



Colorado's Water
Supply Future



Yampa Roundtable Meeting Craig, Colorado

January 21, 2009

**Projects and Methods to Meet
Identified Water Supply Needs**

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Basin-Wide Water Needs Assessments

- Identify Consumptive Water Needs (M&I and Agricultural)
- Identify Nonconsumptive Water Needs (Environmental and Recreational)
- Identify Available Water Supplies
- Identify Projects and Methods to Meet Consumptive and Nonconsumptive Water Needs

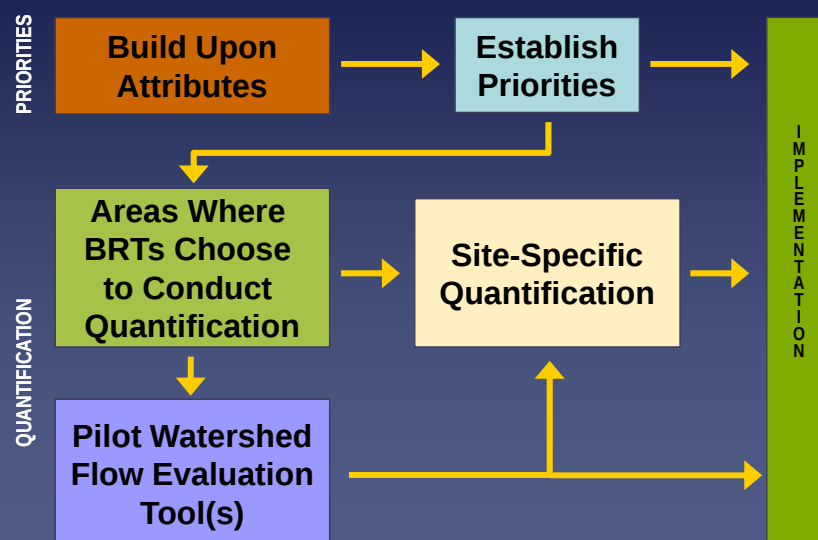
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Status of Basin Roundtable Needs Assessments

Basin	Consumptive Needs Assessment	Nonconsumptive Needs Assessment	Water Supply Availability Assessment
Yampa	• Used SWSI 1 as baseline needs assessment • Energy Study • Agricultural Study	• Developed preliminary priority mapping	• Colorado River Supply Availability Study

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Nonconsumptive Needs Assessment Methodology



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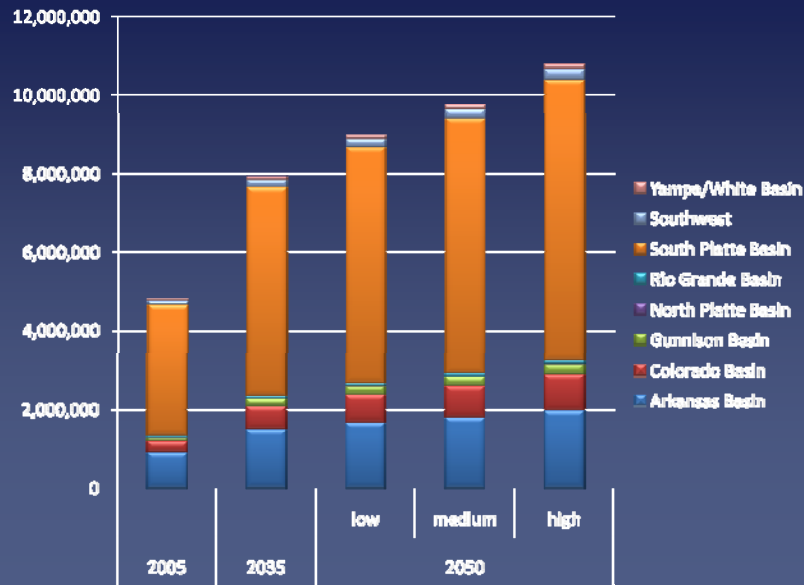
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*Visions and Strategies for
Colorado's Water Supply Future:
M&I Water Demands to 2050*

