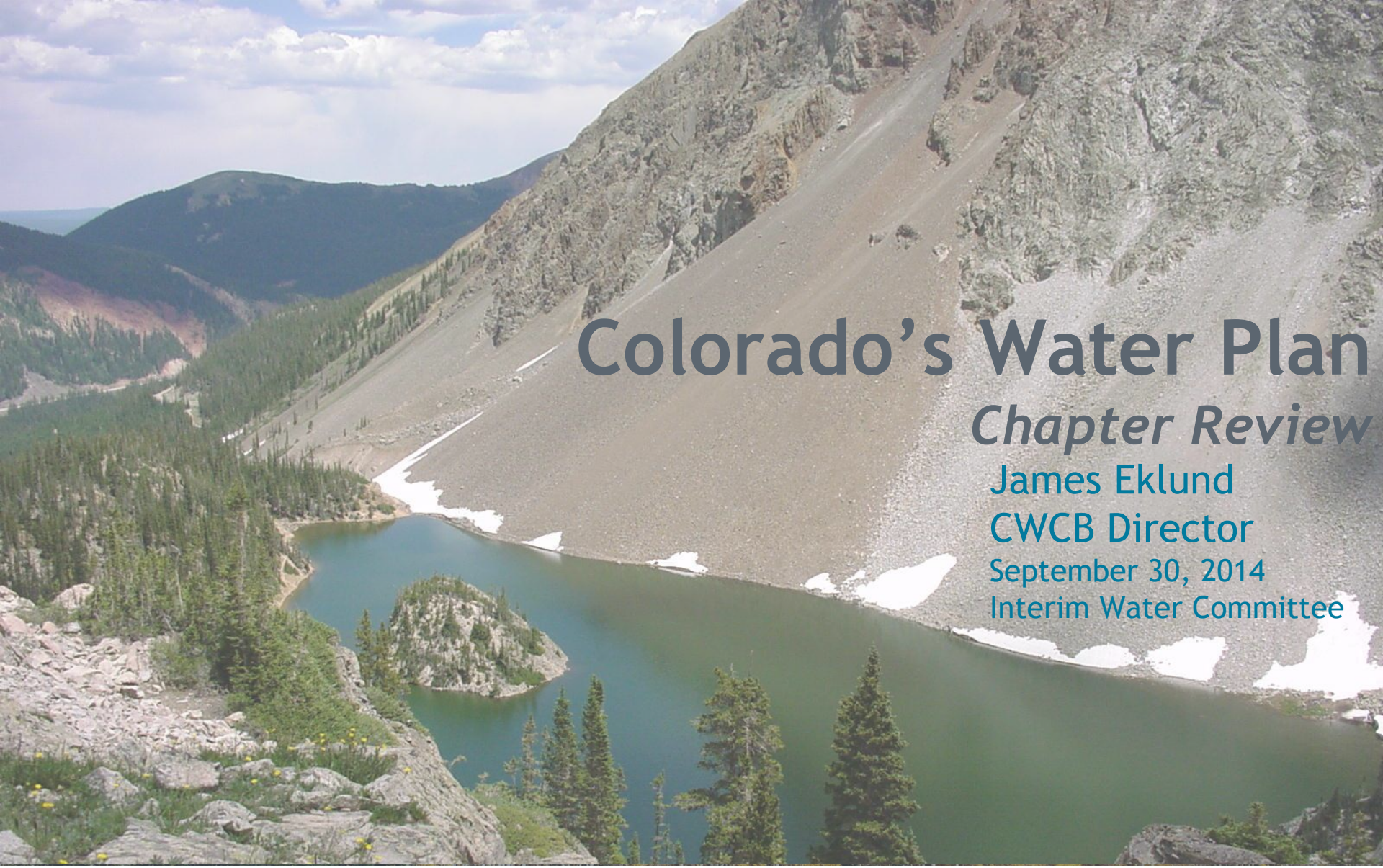


Colorado's Water Plan

Chapter Review

James Eklund
CWCB Director

September 30, 2014
Interim Water Committee

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

COLORADO'S WATER PLAN

NOTE: This bill has been prepared for the signature of the appropriate legislative officers and the Governor. To determine whether the Governor has signed the bill or taken other action on it, please consult the legislative status sheet, the legislative history, or the Session Laws.

An Act

HOUSE BILL 05-1177

BY REPRESENTATIVE(S) Penry, Buescher, Decker, Liston, Massey, White, Berens, Clapp, Crane, Gallegos, Hall, Hoppe, Jahn, Kerr, Knoedler, Paccione, Rose, Stafford, Stengel, Sullivan, Romanoff, Boyd, Brophy, Coleman, Frangas, Harvey, King, Madden, May M., McCluskey, Merrifield, and Todd;
also SENATOR(S) Isgar, Tapia, Taylor, Entz, Grossman, Kester, Fitz-Gerald, Groff, Teck, and Tupa.

CONCERNING THE NEGOTIATION OF INTERBASIN COMPACTS REGARDING THE EQUITABLE DIVISION OF THE STATE'S WATERS, AND MAKING AN APPROPRIATION IN CONNECTION THEREWITH.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. Title 37, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW ARTICLE to read:

ARTICLE 75
Interbasin Compacts

37-75-101. Short title. THIS ARTICLE SHALL BE KNOWN AND MAY BE CITED AS THE "COLORADO WATER FOR THE 21ST CENTURY ACT".

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

STATE OF COLORADO

OFFICE OF THE GOVERNOR
136 State Capitol Building
Denver, Colorado 80203
Phone (303) 866-2471
Fax (303) 866-2003

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.

COLORADO MOTHER OF RIVERS

By Justice Greg Hobbs

When I was young the waters sang
of being here before I am,
of falling sweet and soft and slow
to berry bog and high meadow.
And held me in her lap and cooed
the willow roots, the gaining pools,
and called me through bright dappled grass
and called me O, My Shining One;
And shaped a bed to lay me on
and played the flute so high and clear.
And shape the stones to carry me,
when I am young and full of fight
for roaring here and roaring there,
for pouring torrents in the air.
When I am young as mountain snow
in crag and cleft and cracked window;
I call the green-backed cutthroat trout,
I call the nymph and hellgrammite,
I call the hatch to catch a wind,
I call upon the mountain track;
I call the scarlet to the jaw
as morning calls her own hatchlings,
call Yampa, White, the Rio Grande,
San Juan, the Platte, the Arkansas.
(in celebration of the 30th year
of Colorado's instream flow law)

NOTE: This bill has been prepared for the signatures of the appropriate legislative officers and the Governor. To determine whether the Governor has signed the bill or taken other action on it, please consult the legislative status sheet, the legislative history, or the Session Laws.

An Act

SENATE BILL 14-115

BY SENATOR(S) Roberts and Schwartz, Grantham, Guzman, Kefalas, Todd;
also REPRESENTATIVE(S) Fischer and Coram, Becker, Dore, Exum, Fields, Garcia, Gerou, Ginal, Hamner, Hullinghorst, Labuda, Lebsock, Lee, McCann, Mitsch Bush, Pabon, Rankin, Rosenthal, Ryden, Schafer, Sonnenberg, Stephens, Tyler, Vigil, Young.

