

ARIZONA WATER BANKING AUTHORITY
ANNUAL PLAN OF OPERATION
2002



Joseph C. Smith, Chairman

December 2001

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) assist in the settlement of American 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 (or banking) of water is accomplished through the Underground Water Storage, Savings and Replenishment Act (UWS) 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 renewable water is used in place of groundwater, creating a groundwater savings. The UWS program mandates the accounting of the renewable water stored and the development of long-term storage credits. The long-term storage credits developed by the AWBA will then be utilized by the AWBA when future conditions warrant. The use of credits for the three objectives listed above may differ and 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. This is achieved by presenting a draft of the Plan to the Groundwater Users Advisory Councils (GUAC) for the Phoenix, Pinal and Tucson Active Management Areas (AMA) and to the county board of supervisors for counties outside of the AMA's if water storage is proposed there within the Plan. 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 accepts public comment in writing up to the time the final draft Plan is presented for approval.

This Plan does not include an interstate water banking component. When it is anticipated that the final approved Plan may include an interstate water banking component, pursuant to the provisions of the Agreement for Interstate Water Banking, the initial draft Plan will not. Not including the interstate water banking component in the initial draft Plan allows the AWBA to insure that Arizona's water banking interests have been met prior to inclusion of an interstate banking component. On or before November 1, the AWBA will advise the Nevada entities of any opportunity for interstate water banking. They will, in turn, advise the AWBA of their desire to accept or decline the amount offered. Consequently, absence of an interstate component in a draft Plan does not indicate that interstate water banking will not occur.

The Plan is intended to govern the operations of the AWBA over the course of the entire calendar year. During the course of the year, changing circumstances may present limitations or provide new opportunities not contemplated in the adopted Plan,

which could affect the overall delivery projections. In such circumstances, the AWBA may choose to modify its adopted Plan. If such modifications are required, the proposed modifications will be discussed and, if acceptable, approved at a public meeting of the AWBA and an Amended Plan will be prepared.

The AWBA recognizes that day-to-day adjustments in the normal operations of the CAP or the individual storage facilities caused by maintenance and fluctuations in the weather 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 not be deemed modifications to the Plan and will be addressed by staff and reported to the AWBA members on an as-needed basis.

2001 PLAN OF OPERATION

In 2001, the AWBA's fifth full year of operation, the AWBA recharged more than 295,000 acre feet of Colorado River water and Arizona's total use of Colorado River water was forecast to be 2.66 million acre feet. Consequently, the AWBA continues to play a role in bringing Arizona closer to full utilization of their normal year entitlement of 2.8 million acre feet (see Figure 1).

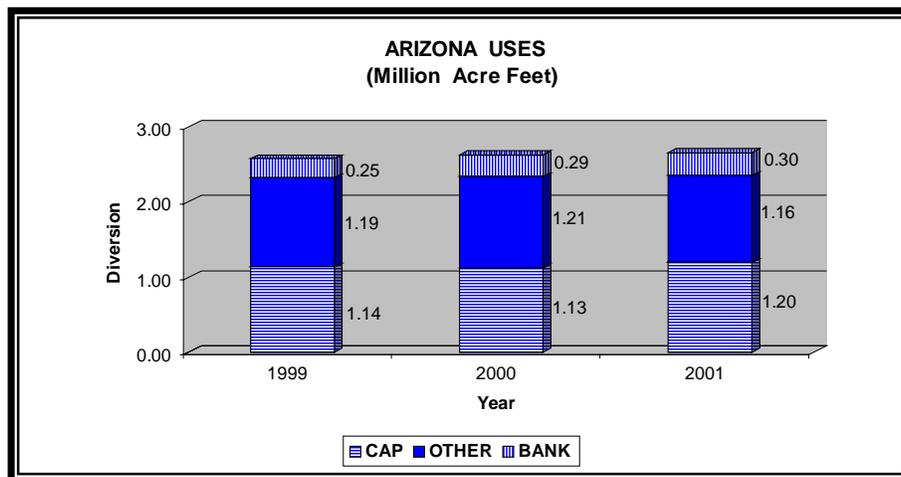


Figure 1

Because the Secretary of the Interior declared that the Colorado River was in limited surplus in 2001, Arizona's use did not impact the other Lower Basin states' uses. Total use of Colorado River water in the Lower Basin is forecast to be approximately 8.15 million acre feet in 2001 (see Figure 2) based on Bureau of Reclamation data dated November 29, 2001.

