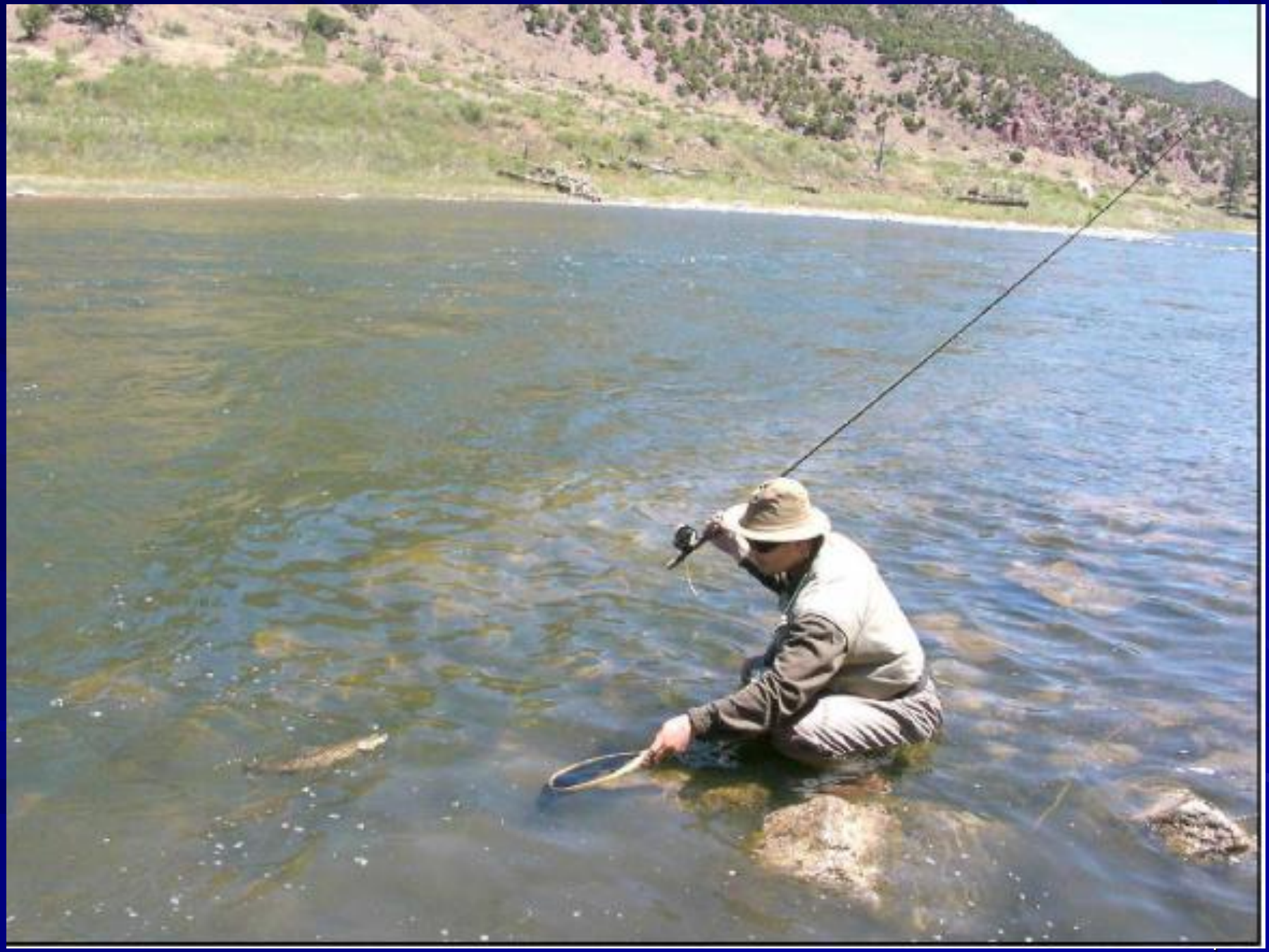
COLORADO WATER for the 21st CENTURY ACT

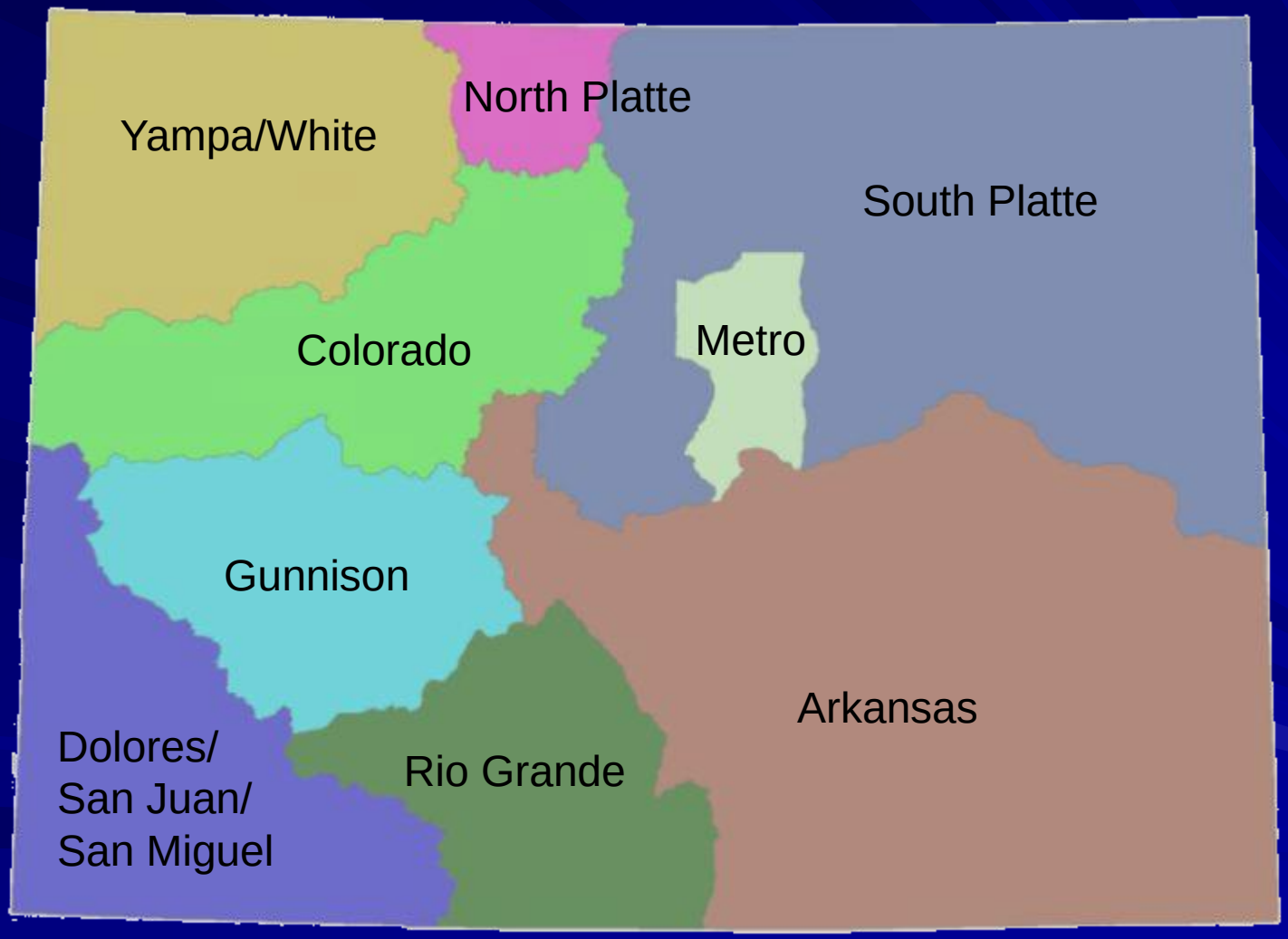
THE SOUTH PLATTE BASIN ROUNDTABLE UPDATE

Irrigationists Symposium

March 15, 2012



Colorado's Nine Basin Roundtables



Responsibilities of the Roundtables

- Develop an assessment of the nonconsumptive water needs
- Develop an assessment of the consumptive water needs
- Develop an assessment of the available water supplies
- Develop proposed projects or methods to meet any identified water needs