CONCERNING PROCEDURAL REQUIREMENTS APPLICABLE TO STATE WATER PLANS, AND, IN CONNECTION THEREWITH, MAKING AND REDUCING AN APPROPRIATION.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, 37-60-106, **add** (1) (u) as follows:

37-60-106. Duties of the board - state water plan - legislative declaration. (1) It is the duty of the board to promote the conservation of the waters of the state of Colorado in order to secure the greatest utilization of such waters and the utmost prevention of floods; and in particular, and without limiting the general character of this section, the board has the power and it is its duty:

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

Colorado's Water Plan Framework 2.0

Framework Chapters

1.	*Introduction*
2.	*The Legal and Institutional Setting* 2.1 Colorado Water Law and Administration 2.2 Interstate Compacts & equitable apportionment decrees 2.3 Colorado's local-control structure 2.4 Local, state, tribal & federal water planning, approval, & permitting institutions
3.	*Overview of Each Basin*
4.	*Historical and Projected Water Supply*
5.	*Water Demand by Sector*
6.	*Water Supply Management for the Future* 6.1 Scenario Planning, adaptive strategies & no/low regrets 6.2 Meeting Colorado's water gaps 6.3 Conservation and Reuse 6.4 Alternative agricultural to urban transfers 6.5 Municipal, industrial, & agricultural infrastructure projects & methods 6.6 Environmental & recreational projects & methods
7.	*Water Resource Management and Protection* 7.1 Watershed health & management 7.2 Natural disaster management 7.3 Water Quality
8.	*Interbasin Projects & Agreements*

Framework Chapters (cont.)

9. *Alignment of State Resources & Policies* 9.1 Economics & funding 9.2 State water rights & alignment 9.3 Framework on more efficient water project permitting processes 9.4 Outreach, education, & public engagement
10. *Legislative Recommendations to Assist in Fully Implementing CWP*
11. *Updating Colorado's Water Plan*

Chapter 1

Introduction: Collaborating on Colorado's Water Future

5 Things Colorado's Water Plan Will Do

1. Foster collaborative solutions to responsibly address the looming gap between supply and demand (effect of this is to fortify Prior Appropriation Doctrine, not undermine it)
2. Identify and test cost-effective alternatives to the permanent "buy & dry" of irrigated lands
3. Affirm that Colorado will protect its compact entitlements, act affirmatively to avoid compact curtailments where possible, and demonstrate effective state-based policy to prevent federal erosion of state water authority
4. Push federal regulatory processes to move "quicker" by front-loading state activity
5. Align state policies and dollars to support Colorado's water values and policy objectives

5 Things Colorado's Water Plan Will NOT Do

1. Erode, or in any way cede, Colorado's compact entitlements
2. Advocate alternatives to the Prior Appropriation Doctrine
3. Infringe upon water rights' status as private property rights
4. 4 Ban the "permanent buy & dry" of irrigated lands
5. Allow the status quo to drive increased uncertainty and undesired results

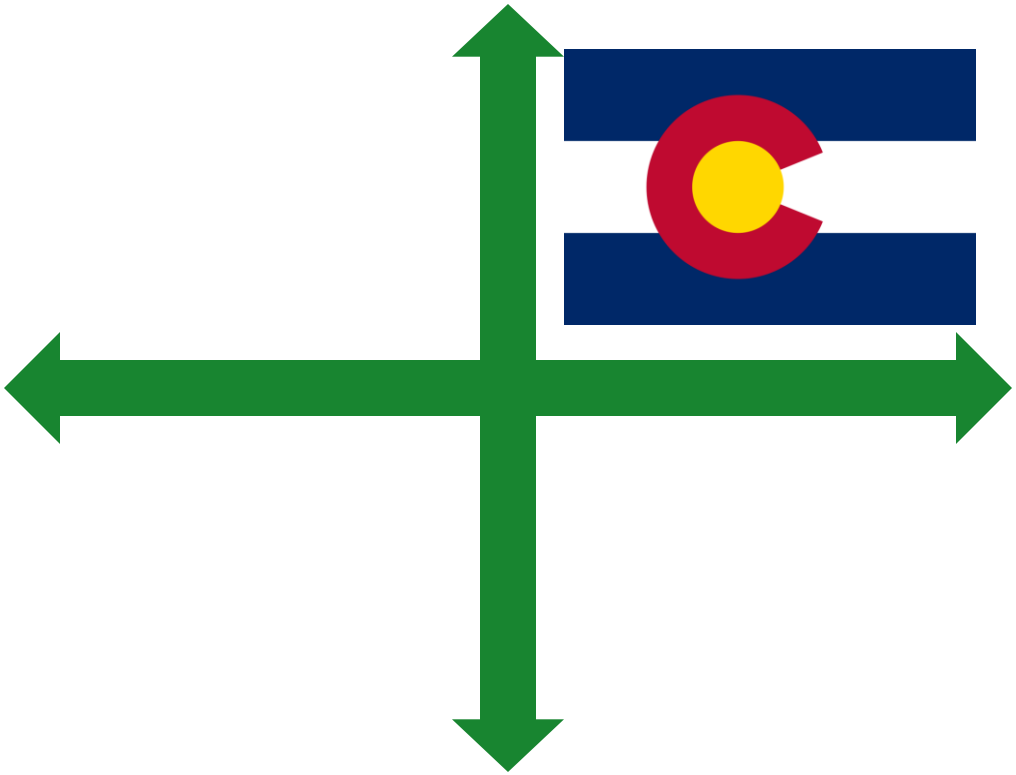
Why Do We Need a Water Plan?

1. Gap between supply and demand: Declining or flat-lining water supplies and population growth
2. Unacceptable pace of agricultural dry up
3. Environmental stress and recreational opportunities
4. Inefficient and ineffective regulatory processes
5. Fiscal challenges of our water infrastructure systems

Why Now

1. We face an undesirable future for Colorado with unacceptable consequences; these challenges demand urgency
2. We have sufficient data
3. Unprecedented grassroots structure
4. Paradigm-shift on both sides of the divide