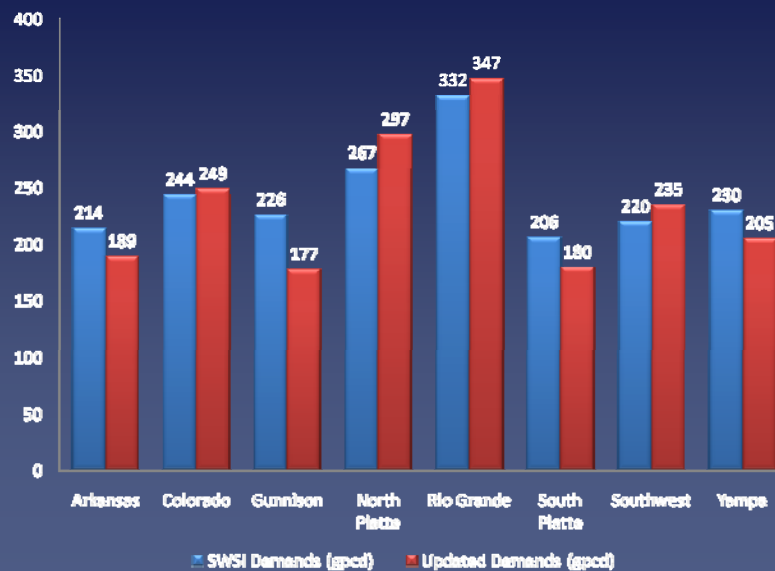
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Population Projections



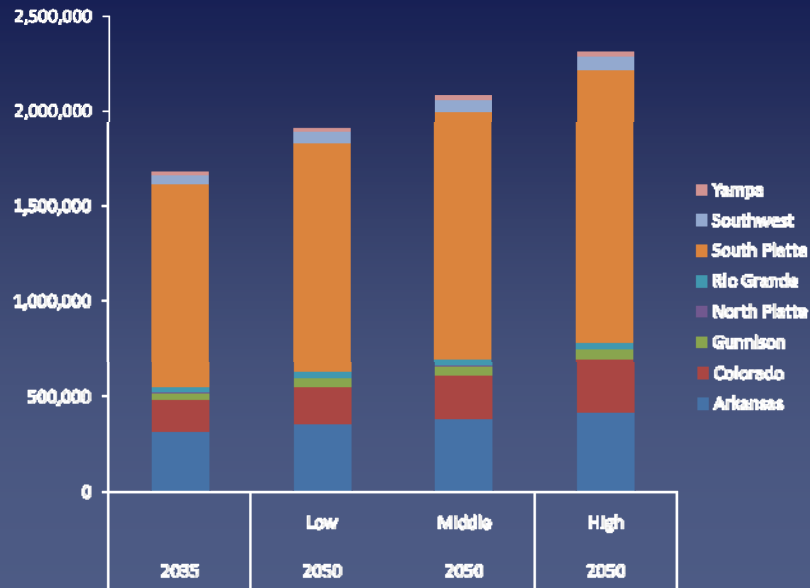
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M&I Water Usage Rates by Basin



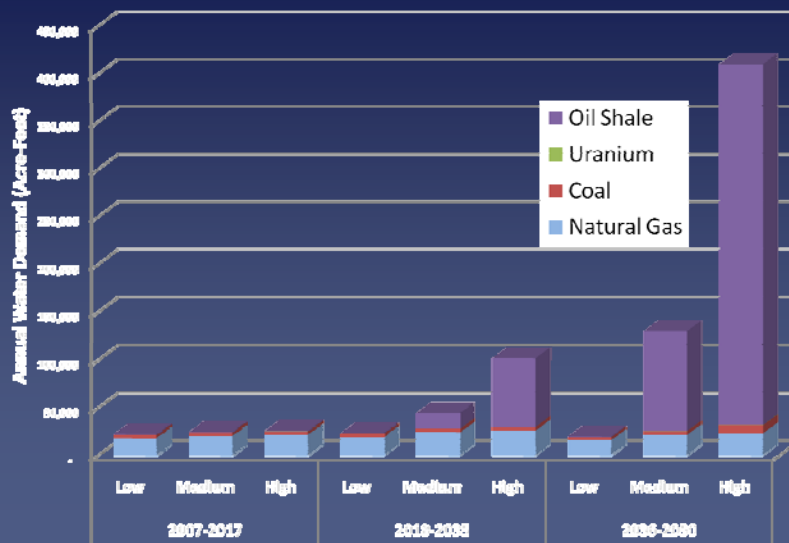
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Municipal Water Demands by Basin