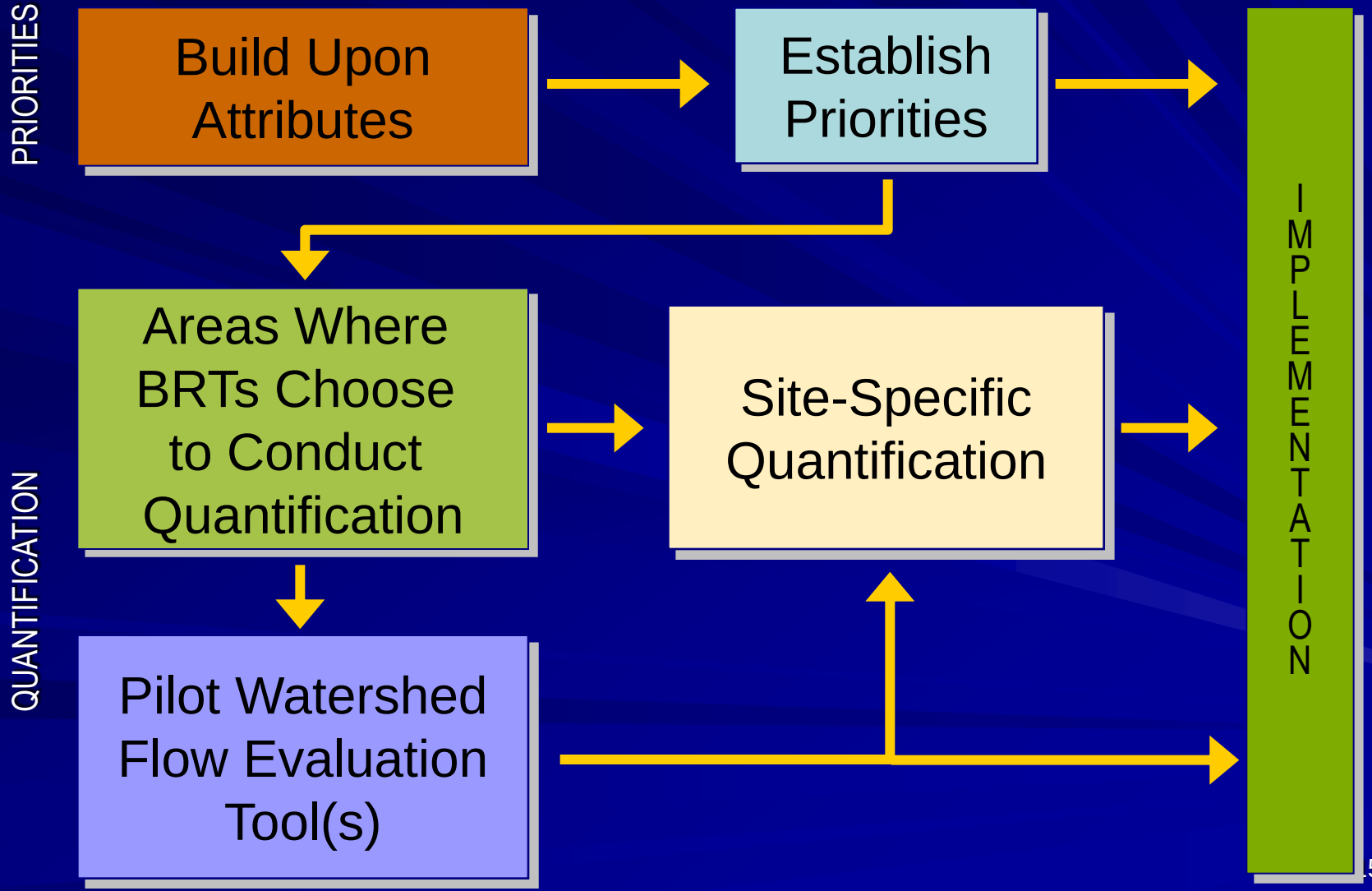
Colorado's Water
Supply Future

South Platte Basin Roundtable
Nonconsumptive Needs Assessment

Why are we developing an NCNA?

- Yes, it's required by statute, but more importantly…
- The NCNA will provide an objective, science-based set of tools for BRTs and other stakeholders.
  - Priority Streams
  - Flow Quantification
- To be used to make informed decisions about future water supply management. For example:
  - What are the most important streams and rivers for our environment and recreation?
  - How much water would we need to sustain those values?
  - What tools and strategies can we use?
  - How can we develop new water supplies that avoid impacts or provide multi-purpose benefits to priority streams and wetlands?