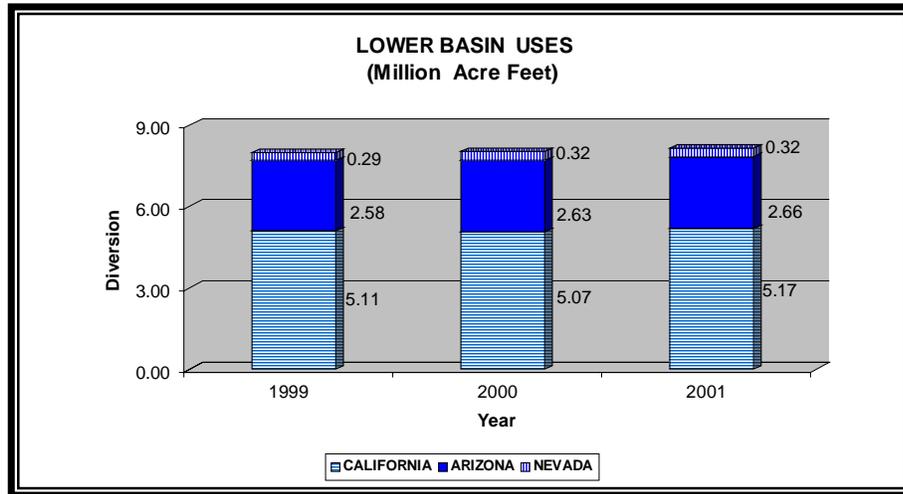


Figure 2

The AWBA recharged water at both USFs and GSFs in 2001. Table 1 lists the AWBA's recharge partners for 2001, 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 2001. Table 1 values are based on actual deliveries through November with December's 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 3-5% 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 1

AMA	Facility	Type	Permit Capacity	Amount Delivered
Phoenix	GRUSP	USF	200,000 AF	62,702 AF
	Agua Fria	USF	100,000 AF	4,464 AF
	Chandler Hts Citrus ID	GSF	3,000 AF	545 AF
	Queen Creek ID	GSF	28,000 AF	8,829 AF
	New Magma IDD	GSF	54,000 AF	44,162 AF
	SRP	GSF	200,000 AF	14,935 AF
Pinal	MSIDD	GSF	120,000 AF	48,145 AF
	CAIDD	GSF	110,000 AF	12,141 AF
	Hohokam ID	GSF	55,000 AF	54,936 AF
Tucson	Avra Valley (CAP)	USF	11,000 AF	6,141 AF
	Lower Santa Cruz (CAP)	USF	30,000 AF	24,299 AF
	Pima Mine Road (CAP)	USF	30,000 AF	12,973 AF
	Kai-Red Rock	GSF	11,231 AF	863 AF
Total			952,231 AF	295,135 AF

The 2001 Plan scheduled more than 319,000 acre feet of water to be delivered for recharge around the state. The amount of water actually delivered amounted to slightly more than 295,000 acre feet. Reduced availability at two facilities accounted for the majority of the difference between projected and actual deliveries. There was a curtailment of storage at the Granite Reef Underground Storage Project pursuant to the provisions of Salt River Project's agreement with the Salt River Pima Maricopa Indian Community. There was also a reduction in the storage at the Agua Fria Recharge Facility as the available storage was utilized by the Central Arizona Groundwater Replenishment District to meet their replenishment obligations. The historical trend of a greater amount of storage at GSF's continued in 2001. Figure 3 shows the acre foot break down between GSF's and USFs for 2001 and a comparison between 2001 and previous years.

