



Colorado's Water Supply Future



CWCB Board Meeting

Longmont, Colorado

March 17, 2009

Agenda

- Welcome, Introduction, and Agenda Review
- Scenarios for Colorado's Water Supply Future
- Demand Management Strategy
- Agriculture Transfer Strategy
- New Supply Development Strategy
- Next Steps and Path Forward
- State Budget Update

Today – Examine the Engineering Evaluation Elements for Strategies

- Description of strategy or project elements – water source, conveyance and storage, water quality
- Capital costs – permitting, mitigation, land acquisition, pumps, pipe, treatment
- Annual O&M costs – energy, equipment maintenance and replacement

Purpose

Ability to begin to compare tradeoffs between strategies

After Today – Further Evaluation of Strategies will Include:

- Identification of:
 - Project benefits
 - Implementation issues
 - Potential attributes/additional options
 - Acceptability
- Other evaluation elements:
 - Additional cost elements (water rights or storage)
 - Discuss potential attributes/additional options for ag transfer and new supply development options with Basin Roundtables
 - Incorporate other conservation elements such as sharing of conserved water and the infrastructure and institutional arrangements required
- Qualitative description of how each strategy meets the Vision Statement and Vision Goals

*Scenarios for Colorado's
Water Supply Future*

Scenarios will Address the Following Water Needs

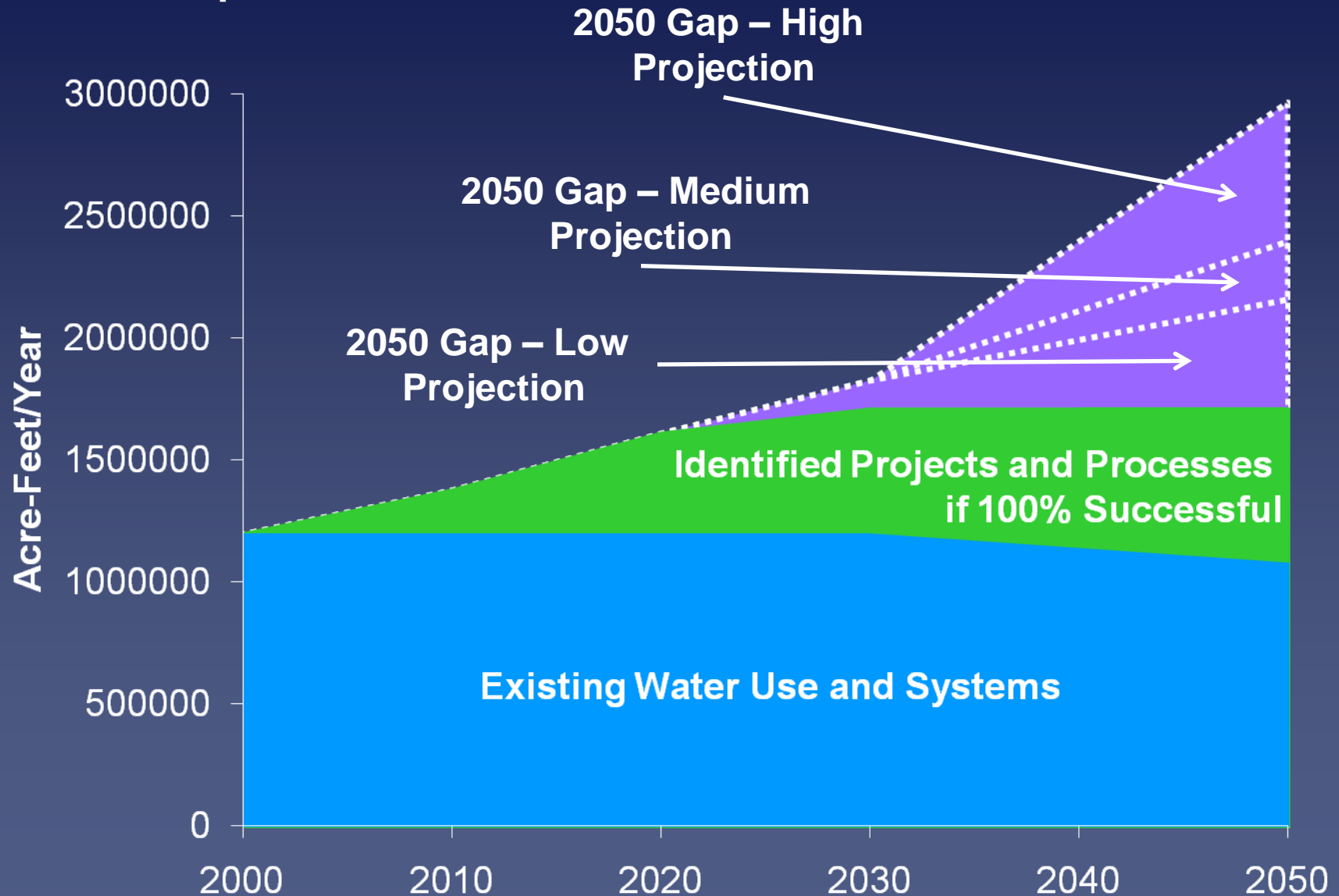
- Municipal & Industrial
- Agricultural
- Environmental & Recreational



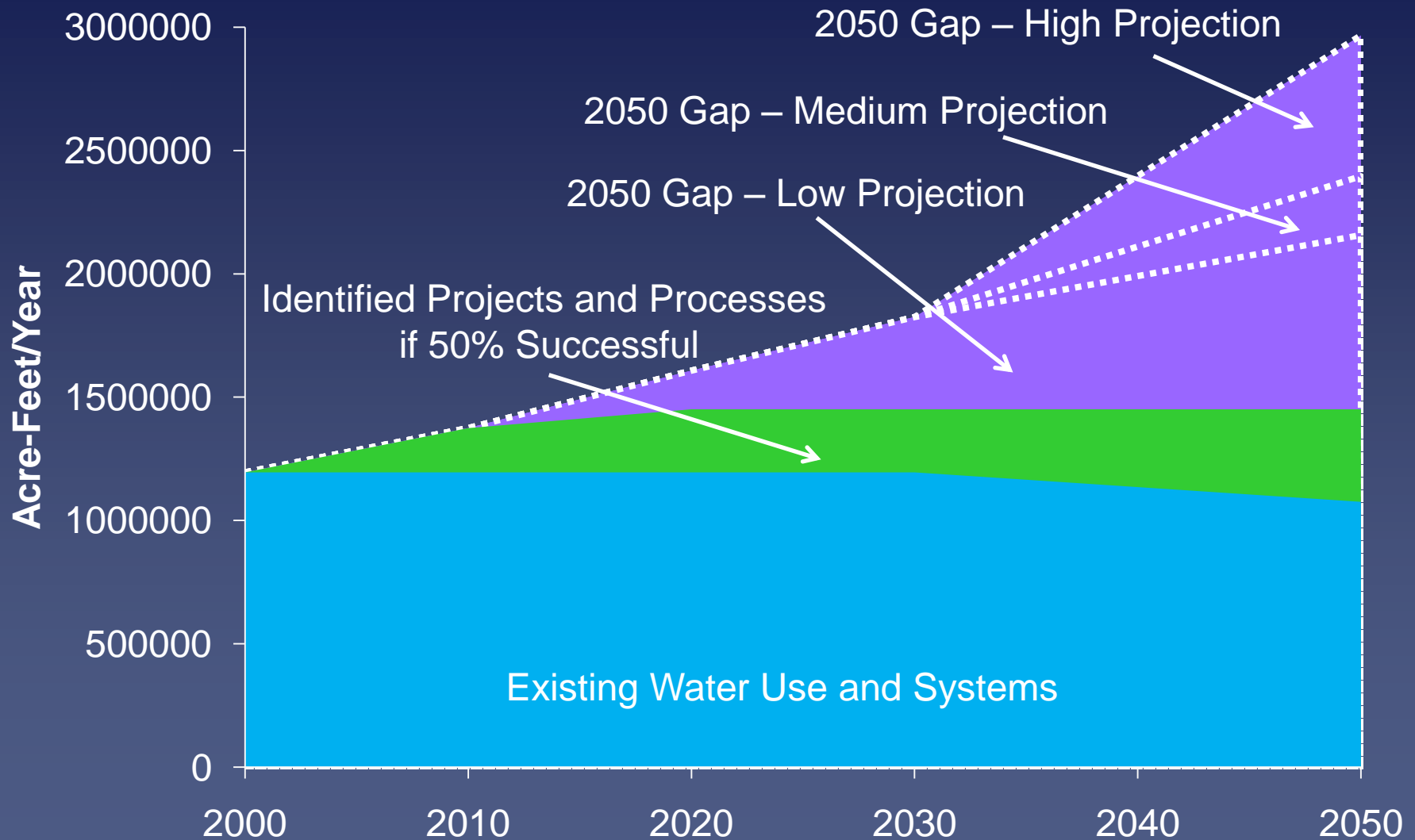
Development of Scenarios

- Overview of Water Needs
 - M&I (short-term and long-term)
 - Agricultural
 - Environmental Needs
- Scenario Development for M&I Needs
 - Low to High Demand
 - Low to High Supply
- Scenario Portfolios for M&I Needs

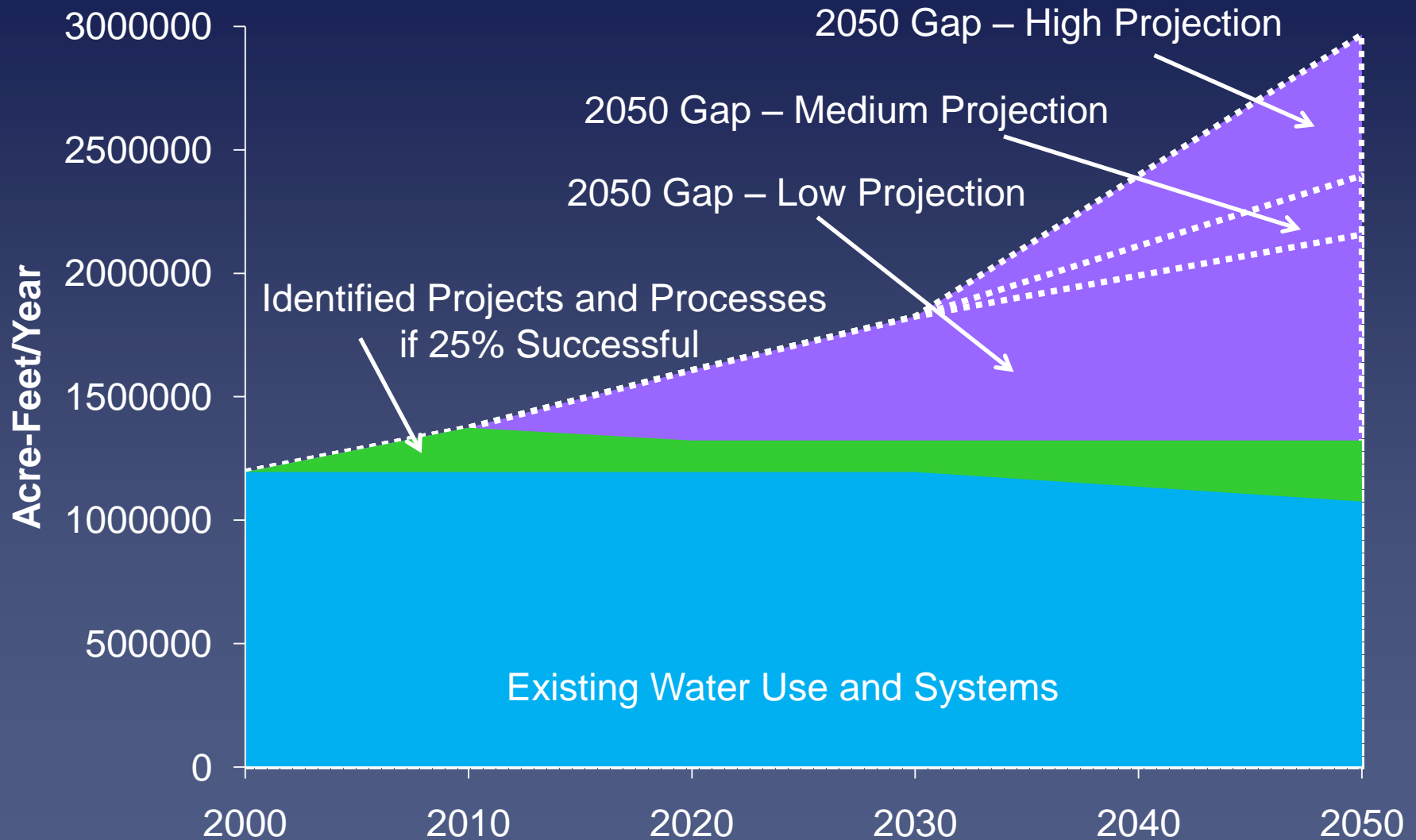
State of Colorado Projected M&I Water Use and Gaps



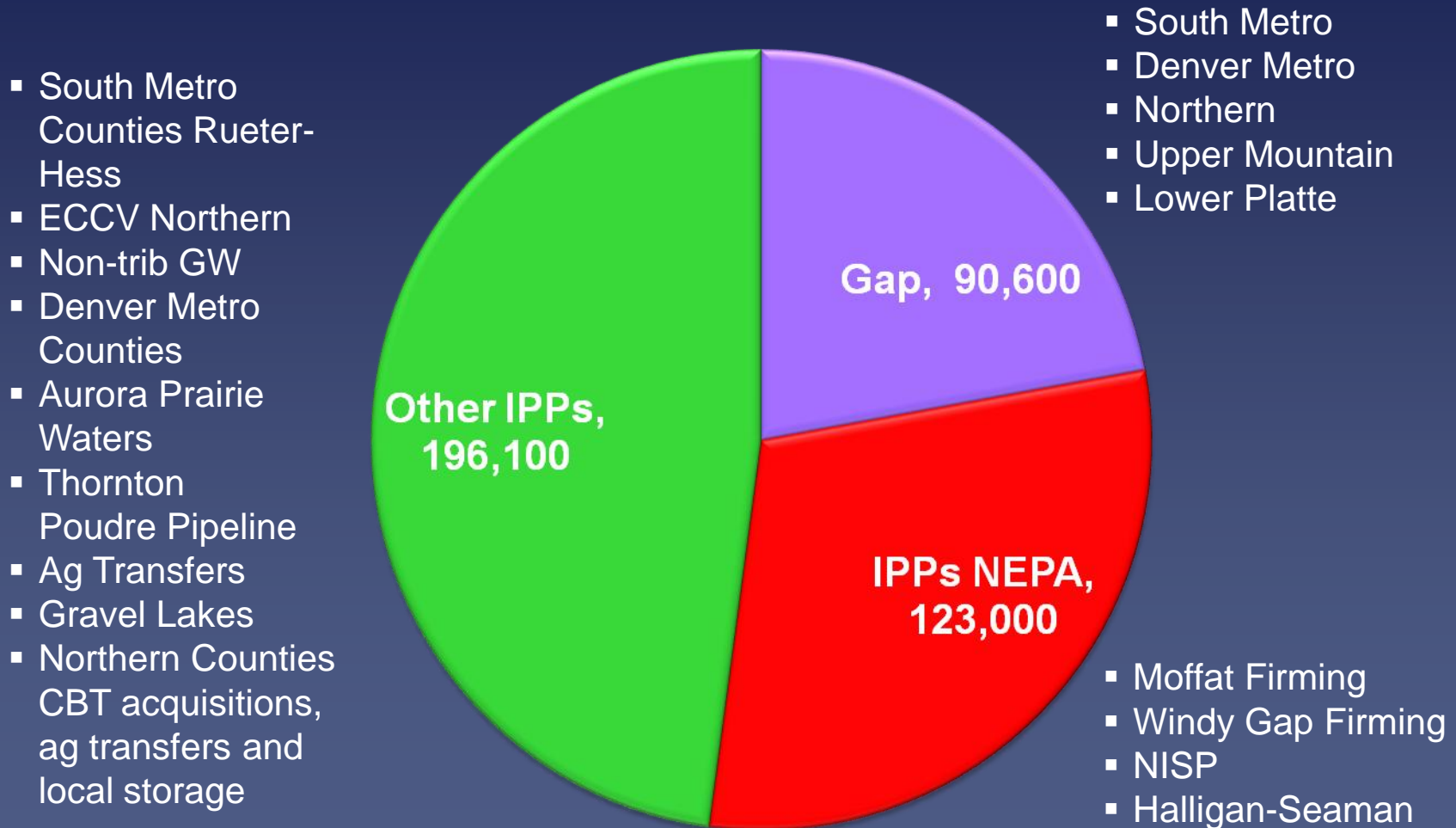
State of Colorado Projected M&I Water Use and Gaps



State of Colorado Projected M&I Water Use and Gaps

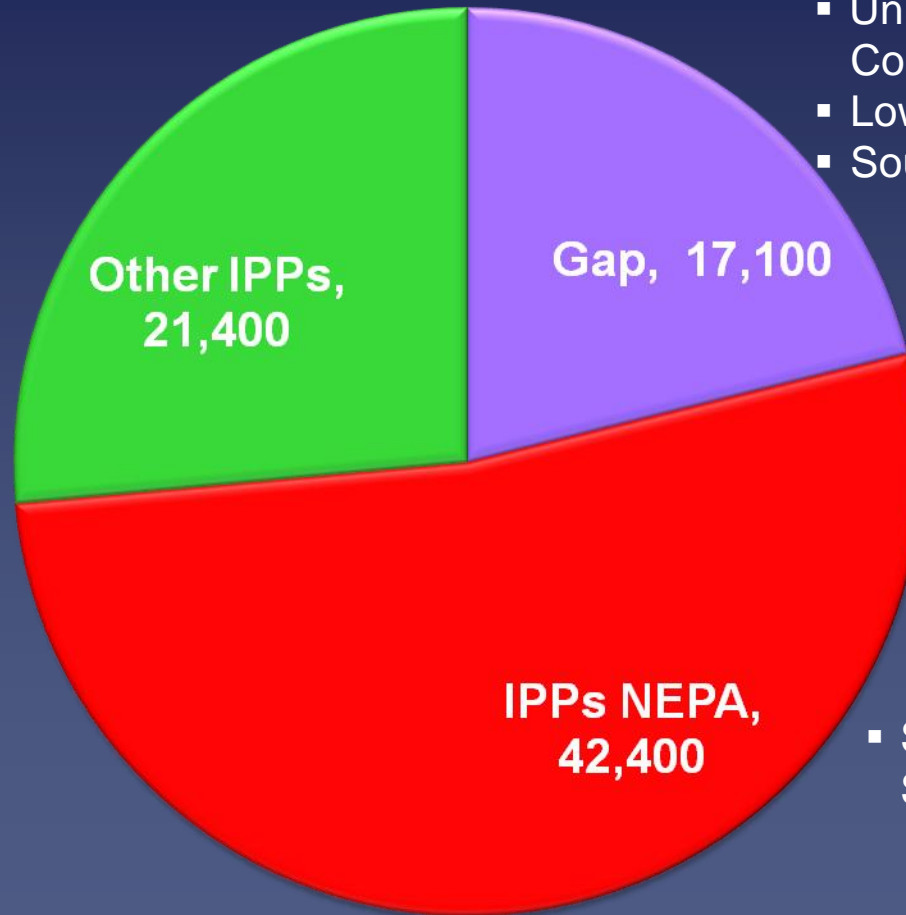


In 2030, the South Platte and Metro Basins will have 409,700 of New Demand



In 2030, the Arkansas Basin will have 80,900 of New Demand

- Arkansas Valley Conduit
- Well augmentation
- Non-trib GW
- PSOP
- Existing water rights
- Agricultural Transfers