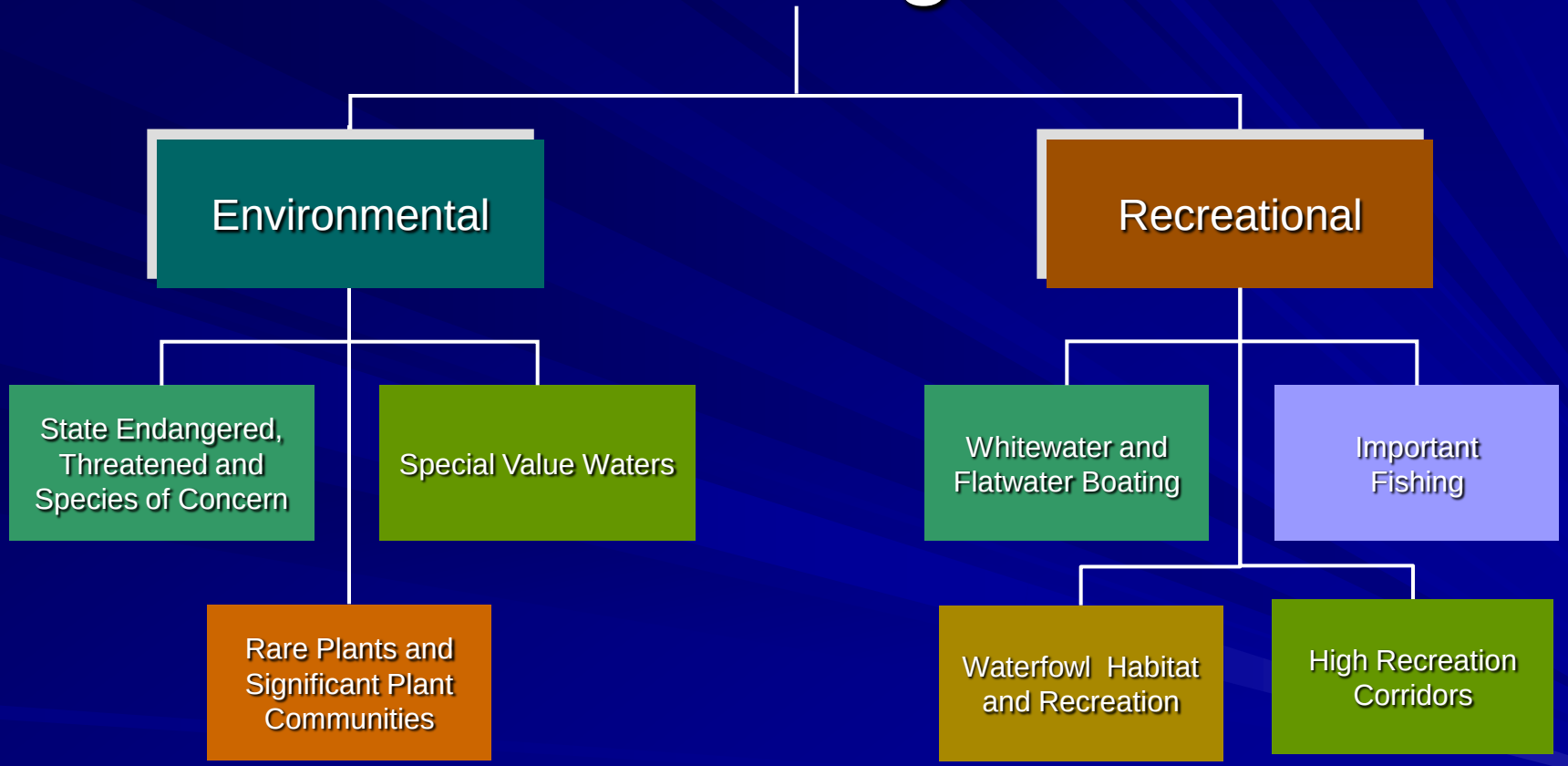
Statewide Nonconsumptive Needs Assessment Methodology