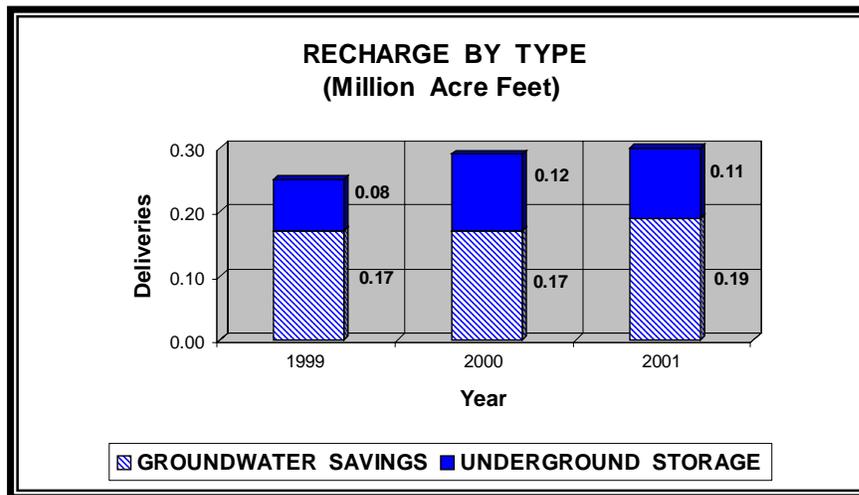


Figure 3

2002 PLAN OF OPERATION

When developing the 2002 Plan, the AWBA evaluated four critical factors: (1) the amount of unused water available to the AWBA for delivery, (2) the CAP capacity available to the AWBA for the delivery of unused water, (3) the funds available and the costs required to deliver the unused water, and (4) the capacity available for use by the AWBA at the various recharge facilities.

The Bureau of Reclamation published the Annual Operating Plan (AOP) for water year 2002 on October 15, 2001. The 2002 AOP prescribes that a full domestic surplus condition will govern releases from Lake Mead for the Lower Basin states in 2002. This surplus condition is described in the Interim Surplus Guidelines that became effective on February 26, 2001 and, in effect, limits Arizona to 2.8 million acre feet. Based on the Secretarial declaration and proposed uses, the overall Lower Basin use is projected to be 8.15 million acre feet (Figure 4) and Arizona's use is forecast to be 2.75 million acre feet (Figure 5). Consequently, water availability will not be a limiting factor for the AWBA in 2002.

