

# MEMORANDUM



**To:** AWBA Commission Members  
**From:** Virginia O'Connell  
**Subject:** Draft Amended 2011 Plan of Operation  
**Date:** August 24, 2011

AUTHORITY MEMBERS  
Sandra Fabritz-Whitney, Chairman  
Maureen R. George, Vice-Chairman  
John Mawhinney  
Lisa Atkins  
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The New Magma Irrigation and Drainage District (NMIDD) Groundwater Savings Facility (GSF) in the Phoenix AMA and Central Arizona Irrigation and Drainage District (CAIDD) GSF in the Pinal AMA have provided a written request for emergency water supplies from the AWBA for Calendar Year 2011. The letter, which provides background information to the request, is attached.

The following are staff's proposed changes that could be made to the 2011 Plan of Operation to meet a portion of the GSF operator's requests for additional water. These changes are reflected in Draft Tables 2, 4, 5, and 7.

## Phoenix AMA

- Redirect up to 5,000 acre-feet of deliveries from the Tonopah Desert Recharge Project (TDRP) to the NMIDD GSF. The deliveries would stay within the Phoenix AMA.
- There is funding available in the Phoenix AMA, therefore the cost-share paid by NMIDD is \$33/AF.
- The overall cost to the Bank would be reduced by \$205,000 because the storage would not include the \$8/af storage facility fee for TDRP and NMIDD pays \$33/AF toward the \$137/AF water delivery cost.

## Pinal AMA

- Up to 15,000 acre-feet of the water that was turned back by Tucson Water because it could not be stored at SAVSARP could be redirected to the CAIDD GSF.
- While the AWBA does not have funds available to make additional deliveries to the Pinal AMA, it could charge its GSF partner the full cost (\$137/AF) for providing the in lieu water, which CAIDD has agreed to pay.

## Tucson AMA

- Redirecting the water to the Pinal AMA would reduce the amount of credits accrued for Municipal and Industrial (M&I) firming in the Tucson AMA for 2011. However, credits that are accrued in the Pinal AMA could be recovered and delivered to the Tucson AMA to assist in meeting the firming goal. Use of the credits would not have the current limitations because AWBA funds would not be used to purchase the water.
- Tucson AMA funds that are not expended in 2011 from reduced deliveries can be carried over and expended in 2012. Thus the 15,000 acre-feet, not stored in 2011 could be stored in 2012.

**Amended Table 2**<sup>1</sup>  
**Water Delivery Schedule (Acre-Feet)**  
**Calendar Year 2011**

AWBA-Recharge Sites		Permitted Capacity (AF)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>PHOENIX AMA :</b>															
<b>USF</b>	West Maricopa Combine	25,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	HIEROGLYPHIC	35,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	AGUA FRIA	100,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	TONOPAH DESERT	150,000	171	6,262	12,622	3,753	1,706	14,354	12,465	3,617	0	0	0	0	54,950
															54,950
<b>GSF</b>	RWCD	105,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	NEW MAGMA	54,000	0	0	0	0	0	0	0	0	2,500	2,500	0	0	5,000
	QUEEN CREEK	28,000	0	0	0	0	0	2,945	0	0	683	1,142	1,143	1,142	7,055
	TONOPAH ID	15,000	0	0	0	0	0	0	0	0	0	0	0	0	0
															12,055
<b>AMA TOTAL INTRASTATE</b>			171	6,262	12,622	3,753	1,706	17,299	12,465	3,617	3,183	3,642	1,143	1,142	67,005
<b>PINAL AMA :</b>															
<b>GSF</b>	CAIDD	110,000	0	0	0	0	0	0	0	7,500	10,000	5,000	0	0	22,500
	HOHOKAM	55,000	0	0	0	0	0	0	0	500	750	750	750	250	3,000
	MSIDD	120,000	380	720	1,550	1,650	1,450	930	318	200	200	0	0	102	7,500
															33,000
<b>AMA TOTAL INTRASTATE</b>			380	720	1,550	1,650	1,450	930	318	8,200	10,950	5,750	750	352	33,000
<b>TUCSON AMA:</b>															
<b>USF</b>	AVRA VALLEY	11,000	0	0	0	0	0	0	0	0	236	0	700	700	1,636
	PIMA MINE RD	30,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	LOWER SANTA CRUZ	50,000	1,146	2,526	2,893	2,811	0	0	0	2,000	425	0	0	0	11,801
	CAVSARP	100,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	SAVSARP	60,000	0	0	0	0	0	0	0	3,000	4,000	5,000	3,000	2,000	4,000
															34,437
<b>GSF</b>	CORTARO-MARANA ID	20,000	0	0	0	0	0	0	0	500	500	0	0	0	1,000
	KAI FARMS (Red Rock)	11,231	0	0	0	0	500	500	0	0	0	0	0	0	1,000
															2,000
<b>AMA TOTAL INTRASTATE</b>			1,146	2,526	2,893	2,811	500	500	3,000	6,500	6,161	3,000	2,700	4,700	36,437
<b>TOTAL INTRASTATE</b>			1,697	9,508	17,065	8,214	3,656	18,729	15,783	18,317	20,294	12,392	4,593	6,194	136,441
<b>TOTAL INTERSTATE</b>			0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL RECHARGE</b>			1,697	9,508	17,065	8,214	3,656	18,729	15,783	18,317	20,294	12,392	4,593	6,194	136,441
<b>DIRECT DELIVERY (Non-Storage):</b>															
	Southside Replenishment Bank		0	0	0	0	1,000	0	0	0	0	0	0	0	1,000
	Southside Replenishment Obligation		0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>TOTAL DIRECT</b>		0	0	0	0	1,000	0	0	0	0	0	0	0	1,000
<b>TOTAL DELIVERIES</b>			1,697	9,508	17,065	8,214	4,656	18,729	15,783	18,317	20,294	12,392	4,593	6,194	137,441

