

In August of 2011, the AWBA amended its 2011 Plan by redistributing some of its deliveries to groundwater savings facilities (irrigation districts) to assist in preventing crop failure. While this amendment changed the amount of water planned for storage at TDRP, it did not change the total amount of water available to the AWBA under the 2011 Plan. If available, the AWBA could have stored the additional 11,659 acre-feet at TDRP.

It is important to note that the AWBA's monthly delivery schedule is based on best estimates. It is typical that actual monthly deliveries differ from what was planned due to changes in a farmer's irrigation needs or because of unscheduled maintenance at underground storage facilities. The AWBA's final deliveries for Calendar Year 2011 totaled 135,576 acre-feet, which is 13,524 acre-feet less than was available at the beginning of the year (see enclosed AWBA 2011 Delivery Table). Included in the 13,524 acre-feet is the 11,659 acre-feet that the AWBA was not able to schedule plus 1,865 acre-feet attributed to minor monthly operational changes.

Feel free to contact me at (602) 771-8491 if you have any questions.

Sincerely,



Virginia O'Connell, Manager
Arizona Water Banking Authority

Enclosures

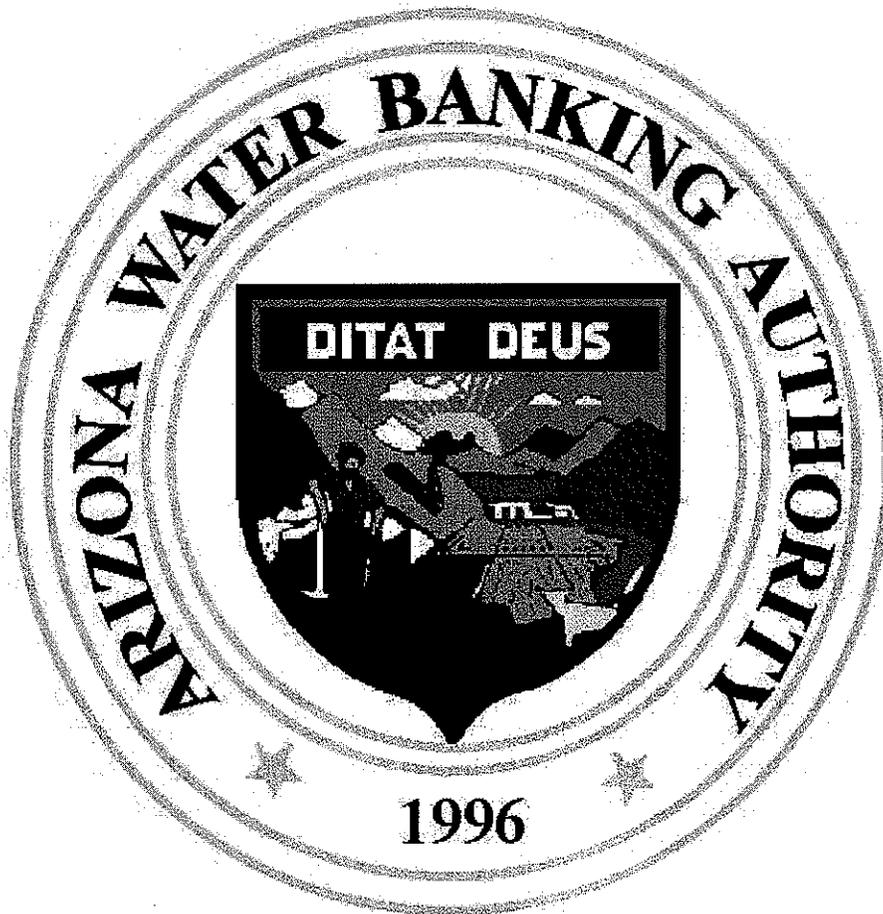
cc: Brian Henning, CAP
Perri Benemelis, ADWR

