



South Platte Regional Water Planning



GRAD 592 The South Platte River: Colorado's Lifeblood
October 3, 2023

Emily Hunt, City of Thornton Deputy Infrastructure Director for Water

Today's Agenda

- What are municipal water supplies and how are they developed?
- Thornton's water system
- Where does your water come from?
- Regional South Platte water supply challenges & opportunities

Today's Objective

- Become a fan of drinking water!



Municipal Water Supply in Colorado ... The Basics

Objective: Safe water is available for critical human uses, even in a drought

How

- Water efficiency & demand management
- High quality source water to reduce risk to public health
- Diverse water rights portfolio
 - geographic
 - senior and junior rights
- Storage to carry water from wet periods to dry periods
- Firm Yield – amount that can be reliably counted on in a multi-year drought; combination of water rights and storage

Municipal Water Supply in Colorado ... The Challenges

Location

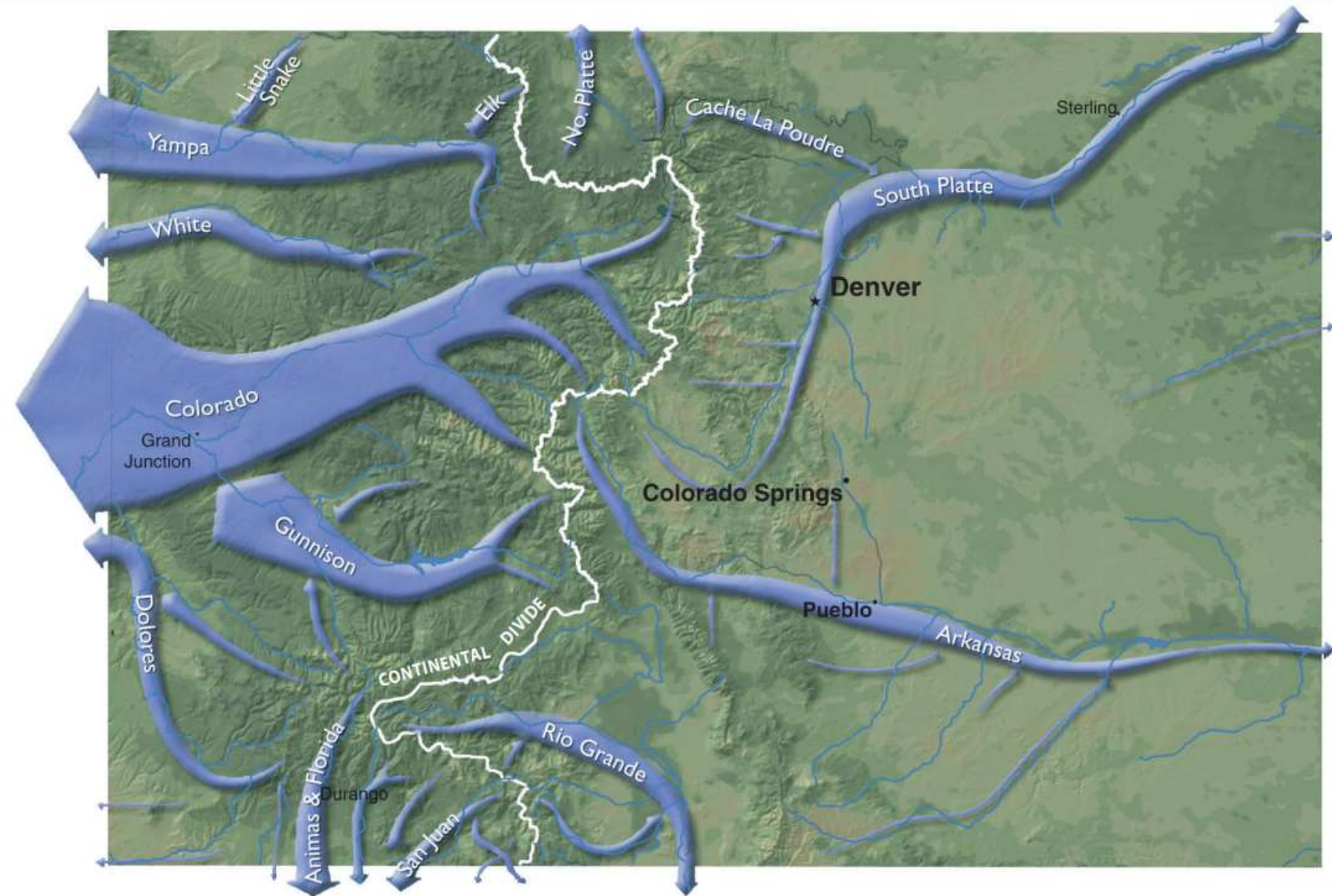
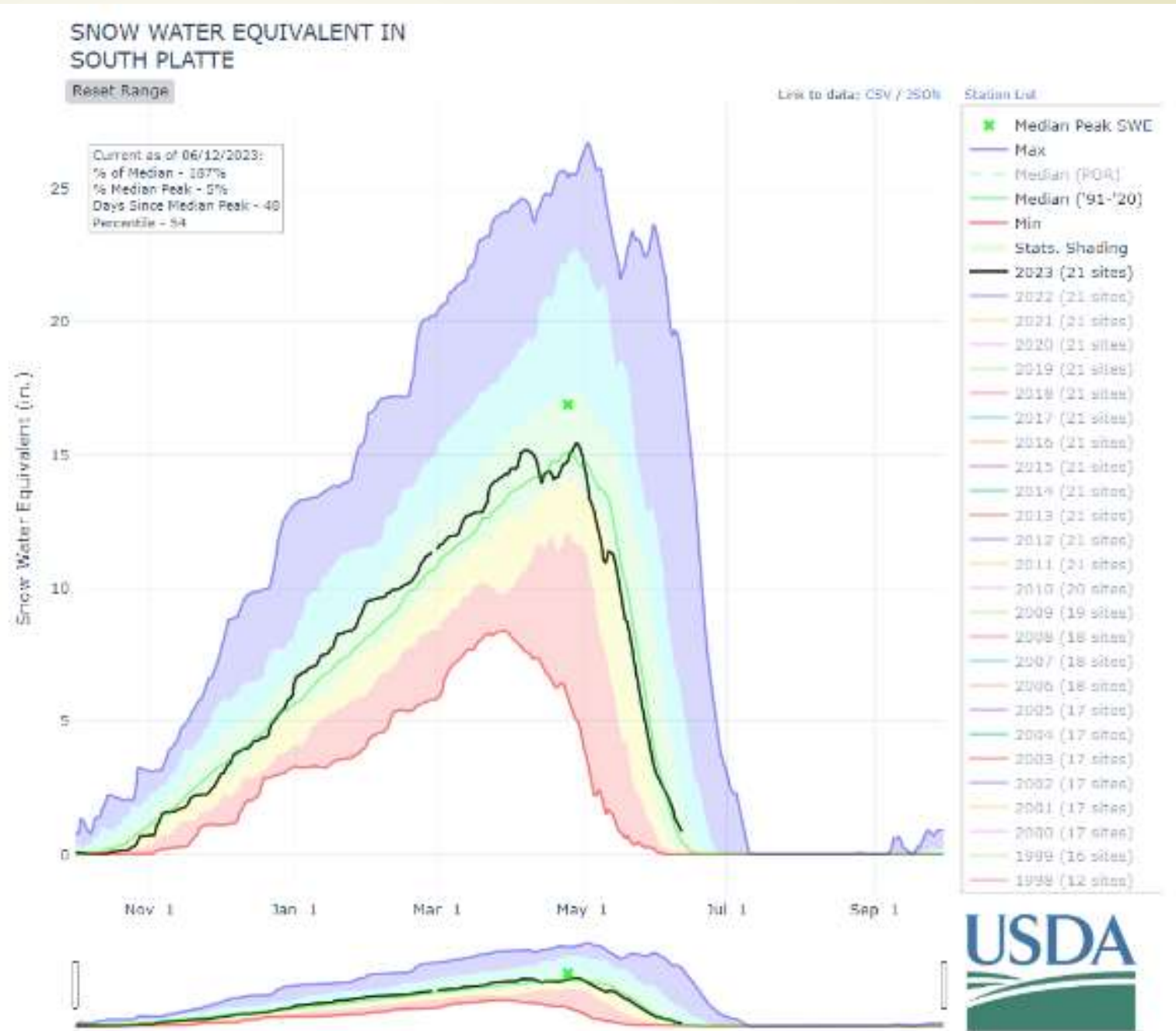


Figure 01-03. "Snake Diagram" schematic showing relative annual average stream flow of Colorado Rivers. Source: Colorado Division of Water Resources, 2011 revision. Colorado Geological Survey ON-010 Colorado Groundwater Atlas.



