Water Banking in Arizona

The Joint Recovery Model

PROTECTING ARIZONA'S WATER SUPPLIES for ITS NEXT CENTURY

Banking Water No for Arizona's Futur

CAP CENTRAL ARIZONA PROJECT

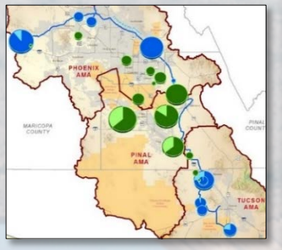
YOUR WATER. YOUR FUTURE.

A Planning Tool Developed by the **Central Arizona Project**, **Arizona Water Banking Authority** and the **Arizona Department of Water Resources**

Background

In the past two decades, 11 million acre-feet of Colorado River water has been recharged in the aquifers to Central and Southern Arizona. More than a third of that has been stored by the Arizona Water Banking Authority, primarily for times of shortage on the Colorado River.

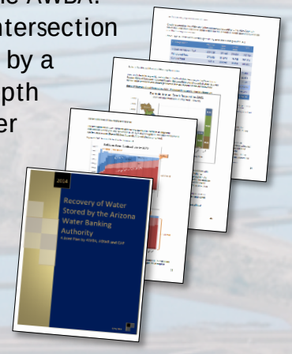
Water Banking is one of Arizona's key water management strategies, and the "recovery" (pumping) of that water is a joint responsibility of the AWBA, the Arizona Department of Water Resources, and the Central Arizona Project.



Need

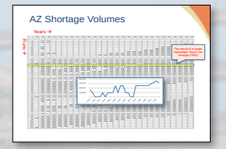
Stored water will be recovered when Colorado River shortages affect users that are "firmed" by the AWBA.

The timing and magnitude of this intersection of supply and demand is influenced by a number of factors, including the depth of shortage, available Colorado River supply, and the rate of CAP long-term contract use. In 2014, AWBA, ADWR and CAP published a Plan that analyzed those uncertainties and addressed key Institutional and regulatory issues.



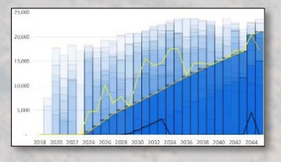
Approach

To facilitate updated planning and policy development, CAP, in coordination with AWBA and ADWR, has developed a GoldSim model that can evaluate the timing, frequency and magnitude of AWBA recovery, over a wide range of scenarios. The "Joint Recovery Model" processes data from the US Bureau of Reclamation's Colorado River Simulation System model, along with water use projections, and policy variables, all of which are accessible through a GoldSim dashboard.



Results

The Joint Recovery Model generates results under a range of hydrologic conditions (typically 110 realizations, projected through 2045), for each of the AWBA's classes of firmed users (e.g., M&I CAP subcontractors, 4th Priority On-River users, etc.). To assist in analysis and comprehension, a set of Excel-based visualizations have been developed. Combining Visual Basic for Applications, and advanced charting, the relationships among volume, timing and likelihood can be conveyed.



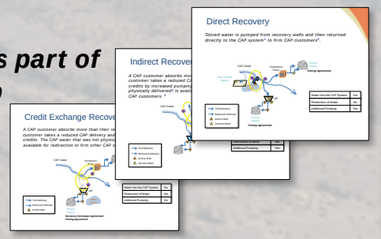
Engagement

Results from the Joint Recovery Model have played a prominent role in the work of the "Recovery Planning Advisory Group." RPAG is a 14-member stakeholder group convened by the Arizona Department of Water Resources to assist ADWR, AWBA and CAP in the refinement of recovery methods and concepts. Stakeholders have used the modeling to focus on near-term implementation proposals. The modeling results have also been included in briefings to relevant elected and appointed officials.

Next Steps

There are a number of additional issues of interest to AWBA recovery, notably those relating to cost. To analyze the range of potential costs, the Joint Recovery Model is being integrated with a separate model that evaluates costs based on probabilities, different methods of recovery, and their associated cost components.

The Joint Recovery Model is part of a broader effort to develop shared analytical tools among Arizona's major water institutions.



For More Information:

ADWR: www.azwater.gov
AWBA: www.azwaterbank.gov
CAP: www.cap-az.com

Photo: Tonopah Desert Recharge Project (CAP)