AWBA 2011 DELIVERIES

Actual deliveries updated Amended Plan of Operation	08-Mar-12 25-Aug-11	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
Phoenix AMA														
TONOPAH DESERT	171	6,262	12,622	3,753	1,706	14,354	12,465	2,497	0	0	0	0	0	53,830
	171	6,262	12,622	3,753	1,706	14,354	12,465	3,617	0	0	0	0	0	54,950
NMIDD	0	0	0	0	0	0	0	0	0	0	0	1,047	1,579	2,626
	0	0	0	0	0	0	0	0	1,000	2,500	1,500	0	0	5,000
QCID	0	0	0	0	0	2,945	0	0	527	2,249	640	390	0	6,751
	0	0	0	0	0	2,945	0	0	683	1,142	1,143	1,142	0	7,055
SUPERSTITION MTNS	0	0	0	0	0	0	0	0	0	0	0	0	2,444	2,444
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	171	6,262	12,622	3,753	1,706	17,299	12,465	2,497	527	2,249	1,687	4,413	0	65,651
Total to date	171	6,433	19,055	22,808	24,514	41,813	54,278	56,775	57,302	59,551	61,238	65,651	65,651	65,651
Projected total to date	171	6,433	19,055	22,808	24,514	38,868	51,333	54,950	55,950	58,450	59,950	59,950	59,950	67,005
Pinal AMA														
CAIDD	0	0	0	0	0	0	0	14,713	6,520	310	67	0	0	21,610
	0	0	0	0	0	0	0	7,500	10,000	5,000	0	0	0	22,500
MSIDD	380	720	1,550	1,650	1,450	930	310	310	200	0	0	0	0	7,500
	380	720	1,550	1,650	1,450	930	318	200	200	0	0	102	0	7,500
HIDD	0	0	0	0	0	0	0	0	1,751	0	300	1,891	0	3,941
	0	0	0	0	0	0	0	500	750	750	750	250	0	3,000
Southside Bank	0	0	0	0	1,000	0	0	0	0	0	0	0	0	1,000
	0	0	0	0	1,000	0	0	0	0	0	0	0	0	1,000
Subtotal	380	720	1,550	1,650	2,450	930	310	15,023	8,471	310	367	1,891	0	34,052
Total to date	380	1,100	2,650	4,300	6,750	7,680	7,990	23,013	31,484	31,794	32,161	34,052	34,052	34,052
Projected total to date	380	1,100	2,650	4,300	6,750	7,680	7,998	16,198	27,146	32,898	33,648	34,000	34,000	34,000
Tucson AMA														
AVRA VALLEY	0	0	0	0	0	0	0	268	0	397	321	586	0	1,572
	0	0	0	0	0	0	0	0	236	0	700	700	0	1,636
CAVSARP	0	0	0	0	0	0	0	0	0	0	0	500	0	500
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAVSARP	0	0	0	0	0	0	3,000	4,000	6,687	3,805	2,605	826	0	20,923
	0	0	0	0	0	0	3,000	4,000	5,000	3,000	2,000	4,000	0	21,000
LOWER SANTA CRUZ	1,146	2,526	2,893	2,811	0	0	0	2,116	309	0	0	0	0	11,801
	1,146	2,526	2,893	2,811	0	0	0	2,000	425	0	0	0	0	11,801
CMID	0	0	0	0	0	0	0	841	159	0	0	0	0	1,000
	0	0	0	0	0	0	0	500	500	0	0	0	0	1,000
KAI FARMS - Red Rock	0	0	0	0	500	500	0	0	0	77	0	0	0	1,077
	0	0	0	0	500	500	0	0	0	0	0	0	0	1,000
Subtotal	1,146	2,526	2,893	2,811	500	500	3,000	7,225	7,155	4,279	2,926	1,912	0	36,873
Total to date	1,146	3,672	6,565	9,376	9,876	10,376	13,376	20,601	27,756	32,035	34,981	36,873	36,873	36,873
Projected total to date	1,146	3,672	6,565	9,376	9,876	10,376	13,376	19,876	26,037	29,037	31,737	36,437	36,437	36,437
TOTAL														
TOTAL	1,697	9,508	17,065	8,214	4,656	18,729	15,775	24,745	16,153	6,838	4,980	8,216	0	136,576
Total to date	1,697	11,205	28,270	36,484	41,140	59,869	75,644	100,389	116,542	123,380	128,360	136,576	136,576	136,576
Projected total to date	1,697	11,205	28,270	36,484	41,140	56,924	72,707	91,024	109,135	120,385	125,335	130,387	130,387	137,442

ARIZONA WATER BANKING AUTHORITY
ANNUAL PLAN OF OPERATION

2011



Herbert R. Guenther, Chairman

December 2010

In 2011, the Water Bank will store approximately 136,400 acre-feet for intrastate storage at a cost of approximately \$19 million. There is no interstate storage planned for 2011. Furthermore, the AWBA will deliver an additional 1,000 acre-feet of water for the Southside Replenishment Bank at a cost of \$122,000.

