

RECLAMATION

Managing Water in the West

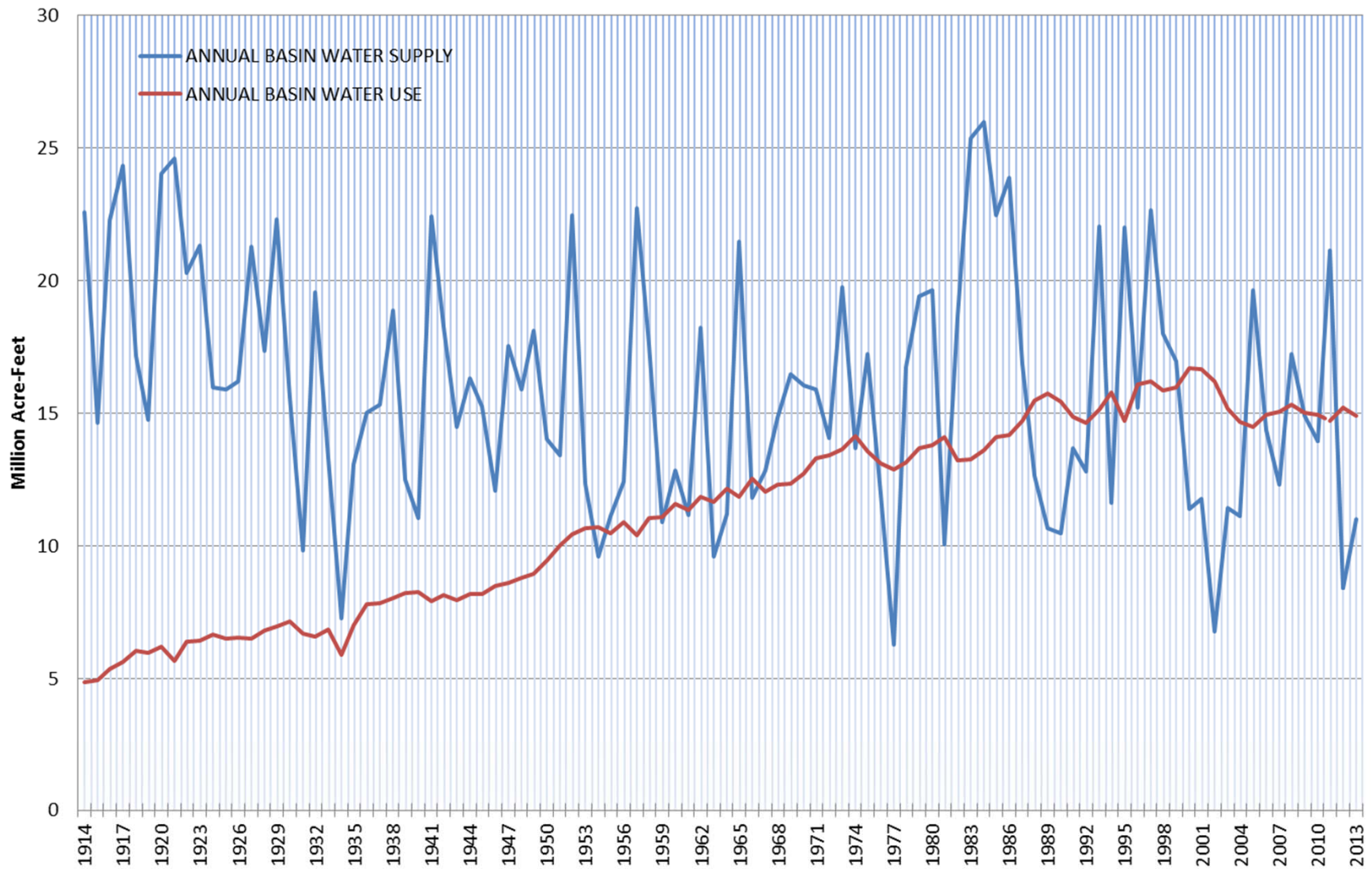
Overview of The Colorado River Basin Water Supply and Demand Study