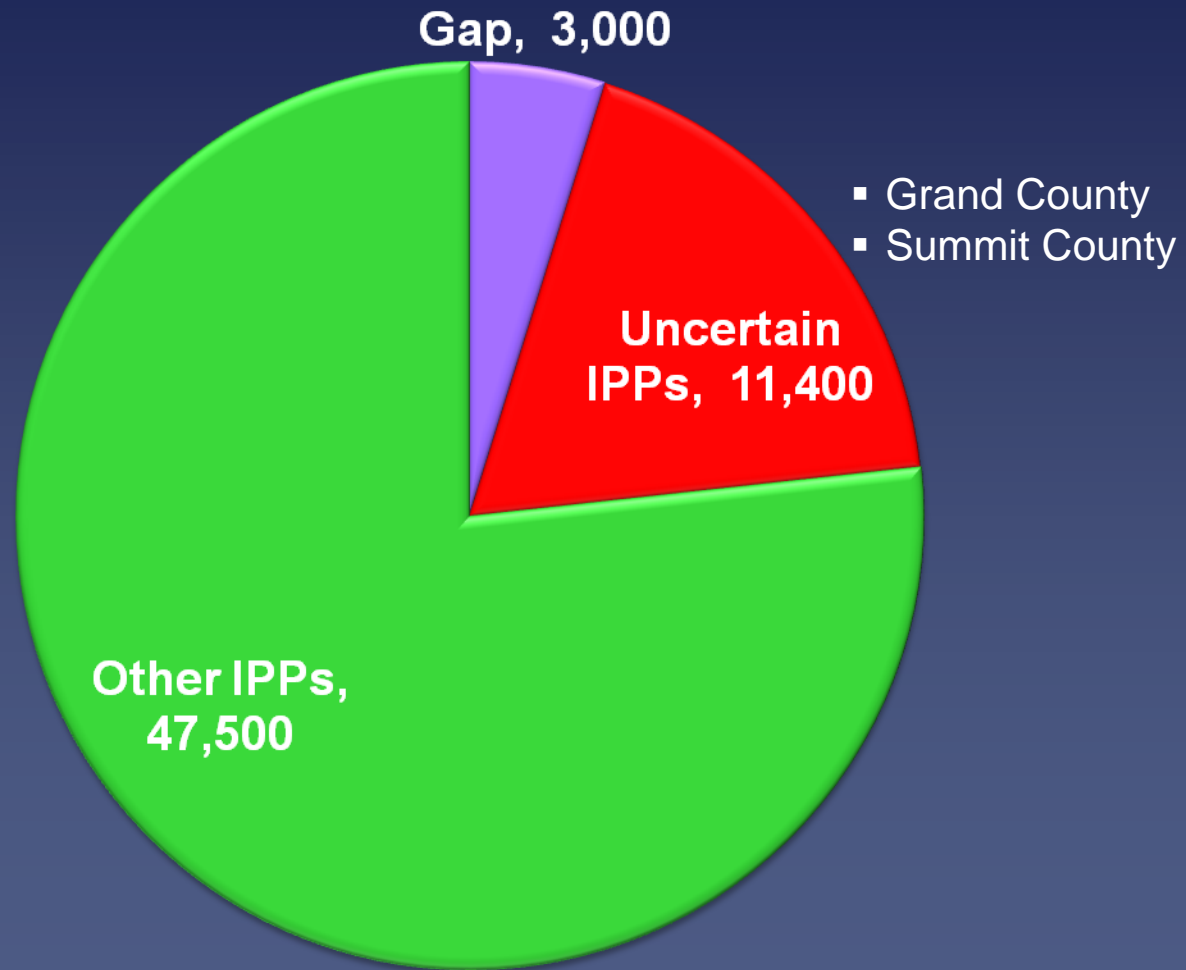


- Upper Arkansas
- Unincorporated El Paso County
- Lower Arkansas
- Southwestern Arkansas

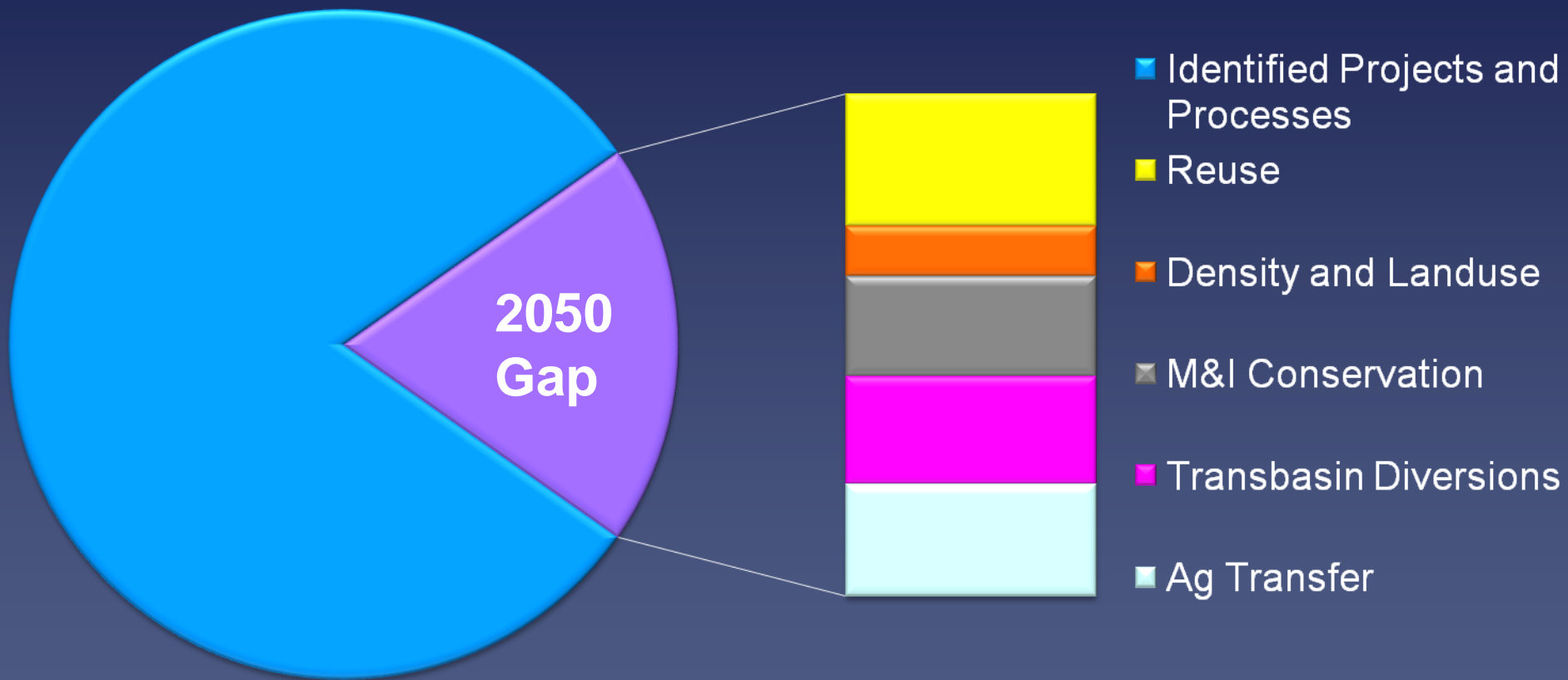
- Southern Delivery System

In 2030, the Colorado Basin will have 61,900 of New Demand

- Pitkin County IPPs Existing Supplies
- Ruedi Reservoir
- Mesa City IPPs Existing Supplies, Ag Transfers, Ruedi/Wolford
- Jerry Creek Reservoir
- Garfield City IPPs Existing Supplies
- Ag Transfers
- Eagle City IPPs Existing Supplies
- Ag Transfers
- Eagle River Process



Example of Portfolio to Meet 2050 M&I Needs



2050 Planning Horizon for Colorado's Water Supply Future

Demand Factors:

- M&I Growth
- Energy Demands
- Identified Projects and Processes Uncertainty



Supply Factors:

- Colorado River Hydrologic Variability
- Climate Change
- Compact Considerations

Scenario for Colorado's Water Supply Future

- Not forecasts of the future
- Represent potential conditions in the future
- Influenced by issues outside of the control of a water manager

*There does not need to be
agreement on each scenario just an
acknowledgement that these scenarios
may happen in the future*

Scenario for Colorado's Water Supply Future

- Strategies are water management responses to future conditions
- Strategies can be related to future conditions and assessed by performance measures related to the vision goals
- Utilize no regrets planning platform

Scenario Development Summary

- Many issues outside of control of water manager
- For this effort have focus on issues that impact water demand and supply
- Developed narratives for demands and supply
- Demand narratives are very detailed based on 2050 demands projections
- Supply narratives are more general detail will be provided by the Colorado River Water Supply Availability Study

2050 Planning Horizon for Colorado's Water Supply Future

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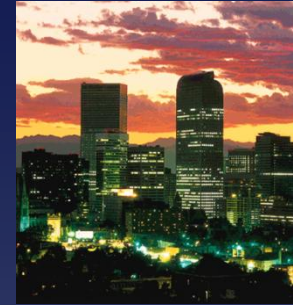


Supply Factors:

- Colorado River Hydrologic Variability
- Climate Change
- Compact Considerations

Water Supply Strategies

- Water Conservation
- Agricultural Transfers
 - Conventional and alternative transfers
- Development of New Supplies
 - West Slope M&I and Energy
 - Transbasin

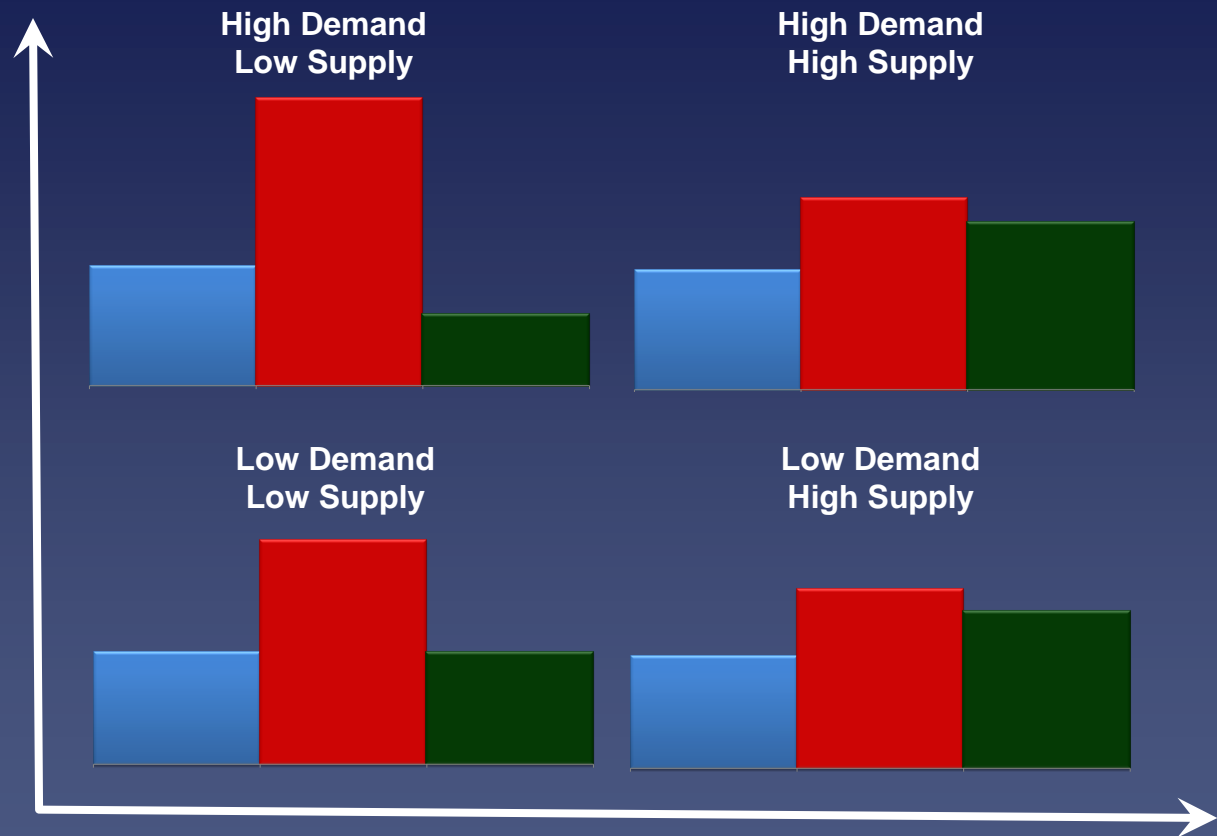


These strategies address M&I needs, but options to address agricultural and nonconsumptive needs will be added as strategies are evaluated

2050 Planning Horizon for Colorado's Water Supply Future

Demand Factors:

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Conservation Strategy

Conservation Strategy Next Steps

- Complete basin by basin analysis
- Work with water providers and Basin Roundtables to confirm analysis
 - Confirm where 2000 to current savings is permanent or temporary
 - Confirm conservation measures utilized
- Summarize findings

Conservation Strategy Next Steps

- Identify benefits, implementation issues, potential attributes and acceptability
- Cost Estimates
- Utilize demand reductions as baseline conditions for meeting 2050 water needs
- Analyze other conservation elements such as sharing of conserved water and the infrastructure and institutional arrangements required

M&I Conservation Strategy

Example of Benefits, Impacts and Attributes

Benefits	Impacts	Potential Attributes
Cost effective water supply strategy	Potential reliability concerns	Environmental or recreational flows
Reduces need for future transbasin diversion	Consideration of utilities financial model	
Reduces need for future agricultural transfers	For higher levels of conservation, potentially severe landscape impacts	

*Overview of Agricultural Transfer
Strategy and New Supply
Development Strategy*

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 - Incorporate other conservation elements such as sharing of conserved water and the infrastructure and institutional arrangements required
- Qualitative description of how each strategy meets the Vision Statement and Vision Goals

Assumptions for Today's Analysis for the Agricultural Transfer Strategy and New Supply Development Strategy

- Delivery of similar water quality
- With exception of Green Mountain concept, strategies will deliver water in the range of 100KAF to 250KAF
- Provide apples to apples comparison of key cost components
- Cost presented in terms of net present value and cost per acre-foot basis

Cost Estimate Approach

- High level or reconnaissance planning approach
- Preliminary estimates
- Reviewed existing studies
- Identified major cost components
 - Pipelines
 - Pump stations
 - Tunneling
 - Water treatment
 - Land Costs
- 2009 unit costs

Conveyance Cost Components

Capital

- Pipeline
- Pump stations
- Tunneling
- Land/Easements
- Engineering and Legal
- General contingencies

Annual O&M

- Power costs
- Pump and pipeline maintenance

Treatment Cost Components

Capital

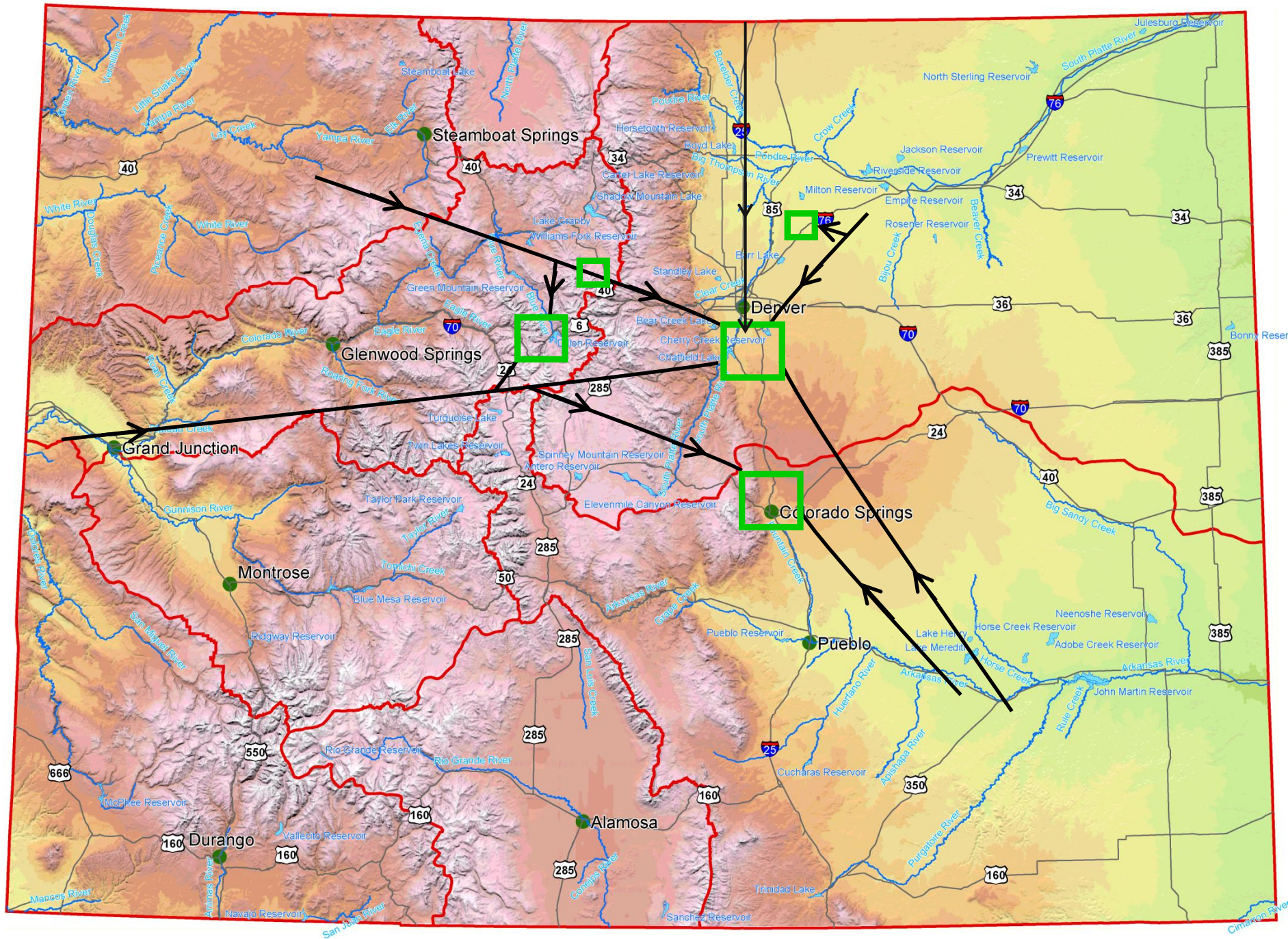
- Treatment type based on water quality
 - Reverse osmosis
 - UV for bypass water
 - Conventional treatment
- Includes costs for building treatment facilities
- Unit costs for treatment range from \$1.90/gallon to \$5.02/gallon