To date, the AWBA has delivered for storage approximately 3.7 million acre-feet of water at a cost of \$271 million; 3.2 million acre-feet for intrastate storage at a cost of \$162 million and 594,000 acre-feet for interstate storage at a cost of \$109 million. A total of 2,000 acre-feet has been delivered for Southside Replenishment purposes at a cost of \$226,000.

INTRODUCTION

The Arizona Water Banking Authority (AWBA) was created to store Arizona's unused Colorado River water entitlement in western, central and southern Arizona to develop long-term storage credits to: (1) firm existing water supplies for municipal and industrial users (M&I) along the Colorado River and Central Arizona Project (CAP) M&I users during Colorado River shortages or CAP service interruptions; (2) help meet the water management objectives of the Groundwater Code; and (3) meet the State's obligations in the settlement of Indian water rights claims. Changes in the AWBA's enabling legislation in 1999 authorized the AWBA to participate in other water banking activities, however, no new water banking activities are included in this annual Plan of Operation.

The AWBA's storage of water is accomplished through the Underground Water Storage, Savings and Replenishment Act enacted by the Arizona legislature in 1994 and administered by the Arizona Department of Water Resources (ADWR). Through this program, the AWBA stores renewable water that currently has no immediate direct use in either underground storage (USF) or groundwater savings (GSF) facilities. A USF is a facility that allows water to physically be added to an aquifer. A GSF is a facility where the water is used in place of groundwater, creating a groundwater savings. The program mandates the accounting of the water stored and the development of long-term storage (LTS) credits. The LTS credits developed will then be utilized by the AWBA when future conditions warrant. The use of LTS credits for the three objectives listed is dependent on the source of funds utilized to develop them.

The AWBA is required by statute to approve an annual Plan of Operation (Plan) by January 1 of each year. Prior to approval of the final Plan, the AWBA is required to solicit public comment. A draft of the Plan was presented to the Groundwater Users Advisory Councils (GUAC) for the Phoenix, Pinal and Tucson Active Management Areas (AMA). Presentation of the draft Plan must be made at publicly-noticed open meetings at which members of the public are permitted to provide comment. The AWBA also makes the Plan available on its web page and accepts public comment in writing up to the time the final draft Plan is presented for approval.

The Plan is intended to govern the operations of the AWBA over the course of the entire calendar year. The AWBA recognizes that day-to-day adjustments in the normal operations of the CAP or the individual storage facilities may affect the actual monthly deliveries made on behalf of the AWBA. If the adjustments do not impact the overall annual delivery projections contained in the Plan, they will be addressed by staff and reported to the AWBA members on an as-needed basis.

The AWBA recharged water at both USFs and GSFs in 2010. Table 1a lists the AWBA's recharge partners for 2010, the amount of water that can be stored under each AWBA water storage permit, and the amount of water delivered to the facility by the AWBA in 2010. Values are based on actual deliveries through October with November and December deliveries estimated. The amount of water delivered to a facility is always greater than the amount of long-term storage credits earned by the AWBA because credits are computed by subtracting approximately 3% for losses and 5% for a "cut to the aquifer" from the total annual deliveries. Final figures for credits earned generally become available in the middle of the following year after review of the annual reports filed with the ADWR and are reported in the AWBA's Annual Report.

Table 1a. Recharge Partners and Water Deliveries for 2010

AMA	Facility	Type	Permit Capacity (acre-feet)	Delivered (acre-feet)		
				Intrastate	Interstate	
PHOENIX AMA	Tonopah Desert	USF	150,000	79,345	5,000	
	Hieroglyphic Mtn.	USF	35,000	5002	0	
	Agua Fria	USF	100,000	1998	0	
	Queen Creek ID	GSF	28,000	1,000	0	
	<i>Intrastate/Interstate AMA Subtotal</i>				87,345	5,000
	<i>Phoenix AMA Subtotal</i>				92,345	
PINAL AMA	Central Arizona IDD	GSF	110,000	13,400	0	
	Hohokam IDD	GSF	55,000	8,500	0	
	Maricopa-Stanfield IDD	GSF	120,000	16,800	0	
	<i>Intrastate/Interstate AMA Subtotal</i>				38,700	0
	<i>Pinal AMA Subtotal</i>				38,700	
TUCSON AMA	Avra Valley	USF	11,000	3,777	1,000	
	Lower Santa Cruz	USF	50,000	20,645	8,000	
	CAVSARP	USF	100,000	0	5,000	
	SAVSARP	USF	60,000	41,000	0	
	Cortaro-Marana ID	GSF	20,000	4,000	0	
	<i>Intrastate/Interstate AMA Subtotal</i>				69,422	14,000
	<i>Tucson AMA Subtotal</i>				83,422	
TOTAL INTRASTATE & INTERSTATE DELIVERIES				195,467	19,000	
TOTAL RECHARGE DELIVERIES				214,467		

