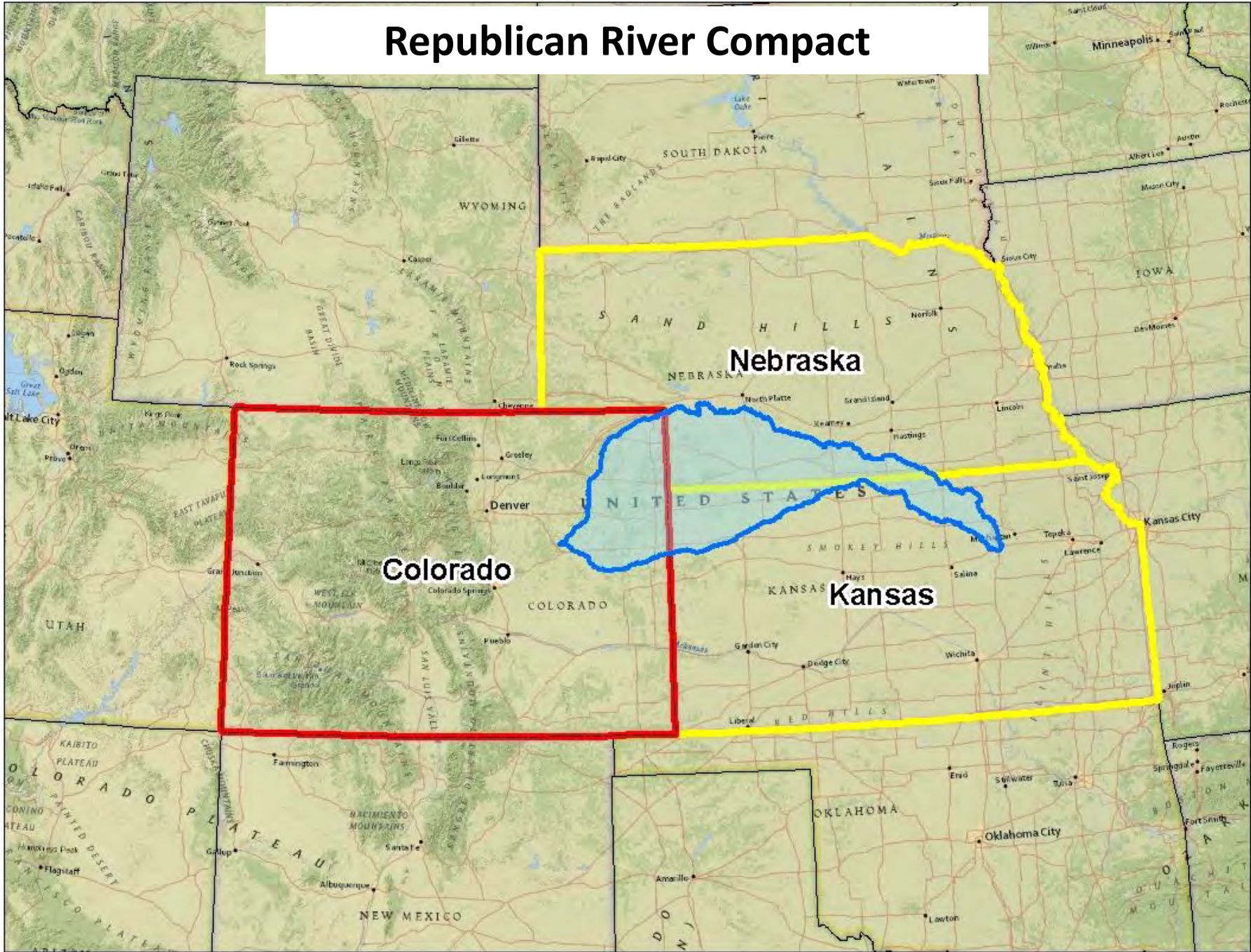


# Upper Colorado River Compact





# Republican River Compact



# What else?

- Ag to municipal conversions, ATM's
- Diminishing supply of “nontributary” groundwater
- Colorado River Compact
- Measurement Rules
- South Platte Compact
- Anti-speculation
- Administration during drought



January 13, 2023



# Current Issues on the Colorado River

**Amy Ostdiek**

Section Chief

Interstate, Federal, and Water Information Section



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# The Colorado River Compact

**Article II(a):** Defines Colorado River System

**Article III(a):** Apportions to Upper Basin and Lower Basin 7.5 million acre-feet per year in perpetuity

**Article III(b):** Lower Basin may develop additional one million acre-feet annually

**Article III(c):** Defines obligations to Mexico

**Article III(d):** Upper Division States will not cause flow to be depleted below aggregate of 75 million acre-feet over ten-year period

**Article IV(c):** No interference with state control of water within its boundaries

**Article VIII:** Present perfected rights unimpaired



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**Total Allocation  
before 1944 is  
16 maf**

