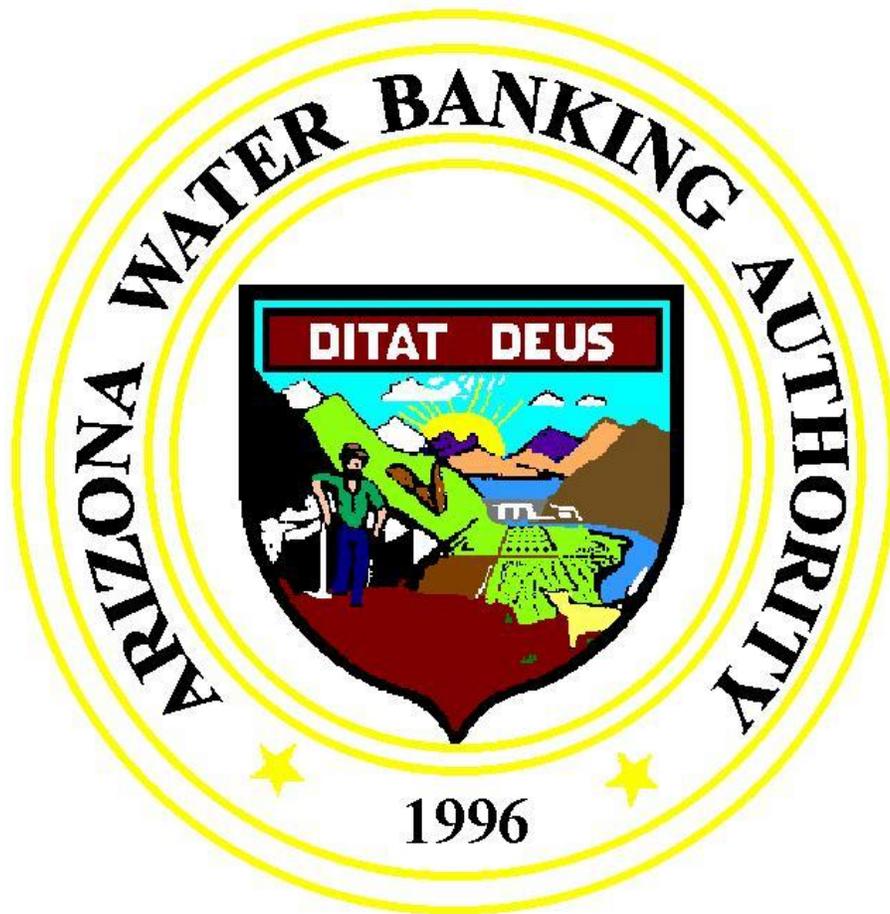


**ARIZONA WATER BANKING AUTHORITY**  
**ANNUAL PLAN OF OPERATION**  
**2011**



Herbert R. Guenther, Chairman

December 2010

# The Arizona Water Banking Authority

## Summary

The Arizona Water Banking Authority (AWBA; Water Bank) was created in 1996 to store the unused portion of Arizona's annual allocation of the Colorado River. Until the AWBA was created, Arizona had not used its full 2.8 million acre-foot share of Colorado River water. Leaving a portion of Arizona's water in the Colorado River was a lost opportunity; the AWBA has seized this opportunity to further secure dependable water supplies necessary to ensure the state's long-term prosperity.

The Water Bank stores unused Arizona Colorado River water to meet future needs for:

- Firming (to secure) adequate water supply to municipal and industrial users in the Central Arizona Project service area and along the Colorado River in times of shortages;
- Meeting the management plan objectives of the Arizona Groundwater Code;
- Meeting the State's obligation pursuant to Indian Water Rights Settlements;
- Assisting the Colorado River fourth priority municipal and industrial users in developing credits that could be used to increase their future supplies for firming; and
- Assisting Nevada and California through interstate water banking.

Each year, the AWBA pays the delivery and storage costs to bring Colorado River water into Central and Southern Arizona through the Central Arizona Project canal. The water is stored underground in existing aquifers (direct recharge) or is used by irrigation districts in lieu of pumping groundwater (indirect or in lieu recharge). For each acre-foot stored, the AWBA accrues credit that can be redeemed in the future when Arizona's communities, Indian Tribes or neighboring states need this backup water supply.

