ARIZONA WATER BANKING AUTHORITY

ANNUAL PLAN OF OPERATION

2001

Rita Pearson Maguire, Chairman

December 2000

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 during Colorado River shortages or Central Arizona Project (CAP) service interruptions; (2) help meet the water management objectives of the Arizona 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 by presenting it 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 Plan must be made at publicly noticed open meetings at which members of the public are permitted to provide comment.

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.

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.

2000 PLAN OF OPERATION

In 2000, the AWBA's fourth full year of operation, the AWBA recharged approximately 296,000 acre feet of Colorado River water, bringing Arizona's total use of Colorado River water close to its normal year entitlement of 2.8 million acre feet (see Figure 1).

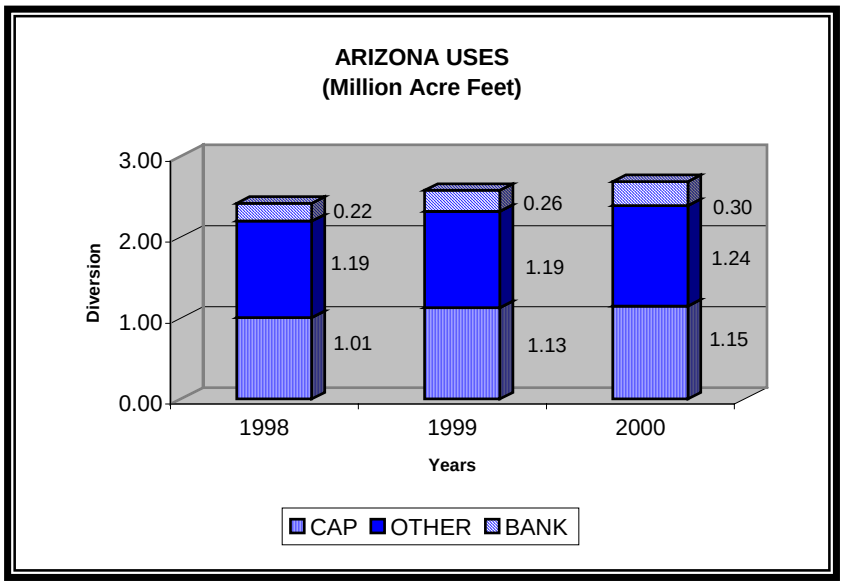

Figure 1

Because the Secretary of the Interior declared that the Colorado River was in surplus in 2000, increased use by Arizona did not impact the other Lower Basin states' uses. Total use of Colorado River water in the Lower Basin is estimated to be approximately 8.3 million acre feet in 2000 (see Figure 2).

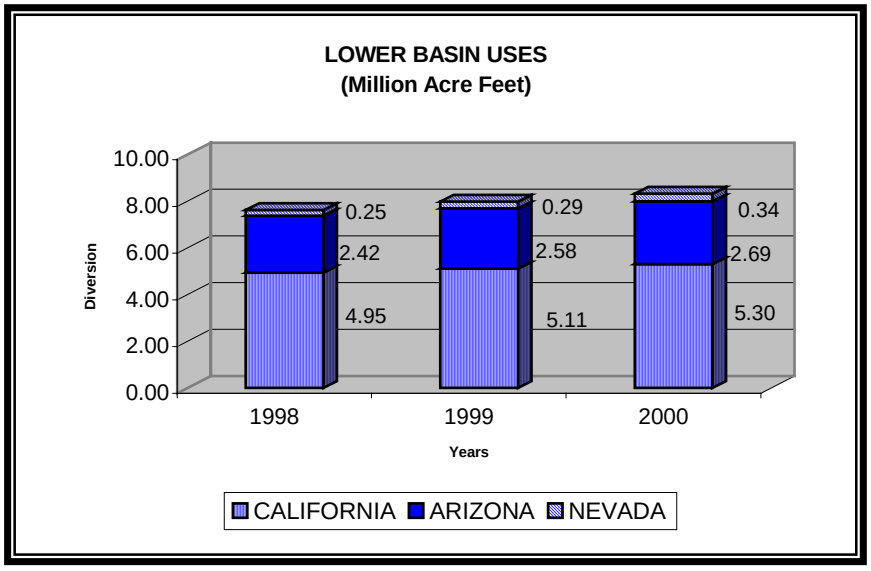

Figure 2

The AWBA recharged water at both USFs and GSFs in 2000. Table 1 lists the AWBA's recharge partners for 2000, the amount of water that can be stored under each AWBA water storage permit, and the amount estimated to be recharged by the AWBA at each facility in 2000. Final figures generally become available in the middle of the following year following review of the annual reports filed with the ADWR. The amount of water stored 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.