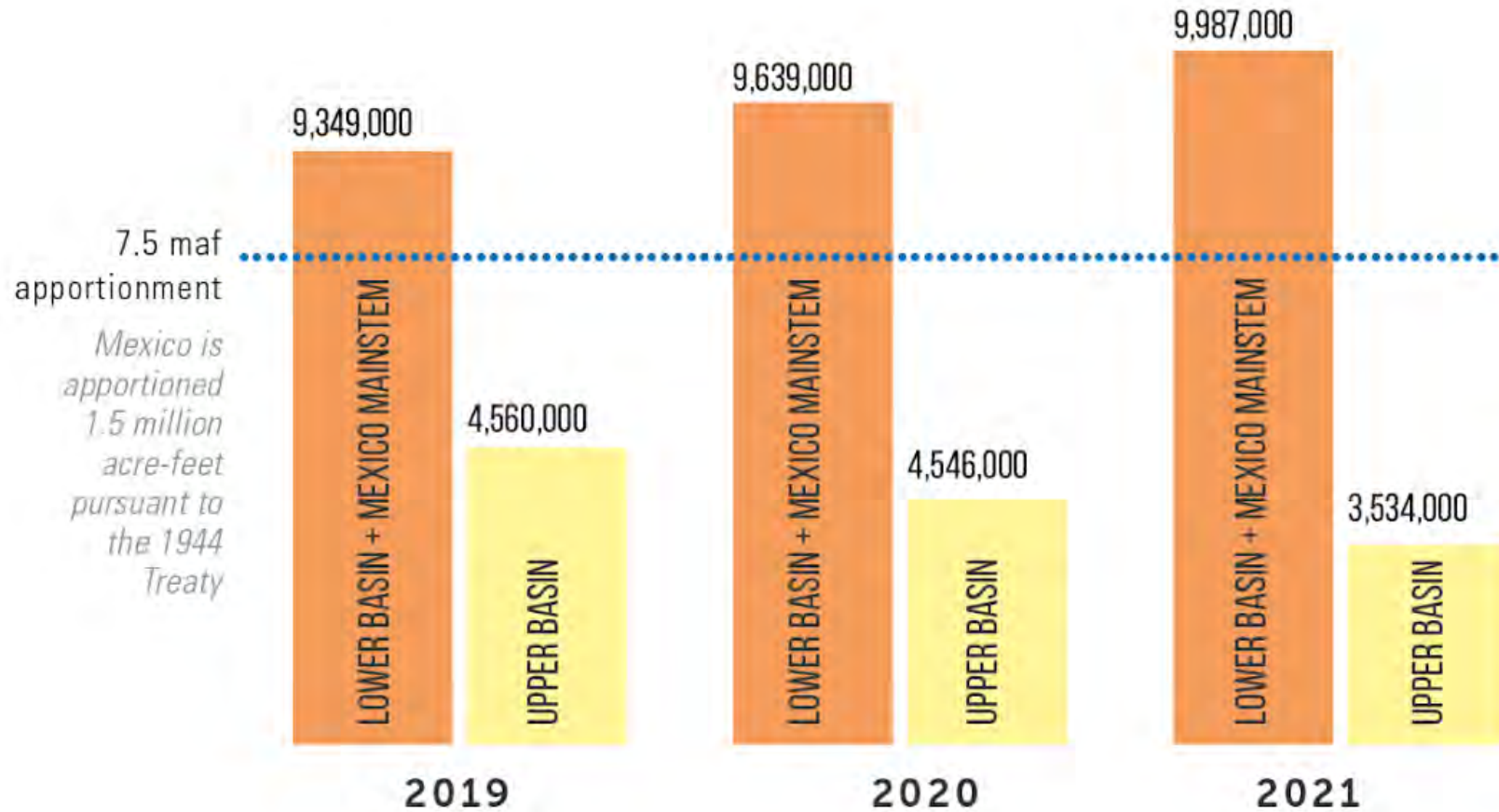
**Allocation to  
Mexico TBD**

**Lower Basin**

**7.5 maf  
+1 maf**



**Upper Basin  
7.5 maf**



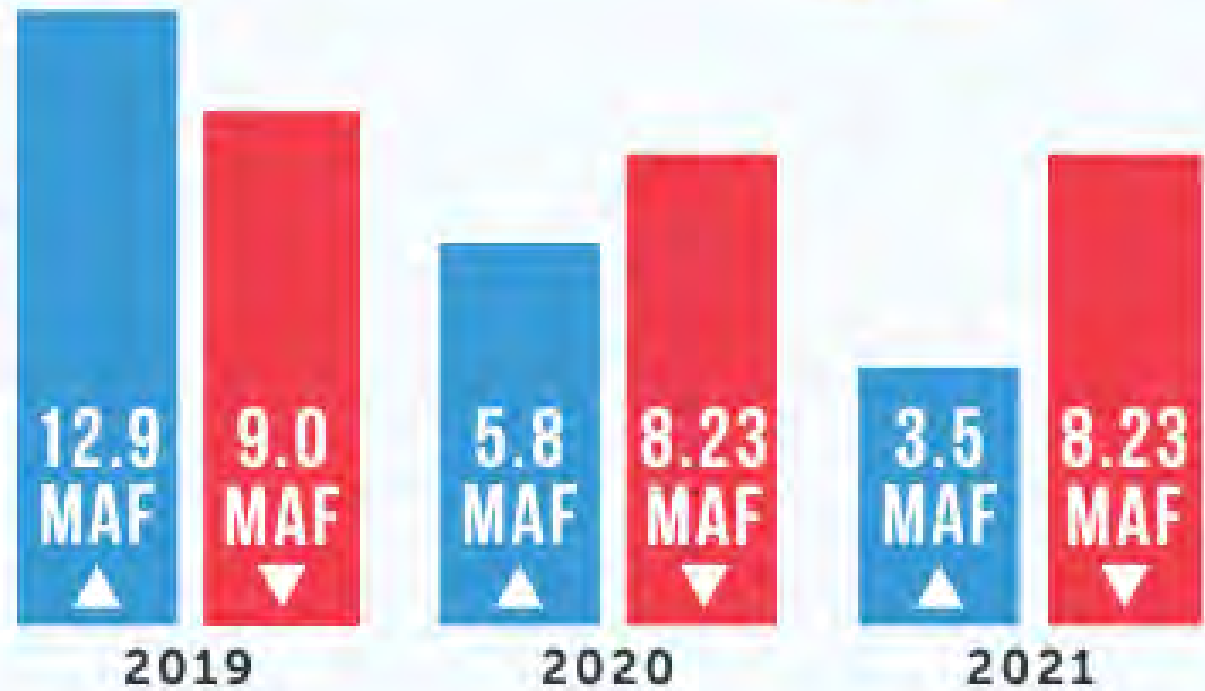
## WATER USE BY BASIN

Lower Basin use only includes Mainstem Colorado River use by the Lower Basin States and Mexico, as calculated by the Upper Colorado River Commission. Tributary use is not included in this calculation.

**WATER THAT FLOWED  
INTO LAKE POWELL**



**WATER RELEASED FROM  
LAKE POWELL INTO  
LAKE MEAD**



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Unregulated Inflow, 24-Month Study, Bureau of Reclamation

# Adapting the Law of the River

**2007 Colorado River Interim Guidelines** – Coordinated operations of Lakes Powell and Mead.

**2019 Drought Contingency Plans** – Additional layer to protect critical elevations at Lakes Powell and Mead.

**Additional Short-Term Actions** – Federal government has recently called for additional actions to protect critical infrastructure.



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# Upper Basin Actions

- Upper Basin reservoirs have provided **661,000 acre-feet** of water to protect Powell.
- **Reduced uses by 25%** in 2021 and ***continue to live within the means of the River every year.***
- Additional measures through the Upper Basin **Five-Point Plan**, including increased measurement and monitoring and conservation measures, among other efforts.



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# Thank You

**Amy Ostdiek**

Section Chief

Interstate, Federal, and Water Information Section

[amy.ostdiek@state.co.us](mailto:amy.ostdiek@state.co.us)



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# Upper Colorado, San Juan and Platte River Endangered Species Recovery Programs

**January 13, 2023**

**Demystifying Colorado Water**

**Michelle Garrison**  
Senior Water Resources Specialist  
Interstate, Federal, and Water Information Section



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# Endangered Species Recovery Programs

***Goal: Recover endangered and threatened riverine-dependent species while allowing existing water use and some future water development to continue***

- Collaborative partnerships of federal, state and local agencies, Tribes, water users, NGOs, hydropower customers
- Provide regulatory certainty and streamlined Endangered Species Act compliance for water users
- Operate in compliance with federal and state law and interstate compacts
- Improve results through combined resources
- Avoid litigation
- Utilize science and adaptive management to improve habitat
- Participation from water users and CO DNR
- Make consensus-based decisions through technical and management committees



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# Upper Colorado and San Juan Programs



