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Managing Water in the West

Overview of the Colorado River Basin Water Supply and Demand Study

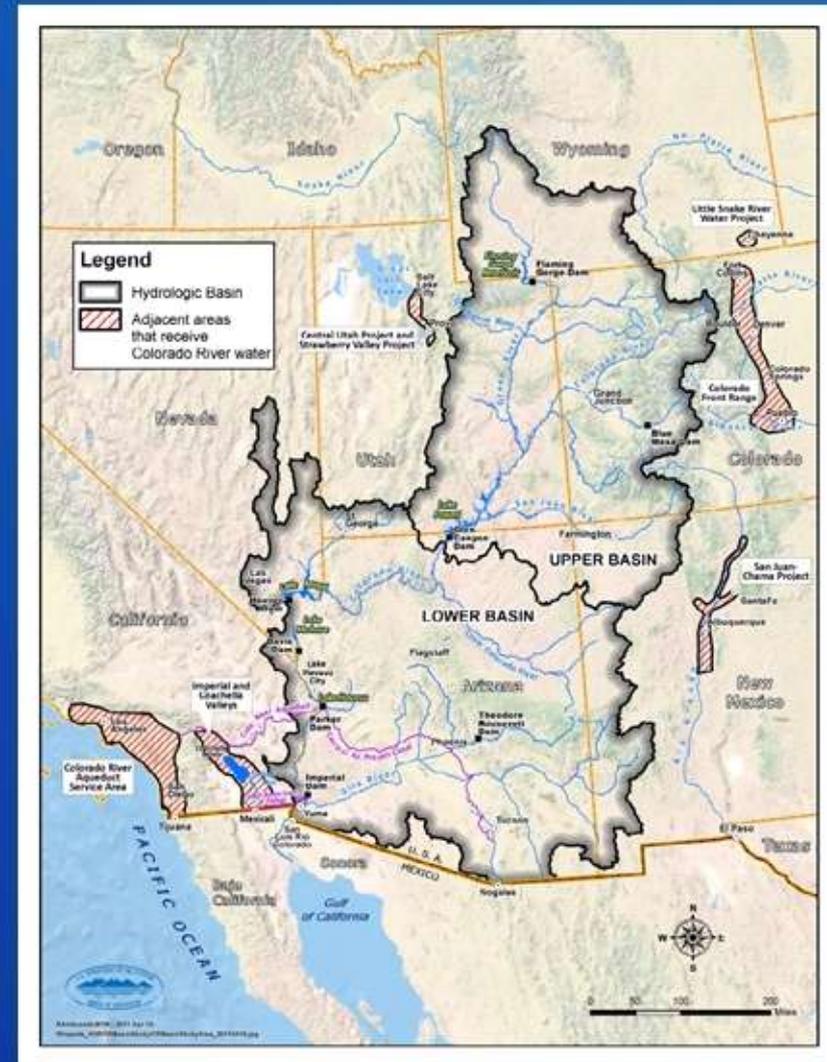
**GNEB Board Meeting
Teleconference / Webinar
March 22, 2012**