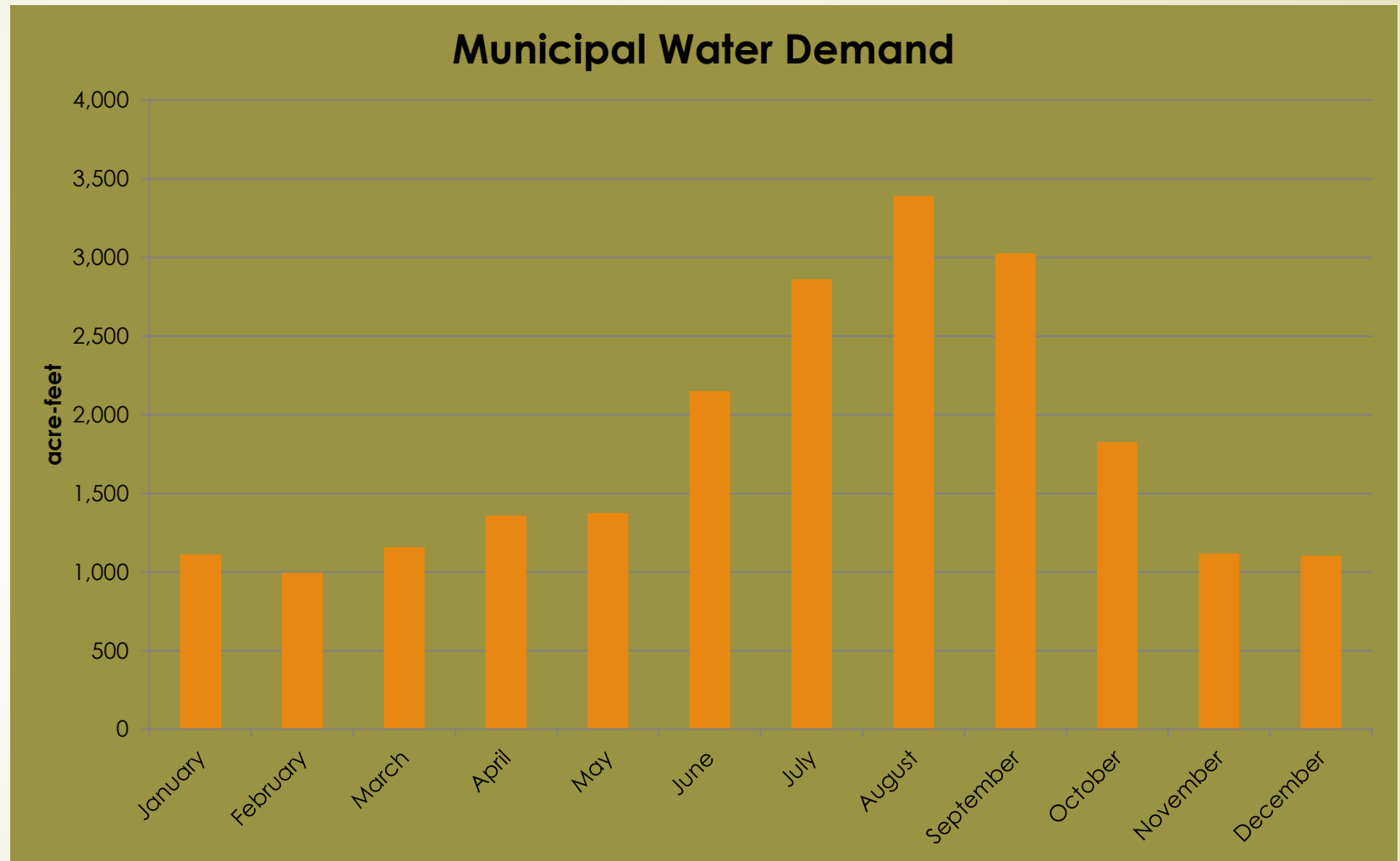
Municipal Water Supply in Colorado ... The Challenges

Variability



Municipal Water Supply in Colorado ... The Challenges

Variability



Municipal Water Supply in Colorado ...