PROPERTY RIGHTS / LOCAL CONTROL



GLOSSY REPORT

MEANINGFUL ACTION

CENTRALIZED CONTROL

Chapter 2

The Legal and Institutional Setting

The Legal & Institutional Setting Sections

2.1 Colorado Water Law and Administration

2.2 Interstate Compacts & Equitable Apportionment Decrees

2.3 Colorado's Local-Control Structure

2.4 Local, State, Tribal & Federal Water Planning, Approval, & Permitting Institutions

Chapter 3

Overview of Each Basin

Arkansas River

Yampa River

Republican River

Colorado River

Dolores River

North Platte River

Gunnison River

South Platte River

Rio Grande River

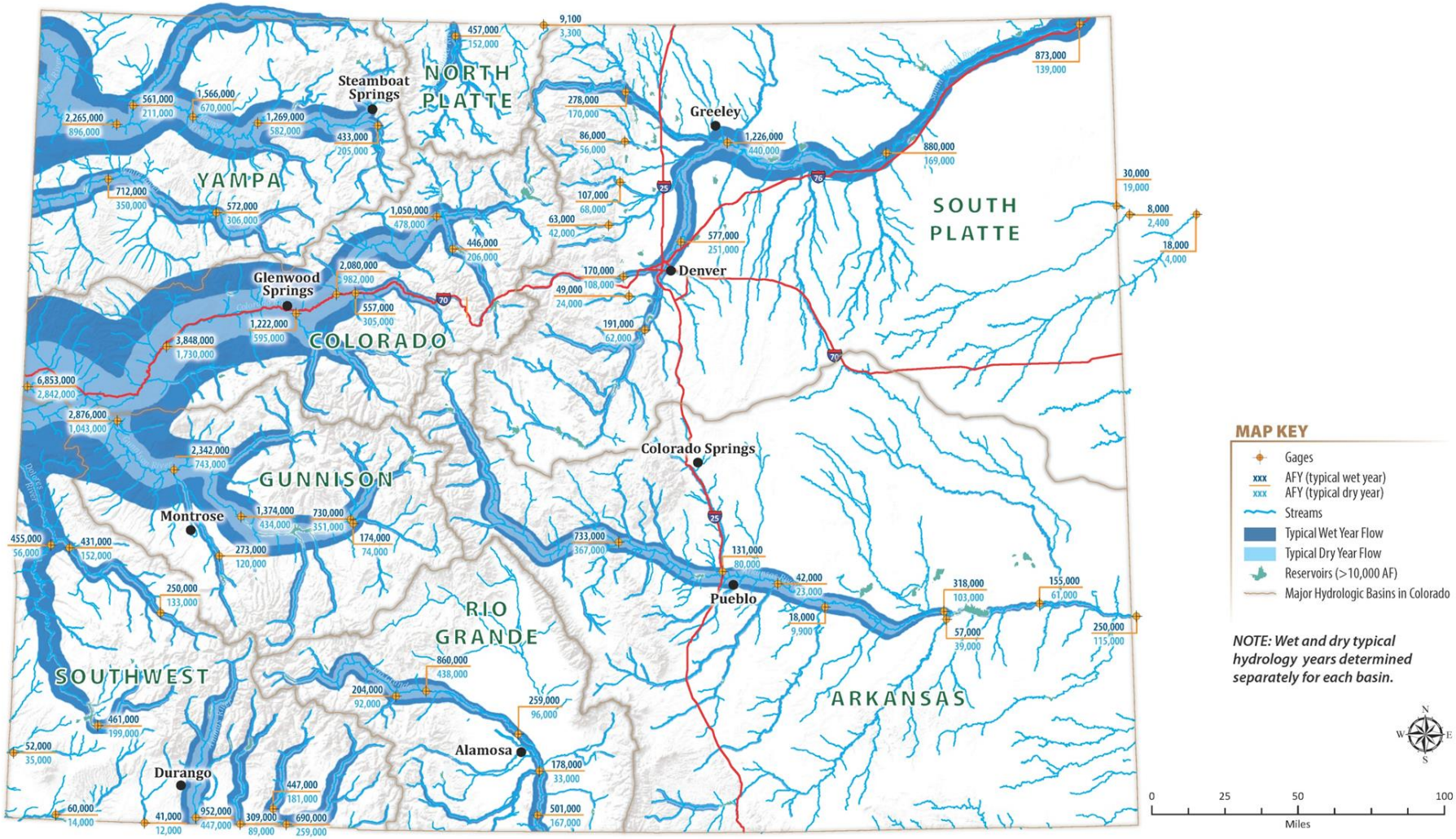
Chapter 4

Historical & Projected Water Supply

DRAFT

STATEWIDE

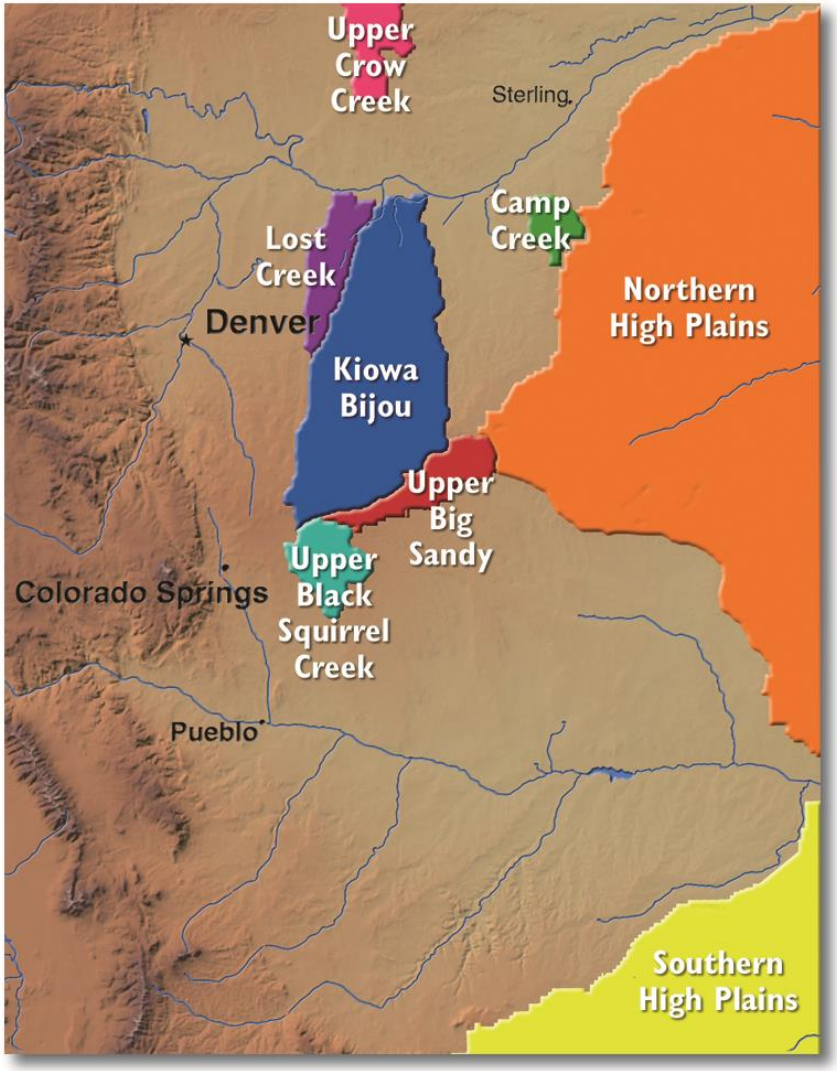
Summary of Observed Wet & Dry Surface Water Hydrology