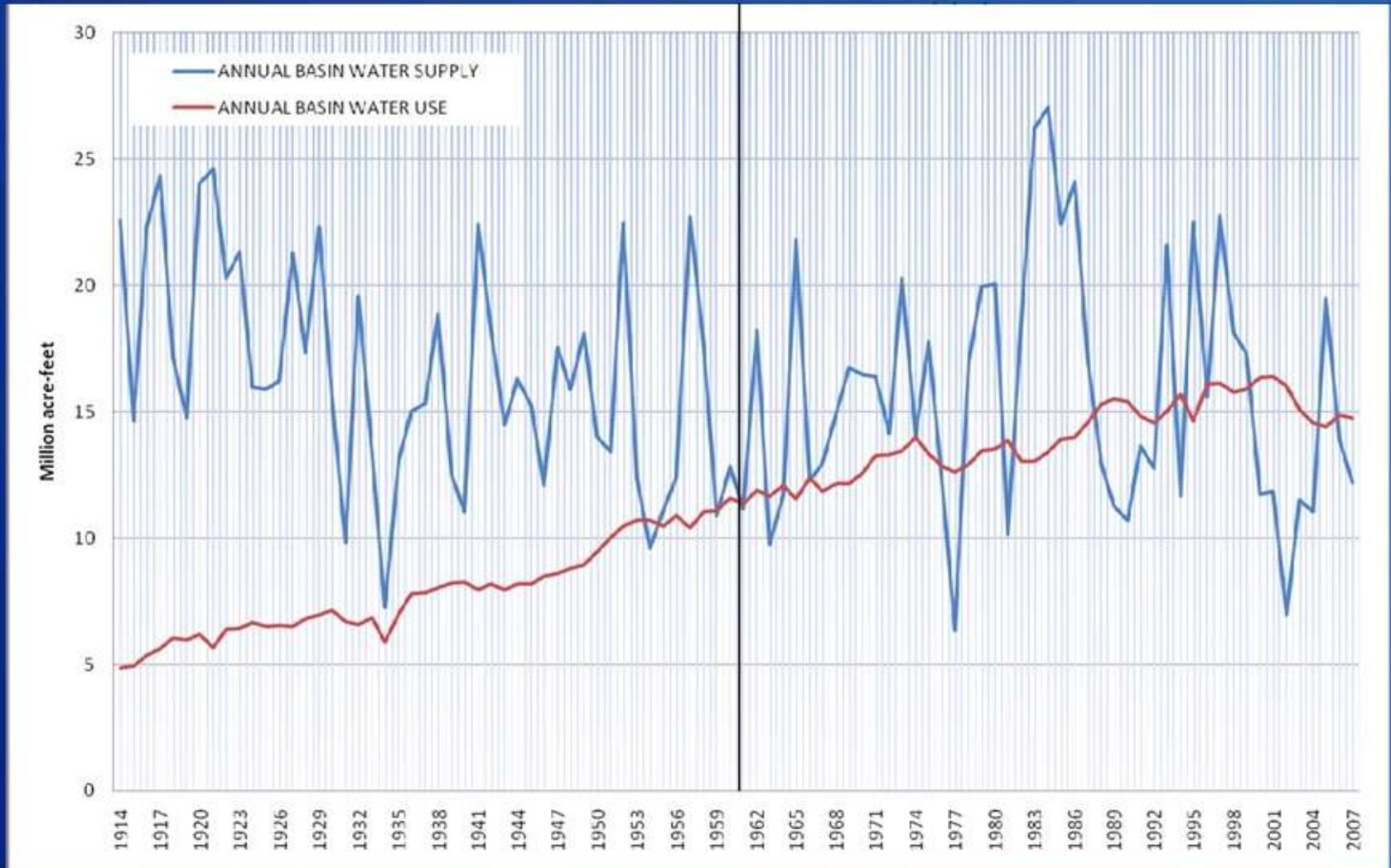
U.S. Department of the Interior
Bureau of Reclamation

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
- Study being conducted by Reclamation and the Basin States, in collaboration with stakeholders throughout the Basin
- A 2.5 year-Study beginning in January 2010
- A planning study - will *not* result in any decisions, but will provide the technical foundation for future activities



Historical Colorado River Water Supply & Use (Annual)

