

# ARIZONA WATER BANKING AUTHORITY

ANNUAL REPORT  
2002



Submitted

July 1, 2003

# **Arizona Water Banking Authority**

## **Annual Report 2002**

**Honorable Janet Napolitano  
Governor of Arizona**

### **Members**

**Herbert R. Guenther  
*Chairman***

**George R. Renner  
*Vice-chairman***

**Charles L. Cahoy  
*Secretary***

**Maureen R. George  
*Member***

**John Mawhinney  
*Member***

***Ex officio*  
Senator Linda Binder  
Representative Jake Flake**

# Arizona Water Banking Authority

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#### AUTHORITY MEMBERS

Herbert R. Guenther, Chairman

George R. Renner, Vice Chairman

Charles L. Cahoy, Secretary

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John Mawhinney

#### EX OFFICIO MEMBERS

Senator Linda Binder

Representative Jake Flake

July 1, 2003

The Honorable Janet Napolitano  
Governor, State of Arizona  
1700 West Washington Street  
Phoenix, Arizona 85007

Dear Governor Napolitano:

Enclosed is the Annual Report of the Arizona Water Banking Authority (AWBA) for Calendar Year 2002. The Annual Report details the amount of water stored by the AWBA, the monies received and expended from the banking fund and the remaining funds available to the AWBA. The Ten Year Plan portion of the Annual Report that details the ability of the AWBA to achieve specific activities between 2004 and 2013 will be submitted at a later date. The recent loss of \$9 million from the Arizona Water Banking Fund pursuant to House Bill 2531 necessitated extensive modification to the Ten Year and those changes have not yet been completed.

A notable highlight of 2002 was the execution of the final two agreements necessary to commence interstate water banking in Arizona. Pursuant to those agreements, Arizona stored almost 67,000 acre feet of water on behalf of Nevada in groundwater savings facilities located in Pinal County. The combination of interstate and intrastate storage resulted in the AWBA having the highest annual water deliveries since inception. Furthermore, storage by the AWBA assisted Arizona in reaching full utilization of their 2.8 million acre foot allocation for the first time. Another notable event was the adoption of Resolution 2002-1 by the AWBA. This resolution established priorities for the long-term storage credits developed through expenditure of general fund appropriation revenues with the first priority identified as firming for the on-river communities in times of shortage. This resolution assuaged many of the concerns of the on-river users.

In summary, the past year was a highly successful one for the AWBA as more than 345,000 acre feet of water were recharged in Maricopa, Pinal and Pima Counties through eight groundwater savings facilities and five underground storage facilities. I take great pride in the accomplishments of the AWBA and I am confident that the AWBA will continue to be a successful and important component of Arizona's water management planning for the future.

Sincerely,

Herbert R. Guenther  
Chairman

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## Arizona Water Banking Authority Annual Report Requirement

Arizona Revised Statutes § 45-2426 mandates that the Arizona Water Banking Authority (AWBA) file an annual report with the Governor, President of the Senate and Speaker of the House of Representatives on or before July 1 of each year for the previous calendar year. The report is required to be a full and complete account of the AWBA's transactions and proceedings and must include the following:

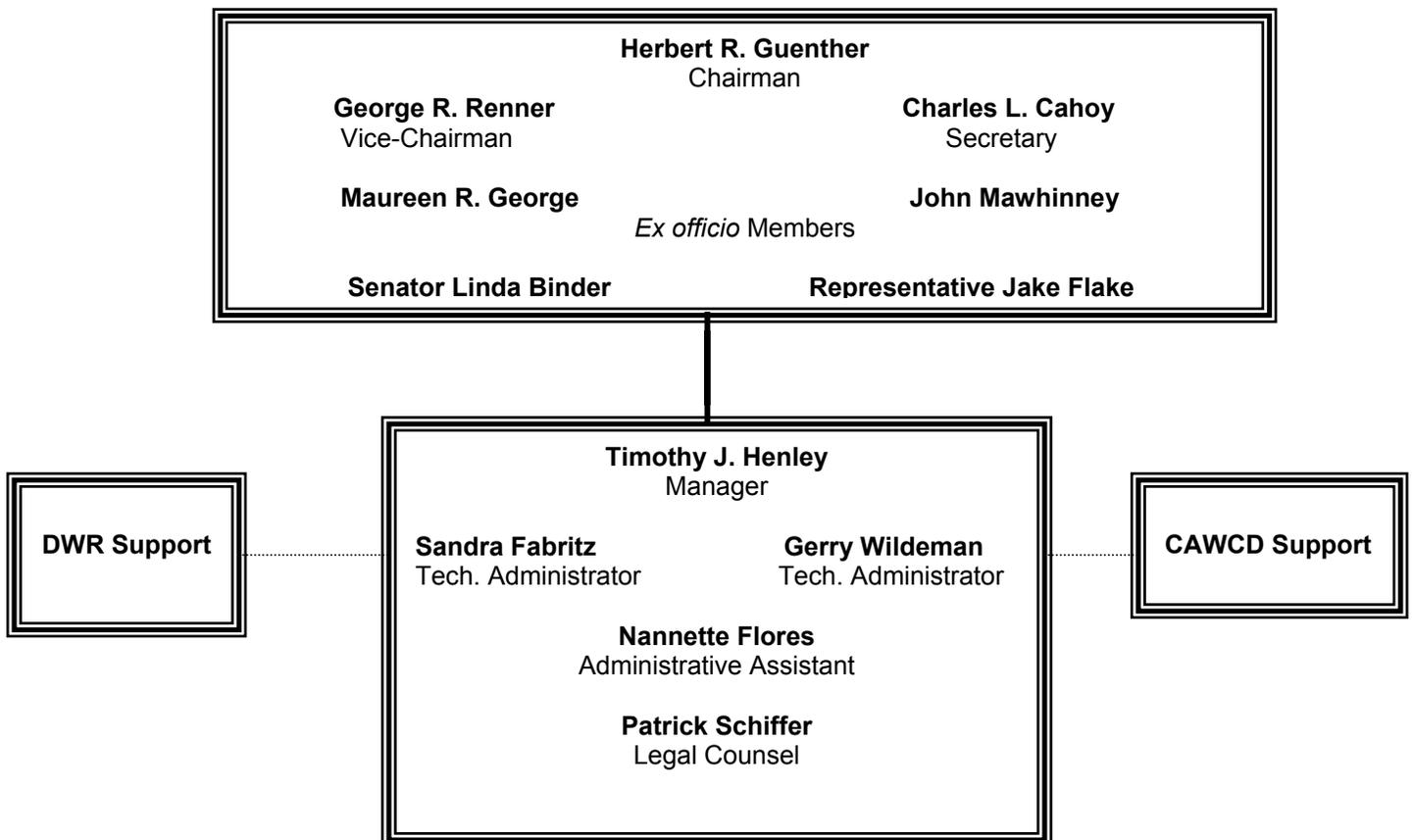
1. An accounting of all monies expended from the banking fund.
2. An accounting of all monies in the banking fund remaining available to the AWBA.
3. The amount of water stored by the AWBA.
4. The number of long-term storage credits distributed or extinguished by the AWBA.
5. The purposes for which long-term storage credits were distributed or extinguished by the AWBA.
6. A description of the water banking services and interstate water banking to be undertaken by the AWBA during the following ten year period and a projection of the capacity of the AWBA during that period to undertake those activities in addition to storing Colorado River water brought into the state through the Central Arizona Project (CAP) for all of the following purposes:
  - a. Protecting this state's municipal and industrial water users against future water shortages on the Colorado River and disruptions of operation of the CAP.
  - b. Fulfilling the water management objectives of the state.
  - c. Making water available to implement the settlement of water rights claims by Indian communities within Arizona.
7. Any other matter determined by the authority to be relevant to the policy and purposes of the AWBA.