San Diego IRWM Regional Advisory Committee
Conference Call
February 4, 2015



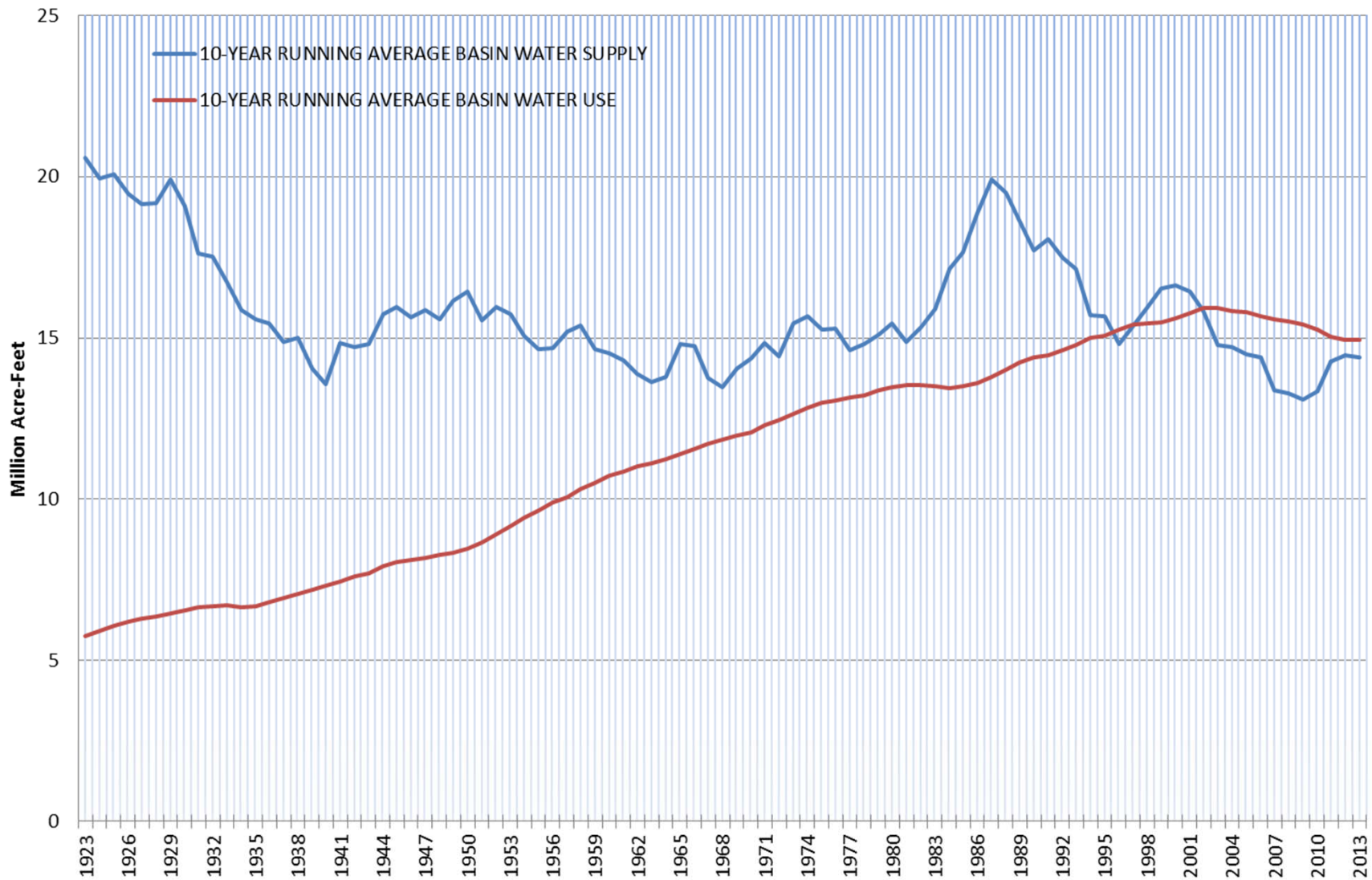
U.S. Department of the Interior
Bureau of Reclamation