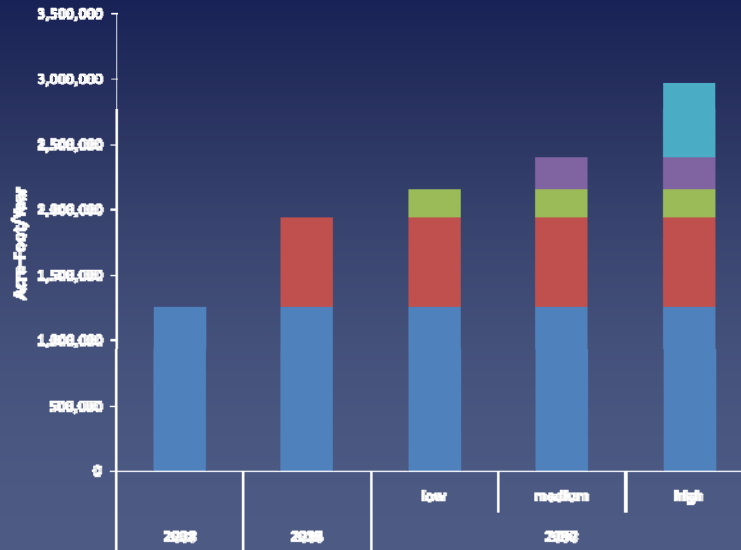
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Colorado and Yampa/White Energy Demands



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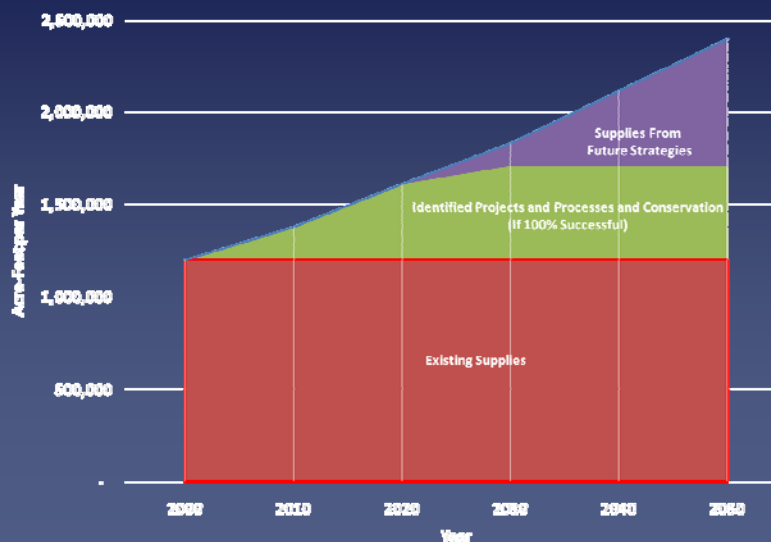
By 2050, Colorado will need up to 1.7 MAF to Meet M&I Demands*



*This does not take into account demand reductions from conservation for future demands

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State of Colorado Projected Water Demands, Supplies, and Gaps