The money that funds the AWBA and, specifically, water storage for the benefit of Arizona (intrastate storage) comes from three sources that are either from existing revenue sources or from fees charged to those benefiting directly from the stored water. Restrictions on the ways these monies can be used depend on the source of the monies, which currently include:

- Fees for groundwater pumping currently collected within the Phoenix, Pinal and Tucson Active Management Areas (AMA). These monies can only be used to benefit the AMA in which the fees are collected. Included as a benefit to the AMA are both municipal and industrial firming and Indian firming.
- A four cent *ad valorem* property tax collected in the three county CAP service area. These monies can only be used to benefit the county in which the tax is levied.
- A general fund appropriation received at the discretion of the Legislature.

Another source of funding is used for water storage to aid Nevada (interstate storage) and is received pursuant to an Agreement for Interstate Water Banking.

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.

## 2010 PLAN OF OPERATION

In 2010, the AWBA recharged and directly delivered approximately 214,470 acre-feet of Colorado River water. Arizona is forecast to use its full entitlement of 2.8 MAF, which includes the remaining balance of 8,159 acre-feet of ICUA developed for and diverted by California. CAWCD recovered and utilized credits previously stored for the benefit of California allowing the creation of ICUA (see Figure 1).

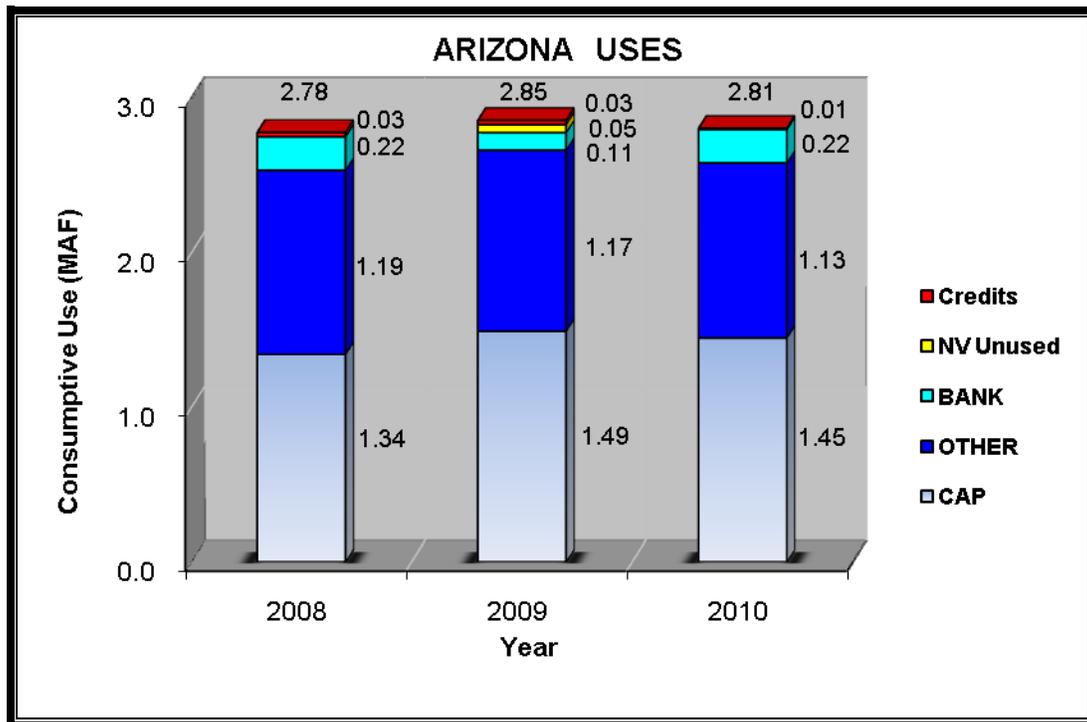


Figure 1. Recent Comparison of Colorado River Water Uses by Arizona

Forecasted direct use of Colorado River water in the Lower Basin is 7.41 MAF in 2010 (see Figure 2). California and Nevada also created Intentionally Created Surplus in 2010 for use in future years.