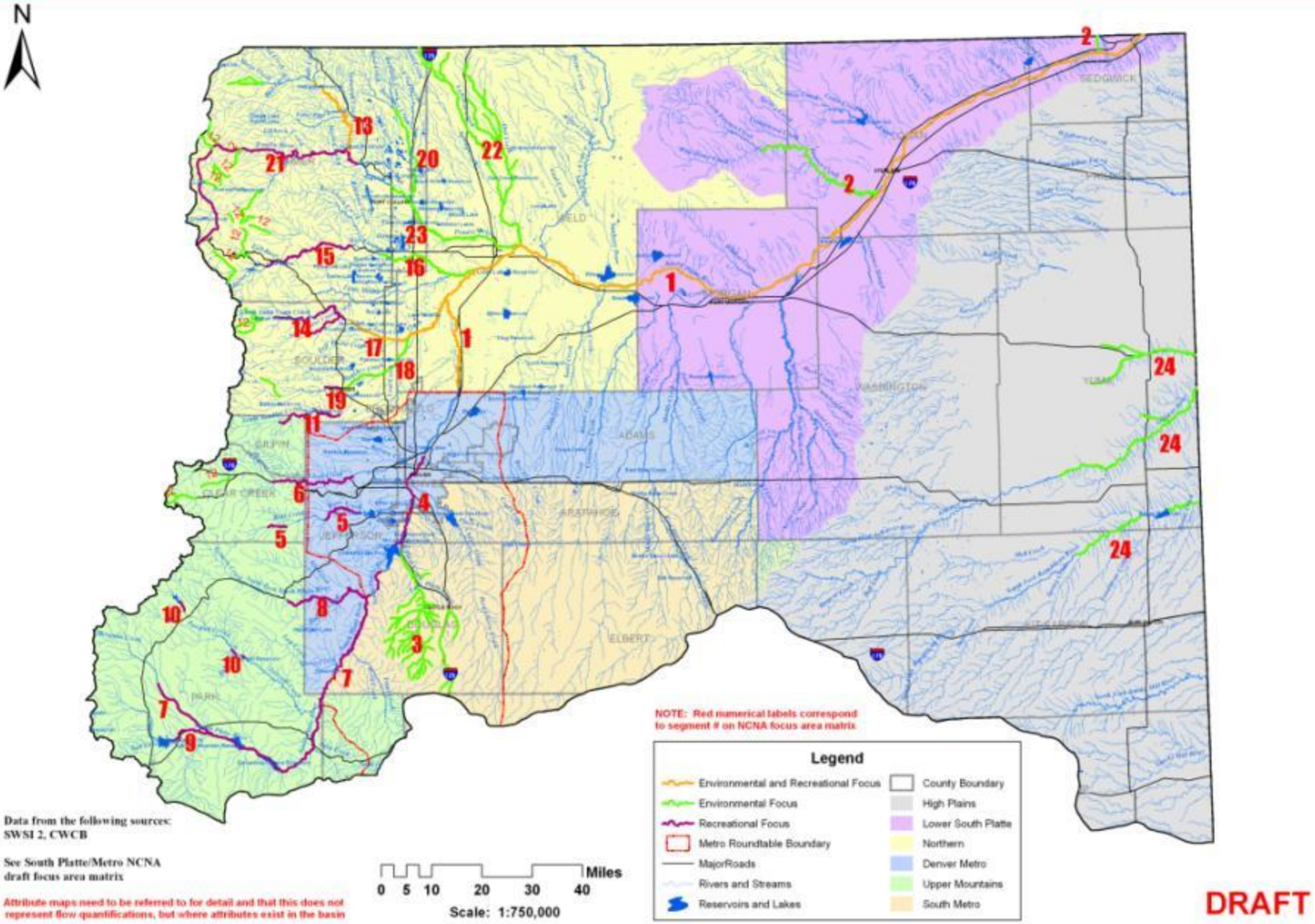
Products

- GIS coverages representing Colorado's important environmental and recreational attributes
- Map of Basin Roundtable prioritized areas and reaches
- Results of flow evaluation tools and site-specific instream flow pilot studies
- Identification of flow and non-flow related resource management options

South Platte Basin Attribute Categorization



Phase I South Platte/Metro Basin Non-Consumptive Needs Assessment: Candidate Environmental and Recreational Focus Areas