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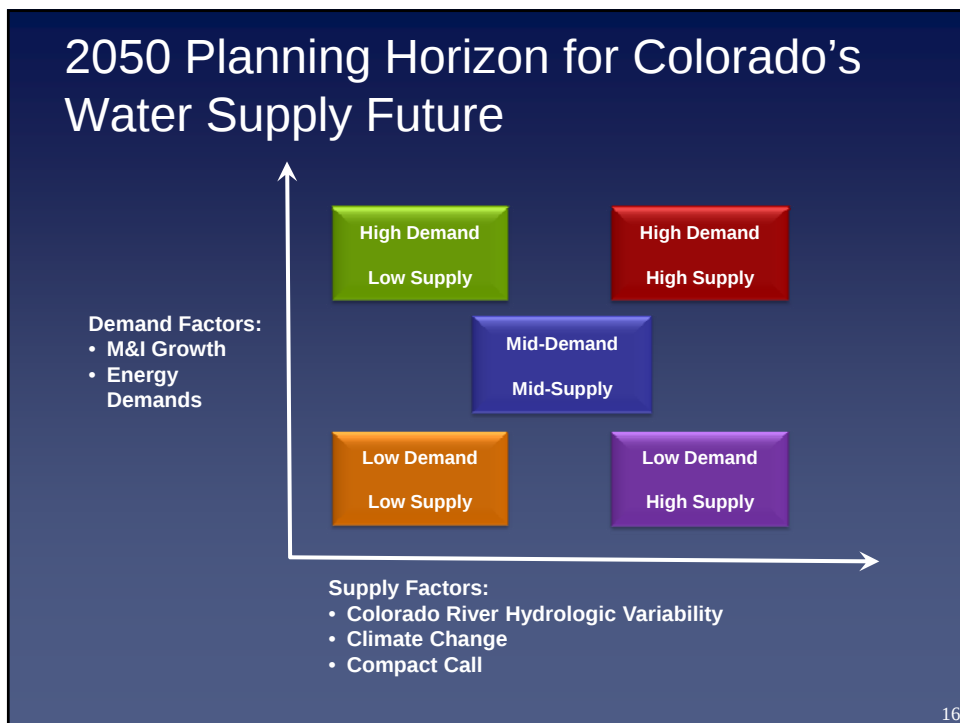
Development of Water Supply Strategies

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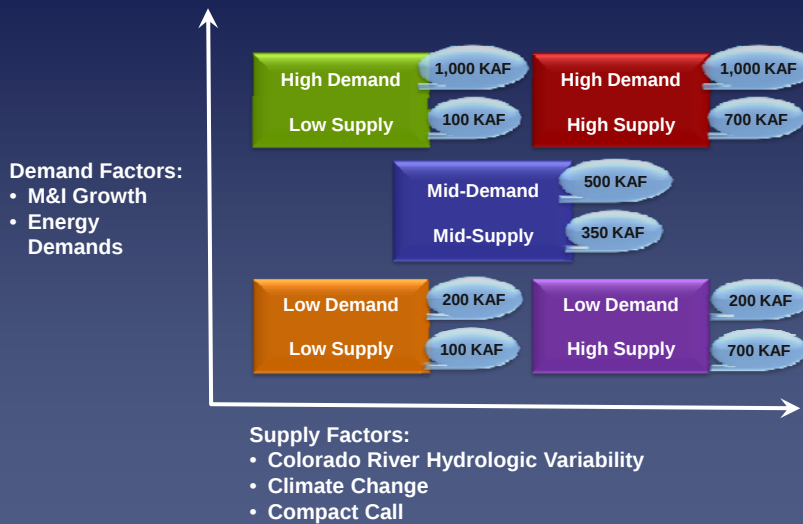
Elements of the Visioning Process



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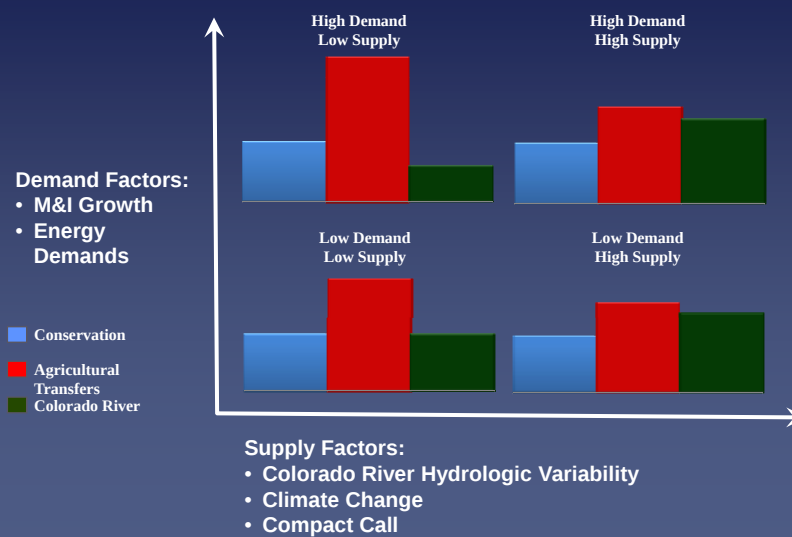