Table 1

AMA	Facility	Type	Permit Capacity	Amount Recharged
Phoenix	GRUSP	USF	200,000 AF	88,134 AF
	Chandler Hts Citrus ID	GSF	3,000 AF	1,030 AF
	Queen Creek ID	GSF	28,000 AF	11,330 AF
	New Magma IDD	GSF	54,000 AF	49,200 AF
	Tonopah ID	GSF	15,000 AF	1,000 AF
	SRP	GSF	200,000 AF	14,838 AF
	Maricopa Water District	GSF	18,000 AF	1,164 AF
Pinal	MSIDD	GSF	120,000 AF	26,936 AF
	CAIDD	GSF	110,000 AF	11,492 AF
	Hohokam ID	GSF	55,000 AF	55,000 AF
Tucson	Avra Valley (CAP)	USF	11,000 AF	2,000 AF
	Lower Santa Cruz	USF	30,000 AF	15,820 AF
	Pima Mine Road (CAP)	USF	30,000 AF[1]	6,510 AF
	CAVSARP (Tucson)	USF	15,000 AF	9,429 AF
	Kai Farms (Red Rock)	GSF	11,200 AF	2,566 AF
Total			**900,200 AF**	**296,449 AF**

[1] The Pima Mine Road pilot permit maximums were reached in March 2000. Recharge was reinitiated under the full-scale permit in September 2000. The permit capacity listed in the full-scale permit amount.

The 2000 Plan scheduled approximately 288,000 acre feet of water to be recharged around the state. The amount of water recharged amounted to more than 296,000 acre feet . Figure 3 shows the acre foot break down between GSFs and USFs for 2000 and a comparison between 2000 and previous years.

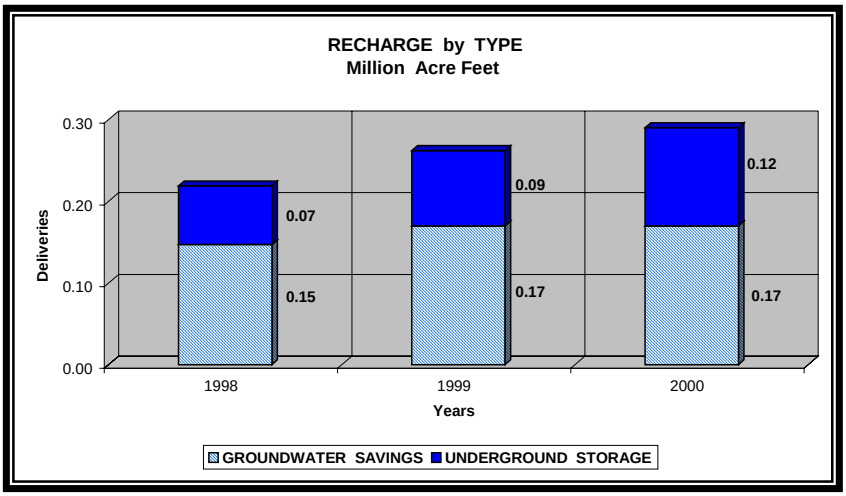

Figure 3

2001 PLAN OF OPERATION

When developing the 2001 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 (Bureau) has not yet signed the Annual Operating Plan for water year 2001, however, they have proposed declaration of a limited surplus. This declaration is consistent with the provisions of the seven state interim surplus proposal. Based on this declaration and proposed uses, the overall Lower Basin use is projected to be 8.13 million acre feet (see Figure 4). Arizona's use of Colorado River water in 2001 will be 2.8 million acre feet (see Figure 5). This is utilization of Arizona's total Colorado River allocation. Signing of the Annual Operating Plan is anticipated before December 31, 2000.