Colorado Pikeminnow



Razorback Sucker



Humpback Chub



Bonytail

# Upper Colorado Program

## Recent Accomplishments and Challenges:

- Downlisting of Humpback Chub
- Proposed downlisting of razorback sucker
- Habitat access
- Non-native fish species management
- Flow augmentation
- Program reauthorization and funding



# San Juan Program

## Recent Accomplishments and Challenges:

- Proposed downlisting of razorback sucker
- Non-native fish species management
- Flow augmentation
- Waterfall and habitat access
- Program reauthorization and funding



# Platte River Program



Pallid Sturgeon



Piping Plover



Interior Least Tern



Whooping Crane



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# Platte River Program

## Recent Accomplishments and Challenges:

- ***Delisting*** of Interior Least Tern
- Land and Water *Acquisitions*
- Continued understanding of Pallid Sturgeon
- Program extension through 2032
- Program funding



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# Colorado Water User and DNR Participation

- Funding
- Water
- Land
- Habitat access
- Entrainment reduction
- Expertise and staffing resources
- Local solutions
- Consistency with state law, water right administration, interstate compacts and water policy



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# THE COLORADO WATER PLAN

Russ Sands – Section Chief  
Colorado Water Conservation Board

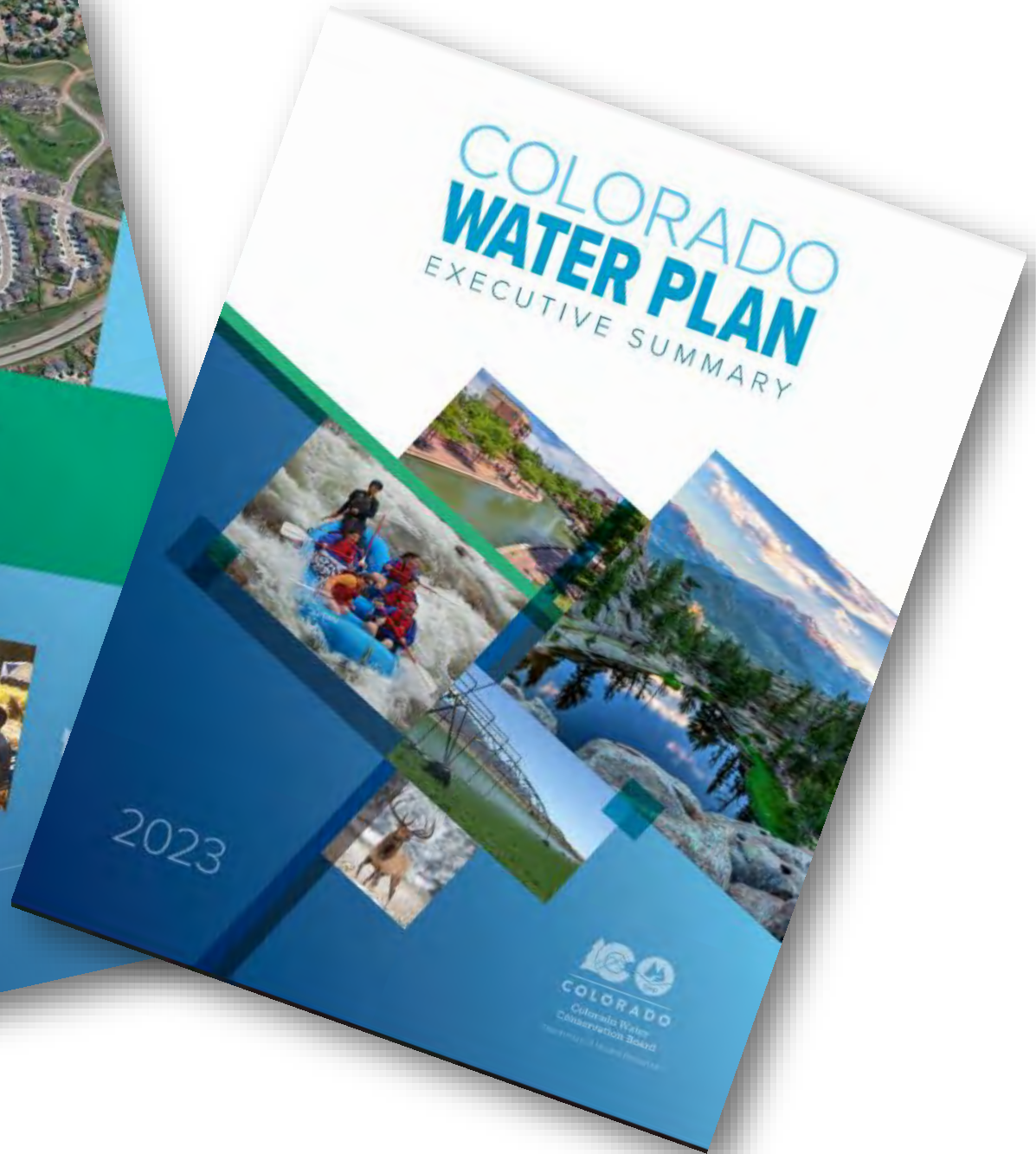
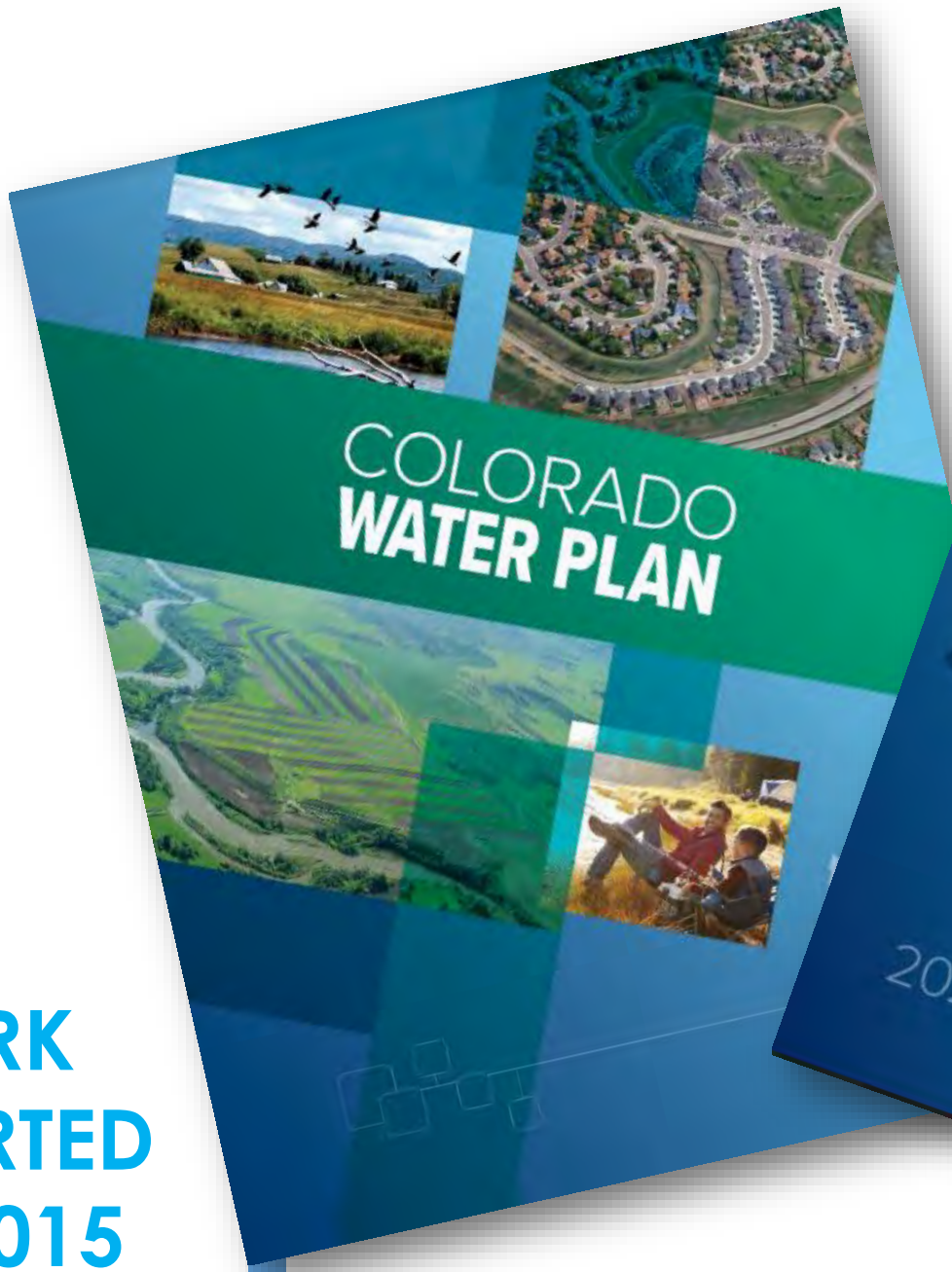