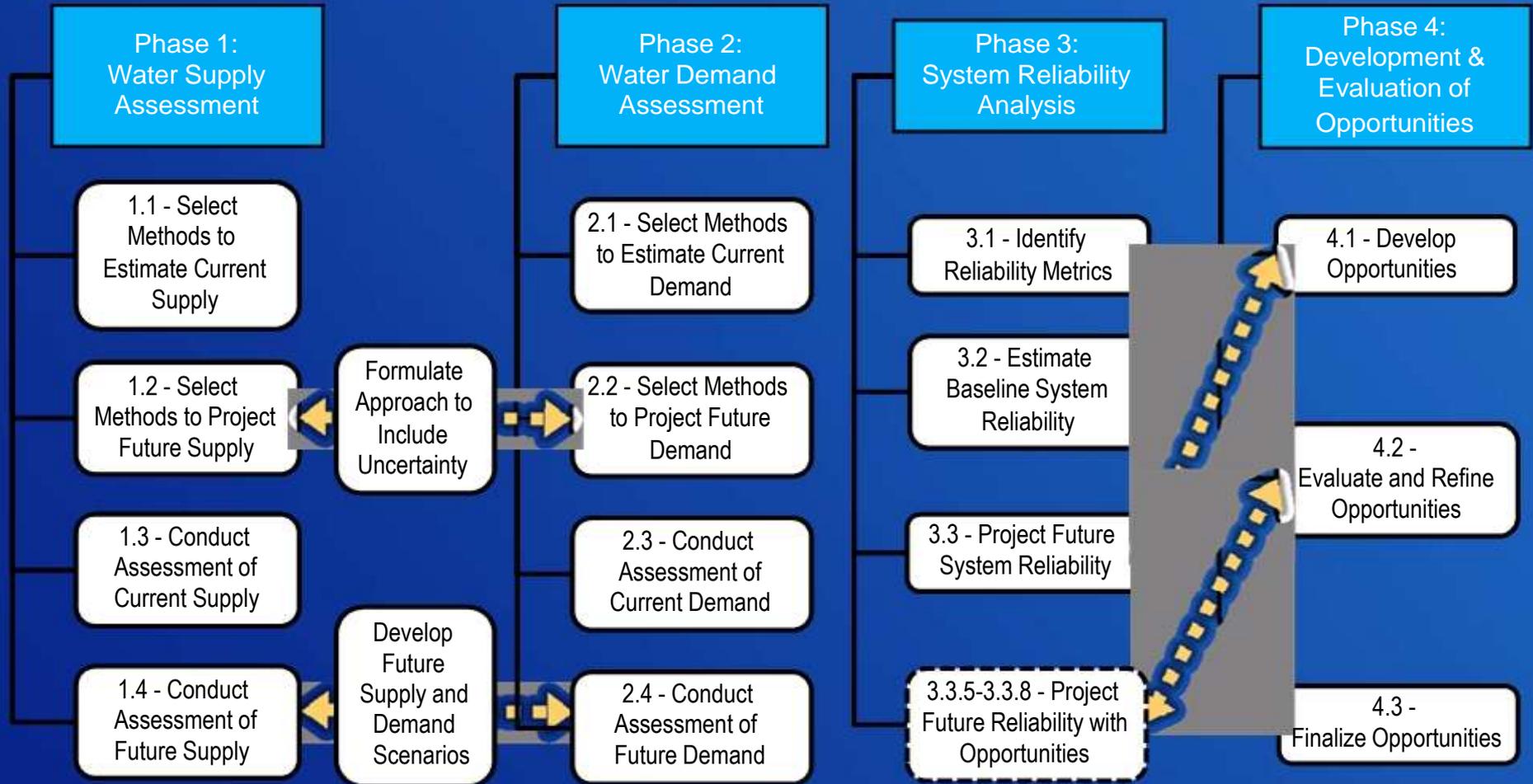


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50 Years of Colorado River Changes

	1960	2010
Demographics / Land Use <ul style="list-style-type: none"> • Population served • Acres irrigated 	12 million < 3 million	30 million 3 million
Physical System <ul style="list-style-type: none"> • Storage capacity • Hydropower generation capacity 	30 maf 6,700 GW	67 maf 12,400 GW
Natural System <ul style="list-style-type: none"> • Annual mean natural flow at L.F. • Lowest 10-yr average flow at L.F. 	15.1 maf (14.9) 12.5 maf (1931-1940)	15.0 maf 12.0 maf (2001-2010)
Institutions, Governance <ul style="list-style-type: none"> • Legislation, Policies, Agreements 	<ul style="list-style-type: none"> • Colorado River Compact • Boulder Canyon Project Act • US-Mexico Water Treaty • UC River Basin Compact • CR Storage Project 	<ul style="list-style-type: none"> • Decree in AZ v. CA • NEPA • ESA • QSA • 2007 Interim Guidelines

