

CITIZENS' WATER ADVISORY COMMITTEE (CWAC)

Technical/Planning and Policy Subcommittee

Wednesday, June 29, 2016, 12:00 p.m.

Director's Conference Room

Tucson Water, 3rd Floor

310 W. Alameda Street, Tucson, Arizona



Legal Action Report

1. Roll Call/Call to Order

The meeting was called to order by Subcommittee Chair Mark Murphy, at 12:00 p.m. Those present and absent were:

Present:

Mark Murphy	Chairperson-Representative, Mayor
Mitch Basefsky	Representative, City Manager
Placido dos Santos	Representative, City Manager
Brian Wong	Representative, City Manager
Chuck Freitas	Representative, City Manager
Kelly Lee	Representative, Ward 6

Absent:

None

Tucson Water Staff Present:

Scott Clark	Deputy Director
Melodee Loyer	Water Administrator
Wally Wilson	Chief Hydrologist
Johanna Hernandez	Staff Assistant
Beth Kleiman	Intern

Others Present:

Michael Block	Metro Water
Ken Seasholes	CAP

- Announcements** – Members provided information regarding recent meetings and conferences held by AWWA and WESTCAS.
- Call to Audience** – No action taken.
- Review & Approval of May 25, 2016 Legal Action Report and Meeting Minutes** – Member Wong motioned to approve the Legal Action Report and Meeting Minutes of May 25, 2016. Member Lee seconded. Motion passed unanimously by a voice-vote of 6-0.
- Regional Water Planning/Firming** – Ken Seasholes, from CAP, presented a PowerPoint on the role of water banking in mitigating shortage impacts. Water banking is a method of recharging and storing water for later use, particularly in times of shortage on the Colorado River. Arizona has an extensive water banking process as one of many shortage strategies. These strategies also include conservation and water management, tiered priorities of CAP water, and shortage sharing. Another benefit of water banking is the protection of groundwater through use of renewable supplies. Recharge of water results in credits that accumulate and can be recovered within the same active management area that year, or stored as long-term credits. Water can be stored directly through underground storage facilities, or indirectly

Citizens' Water Advisory Committee, Technical/Planning and Policy Subcommittee

Legal Action Report

June 29, 2016

through groundwater savings facilities. Water recharge and recovery is regulated and monitored by the Arizona Department of Water Resources. Arizona has an annual recharge capacity of 2 million acre-feet a year. The Arizona Water Banking Authority (AWBA) was created to firm unused Colorado River entitled to Arizona. The AWBA recharges water in various locations across the different AMA's in the state. Water stored by the AWBA will be recovered in times of shortages on the Colorado. The conditions of the shortage will determine the recovery of water. AWBA firms only for M&I users and a small portion of NIA users. The need for recovery is projected to increase over time. Current shortage sharing agreements were reviewed as part of a discussion of pending shortage sharing negotiations to help protect elevation levels in Lake Mead. Recovery would include ADWR, as regulator; AWBA, as holder of the credits; CAP, as a recovery agent; and, Recovery Partners, as contracted CAP users. Different recovery scenarios reflecting normal deliveries, shortage without firming, shortage with firming, direct recovery, indirect recovery, and credit exchange recovery. Technical studies are being done to assess direct recovery options and agreements with partners for future recovery are being pursued. CAP and reclamation are negotiating terms for firming and recovery, as well as potential wheeling, and exchanges. These negotiations will result in a CAP System Use Agreement. The Agreement is currently in draft form, and is approaching a draft that can be shared.

- 6. Future Meetings/Agenda Items** – See projected agenda for further information.
- 7. Adjournment** – Meeting adjourned at 1:22 p.m.

The Role of Water Banking in Mitigating Shortage Impacts

CWAC Technical,
Planning & Policy
Subcommittee
June 29, 2016

Ken Seasholes

Manager, Resource Planning & Analysis



YOUR WATER. YOUR FUTURE.

Context & Terms

- Water banking—recharging water for later use—is a critical part of Arizona’s strategy for dealing with Colorado River shortages
 - During shortage, stored water is pumped from wells (“recovered”) to supplement (“firm”) deliveries that have been reduced
- Arizona has created an elaborate physical, institutional, financial and regulatory framework to accomplish this goal

Some of

Arizona's Shortage Strategies

- Conservation & Water Management
 - Long-term programs
 - Drought response provisions
- Tiered Priorities of CAP Water
- Shortage Sharing
 - With Nevada and Mexico
 - Within Arizona between CAP and On-River
- Water Banking & Recovery

Recharge & Recovery Framework

Recharge Policy

“Protect the general economy and welfare of this state by encouraging the use of renewable water supplies, particularly this state's entitlement to Colorado river water, instead of groundwater through a flexible and effective regulatory program for the underground storage, savings and replenishment of water.”

Underground Water Storage, Savings and Replenishment Act (1994; §45-801.01)

Recharge & Recovery

- Arizona's recharge & recovery program uses a "paper water" accounting system that relies on a "mass balance" approach
 - Recharging a volume of water allows an equal, or nearly equal, volume to be recovered
 - Generally, anywhere within the same AMA
- Recharge & recovery can occur within the same year, or a Long-Term Storage Credit is issued for future use
 - Credits can be transferred among users, with some restrictions

Recharge Facility Types



Superstition Mountains Photo: CAP

Underground Storage Facilities (USF)

- “Direct” recharge
- Water is delivered to spreading basins, trenches, injection wells or natural channels



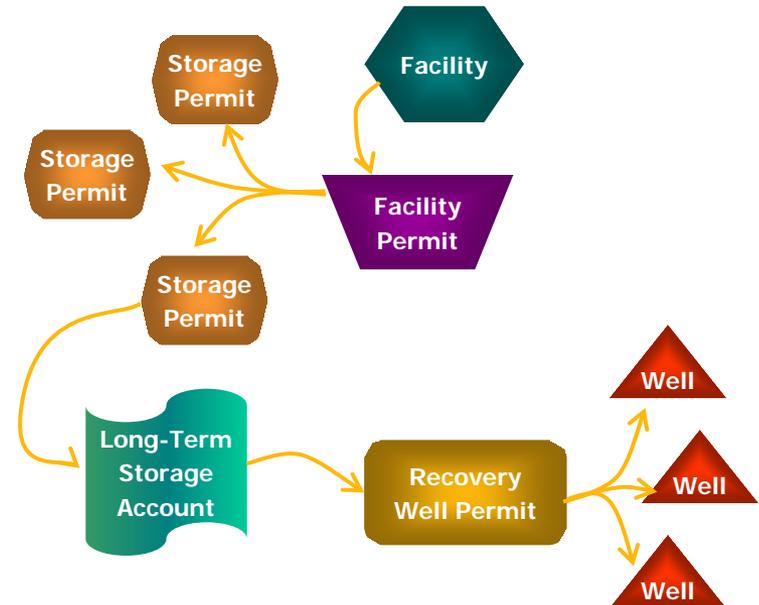
Drip Irrigation, MSIDD. Photo: Megdal

Groundwater Savings Facilities (GSF)

- “Indirect” or “in lieu” recharge
- Water is delivered to agricultural user that would otherwise have pumped groundwater