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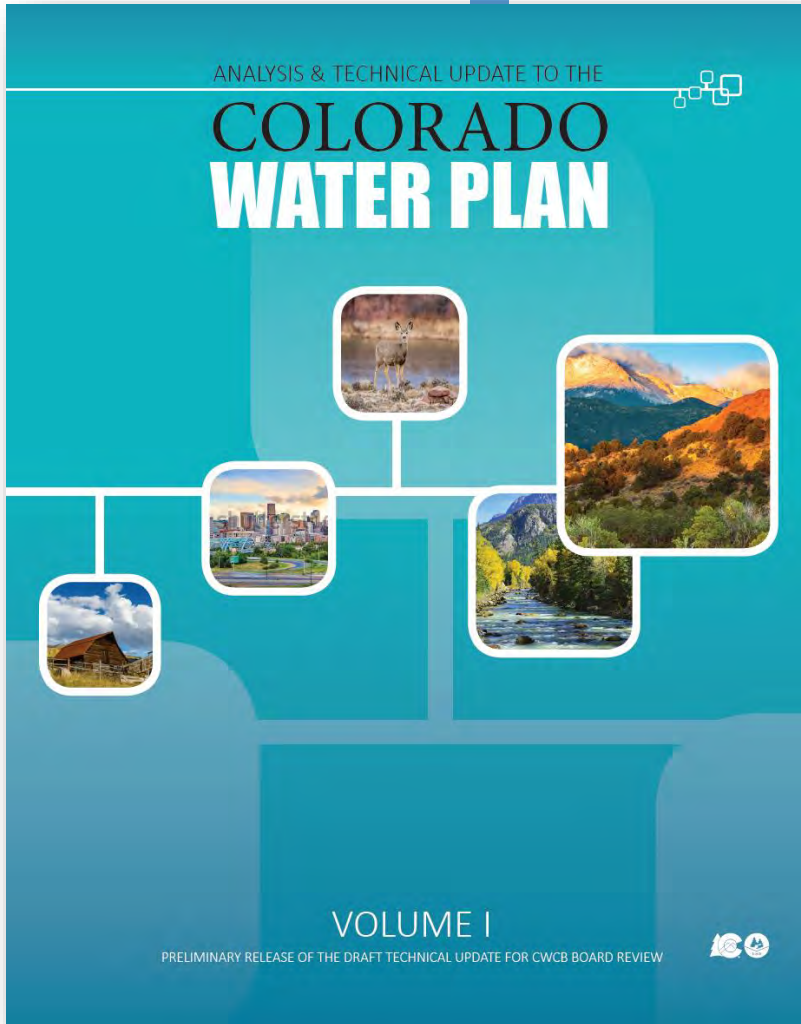
# COLORADO'S WATER VALUES

- 1 A productive economy that supports vibrant and sustainable cities, agriculture, recreation and tourism.
- 2 An efficient and effective water infrastructure system.
- 3 A strong environment with healthy watersheds, rivers, streams and wildlife.
- 4 An informed public with creative, forward-thinking solutions that are sustainable and resilient to changing conditions and result in strong, equitable communities that can adapt to and thrive in the face of adversity.

**WORK  
STARTED  
IN 2015**



2019



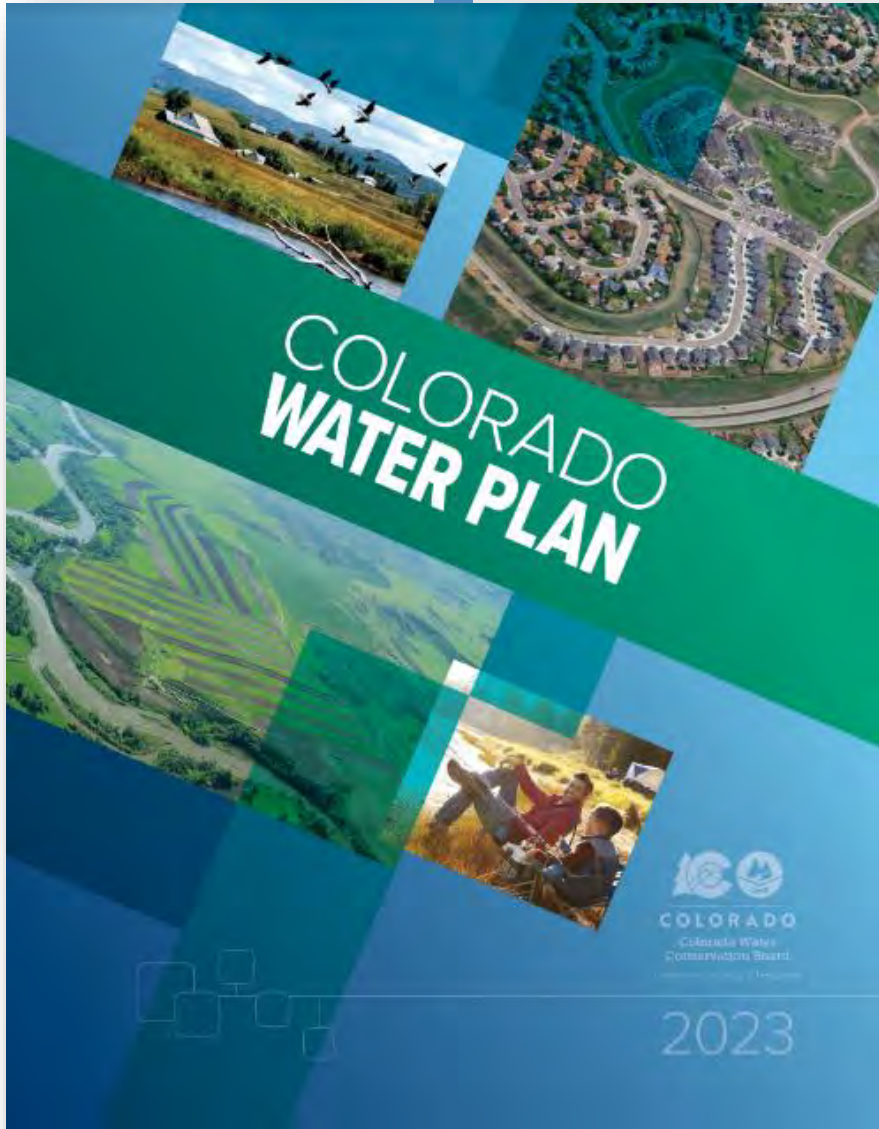
- Models **5 future scenarios.**
- Evaluates risks to cities, farms and streams, etc.
- **Up to 740,000 acre feet** of water needed per year by 2050.