2050 Planning Horizon for Colorado's Water Supply Future



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2050 Planning Horizon for Colorado's Water Supply Future

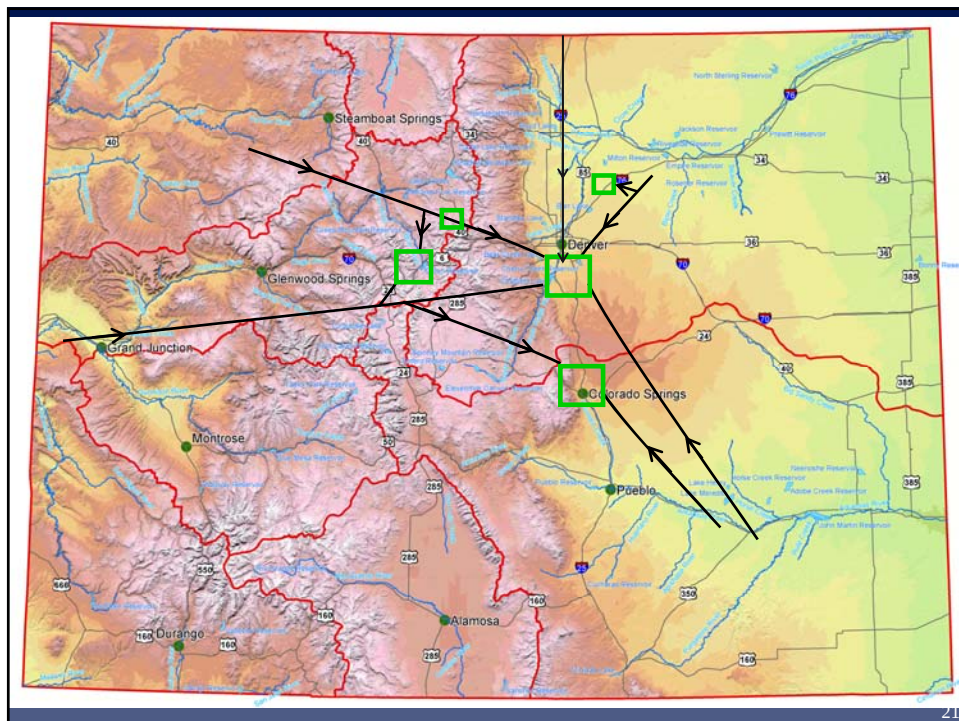


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Water Supply Strategies

- Water Conservation
- Agricultural Transfers
 - Conventional and alternative transfers
- Development of New Supplies
 - New Storage
 - Transbasin

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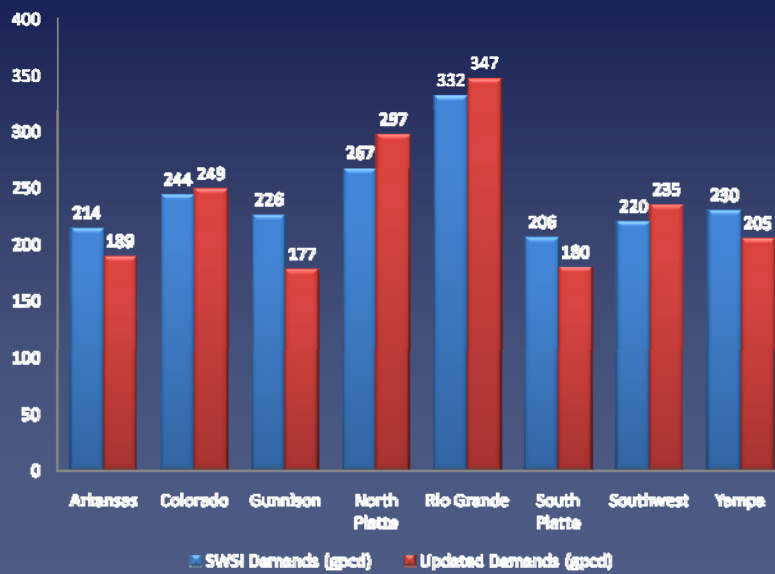