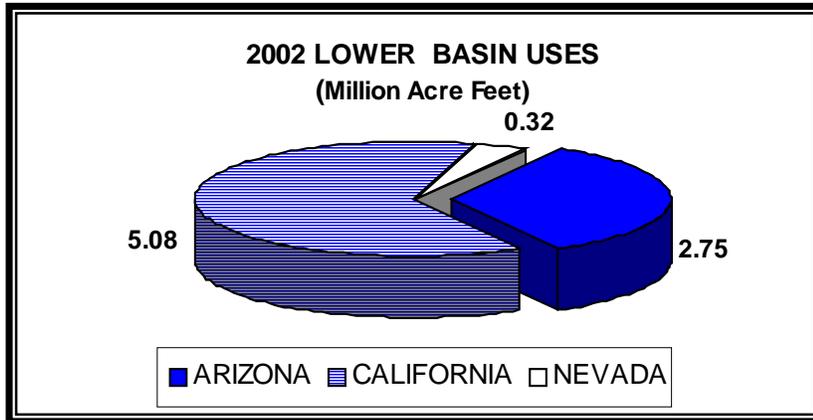


Figure 4

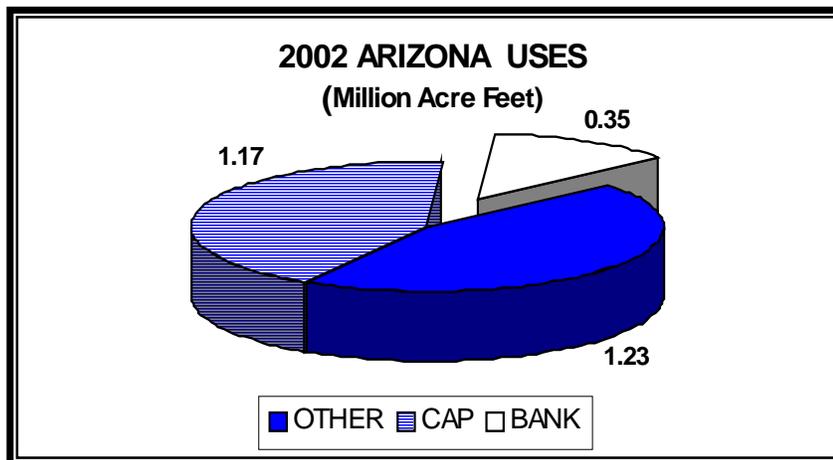


Figure 5

The CAP 2002 Operating Plan would accommodate the delivery of approximately 1.65 million acre feet of water. CAP's plan delivers approximately 1.17 million acre feet to its subcontractors, leaving 480,000 acre feet of capacity available for the AWBA. Based on this available capacity, the CAP's operations will not be a limiting factor for the AWBA in 2002.

The funding available to the AWBA from its three sources (county *ad valorem* property tax revenues, groundwater pumping fees, and general funds) to pay for the delivery of water in 2002 will be approximately \$49 million including the carryover from previous years. Given the costs associated with the delivery of water and the continued policy of GSF operators paying \$21 of the water delivery costs to their facilities, the \$49 million is adequate to fund the Plan and is not a limiting factor in 2002. For more information about the cost of the Plan, please refer to the pricing section.

To assist in developing the 2002 Plan, facility operators submitted an annual delivery schedule to the CAP that included their projected storage with the AWBA. The CAP schedules the AWBA's deliveries to the USFs it operates. The CAP staff utilized the facility operator's schedules to compile an annual schedule for the CAP, including

municipal and industrial (M&I) water, water for Indian tribes, incentive recharge water, agricultural pool water, and AWBA water.

Concurrently, the AWBA staff met with the facility operators to discuss their delivery schedules and development of new facility agreements as appropriate and confirm their continued interest in participating with the AWBA. These discussions confirmed the availability of substantial permitted recharge capacity but also that not all of the existing capacity is available to the AWBA. Some of the GSF availability was limited by delivery cost and operational constraints or previous commitments to other partners limited the availability of both the GSFs and the USFs to the AWBA. Accordingly, the only constraint on AWBA storage in 2002 is availability of recharge facilities.

The CAP water that the AWBA purchases from CAWCD can be viewed as having two components, cost and availability. The pricing aspect of the water deliveries is discussed further in the pricing section of this document. With regard to availability of water, the AWBA purchases water from the category that is termed excess water. Excess water is generally recognized to be all water available for delivery through the CAP, regardless of Secretarial declaration of condition, that exceeds the quantities scheduled under long-term contracts and subcontracts. The availability of excess water is determined on an annual basis. In 2002, and until 2004, there are no pools associated with excess water and the AWBA has available to it any water not requested by another entity within Arizona. In light of the Repayment Settlement Stipulation with the federal government, the CAWCD has proposed a new policy for excess water that will become effective in 2004 and continue until 2030. This policy establishes eligibility criteria, priority and price for each pool or category. The AWBA category is established exclusively for the AWBA's intrastate storage purposes. Size and price of the pool will be established by the CAWCD Board; a priority was not established for this pool. This policy also establishes an Interstate Storage category for the AWBA's interstate storage purposes. The price for water delivered for interstate banking will be established according to statute. This pool strategy has been discussed in numerous CAWCD Board meetings but has not yet been officially adopted as Board policy.

