Portfolio Tool for Assessing Trade-offs in Water Supply Strategies

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Mid Demand-High Supply
Key Findings

Statewide demand is 790,000 acre feet

Includes 60,000 acre feet for oil shale

Colorado River Development

- **150,000 acre feet to West Slope**
- **168,000 acre feet to the East Slope**

High Conservation: 460,000 acre feet

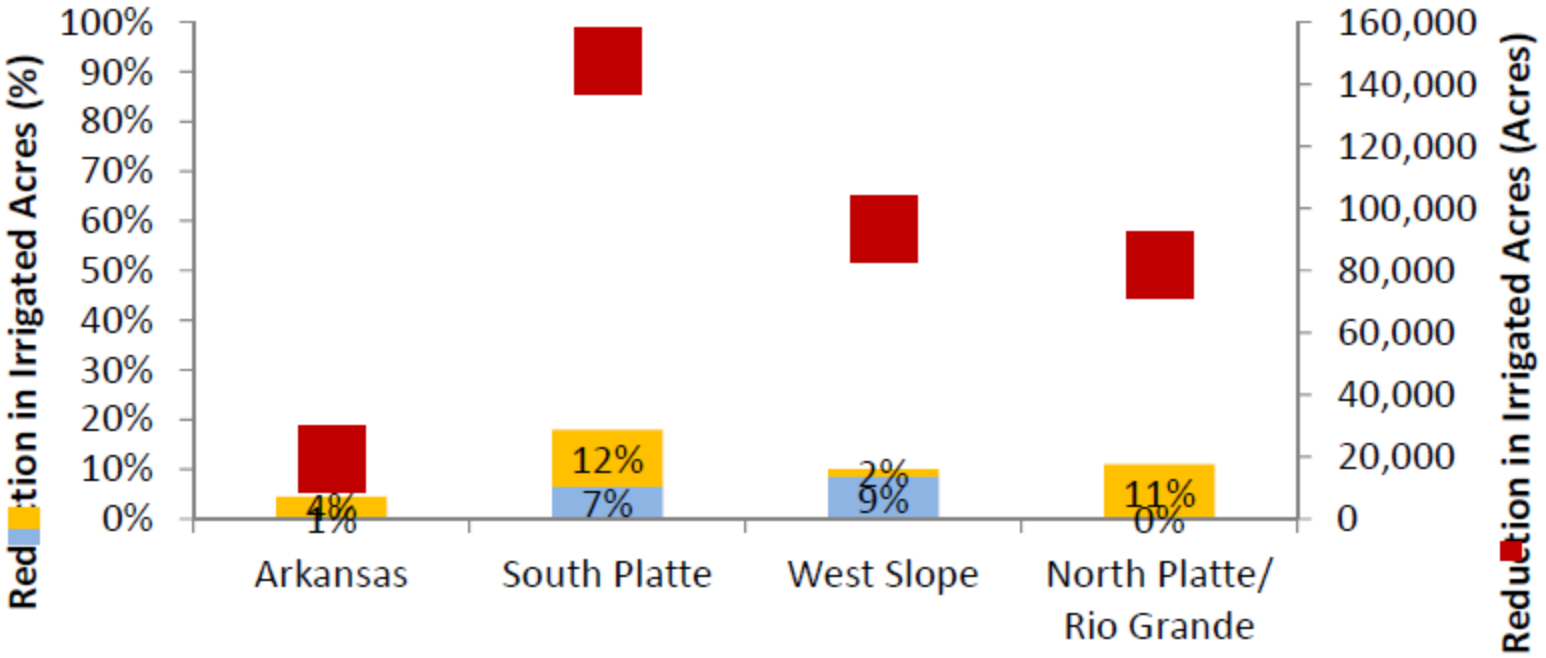
- **60% goes to gap**

Table 1: Comparison of 2050 implementation and penetration level for three conservation strategies, and demand reductions used in forecasts