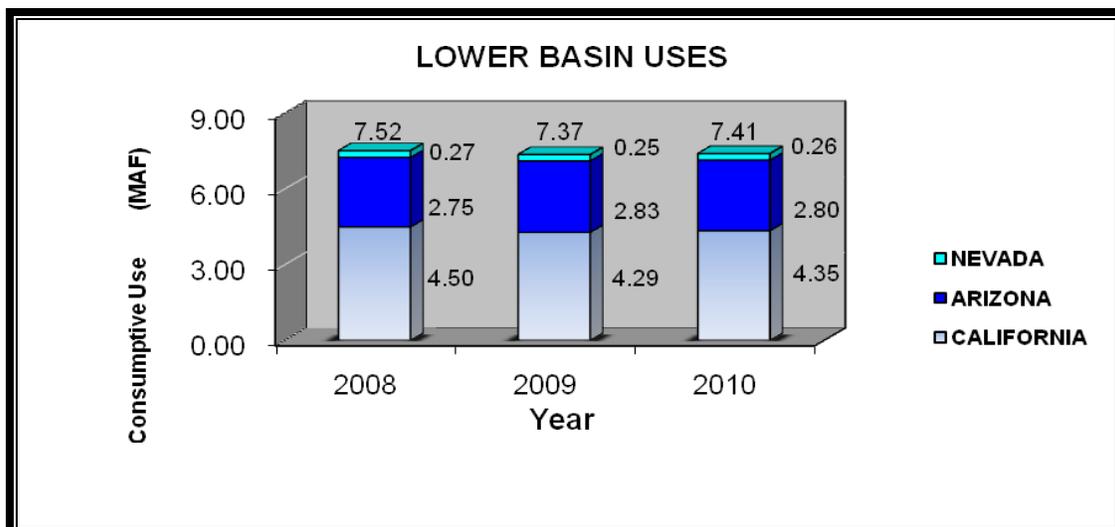


Figure 2. Recent Comparison of Lower Basin Uses of Colorado River Water

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>				<b>87,345</b>	<b>5,000</b>
	<i>Phoenix AMA Subtotal</i>				<b>92,345</b>	
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>				<b>38,700</b>	<b>0</b>
	<i>Pinal AMA Subtotal</i>				<b>38,700</b>	
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>				<b>69,422</b>	<b>14,000</b>
	<i>Tucson AMA Subtotal</i>				<b>83,422</b>	
<b>TOTAL INTRASTATE &amp; INTERSTATE DELIVERIES</b>				<b>195,467</b>	<b>19,000</b>	
<b>TOTAL RECHARGE DELIVERIES</b>				<b>214,467</b>		