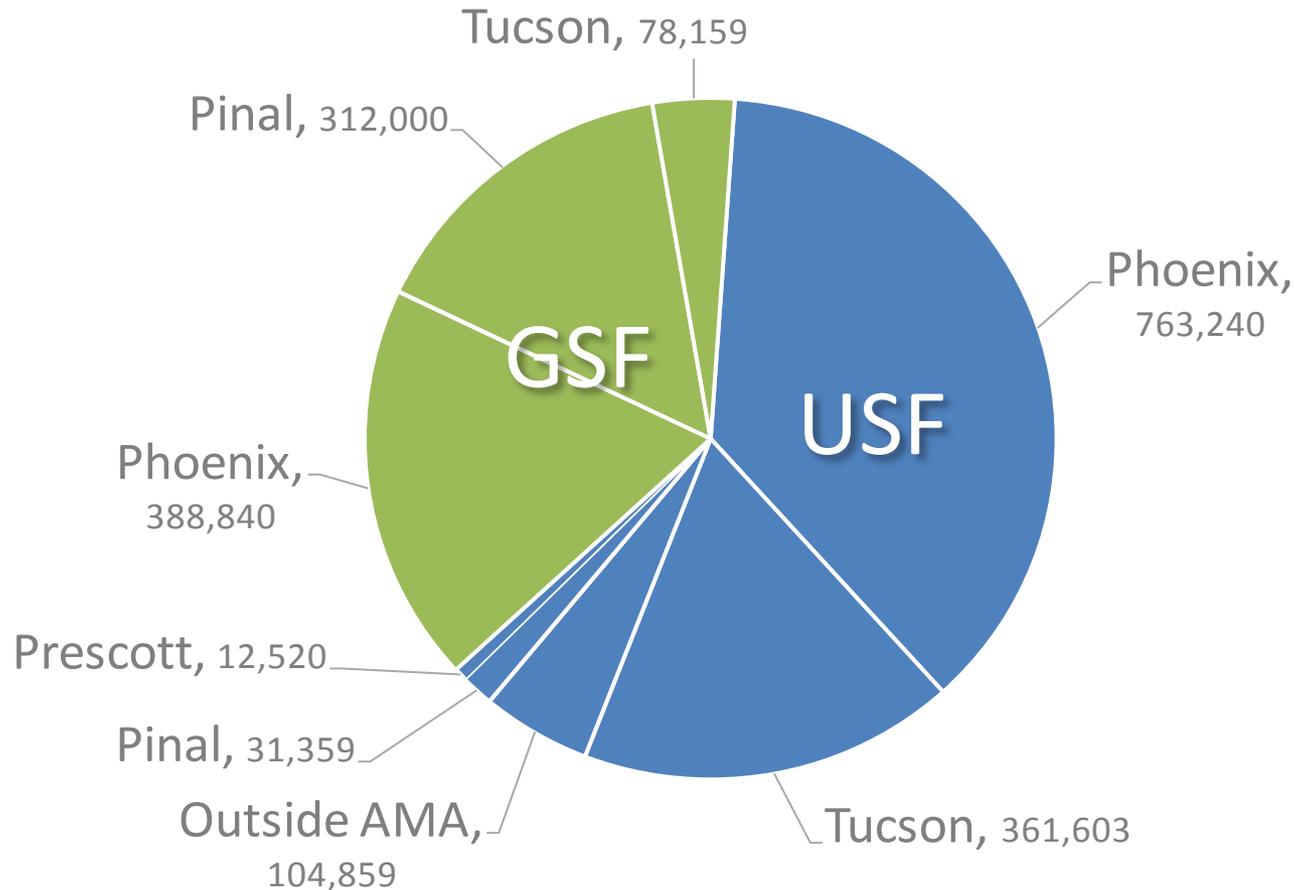
Regulation & Accounting

- The Arizona Department of Water Resources administers the system of permits and accounts
 - Allows storage and recovery while protecting other land and water users
 - Requires extensive monitoring and annual reporting
 - Stored water retains its legal character
 - Recovered CAP Water = 'wet' CAP Water



Annual Recharge Capacity

Total = 2.0 MAF/year



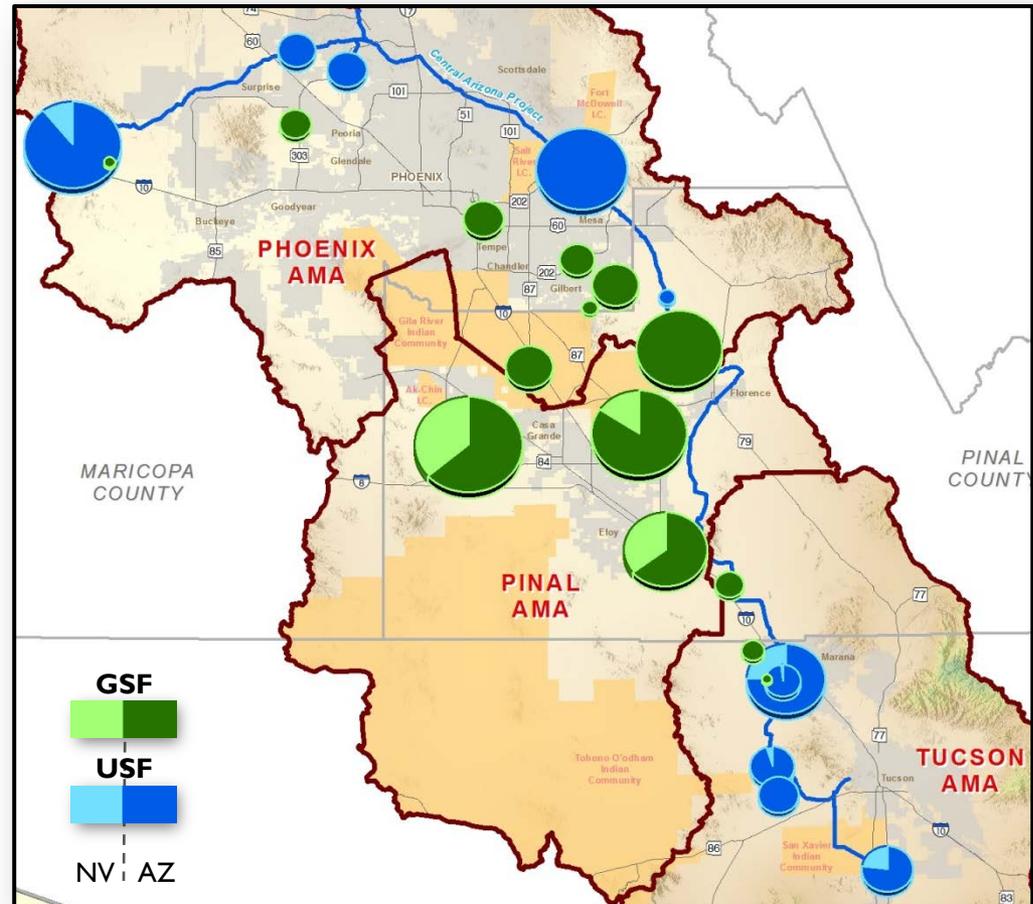
Source: ADWR Status Reports, 2/24/16
Permitted capacity, by facility type and AMA

Arizona Water Banking Authority

- Recharges for a variety of purposes
 - To mitigate the impacts of Colorado River shortages
 - To create water management benefits
 - To allow interstate storage
 - To help settle Indian water rights claims
- Each of these was in service to a larger policy objective—*full utilization of Arizona's Colorado River allocation*

AWBA Storage

- 4.0 MAF in storage
 - 3.4 MAF for AZ
 - 0.6 MAF for NV
- In the Phoenix, Pinal and Tucson Active Management Areas
 - 10 Underground Storage Facilities (USFs)
 - 14 Groundwater Savings Facilities (GSFs)