Measure	Implementation or Penetration Level by 2050		
	Low Strategy	Medium Strategy	High Strategy
System-wide conservation measures with potential to impact all customers			
Public information and education	~100%	~100%	~100%
Integrated resources planning	~100%	~100%	~100%
Conservation-oriented water rates	~100%	~100%	~100%
Water budget-based water rates	<=10% of utilities implement	<=30% of utilities implement	<=50% of utilities implement
Conservation-oriented tap fees	0 - 5% of utilities implement	5 - 10% of utilities implement	<= 50% of utilities implement
Smart metering with leak detection	<=10% of pop.	<=50% of pop.	50 - 100% of pop.
Residential indoor savings and measures			
Reduction in Residential Per Capita Indoor Use	**Res. Indoor gpcd = 40**	**Res. Indoor gpcd = 35**	**Res. Indoor gpcd = 30**
• Conservation-oriented plumbing and building codes, green building, rules for new residential construction	30-50% of state impacted	50-70% of state impacted	70-100% of state impacted
• High efficiency toilets, clothes washers, faucets, and CII equipment	Passive ~100%	Passive ~100%	Passive ~100%
• Submetering of new multi-family housing	0%	~50%	~100%
• Reduction in customer side leakage	33% savings - passive from toilet replacement	37% savings -passive from toilet replacement and active repairs	43% savings -passive from toilet replacement and active repairs
Non-Residential indoor savings and measures			
Reduction in Non-Residential Per Capita Indoor Use	**15% reduction**	**25% reduction**	**30% reduction**
• High efficiency toilets, urinals, clothes washers, faucets, and showers	Passive ~100%	Passive ~100%	Passive ~100%
• Conservation-oriented plumbing and building codes, green building, rules for new non-residential construction	30-50% of state impacted	50-70% of state impacted	70-100% of state impacted
• Specialized non-residential surveys, audits, and equipment efficiency improvements	0-10% of utilities implement	10-50% of utilities implement	50-80% of utilities implement
Landscape conservation savings and measures*			
Landscape water use reductions (residential and non-residential)	**15% reduction**	**22-25% reduction**	**27-35% reduction**
• Targeted audits for high demand landscape customers	0-30% of utilities implement	30-50% of utilities implement	50-80% of utilities implement
• Landscape transformation of some high water requirement turf to low water requirement plantings	<=20% of landscapes	20-40% of landscapes	>50% of landscapes
• Irrigation efficiency improvements	<=10% of landscapes	<=50% of landscapes	50 - 100% of landscapes
Utility Water Loss Control			
Improved utility water loss control measures	**<=7% real losses**	**<=6% real losses**	**<=6% real losses**

*Landscape water demand reductions include the anticipated impact of urban densification.

Reduction in Irrigated Acres in 2050 Based on Scenarios



Region	Ag Lost due to Urbanization	% Ag Lost due to Urbanization	Ag Transfers & Other Factors	% Ag Transfers & Other Factors	Total Reduction in Irrigated Acres	Total % Ag Loss
Arkansas	2,500	1%	17,000	4%	19,500	5%
South Platte	52,500	7%	95,000	12%	147,500	18%
West Slope	78,500	9%	15,000	2%	93,500	10%
NP / RG	1,000	0%	81,000	11%	82,000	11%