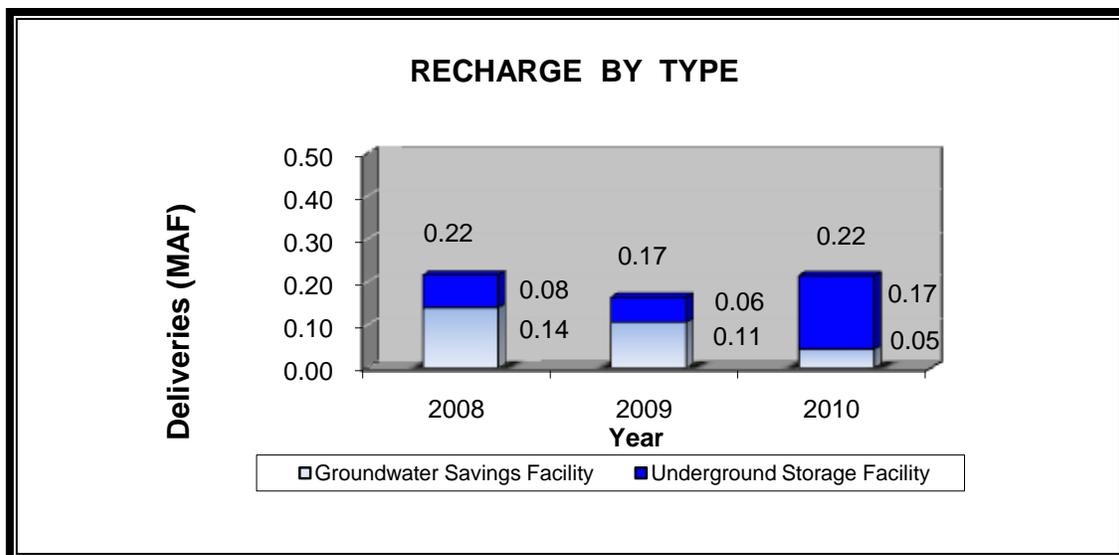
In addition to recharge deliveries, the AWBA also delivered water to meet the requirements of the Gila River Indian Community Water Settlement Program (Settlement Program). In 2009, the AWBA entered into an intergovernmental agreement (IGA) with the Gila River Indian Community that identifies the procedure for delivering water for meeting a replenishment obligation and/or for establishing the Southside Replenishment Bank identified in the Settlement Program. While these deliveries do not accrue long-term storage credits that may be recovered in the future, the Replenishment Bank receives a replenishment credit for each acre-foot of water delivered. Table 1b identifies the amount of water the AWBA delivered for replenishment purposes. A replenishment obligation was not incurred in 2009.

**Table 1b. Replenishment Deliveries**

Southside Replenishment Activities	2010 Deliveries (acre-feet)	Cumulative Deliveries (acre-feet)
Replenishment Obligations	0	0
Replenishment Bank	1,000	2,000
<b>TOTAL DIRECT DELIVERIES</b>	<b>1,000</b>	<b>2,000</b>

This was the first year the AWBA participated in CAWCD’s new five-year policy for distributing Excess CAP water. The initial Plan of Operation (Plan) for 2010 proposed to deliver 153,600 acre-feet of water and did not include deliveries for interstate storage. The Plan was amended in September of 2010 to include an additional 57,000 acre-feet of water made available through CAWCD’s remarketing process and to recognize interstate deliveries. By the end of the year, the AWBA delivered for storage an estimated 214,470 acre-feet of water: 195,470 acre-feet for intrastate banking and 19,000 acre-feet for interstate banking. Figure 3 shows the acre-foot breakdown between GSFs and USFs for 2010 and a comparison between 2010 and previous years.

**Figure 3. Recent Comparison of Annual Deliveries to GSFs and USFs**



## 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

replenishment reserve purposes, and the Bureau for Indian firming. The AWBA may use this water for any authorized purpose.

Subtracting the projected uses for the CAGRDR replenishment reserve (10,900 acre-feet) and the Bureau (15,000 acre-feet), leaves a remaining balance of 149,100 acre-feet for the AWBA that includes 11,659 acre-feet of payback for an Inadvertent Overrun of Colorado River water in 2009. CAWCD's overrun payback plan assumes overruns can be attributed to end-of-year water that becomes available to the AWBA from unused apportionment or customer turn-back water. Accordingly, the amount of water available to the AWBA for storage in 2011 is 137,441 acre-feet.

## II. CAP System Capacity

Under normal operating conditions, CAP can divert approximately 1.6 million acre-feet. Although the CAP is capable of delivering approximately 180,000 acre-feet per month, the available capacity does not always total that because of unique situations, i.e. the filling of Lake Pleasant in the winter months, deliveries to the western portion of the aqueduct, New Waddell Dam releases to the aqueduct in the summer months and scheduled maintenance and outages. The amount of water available to be diverted by the CAP within Arizona's 2.8 million acre-foot allocation was not a limiting factor in this Plan.

## III. Available Funds

The AWBA will have withdrawal fees collected in 2011 available for use in this Plan for intrastate storage. Total withdrawal fees are estimated at \$3.24 million; of that amount, \$1.6 million is available for the Phoenix AMA, and approximately \$1.2 million and \$435,000 are available for the Pinal and Tucson AMAs, respectively.