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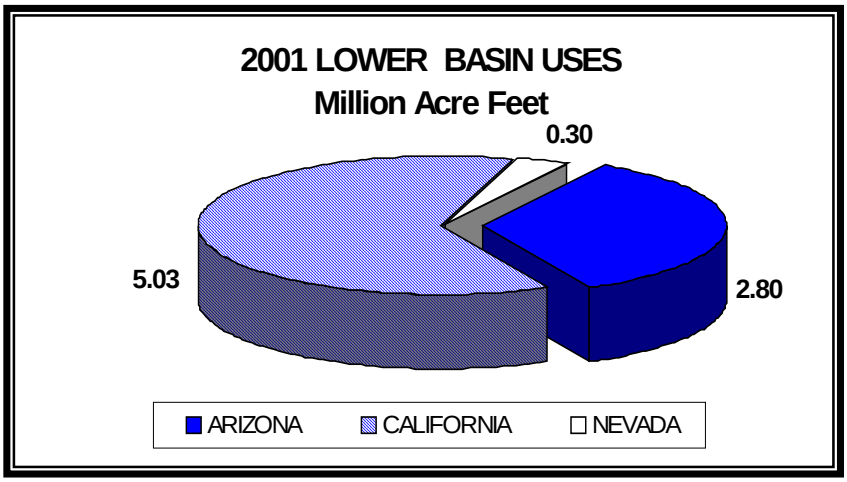

Figure 4

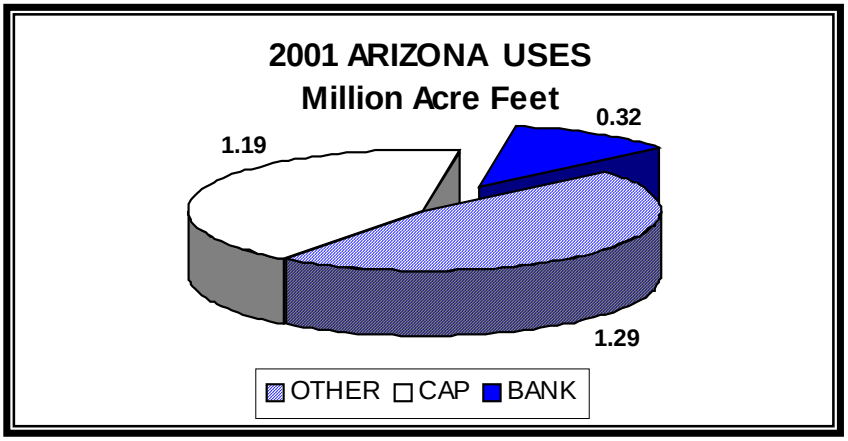

Figure 5

The CAP 2001 Operating Plan anticipates the delivery of approximately 1.46 million acre feet of water. CAP's plan delivers approximately 1.15 million acre feet to its subcontractors. As the Bureau has projected CAP's Colorado River diversions to be in excess of 1.62 million acre feet, the CAP's operations will not be a limiting factor for the AWBA in 2001. However, monthly capacity may be limiting due to a planned outage of the CAP in November and December 2001.

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 2001 will be approximately $40 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 $40 million is adequate to fund the Plan and is not a limiting factor in 2001. For more information about the cost of the Plan, please refer to the pricing section.

To assist in developing the 2001 Plan, each facility operator submitted an annual delivery schedule to the CAP. (The CAP schedules the AWBA's deliveries for those USFs it will be operating.) The CAP staff utilized these 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 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. Operational constraints or previous commitments to other partners limited the availability of both the GSFs and the USFs to the AWBA. For example, two partners that previously participated with the AWBA are not included in this Plan. The Central Avra Valley Storage and Recovery Project will be fully utilized by Tucson Water for their own annual recharge and recovery purposes. Maricopa Water District also anticipates that their GSF capacity will be fully utilized by other recharge partners. Figure 6 shows the break down between GSF and USF water storage for the 2001 Plan.