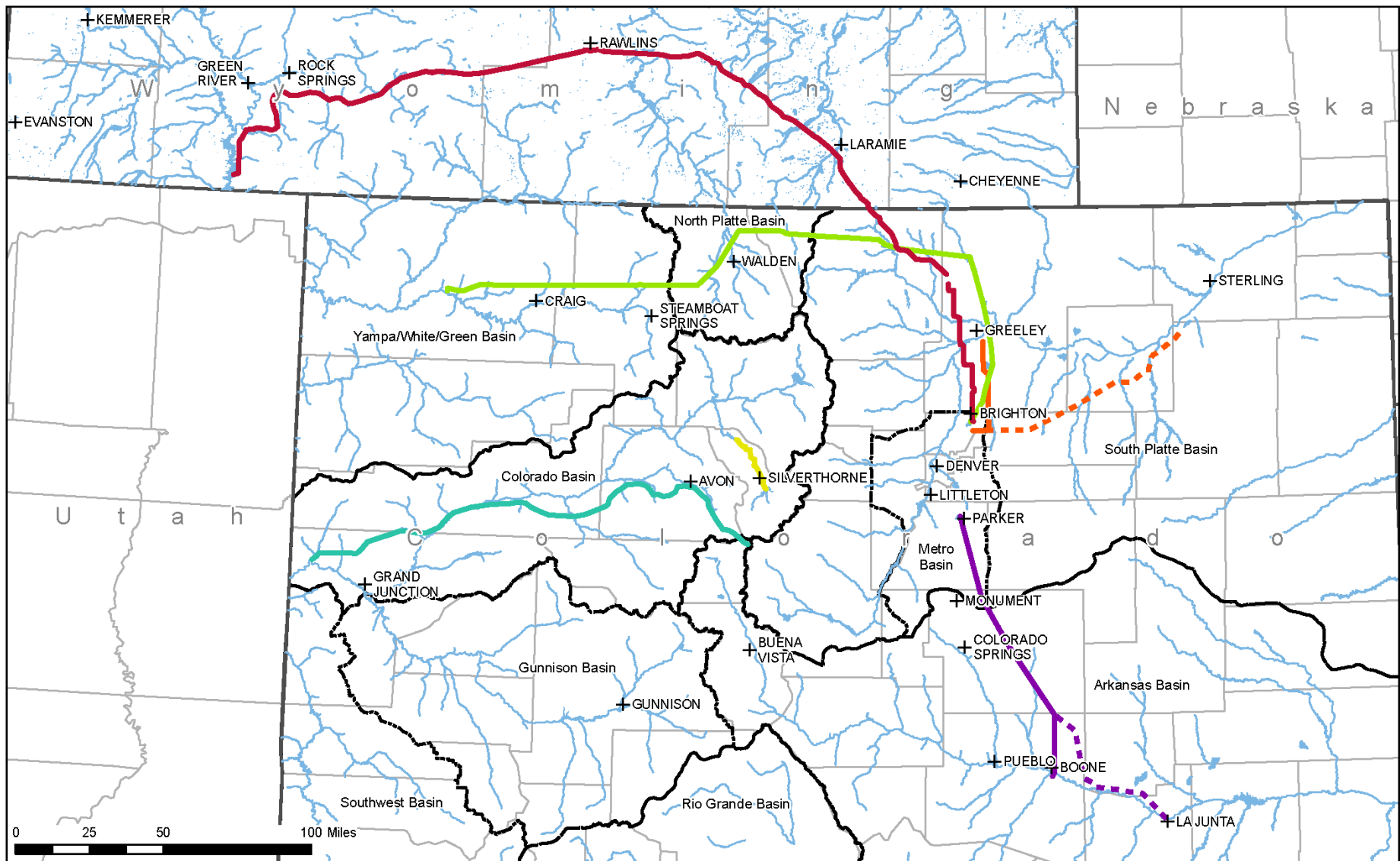
Annual O&M

- O&M costs based on treatment type
- O&M costs range from \$0.30/Kgal to \$1.03/Kgal

Concepts That will be Presented Today

- Lower South Platte concept
- Lower Arkansas concept
- Green Mountain concept
- Yampa concept
- Flaming Gorge concept
- Colorado River Return Reconnaissance concept





Legend

Colorado River Return Reconnaissance Study Concept

Flaming Gorge Concept

Yampa River Concept

Middle South Platte Concept

Lower South Platte Concept

Lower Arkansas Concept 1

Lower Arkansas Concept 2

Green Mountain Concept

Colorado Basins



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Agricultural Transfer Strategy

Agricultural Transfer Strategy Overview

- Overview of projects and methods to meet needs matrix for roundtables
- Engineering Evaluation Elements
 - Lower South Platte concept 100,000-250,000 acre-feet
 - Lower Arkansas concept 100,000-250,000 acre-feet
- Example benefits and issues with each project

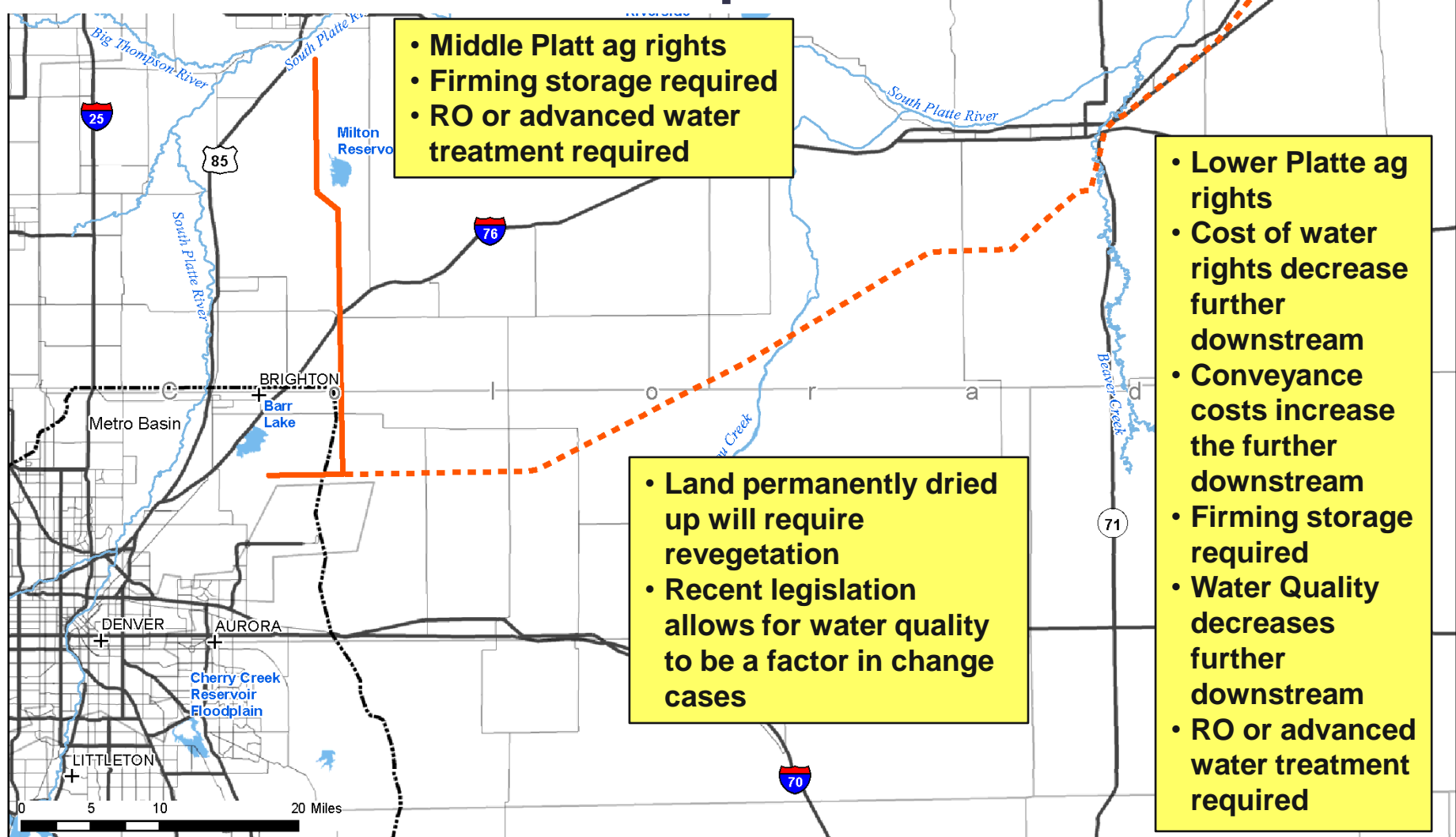
Alternative Agricultural Water Transfer Methods - Arkansas Basin (Grant Awards)

Name of Project	Name of Applicant
Lower Arkansas Valley Super Ditch Company	Lower Arkansas Valley Water Conservancy District
High Line Canal Water Leasing Project	High Line Canal Company
The Effect of Land Fallowing and Water Rights Leasing on Corn Yield, Nutrient Needs and Economics in the Lower Arkansas River Valley of Colorado	Colorado State University (Southern Regional Extension Office)

Alternative Agricultural Water Transfer Methods – South Platte Basin (Grant Awards)

Name of Project	Name of Applicant
Alternative Water Transfers in the South Platte Basin Using the Farmers Reservoir and Irrigation Company System	Farmers Reservoir and Irrigation Company
Lower South Platte Irrigation Research and Demonstartion Project	Parker Water and Sanitation District
Development of Practical Alternative Agricultural Water Transfer Measures for Colorado Irrigated Agriculture	Colorado Corn Growers

Lower South Platte Concept



Legend

- + Cities
- Highways
- Other Roads
- Rivers and Streams
- Lakes and Reservoirs
- Colorado Basins
- Middle South Platte Concept
- Lower South Platte Concept



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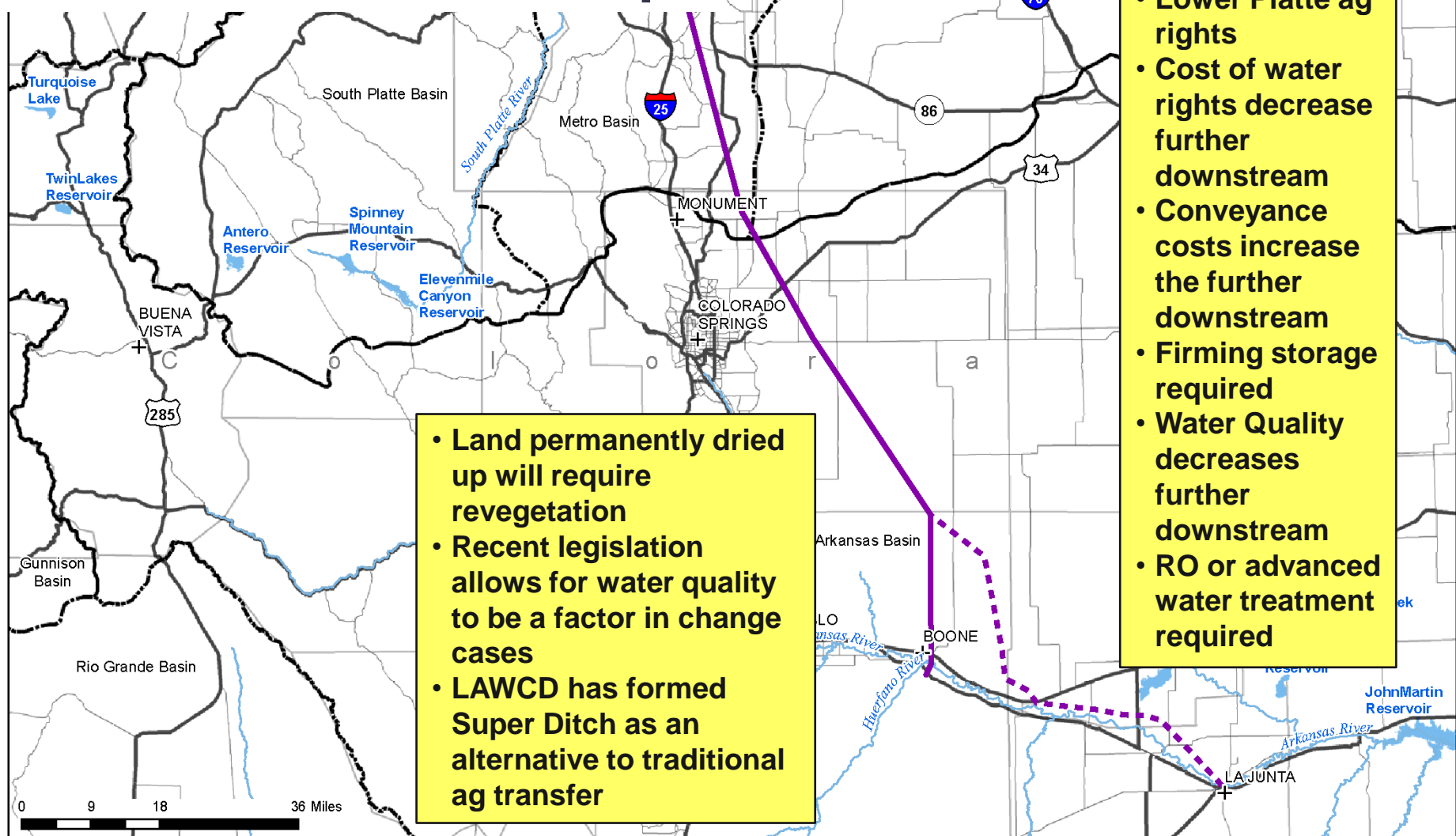
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Lower South Platte Concept

Example of Benefits, Impacts, and Attributes

Benefits	Impacts	Potential Attributes
Less reliance on additional deliveries from headwaters areas, thus minimizing streamflow impacts in environmentally sensitive areas	Water quality is poor and treatment costs (capital and O&M) are high	Potential to collaborate with remaining agricultural users to construct lower basin storage or recharge facilities to improve agricultural yields or provide for well augmentation
Decreases the need for additional transbasin diversions	Disposal of treatment waste stream concentrate is a challenge and very costly	Shared infrastructure among water providers, resulting in economies of scale for capital and O&M
No net increase in depletions to the river system	Loss of irrigated acreage in production annually regardless of the type of agricultural transfer	Can provide for coordinated acquisition of agricultural rights for either a traditional or alternative transfer preserving higher quality/value agricultural production
	Significant energy requirements for pumping and water treatment	Conjunctive use with non-tributary groundwater can potentially improve the overall project operation

Lower Arkansas Concept



- Land permanently dried up will require revegetation
- Recent legislation allows for water quality to be a factor in change cases
- LAWCD has formed Super Ditch as an alternative to traditional ag transfer

- Lower Platte ag rights
- Cost of water rights decrease further downstream
- Conveyance costs increase the further downstream
- Firming storage required
- Water Quality decreases further downstream
- RO or advanced water treatment required

Legend

- + Cities
- Highways
- Other Roads
- Rivers and Streams
- Lakes and Reservoirs
- Colorado Basins
- Lower Arkansas Concept 1
- Lower Arkansas Concept 2



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Lower Arkansas Concept

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Decreases the need for additional transbasin diversions	Transfer to South Metro Area may be of concern	Shared infrastructure among water providers, resulting in economies of scale for capital and O&M
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	Significant energy requirements for pumping and water treatment	

New Supply Development

New Supply Development Strategy Overview

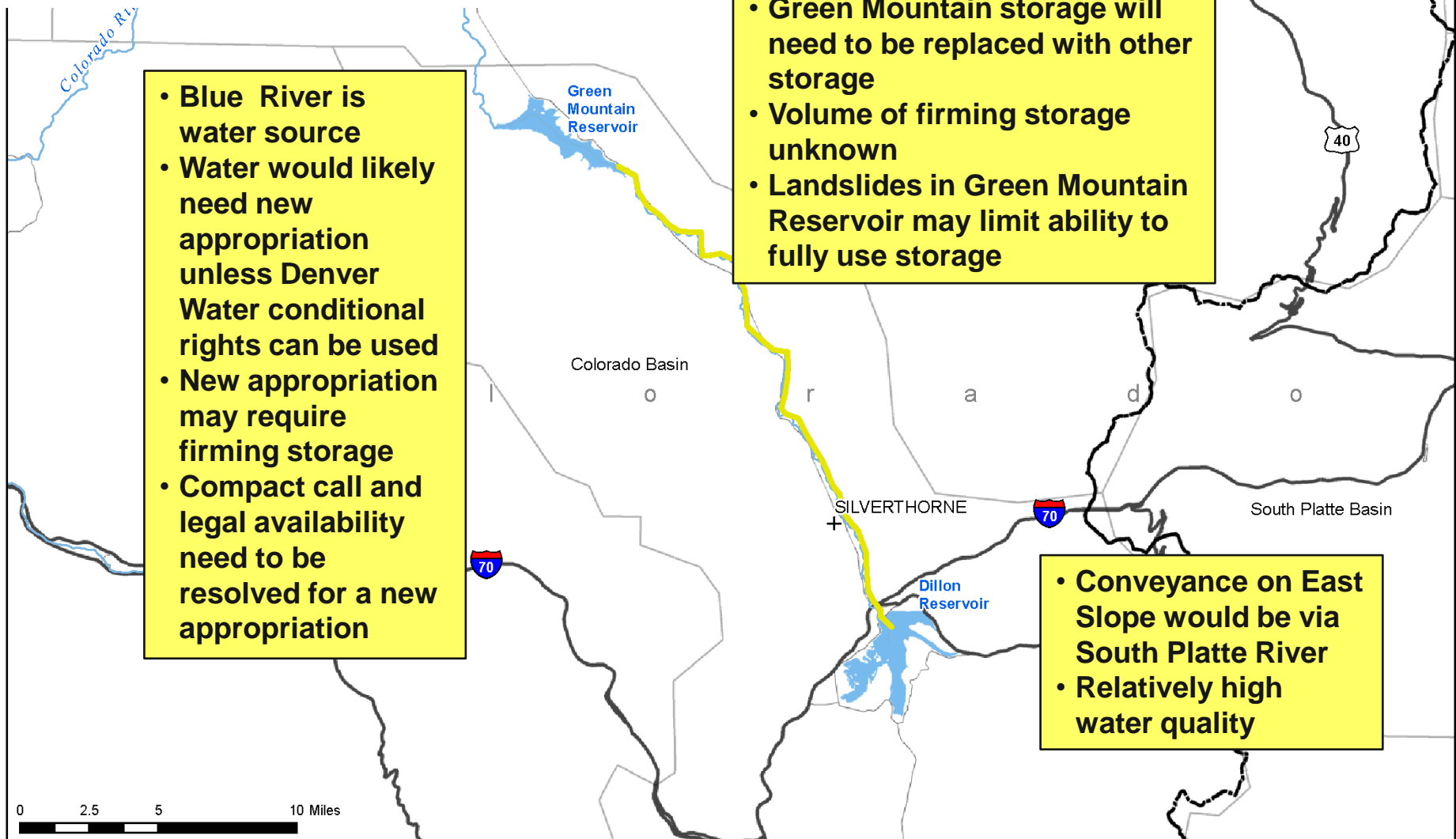
- Overview of projects and methods to meet needs matrix for roundtables
- Engineering Evaluation Elements
 - Green Mountain concept <100,000 acre-ft
 - Yampa concept 100,000 to 250,000 acre-ft
 - Flaming Gorge concept 100,000 to 250,000 acre-ft
 - Colorado River Return Reconnaissance concept 100,000 to 250,000 acre-ft
- Example benefits and issues with each project

Green Mountain Concept

- Blue River is water source
- Water would likely need new appropriation unless Denver Water conditional rights can be used
- New appropriation may require firming storage
- Compact call and legal availability need to be resolved for a new appropriation

- Green Mountain storage will need to be replaced with other storage
- Volume of firming storage unknown
- Landslides in Green Mountain Reservoir may limit ability to fully use storage