Next Steps

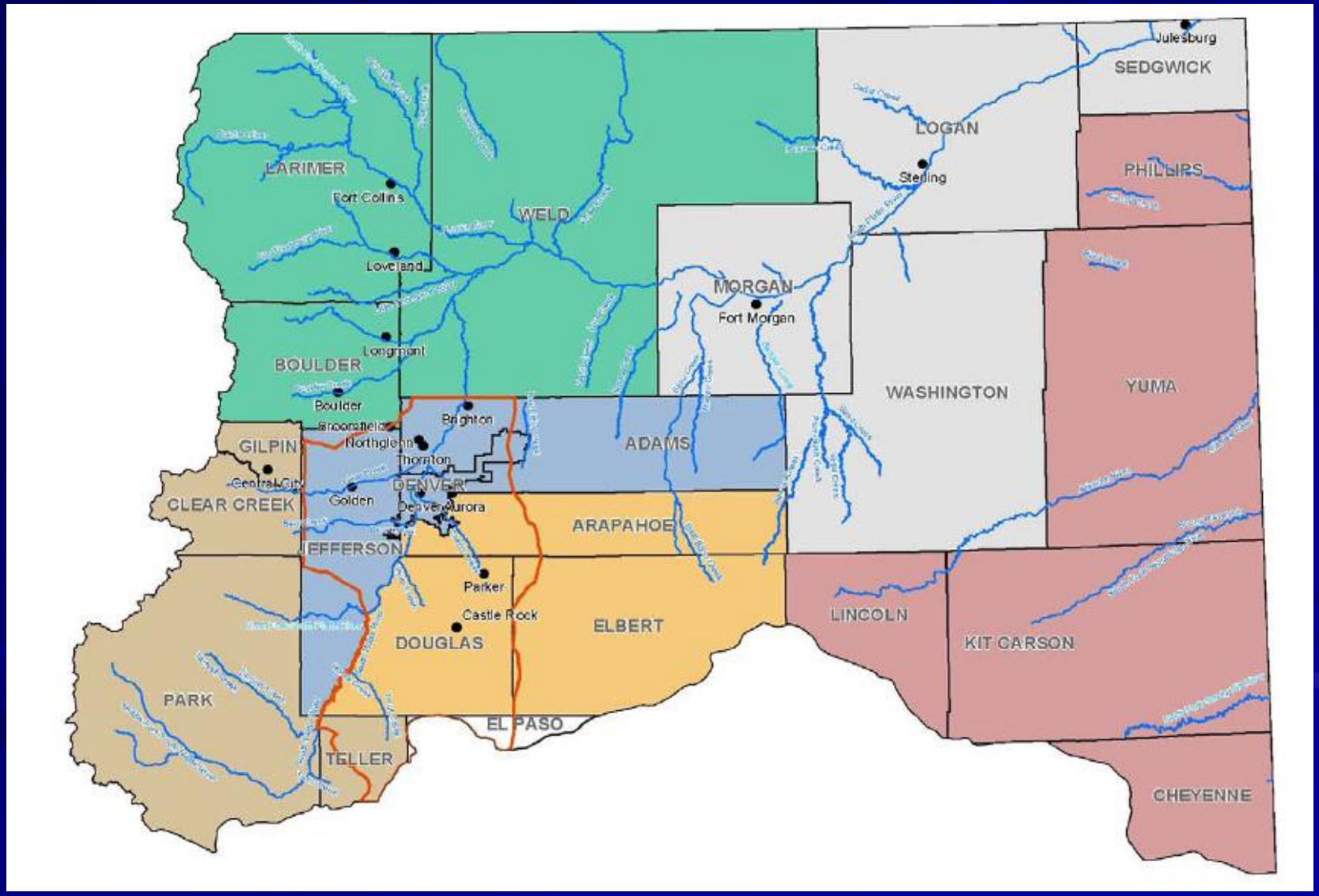
- Quantification of water needs
- Implementation of projects to sustain and improve recreational and environmental attributes

Colorado's Water
Supply Future

South Platte Basin Roundtable

Consumptive Needs Assessment

Map of the Roundtable



South Platte Basin Roundtable

- Three-Part Approach to Consumptive Needs Assessment:
  1. 2004 Statewide Water Supply Initiative (SWSI), Phase 1.
     - Adopted as an *interim* needs assessment
  2. Detailed analysis of five key areas
  3. Assessments based on 2050 demands

Part 1: Statewide Water Supply Initiative, Phase 1

- Findings
  - The gap or shortage indentified for 2030:
    - Statewide: 118,000 AF
    - South Platte Basin Roundtable: 28,000 AF
    - Overall South Platte: 90,600 AF

Part 2: Five Key Areas

- The consumptive needs assessment involves the detailed analysis of Five Key Areas:

1. Competition for the same water supply
2. Identification of any unappropriated water
3. Current and historical river administration
4. Increasing use of wholly consumable effluent
5. Water conservation plans by providers

Part 2: Five Key Areas
Conclusions

1. There is significant competition for the same water supplies including competition from the Denver Metro Area
2. There is very little un-appropriated water available
3. There will be increased frequency and duration of senior calls on the river
4. Increase reuse of consumable effluent will result in less water in the South Platte River
5. Water conservation will help reduce future water demands but will not alone be sufficient to meet future demands

Part 3: Consumptive Needs Assessment

- Approach to the Needs Assessment:
  - Projection of 2050 Agricultural Demands
  - 2050 Municipal and Industrial Demands Projected Statewide
  - Available Water Supply
  - Calculation of the 2050 Projected Gap or Shortage

Part 3: Consumptive Needs Assessment

- 2030 Projected Agricultural Demands:
  - 2005 irrigated acres were used as a base line for projecting future Agricultural water needs.
  - Due to the high decree of uncertainty in estimating the 2050 irrigated acreage the decision was made by the Roundtable to use updated 2030 acreage estimates from SWSI Phase 1.