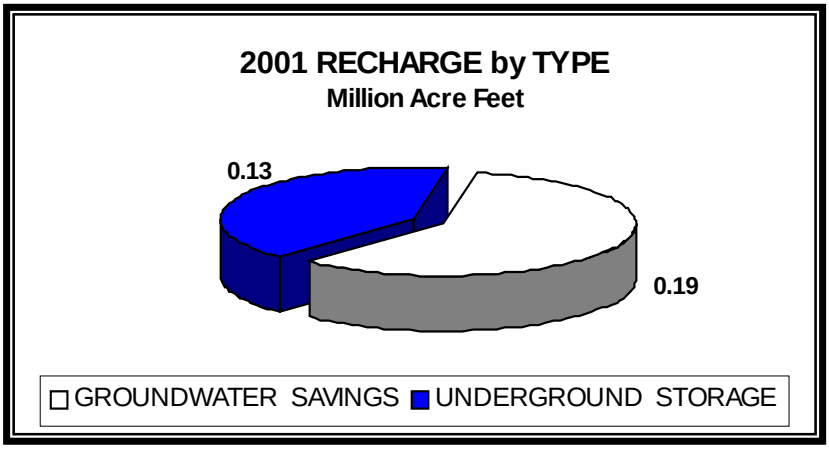

Figure 6

Based on its adopted Plan, the AWBA anticipates recharging approximately 319,000 acre feet of Colorado River water in 2001. The Plan was developed utilizing permitted facilities located in Maricopa, Pinal and Pima Counties. The Plan 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.

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 2001, 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.

Table 2 shows the AWBA's 2001 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 available of the CAP after it makes its priority deliveries and its deliveries to New Waddell Dam. Although the CAP is capable of delivering approximately 180,00 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 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 Twenty represent the AWBA’s 2001 Plan of Operation. This section identifies the AWBA’s partners for 2001 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 full-scale facility permits and the amount of that capacity that is available to the AWBA in 2001. The capacity available does not always equal the storage permit capacity because the storage facility operators may have agreements with other storage partners.

C:\AWBA Files\Annual Plan\2001\2001 Plan of Operation Table 2.doc
Line Twenty-one lists the total amount of AWBA storage scheduled for the year 2001.

Line Twenty-two 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 2001, however, there was significant activity in the past year regarding recovery. In March there was a meeting of the Recovery Subcommittee in which the final Recovery Data CD and general recovery strategies developed by AWBA staff were presented and discussed. Some recovery components identified at the March meeting were the topic of the next Recovery Subcommittee meeting held in May. At the May meeting it was determined that there existed a smaller, core group of entities with the operational flexibility and capability to participate in recovery for themselves and others. This core group met in June and August to discuss the ability of each entity to recover water and the entities were tasked with bringing specific operational, system and quantity information back to the core group. It was anticipated that this compilation of this information would be completed in November or December and another core group meeting would be scheduled. Nonetheless, the AWBA will continue to pursue recovery concepts in 2001 and beyond.

NEW PARTNERS

In 2001, the Annual Plan of Operation anticipates recharging water at only one new facility, the Agua Fria Recharge Project. CAWCD is developing the Agua Fria Recharge Project as a Maricopa County State Demonstration Project. It will be the first recharge project in Arizona to incorporate a combination of streambed recharge and infiltration basins in a single underground storage facility. The Agua Fria Recharge Project is located in the Agua Fria River channel within the Salt River Valley groundwater basin of the Phoenix AMA. Land acquisition remains the final issue to be resolved before the Agua Fria may be constructed. The Agua Fria Recharge Project is expected to be available to the AWBA for recharge in August 2001. Staff are currently in the process of negotiating an agreement for this facility.

Pinnacle West Capital Corporation Bouse Recharge and Vicksburg Farms Facilities

At their September 2000 meeting, the AWBA determined that there would be no further participation at pilot scale projects due to the increased risks associated with storing water at these facilities. Consequently, storage would only be scheduled at these facilities if they were to obtain full scale permits.

INTERSTATE WATER BANKING

Rita Pearson Maguire, as Director of the Department of Water Resources (ADWR), presented her determination that the final federal rule regarding interstate banking met state statutory criteria on January 26, 2000. The AWBA then authorized a negotiating team composed of AWBA, CAP and ADWR staff, to initiate exploratory discussions with Nevada. On June 28, 2000, the AWBA formally authorized the team to begin

negotiations with the Southern Nevada Water Authority and the Colorado River Commission of Nevada. The first staff level negotiation meeting was held on July 17, 2000 and it was decided that initial negotiations would focus on the two party agreement between the states. The draft agreement, titled the Agreement for Interstate Water Banking, continues to be collaborated upon.