- Conveyance on East Slope would be via South Platte River
- Relatively high water quality



Legend

- + Cities
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- Lakes and Reservoirs
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- Green Mountain Concept



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Green Mountain Concept

Example of Benefits, Impacts, and Attributes

Benefits	Impacts	Potential Attributes
Minimize loss of irrigated acres in South Platte and Arkansas Basins	Potential for increased compact call	Delivery to North Fork of South Platte upstream of Denver Metro area for gravity delivery to Denver Water customers and other water providers
Maximize Colorado's Colorado River compact entitlement	Additional in-basin storage	
Additional flows in Upper South Platte	Diminished flows in rivers below proposed diversions with potential increases in TDS and other water quality impacts	Protect or enhance Blue River flows
Grand County streamflow management	Phosphorus levels in Dillion Reservoir	Exchanges for additional flows in Colorado headwaters
Additional Grand Valley water supplies	Green Mountain Reservoir levels	Multi-purpose storage for endangered species and other Colorado Basin needs

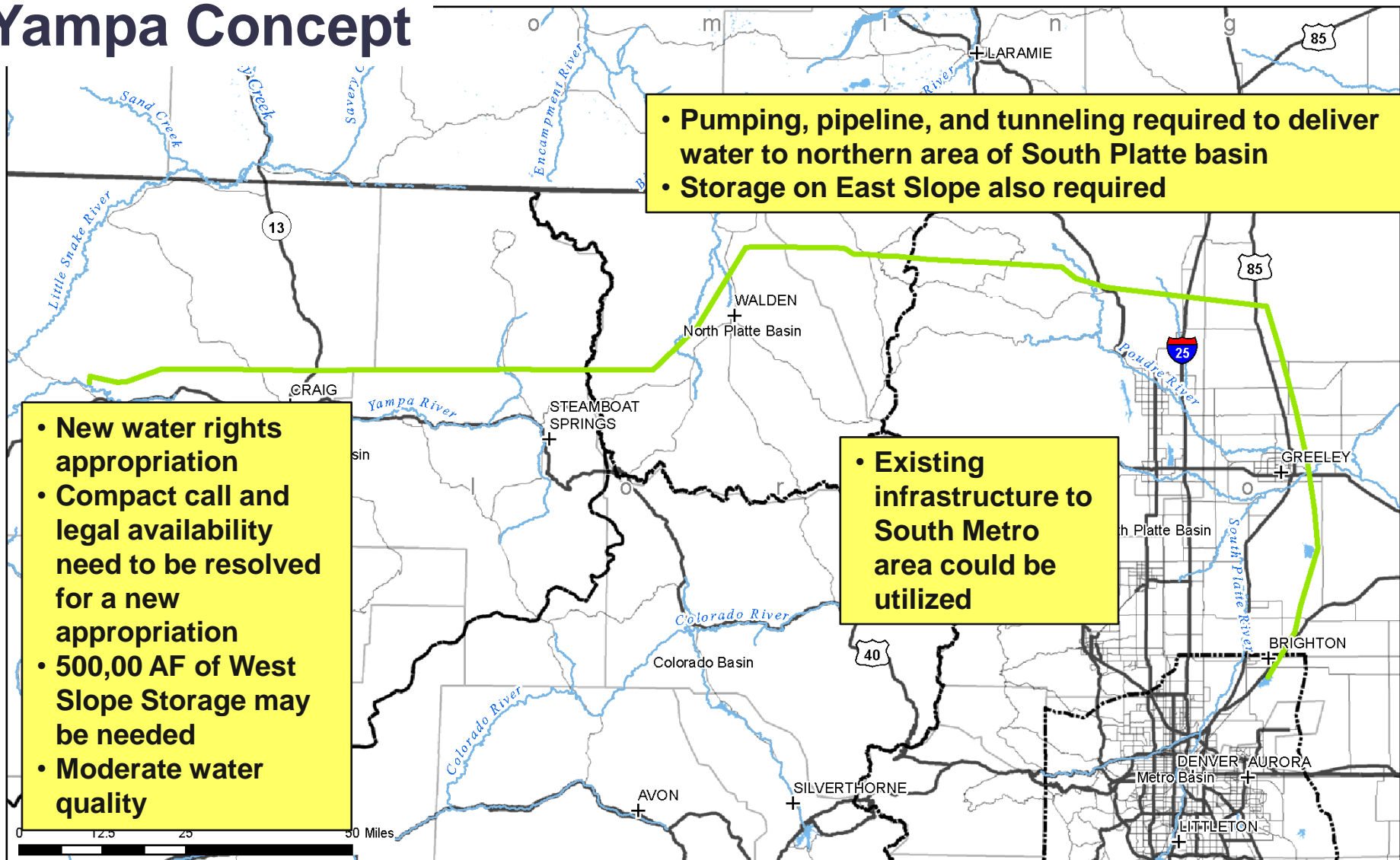
Green Mountain Concept

Example of Benefits, Impacts, and Attributes

(cont.)

Benefits	Impacts	Potential Attributes
Dillon Reservoir Levels	Green Mountain Reservoir/ Wolcott Reservoir Swap	Ability to exchange water for Summit County Municipal and Industrial purposes
Additional water supplies for the upper Blue River		
Additional yield for Clinton Reservoir		
Blue River flow enhancement		
Additional west slope supplies		Recreation component for Wolcott Reservoir
Abandonment of some Eagle River rights		

Yampa Concept



Legend

- + Cities
- Highways
- Other Roads
- Rivers and Streams
- Lakes and Reservoirs
- Colorado Basins
- Yampa River Concept



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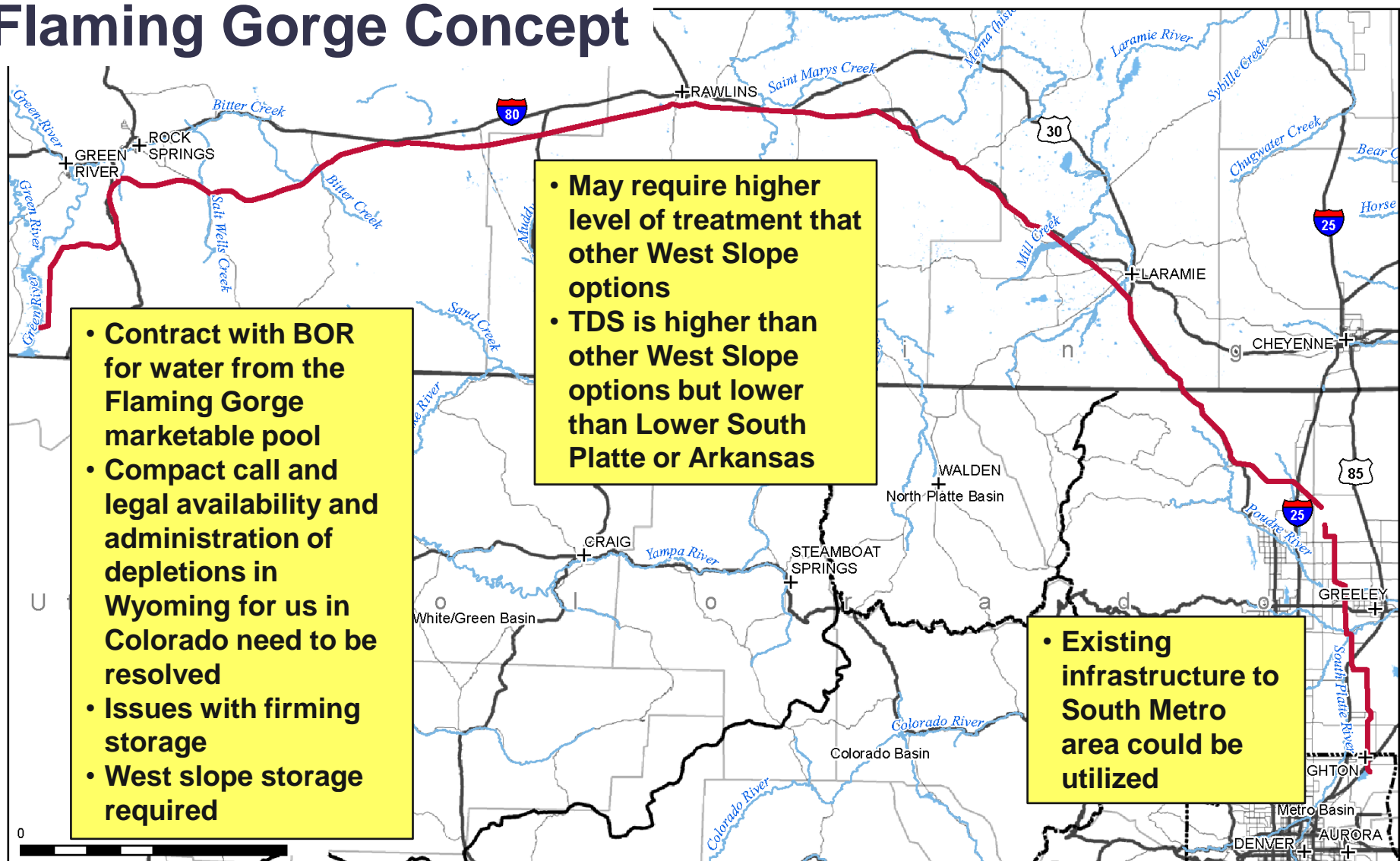
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Yampa Concept

Example of Benefits, Impacts, and Attributes

Benefits	Impacts	Potential Attributes
Minimize loss of irrigated acres in South Platte and Arkansas Basins	Potential for increased compact call	Multiple Front Range delivery locations
Maximize Colorado's Colorado River Compact entitlement	Large energy requirements	West Slope and East Slope storage
	Endangered species on Yampa and Green Rivers	East Slope hydropower facilities
	Dinosaur National Monument located downstream of proposed diversion	

Flaming Gorge Concept



Legend

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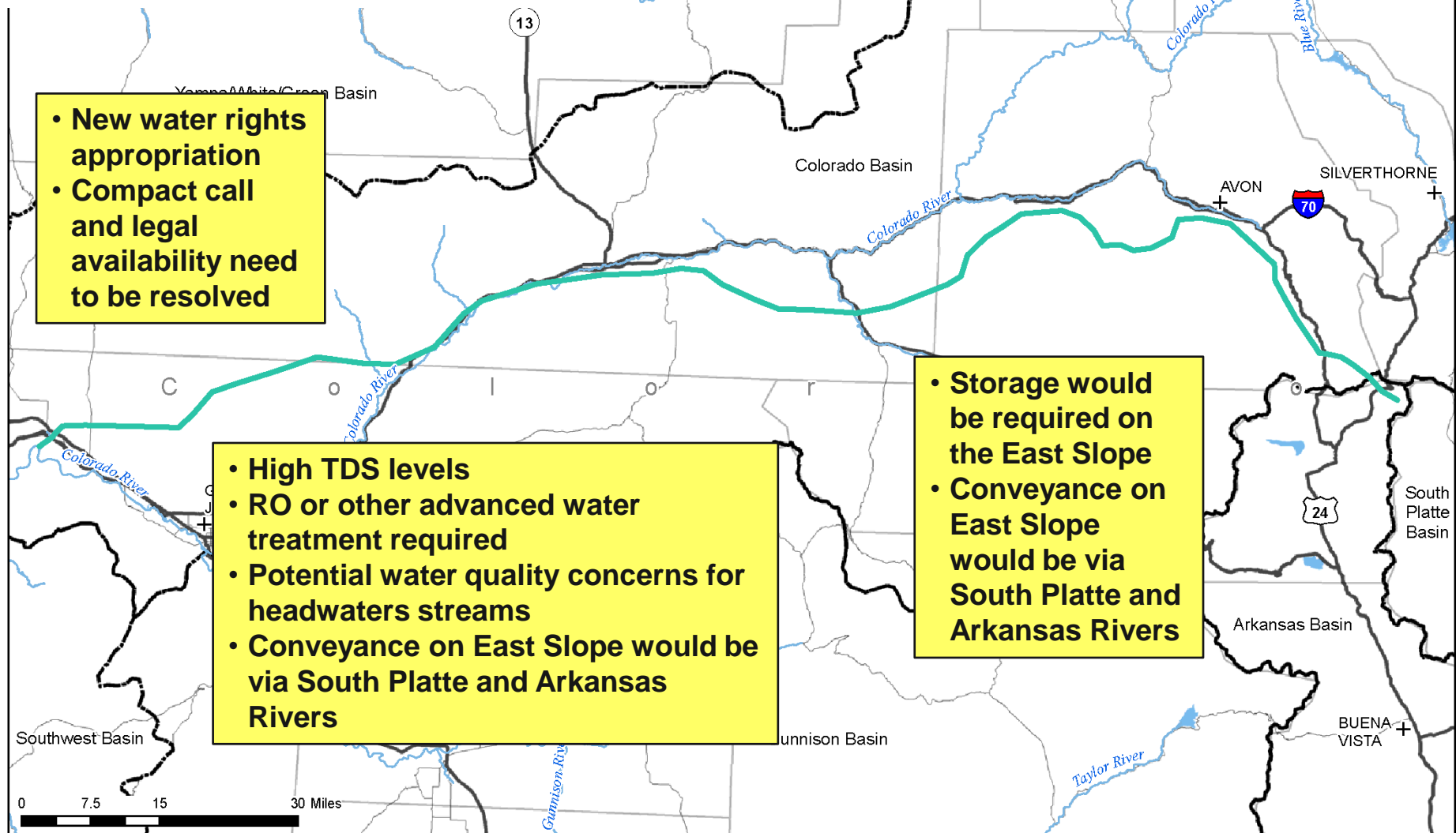
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Flaming Gorge Concept

Example of Benefits, Impacts, and Attributes

Benefits	Impacts	Potential Attributes
Minimize loss of irrigated acres in South Platte and Arkansas Basins	Potential downstream endangered fishes and depletion issues	Delivery to in-basin users for agricultural domestic augmentation and instream flows
Acceptable quality water source that may not require advanced water treatment processes	Enlargement or construction of additional storage in South Platte or Arkansas	Exchanges for additional flows in Colorado headwaters
Maximizes State of Colorado's Colorado River Compact entitlement without impacting streamflows Colorado	Large energy requirements	Allows water development while protecting recreational and environmental flows in Colorado River Basin
	Potential for increased compact call	
	Coordinated administration of water rights in the event of a compact call	

Colorado River Return



Legend

- + Cities
- Highways
- Other Roads
- Rivers and Streams
- Lakes and Reservoirs
- Colorado Basins
- Colorado River Return Reconnaissance Study Concept



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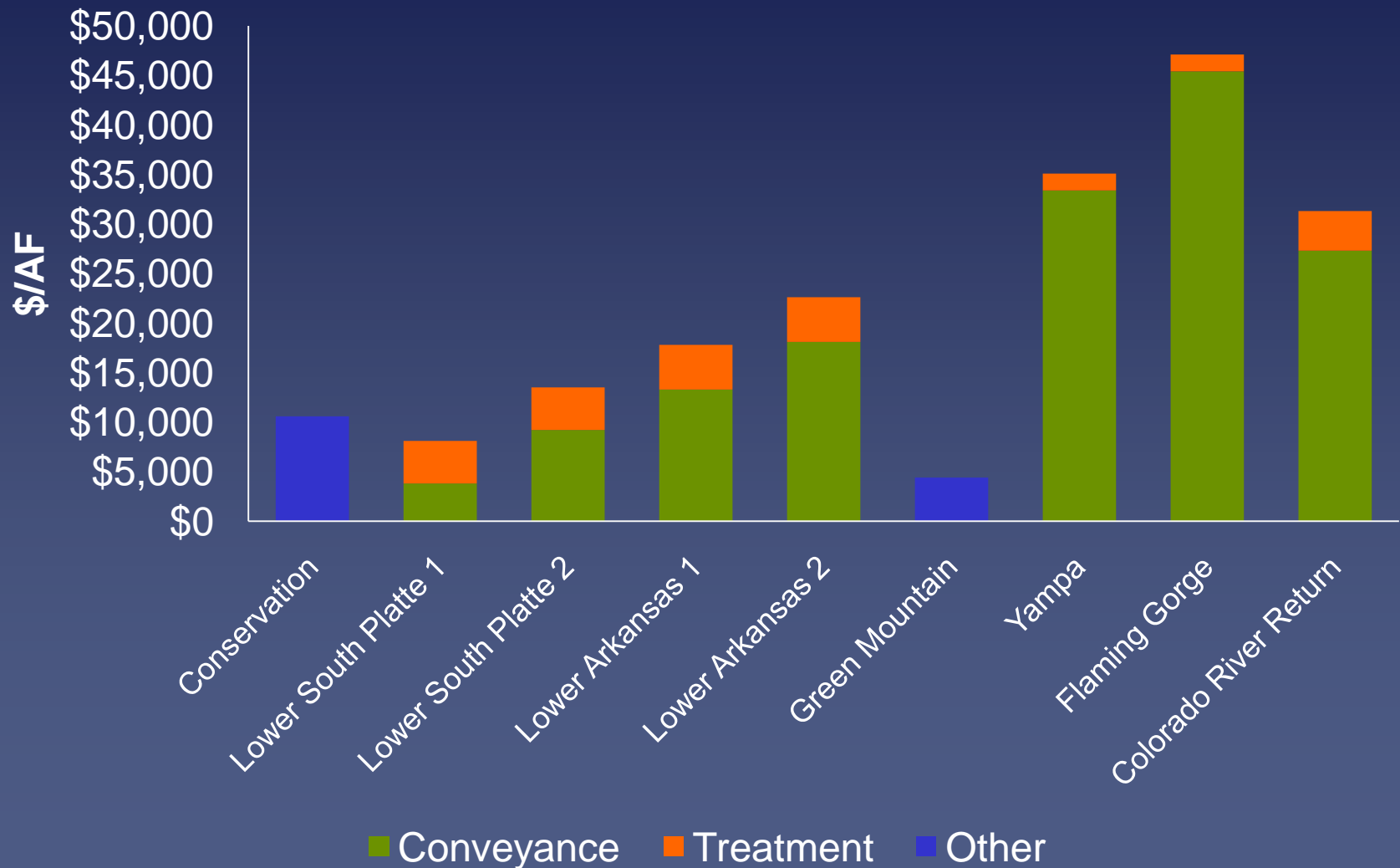
Colorado River Return Reconnaissance