The Basics

Source of Supply

- Water rights
- Wells
- Contracts

Raw Water Infrastructure



- Storage
- Pipelines
- Pump stations
- Tunnels

Treatment & Distribution Infrastructure

- Water treatment
- Tanks
- Pipelines
- Pump stations
- Potable / non-potable

Demand Management

- Metering
- Customer water efficiency



City of Thornton – Source of Supply

Thornton Water Supply Development



1956

Thornton incorporated

1970s

Develop additional Clear Creek & South Platte supplies

Mid 1980s

Two Forks begins to falter
South Platte water quality challenges

1986-1987

Water Supply & Storage Company acquisition

1963

Acquired Northwest Utilities
Clear Creek & South Platte supplies

1982

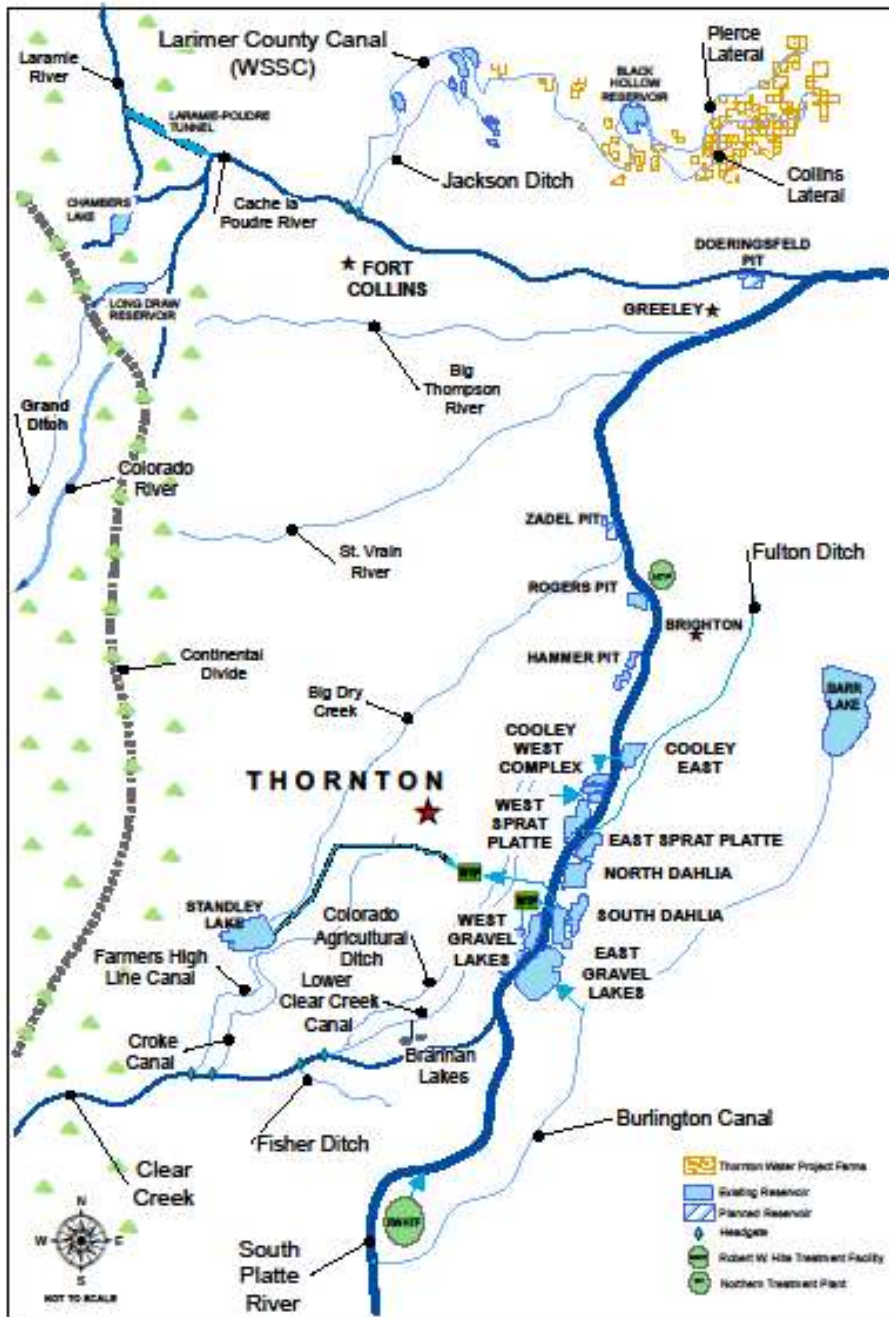
Two Forks Reservoir Project

1985

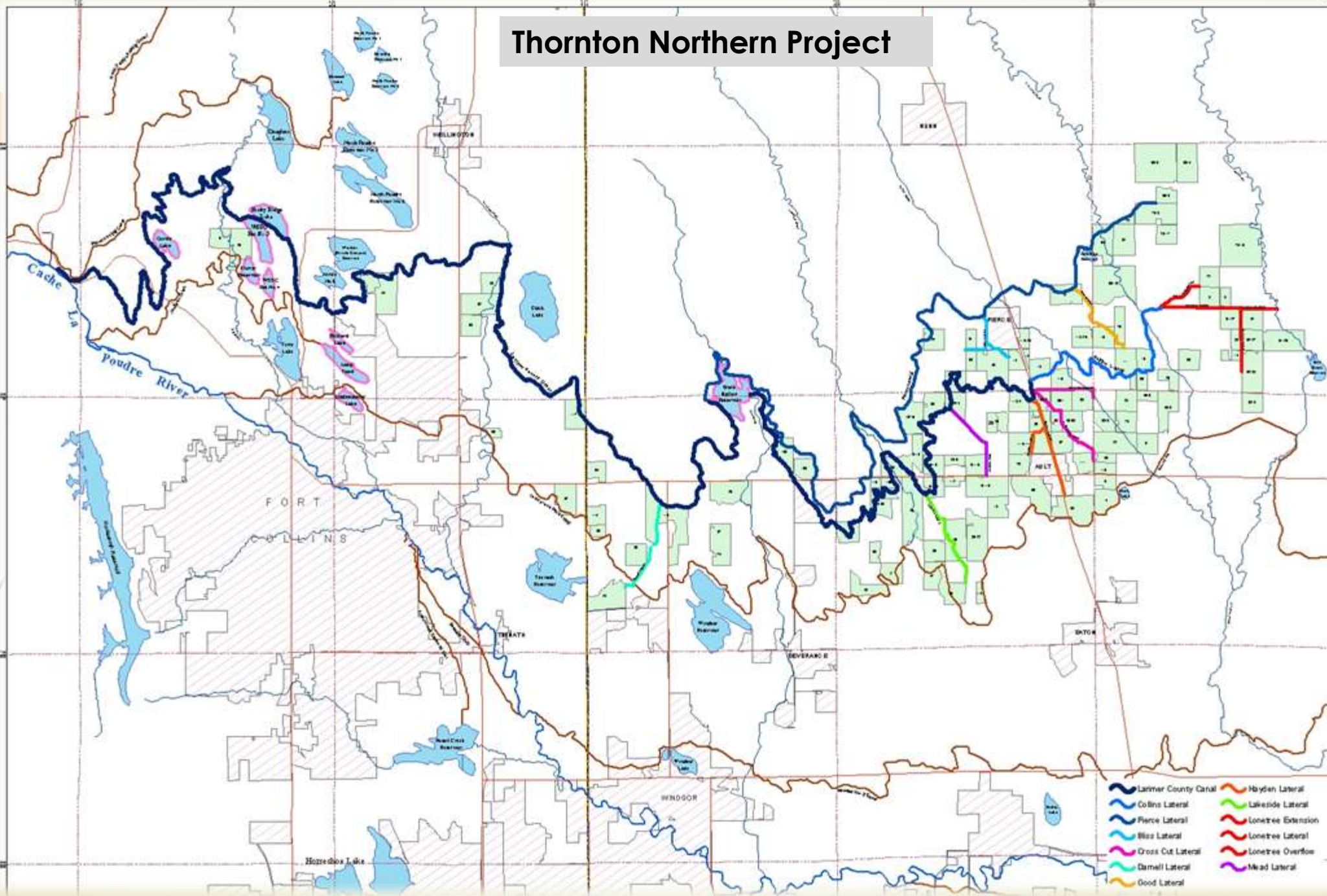
Thornton divests from Two Fork
Looks for higher quality supply