As in previous years, the CAWCD Board resolved to continue to retain the county *ad valorem* property taxes collected and not transfer those revenues to the AWBA Fund. Property tax revenues retained by CAWCD can be used to offset the cost of AWBA water deliveries in the tri-county CAWCD service area. The estimated *ad valorem* tax balances available for 2011, including carryover, are: Maricopa County (\$121 million), Pinal County (\$795,000), and Pima County (\$7.4 million).

While funding was not a limiting factor in developing the Plan for the Phoenix AMA, funding did limit the amount of water available for storage in the Pinal and Tucson areas. The ability to purchase water for storage in the Tucson AMA was further reduced as a result of legislative transfers in 2010. The amount of funds collected in both the Pinal and Tucson AMAs is expected to be a limiting factor in these areas in the future.

#### 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.

**Table 2**  
**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 <sup>1</sup>	150,000	0	0	0	1,600	9,000	9,000	9,000	9,000	9,000	9,000	4,350	0	59,950
															59,950
<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	0	0	0	0	0
	QUEEN CREEK	28,000	0	0	0	0	0	0	0	1,343	2,285	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
															7,055
<b>AMA TOTAL INTRASTATE</b>			0	0	0	1,600	9,000	9,000	9,000	10,343	11,285	10,142	5,493	1,142	67,005
<b>PINAL AMA :</b>															
<b>GSF</b>	CAIDD	110,000	0	0	0	1,500	1,500	1,500	1,500	1,500	0	0	0	0	7,500
	HOHOKAM	55,000	0	0	500	0	0	0	0	0	750	750	750	250	3,000
	MSIDD	120,000	508	636	1,589	1,335	1,335	636	318	318	572	0	0	254	7,500
															18,000
<b>AMA TOTAL INTRASTATE</b>			508	636	2,089	2,835	2,835	2,136	1,818	1,818	1,322	750	750	504	18,000
<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	0	0	0	1,000	2,000	2,000	2,000	2,000	2,000	300	0	0	11,300
	CAVSARP	100,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	SAVSARP	60,000	0	0	0	0	4,000	5,000	5,000	5,000	5,000	5,000	3,000	4,000	36,000
															48,936
<b>GSF</b>	CORTARO-MARANA ID	20,000	0	0	0	0	0	0	0	0	0	0	0	0	0
	KAI FARMS (Red Rock)	11,231	0	0	0	0	500	500	500	500	500	0	0	0	2,500
															2,500
<b>AMA TOTAL INTRASTATE</b>			0	0	0	1,000	6,500	7,500	7,500	7,500	7,736	5,300	3,700	4,700	51,436
<b>TOTAL INTRASTATE</b>			508	636	2,089	5,435	18,335	18,636	18,318	19,661	20,343	16,192	9,943	6,346	136,441
<b>TOTAL INTERSTATE</b>			0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL RECHARGE</b>			508	636	2,089	5,435	18,335	18,636	18,318	19,661	20,343	16,192	9,943	6,346	136,441
<b>DIRECT DELIVERY (Non-Storage):</b>															
	Southside Replenishment Bank		1,000	0	0	0	0	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>		1,000	0	0	0	0	0	0	0	0	0	0	0	1,000
<b>TOTAL DELIVERIES</b>			1,508	636	2,089	5,435	18,335	18,636	18,318	19,661	20,343	16,192	9,943	6,346	137,441

<sup>1</sup> Deliveries for November and December have been reduced by 11,659 acre-feet as pay back for an Inadvertent Overrun of Colorado River water in 2009.

## 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.

## Assignment of Long-term Storage Credits Pursuant to A.R.S. § 45-841.01

Pursuant to A.R.S. § 45-841.01, an Indian community may accrue credits to further the implementation of Indian water rights settlements. One criterion for accruing credits is that ten percent of the credits be offered to the AWBA at a price per acre-foot that is equal to the AWBA's delivery and storage costs at the time of sale. The Tohono O'dham Nation (Nation) stored water at the Mission Mine Complex in 2008. In 2009, the Nation assigned 234 acre-feet of credits to the AWBA from the credits accrued from its 2008 storage at a cost of \$22,698. It is anticipated the Nation will offer to assign an estimated 768 acre-feet of credits from its 2009 storage. For 2011, an estimated 930 acre-feet of credits may be available to the AWBA based on the Nation's 2010 storage activities. While these credits may be used for M&I firming or for water management purposes, there is a restriction that the credits not be recovered within five miles of the exterior boundary of the reservation.