High Demand-Low Supply

Statewide demand is 1,060,000 acre feet

Includes 60,000 acre feet for oil shale

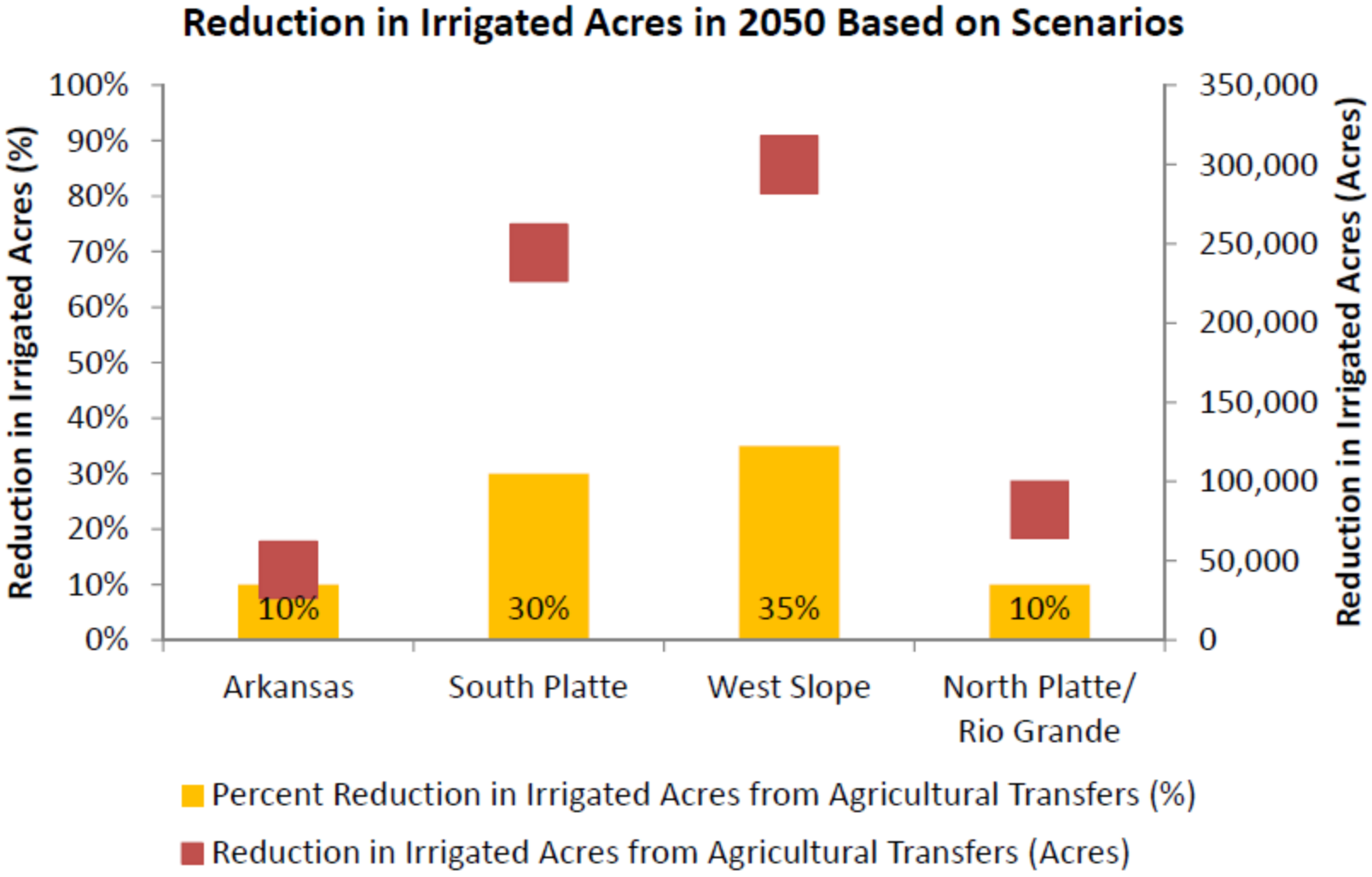
Colorado River Development

0 acre feet to West Slope

0 acre feet to the East Slope

High Conservation: 460,000 acre feet

60% goes to gap



Region	Ag Lost due to Urbanization	% Ag Lost due to Urbanization	Ag Transfers & Other Factors	% Ag Transfers & Other Factors	Total Reduction in Irrigated Acres	Total % Ag Loss
Arkansas	3,000	1%	41,000	10%	44,000	10%
South Platte	58,000	7%	186,500	23%	244,500	29%