Study Phases and Tasks



Complete, described in Interim Report No. 1 and subsequent technical updates

Ongoing work since Interim Report No. 1

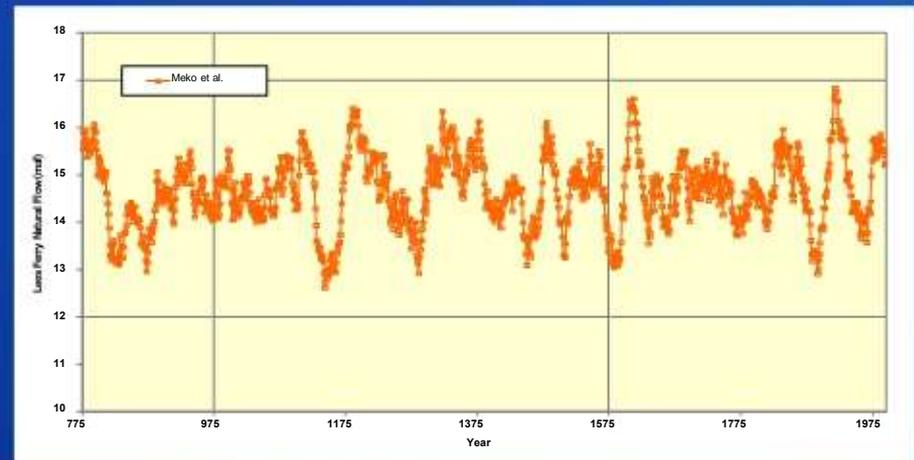
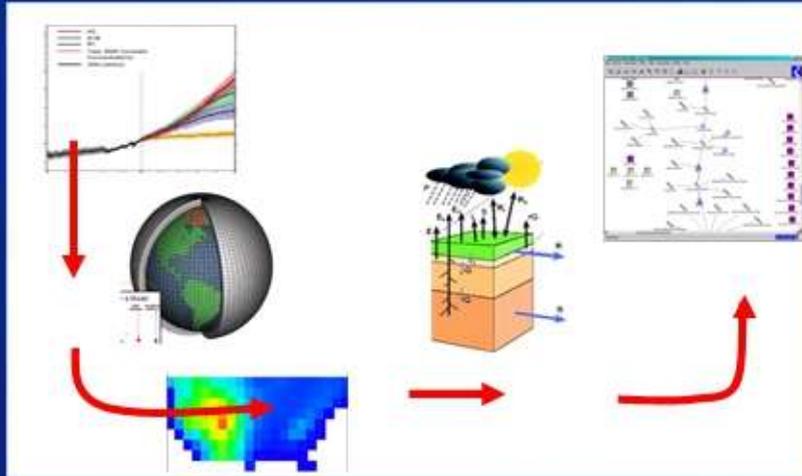
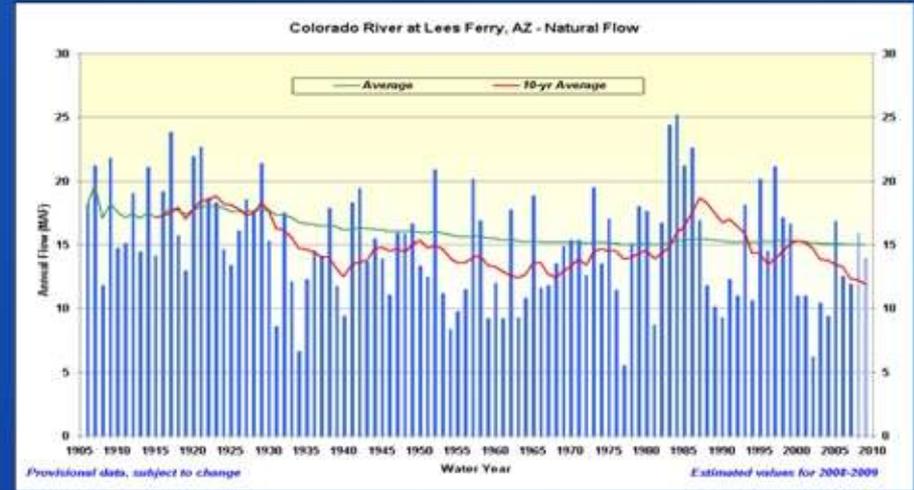
Kickoff in November 2011

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Phase 1: Water Supply Assessment

Scenarios *:

- Observed Resampled
- Paleo Resampled
- Paleo Conditioned
- Downscaled GCM Projected