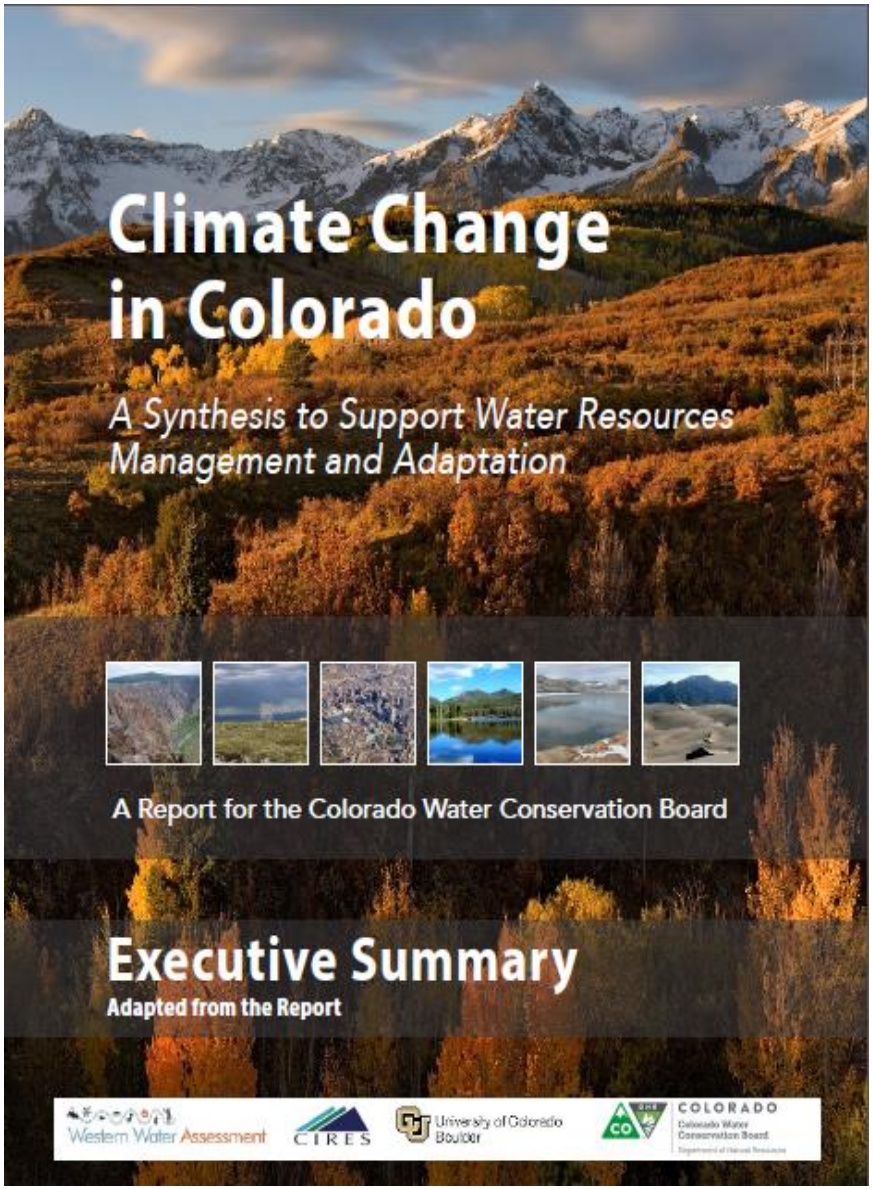


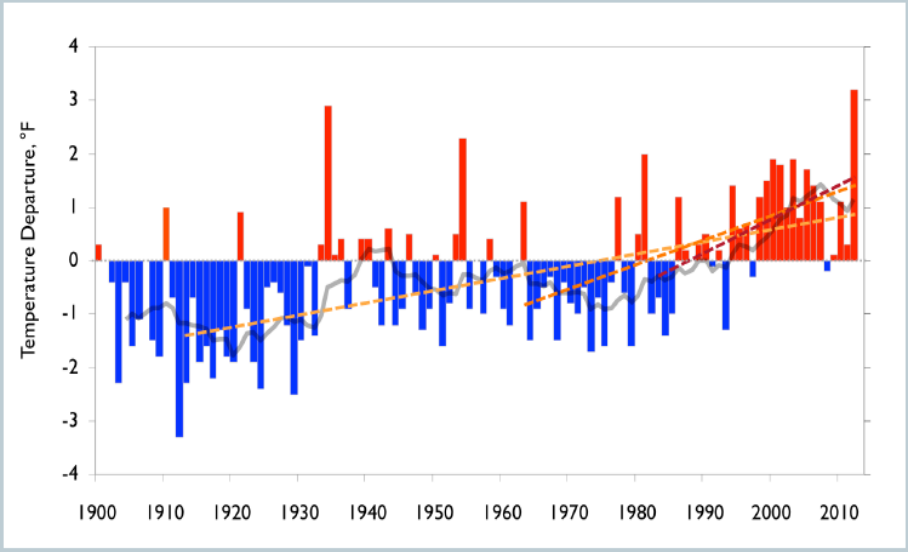
COLORADO'S WATER PLAN

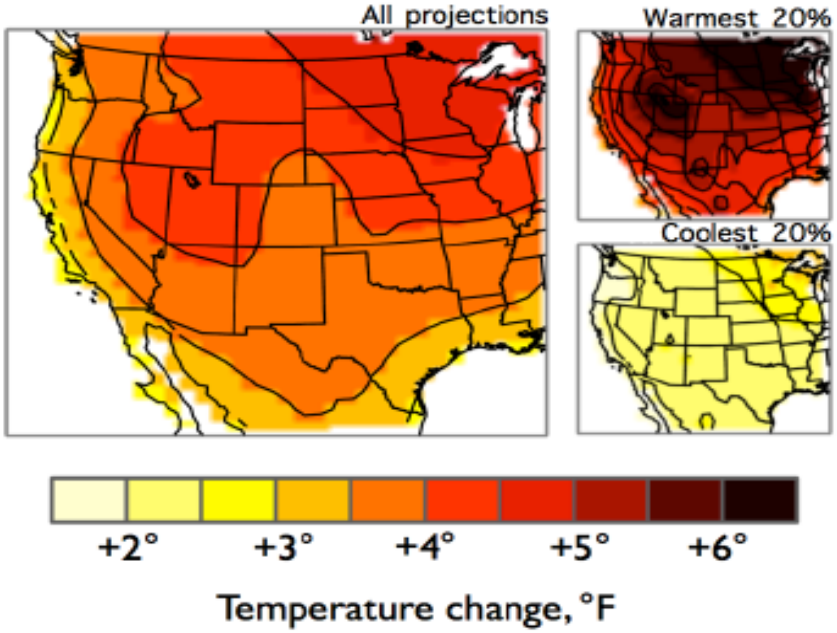
Groundwater

- 19 Counties rely on GW
- Alluvial and bedrock aquifers
- 10 million acre-feet (MAF) of alluvial aquifer storage
- 150+ MAF of bedrock aquifer storage

