

## Information Brief

Meeting Date: March 21, 2012

Subject: Capping the Distribution of AWBA Long-term Storage Credits for M&I Firming during Shortages

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Issue: Should the AWBA limit its credit distribution for M&I firming during times of a Secretarial declared shortage of Colorado River Water or a Central Arizona Project disruption to a maximum of 20% of the total M&I subcontract entitlement?

Description: The AWBA is required to distribute long-term storage credits accrued with four-cent tax monies to CAWCD to the extent necessary to meet the demands of the M&I subcontractors and it may distribute long-term storage credits accrued with the withdrawal fees under the same circumstances. The statute does not define what “to the extent necessary” means so it is up to the AWBA to define that term.

Background: When the AWBA was first established in 1996 there was a question about how many credits would be needed for future M&I subcontract firming. Modeling of that era showed there was the potential for many shortage occurrences with several being quite severe. The water supply, available storage capacity other than Groundwater Savings Facilities (GSFs) and the cost, recovery capacity and cost, and funding availability were also unknown. Based on the available information, the AWBA made the decision that for planning purposes, determination of the need for M&I firming would be limited to 20% of the M&I subcontract amount in any year. This decision was made primarily on the fact that the Assured Water Supply rules allow a drought exemption for municipal providers. The drought exemption allows a provider to replace up to 80% of a surface water supply with groundwater without impacting the groundwater allowance in a year when no more than 80% of the surface water supply is available. What this means is that a provider can apply for a drought exemption and after approval by ADWR, pump groundwater to meet all but 20% of its lost CAP subcontract water. The AWBA determined, recognizing the unknowns and wanting to limit the State’s exposure, that the State should only expend monies to create credits to meet that portion of demand that was limited by the Assured Water Supply Rules. Models were run, based on the 20% assumption and the probability of shortage, the AWBA established a goal of approximately 2.5 million acre-feet of firming for the CAWCD service area. A 20% reduction equals approximately 127,800 AF prior to 2044 and 137,200 AF after 2044 (Hohokam IDD water conversion to M&I priority in 2044). Should the AWBA modify this assumption?

Analysis: Many things have changed since the AWBA made its initial analysis 15 years ago. First, the AWBA has been able to accrue approximately 1.8 million acre-feet of long term storage credits utilizing four-cent tax monies and approximately 750,000 acre-feet of long term storage credits utilizing withdrawal fees. The way the Colorado River is operated has also changed. In 1996, shortages were determined based on a probability analysis. This analysis indicated shortage

could occur early and often and that the volume of annual shortages could become fairly significant especially during periods of prolonged shortages. Today's operation is based on a rule curve. The rule curve has three steps for determining the quantity of the shortage. This analysis allows the volume of shortages to the M&I supply to be more predictable. While the total shortages are still unknown, the impact of a shortage to CAP M&I supplies can be better understood.

The first two steps (400,000 AF and 500,000 AF) rarely if ever create the situation where shortages to the CAP subcontractors M&I supply is greater than 20% of the CAP subcontractors M&I entitlements. That circumstance does occur when the 600,000 AF step (480,000 reduction to AZ) is declared by the Secretary. This situation does not occur prior to 2044 in any year in any trace. After 2043, when full utilization of CAP entitlements is expected, a 480,000 AF reduction to CAP will result in an average reduction to CAP M&I subcontract of approximately 166,000 AF in that year. The 166,000 AF reduction is approximately 29,000 AF greater than the firming amount available with a 20% firming limit. The average probability that a reduction to the CAP supply greater than 20% would occur is approximately 6% in any given year. Increasing the AWBA goal to firm the full CAP M&I subcontract reduction would require the accrual of approximately 126,000 AF of additional long-term storage credits for M&I firming. At the AWBA's current average storage costs, the credits would cost approximately \$16 million.

In addition to requiring additional long-term storage credits, several other issues arise; (1) the AWBA currently is not projected to meet its goal in the Tucson area with the 20% cap, (2) increasing the potential recovery obligation by an additional 29,000 AF in any year could impact the cost and opportunities when developing a recovery plan, (3) even during the largest reduction, CAP subcontractors would still be getting, including AWBA firming, approximately 95% of their CAP M&I subcontract entitlement, (4) most CAP M&I subcontractors have the ability to absorb a 5% reduction when there is only a 6% probability of that occurring, (5) by not increasing the goal, water could become available to firm up to 20% of surface water supply shortages that are not associated with the Central Arizona Project i.e. Salt/Verde system, and (6) having the 20% cap does not preclude the AWBA from creating additional long-term storage credits for M&I firming if water and funding were available.

Observations:

Recognizing these issues and current AWBA obligations to firm Indian settlement water, create 1.25 MAF of long-term storage credits for Nevada, and the need to develop a recovery plan, the staff suggests that the AWBA create a policy establishing a 20% cap on the amount of credits distributed in any year for CAP subcontract firming. This cap would be consistent with the cap already in place for the firming of other surface water supplies. This policy is not a guarantee that 20% of the CAP M&I subcontractors entitlement will be firming. The actual firming is dependent on the amount of long-term storage credits available to the AWBA. The AWBA may want to revisit this policy in the future after shortages have occurred and there is additional information on shortage operations and credit availability.