Recharge & Recovery: CAP

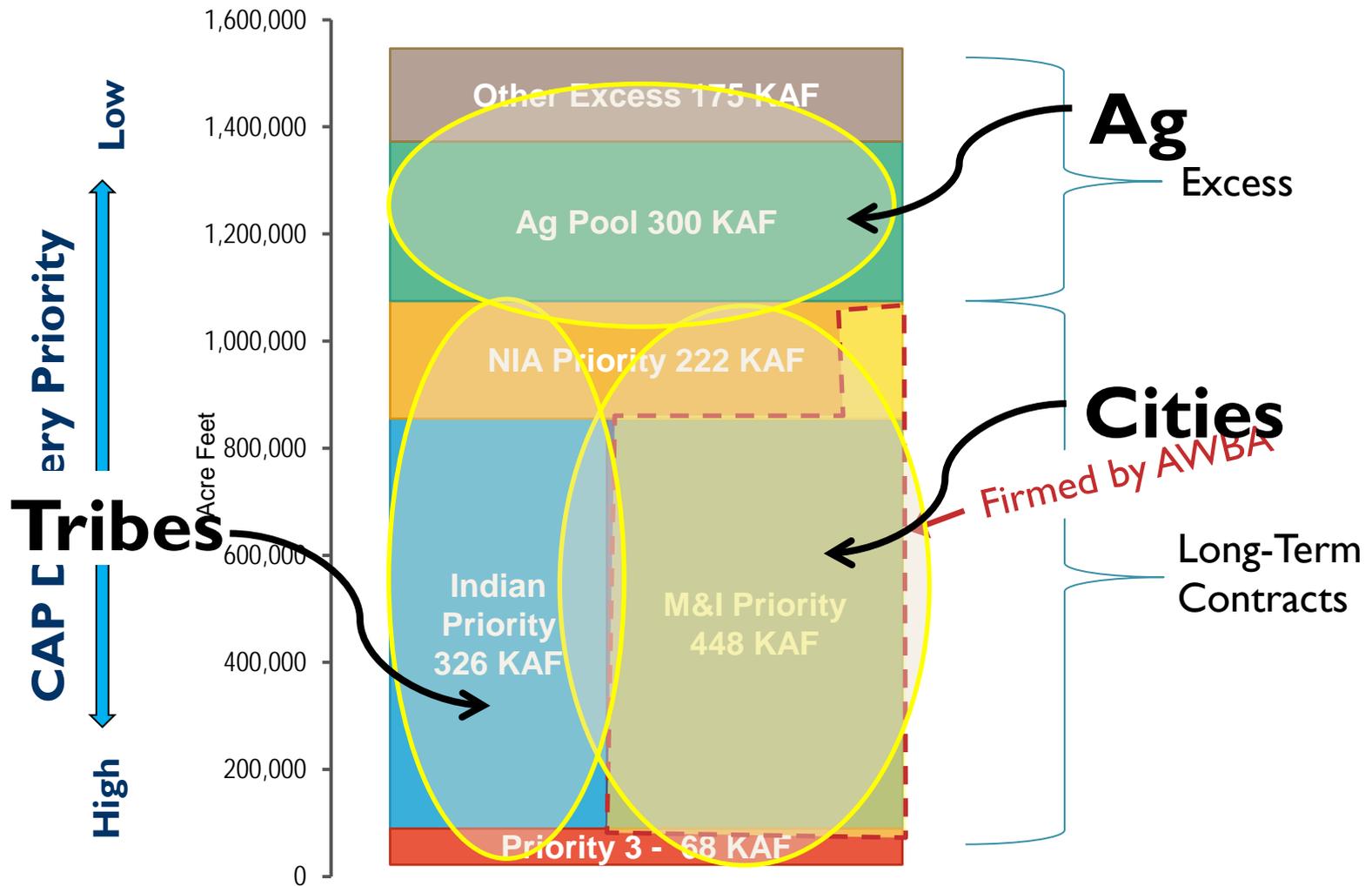
- Colorado River water delivered via the CAP system has been the largest supply for recharge
- CAP owns & operates six recharge facilities
- CAP also has a significant role in recovery, particularly for water stored by the AWBA

Recovery of AWBA Credits

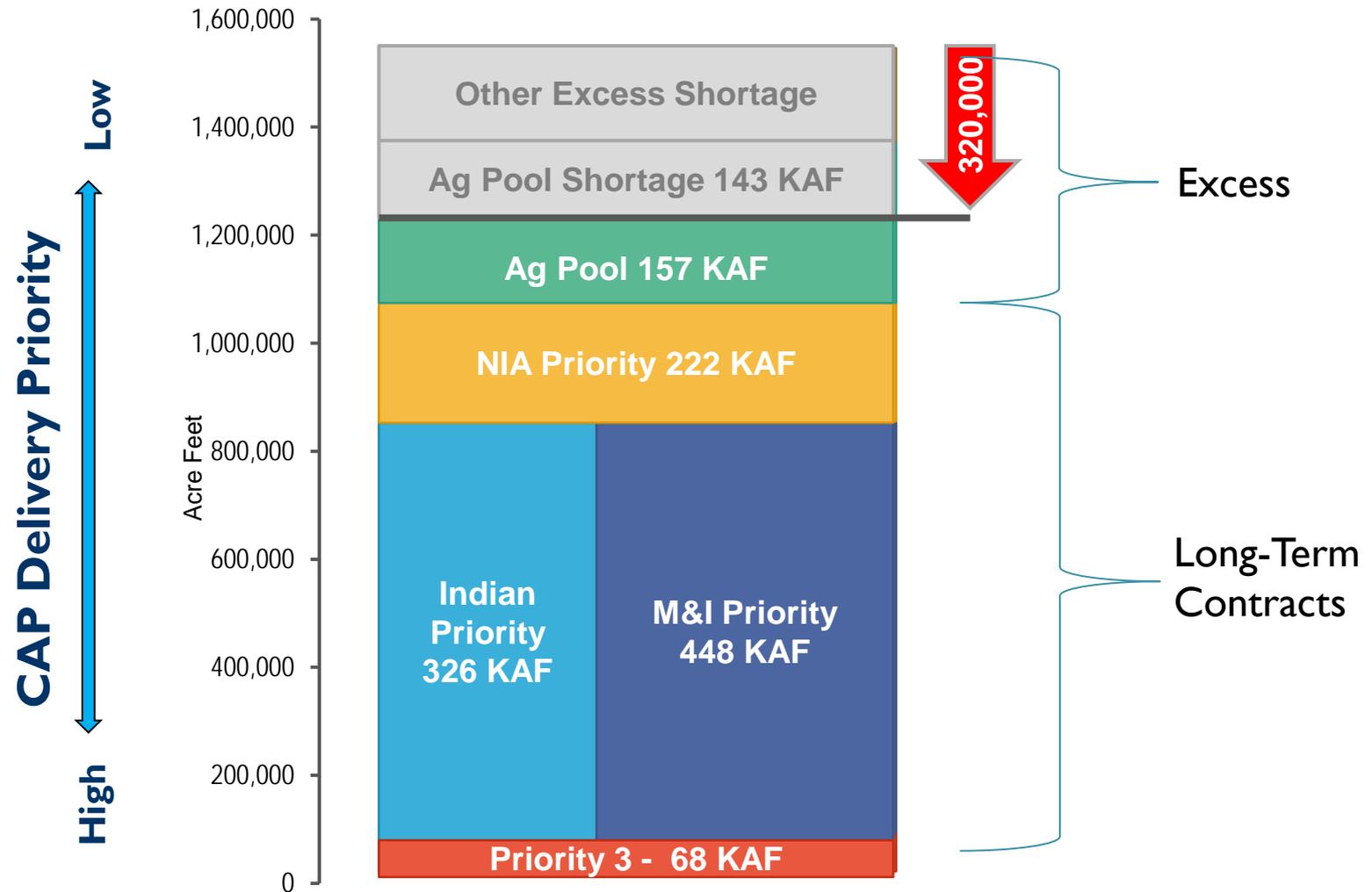
- **When** will recovery be necessary?
- **Who** is responsible?
- **How** will it be accomplished?
- What are the **current efforts**?

When?