The AWBA anticipates recharging more than 350,000 acre feet of Colorado River water in 2002. The 2002 Plan was developed utilizing permitted facilities located in Maricopa, Pinal and Pima Counties and attempts to optimize, on a monthly basis, the delivery of Colorado River water to meet the AWBA's objectives. The Plan is flexible and if additional recharge capacity can be identified and funding remains available it can be modified in the future to include additional facilities.

Table 2 shows the AWBA's 2002 delivery schedule. Line One of this table provides estimates of the CAP's monthly deliveries to its M&I, agricultural, incentive recharge, and Indian customers. These deliveries have a scheduling priority over the AWBA's deliveries. These estimates do not include deliveries to New Waddell Dam.

Line Two shows the operational capacity of the CAP available after it makes its priority deliveries and its deliveries to New Waddell Dam. 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. These can include the filling of Lake Pleasant in the winter months, deliveries to the western portion of the aqueduct, New

Table 2
ARIZONA WATER BANKING AUTHORITY
 Water Delivery Schedule
 Calendar Year 2 0 0 2
 (ACRE-FEET)

2001
 Deliveries
 (AF)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1 Estimated CAP Deliveries + Losses :	45,000	49,000	110,000	118,000	135,000	165,000	185,000	145,000	70,000	69,000	42,000	40,000	1,173,000
(M&I, Indian, Ag Pools 1, 2 & 3, Incentive Recharge)													
2 Available Excess CAP Capacity for AWBA :	17,000	22,000	26,000	48,000	47,000	54,000	40,000	58,000	50,000	53,000	36,000	29,000	480,000
AWBA -- Recharge Sites :													
PHOENIX A M A :													
3 USF GRUSP	200,000	50,600	4,800	4,800	4,800	4,800	3,800	3,800	3,800	3,800	3,800	3,800	50,600
4 HIEROGLYPHIC MTN.	35,000	6,000	0	0	0	0	0	0	0	0	3,000	3,000	6,000
5 AGUA FRIA	100,000	62,329	2,033	2,034	2,033	5,600	6,100	6,100	6,450	7,100	7,100	7,100	62,329
6 GSF	3,000	1,117	50	100	50	100	151	125	125	191	0	0	1,117
7 NEW MAGWA	54,000	47,200	2,000	2,000	3,200	2,500	3,500	3,700	9,700	9,600	2,500	2,000	47,200
8 QUEEN CREEK	28,000	13,500	0	0	0	0	5,711	3,182	1,682	1,202	1,723	0	13,500
9 SRP	200,000	11,200	0	0	1,600	1,600	1,600	1,600	1,600	1,600	0	0	11,200
10 TONOPAH ID	15,000	3,000	0	0	0	0	0	0	0	0	2,000	1,000	3,000
P I N A L A M A :													
11 GSF	110,000	15,000	0	0	0	0	0	3,000	7,000	2,500	1,000	1,500	15,000
12 HOHOKAM	55,000	54,500	1,500	2,500	6,400	6,500	10,000	8,000	4,000	7,600	3,500	2,000	54,500
13 MSIDD	120,000	27,830	510	510	1,350	620	4,870	10,700	6,010	210	200	0	27,830
T U C S O N A M A :													
14 USF	11,000	6,500	570	570	570	570	570	570	570	230	570	570	6,500
15 PIMA MINE ROAD	30,000	25,431	2,100	2,600	2,600	2,100	2,600	2,600	2,000	400	1,131	2,600	25,431
16 LOWER SANTA CRUZ	30,000	25,468	1,600	2,600	2,600	2,600	1,661	1,742	1,293	972	2,600	2,600	25,468
17 KAL-RED ROCK	11,231	1,000	0	0	0	0	0	500	500	0	0	0	1,000
18 T O T A L (USF + GSF) :	350,675	15,163	17,714	25,203	26,990	36,240	39,621	30,016	44,258	40,470	20,375	25,092	350,675
19 Remaining CAP Capacity :	1,837	4,286	797	21,010	10,760	14,379	9,984	13,742	9,530	32,625	10,908	(533)	129,325