* Multiple realizations for each scenario

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Phase 2: Water Demand Assessment

Scenarios*:

- **Current Projected:** growth, development patterns, and institutions continue along recent trends
- **Slow Growth:** low growth with emphasis on economic efficiency
- **Rapid Growth:** economic resurgence (population and energy) and current preferences toward human and environmental values **
- **Enhanced Environment:** expanded environmental awareness and stewardship with growing economy **

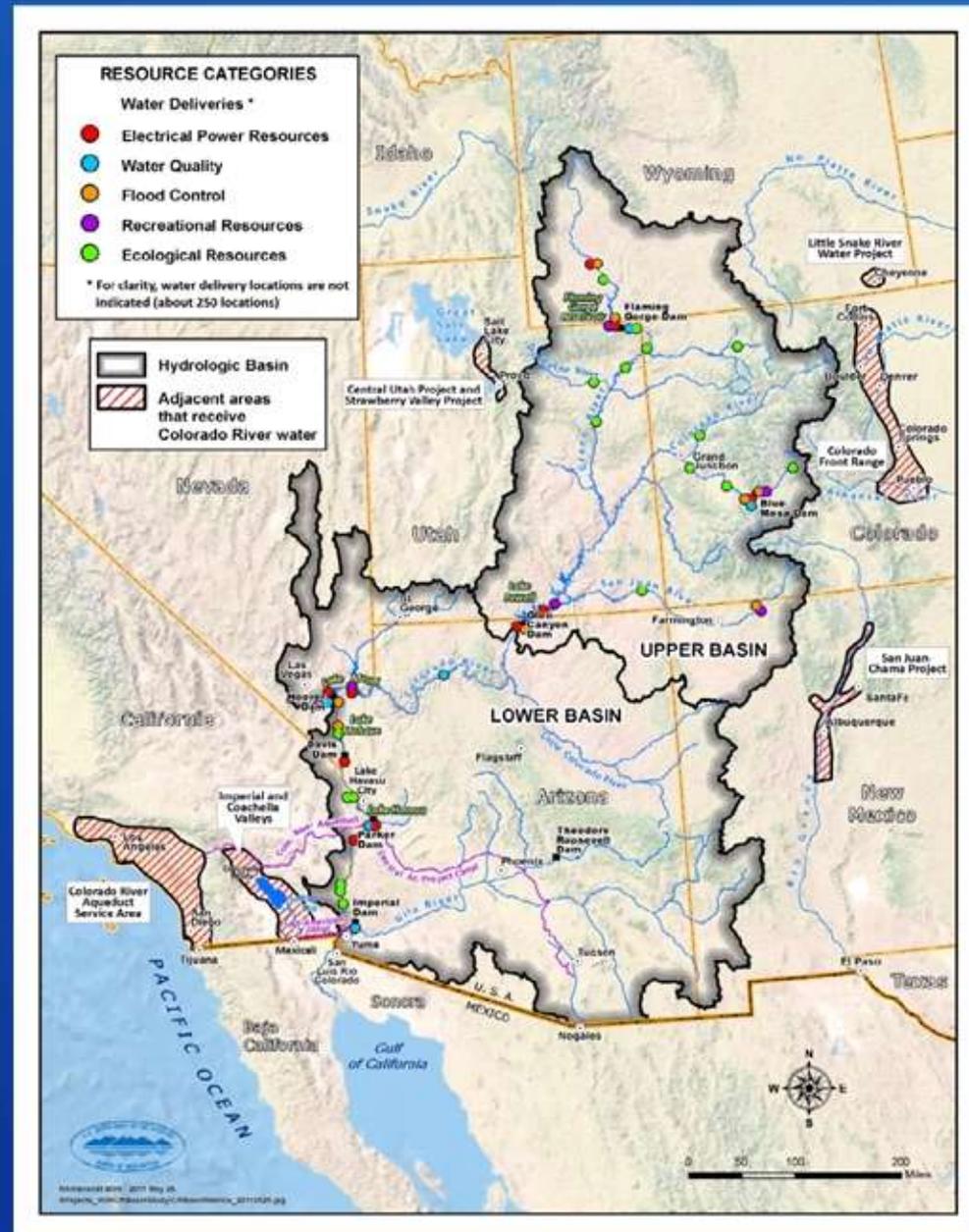
* Preliminary - Scenario names subject to change