2030 Projected Agricultural Demands, cont'd

- 2005: Irrigated Land 840,000 acres
  Water Deficit 210,000 AF*
- 2030: Irrigated Land 684,000 -- 797,000 acres
  Water Deficit 171,000 -- 198,000 AF*

- The current and projected Agricultural water shortage in the overall basin:
  - 200,000 acre-feet of consumptive use*
  - 364,000 acre-feet of actual diversion

Part 3: Consumptive Needs Assessment
Municipal and Industrial Projections
2050 Population Estimates

Location	Year/Range	Population
Statewide	2005	4,782,000
	2050 Low	8,664,000
	2050 Med	9,331,000
	2050 High	10,327,000
Denver Metro And South	2005	2,359,000
	2050 Low	4,052,000
	2050 Med	4,289,000
	2050 High	4,728,000

2050 Population Estimates, cont'd

Location	Year/Range	Population
South Platte Basin Roundtable	2005	945,000
	2050 Low	1,779,000
	2050 Med	1,902,000
	2050 High	2,079,000
Total South Platte Basin	2005	3,304,000
	2050 Low	5,831,000
	2050 Med	6,191,000
	2050 High	6,807,000

Data Source: Colorado Water Conservation Board "State of Colorado 2050 Municipal and Industrial Water Use Projections."

Part 3: Consumptive Needs Assessment

2050 M&I Water Demand

Location	Year/Range	Acre-Feet
Statewide	2008	1,161,000
	2050 Low	1,751,000
	2050 Med	1,871,000
	2050 High	2,111,000
Denver Metro	2008	502,000
	2050 Low	682,000
	2050 Med	712,000
	2050 High	782,000

Note: For the Medium 2050 Demand the State will need another 1,100,000 AF of water.

2050 M&I Water Demand, cont'd

Location	Year/Range	Acre-Feet
South Platte Basin Roundtable	2008	234,000*
	2050 Low	394,000
	2050 Med	414,000
	2050 High	464,000
Total South Platte Basin	2008	736,000
	2050 Low	1,076,000
	2050 Med	1,126,000
	2050 High	1,246,000

**The 2008 demand reflects a 13% decrease from the 2000 demand. This reduction is due to current conservations efforts.*

2050 M&I Water Demand, cont'd

- 2050 Medium Demand for the South Platte Basin Roundtable area will need another 180,000 AF of water for M&I
- 2050 Medium Demand for Denver Metro area will need another 210,000 AF for M&I
- Compare this to the following:
  - C-BT Project Annual Yield: 213,000 AF
  - Poudre River Annual Yield: 298,000 AF
- We will need another C-BT Project and another 60% of a Poudre River.

South Platte Basin Roundtable
Major Identified Projects & Processes

- Northern Area:

	Annual Yield
Windy Gap Firming	30,000 AF
Northern Integrated Supply Plan	40,000 AF
Halligan-Seaman Reservoir Projects	20,000 AF
TOTAL	90,000 AF

These projects are currently in the permitting process and do not have the necessary permits to move forward.

Meeting the 2050 M&I Basin Demand

- South Platte (excludes Denver Metro Area)

	Low	Medium	High
2050 Demand	394	414	464
Current Demand	234	234	234
New Demand	160	180	230
IP&Ps at 100%	120	120	120
Gap	40	60	110

Gap Calculation (all values in 1000 ac-ft)