The Hieroglyphic Mountain Recharge Project has not yet been permitted. The application was for 35,000 acre feet per annum and it is anticipated that the AWBA will apply for a water storage permit in the same amount.

Waddell Dam releases to the aqueduct in the summer months and scheduled maintenance and outages. During the fall and winter months, the capacity available to the AWBA is constrained because the CAP is making deliveries to Lake Pleasant.

Lines Three through Seventeen represent the AWBA's 2002 Plan of Operation. This section identifies the AWBA's partners for 2002 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 and the amount of that capacity that is available to the AWBA in 2002. The capacity available does not always equal the storage permit capacity because the storage facility operators may have agreements with other storage partners.

Line Eighteen lists the total amount of AWBA storage scheduled for the year 2002, and Figure 6 illustrates the distribution of that amount between GSFs and USFs. For the first time since the AWBA's inception, storage at USFs and GSFs will be approximately equal.

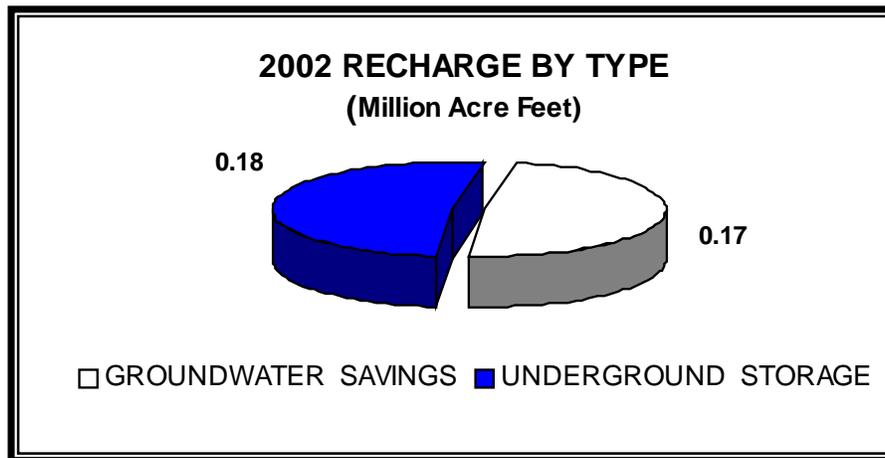


Figure 6

Line Nineteen lists the CAP capacity remaining after the AWBA's deliveries are scheduled. The CAP has shown in the past that there is some operational flexibility to help meet deliveries in any given month. The AWBA staff will work closely with the CAP staff and our partners in an attempt to meet all scheduled deliveries.

No recovery is anticipated in 2002. The AWBA will continue to work with CAWCD to pursue recovery concepts in 2002 and beyond.

NEW FACILITIES

In 2002, the Plan anticipates recharging water at only one new facility, the Hieroglyphic Mountains Recharge Project (HMRP). CAWCD is developing the HMRP as a Maricopa County State Demonstration Project. The HMRP is located near 163rd Avenue and Dixileta Road within the Phoenix Active Management Area. As proposed, it will include

three infiltration basins covering 50 acres with a storage capacity of 35,000 acre feet per annum. The recharge project is uniquely located adjacent to the CAP canal and upstream of the Waddell Canal. The HMRP has not yet obtained a facility permit from the ADWR, however, the public notice of the application has been completed. CAWCD projects facility construction to begin in February 2002 with recharge activity commencing in October 2002.