<sup>1</sup> Water deliveries have been updated to reflect actual deliveries through July.

**Table 4. Amended 2011 Water and Facility Rates**

CAWCD delivery rate to AWBA for water storage	\$137 per acre-foot
Interstate rate	\$167 per acre-foot
Groundwater Savings Facility operator cost share rate <sup>1</sup>	
Intrastate	
Phoenix and Pinal AMAs	\$33 per acre-foot
Tucson AMA	\$15 per acre-foot
Redirected Tucson AMA Deliveries <sup>2</sup>	\$137 per acre-foot
Interstate	\$26 per acre-foot
Underground Storage Facility rate paid by AWBA	
Agua Fria Recharge Project <sup>3</sup>	\$8 per acre-foot
Hieroglyphic Mtn. Recharge Project <sup>3</sup>	\$8 per acre-foot
Tonopah Desert Recharge Project <sup>3</sup>	\$8 per acre-foot
West Maricopa Combine	\$25 per acre-foot
Avra Valley Recharge Project <sup>4</sup>	\$15 per acre-foot
Lower Santa Cruz Recharge Project <sup>4</sup>	\$15 per acre-foot
Pima Mine Road Recharge Project <sup>4</sup>	\$15 per acre-foot
Clearwater Facility (CAVSARP/SAVSARP)	\$14.73 per acre-foot
CAWCD rate to AWBA for Southside Replenishment Bank deliveries	\$122 per acre-foot

<sup>1</sup> This rate is paid directly to CAP by the GSF operators and is not available as revenue to the AWBA. The AWBA's rate for delivery of in lieu water is thus reduced to \$104/af for intrastate deliveries to the Phoenix and Pinal AMAs, \$122/af to the Tucson AMA, and \$141/af for interstate deliveries.

<sup>2</sup> Rate paid by Pinal AMA GSF operators for 15,000 acre-feet of water redirected from the Tucson AMA.

<sup>3</sup> Additional capital charge of \$15 per acre-foot for interstate storage.

<sup>4</sup> Additional capital charge of \$9 per acre-foot for interstate storage.