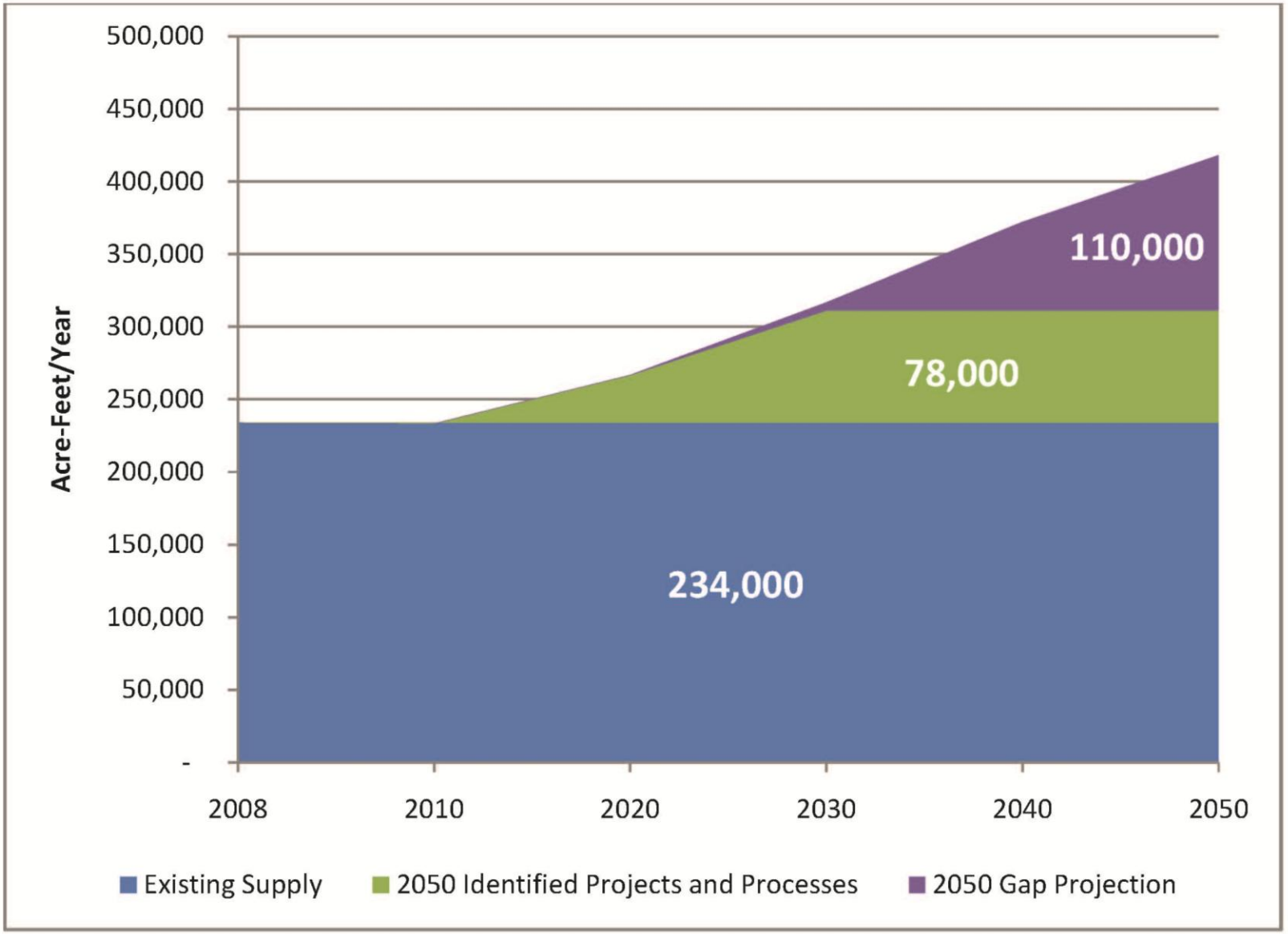


Figure 5-8. South Platte Basin M&I and SSI Gap Summary Medium Scenario (IPPs at 60% Success Rate)

South Platte Basin Roundtable
Combined M&I and Agricultural Demand

- If 60% of IP&P's are successful, the mid-range gap in 2050 due to M&I and agricultural shortages in the South Platte Basin Roundtable area is estimated to be 308,000 AF* (438,000 AF* for overall Basin)

*Consumptive use

Conclusions of the Roundtable

- The 2050 water supply gap in the Basin is large and likely growing.
- The future water supply gap in the Basin is an urgent problem that must be addressed with all due speed.
- Efficient use of all existing water supplies within the Basin is already happening and will increase in the future
- Large scale dry-up of irrigated agriculture will cause significant economic damage to the Basin and the State.
- The Basin and the State must proceed with a sense of urgency to evaluate and develop all potential water supply options.

Portfolios

Building combinations of strategies or “portfolios” for meeting Colorado’s future water needs – different mixes of:

- IPPs
- Conservation/Reuse
- New Supply Development
- Ag Transfers

South Platte Basin Roundtable

- Meetings quarterly
- Southwest Weld County Building (Longmont)
- 4:00 – 8:00 p.m.