INTERSTATE WATER BANKING

On July 3, 2001, the final Agreement for Interstate Water Banking (AIWB) was signed by Arizona and Nevada at a formal signing ceremony in Las Vegas. While this agreement was fully executed, the AWBA is not required to store water for Nevada until two additional agreements are executed. The other two agreements necessary to initiate interstate water banking are the Storage and Interstate Release Agreement (SIRA) and the Agreement for the Development of Intentionally Created Unused Apportionment. These agreements are being developed on the basis of concepts agreed upon in the AIWB, with the SIRA being the current agreement of focus.

The negotiating team continues to work on the SIRA in conjunction with Nevada and representatives of the Bureau of Reclamation. It is projected that the remaining agreements will be executed in the spring of 2002. Consequently, the earliest that initiation of interstate storage would likely be addressed by the AWBA would be the June 2002 meeting. Amendment of this Plan would be required prior to commencement of any interstate water storage.

PRICING

On June 21, 2001, the CAWCD board adopted final water delivery rates for 2002. The rate for AWBA and other M&I Incentive recharge will be \$55 per acre foot. The delivery rate is the pumping energy rate 2 component (\$49 per acre foot) plus 10 percent of the fixed OM&R charge (\$3.30 per acre foot) plus a component to recover lost revenues from federal deliveries (\$2.24 per acre foot). The components of the rate are the same as those in the 2000 and 2001 rates. For 2002, the pumping energy rate 2 was calculated using the average of the above threshold energy rates for the previous three years.

The AWBA's policy of recovering \$21 from its groundwater savings facility partners will continue for 2002. Table 3 reflects the water delivery rate the CAP will charge the AWBA, the rate the GSF operators will pay for use of the AWBA's water and the various rates the AWBA will be charged to utilize the different USFs.

Table 3

2002 Water and Facility Rates – Intrastate	
CAP's delivery rate to AWBA	\$55 per acre foot
Groundwater Savings Facility operator portion of delivery rate	\$21 per acre foot ¹
Underground Storage Facility rate paid by AWBA	
GRUSP (SRP)	\$17.52 per acre foot
Avra Valley (CAP)	\$23.54 per acre foot
Hieroglyphic Mtns. (CAP)	\$7.90 per acre foot
Pima Mine Road (CAP)	\$5.97 per acre foot
Lower Santa Cruz (CAP/Pima County)	\$12.44 per acre foot
Agua Fria Recharge Project (CAP)	\$3.68 per acre foot

¹ 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 \$34/af.

The individual USF agreements determine the cost components paid by the AWBA. For GRUSP, the cost is comprised of an annual administration component, a component for use of the SRP interconnection facility, a transportation component and a general facility component. The other five USFs utilized in the Plan are operated by the CAP and were constructed using state demonstration project funds. Therefore, the CAP does not charge the AWBA a capital cost component for the facilities. Also, there is no administration cost component included in the facility cost because the AWBA pays the CAP administrative costs on an annual basis. The Avra Valley facility has an operation and maintenance (O&M) component, a land lease charge component and a wheeling component for use of the BKW water delivery system. The Lower Santa Cruz has an O&M component and a wheeling component for use of the same system. The Pima Mine Road and Agua Fria facilities have O&M components. The Hieroglyphic Mountains facility charge is only an estimate as there is currently no agreement for storage at the facility. The CAP facility O&M component typically includes facility maintenance and repair, monitoring, water quality sampling and data management and reporting.

The estimated total cost of the AWBA's 2002 Plan of Operation is approximately \$17 million which includes the USF use fees and the CAP delivery rate minus cost recovery from the GSF operator by the CAWCD.

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.

Table 4 provides estimates of the funds available including funds carried over from previous years and an estimate of funds to be collected during the year, the funds to be expended, and the credits that will accrue to those accounts based on the 2002 Plan.