2011 PLAN OF OPERATION

For 2011, the AWBA will store 137,441 acre-feet of intrastate water. Water storage will be occurring in facilities in all three counties. The AWBA is not planning any interstate storage. The AWBA will also deliver 1,000 acre-feet of water for the Southside Replenishment Bank.

When developing a Plan of Operation, the AWBA evaluates four critical factors: (1) the amount of water available to the AWBA for delivery; (2) the CAP capacity available to the AWBA for the delivery of water; (3) the funds available and the costs required to deliver the water; and (4) the capacity available for use by the AWBA at the various recharge facilities. In addition to these critical factors, the AWBA takes into consideration recommendations made by the Groundwater Users Advisory Councils (GUAC) of the three AMAs regarding water management objectives and priorities for storage.

I. Water Availability

The factor of water availability consists of two parts: (1) the amount of water available on the Colorado River for diversion by the CAP within Arizona's allocation; and (2) the amount of CAP water available to the AWBA for delivery under the existing pool structure.

The Bureau of Reclamation (Bureau) distributed the Draft Annual Operating Plan (AOP) for water year 2011 to the states in September of 2010. The AOP stated that the Intentionally Created Surplus (ICS) Surplus Condition is the criterion that will govern the release of water for the states in the Lower Basin during calendar year 2011. Because Arizona has not created ICS, the State will operate under normal conditions, which allows 2.8 MAF of water available for use within Arizona. Arizona's on-river use is forecast to be 1.2 MAF, leaving approximately 1.6 MAF available for diversion by CAP.

With respect to availability of CAP water, the AWBA purchases water from the category that is termed excess water. Excess water is all water available for delivery through the CAP in excess of the quantities scheduled under long-term contracts and subcontracts. The availability of excess water is determined on an annual basis. The AWBA may order any excess water not requested by another entity within the CAP service area. The AWBA shares an equal priority for water for municipal and industrial (M&I) firming with the Central Arizona Groundwater Replenishment District for replenishment reserve purposes.

The CAWCD Board of Directors (Board), in anticipation of increased excess water orders, had directed its staff to develop a comprehensive strategy for distributing excess CAP water among competing demands. In July of 2009, the Board adopted a five-year policy for the distribution of excess water beginning in 2010. Under this policy, CAWCD created four pools in addition to the agricultural pool previously established. One of these pools identifies a volume of 175,000 acre-feet to be shared between the AWBA, the CAGR for

IV. Available Storage Facility Capacity

AWBA staff conferred with facility operators to discuss their delivery schedules and their continued interest in participating with the AWBA. These discussions confirmed that there was significant interest from facility operators in all three AMAs in partnering with the AWBA. If additional supplies become available, the AWBA still has sufficient capacity to meet its anticipated needs.

The Water Delivery Schedule (Table 2) identifies the AWBA's partners for 2011 and the amount of water scheduled to be recharged. The second column in this section identifies the AWBA's water storage permit capacities for each facility based on the facility permits. The capacity available as shown does not always equate to the storage permit capacity because the storage facility operators may have agreements with other storage partners. In addition to recharge deliveries, Table 2 also identifies the amount of water scheduled for meeting the AWBA's Southside Replenishment obligations.

NEW FACILITIES

Presently, there are no new storage facilities identified in the AWBA 2011 Plan. CAWCD's Superstition Mountains Recharge Project (SMRP) is currently under construction and is anticipated to be operational by May/June 2011 (Phase 1). When fully completed, the proposed storage volume for the facility will be 56,500 acre-feet/year. Phase 1 of the project proposes to store an estimated 25,000 acre-feet/year.

The AWBA intends to obtain a water storage permit for the SMRP facility in 2011 and when utilized would provide additional storage capacity to the AWBA in the Phoenix AMA.

INDIAN SETTLEMENTS

The Plan does not specifically identify storage to meet the State's firming obligations under the Arizona Water Settlements Act (Settlements Act), however it does incorporate replenishment deliveries required under the Gila River Indian Community (GRIC) Settlement Program.