## **INTERSTATE WATER BANKING**

The 2011 Plan does not include an interstate water banking component for the State of Nevada. The AWBA and SNWA executed a letter agreement, December 9, 2010, which suspends certain provisions of Second Amended Agreement for Interstate Water Banking (Second Amended Agreement). Pursuant to the letter agreement, AWBA agreed to forego storing additional water for SNWA through the end of calendar year 2014 and SNWA has agreed to forego requiring the development of ICUA during this period in order to reduce the amount of water that would be delivered from Lake Mead.

Recent requests to the Bureau of Reclamation to leave unused water in Lake Mead will minimize the mutual risk of shortage to Arizona and Nevada during the next several years. In order to accommodate these operational adjustments, and unless otherwise agreed to by the AWBA and SNWA, payment dates specified in Subarticle 2.4.1.2 of the Second Amended Agreement will be extended by six years.

From 2009 to the present, Legislative transfers from the AWBA Nevada Resource subaccount total \$19.65 million.

## **RECOVERY**

In 2010, CAWCD recovered the remaining 8,159 acre-feet of long-term storage credits (credits) held on behalf of Metropolitan Water District of Southern California (Metropolitan), therefore, no additional recovery is planned for 2011. These credits were recovered pursuant to the Amended Letter Agreement for the Creation of Intentionally Created Unused Apportionment (ICUA) with Credits Created Under the 1992 Demonstration Agreement between CAWCD and Metropolitan.

Based on the 1992 Demonstration Agreement (amended in 1994), CAWCD stored 89,000 acre-feet of water in Pinal County in the early 1990s, resulting in 80,909 acre-feet of credits that could be recovered for the benefit of Metropolitan. CAWCD agreed to recover and use these credits which, have been held in CAWCD's long-term storage account, in lieu of diverting a like amount of its Colorado River apportionment. The AWBA was party to the agreement because it is the only entity in Arizona that can request the Secretary release ICUA to California and Nevada. CAWCD began

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](http://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

AWBA pays the CAWCD administrative costs on an annual basis. The rate established for interstate banking is \$167 per acre-foot, plus facility costs and facility capital costs.

**Table 4. 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
Interstate	\$26 per acre-foot
Underground Storage Facility rate paid by AWBA	
Agua Fria Recharge Project <sup>2</sup>	\$8 per acre-foot
Hieroglyphic Mtn. Recharge Project <sup>2</sup>	\$8 per acre-foot
Tonopah Desert Recharge Project <sup>2</sup>	\$8 per acre-foot
West Maricopa Combine	\$25 per acre-foot
Avra Valley Recharge Project	\$15 per acre-foot
Lower Santa Cruz Recharge Project <sup>3</sup>	\$15 per acre-foot
Pima Mine Road Recharge Project <sup>3</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> Additional capital charge of \$15 per acre-foot for interstate storage.

<sup>3</sup> Additional capital charge of \$9 per acre-foot for interstate storage.

## ACCOUNTING

The AWBA's enabling legislation required the development of an accounting system that allows the tracking of all long-term storage credits accrued by the AWBA and the funding sources from which they were developed. The ADWR has established accounts that track both credits and funds.

The estimated total cost of the AWBA's 2011 Plan of Operation is approximately \$19 million. Table 5 provides estimates of the funds available to be utilized by the AWBA, an estimate of funds to be collected during the year, the funds to be utilized, the entity that holds the funds, and the credits that will accrue to those accounts based on the 2011 Plan.