2022



- Explains local challenges.
- Identifies potential local projects.
- CWCB could need as much as **\$1.5 billion** by 2050 to help fund projects.

2023



- Brings data, local strategies and a plan for action together.
- Provides examples of **50 actions** others can advance and/or apply for grants to implement.
- Provides **50 actions** CWCB and partner agencies will advance.



“The magic happens at the local level.”

-Greg Felt  
Chaffee County Commissioner,  
CWCB Board Director  
& Fly Fishing Guide



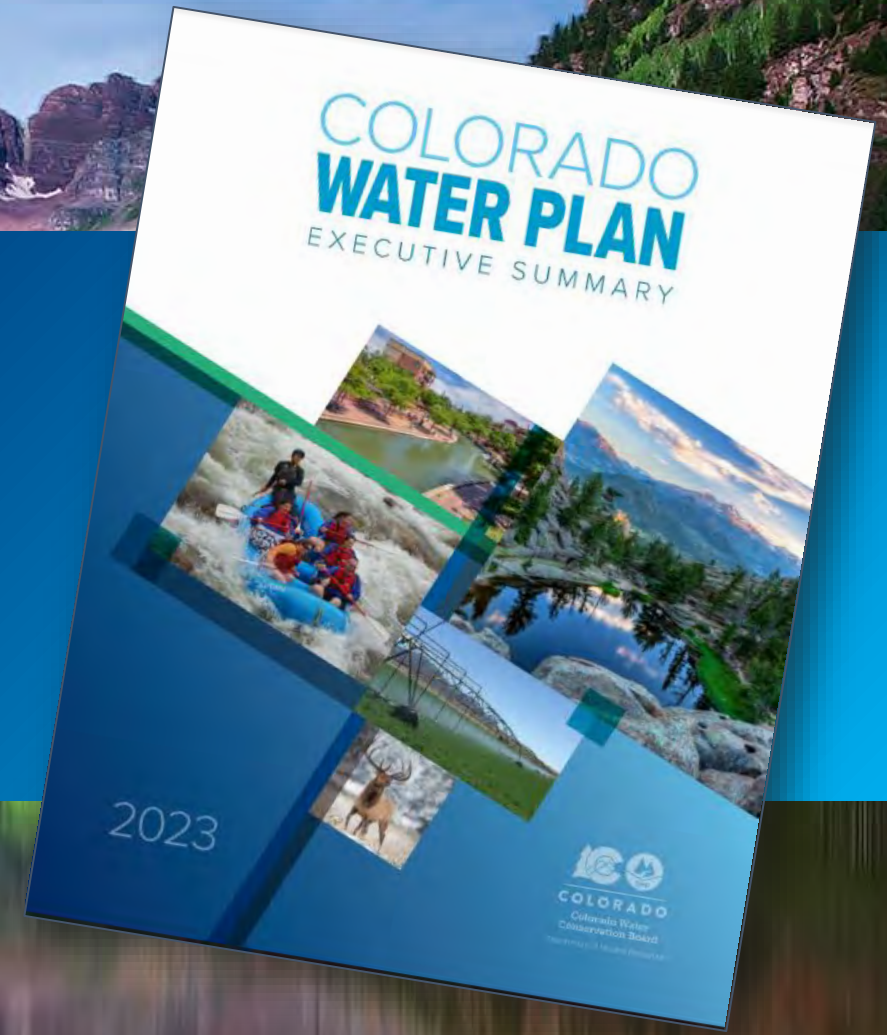
# OUR CHALLENGES ARE BIG OUR OPPORTUNITIES ARE EVEN BIGGER

Water Plan Launch & Celebration Event

**Tuesday, January 24, 2023**

3201 Walnut Street, Denver, CO 80205

5:00 p.m. – 9:00 p.m.



# THE COLORADO WATER PLAN



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# WILDFIRE READY WATERSHEDS

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STATEWIDE POST-FIRE SUCEPTIBILITY  
Program Update January 2023

Angela Boag, Department of Natural Resources



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# MISSION



The CWCB will assess the susceptibility of Colorado's water resources, communities and critical infrastructure to post-wildfire impacts and advance a framework for communities to plan and implement mitigation strategies to minimize these impacts – before wildfires occur.