** Additional “branches” possible depending upon assumed trajectory of specific socio-economic factors

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Phase 3: System Reliability Analysis

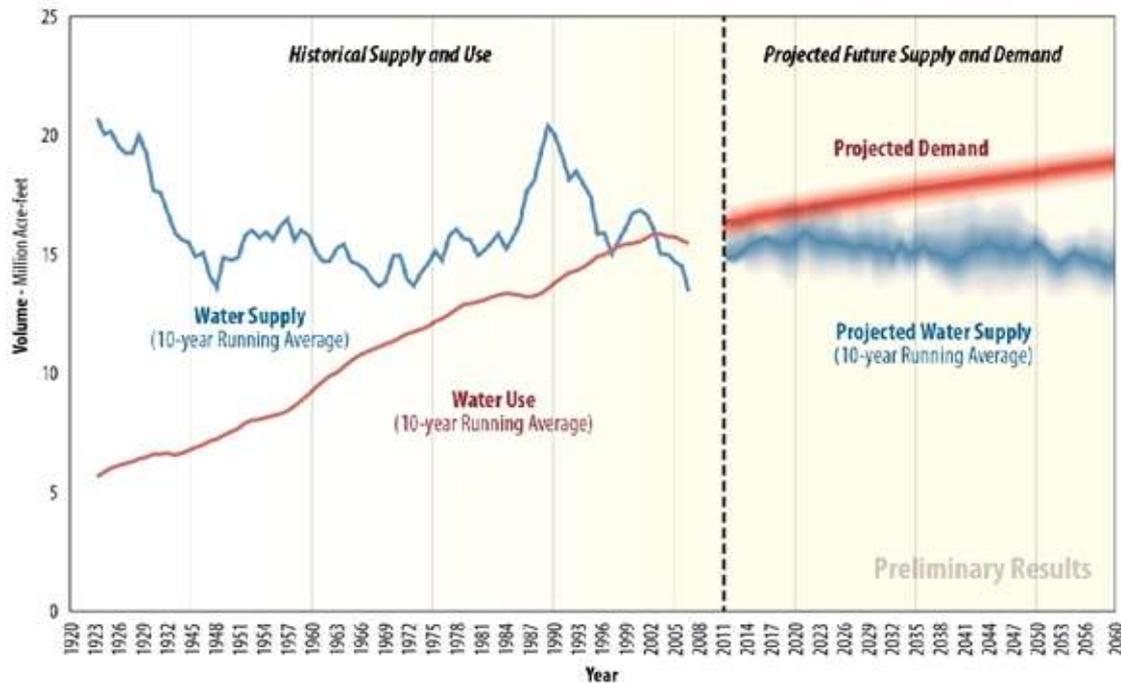
- Simulate the state of the system on a monthly time step over the next 50 years for each scenario, with and without options and strategies
- Metrics will be used to quantify impacts to Basin resources
- **Resource Categories**
 - 🕒 Water Deliveries
 - 🕒 Electrical Power Resources
 - 🕒 Water Quality
 - 🕒 Flood Control
 - 🕒 Recreational Resources
 - 🕒 Ecological Resources



Phase 4: Development and Evaluation of Opportunities to Balance Supply & Demand

- Consider a wide range of options and strategies
- Will not result in selection or funding of a proposed project