## Members of the Arizona Water Banking Authority



Pictured above from left to right: Charles L. Cahoy, Maureen R. George, Herbert R. Guenther, George R. Renner and John Mawhinney

### Organizational Chart<sup>1</sup>



<sup>1</sup> This Annual Report documents the activities of the AWBA through the end of December 2002 but is approved in June 2003. New Authority members were appointed in 2003 and are reflected in this organizational chart and pictured above.

## Update

Calendar year 2002 was a year of many firsts with regard to water, not only for the AWBA, but also for the state of Arizona. In 2002, storage by the AWBA assisted Arizona in fully utilizing the state's 2.8 million acre foot Colorado River allocation for the first time. In fact, the Central Arizona Project (CAP) operations required careful monitoring throughout the last quarter of 2002 to insure that Arizona did not exceed their allocated volume. Additionally, 2002 was the first year that the AWBA stored interstate water. In June, the AWBA amended the 2002 Annual Plan of Operation to include 40,000 acre feet of storage at groundwater savings facilities in Pinal County on behalf of Nevada. This interstate water storage was done pursuant to a letter agreement between the AWBA and the Southern Nevada Water Authority because, at that time, all three of the agreements needed for interstate water banking had not yet been executed. However, the final two agreements were ultimately executed on December 18, 2002<sup>2</sup>. Execution of the three agreements established the parameters for a long-term interstate water banking relationship between the AWBA and Nevada. The AWBA and California met and discussed interstate water banking, but no agreements with California have been executed.

The AWBA experienced a change in leadership in December 2002 with the appointment of Senator Herbert R. Guenther as Director of the Arizona Department of Water Resources (ADWR) by Governor Janet Napolitano. Pursuant to statute, the Director of ADWR serves as the chair of the AWBA. Mr. Guenther replaced former Director, Joseph C. Smith, an appointee of former Governor Jane Dee Hull. Immediately prior to his appointment, Mr. Guenther served as a state senator (D-Tacna). He also served as a state representative from 1986 through 1993 and is recognized as an expert in the field of water resources management. The terms of the three original members appointed by the governor expired in July of 2002. Pursuant to statute, the appointed members are permitted to continue serving after expiration of their terms until new members are appointed. Consequently, the members served throughout 2002<sup>3</sup>.

In 2002, the AWBA continued its quarterly meeting schedule with special meetings or workshops scheduled as needed. In addition to the regularly scheduled meetings, there was a special meeting called on May 29, 2002 to solicit public input on the ten year plan component of the 2001 Annual Report. On August 21, 2002, a workshop on interstate water banking was convened at the request of the Authority members. The purposes of the workshop were (1) to provide the Authority and the public with information regarding the environmental process that had been completed by the U.S. Bureau of Reclamation in conjunction with interstate water banking and (2) to receive additional information from Nevada regarding their long-term water plan and the role that interstate water banking plays within it.

The issue of firming the on-river municipal and industrial (M&I) uses continued to be at the forefront in 2002 and culminated on March 20 with adoption of Resolution 2002-1. This resolution recognized that previous Authority action identified 420,000 acre feet as a reasonable number of credits for on-river firming and established the following: (1) the first priority of credits accrued with general fund appropriation shall be the development and reservation of a reasonable number of credits for the benefit of on-river M&I users; (2) the second priority shall be to aid in Indian water rights settlements; (3) the third priority shall be firming for CAP M&I users; (4) the fourth priority shall be to fulfill water

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<sup>2</sup> A more detailed discussion of interstate water banking activities can be found in the Activities and Projects section.

<sup>3</sup> New members were appointed to the Authority in 2003 as shown on the organizational chart.

management objectives; (5) the AWBA shall consider these priorities before distributing credits for any lower priority uses; and (6) staff shall conduct their planning to effectuate these priorities.