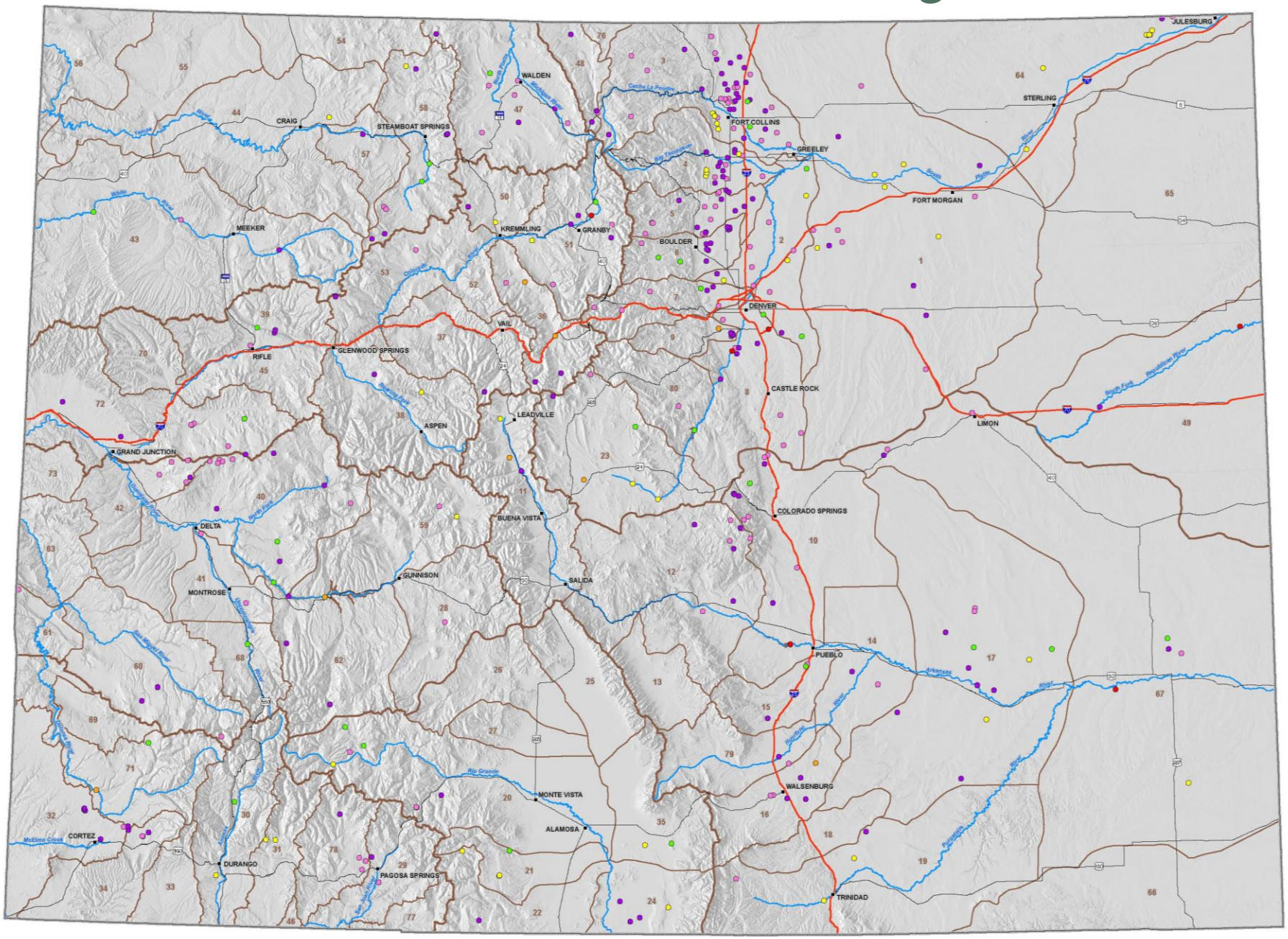



Climate Change in Colorado
A Synthesis to Support Water Resources Management and Adaptation
A Report for the Colorado Water Conservation Board
Executive Summary
Adapted from the Report
Western Water Assessment
CIRES
University of Colorado Boulder
COLORADO
Colorado Water Conservation Board


Temperature Departure, °F
4
3
2
1
0
-1
-2
-3
-4
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010


All projections
Warmest 20%
Coolest 20%
+2°
+3°
+4°
+5°
+6°
Temperature change, °F

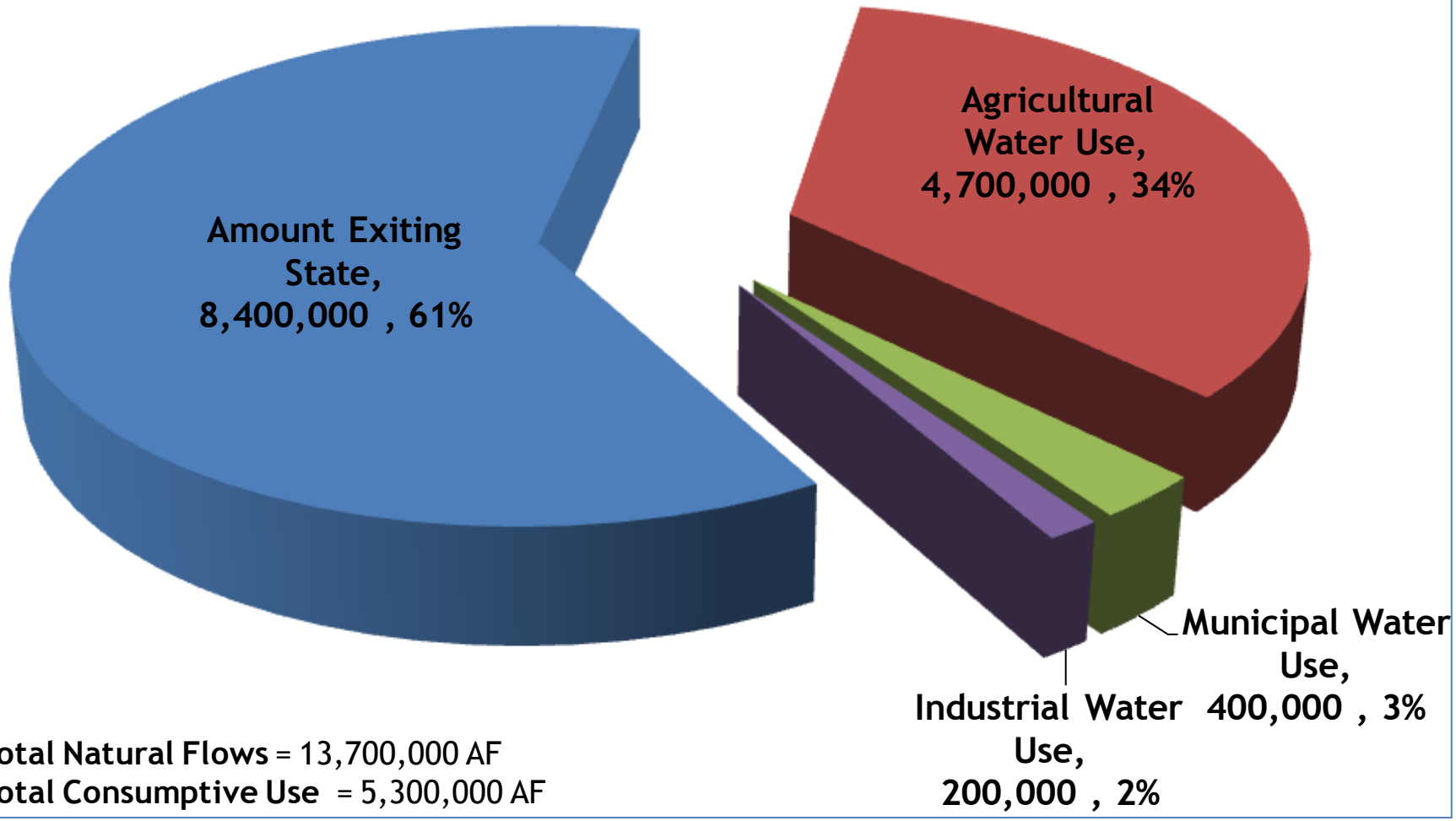
Potential Statewide Reservoir Storage Increase