Example of Benefits, Impacts, and Attributes

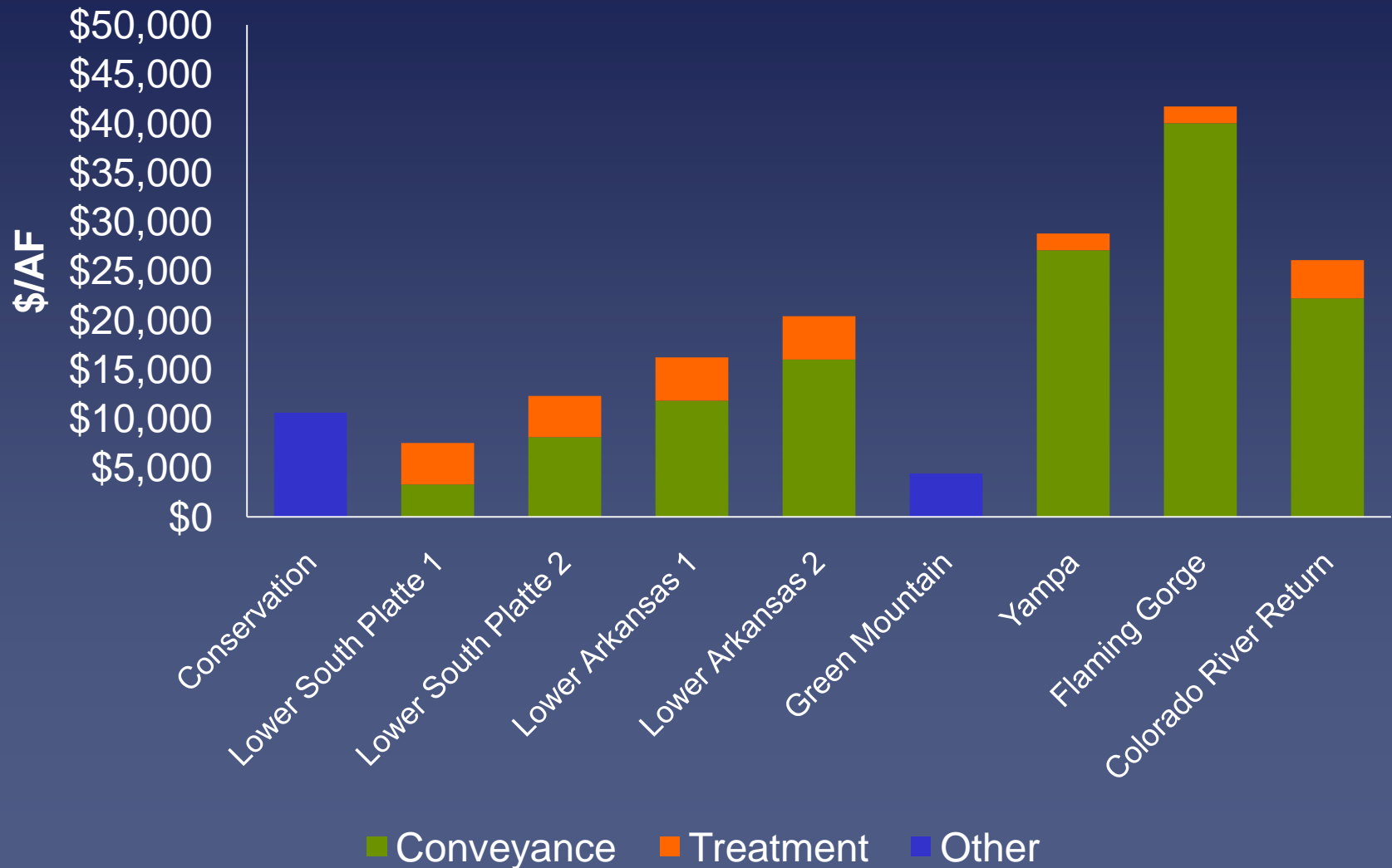
Benefits	Impacts	Potential Attributes
Minimize loss of irrigated acres in South Platte and Arkansas	Water quality is poor and treatment costs (capital and O&M) are high	Delivery to in-basin users for ag, domestic augmentation, and instream flows
Diverts below all major users in Colorado	Disposal of treatment waste stream concentrate is a challenge and very costly	Exchanges for additional flows in Colorado headwaters
Maximize Colorado's compact entitlement	Potential for increased compact call	Allows water development while protecting recreational and environmental flows in Colorado basin
Less reliance on additional deliveries from headwaters areas, thus minimizing streamflow impacts	Stream temperature, nutrients, and TDS in water after treatment will be different than streams receiving discharge from project	
Additional flows in upper South Platte, Arkansas, and Colorado Rivers, providing for additional environmental and recreational enhancement	Reduction of flows in the main stem Colorado River and the presence of federally listed fish species below the diversion	
Multiple basin delivery	Significant energy requirements	

Summary

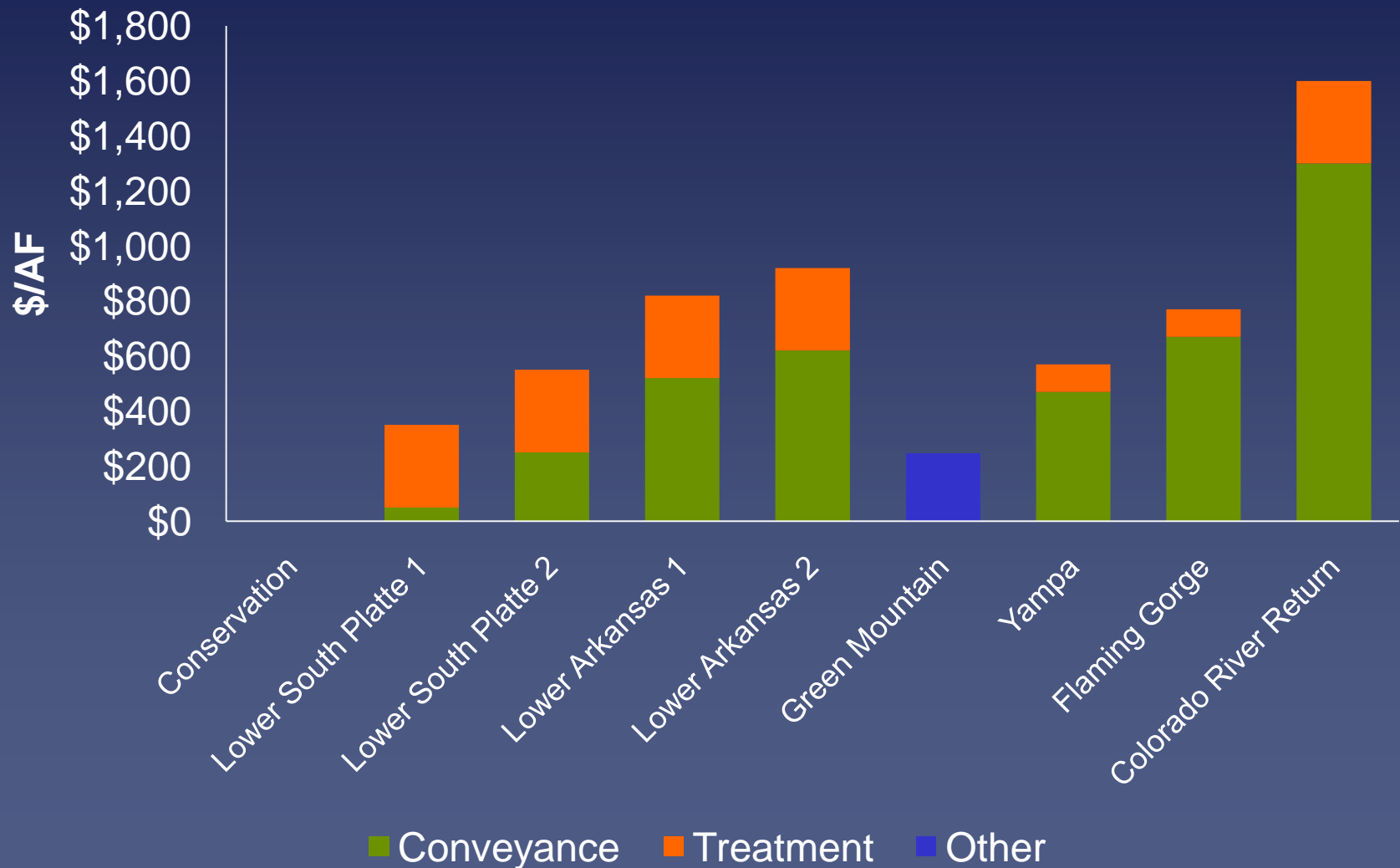
Summary of Capital Costs per Acre-Foot by Concept – 100,000 AF Increment (Preliminary Draft)



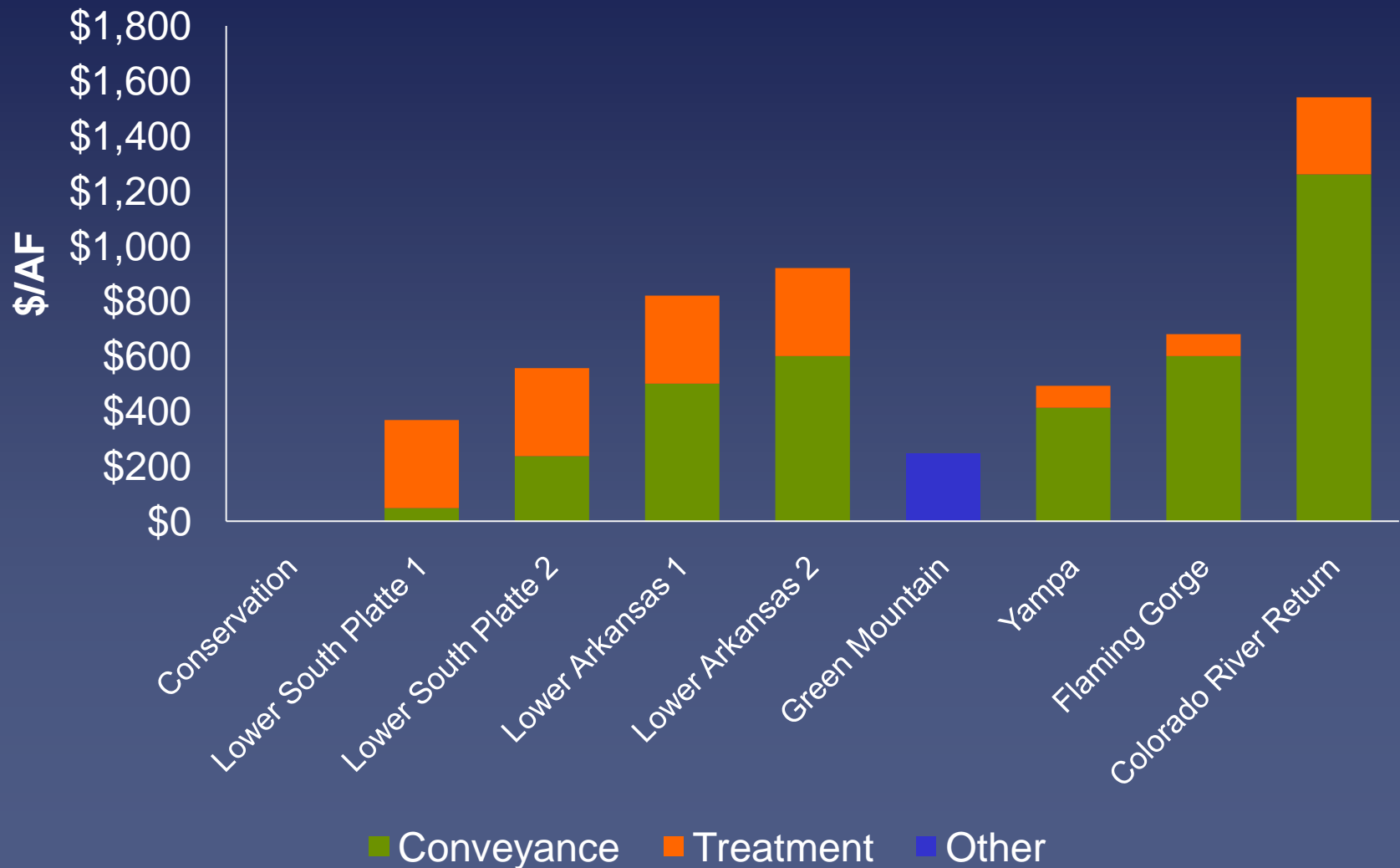
Summary of Capital Costs per Acre-Foot by Concept – 250,000 AF Increment



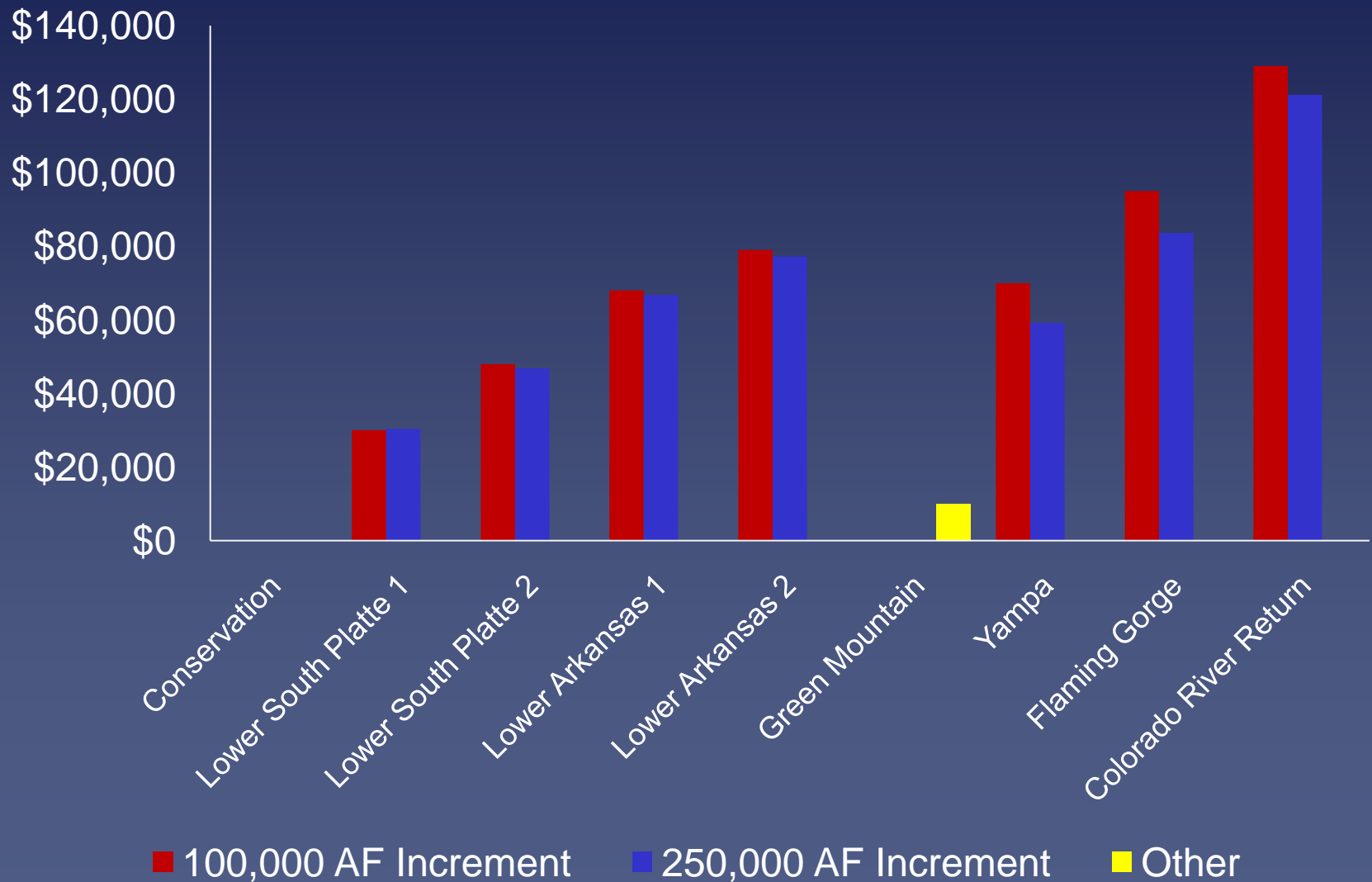
Summary of O&M Costs per Acre-Foot by Concept – 100,000 AF Increment



Summary of O&M Costs per Acre-Foot by Concept – 250,000 AF Increment



Summary of Net Present Value by Acre-Foot



Risk Management Strategies

Risk Management and Planning

- Timing and phased development
- Incremental development
- No regrets planning

Risk Management and Implementation

- West Slope Water Bank
- Compact Delivery via Blue Mesa
- Conjunctive Use of Denver Basin Aquifer
- System Wide Augmentation

Next Steps and Path Forward

Next Steps in Strategy Analysis

- Evaluation processes
- Tradeoffs
- Risk and uncertainty

Elements of the Visioning Process



**Colorado's
Water Supply
Future Vision
Goals**

Meet M&I Demands

Meet Agricultural Demands

**Meet Colorado's Environment and
Recreation Demands**

**Promote Cooperation Between Water Supply
Planners and Land Use Planners**

**Promote More Cooperation Among All
Colorado Water Users**

Optimize Existing and Future Water Supplies

Promote Cost-Effectiveness

Minimize the Net Energy Used to Supply Water

**Protect Cultural Values Linked to
Water Resources**

**Provide Operational Flexibility
and Coordinated Infrastructure**

**Promote Increased Fairness When
Water is Moved Between Areas**

**Comply With all Applicable
Laws and Regulations**

**Educate all Coloradoans on the
Importance of Water**

How Will we Know What Future Scenario we Are On?