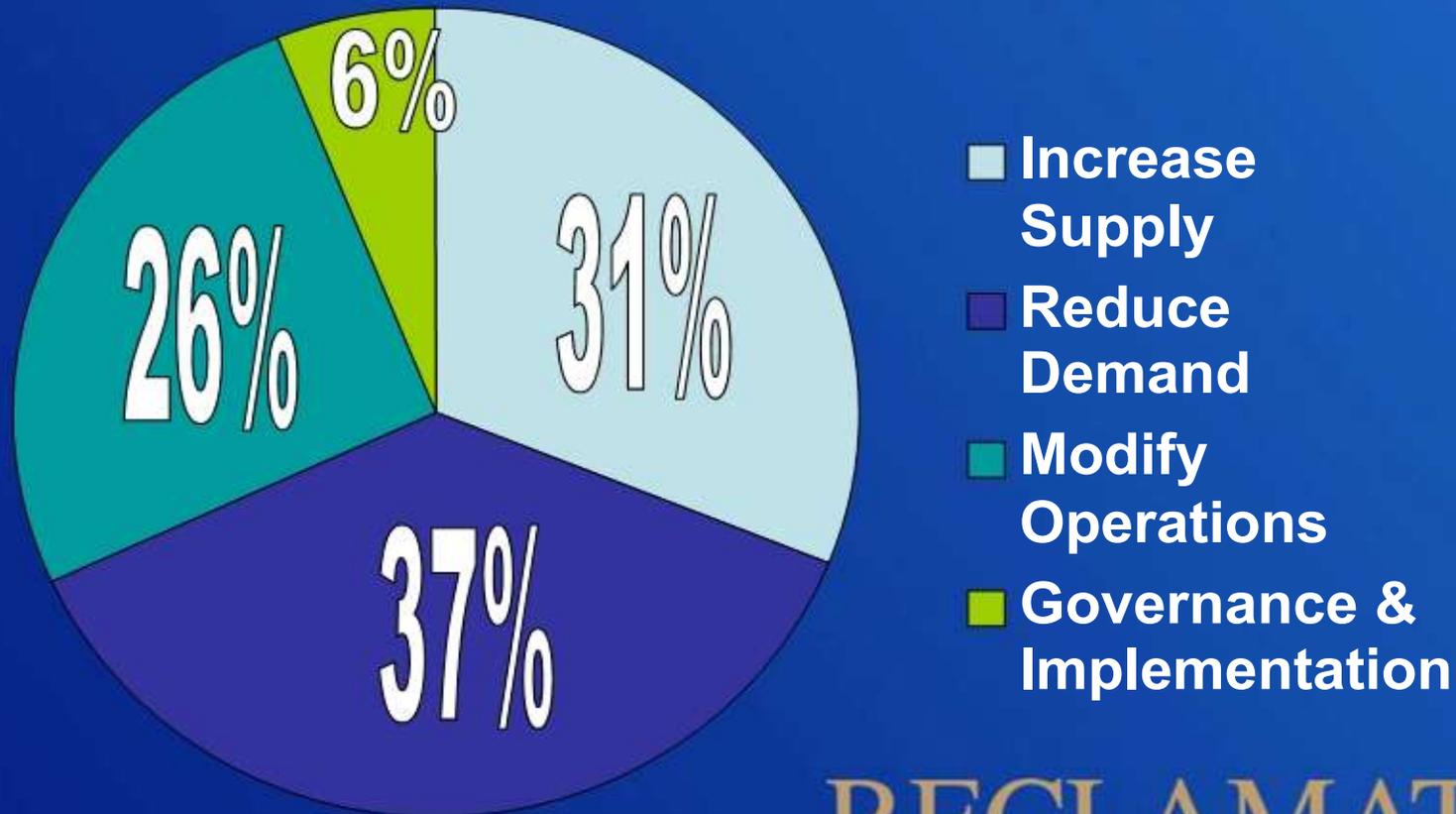
Projected Future Colorado River Basin Supply & Demand



- Preliminary Assessment based on:
 - “Current Projected” demand scenario
 - supply scenario that considers a changing climate
- A broad range of imbalances will be considered when all supply and demand scenarios are combined