Historical Annual Colorado River Basin Supply & Use



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Historical 10-Year Running Average Colorado River Basin Supply & Use



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Colorado River Basin Water Supply and Demand Study

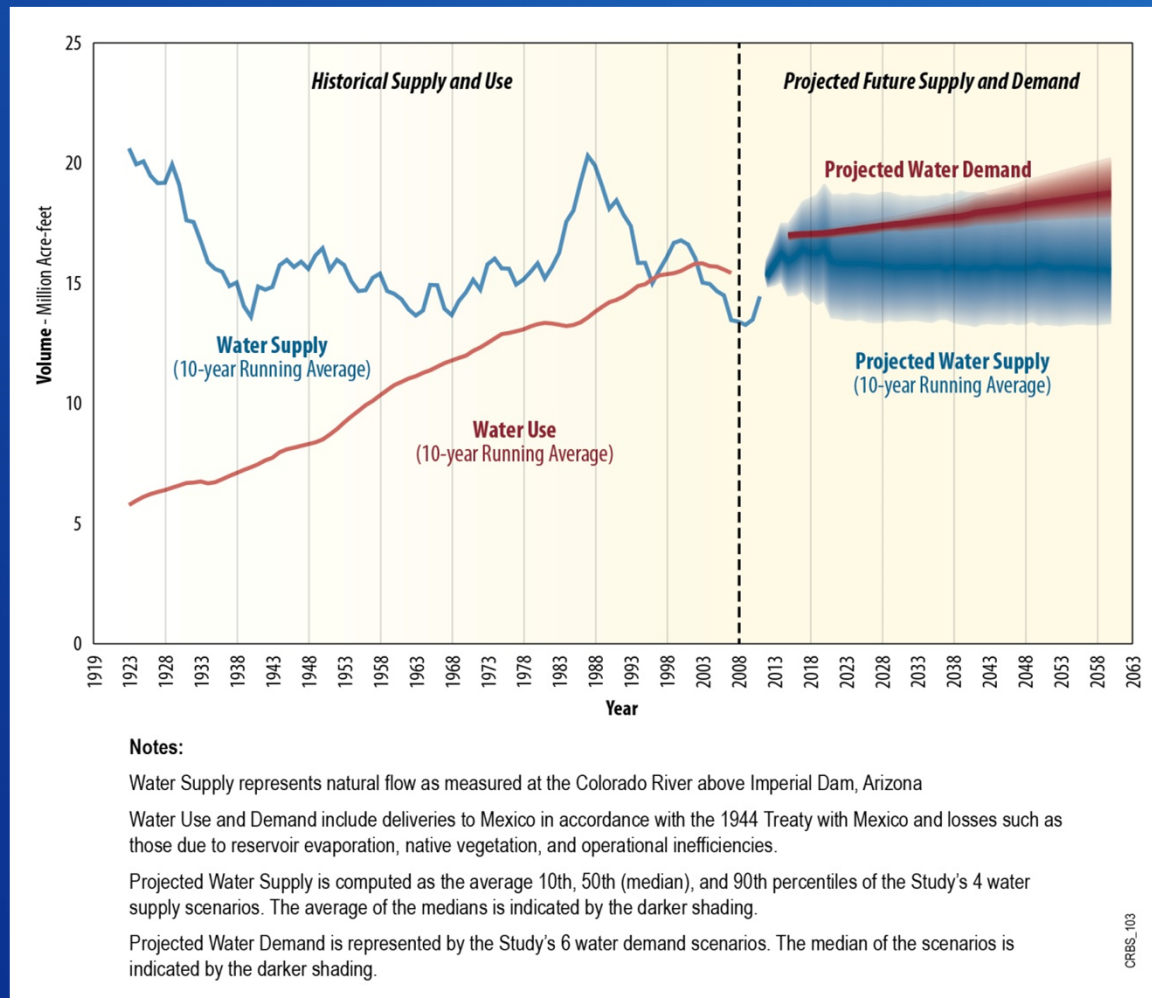
- Study Objective
 - Assess future water supply and demand imbalances over the next 50 years
 - Develop and evaluate opportunities for resolving imbalances
- Conducted through the WaterSMART Basin Study Program
- Conducted by Reclamation and the Basin States, in collaboration with stakeholders throughout the Basin
- Began in January 2010 and completed in December 2012
- A planning study – does *not* result in any decisions, but provides the technical foundation for future activities