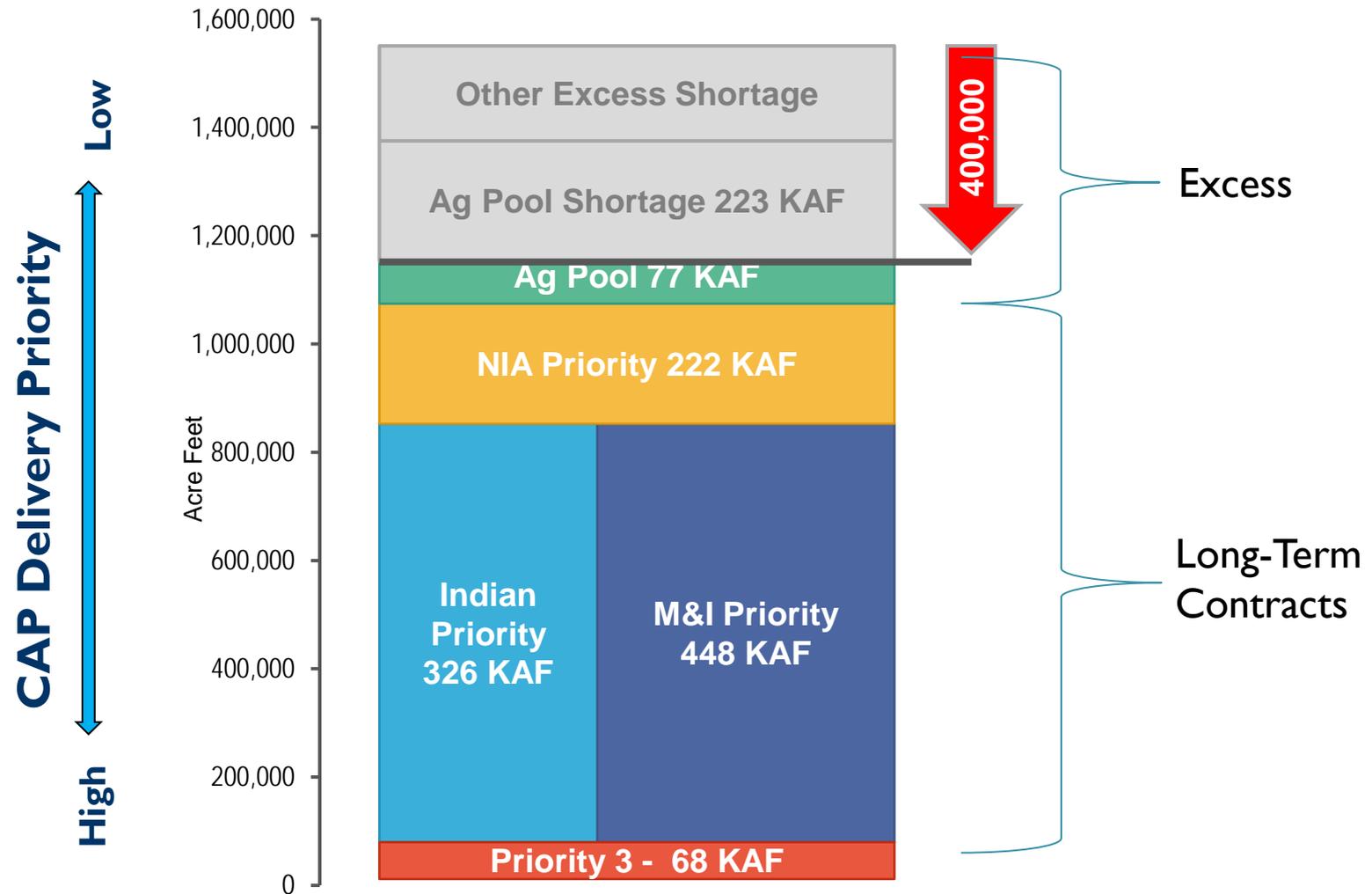
Shortage Impacts



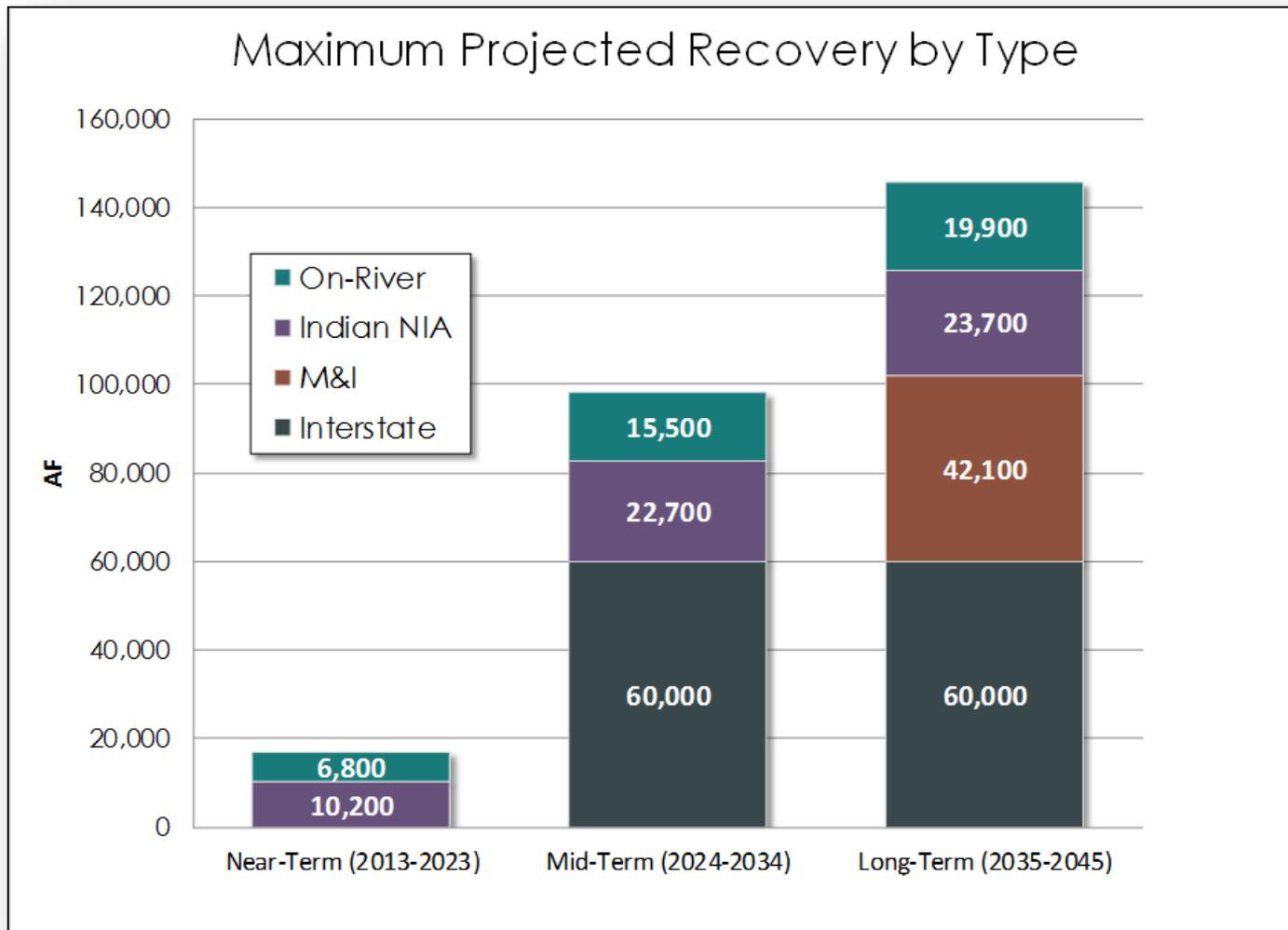
Shortage Impacts



Shortage Impacts



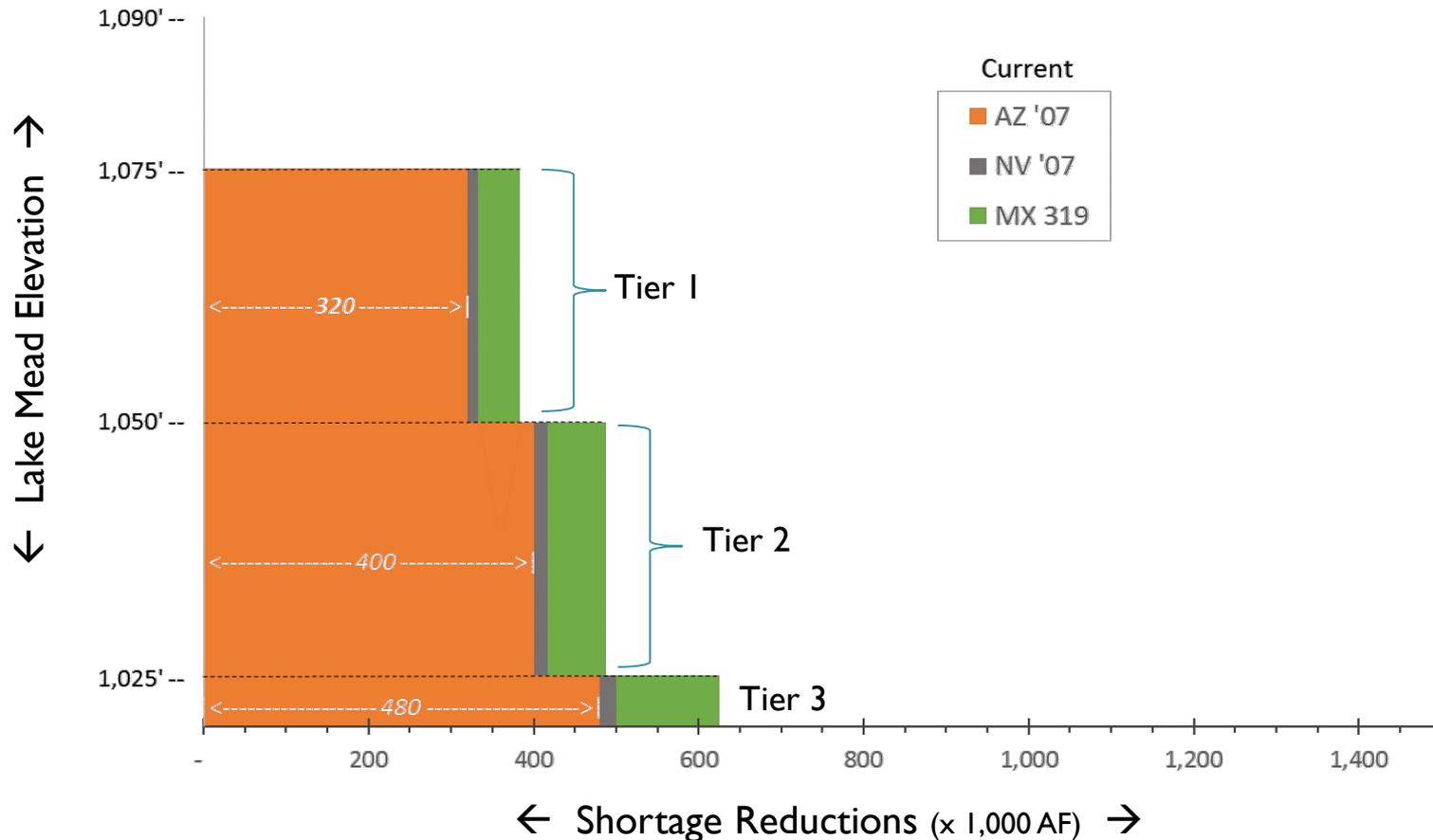
Recovery Needs



Joint Recovery Plan, 2014

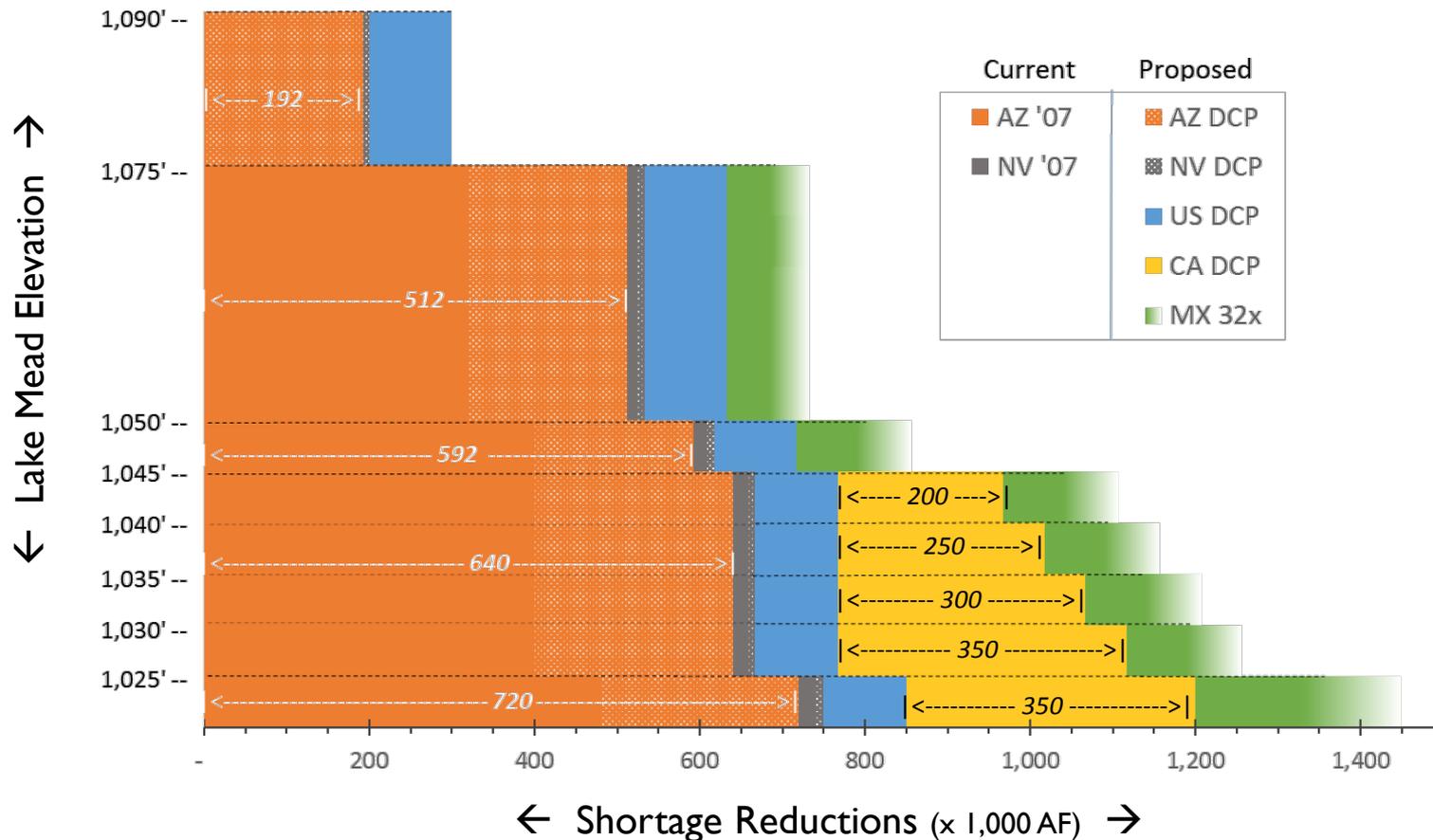
2007 Guidelines + Minute 319

Current Shortage Sharing, by Lake Mead Elevation and State/Country

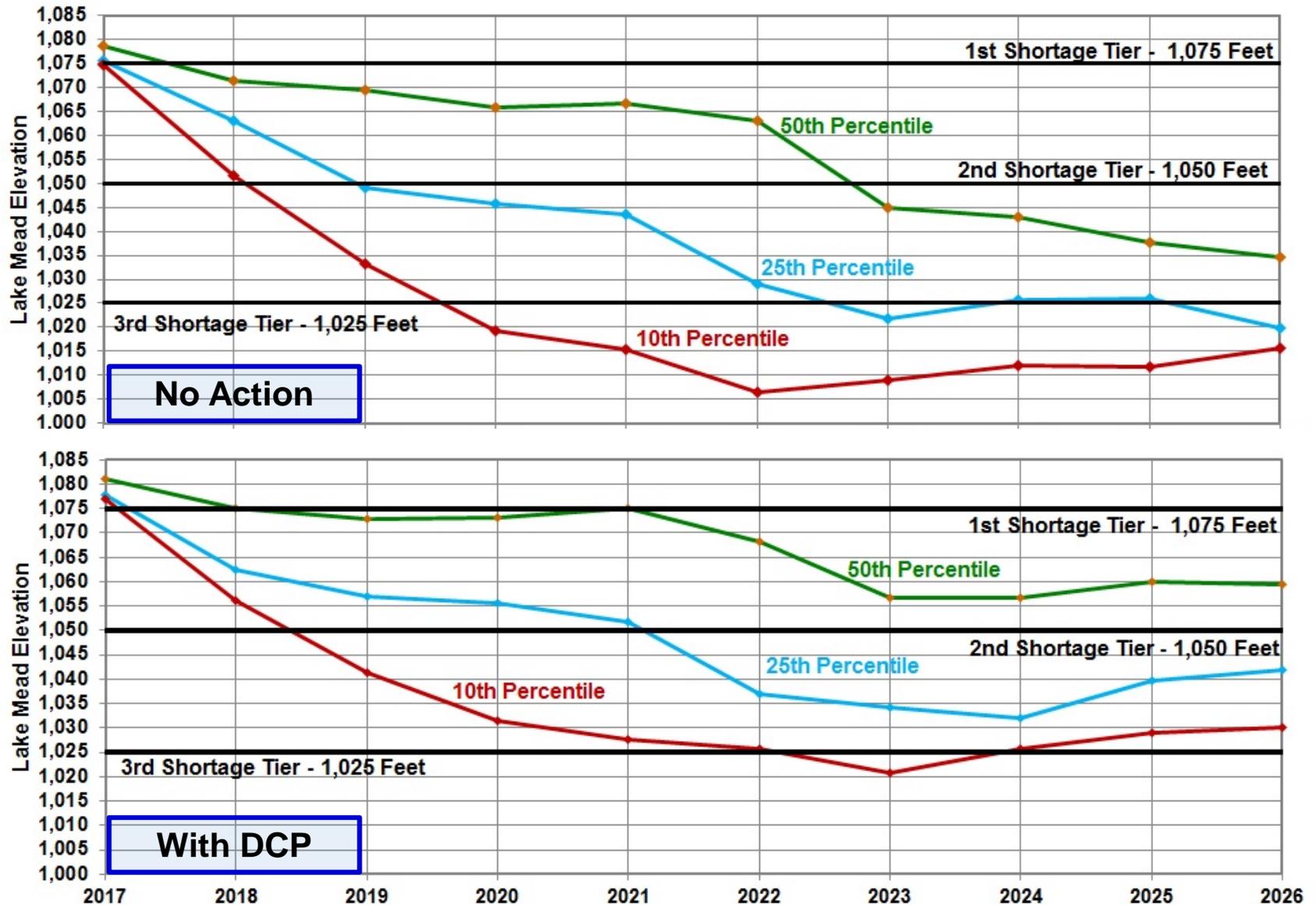


'07 Guidelines + LBDPCP Reductions + Minute 32x