- Need to have triggers at certain timeframes in the future
 - IPP success or failure
 - Population growth
 - Supply availability analysis
 - Climate change
- What actions are taken given on certain outcomes

Additional Information

Recap of Path Forward for CWCB and IBCC

- May IBCC Meeting Direction
- July CWCB Meeting Direction
- Visioning exercise – August IBCC Meeting
- October IBCC Meeting – Visioning and Strategies
- December IBCC Meeting – Strategies
- January CWCB Meeting – Conceptual Conservation Alternative Presented

Continued Development of Water Supply Strategies

- Front Range Needs Assessment request to examine strategies in coordination with West Slope
- West Slope Responds
- Additional interests including existing transbasin diverters and River District have confirmed the need for strategy development

Since the December 2008 IBCC Meeting, We Have Presented the Strategies Overview at Roundtable Meetings

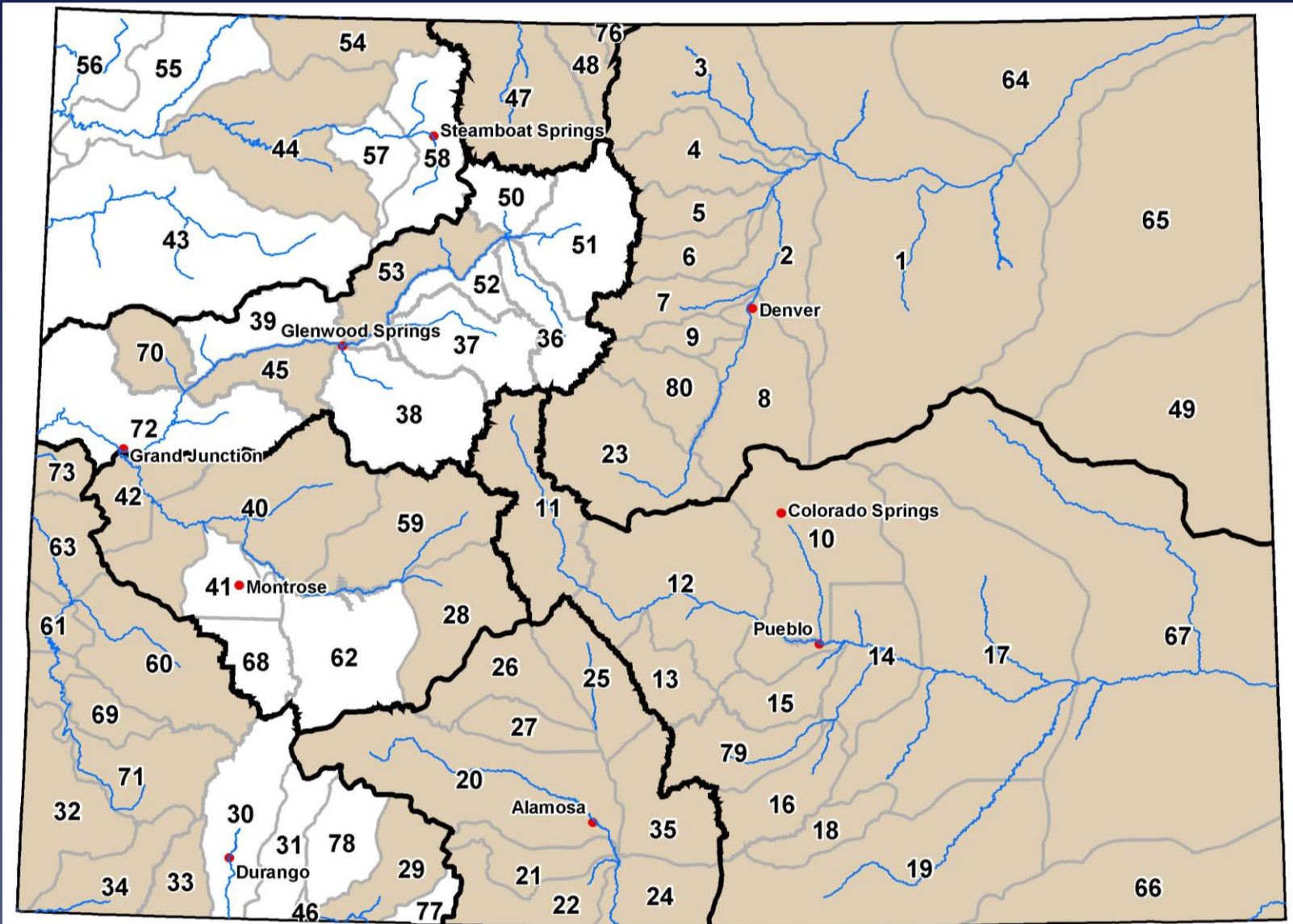
- January
 - Colorado
- February
 - Metro
 - South Platte
 - North Platte
 - Yampa
- March
 - Gunnison
 - Rio Grande
 - Southwest
 - Arkansas



Agricultural Needs

- Most areas in the state have shortages greater than 10 percent
- Based on Needs Assessment Updates, Yampa/White Basin and Gunnison Basin are executing WSRA grants to assess their current and future shortages and needs
- New Water Supply Development will look for opportunities for agricultural shortages

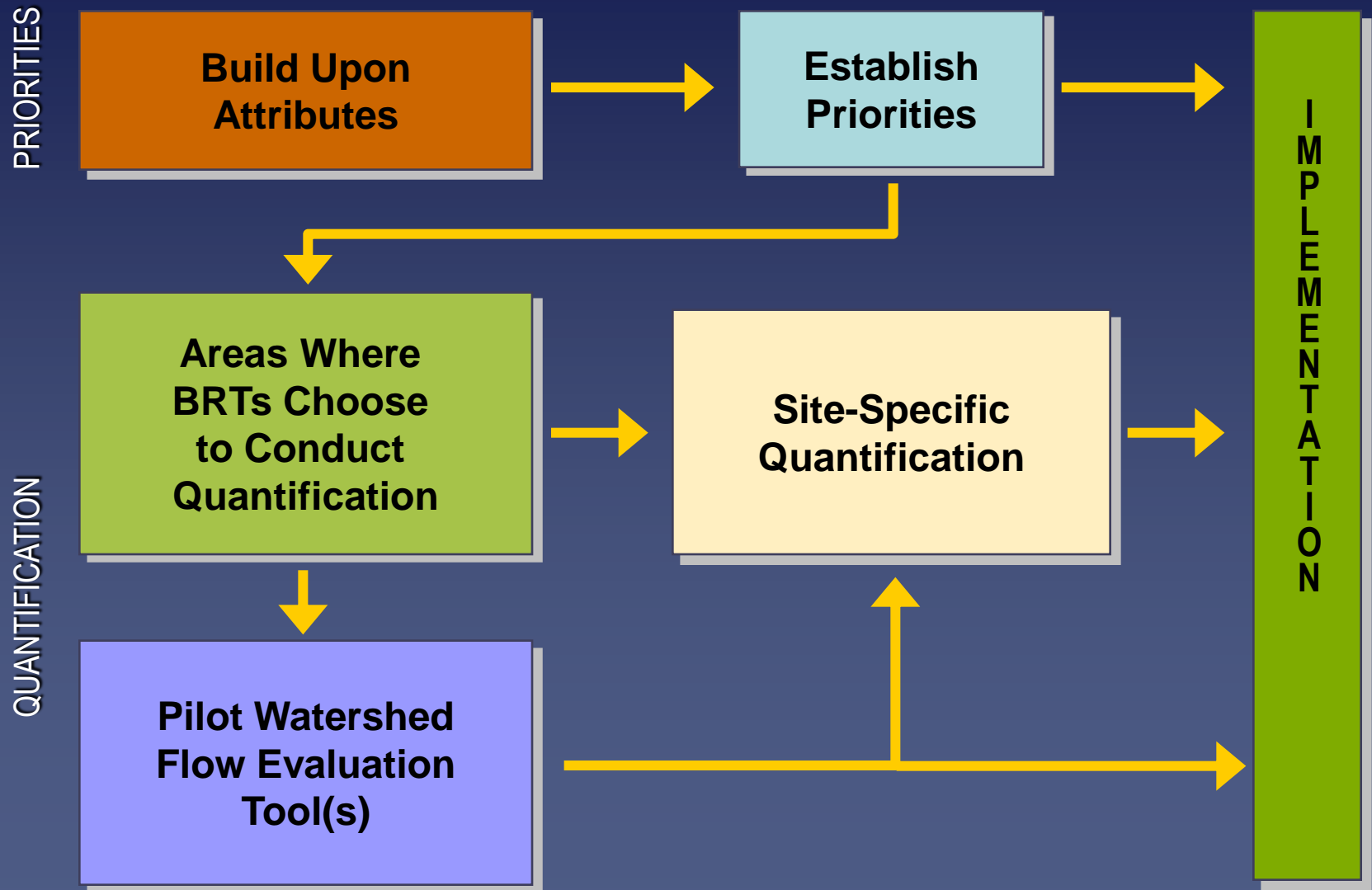
2030 Ag Water Shortages Greater than 10 percent (shaded) by Water District



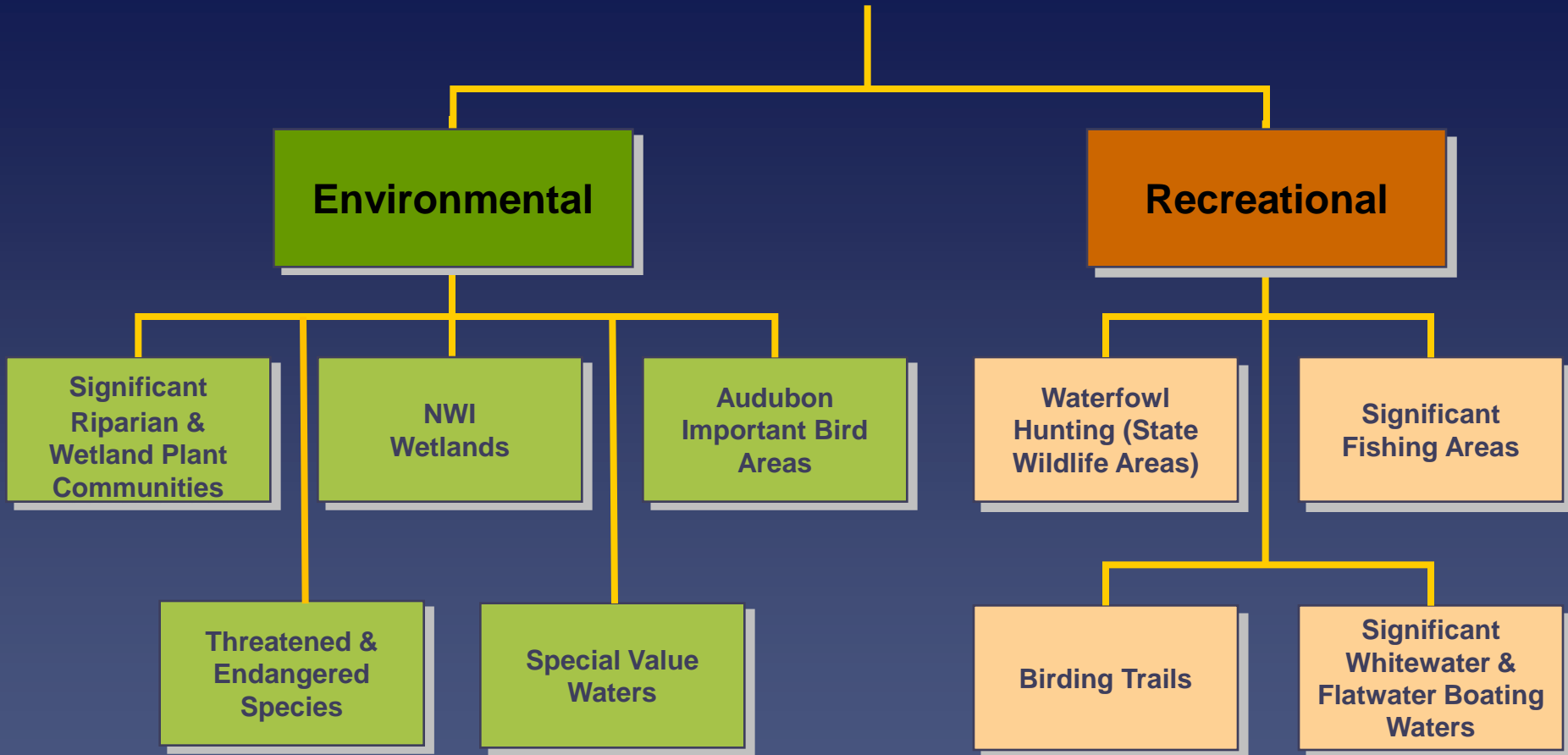
Environmental and Recreational Needs

- Roundtables are in the process of finalizing their environmental and recreational priority areas
- Statewide map will be developed of these priority areas
- Arkansas Basin and Colorado Basin have prepared WSRA applications for further quantification of their environmental and recreational needs

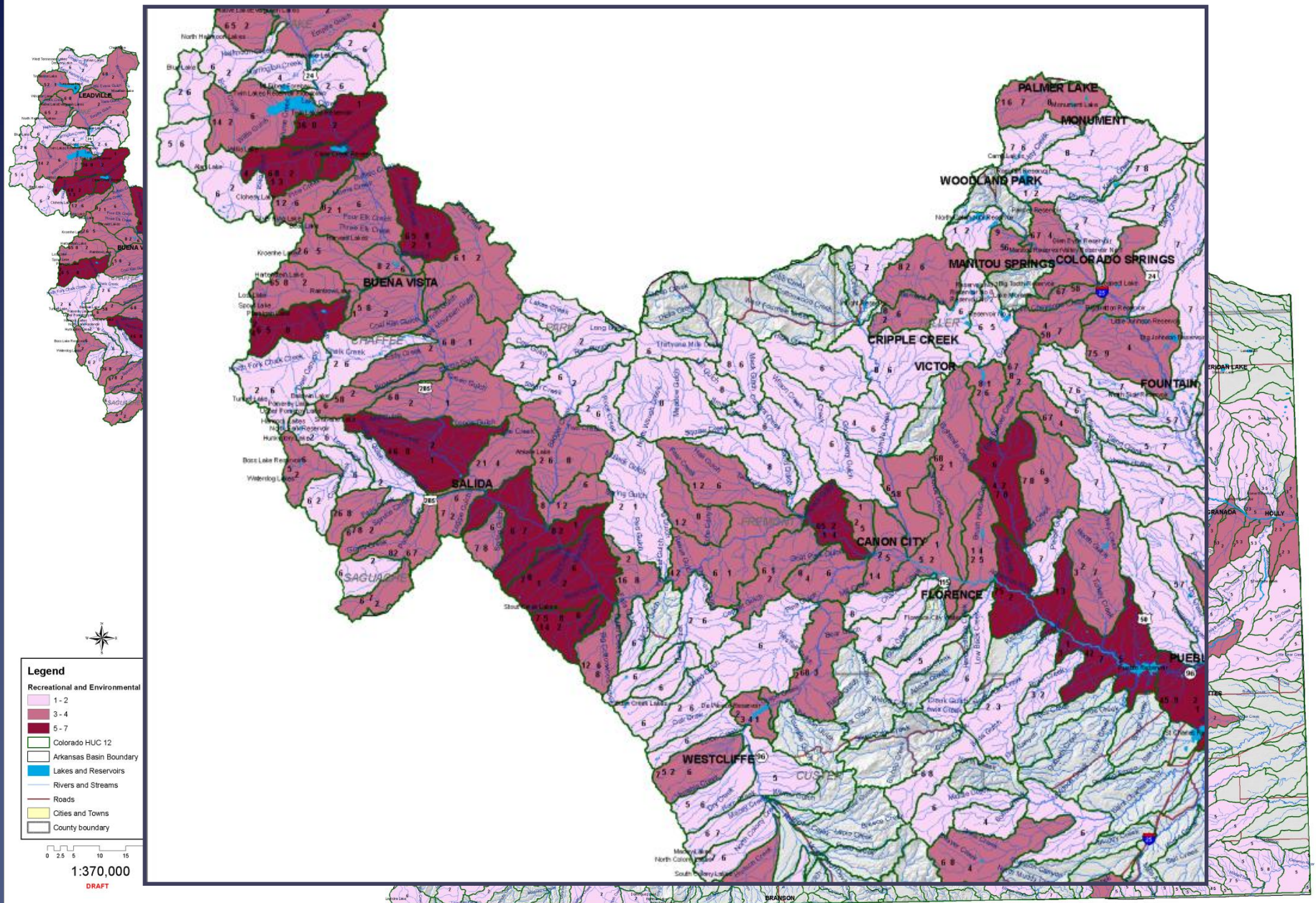
Nonconsumptive Needs Assessment Methodology



Arkansas Basin Attributes

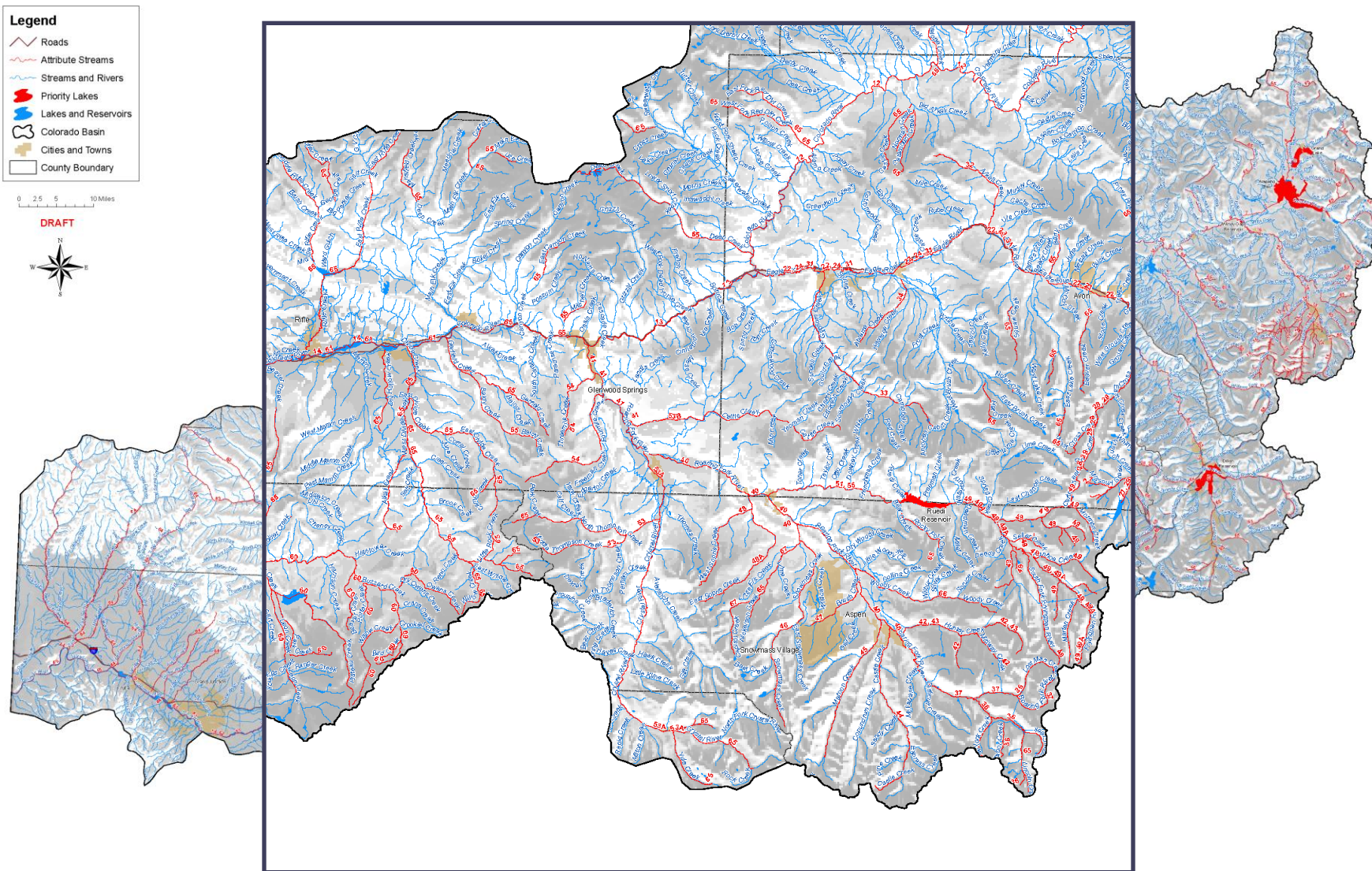


Arkansas Basin Nonconsumptive Needs Assessment Environmental and Recreational Priorities HUC 12 Watershed Based Environmental and Recreational Attributes Prioritization