**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	\$7,826,000	51,180
Pinal AMA	\$0	\$795,000	\$0	\$794,000	7,020
Tucson AMA <sup>3</sup>	\$0	\$7,440,000	\$0	\$7,440,000	45,520
<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>	\$0		\$0		0
	<b>Total Funds Available</b>		<b>Total Funds Expended</b>		<b>Credits</b>
	\$132,340,000		\$19,295,000		125,520

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

<sup>4</sup> 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 6 provides an estimate of the AWBA funds expended and the credits that have accrued to the various accounts based on the AWBA's recharge activities since inception.

**Table 6. Cumulative Totals of Long-term Storage Credits 1997-2010**

	FUNDS EXPENDED	CREDITS <sup>1</sup> AMOUNT (AF)	LOCATION
<b>Withdrawal Fee</b>			
Phoenix AMA	\$15,766,819	268,883	Phoenix AMA
Pinal AMA <sup>2</sup>	\$13,450,567	373,876	Pinal AMA
Tucson AMA <sup>3</sup>	\$7,174,237	92,845	Tucson AMA
<b>Four Cent Tax</b>			
Maricopa County	\$72,358,259	1,217,416	Phoenix AMA
Pinal County	\$7,720,465	172,849	Pinal AMA
Pima County	\$30,749,750	328,486	Tucson AMA
<b>Other</b>			
General Fund <sup>4</sup>	\$11,100,865	403,830	
	\$1,522,115	42,316	Phoenix AMA
	\$6,394,964	306,968	Pinal AMA
	\$3,183,786	54,546	Tucson AMA
Indian Firming Appropriation	\$2,338,171	28,436	
	\$0	0	Phoenix AMA
	\$0	0	Pinal AMA
	\$2,338,171	28,436	Tucson AMA
Shortage Reparations	\$2,999,742	82,283	
	\$1,099,339	20,642	Phoenix AMA
	\$1,708,580	60,436	Pinal AMA
	\$191,823	1,205	Tucson AMA
<b>Interstate</b>			
Nevada <sup>5</sup>	\$109,217,972	600,252	
	\$10,053,945	50,887	Phoenix AMA
	\$86,589,032	439,851	Pinal AMA
	\$12,574,995	109,514	Tucson AMA
<b>TOTAL</b>	<b>\$272,876,847</b>	<b>3,569,200</b>	

<sup>1</sup> Actual credits used for 1997-2009; credits estimated for 2010.

<sup>2</sup> Includes expenditure of \$226,000 for Southside Replenishment Bank deliveries.

<sup>3</sup> Includes estimated expenditures of \$136,362 for the assignment of 1,002 acre-feet of credits to the AWBA from the Tohono O'odham Nation pursuant to §45-841.01.

<sup>4</sup> 256,174 AF of credits reserved pursuant to contract dated March 17, 2010 with Mohave County Water Authority.

<sup>5</sup> Includes 50,000 acre-feet of credits transferred from CAWCD pursuant to Amended Agreement for Interstate Water Banking.

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
<b>Phoenix AMA</b> M&I Firming Groundwater Mgmt <sup>1</sup>	Ad valorem tax Withdrawal Fees	1,566,000 AF			1,268,596 279,343	81% 99%
<b>Pinal AMA</b> M&I Firming Groundwater Mgmt <sup>1</sup>	Ad valorem tax Withdrawal Fees	243,000 AF			179,869 383,416	74% 232%
<b>Tucson AMA</b> M&I Firming Groundwater Mgmt <sup>1,2</sup>	Ad valorem tax Withdrawal Fees	864,000 AF			374,006 90,766	43% 54%
<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 34,102 5,621 n/a	100%
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> Includes credits acquired from the Tohono O'odham Nation pursuant to §45-841.

<sup>3</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>4</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>5</sup> Based on estimates from the Indian Firming Study Commission Report dated January 6, 2006.

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

<sup>7</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.

## **PUBLIC REVIEW AND COMMENT**

The AWBA staff held meetings with the GUACs for the Phoenix, Pinal and Tucson AMAs as required by statute. The Plan was distributed to the public and was posted on the AWBA web page for public review and comment.

In general, the GUACs supported the Plan and had no requests for changes to it. Questions received focused on clarification of the Southside Replenishment Bank, different cost-share pricing for GSFs, and explanation of the interstate delivery rate.