Potential Shortage Sharing and Protection Actions, by
Lake Mead Elevation and State/Country



Lake Mead – Selected Percentile Elevations Stress Test Hydrology – “No Action” and With DCP



May 18th Shortage Update

Who?

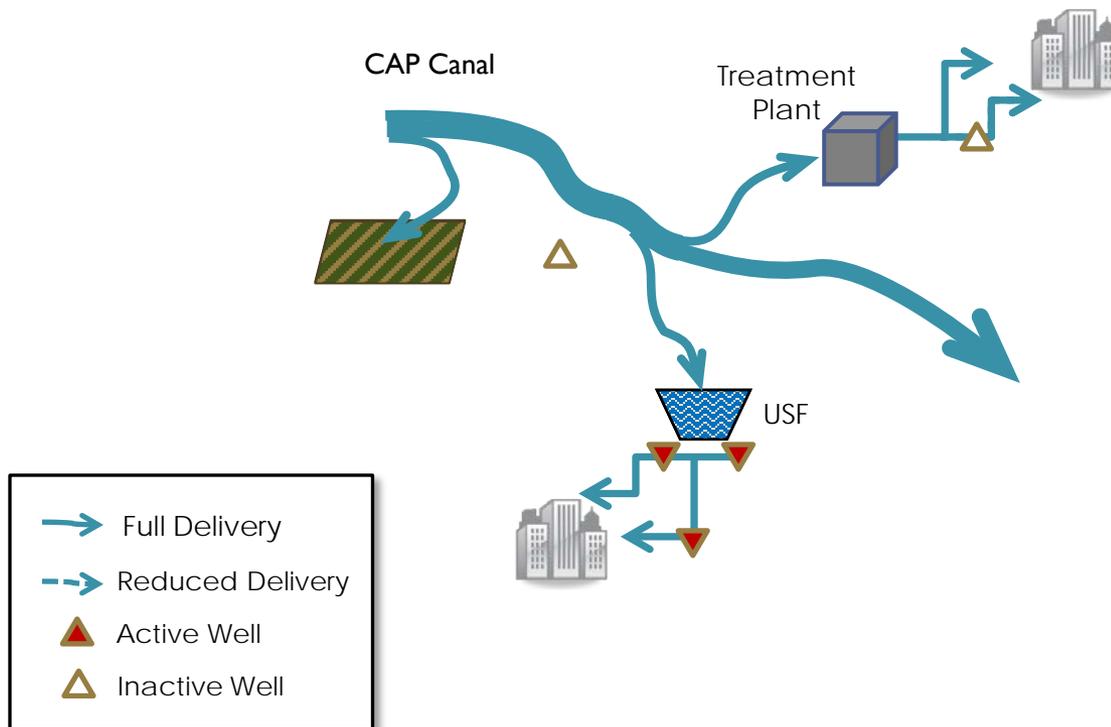
Recovery Roles

- **ADWR**—administers the regulatory framework for recharge & recovery
- **AWBA**—manages the distribution of its credits, consistent with firming requirements, location and sources of funding