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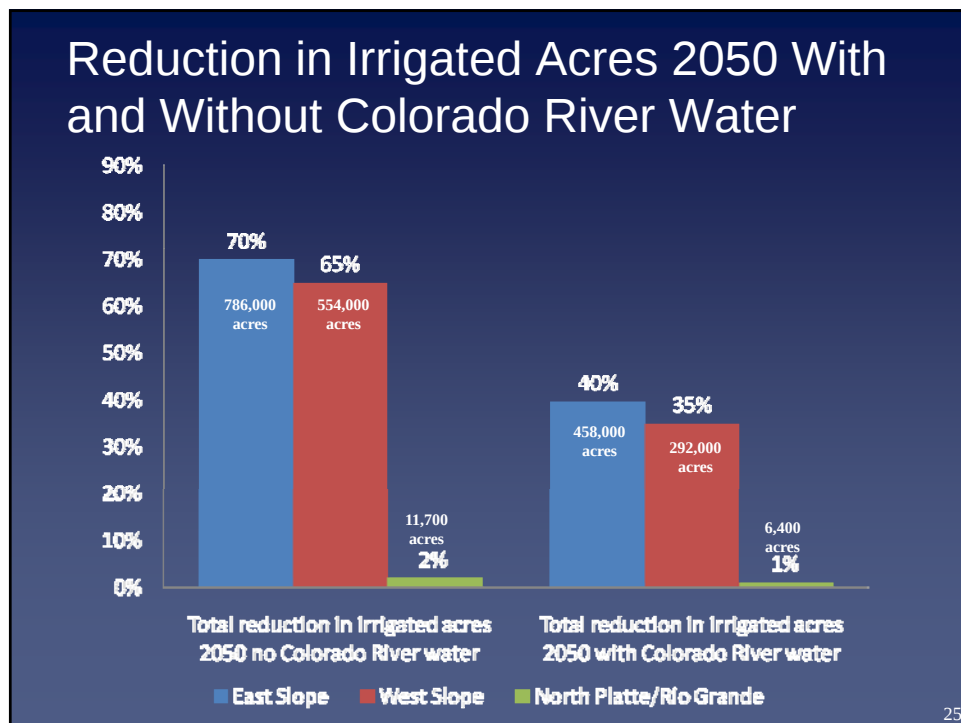
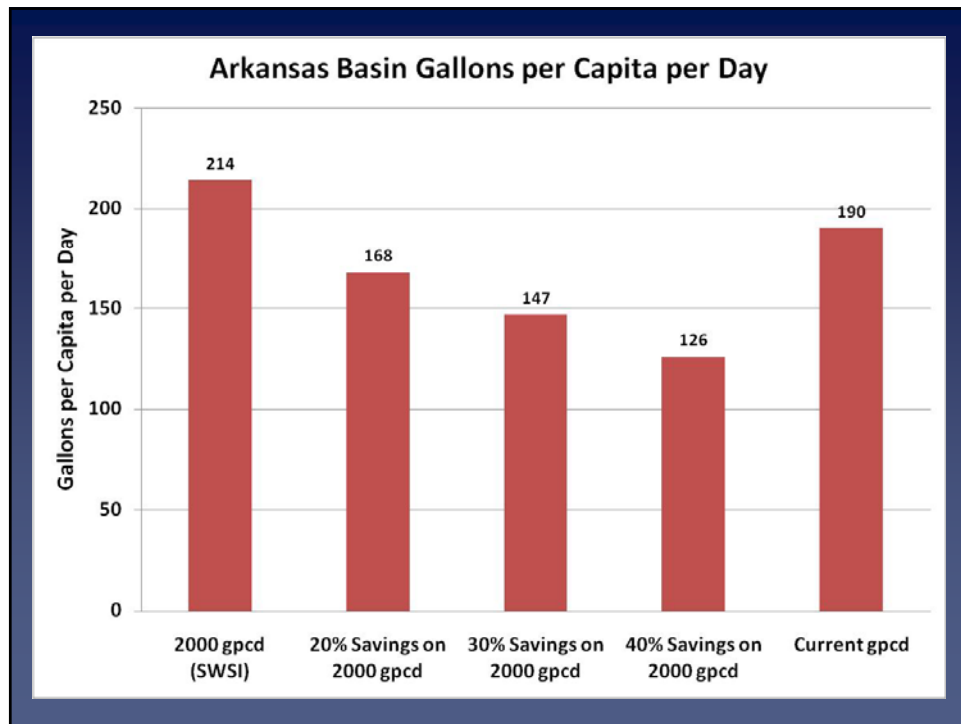
Water Conservation