Legislative directive from SB21-240

# RISK

RISK



Probability  
Hazard



Consequence  
Values-at-Risk

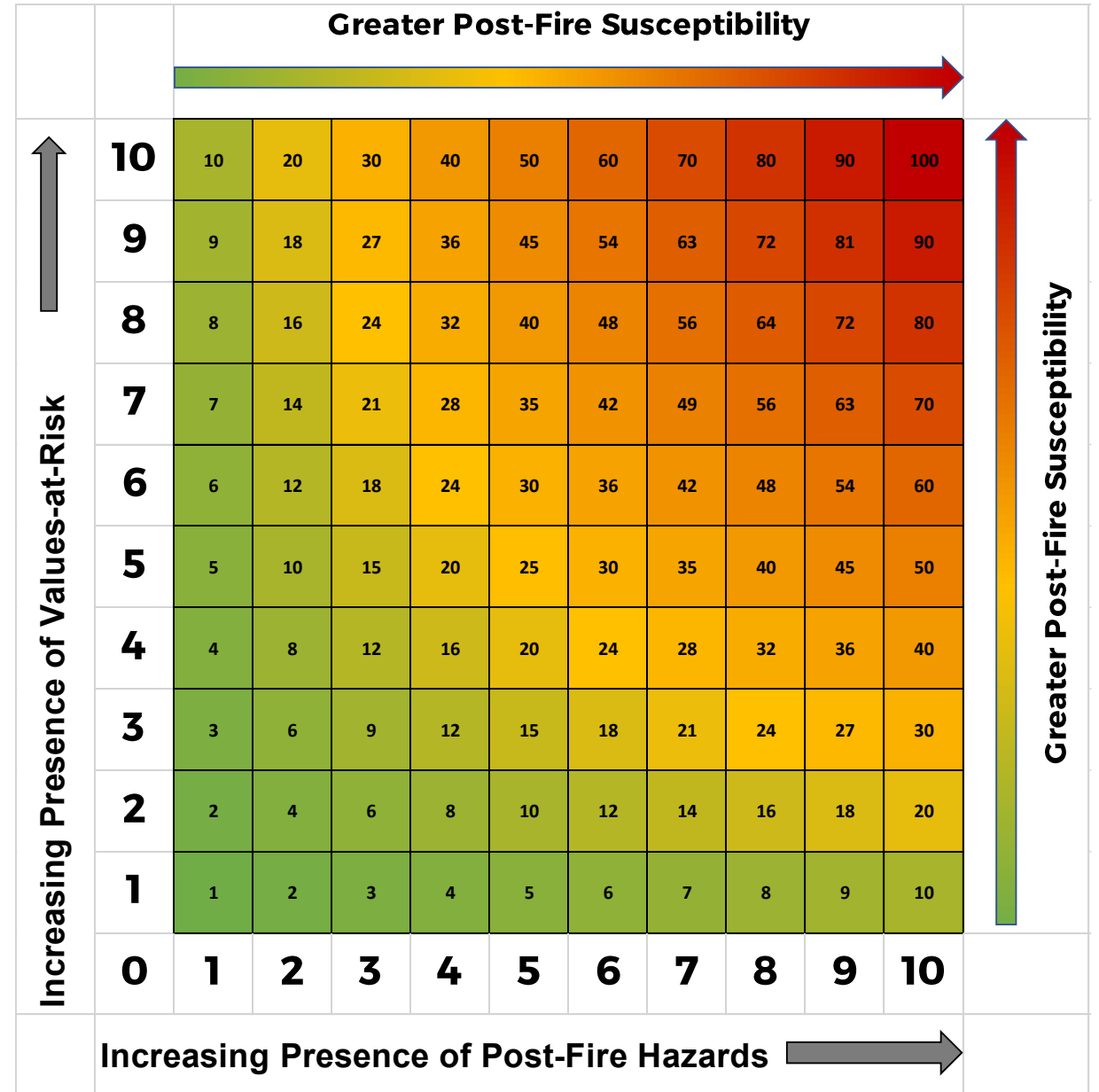
## Risk & Susceptibility

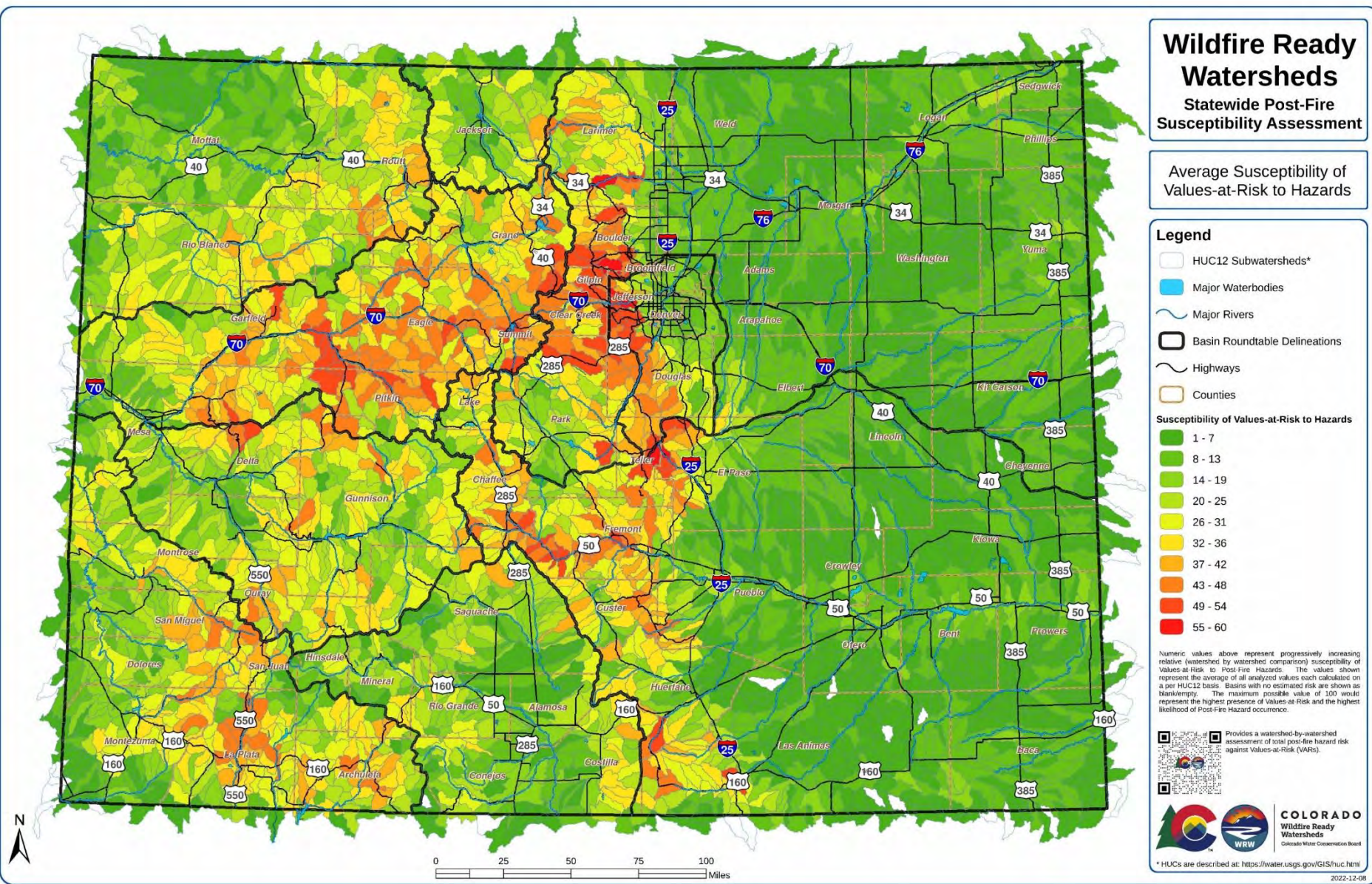
- Where values-at-risk are located
- Where hazards exist
- Understanding where hazards pose threats to values provides an overall understanding of susceptibility.