- **CAP**—serves as a designated recovery agent for the AWBA; works with the AWBA and partners to turn credits into firming water
- **Recovery Partners**—entities that agree to recover credits to make up for reduced deliveries of CAP water

How?

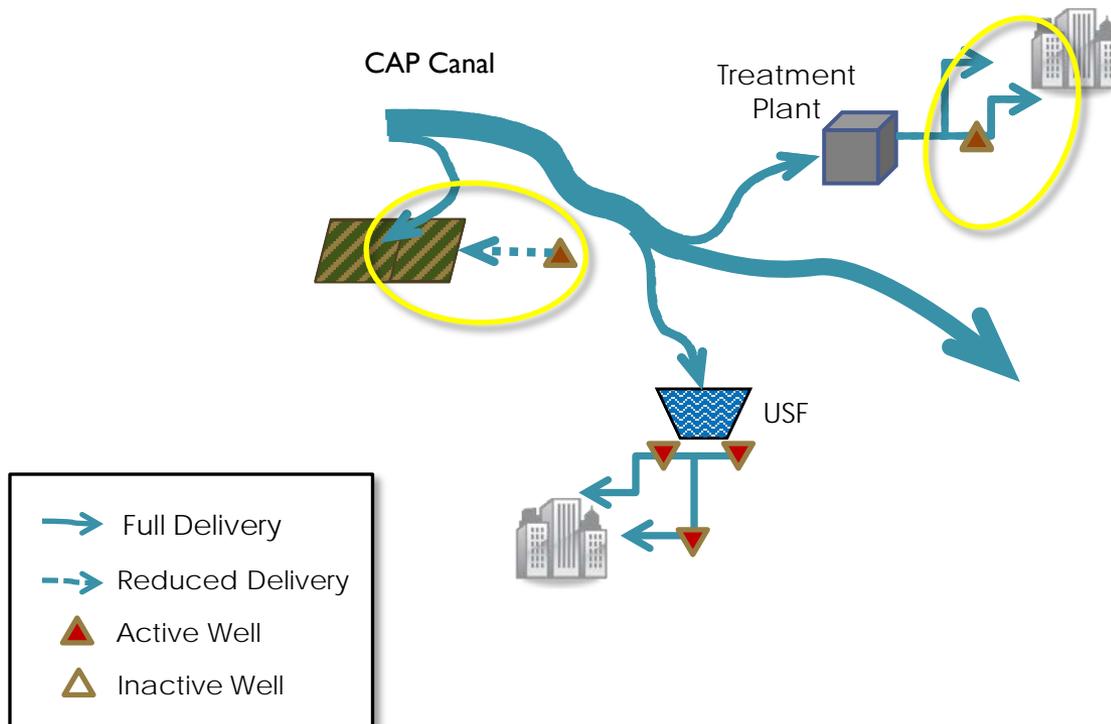
Normal Deliveries

Sufficient Project Water is available for full deliveries to CAP customers.