City of Thornton Source of Supply

- Upper Clear Creek
 - Standley Lake
 - Farmers' Highline Canal
 - Croke Canal
- Lower Clear Creek
 - West Gravel Lakes, Brannan Lakes
 - Lower Clear Creek Canal
 - Colorado Agricultural Canal
- South Platte
 - South Platte Gravel Lakes – Direct
 - Burlington Canal
 - Alluvial wells
 - South Platte Gravel Lakes – Reuse
 - South Platte direct diversions
- Poudre River
 - Water Supply & Storage Company Reservoirs
 - Larimer County Canal



Thornton Northern Project



Thornton Northern Project
WSSC Facilities

1 inch equals 2 miles



Thornton Northern Project



1985 to 1987

Acquisition

- Acquired 110 farms, ~21,000 acres
- 284 shares of Water Supply and Storage Company (WSSC)
- Farmhouses, wells, and other assets

1985 to present

Property Stewardship

- Thornton Agricultural Stewardship Office – Ault, CO
- Continued irrigated agriculture
- Gradual conversion to self-sustaining and native grasses began in 2000s

1986 to 1998

Water Court

- Change WSSC shares from agricultural to municipal use
- Junior direct and exchange water rights

2014 to present

Thornton Water Project

- Conveyance infrastructure

2018 to present

Northern Properties
Stewardship Plan

- Data-driven and community-informed property management and long-term land use planning

Thornton Water Project

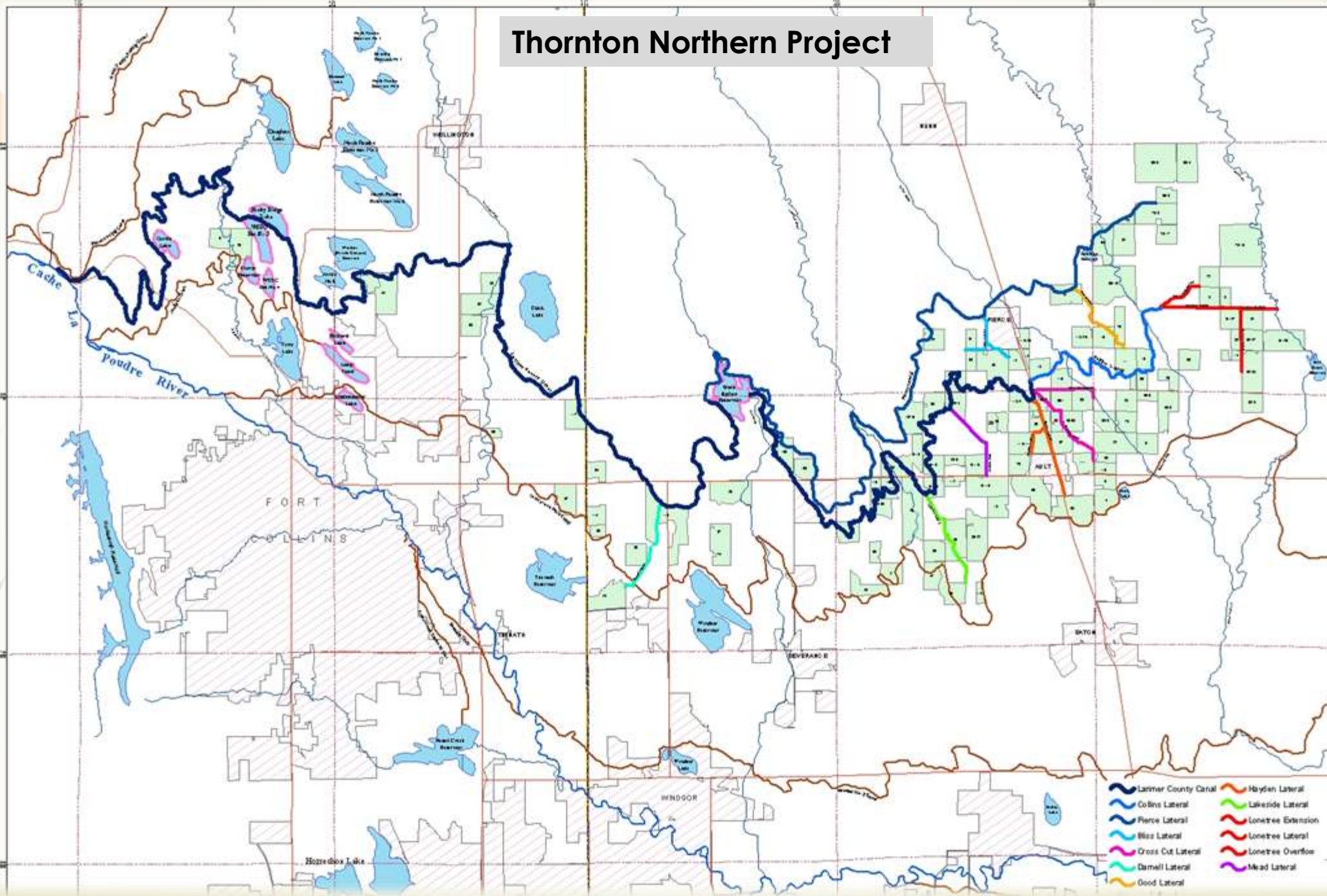
- Conveyance Infrastructure for Thornton's Water Supply and Storage Company shares
 - Raw water pump station at WSSC Reservoirs
 - Pipeline to Thornton
- **No new diversions from the Poudre**
 - Water diverted from the Poudre via the Larimer County Canal in the same amount, timing & location as done historically