**Table 5. Funding for 2011 Annual Plan of Operation**

	Funds Available (\$)		Funds Utilized (\$)		Credits (AF)
	AWBA	CAWCD	AWBA	CAWCD	
<b>Withdrawal Fees</b>					
Phoenix AMA	\$1,600,000	-	\$1,600,000	-	10,460
Pinal AMA <sup>1</sup>	\$1,200,000	-	\$1,200,000	-	9,540
Tucson AMA <sup>2</sup>	\$435,000	-	\$435,000	-	1,800
<b>Four Cent Tax</b>					
Phoenix AMA	\$0	\$120,870,000	\$0	\$7,621,000	51,180
Pinal AMA	\$0	\$795,000	\$0	\$794,000	7,020
Tucson AMA <sup>3</sup>	\$0	\$7,440,000	\$0	\$5,164,000	31,720
<b>Other</b>					
<b>General</b>	\$0				
Phoenix AMA		-	\$0	-	0
Pinal AMA		-	\$0	-	0
Tucson AMA		-	\$0	-	0
<b>Gifts, Grants, Donations</b>					
Shortage Reparations (NV):	\$0				
Phoenix AMA		-	\$0		0
Pinal AMA		-	\$0		0
Tucson AMA		-	\$0		0
<b>Interstate Banking- Nevada</b>					
Operating <sup>4</sup>	\$33,315,000		\$0		0
	<b>Total Funds Available</b>		<b>Total Funds Expended</b>		<b>Credits</b>
	\$165,655,000		\$16,814,000		111,720

<sup>1</sup> Includes expenditure for 1,000 acre-feet of direct deliveries for establishing the Southside Replenishment Bank under the Gila River Indian Water Settlement Program.

<sup>2</sup> Includes expenditure of \$141,360 for the assignment of an estimated 930 acre-feet of credits to the AWBA from the Tohono O'odham Nation pursuant to §45-841.01.

<sup>3</sup> Includes CAWCD's capital charge recovery for costs of construction of state demonstration projects when facilities are used for interstate purposes and by entities that do not pay the 4¢ ad valorem tax. Revenue through 2009 is estimated to be \$2,026,952.

<sup>4</sup> The amount of funding that will be available from the Southern Nevada Water Authority (SNWA) if water becomes available for interstate storage. Pursuant a letter agreement between SNWA and AWBA dated June 15, 2010, annual payments of \$23 million for calendar years 2011 and 2012 have been deferred.

**Table 7. Projected Percent of Goals and Obligations Achieved through 2011**

Location and Objective	Funding Source	Goal	Obligation	Non-Credit Goal/Oblig. Achieved	Credits Accrued (AF)	Percent Goal/Oblig. Achieved
<b>Phoenix AMA</b> M&I Firming Groundwater Mgmt <sup>1</sup>	Ad valorem tax Withdrawal Fees	1,566,000 AF			1,268,596	81%
					279,343	99%
<b>Pinal AMA</b> M&I Firming Groundwater Mgmt <sup>1</sup>	Ad valorem tax Withdrawal Fees	243,000 AF			179,869	74%
					383,416	232%
<b>Tucson AMA</b> M&I Firming Groundwater Mgmt <sup>1,2</sup> Pinal Redirect Credits	Ad valorem tax Withdrawal Fees	864,000 AF			360,206	42%
					90,766	54%
	n/a			13,800	1%	
<b>On-River M&amp;I Firming<sup>3</sup></b>	General Fund	420,000 AF			403,830	96% <sup>4</sup>
<b>Indian Settlements:</b> GRIC Firming	Withdrawal Fees	350,000 AF <sup>5</sup>	up to 15,000 AF/YR		0	0%
Future Settlements	Withdrawal Fees	200,000 AF <sup>5</sup>	up to 8,724 AF/YR		0	N/A
Federal Assistance Tucson AMA	Appropriation Withdrawal Fees Cost of Services <sup>6</sup>		\$3,000,000	\$3,000,000 \$2,338,171 \$630,490 \$31,339	39,723	100%
					34,102	
					5,621	
	n/a					
Southside Repl. Bank	Withdrawal Fees		15,000 AF Direct Delivery		3,000	20%
<b>Interstate Water Banking - NV</b>	Contract with Nevada		1,250,000 AF <sup>7</sup>		600,252	48%
<b>Shortage Reparations-Nevada</b>	Gifts, Grants, Donations	\$8,000,000		\$2,999,748	82,283	37%

<sup>1</sup> Withdrawal fees could be utilized in addition to 4¢ ad valorem tax revenues for M&I firming if needed to reach firming goals.

<sup>2</sup> Credits accrued from water that was scheduled for the Tucson AMA and redirected to the Pinal AMA for storage at GSFs.

<sup>3</sup> Includes credits acquired from the Tohono O'odham Nation pursuant to §45-841.

<sup>4</sup> By resolution passed in 2002, the AWBA established on-river firming as the highest priority of use for credits accrued through expenditure of general fund appropriations. Pursuant to the AWBA Agreement to Firm with the Mohave County Water Authority (MCWA) dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term-storage sub-account for the MCWA in 2005.