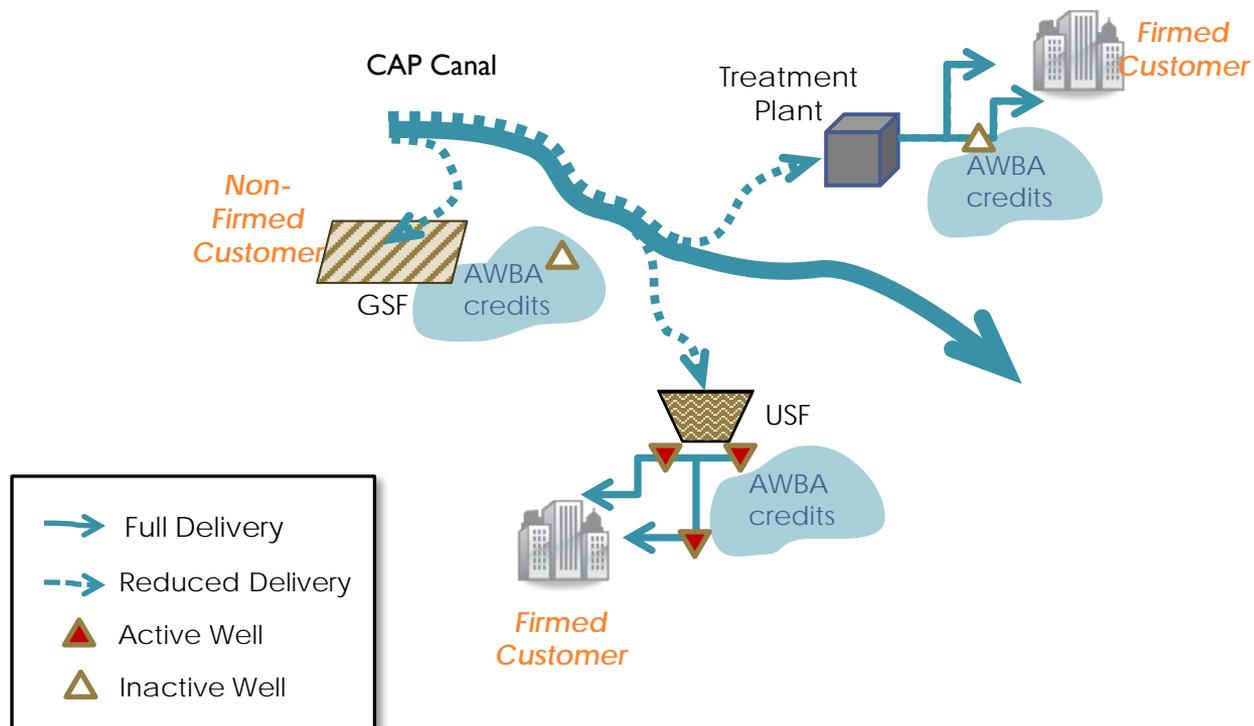
Shortage Without Firming

Deliveries to CAP customers are reduced based strictly on their CAP priority and shortage formula defined in Arizona Water Settlements Act. Users are left on their own to make up reductions.