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M&I Water Usage Rates by Basin



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Ag Transfer Strategy

- Lower South Platte Transfer
- Lower Arkansas Transfer

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Development of New Water Supplies

- Green Mountain Concept <100,000 acre-ft
- Yampa Concept >100,000 acre-ft
- Flaming Gorge Concept >100,000 acre-ft

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Risk Management Strategies

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

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Yampa IPPs

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Major Identified Projects and Processes in Yampa/White/Green Basin Counties

County	Estimated Demand Met by Identified Projects and Processes and Additional Conservation (AFY)	Identified Projects and Processes
Moffat	10,300	• Existing supplies and water rights and reservoirs and reservoir enlargements (Stagecoach and Elkhead)*
Rio Blanco	600	• Existing supplies and water rights from White River and tributaries
Routt	11,400	• Existing supplies and water rights and reservoirs and reservoir enlargements (Stagecoach and Elkhead)*
TOTAL	22,300	

* Elkhead completed need new estimates of remaining gap.

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Detailed Identified Projects and Processes for Yampa/White/Green Basin

County	Major Provider	Remaining Gross Gap (AF)	Supplies Beyond 2030*	Notes	Source
Routt	Hayden	0	N	Recently acquired water rights in Stagecoach and Yamcolo. Expect minor growth and will have adequate supplies.	Frank Fox, Hayden PW
	Hayden Power Generating Facility (Xcel)	0	N	Increase in demand will be met through existing rights and Elkhead Reservoir enlargement.	Basin Roundtable Feedback
	Morrison Creek W&S District	U	U	—	—
	Mt. Werner W&SD (Steamboat Springs)	0	Y	—	Response to CDM survey
	Oak Creek	0	Y	No gap indicated through Basin Roundtable discussions.	Response to CDM survey
	Unincorporated Routt County	0	N	There may be need for augmentation sources and storage depending upon location of depletions in relation to augmentation supplies.	
	Yampa	0	U	No gap indicated through Basin Roundtable discussions.	Basin Roundtable Feedback

* Y = Yes; N = No; U = Unknown

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Detailed Identified Projects and Processes for Yampa/White/Green Basin (cont.)

County	Major Provider	Remaining Gross Gap (AF)	Supplies Beyond 2030*	Notes	Source
Moffat	Craig	0	Y	Will have adequate supplies for growth beyond 2030.	Response to CDM survey
	Craig Power Generating Facility (Tri-State Generating and others)	0	N	Increase in demand will be met through existing rights, Yamcolo, and Elkhead Reservoirs and Elkhead Reservoir enlargement.	Basin Roundtable Feedback
	Dinosaur	0	U	Expect small increase in demand.	Basin Roundtable Feedback
	Unincorporated Moffat County and other small towns	0	U	There may be need for augmentation sources and storage depending upon location of depletions in relation to augmentation supplies.	–
Rio Blanco	Rangely	0	U	Expect small increase in demand.	Basin Roundtable Feedback
	Meeker	0	U	Expect small increase in demand.	Basin Roundtable Feedback
	Mesa View Water District	0	U	Expect small increase in demand.	–
	Unincorporated Rio Blanco County and other small towns	0	U	There may be need for augmentation sources and storage depending upon location of depletions in relation to augmentation supplies.	–