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Projected Future Colorado River Basin Water Supply and Demand

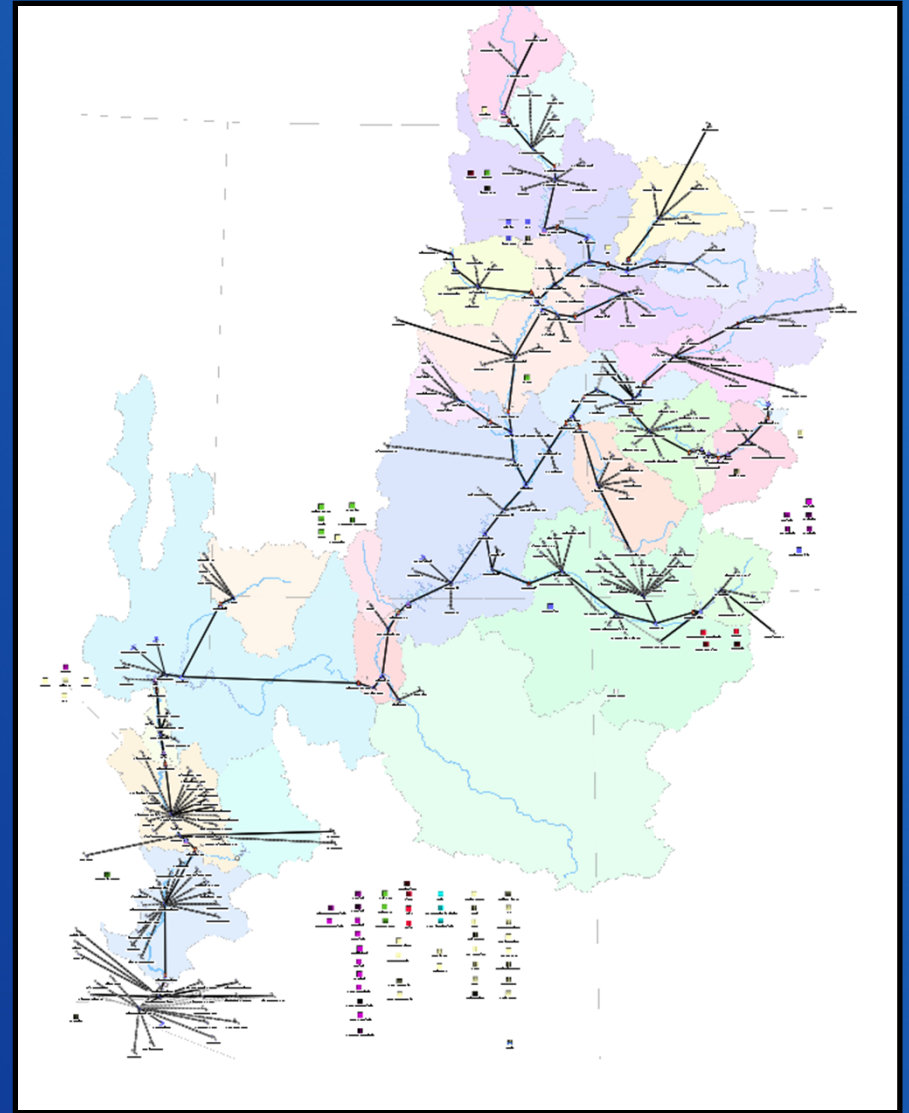
- Average supply-demand imbalances by 2060 are approximately 3.2 million acre-feet
- This imbalance may be more or less depending on the nature of the particular supply and demand scenario
- Imbalances have occurred in the past and deliveries have been met due to reservoir storage