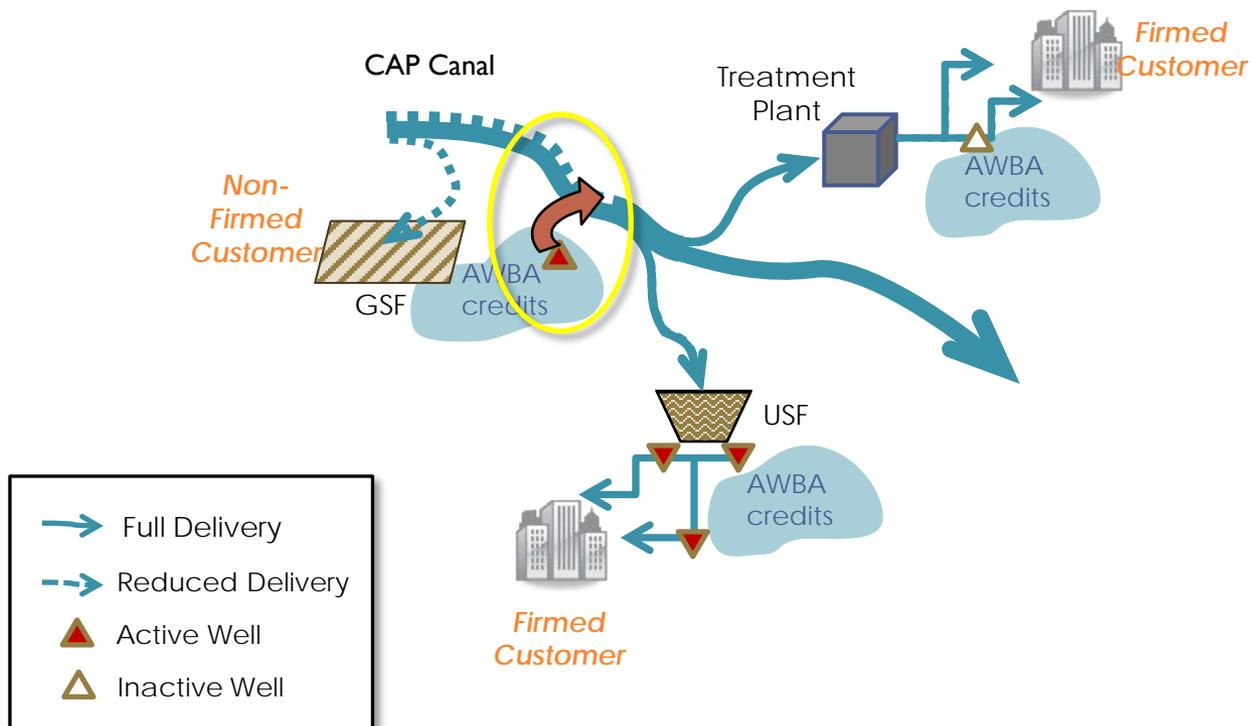
Shortage With Firming

Firming is accomplished using the water that the AWBA has previously stored



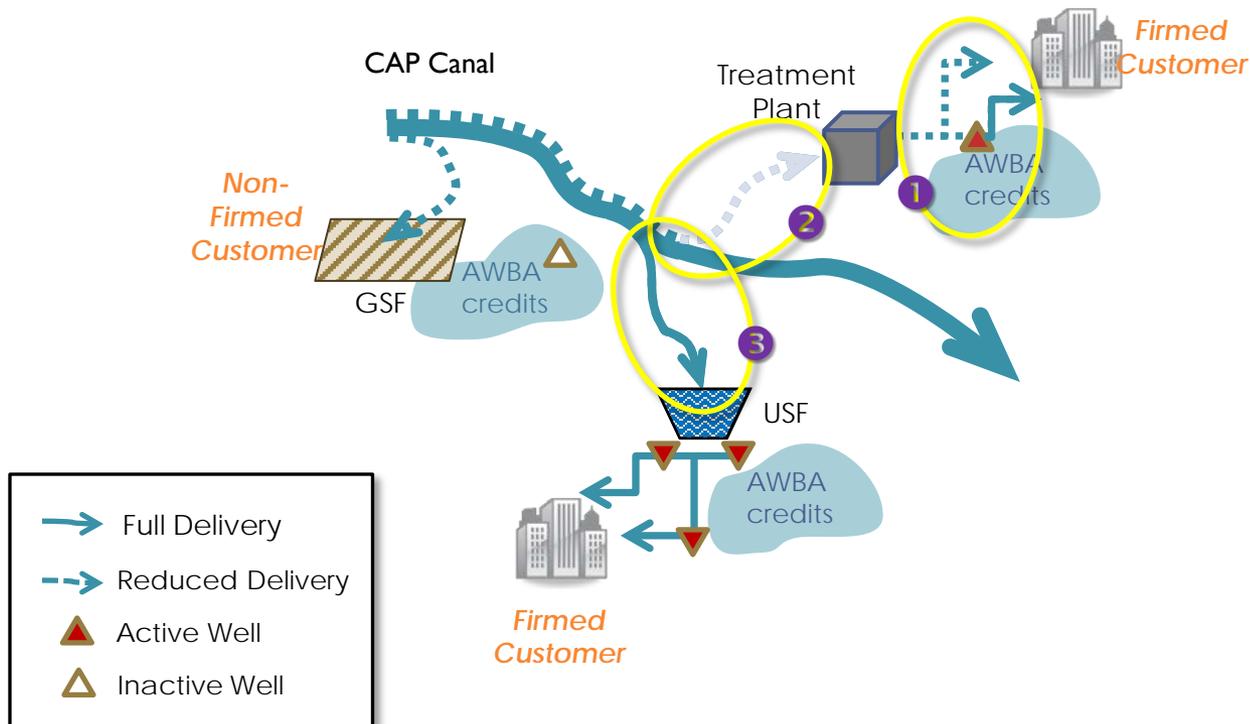
Direct Recovery

Stored water is pumped from recovery wells and then returned directly to the CAP system to firm CAP customers.



Indirect Recovery

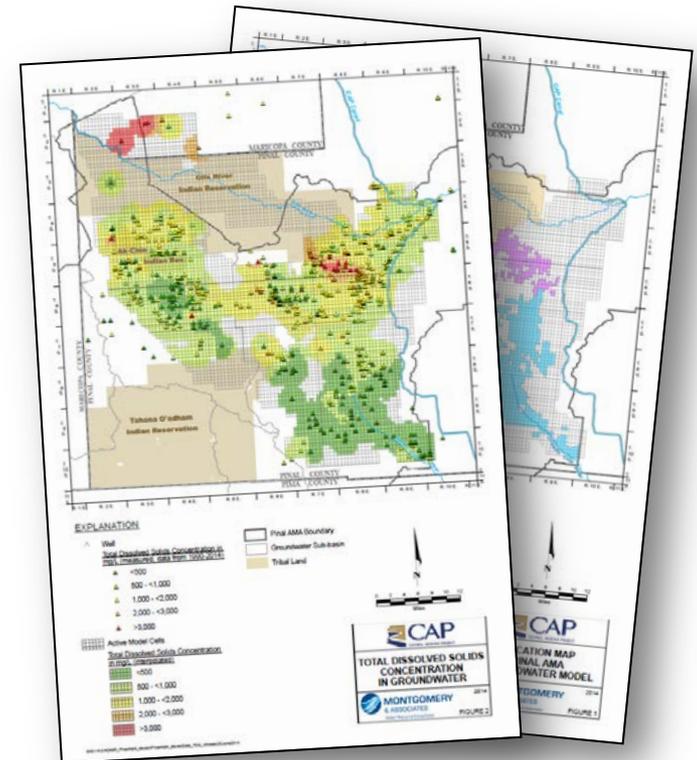
Stored water is pumped and delivered from recovery wells¹ to fulfill a portion of a CAP customer's order that would have otherwise been directly delivered.² The CAP water that was not physically delivered is available to firm other customers.³



Current Efforts

Recovery Plan Implementation

- Technical studies
 - Analysis of direct recovery from the Tonopah Desert Recharge Project
 - Wellfield design; energy transmission; water treatment
 - Water quality modeling in the Pinal AMA
 - Well capacity analysis in the Pinal AMA
 - Potential infrastructure partnership in the Tucson AMA



Recovery Plan Implementation

- Discussions with potential partners
- Development of draft partner agreements
- Coordination within CAP
 - Operations, Engineering, Planning, Legal, Communications, and Maintenance
- Coordination with AWBA and ADWR
 - Credit transfer and accounting procedures
- Coordination with Reclamation
 - Discussion of framework to reconcile legal/contractual issues



CAP/Reclamation Issues

- The CAP is a federal project, so recovery requires consideration of both Arizona and Reclamation law, plus a number of key owner/operator agreements
 - Basin Project Act (1968)
 - Master Repayment Contract (1988)
 - Operating Agreement (2000)
 - Arizona Water Settlements Act (2004)
 - Repayment Stipulation (2007)
 - Tribal contracts and M&I subcontracts (various)

CAP/Reclamation Issues

- CAP and Reclamation staff have been developing a comprehensive framework that reconciles the various legal authorities
 - Looks at CAP system as a whole
 - Adopts priorities for CAP system use
 - Addresses firming, wheeling and exchanges
- The major elements are being written into a draft “CAP System Use Agreement”

DRAFT

CAP System Use Agreement

- “Firming Water” is available to satisfy reductions to contract orders due to shortage or unplanned outage
 - Includes tribal contracts and non-tribal subcontracts
- Sources of firming water are identified
 - All methods are recognized
- CAP can deliver firming water without a separate wheeling agreement

DRAFT

CAP System Use Agreement

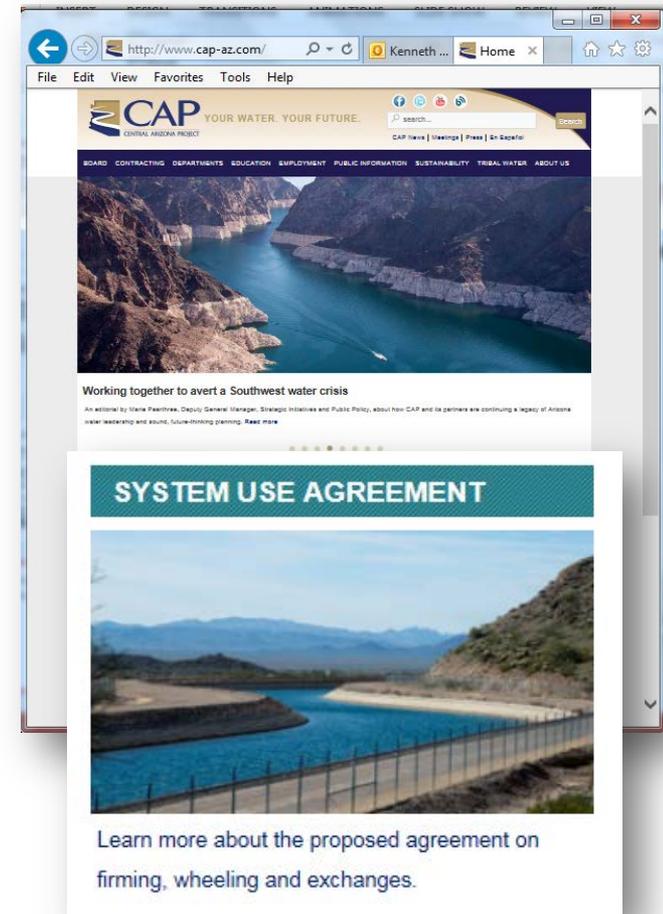
- Agreement contemplates new exchanges, including subcontractors exchanging with a separate party, for firming and non-firming purposes
- Implements a concept proposed by Phoenix, Tucson and Metro
 - Phoenix recharges some of its water in Tucson now
 - Later, Tucson/Metro recovers Phoenix credits in exchange for a reduced CAP delivery in Tucson
 - The exchanged CAP water is delivered to Phoenix

DRAFT

CAP System Use Agreement

- The draft Agreement is undergoing refinement by CAP and Reclamation staff
 - A public workshop was held, and separate consultation with Tribes is being undertaken by Reclamation
- Finalizing and approving the Agreement is critical for recovery, and will provide important new system flexibility

www.cap-az.com



Questions?