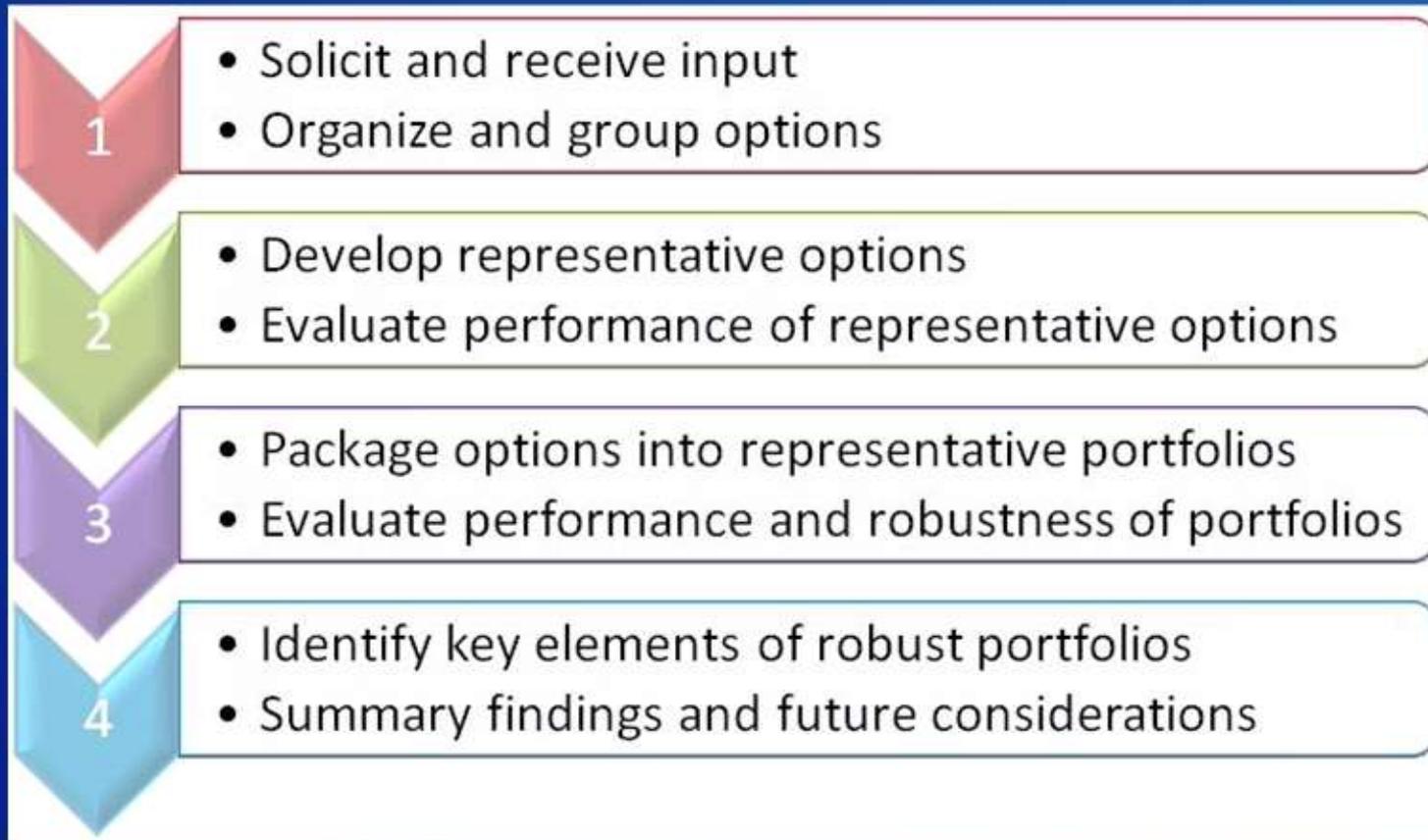
Summary of Options Submitted

- Over 140 options were submitted to the Study
- Multiple sub-categories exist, e.g. desalination, watershed management, reuse, etc.
- Option will be posted on the Study website in late March



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Process for Developing & Evaluating Options & Strategies



Milestones & Updated Study Timeline

February - January 2012	Quantify Demand Scenarios
December - March 2012	Perform “Baseline” System Reliability Analysis
November - March 2012	Develop Options & Strategies
February - March 2012	Publish Technical Updates
March - April 2012	Perform System Reliability Analysis with Options & Strategies
April - June 2012	Finalize & Evaluate Options & Strategies
June 2012	Publish Draft Final Study Report
July 2012	Publish Final Study Report

Colorado River Basin Water Supply and Demand Study

A wide-angle photograph of a large reservoir, likely Lake Mead, situated in a deep canyon. The water is a deep blue-green color. In the center of the reservoir, a small white boat is visible. The surrounding cliffs are rugged and brownish-red. In the distance, a long dam structure spans across the canyon. The sky is clear and blue.

Study Contact Information

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