To increase AWBA involvement in the process, an Interstate Water Banking Subcommittee was formed. The subcommittee meets as needed to discuss important items of negotiation identified by the AWBA and staff.

PRICING

On June 22, 2000, the CAWCD board adopted final water delivery rates for 2001. The rate for AWBA and other M&I Incentive recharge will be $45 per acre foot. The delivery rate is the pumping energy rate 2 component ($40 per acre foot) plus 10 percent of the fixed OM&R charge ($2.90 per acre foot) plus a component to recover lost revenues from federal deliveries ($2.22 per acre foot). This rate calculation utilized the same formula as the 2000 delivery rate which was the first to include a second energy pumping rate.

The AWBA's policy of recovering $21 from its groundwater savings facility partners will continue for 2001. 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

2001 Water Rates	
CAP's delivery rate to AWBA	$45 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)	$14.63 per acre foot
Avra Valley (CAP)	$21.30 per acre foot
Pima Mine Road (CAP)	$8.90 per acre foot
Lower Santa Cruz (CAP/Pima County)	$13.10 per acre foot
Agua Fria Recharge Project	$1.90 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 $24/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, there is no administration cost component because the AWBA already pays the CAP an administrative cost component on an annual basis for utilization of CAP staff. The CAP also does not charge the AWBA a capital cost component for the facilities. 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 facility has an O&M component. The Agua Fria 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 2001 Plan of Operation is approximately $12 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, the funds to be expended, and the credits that will accrue to those accounts based on the 2001 Plan.

Table 4

2001 PLAN OF OPERATION

	FUNDING[1]		CREDITS[2]	
	AVAILABLE	**EXPENDED**	**AMOUNT**	**LOCATION**
Withdrawal Fee				
Phoenix AMA	$10,045,000	$0	0	Phoenix AMA
Tucson AMA	$2,726,000	$0	0	Tucson AMA
Pinal AMA	$2,200,000	$2,201,000	82,000	Pinal AMA
Four Cent Tax				
Maricopa County	$18,279,127	$6,876,000	145,000 AF	Phoenix AMA
Pima County	$5,441,312	$721,000	12,000 AF	Tucson AMA
Pinal County	$229,979	$230,000	9,000 AF	Pinal AMA
Other				
General Fund	$2,000,000	$2,000,000	39,000 AF	
		$737,000	16,000 AF	Phoenix AMA
		$1,124,000	18,000 AF	Tucson AMA
		$139,000	5,000 AF	Pinal AMA
California	(not applicable)			
Nevada	(not applicable)			
TOTAL	**$40,921,418**	**$12,028,000**	**287,000 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 (1998 actual Plan of Operation loss calculation)

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
1997-2000

	EXPENDED	CREDITS [1] AMOUNT	CREDITS [1] LOCATION
Withdrawal Fee			
Phoenix AMA	$0	0	Phoenix AMA
Tucson AMA	$0	0	Tucson AMA
Pinal AMA	$1,875,000	73,000	Pinal AMA
Four Cent Tax			
Maricopa County	$18,528,873	475,273 AF	Phoenix AMA
Pima County	$2,512,688	41,248 AF	Tucson AMA
Pinal County	$1,105,021	51,657 AF	Pinal AMA
Other			
General Fund	$8,695,000	337,518 AF	
	$2,510,012	76,009 AF	Phoenix AMA
	$4,652,468	237,509 AF	Pinal AMA
	$1,532,520	24,000	Tucson AMA
California			
Nevada			
TOTAL	**$32,716,582**	**978,696 AF**	

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

PUBLIC REVIEW AND COMMENT

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

Phoenix GUAC

At the Phoenix GUAC meeting there were requests for additional information regarding the water banking process and the various cost components for the storage facilities. The requested information was incorporated into the Introduction and Pricing sections of this document.

Pinal GUAC

There were no specific comments regarding the Plan or requests for modifications to it.