Colorado Basin Nonconsumptive Needs Assessment

Priority Streams and Lakes



North Platte National Conservation Area Environmental Assessment Stream Segment



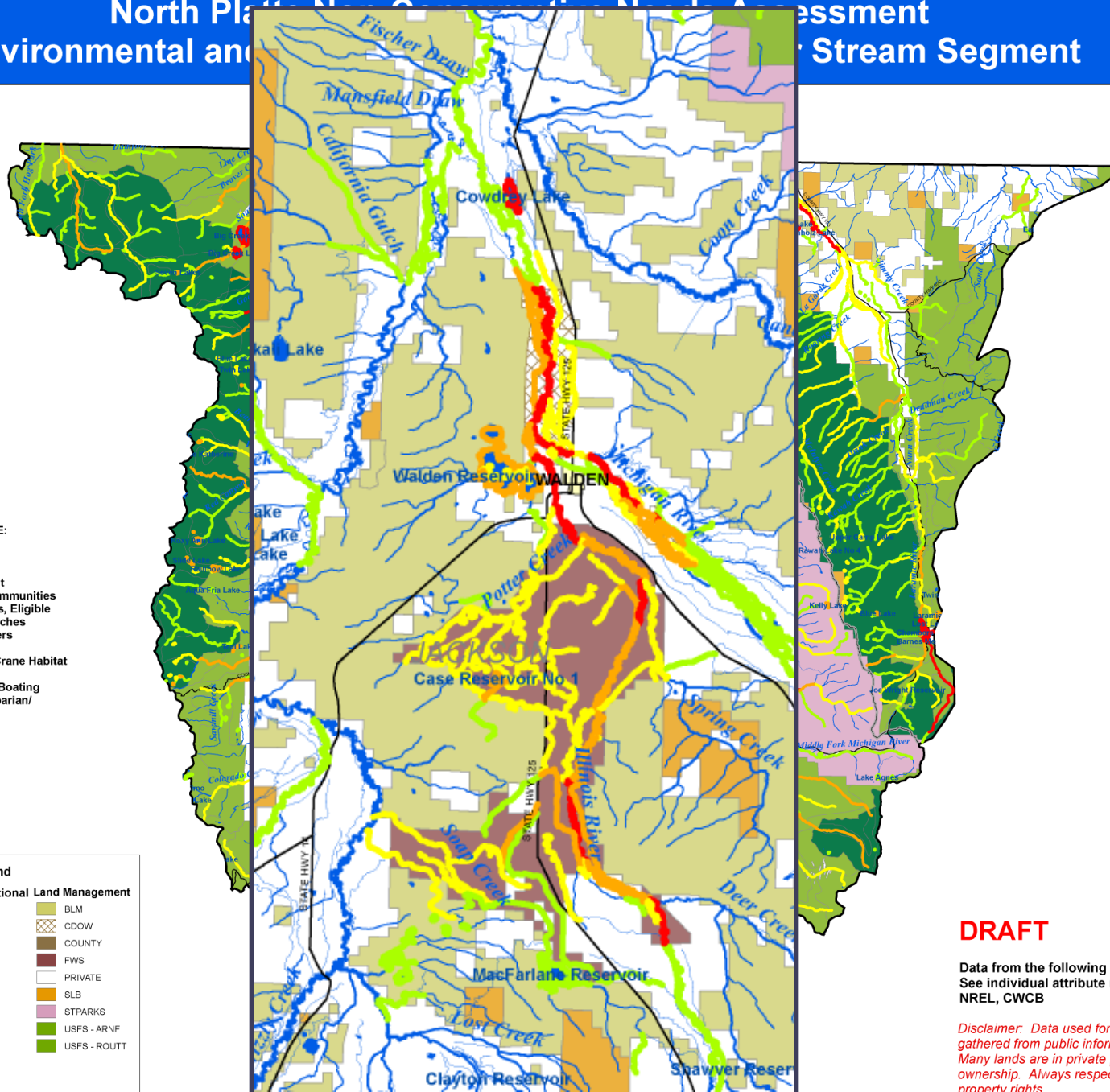
ATTRIBUTE CATEGORY CODE:

- 1 Bald Eagle and Osprey
- 2 River Otter
- 3 Amphibians
- 4 Rare Plants and Significant
Riparian/Wetland Plant Communities
- 5 WQCD Outstanding Waters, Eligible
Wild and Scenic River Reaches
- 6 CWCB Instream Flow Waters
- 7 Lake Chub
- 8 Important Waterfowl and Crane Habitat
- 9 Important Fishing
- 10 Whitewater and Flatwater Boating
- 11 Waterfowl Hunting and Riparian/
Wetland Wildlife Viewing

Legend

Environmental and Recreational Land Management Attribute Count

1	BLM
2	CDOW
3	COUNTY
4 - 6	FWS
Roads	PRIVATE
Rivers and Streams	SLB
Reservoirs and Lakes	STPARKS
Cities and Towns	USFS - ARNF
County Boundary	USFS - ROUTT
Wilderness_Areas	



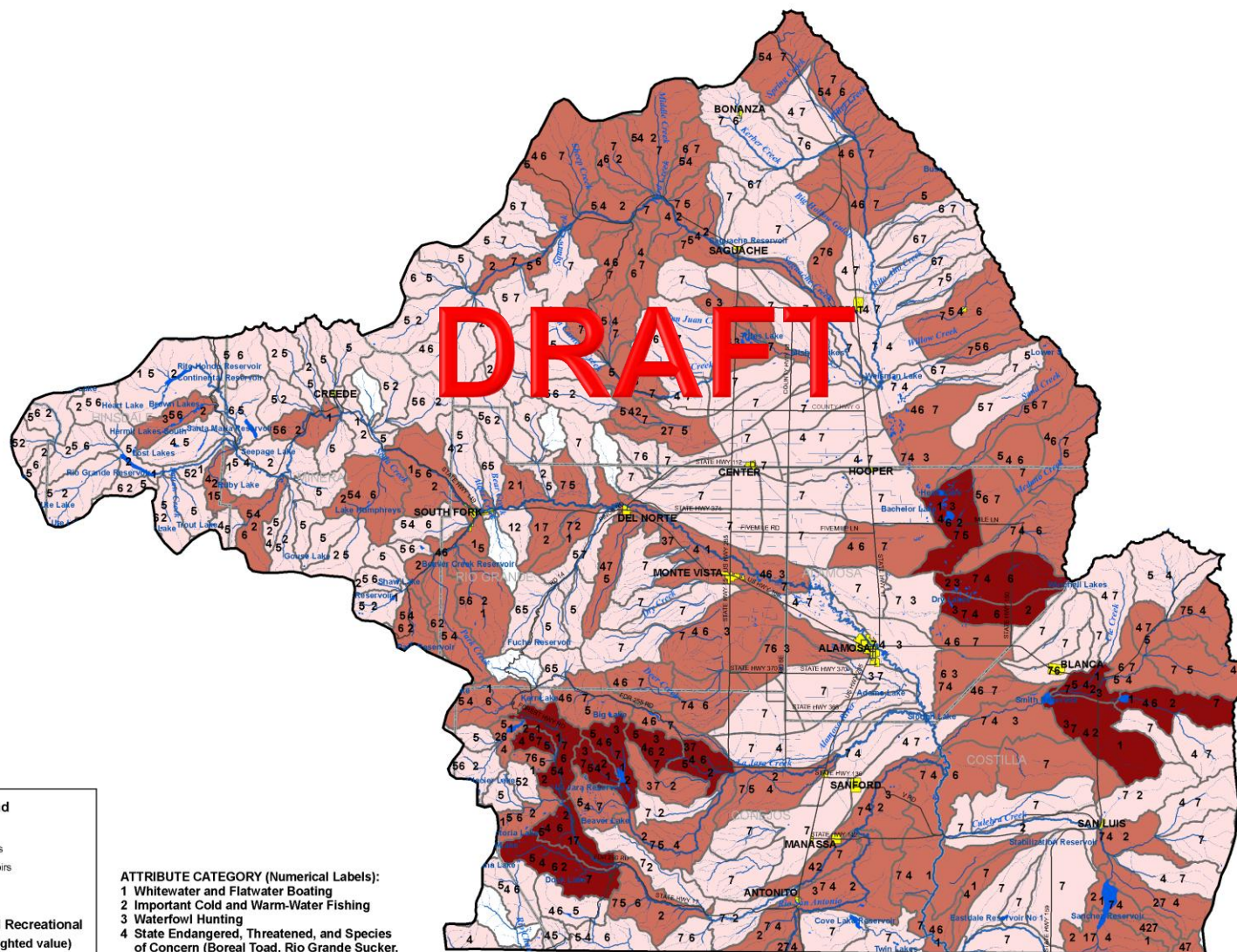
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Data from the following sources:
See individual attribute maps,
NREL, CWCB

*Disclaimer: Data used for this effort is
gathered from public information sources.
Many lands are in private property
ownership. Always respect private
property rights.*

Rio Grande Basin Non-Consumptive Needs Assessment

Sample 12-Digit HUC Prioritization Based on Environmental and Recreational Attributes



Note: Wetlands were assigned a weighted value of 2. All other attribute categories had a weight of 1.

0 4.5 9 18 27 36 Miles

Scale 1:500,000

DRAFT

Data from the following sources:
See Individual Attribute Maps,
USGS, CWCB

Status of Priority Mapping for Remainder of Roundtables

Basin	Status
Arkansas	<ul style="list-style-type: none">• Approved mapping expected WSRA application
Colorado	<ul style="list-style-type: none">• Approved mapping and submitted WSRA application
Gunnison	<ul style="list-style-type: none">• Compiling comments on map, planning April 6 vote on mapping
North Platte	<ul style="list-style-type: none">• Vote on mapping March 24
Rio Grande	<ul style="list-style-type: none">• Vote on mapping April 14
South Platte	<ul style="list-style-type: none">• Revising mapping
Metro	<ul style="list-style-type: none">• Vote on mapping April 8
Southwest	<ul style="list-style-type: none">• Compiling Public Comments
Yampa/White	<ul style="list-style-type: none">• Vote on mapping April 15

Integration of Nonconsumptive Needs

- Statewide map of priorities
- CWCB in process of identifying existing protections
- Priority areas addressed during strategy development
 - Qualitative need
 - Quantitative need
 - Non-flow related needs

Conservation Strategy

- 20 to 40 percent savings analyzed for each basin
- Management practices identified
- Overview of initial results
- Feedback on how much this strategy will reduce overall 2050 demands

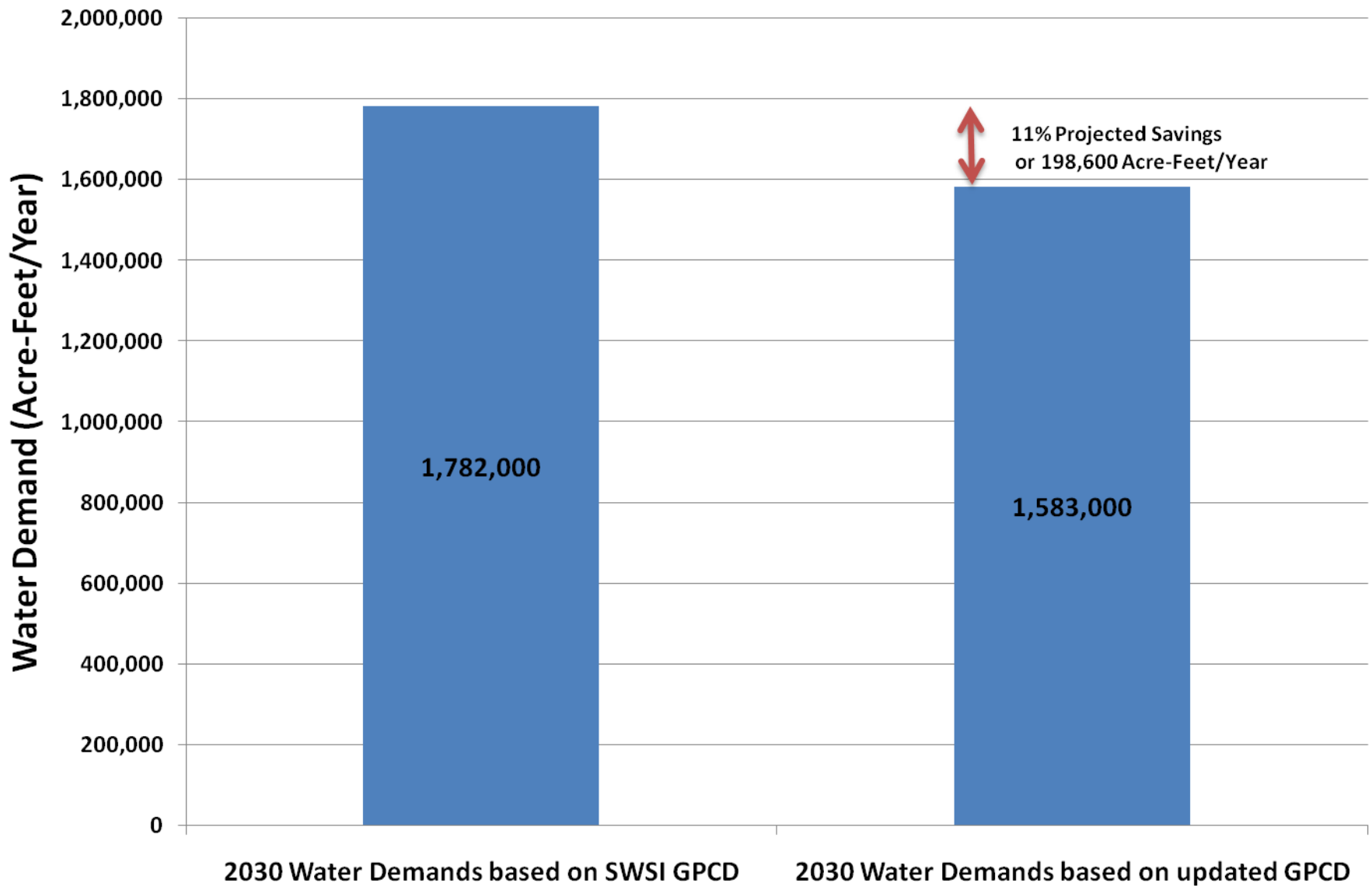
Overview of Conservation Strategy Approach

- Used SWSI 1 as baseline
- Estimated percent reduction in water usage at 2050 at 20 percent, 30 percent, and 40 percent reduction levels from SWSI 1
- Examine measures identified in SWSI 2 that could be utilized to achieve reduction levels
- Review results with major water providers and Basin Roundtables
- Summarize findings

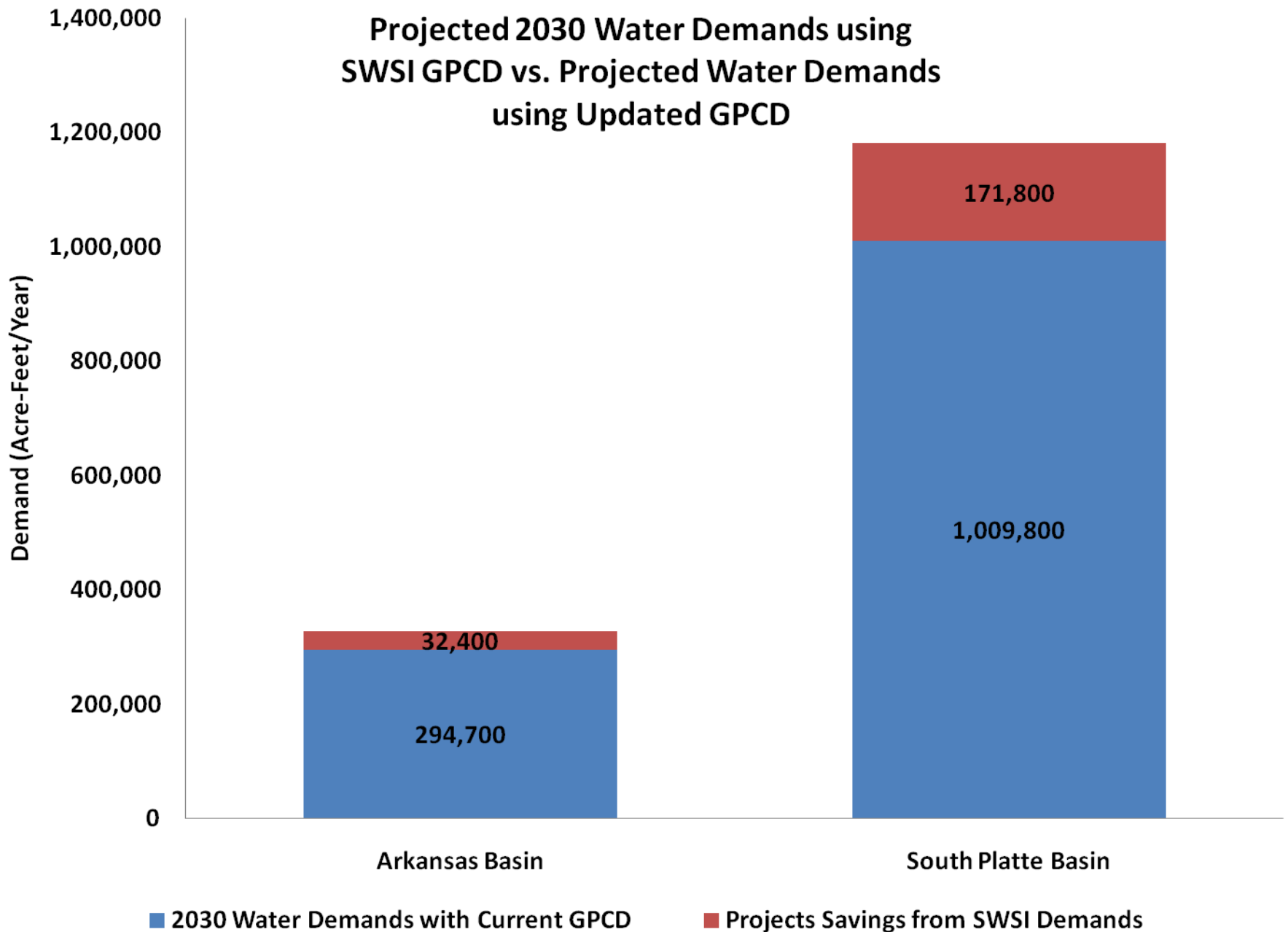
Initial Results

- What progress have we made in meeting 2030 demands with respect to demand reductions from conservation?
- What demand reductions should be implemented by 2050?
- What conservation best management practices could be used to implement these reductions?
- What do other states require regarding conservation or demand reporting?