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System Reliability Analysis

- Simulate the state of the system over the next 50 years for each scenario, with and without options and strategies
- Use metrics and vulnerabilities to quantify impacts to Basin resources
- **Resource Categories**
 - Water Deliveries
 - Electrical Power Resources
 - Water Quality
 - Flood Control
 - Recreational Resources
 - Ecological Resources

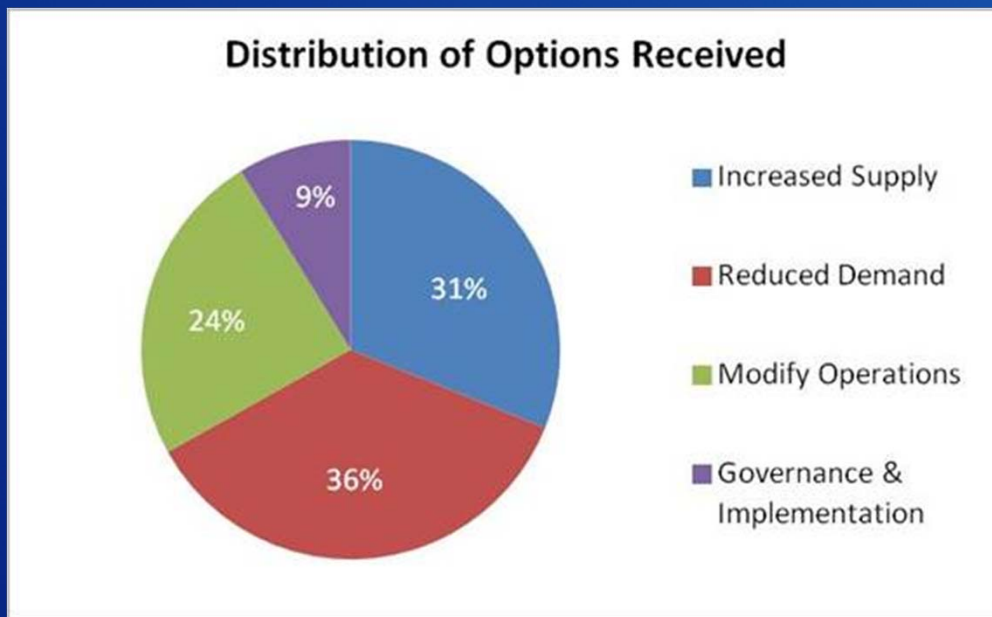


Colorado River Simulation System (CRSS)
Implemented in RiverWare™

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Summary of Options Submitted

- Over 150 options were submitted to the Study
- All options received were included and are reflected in the Study



Increased Supply – reuse, importation, desalination, etc.

Reduced Demand – M&I and agricultural conservation, etc.

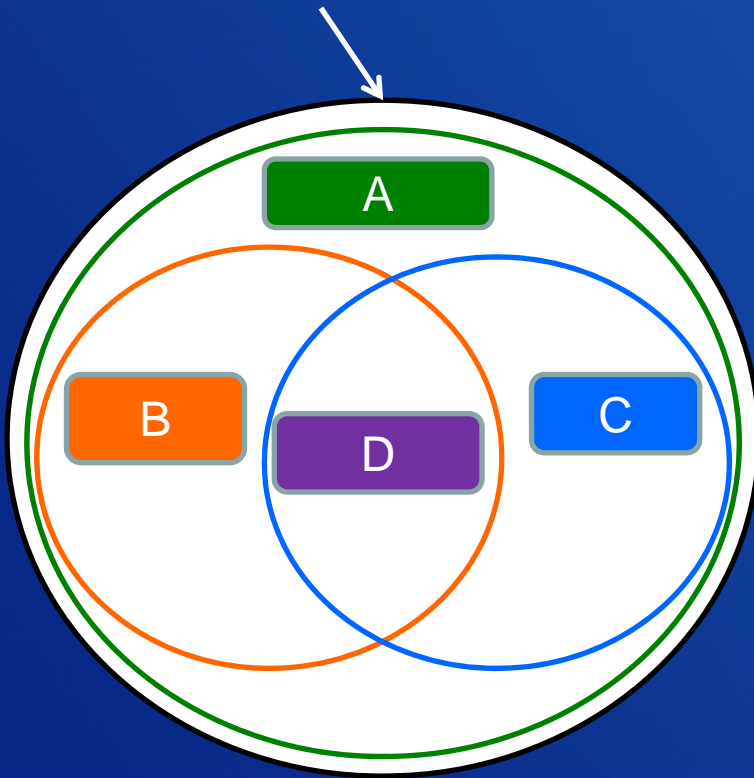
Modify Operations – transfers & exchanges, water banking, etc.