# RISK

- VARs and Hazards are classified from 0-10.
- Highest values represent greatest presence of value or hazard.
- VAR and Hazard scores are intersected to generate overall risk score from 0-100.





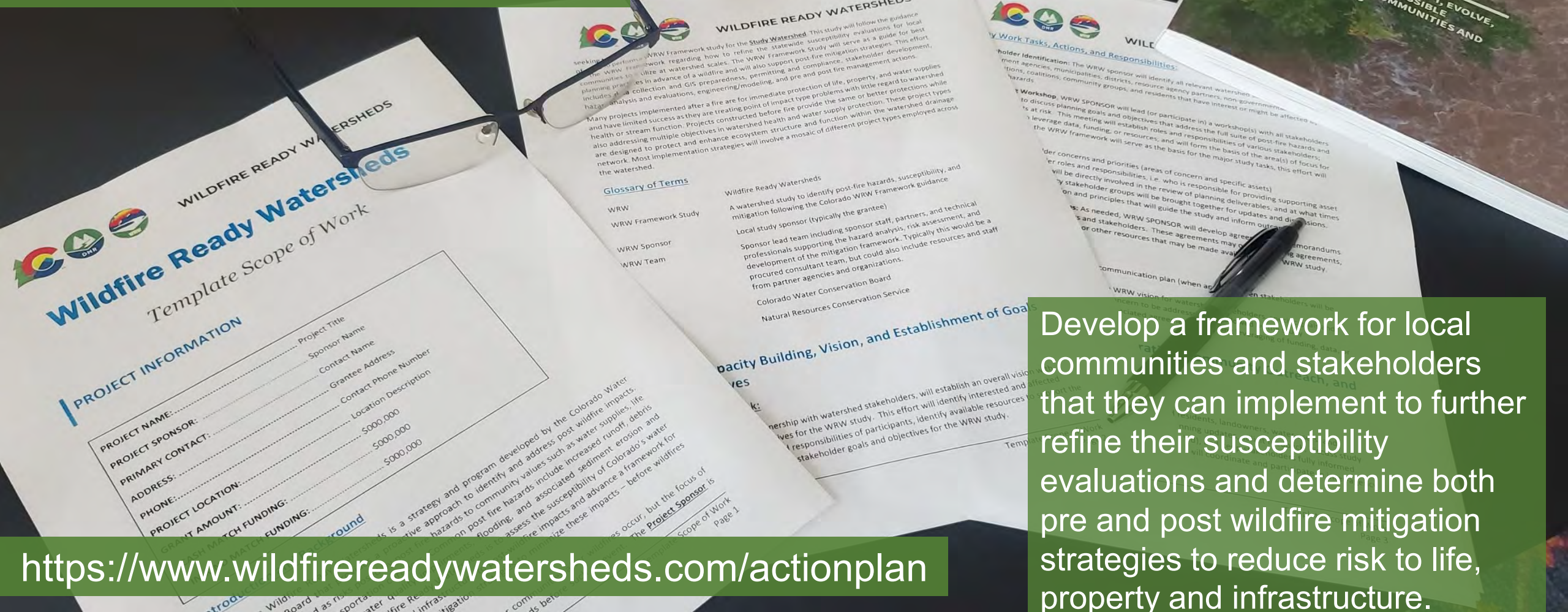
# Post-Fire Risk

Statewide relative risk for all values and post-fire hazards.

Map represents overall average susceptibility.



# Wildfire Ready Action Plan (WRAP)



Develop a framework for local communities and stakeholders that they can implement to further refine their susceptibility evaluations and determine both pre and post wildfire mitigation strategies to reduce risk to life, property and infrastructure.

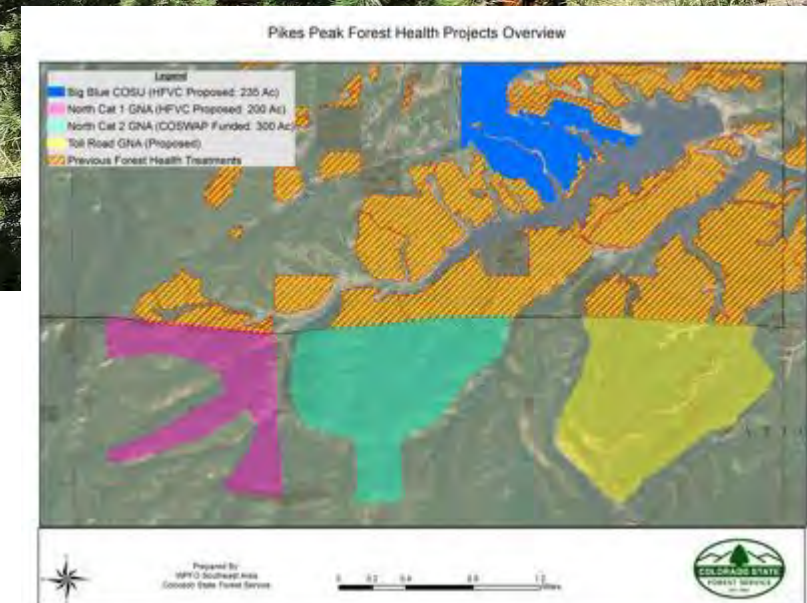
<https://www.wildfirereadywatersheds.com/actionplan>



# Forest Management

## Pre-Fire Fuels Mitigation

- CSFS Forest Restoration & Wildfire Mitigation (FRWRM) Grant Program
- CSFS Wildfire Mitigation Incentives for Local Government Grant Program
- CSFS Healthy Forests, Vibrant Communities funding (state-led projects)
- DNR Colorado Strategic Wildfire Action Program (COSWAP) funds and workforce development