Chapter 5

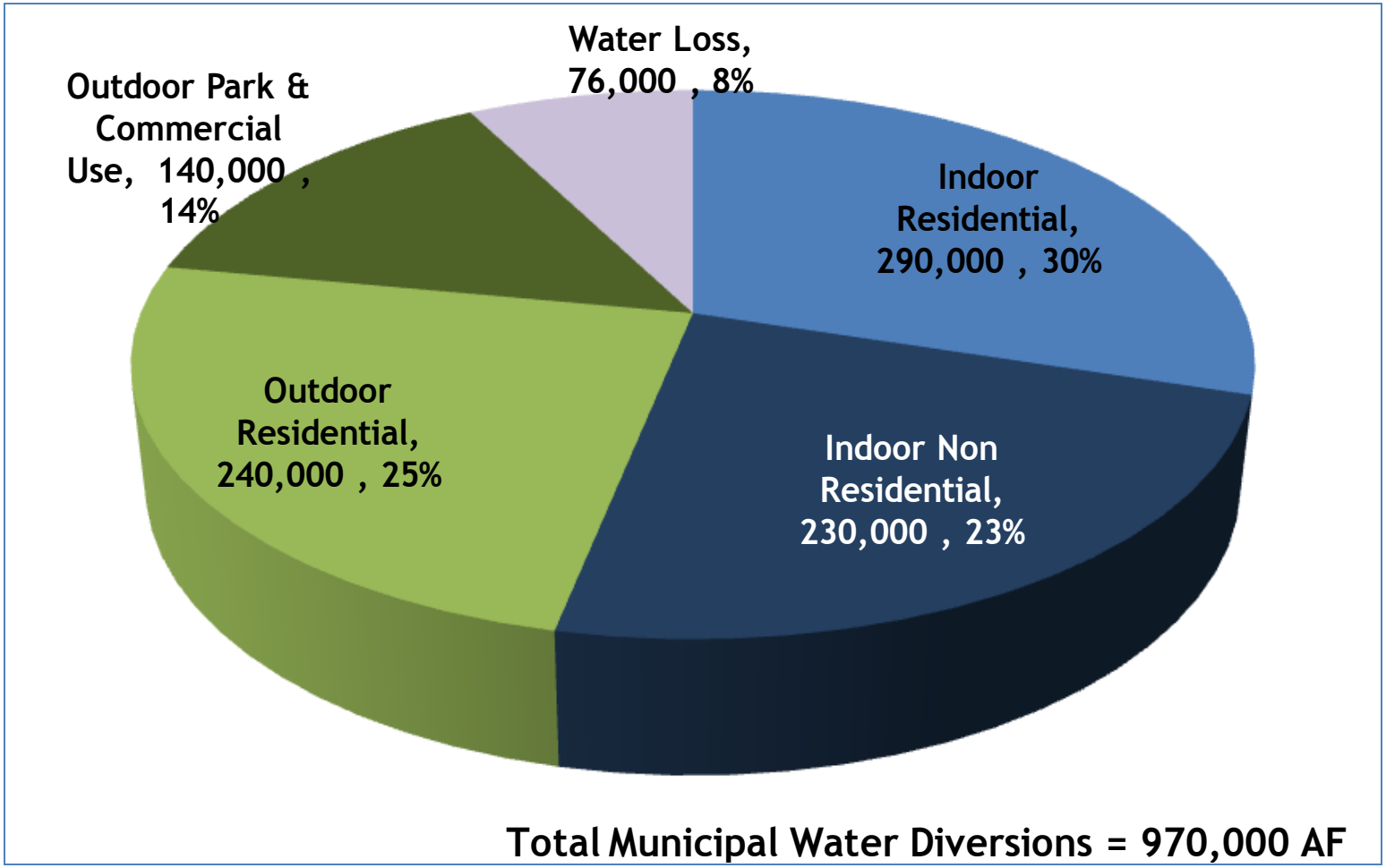
Water Demand by Sector

Statewide Water Use

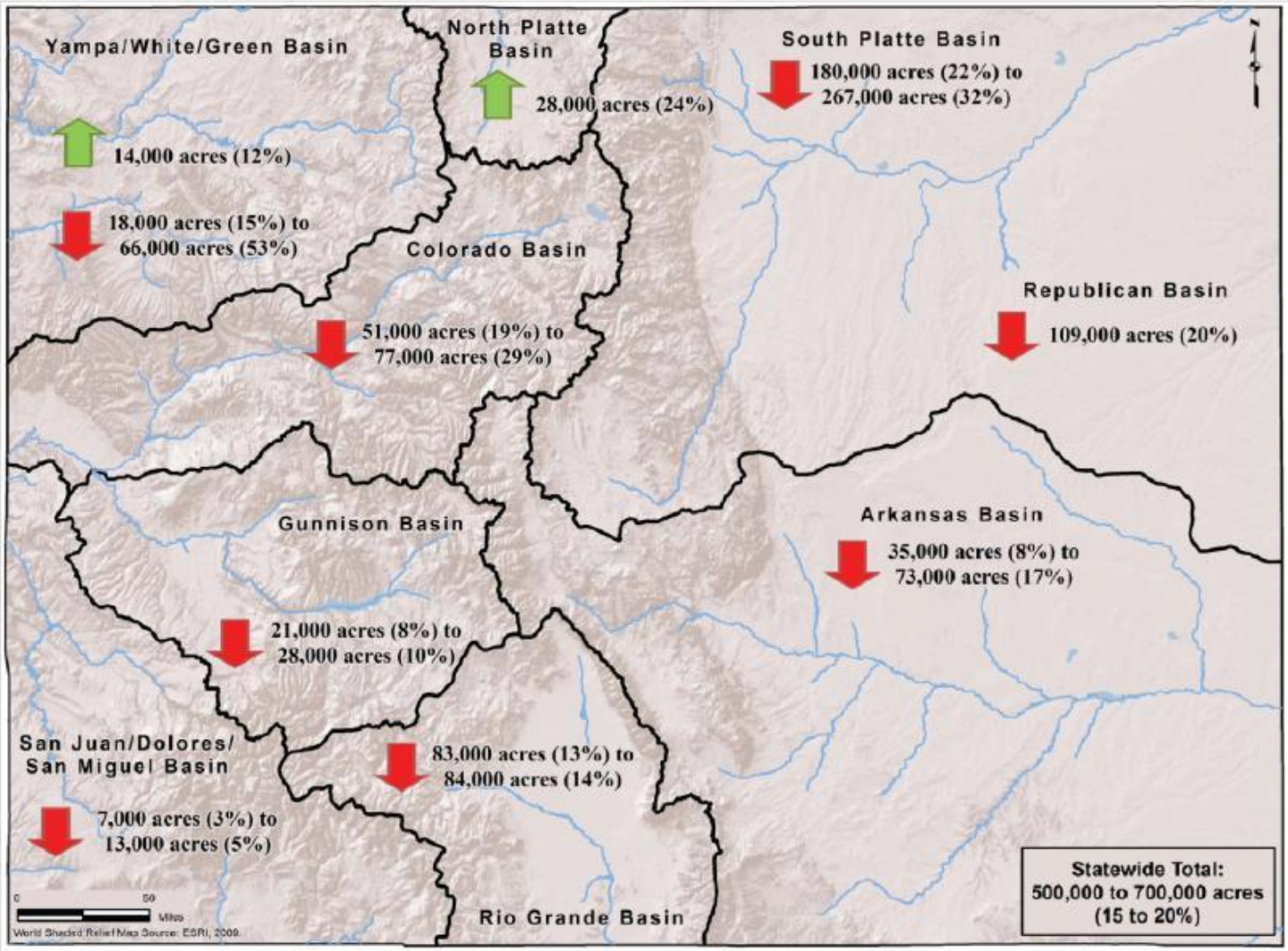


Total Natural Flows = 13,700,000 AF
Total Consumptive Use = 5,300,000 AF

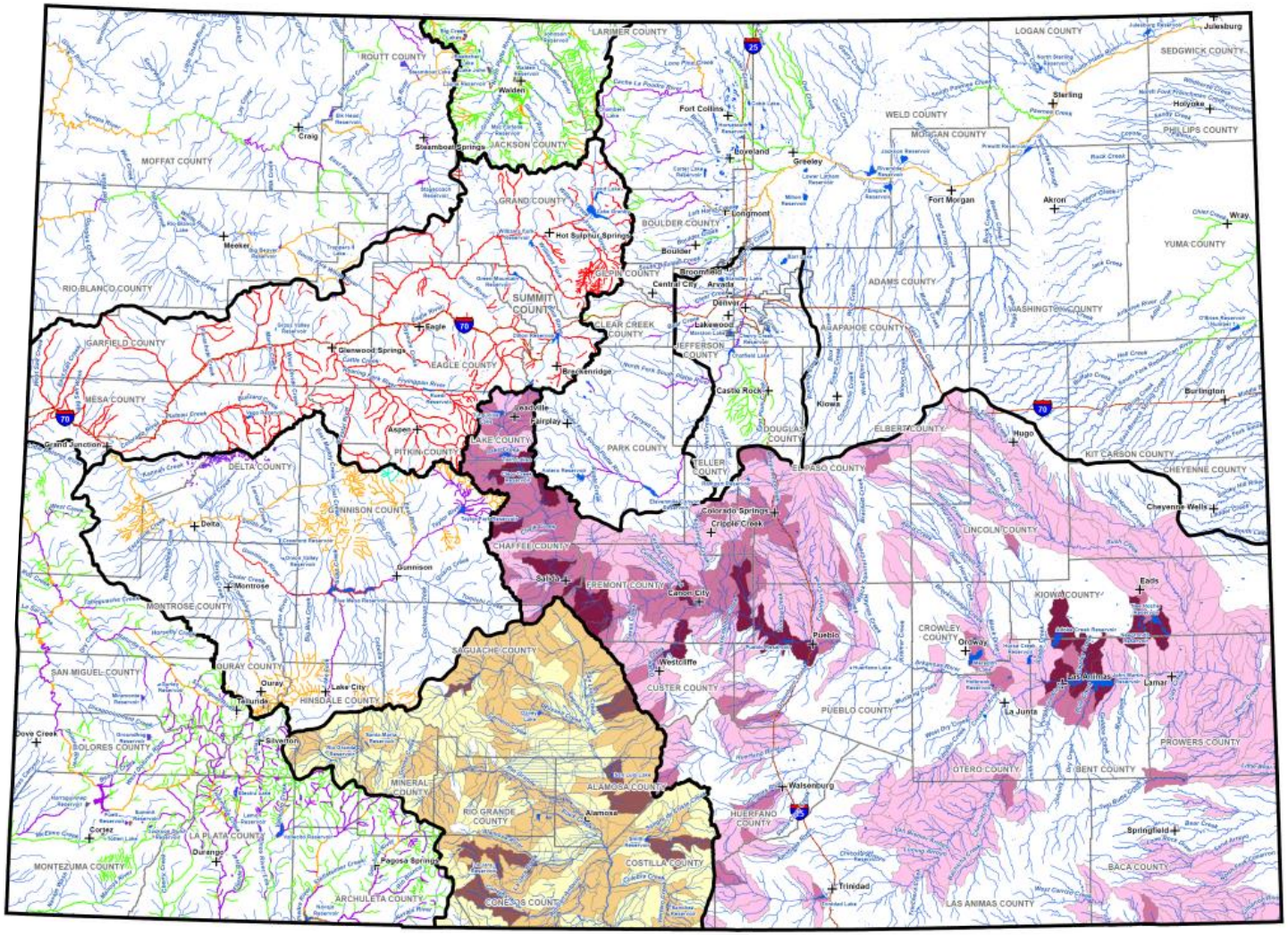
Municipal Needs



Agricultural Needs



Environmental & Recreational Needs



Potential Effects of Climate Change

Decreased snowpack plus warmer air temperatures

↓

Likely to result in decreased snowpack inputs to streams, lower summer flows and warmer water temperatures

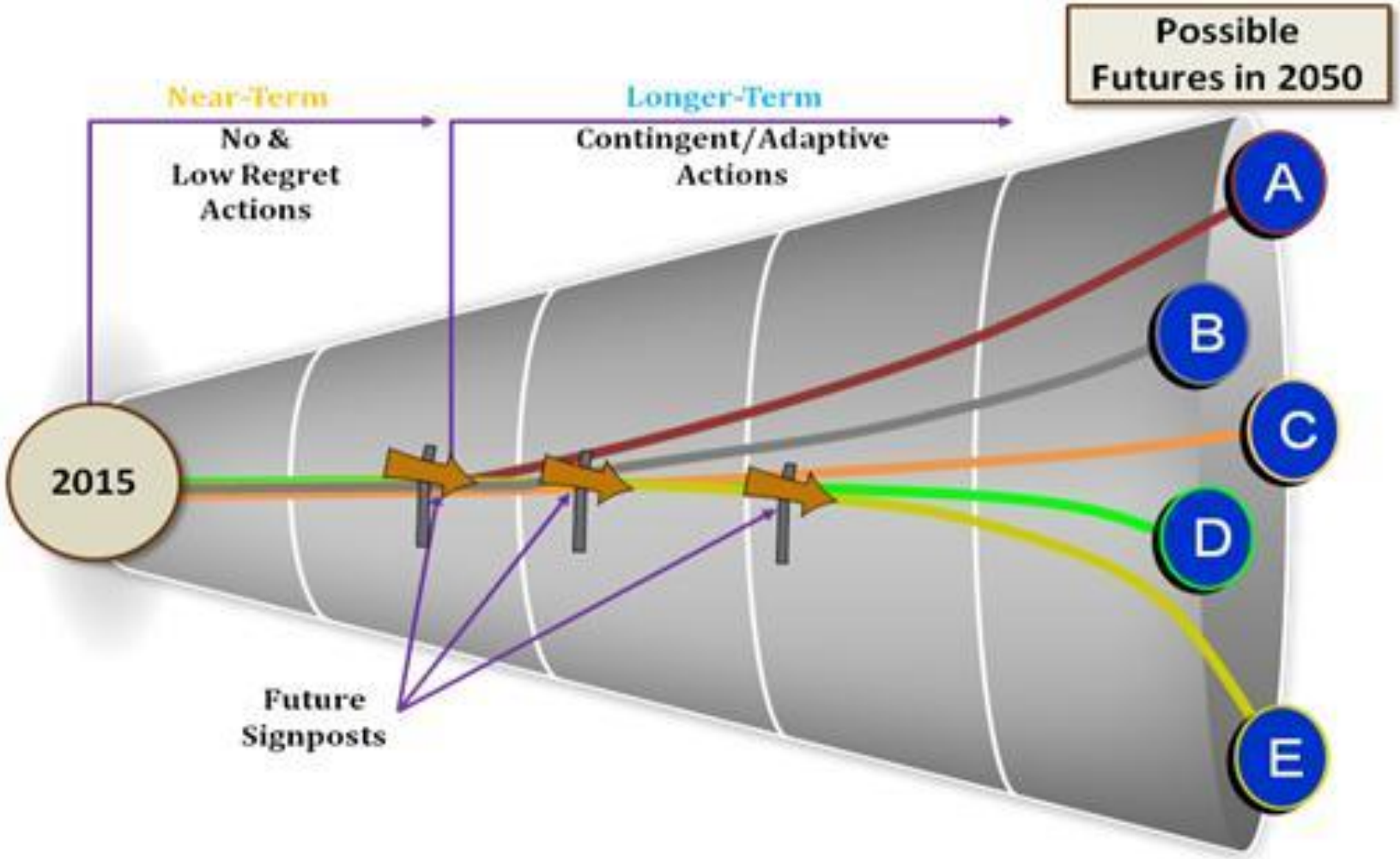
↓

Which is likely to result in thermal tolerances for native trout exceeded in some streams, making it difficult to maintain/restore native trout

Section 6.1

Scenario Planning and Developing an Adaptive Water Strategy

Scenario Planning



No and Low Regret Actions

1. Minimize Statewide Agricultural Acres Transferred and Implement Agricultural Sharing Projects
2. Plan and Preserve Future Options for Developing Unallocated Waters
3. Establish Medium Conservation Strategies
4. Implement Projects and Methods that Support the Environment and Recreation
5. Strive for High Success Rates for Projects and Methods that Are Already Planned
6. Assess and Implement Storage Projects & Other Infrastructure
7. Implement Water Reuse Strategies