Northern Properties Stewardship Plan - Objective

The Northern Properties Stewardship Plan is a **complementary process** to Thornton's agriculture-to-municipal water transfer. While Thornton's **water will be used in accordance with Thornton's water rights decree**, the Stewardship Plan is a **vision for the management and future land** use of Thornton's 18,000 acres.

<https://www.thorntonco.gov/government/infrastructure/water/NPSP/Pages/northern-properties-stewardship-plan.aspx>

Thornton Northern Project



Thornton Northern Project
WSSC Facilities

1 inch equals 2 miles





Calls to action

- Maintain key components of the region's agricultural heritage.
- Support transitioning agricultural economies.
- Promote economic diversification.
- Address a future with 1 million residents in 2040.
- Advance regional approaches to land and water planning and management.



Funding

- ▶ **Bureau of Reclamation**
 - ▶ WaterSmart: Water Marketing Strategy Grant
- ▶ **City of Thornton**
- ▶ **Colorado Water Conservation Board**
 - ▶ Colorado Water Plan Grant
 - ▶ South Platte Basin Roundtable Water Supply Reserve Fund
 - ▶ Metro Basin Roundtable Water Supply Reserve Fund
 - ▶ Statewide Water Supply Reserve Fund
- ▶ **Department of Local Affairs (DOLA)**
 - ▶ Energy Impact Administrative Grant



Community-driven process

- Subject Matter Expert Interviews (February 2020)
- Steering Committee Meetings (ongoing - eight meetings from November 2021 to present)
- Water Optimization Study Group (October 2022 to present)
- Weld County Commissioners Meeting (July 2021, March 2022, November 2022, March 2023)
- Regional Working Group Meetings (Jan 2023)
- Poudre Valley RE-9 Meeting (January 2023)
- Towns of Eaton, Ault and Pierce Meeting (February 2023)
- Town of Ault Meetings (recurring)
- Farm Tenant Open House (March 2023)
- Community Open House (March 2023)
- Joint Regional Working Group Meeting (June 2023)
- Community Open House (August 2023)
- Thornton City Council Adoption (Q1 2024)

Steering Committee Members

City of Thornton and Consultants

Keith Amen, Amen Farm
Brendan Boepple, Colorado Cattlemen's Agricultural Land Trust
Sean Chambers / Cole Gustafson, City of Greeley
Nick Colglazier, Colorado Corn Growers
Carmen Farmer, Colorado Open Lands
Meegan Flenniken, Larimer County Natural Resources
Jim Flesher, Weld County
Amber Graves, Morning Fresh Dairy
Julie Lukela, Town of Pierce
Cindy Lair, Department of Agriculture
Trent Verquer, CO Parks & Wildlife

Drew Rayburn, The Nature Conservancy
Eric Reckentine, North Weld County Water District
Chris Schnorr, Thornton Tenant Farmer
Sharon Sullivan, Town of Ault
Stacy Suniga, Latino Coalition of Weld County
George Wallace, Larimer County Agricultural Advisory Board
Richard Werner, Upstate Colorado Economic Development
Bryan Willson, CSU Energy Institute
Brad Wind, Northern Water
Mark Reifenrath, Local farmer

Emily Hunt, City of Thornton
Ed Lanyon, City of Thornton
Brian Foss, Thornton Ault Office
Pia Gerstle, City of Thornton
Mike Flowers, City of Thornton
Jonathan Bartsch, CDR (facilitator)
Cara Potter, CDR (facilitator)
Scott Campbell, ICS/TFT (consultant)
Andrew Boyd, TFT (consultant)
Kevin Shanks, THK (consultant)
Erik Sakotas, THK (consultant)

Northern Properties Stewardship Plan

Outcome 1

Land Use Assessment

A stakeholder-driven assessment of community land use objectives



Outcome 2

Water Optimization Study

A stakeholder-informed study of opportunities to maintain irrigation on Thornton farms with non-Thornton water.