<sup>5</sup> This percentage reflects full utilization of general fund credits accrued to date and would change as other objectives are identified by the AWBA.

<sup>6</sup> Based on estimates from the Indian Firming Study Commission Report dated January 6, 2006.

<sup>7</sup> Include \$14,883 and \$16,456 deducted for payment of cost of services for FY08 and FY09, respectively.

<sup>8</sup> Pursuant to the Amended Agreement for Interstate Water Banking, the AWBA has committed to have this number of long-term storage credits within the Nevada sub-account.

August 22, 2011

Sandy and Virginia,

The purpose of this email is to provide the AWBA with background on the requests by Central Arizona Irrigation and Drainage District (CAIDD) and New Magma Irrigation and Drainage District (NMIDD) for emergency water service from the AWBA. While differences exist between these Districts, I will begin with the common points of their situations.

Both Districts have a large percentage of acreage in cotton this year because of strong commodity prices last year. The enhanced ability to obtain crop financing for cotton enabled additional acreage to be put into production. Uncharacteristically cold spring temperatures required 30% of the cotton to be replanted which in turn extended the timeline for irrigation. Typically, cotton irrigation is complete by the end of August or earlier with adequate summer rains. In the Eloy (CAIDD) and Queen Creek (NMIDD) areas, there has been a considerable reduction in normal rainfall; a significant factor in the demand for more irrigation water.

In October of 2010, both Districts scheduled all direct CAP water available to them for 2011 (based upon average monthly use over the last several years) taking into consideration the likely high demand due to the favorable commodity prices. In lieu surface water within the limitations of GSF permits was also scheduled. CAIDD, which maintains operational control of all irrigation wells within its boundaries, planned for above-average water use and prepared to pump additional groundwater. NMIDD, which does not have operational control of the wells within its boundaries, relied on individual landowners to manage their own groundwater supplies. NMIDD projections were based on an allocation of 3.7 acre feet per acre of surface water from the district.

As of July 1, the projected deliveries of water to the Districts were sufficient. By the end of July however, it had become apparent that the replanted cotton required more water than anticipated. In other districts with greater crop diversity, irrigation schedules have more flexibility. To meet the increased demand, CAIDD and NMIDD utilized more of the scheduled CAP and in lieu water in late July and August. Additional groundwater deliveries were made where possible, but a substantial increase in such deliveries requires months of advance planning. Both Districts will have utilized all available surface water by the end of August. A large portion of the cotton crops will continue to require water through September due to the late plantings and lack of rain.

At this point in cotton season, an average crop has approximately \$1,000-\$1,200 per acre of total input costs with several irrigations remaining. Without additional water, it is likely the cotton will not fully mature. It will be degraded in value or have no value at all. This is what is meant by cotton "burning up." CAIDD estimates it needs an additional 20,000 – 25,000 acre feet of surface water through the month of September to prevent the burning up loss of the late season cotton. NMIDD estimates it needs 7,000 acre feet for the same period. The districts understand the AWBA cannot fully meet their current needs but whatever is available will help

to minimize crop loss and may serve as a “bridge” to additional water from CAGR D for NMIDD and late available Colorado River water from the “Remarket List” for CAIDD.

CAIDD is in the Pinal AMA and there are no available Pinal AMA funds to “buy down” Bank water in 2011. Accordingly, CAIDD is willing to pay \$137.00 per acre foot for up to 25,000 acre feet to address this emergency condition. CAIDD is also willing to provide storage credits to the Bank for this water in 2011 even at the \$137.00 cost. No CAP irrigated crop could EVER receive financing at such high rates, but this is a one-time emergency purchase to save crops with millions of dollars invested in them from becoming valueless. Of note, is that CAIDD was the first district to provide wide scale recovery for the CAWCD at levels higher than required. I believe their situation merits serious consideration by the Bank.

NMIDD is in the Phoenix AMA and there are sufficient funds to cover storage in the New Magma GSF at the \$33.00 per acre foot GSF rate. NMIDD has been a valued in lieu partner for many East Valley cities, the CAGR D and several industrial users seeking to store credits in the Phoenix AMA.

Thank you for your considerable efforts facilitating this request. Please extend my gratitude to your respective staffs who have also been very helpful. Please let me know if I can provide additional information prior to your meeting on Thursday.

Paul Orme