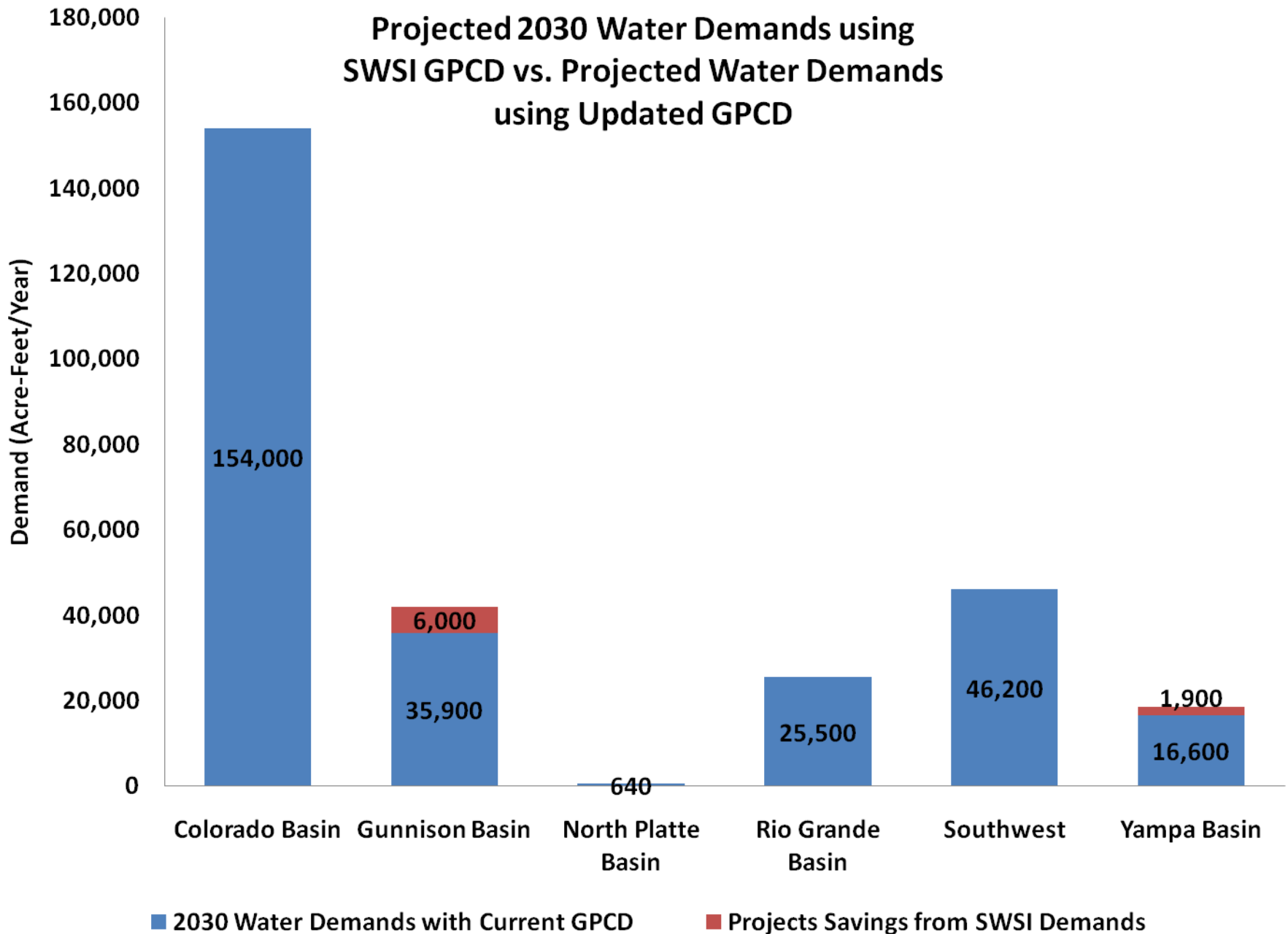
Projected 2030 Water Demands using SWSI GPCD vs. Projected Water Demands using Updated GPCD



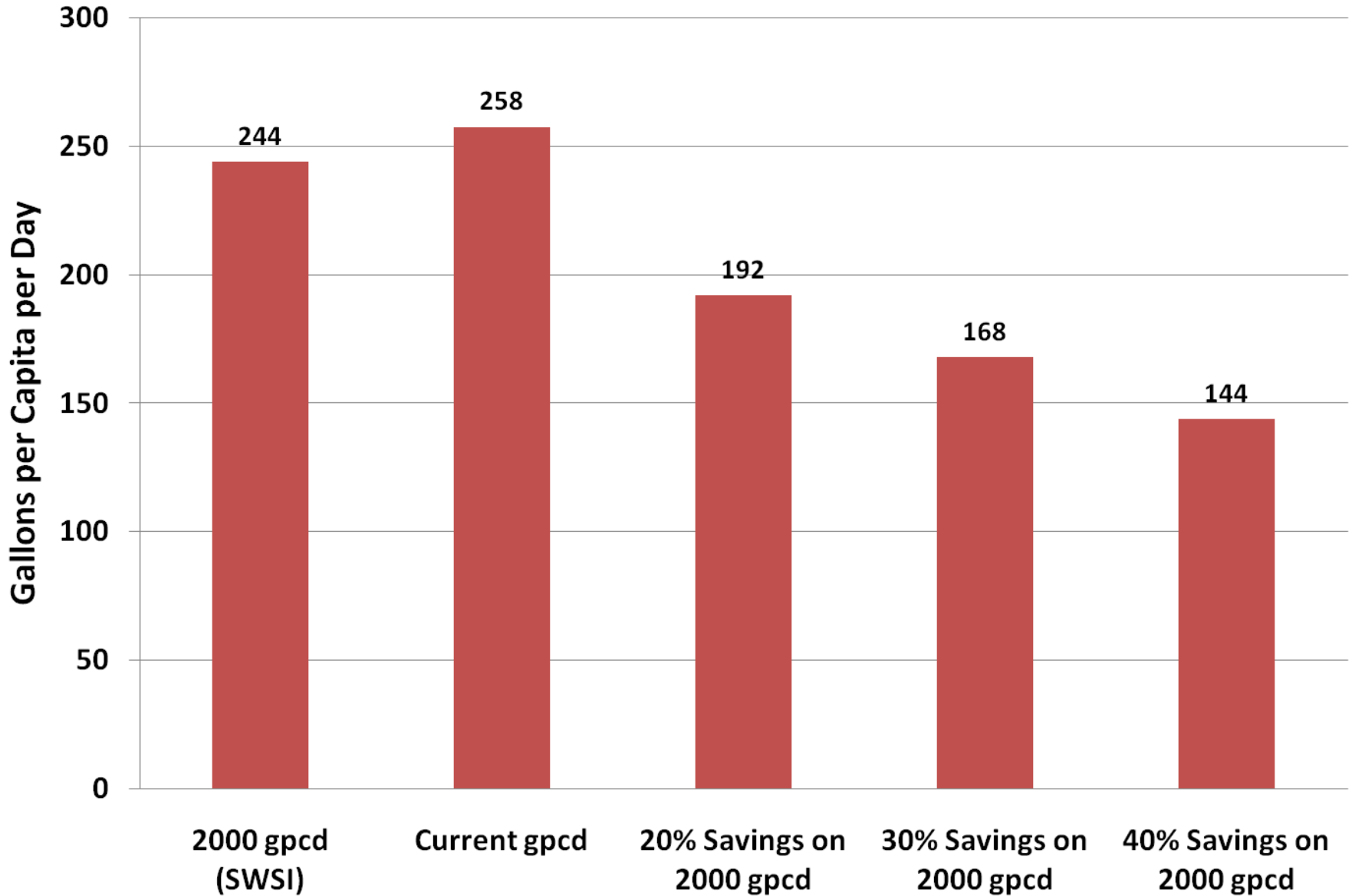
Projected 2030 Water Demands using SWSI GPCD vs. Projected Water Demands using Updated GPCD



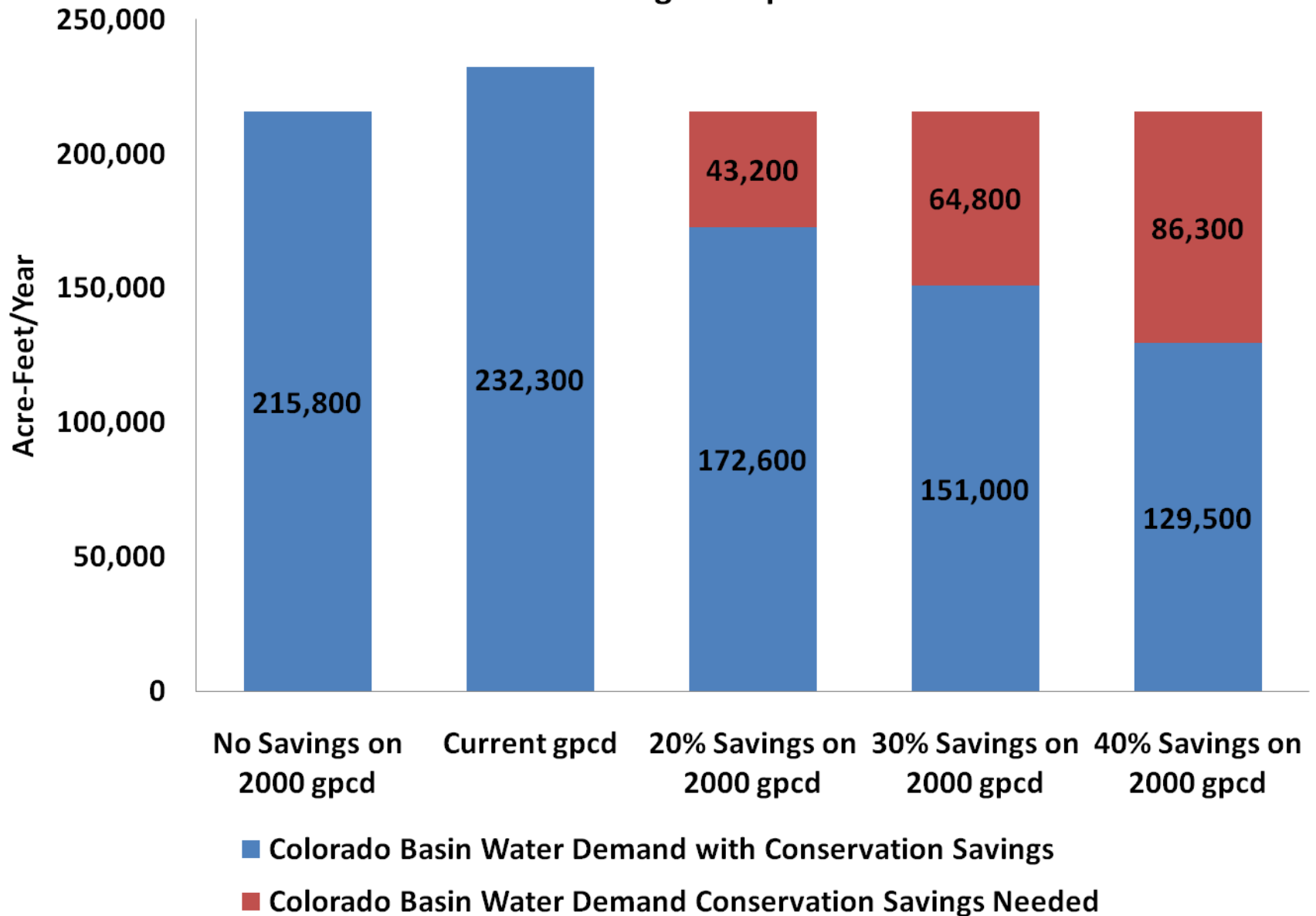
Projected 2030 Water Demands using SWSI GPCD vs. Projected Water Demands using Updated GPCD



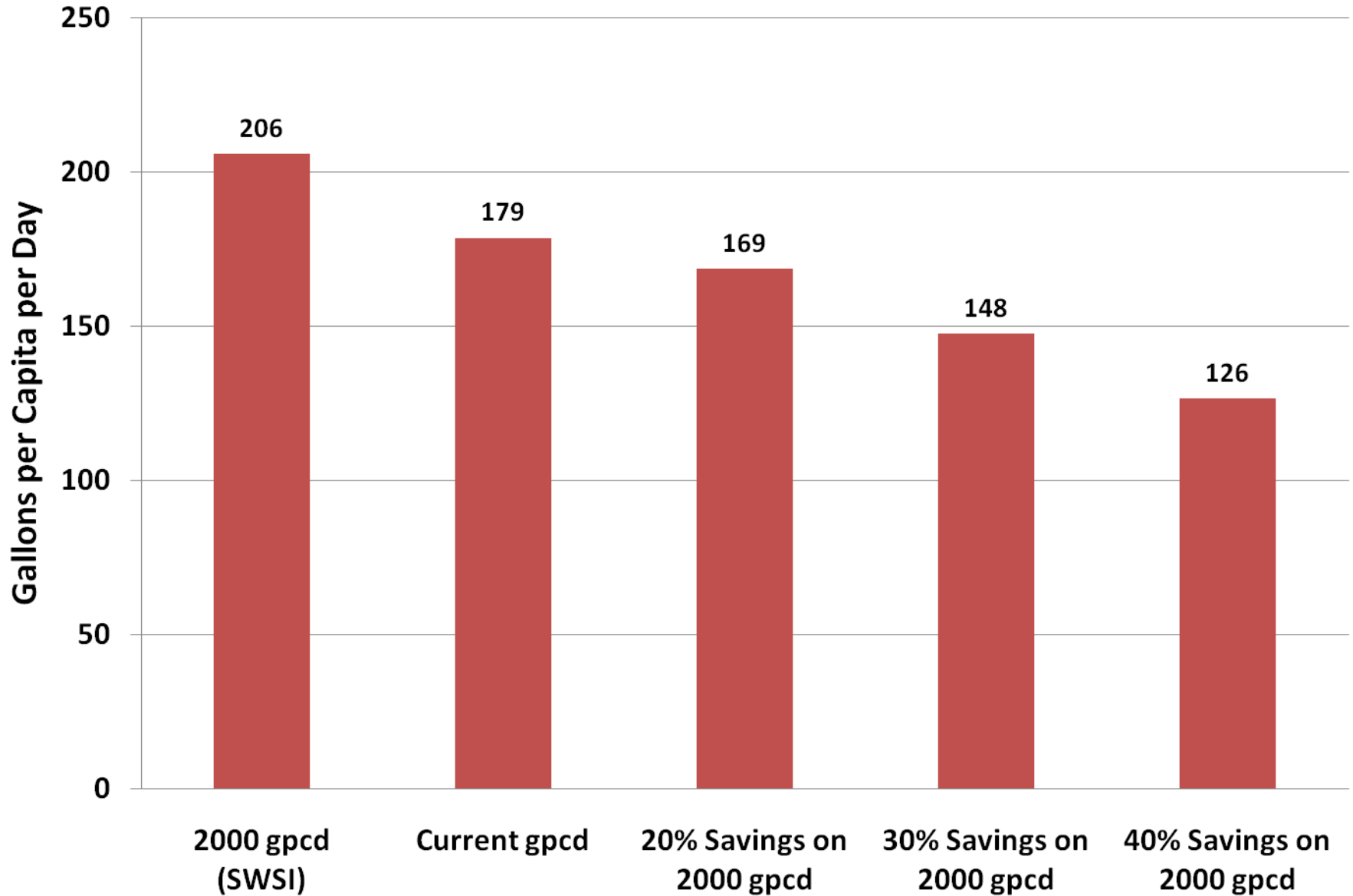
Colorado Basin Gallons per Capita per Day



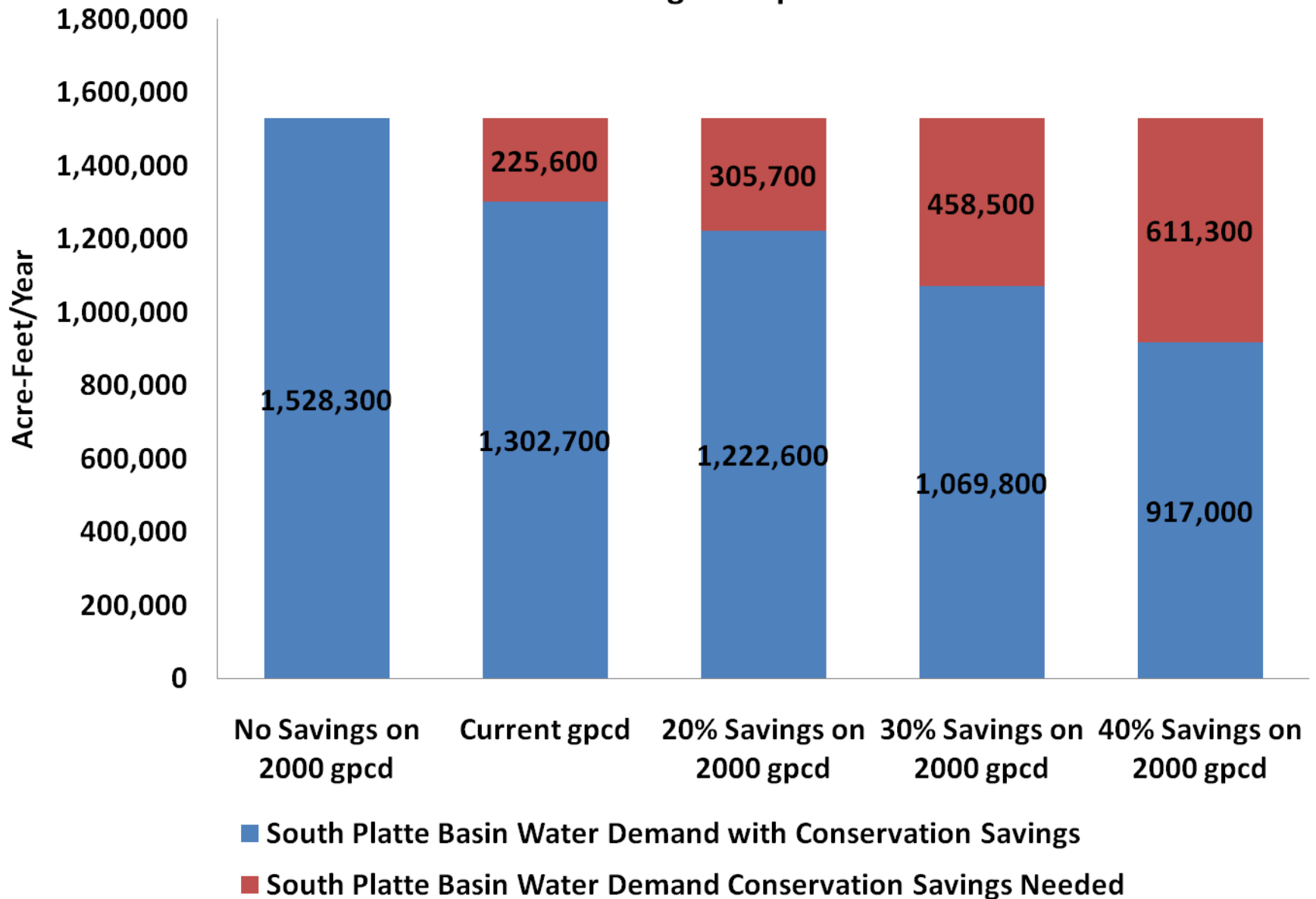
Colorado Basin 2050 M&I Water Demand Forecast Potential Conservation Savings Compared to Current GPCD



South Platte Basin Gallons per Capita per Day



South Platte Basin 2050 M&I Water Demand Forecast Potential Conservation Savings Compared to Current GPCD



SWSI 2 Conservation Measures

- Turf replacement
- Utility water loss reduction programs
- Toilet rebates
- Conservation oriented water rates
- Washer rebates
- Cooling towers increased cycle concentration
- Rebates for landscape retrofits other than turf replacement
- Residential landscape audits
- Residential indoor audits
- Sub-metering in multi-family housing
- Commercial landscape audits
- Commercial indoor audits
- Metering of all utility customers

South Platte Basin Example

Conservation Measure	Preliminary Projected Savings at 2050
Turf Replacement	104,300 AFY to 208,600 AFY
Leak Detection Programs	35,200 AFY to 58,600 AFY
Toilet Rebates	53,100 AFY
Conservation Orientated Water Rates	20,400 AFY
Washer Rebates	15,400 AFY to 36,400 AFY
Cooling Towers	1,540 AFY to 12,200 AFY
Rebates for Landscape Retrofits other than Turf Replacement	3,100 AFY to 10,000 AFY
Residential Landscape Audits	3,500 AFY to 10,400 AFY
Residential Indoor Audits	2,100 AFY to 6,300 AFY
Submetering in Multi-family Housing	2,800 AFY to 7,800 AFY
Commercial Landscape Audits	1,300 AFY to 5,000 AFY
Commercial Indoor Audits	700 AFY to 3,300 AFY
Total Project Savings	267,000 AFY to 432,000 AFY

Colorado Basin Example

Conservation Measure	Preliminary Projected Savings at 2050
Turf Replacement	12,900 AFY to 25,900 AFY
Leak Detection Programs	5,800 AFY to 9,700 AFY
Toilet Rebates	6,000 AFY
Conservation Orientated Water Rates	2,500 AFY
Washer Rebates	1,900 AFY to 4,500 AFY
Cooling Towers	190 AFY to 1,500 AFY
Rebates for Landscape Retrofits other than Turf Replacement	400 AFY to 1,200 AFY
Residential Landscape Audits	400 AFY to 1,300 AFY
Residential Indoor Audits	300 AFY to 800 AFY
Submetering in Multi-family Housing	300 AFY to 1,000 AFY
Commercial Landscape Audits	200 AFY to 700 AFY
Commercial Indoor Audits	100 AFY to 500 AFY
Total Project Savings	31,600 AFY to 56,200 AFY