Indian Firming

The Settlements Act recognizes three categories where the State has firming responsibilities. The first two obligations pertain to firming of water for the GRIC and other Arizona tribes in times of shortage for a 100-year period; the third obligation pertains to providing assistance to the Secretary of the Interior (Secretary) in carrying out obligations of the Southern Arizona Water Rights Settlement Act.

1. GRIC - The AWBA must ensure that up to 15,000 acre-feet per year of CAP NIA priority water be made available to the GRIC. The AWBA did not receive a general fund appropriation to meet this obligation. Although withdrawal fees may be utilized for Indian firming after appropriated funds are expended, the 2011 Plan does not identify the expenditure of withdrawal fees specifically for this purpose. Credits accrued through the use of withdrawal fees could be used to meet this obligation if necessary.
2. Other Tribes - The AWBA is also required to firm up to 8,724 acre-feet per year of CAP NIA priority water for future Indian Settlements. Settlements for other Indian Tribes have not been enacted at this time, thus the 2011 Plan does not include a component for this obligation.
3. Federal Assistance - The State is required to contribute \$3 million in cash or in-kind services to assist the Secretary in meeting the Federal obligation to the Tohono O'odham Nation. The Secretary and the AWBA agreed to develop long-term storage credits (credits), which will later be transferred to the Federal government. The AWBA completed this obligation in 2009.

The Arizona Legislature provided an initial appropriation of \$13.5 million in October, 2006 to assist the AWBA in meeting the State's obligation under the Settlements Act. In July, 2008, \$12.4 million remaining from the initial Indian firming appropriation was swept by the legislature out of the Arizona Water Banking (AWB) Fund.

GRIC Water Settlement Program

In addition to the firming requirements of the Settlements Act, the AWBA, acting as agent for the State, is required to deliver 15,000 acre-feet of water to the GRIC for the purpose of establishing the Southside Replenishment Bank. The AWBA must deliver a minimum of 1,000 acre-feet per year to establish this Bank. The Southside Replenishment Bank will fulfill the obligations created under the Settlements Act for protection of the Reservation from off-reservation groundwater pumping. The 2011 Plan includes 1,000 acre-feet of direct deliveries to the GRIC for this purpose, creating a cumulative total of 3,000 acre-feet toward meeting this obligation.

recovering water on behalf of Metropolitan in 2007 and completed that recovery in 2010.

In addition to the efforts of completing credit recovery for Metropolitan, CAWCD staff continued to conduct its recovery planning in 2010. To assist in planning for credit recovery and water delivery, staff has been compiling and analyzing information such as: subcontractors' operating systems, location of stored credits in relation to service areas, and recovery well locations. Evaluation continued on potential sites for development of large-scale regional recovery facilities, as well as potential partnerships among water providers.

CAWCD staff has held numerous recovery meetings in Maricopa, Pinal and Pima Counties. In response to these discussions, staff has developed draft Guiding Principles for *Recovery of Stored CAP Water for M&I Subcontractors*, which capture basic concepts of recovery and acknowledge customers' concerns (can be found on www.cap-az.com). These principles have been shared with subcontractors and will be incorporated into a draft recovery plan scheduled for completion by CAWCD in March 2011.

PRICING

In June 2010, the CAWCD Board approved its water delivery rate schedule for calendar years 2011/2012. The Board concluded that because of the recent demand for excess CAP water, the incentive recharge rate was no longer necessary and would therefore not be offered. Thus the AWBA rate for recharge is now equivalent to the rate for excess M&I water at \$137 per acre-foot.

This is the second year that the AWBA will have a different cost share structure between AMAs for its GSF partners. Historically, there has been little interest in GSF partnerships with the AWBA in the Tucson AMA because groundwater pumping costs in that AMA have been much lower than the cost share. Because funding in the Tucson AMA is not sufficient for meeting the M&I firming goal and since storage at GSFs is less expensive than underground storage facilities (USFs), accruing more credits per dollar spent, the AWBA Commission directed staff in 2009 to pursue GSF opportunities in the Tucson AMA. Based on data submitted by the Tucson GSF operators, which included a range of groundwater pumping costs and cost shares paid by other partners, it was determined that a reasonable cost share for 2010 was \$15 per acre-foot. The cost share for 2011 will remain the same at \$15 per acre-foot.