Section 6.2

Meeting Colorado's Water Gaps

Chapter Outline

1. Overview
2. Goals & Measurable Outcomes by Basin
3. Meet Municipal Water Needs throughout Colorado
4. Meet Colorado's Agricultural Needs
5. Meet Colorado's Environmental & Recreational Needs
6. Other BIP Identified Gaps
7. How Other States Have Worked to Meet Their Gaps
8. Actions

Actions

1. Basin Implementation Plans
2. Quantification
3. SWSI 2016

Section 6.3

Conservation and Reuse

Section Outline

6.3.1 Municipal & industrial conservation

6.3.2 Reuse

6.3.3 Land use

6.3.4 Agricultural conservation, efficiency, & reuse

6.3.5 Self-supplied industrial

6.3.6 State agency conservation

Municipal Conservation Actions

1. Support foundational activities for all utilities
2. Better tracking and quantification
3. WaterSense specifications for outdoor irrigation technology
4. Incentives for outdoor water conservation measures
5. Water conservation education & outreach

Potential Water Savings:
170,000 AF

Could Serve
1.1 Million Statewide

Municipal Conservation Actions

6. Support local water smart ordinances
7. Encourage education of landscape professionals
8. Strengthen partnerships
9. Funding
10. Market for conserved water

Section 6.4

Alternative Agricultural to Urban Transfers

Actions

- Implement existing ATM legislation
- Evaluate effects of ATMs
- Support existing and future incentive programs
- Continue ATM Grant Program
- Update SWSI

Section 6.5

Municipal, Industrial, & Agricultural Infrastructure Projects & Methods

Municipal, Industrial, and Agricultural Infrastructure Projects and Methods

The policy of the state of Colorado is to use grassroots efforts to identify and implement projects and methods to meet municipaland agricultural water needs throughout Colorado, and achieve the following statewide long-term goals:

- Use water more efficiently to reduce overall future water needs
- Identify additional projects and processes to meet the water supply gap for municipalities while balancing the needs of agriculture, the environment, and recreation across the state
- Meet municipal water needs during periods of drought

Implementation Actions

1. BIPs
2. Climate Change
3. Multi-Purpose Projects
4. Tracking
5. State programs
6. Funding
7. Refine Permitting

Section 6.6

Environmental & Recreational Projects & Methods

Environmental and Recreational Projects and Methods

The policy of the state of Colorado is to identify and implement environmental and recreational projects to achieve the following statewide long-term goals:

- Promote Restoration, Recovery, and Sustainability of Endangered, Threatened, and Imperiled Aquatic and Riparian Dependent Species and Plant Communities
- Protect and Enhance Economic Values to Local and Statewide Economies Derived from Environmental and Recreational Water Uses, Such as Fishing, Boating, Waterfowl Hunting, Wildlife Watching, Camping, and Hiking
- Support the Development of Multi- Purpose Projects and Methods that Benefit Environmental and Recreational Water Needs as well as Water Needs for Communities or Agriculture
- Understand, Protect, Maintain, and Improve Conditions of Streams, Lakes, Wetlands, and Riparian Areas to Promote Self- Sustaining Fisheries and Functional Riparian and Wetland Habitat to Promote Long-Term Sustainability
- Maintain Watershed Health – Protect or Restore Watershed that Could Affect Critical Infrastructure and/or Environmental and Recreational Areas

Implementation Actions

1. Technical Work
2. Watershed Master Plans
3. Support Project Implementation
4. Integrated Approach

Section 7.1

Watershed Health & Management

Watershed Health and Management

The policy of the state of Colorado: to better understand and promote watershed health and to support development of watershed coalitions and watershed master plans that address needs from a diverse set of local stakeholders.

Actions

1. Identify watersheds critical to water supply.
2. Support watershed master plans
3. Identify existing watershed groups and existing watershed plans and assessments.
4. Build capacity

Section 7.2

Natural Disaster Management

COLORADO'S
WATER PLAN

Section 7.3

Water Quality

Water Quality and Quantity Integration Goal

As Coloradans find solutions to address our consumptive and nonconsumptive needs now and in the face of future changes and pressures, water management strategies should prioritize water quality and quantity connections that pro-actively protect and restore water quality for public health and the environment.

Implementation Actions

- Integrated water quality and quantity management.
- Policy considerations.
- Financial considerations.
- Stakeholder and public outreach.

Chapter 8

Interbasin Projects & Agreements

Interbasin Policy

The policy of the state of Colorado is to:

A. Protect Colorado's ability to fully develop our compact entitlements, and continue to support intrastate agreements that strengthen Colorado's position in interstate negotiations.
B. Encourage multi-partner, multi-purpose, cooperative projects through financial incentives and technical support.
C. Use the Draft Conceptual Agreement as an integrated package of concepts to:
    1. Encourage environmental resiliency,
    2. Foster high conservation standards,
    3. Develop stakeholder support for interstate cooperative solutions, and
    4. Identify a path forward for a potential multi-purpose and cooperative transmountain diversion project.

Conceptual Agreements 7 Points

1. Consider TMD project w/o firm yield
2. Operate conjunctively with other East Slope sources
3. Develop triggers to operate project
4. Create an insurance policy
5. Accommodate future western slope needs
6. Improve conservation and reuse.
7. Address environmental resiliency

Actions

- Strengthen Colorado's position in interstate negotiations.
- Prepare for a future with scarcer water supplies
- Refine what conservation targets can be achieved

Section 9.1 (previously 6.1)

Economics & Funding

Implementation Actions

1. Assess funding needs
2. Assess economic affects of meeting Colorado's future water needs
3. Align existing state funding
4. Explore near-term opportunities
5. Assess larger scale long-term funding opportunities to determine the best potential options

Section 9.2 (previously 6.2)

State Water Rights & Alignment

Section 9.3

Framework on More Efficient Water Project Permitting Processes

Section Outline

- Summary each process for water permitting
- History of permitting
- Current permitting efforts
- More efficient and effective permitting

Actions

- Certification and mitigation handbook
- Uniform conservation savings calculations
- More efficient and effective permitting

COLORADO'S
WATER PLAN

COLORADO

Bill Green ©

Section 9.4

Outreach, Education, & Public Engagement

Members of the Outreach, Education, and Public Engagement Task Force

Jacob Bornstein
Tom Browning
Steve Coffin
James Eklund
Russell George
Justice Gregory Hobbs Jr.
Diane Hoppe
Kate McIntire
Rebecca Mitchell
Senator Gail Schwartz
John Stulp
Reagan Waskom
Debbie Alpe
Terry Book
Caroline Bradford
Jeris Danielson
Jeffrey Devere
Judy Lopez
Kristin Maharg
Ren Martyn
Denise Rue-Pastin
Joel Schneekloth
Casey Davenhill
George Sibley
Travis Smith
Jay Winner
Greg Baker
Natalie Brower-Kirton
Karla Brown
Joe Burtard
Perry Cabot
Tom Cech
Sally Covington
Melissa Elliott
Paul Fanning
Julia Gallucci
Todd Hartman
Eric Hecox
Hannah Holm
Diane Johnson
Greg Johnson
Frank Kinder
Jim Pokrandt
Kevin Reidy
Nicole Seltzer
Britta Strother
Ben Wade
Brian Werner
Stephanie White

Implementation Actions

1. Creation of A New Outreach, Education, and Public Engagement Grant Fund

2. CWCB-Led Effort to Update and Reassess the Status of Statewide Outreach, Education, and Public Engagement Programs Related to Water Supply Planning

3. Improving the Use of Existing State Resources