Where does your drinking water come from?



Collaboration & Coordination in the South Platte Basin

Roundtables – Metro & South Platte

Colorado Water for the 21st Century Act

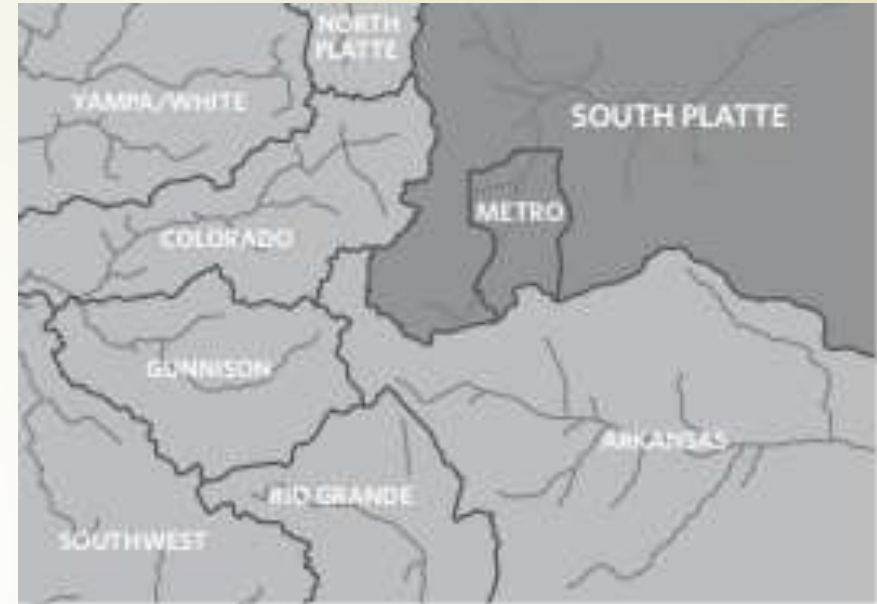
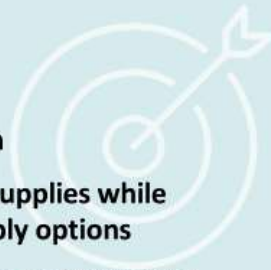
- Established a roundtable for each of the 8 river basins, plus the Metro Denver area ☺ to facilitate discussions on water management issues and encourage locally collaborative solutions
- Representation based on geographic, industry, interest, community

South Platte Basin Implementation Plan



The basin has **12 GOALS** centered around:

- ✓ Encouraging project implementation
- ✓ Maximizing development of native supplies while supporting cooperative outside supply options
- ✓ Maintaining and improving municipal and industrial conservation and efficiency
- ✓ Maintaining and promoting reuse
- ✓ Protecting irrigated agriculture
- ✓ Protecting and enhancing watershed function and environmental and recreational attributes
- ✓ Using scenario planning to manage uncertainty of future water needs
- ✓ Broadening communications, outreach, and education
- ✓ Improving efficiency and effectiveness of water project permitting



Colorado Water Congress

Mission: The mission of the Colorado Water Congress is to initiate and advance programs to conserve, develop, administer, and protect the water resources of the State of Colorado.

Core Beliefs and Values: We believe the state of Colorado's water shapes the future of the State. We provide an open forum to share information, form positions, and advocate for a strong, effective, and fair State water program. The Colorado Water Congress is dedicated to:

- Successful promotion of policy that supports high-quality sustainable water supplies through protection of water rights, conservation, planning, management and infrastructure investment.
- Thoughtful and equitable development and administration of water laws, regulations, and compacts within the framework of Article XVI of the Colorado Constitution.
- Fair representation of every watershed in Colorado and every type of beneficial water use.
- Clear communication of relevant, accurate, and timely information.
- Active engagement of our members through education, collaboration, and networking.



Wrap up