Groundwater pumping costs in the Phoenix and Pinal AMAs vary depending on energy sources used and the location of wells, i.e. depth to water. The AWBA maintained the cost share for the GSF partners at \$33 per acre-foot for the Phoenix and Pinal AMAs, which is comparable to the average groundwater pumping costs in these areas.

Table 4 reflects the water delivery rate CAWCD will charge the AWBA, the cost share GSF operators pay, and the rates the AWBA pays to utilize different USFs for M&I firming. For other than M&I firming purposes, the AWBA also pays a capital charge component. There is no administrative cost component in the facility cost because the

Table 5. Funding for 2011 Annual Plan of Operation

	Funds Available (\$)		Funds Utilized (\$)		Credits (AF)
	AWBA	CAWCD	AWBA	CAWCD	
Withdrawal Fees					
Phoenix AMA	\$1,600,000	-	\$1,600,000	-	10,460
Pinal AMA ¹	\$1,200,000	-	\$1,200,000	-	9,540
Tucson AMA ²	\$435,000	-	\$435,000	-	1,800
Four Cent Tax					
Phoenix AMA	\$0	\$120,870,000	\$0	\$7,826,000	51,180
Pinal AMA	\$0	\$795,000	\$0	\$794,000	7,020
Tucson AMA ³	\$0	\$7,440,000	\$0	\$7,440,000	45,520
Other					
General	\$0				
Phoenix AMA		-	\$0	-	0
Pinal AMA		-	\$0	-	0
Tucson AMA		-	\$0	-	0
Gifts, Grants, Donations					
Shortage Reparations (NV):	\$0				
Phoenix AMA		-	\$0	-	0
Pinal AMA		-	\$0	-	0
Tucson AMA		-	\$0	-	0
Interstate Banking- Nevada					
Operating ⁴	\$0		\$0		0
	Total Funds Available		Total Funds Expended		Credits
	\$132,340,000		\$19,295,000		125,520

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

² 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.

³ 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 2010 is estimated to be \$2,026,952.

⁴ Pursuant to a letter agreement between AWBA and SNWA executed December 9, 2010, storage of water on behalf of SNWA and annual payments to the Operating account have been suspended through 2014.

The 2011 Plan was developed expending all available withdrawal fees in the three AMAs. The Plan also shows CAWCD utilizing a portion of the four-cent tax collected in Maricopa County and all of the four-cent tax collected in Pinal and Pima Counties to offset water costs to the AWBA.

Table 7 identifies the progress made on the AWBA's goals and obligations in 2011.

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
Phoenix AMA M&I Firming Groundwater Mgmt ¹	Ad valorem tax Withdrawal Fees	1,566,000 AF			1,268,596	81%
					279,343	99%
Pinal AMA M&I Firming Groundwater Mgmt ¹	Ad valorem tax Withdrawal Fees	243,000 AF			179,869	74%
					383,416	232%
Tucson AMA M&I Firming Groundwater Mgmt ^{1,2}	Ad valorem tax Withdrawal Fees	864,000 AF			374,006	43%
					90,766	54%
On-River M&I Firming³	General Fund	420,000 AF			403,830	96% ⁴
Indian Settlements: GRIC Firming	Withdrawal Fees	350,000 AF ⁵	up to 15,000 AF/YR		0	0%
Future Settlements	Withdrawal Fees	200,000 AF ⁵	up to 8,724 AF/YR		0	N/A
Federal Assistance Tucson AMA	Appropriation Withdrawal Fees Cost of Services ⁶		\$3,000,000	\$3,000,000	39,723	100%
				\$2,338,171	34,102	
				\$630,490	5,621	
				\$31,339	n/a	
Southside Repl. Bank	Withdrawal Fees		15,000 AF Direct Delivery		3,000	20%
Interstate Water Banking - NV	Contract with Nevada		1,250,000 AF ⁷		600,252	48%
Shortage Reparations-Nevada	Gifts, Grants, Donations	\$8,000,000		\$2,999,748	82,283	37%

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

² Includes credits acquired from the Tohono O'odham Nation pursuant to §45-841.

³ 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.

⁴ This percentage reflects full utilization of general fund credits accrued to date and would change as other objectives are identified by the AWBA.

⁵ Based on estimates from the Indian Firming Study Commission Report dated January 6, 2006.

⁶ Include \$14,883 and \$16,456 deducted for payment of cost of services for FY08 and FY09, respectively.

⁷ 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.