High Demand-Mid Supply

Statewide demand is 1,060,000 acre feet

Includes 60,000 acre feet for oil shale

Colorado River Development

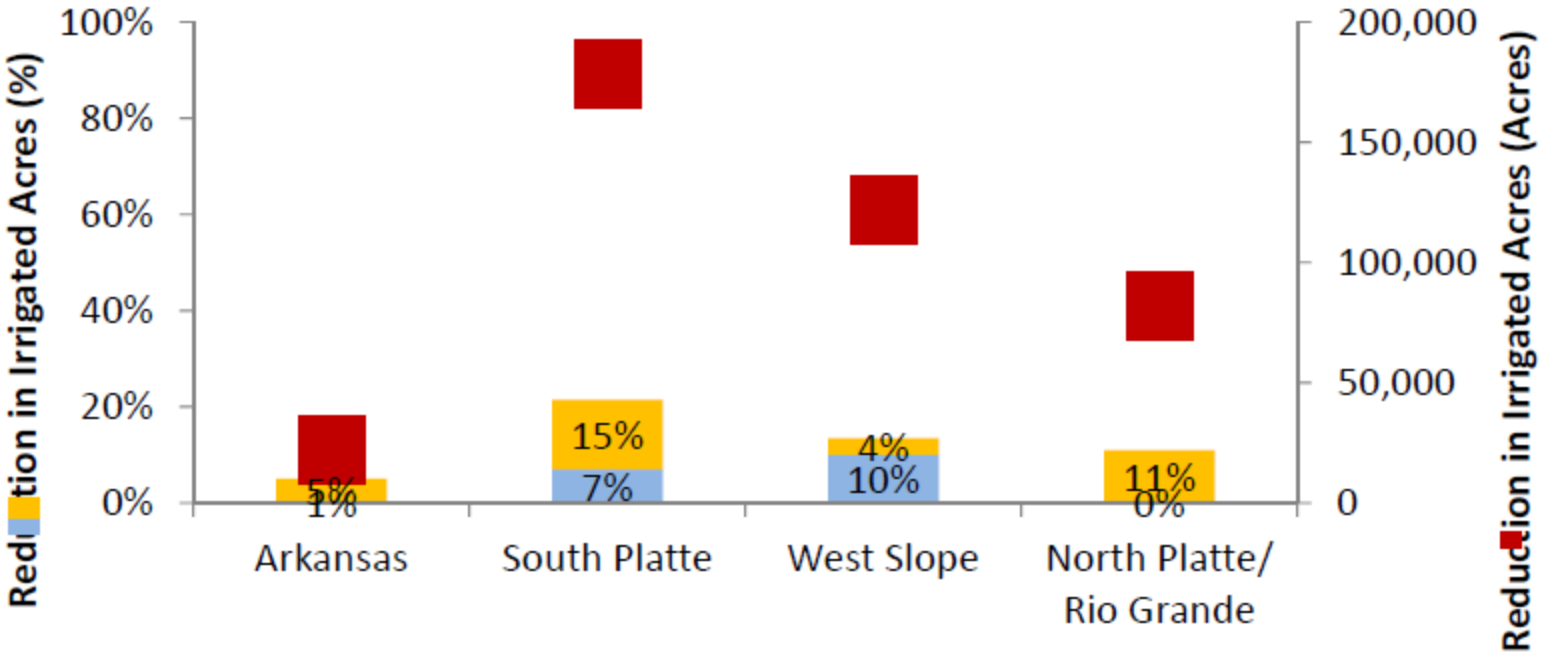
150,000 acre feet to West Slope

0 acre feet to the East Slope

High Conservation: 460,000 acre feet

100% goes to gap

Reduction in Irrigated Acres in 2050 Based on Scenarios



Region	Ag Lost due to Urbanization	% Ag Lost due to Urbanization	Ag Transfers & Other Factors	% Ag Transfers & Other Factors	Total Reduction in Irrigated Acres	Total % Ag Loss
Arkansas	3,000	1%	19,000	5%	22,000	5%
South Platte	58,000	7%	120,500	15%	178,500	21%
West Slope	92,000	10%	30,000	4%	122,000	13%
NP / RG	1,000	0%	81,000	11%	82,000	11%

To find out more about the porfolio tool and to develop your own scenarios, go to:

HTTP://CWCB.STATE.CO.US/TECHNICAL-RESOURCES/PORTFOLIO-TOOL/