Governance & Implementation – stakeholder committees, population control, re-allocation, etc.

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Summary of Portfolios

Universe of options
considered































































Option Selection

- Least restrictive resulting in a highly inclusive set of option preferences
 - Considers the largest set of options
- Low-risk strategy in the long-term with high reliability
 - High technical feasibility
 - Excludes options with high permitting, legal and policy risks
- Prioritizes options that have low environmental impacts and long-term flexibility
 - Excludes options with high permitting risk
- High technical feasibility and long-term reliability
 - Low energy intensity
 - Excludes options with high permitting, legal, and policy risk
 - Considers smallest set of options

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Water Deliveries

Percent of All Plausible Futures that Result in Vulnerability

	Time Period	Baseline	Portfolio A	Portfolio B	Portfolio C	Portfolio D
Upper Basin Shortage (exceeds 25% of requested depletion in any one year)	2012-2026	 38%	 36%	 36%	 36%	 37%
	2027-2040	 45%	 36%	 31%	 36%	 33%
	2041-2060	 59%	 26%	 27%	 31%	 35%
Lee Ferry Deficit (exceeds zero in any one year)	2012-2026	 2%	 2%	 2%	 2%	 2%
	2027-2040	 9%	 3%	 5%	 3%	 6%
	2041-2060	 16%	 4%	 9%	 5%	 11%
Lake Mead Pool Elevation < 1000 feet (below 1000 feet in any one month)	2012-2026	 13%	 12%	 11%	 12%	 12%
	2027-2040	 25%	 17%	 15%	 18%	 18%
	2041-2060	 40%	 10%	 10%	 14%	 15%
Lower Basin Shortage (exceeds 1 maf over any two year window)	2012-2026	 22%	 16%	 15%	 16%	 16%
	2027-2040	 59%	 48%	 43%	 48%	 49%
	2041-2060	 80%	 35%	 34%	 38%	 40%