Table 4

2002 PLAN OF OPERATION				
	FUNDING¹		CREDITS²	
	AVAILABLE	EXPENDED	AMOUNT	LOCATION
Withdrawal Fee				
Phoenix AMA	\$12,333,117	\$0	0	Phoenix AMA
Tucson AMA	\$3,481,180	\$0	0	Tucson AMA
Pinal AMA	\$1,548,649	\$1,548,632	41,000	Pinal AMA
Four Cent Tax				
Maricopa County	\$23,553,694	\$10,241,556	175,000 AF	Phoenix AMA
Pima County	\$6,212,907	\$3,293,189	45,000 AF	Tucson AMA
Pinal County	\$280,000	\$279,990	7,000 AF	Pinal AMA
Other				
General Fund	\$2,000,000	\$2,000,008	46,000 AF	
		\$0	0 AF	Phoenix AMA
		\$519,410	7,000 AF	Tucson AMA
		\$1,480,598	39,000 AF	Pinal AMA
California	(not applicable)			
Nevada	(not applicable)			
TOTAL	\$49,409,547	\$17,363,376	314,000 AF	

¹ Does not include groundwater savings facility partners' payment. The AWBA's partners make payments directly to the CAWCD.

² Estimate based on 89.78% of the deliveries.

Table 5 provides an estimate of the funds expended and the credits that will accrue to various accounts based on the AWBA's recharge activities since its inception.

Table 5

CUMULATIVE TOTALS			
1997-2001			
	EXPENDED	AMOUNT	CREDITS¹
			LOCATION
Withdrawal Fee			
Phoenix AMA	\$0	0	Phoenix AMA
Tucson AMA	\$0	0	Tucson AMA
Pinal AMA	\$3,751,010	144,231	Pinal AMA
Four Cent Tax			
Maricopa County	\$23,964,843	608,692 AF	Phoenix AMA
Pima County	\$3,488,614	59,179 AF	Tucson AMA
Pinal County	\$1,390,893	64,002 AF	Pinal AMA
Other			
General Fund	\$10,695,000	375,773 AF	
	\$2,146,252	58,173 AF	Phoenix AMA
	\$5,361,381	265,209 AF	Pinal AMA
	\$3,187,367	52,391	Tucson AMA
California			
Nevada			
TOTAL	\$43,290,360	1,251,877 AF	

¹ Actual credits used for 1997,1998,1999 and 2000; credits estimated for 2001

PUBLIC REVIEW AND COMMENT

The AWBA staff held public meetings in conjunction with the GUACs for the Phoenix, Pinal and Tucson AMAs as required by the AWBA's enabling legislation.

Phoenix GUAC

There was discussion and questions regarding the Secretary's declaration for the Colorado River and the new Interim Surplus Guidelines. The GUAC expressed its concern regarding the possible decrease in, or loss of, the AWBA's \$2 million general fund appropriation in light of the current budget crisis. The GUAC stated they felt that the legislature needed to be informed of the importance of the AWBA's function and M&I firming and would be willing to help carry that message to the governor and the legislature. There was discussion regarding the costs associated with GSF versus USF storage and a question regarding the funding source for the Hieroglyphic Mountain

Recharge Project. In general, the GUAC supported the Plan and had no requests for additions to, or modification of, it.

Pinal GUAC

There were no specific comments regarding the Plan or requests for modification.

Tucson GUAC

There was general discussion regarding the status of interstate negotiations with California, the manner in which GSFs operate and development of a recovery plan. With regard to this Plan, there was a question whether more water could somehow be recharged in the state or in the Tucson AMA in 2002 when the price for CAP water is lower than forecast for 2003 and 2004. The current limitations for storage were described. The GUAC expressed its support of the plan with the caveat that there were some concerns regarding interstate water banking. The GUAC expressed their support in a letter to the AWBA.

General Public

Letters were received from staff at the Central Arizona Project and the president of the Southern Arizona Water Users Association.