* Y = Yes; N = No; U = Unknown

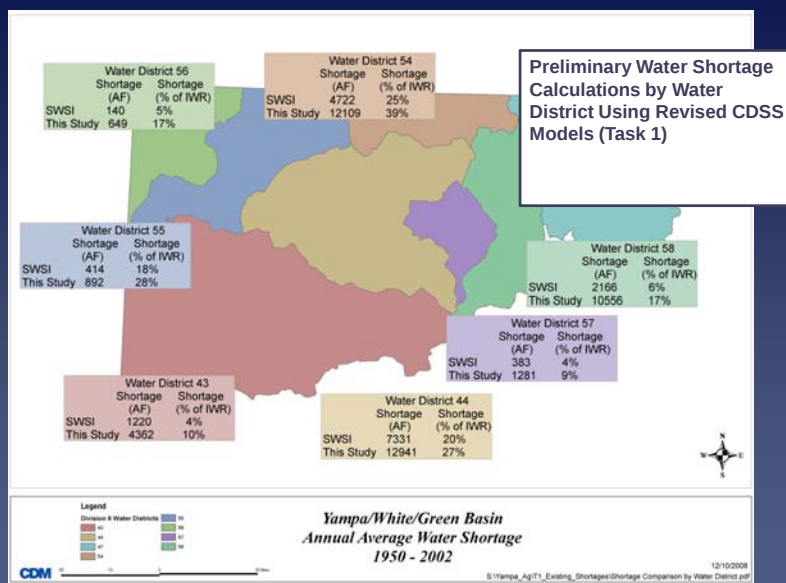
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Objectives

- Refine and update previous estimates of current agricultural water demands, supplies, and shortages for the basin
- Identify and evaluate shortages for future agricultural demands
- Assess the impacts of climate change on agricultural water availability
- Assess the impacts of energy sector water supply development on agricultural water availability in the White River Basin
- Assess water supply development alternatives to satisfy shortages identified in Tasks 1, 2, and 3
- Assess the effects on return flows of various irrigation practices
- Investigate creative solutions that benefit multiple interests

Tasks

- Task 1 – Estimate Existing Agricultural Water Shortages
- Task 2 – Identify and Evaluate Shortages for Future Agricultural Demands
- Task 3 – Assess the Impacts of Climate Change on Agricultural Water Availability
- Task 4 – Assess the Impacts of Energy Sector Water Supply Development on Agricultural Water Availability in the White River Basin
- Task 5 – Assess Water Supply Development Alternatives to Satisfy Shortages Identified in Tasks 1, 2, and 3
- Task 6 – Assess the Effects on Historical Late Season Return Flows from Agricultural Efficiency Alternatives
- Task 7 – Investigate Creative Solutions that Benefit Multiple Interests



Next Steps on Demands to 2050

- Discuss M&I results with Basin Roundtables
- Discussion regarding how much of current demand reductions are technical vs. behavioral
- Conservation reductions for demands
- Incorporate into conservation strategy
- Project climate change impacts on demands
- Estimate agricultural demands at 2050

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Path Forward – 2009

- Consumptive Needs Assessment done in Draft
- Nonconsumptive Priority Areas Identified

Focus of 2009:

***Projects and Methods to Meet Identified Needs
(M&I and Nonconsumptive)***

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Proposed Technical Work – 2009

MEETING 1

- Present status of needs assessment (SWSI I, “Other appropriate sources,” task orders, WSRA studies)
- Present demands to 2050
- Discuss projects and methods for meeting in-basin needs (SWSI IPPs, SWSI base options, other projects identified since SWSI)
- Review nonconsumptive basin maps final product (attributes and priorities)
- Present approach to evaluating water supply strategies

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Proposed Technical Work – 2009

MEETING 2

- Refine demands to 2050
- Screen projects and methods for meeting identified needs
- Discuss next steps on nonconsumptive priority areas (quantification and/or implementation strategies)
- Discuss progress on evaluation of water supply strategies

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Proposed Technical Work – 2009

MEETING 3

- Discuss progress on nonconsumptive quantification and implementation strategies
- Discuss progress on projects and methods for meeting identified needs and evaluation of water supply strategies
- Discuss integrating needs assessments with Colorado River supply availability preliminary results

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Proposed Technical Work – 2009

MEETING 4

- Present draft results of nonconsumptive quantification and implementation strategies
- Present draft results of projects and methods for meeting identified needs
- Present draft results of evaluation of water supply strategies

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Reviewing and Updating Identified Projects

See Handout – Starting point for 2009 update

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