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Summary

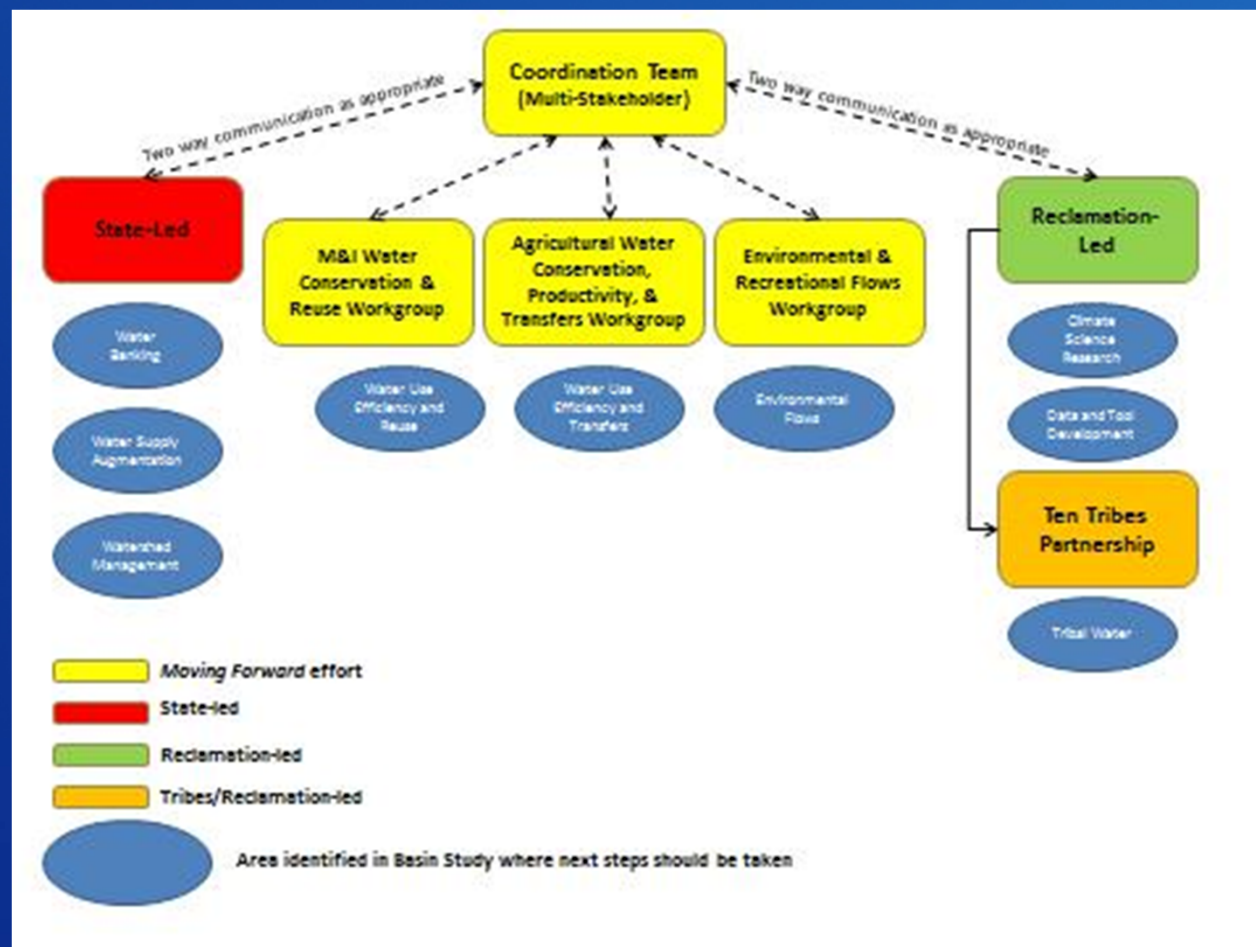
- The system is vulnerable if we do nothing
- Doing something greatly reduces that vulnerability and makes the system more resilient to adverse conditions but does not eliminate vulnerability
- In the near term, all portfolios show that conservation, transfers, and reuse are cost-effective ways to reduce vulnerability
- In the longer term, more tradeoffs emerge to achieve an acceptable level of risk in terms of options, cost, resources, and other implications.

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Moving Forward

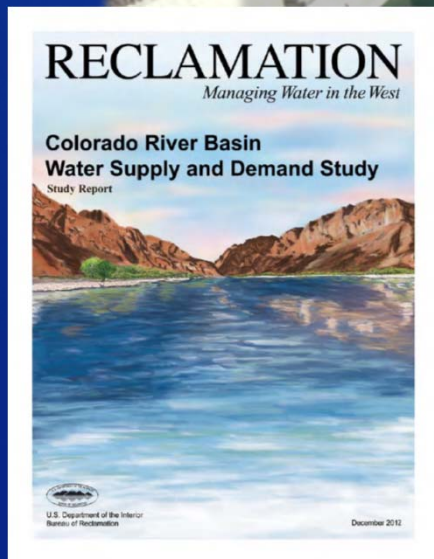
Next Steps after the Study

- Addressing future imbalances will require diligent planning and collaboration at all levels
- Phase I underway and anticipated to be completed in early 2015



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The Colorado River Basin Water Supply and Demand Study



Study & Moving Forward Contact Information

Website:

<http://www.usbr.gov/lc/region/programs/crbstudy.html>

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