Tucson GUAC

While the Tucson GUAC generally support the Plan and the fact that general funds were being expended in their AMA, they had no specific comments regarding the Plan or requests for modifications to it. One entity that commented encouraged full utilization of the available recharge sites within the Tucson AMA, particularly in light of the possibility of an increase in the energy 2 rate in 2002. There was also a letter received that expressed a similar opinion. There was some discussion regarding the interstate banking process and its potential benefit to Arizona.

Table 2

ARIZONA WATER BANKING AUTHORITY

Water Delivery Schedule

Calendar Year 2001

(ACRE-FEET)

			Permitted Capacity (AF)	Requested Capacity (AF)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	2000 Deliveries (AF)
1	Estimated CAP Deliveries + Losses : (M&I, Indian, Ag Pools 1 , 2 & 3, Incentive Recharge)				55,000	63,000	105,000	134,000	138,000	163,000	179,000	138,000	65,000	59,000	23,000	22,000	1,144,000	
2	Available Excess CAP Capacity for AWBA :				22,000	25,000	35,000	38,000	41,000	42,000	44,000	64,000	61,000	35,000	12,000	16,000	435,000	
	AWBA -- Recharge Sites :																	
	LA PAZ COUNTY :																	
3	USF	VIDLER WATER / MBT	100,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	PHOENIX AMA :																	
4	USF	GRUSP	200,000	79,200	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	7,920	3,000	3,000	85,200	88,134
5		AGUA FRIA	100,000	11,920	0	0	0	0	0	0	0	1,560	1,450	1,410	3,750	3,750	11,920	0
6	GSF	CHCID	3,000	1,117	50	100	50	100	100	151	125	125	125	191	0	0	1,117	1,030
7		MWD	18,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,164
8		NEW MAGMA	54,000	47,200	2,000	2,000	3,200	2,500	3,000	3,500	4,700	10,200	10,600	5,500	0	0	47,200	49,200
9		QUEEN CREEK	28,000	16,115	0	0	0	0	0	0	2,967	6,642	4,124	1,682	200	500	16,115	11,330
10		SRP	200,000	14,840	0	0	2,120	2,120	2,120	2,120	2,120	2,120	2,120	0	0	0	14,840	14,838
11		TONOPAH ID	15,000	3,000	0	0	0	0	0	0	0	0	0	0	2,000	1,000	3,000	1,000
	PINAL AMA :																	
12	GSF	CAIDD	110,000	15,000	0	0	0	0	0	0	0	4,195	6,700	2,500	0	1,605	15,000	11,492
13		HOHOKAM	55,000	54,500	2,000	2,800	6,400	7,500	9,000	7,200	5,000	7,600	3,500	2,000	0	1,500	54,500	55,000
14		MSIDD	120,000	37,590	1,750	1,860	2,170	4,150	5,590	7,250	3,220	3,530	1,830	3,280	0	2,960	37,590	26,936
	TUCSON AMA :																	
15	USF	Avra Valley	11,000	6,000	570	570	570	570	570	570	570	570	570	570	0	300	6,000	2,000
16		CAVSARP	60,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,429
17		Pima Mine Road	30,000	10,325	0	937	1,140	1,140	1,140	1,140	1,140	1,140	1,140	808	0	600	10,325	6,510
18		Lower Santa Cruz	30,000	14,503	492	2,000	2,000	2,000	2,000	2,000	400	400	1,200	1,011	0	1,000	14,503	15,820
19	GSF	Kai Avra	11,000	?													?	
20		Kai Red Rock	11,000	2,000	0	0	0	0	0	0	0	500	1,000	500	0	0	2,000	2,566
21	TOTAL (USF + GSF) :			369,310	14,782	18,187	25,570	28,000	31,440	31,851	28,162	46,502	42,279	27,372	8,950	16,215	319,310	296,449
22	Remaining CAP Capacity :				7,218	6,813	9,430	10,000	9,560	10,149	15,838	17,498	18,721	7,628	6,050[1]	2,785[1]	121,690[1]	

[1] The 6,000 acre feet scheduled for delivery at GRUSP in November and December are not subtracted from the remaining CAP capacity listed in line 22 because the deliveries will be accomplished through an exchange with Salt River Project.