# Growth and Land Use/ Water Efficiency

**Waverly Klaw**

Director, Resilient Communities and Watersheds

Sonoran Institute

Prepared for Demystifying Colorado Water for Colorado Legislators

January 13, 2023



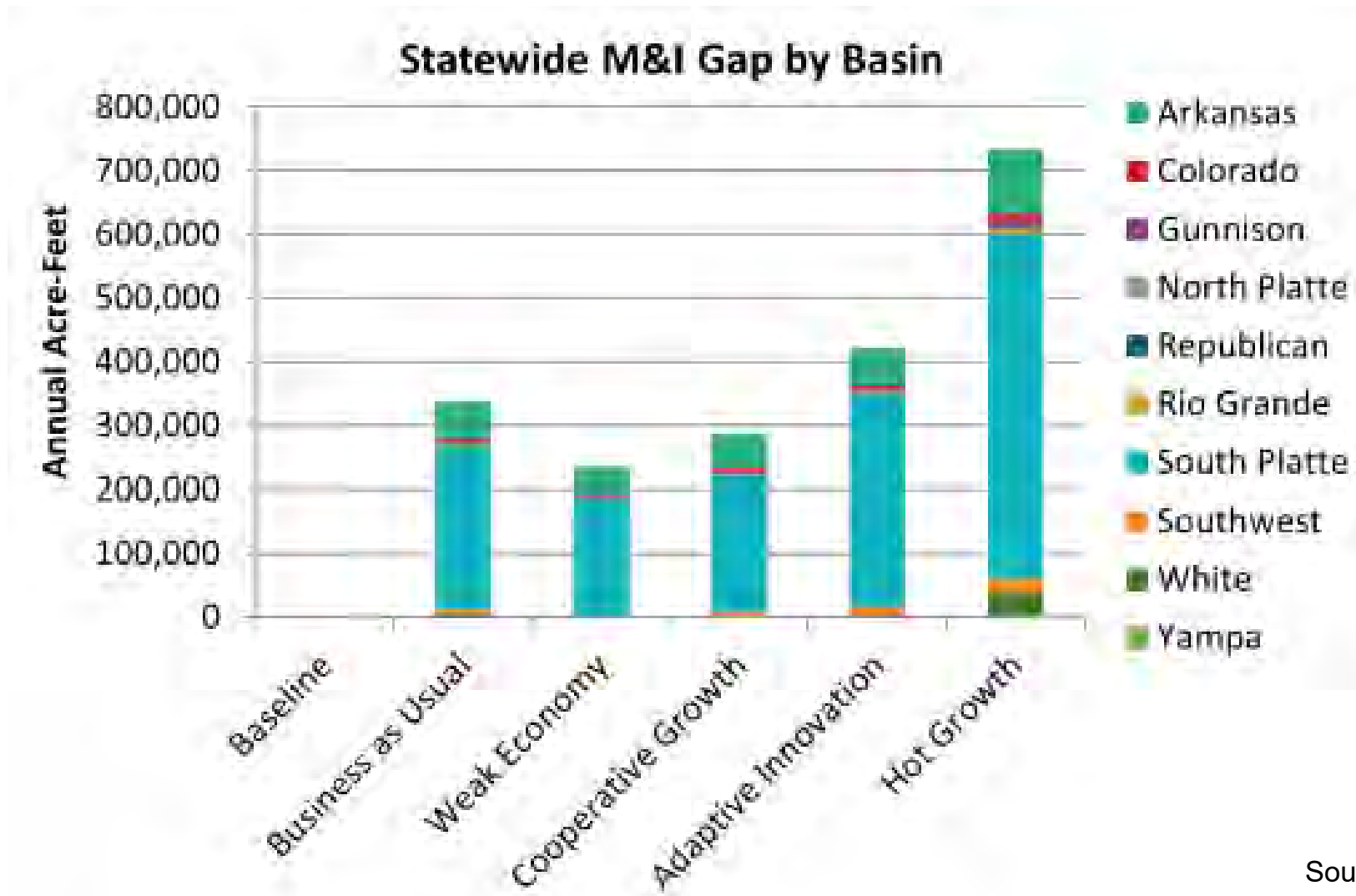
# Water and “Land Use” Integration

- Focuses on the water use of the municipal and industrial (M&I) sector = people and businesses
- Population growth = more development
- New development = influences water demand, stormwater management

*“The integration of land use and water planning is a crucial step when considering a secure water future for Colorado. Most of Colorado’s communities are growing, and **intentional and sustainable growth requires careful consideration.**”*

*– CO Water Plan 2022 draft*

# Growing gap between M&I supply and demand.



Statewide M&I water demand is projected to **increase from 35 to 77%** over current demands.

# Shifting the Focus

Supply-Side



Acquisition



Treatment



Storage/  
Distribution

Gray  
Infrastructure



Infrastructure

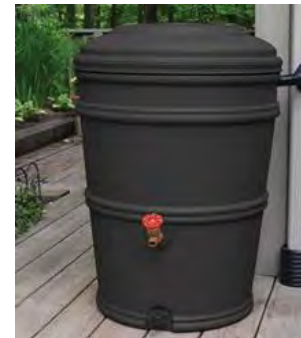
Demand-  
Side



Conservation



Efficiency



Reuse

Green  
Infrastructure

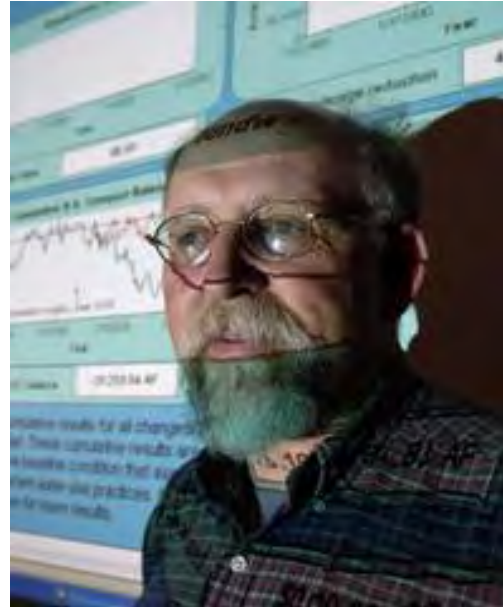


Low-Impact  
Development

# Breaking Down Silos



**Land Use Planners**



**Water Resource  
Managers**



**Elected  
Officials**



**Cross-Sector Collaboration**



**Growing Water Smart** is a Training & Assistance Program that empowers local leaders to implement plans and policies that support community and regional water resilience.

## **Impact Across Colorado**

- 8 workshops
- Over 300 participants
- Over 60 Cities, Counties, and Towns
- Over 25 projects

Colorado workshop: May 8-10, 2023

[www.growingwatersmart.org](http://www.growingwatersmart.org)



# Strategies to integrate water into land use

## Planning



- Long-range community plans inc. water resilience goals/ strategies.
- **Key Legislation:** HB20-1095 on water in comprehensive plans.

## Adequate Water Supply



- Connection btw approval of development projects and determination of adequate and sustainable water supply.
- **Key statute:** CRS 29-20-3 on local det of AWS.

## Land Use Policies



- Compact & dense development.
- Low-water landscaping.
- Low-water fixtures and appliances.
- **Key legislation:** SB14-103, HB19-1231 on low-water fixtures.

## Watershed Health & Alternative Supply



- Green stormwater & low impact dev't
- Protect sensitive areas.
- Strategically use all forms of water.
- **Key legislation:** HB16-1005 on rain barrels.

## Post-Occupancy



- Water rate structure.
- Retrofit existing development (indoor and outdoor).
- **Key legislation:** HB22-1151 on turf replacement.

# How Legislators can Support Municipal Water Resilience

## Championing

Championing the importance of municipal water conservation all sectors need to do their part; this is a state priority

## Setting Goals

Setting ambitious goals and targets the crisis is urgent, and we must move decisively and with accountability

## Reducing Barriers

Reducing legal and financial barriers giving local governments the opportunity to act

# Thank you!

[www.growingwatersmart.org](http://www.growingwatersmart.org)

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**Thank you for coming!**

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