The AWBA annually coordinates with current and potential recharge entities in the process of development of the Annual Plan of Operation (Plan) for the following year. In 2002, this process marked another first for the AWBA because, for the first time since inception, the amount of excess water available to the AWBA in 2003 was limited. In the past, AWBA storage has been limited by facility capacity, not water availability. The limitation was primarily a result of increased water requests from other entities, including the Salt River Project and the Gila River Indian Community, due to the on-going drought conditions. Additionally, because of the overall magnitude of water orders, there were operational constraints limiting CAP deliveries in June and July. Consequently, development of the 2003 Plan was a process that required extensive cooperation and coordination between AWBA and Central Arizona Water Conservation District (CAWCD) staff and the facility operators. Pursuant to the 2003 Plan, the AWBA anticipates recharging almost 275,000 acre feet of water. However, if water supplies in that quantity are ultimately not available to the AWBA, storage at underground storage facilities will be curtailed to permit storage at groundwater savings facilities.

In yet another first, 2003 Plan deliveries were funded mainly utilizing the withdrawal fee monies that have been collected in the Active Management Areas (AMA). The majority of the long-term storage credits accrued to date had been developed with general fund money and 4¢ *ad valorem* tax revenues and were earmarked for firming of M&I supplies in case of operational outage or shortage. Long-term storage credits developed with withdrawal fees are credits that can be used to meet water management objectives or to implement the settlement of Indian water right claims. For the 2003 Plan, the entities scheduled for delivery are SRP's GRUSP and groundwater savings facilities, CAWCD's Agua Fria, Avra Valley, Hieroglyphic Mountains, Pima Mine Road and Lower Santa Cruz facilities, Chandler Heights Citrus Irrigation District, Maricopa Water District, New Magma Irrigation District, Queen Creek Irrigation District, Roosevelt Water Conservation District, Central Arizona Irrigation and Drainage District, Hohokam Irrigation and Drainage District, Maricopa Stanfield Irrigation and Drainage District, the BKW groundwater savings facility, the Central Avra Valley Storage and Recovery Project and the Herb Kai Red Rock Facility.

The AWBA recharged more than 345,000 acre-feet of CAP water in 2002 (see Appendix A). Of this, more than 137,000 acre-feet were stored in the Phoenix Active Management Area (AMA), 151,000 acre-feet were stored in the Pinal AMA and almost 57,000 acre-feet were stored in the Tucson AMA. Total consumptive use of Colorado River water by Arizona for 2002 was approximately 2.81 million acre-feet. Distribution of that quantity was: approximately 1.23 million acre-feet for direct uses along the Colorado River and CAP diversions of approximately 1.58 million acre-feet. Of the CAP diversions, AWBA use was slightly more than 345,000 acre-feet.

For more information about the Arizona Water Banking Authority, consult the AWBA web page at <http://www.awba.state.az.us> or contact Tim Henley ([tjhenley@adwr.state.az.us](mailto:tjhenley@adwr.state.az.us)), Sandy Fabritz ([safabritz@adwr.state.az.us](mailto:safabritz@adwr.state.az.us)) or Gerry Wildeman ([glwildeman@adwr.state.az.us](mailto:glwildeman@adwr.state.az.us)) or by phone at 602-417-2418.

## Activities and Projects - 2002

### Governor's Water Management Commission Legislation- Status

The recommendations of the Governor's Water Management Commission were compiled into a comprehensive legislative package contained in Senate Bill 1344 and 1355 and House Bill 2582 and 2653. The bills were submitted to the House and Senate in February of 2002. However, in March, sponsors of the legislation opted to withdraw the bills from consideration. In light of the legislature's focus on the state's budget problems, it was believed that there was inadequate time to fully review the recommended changes to the 1980 Groundwater Code. At the time the legislation was withdrawn, the sponsors of the bills stated that it was their intention to re-introduce the legislation early in 2003.

### Interstate Water Banking

#### Agreements

The AWBA continued negotiating the final two agreements needed to store water on Nevada's behalf and create unused apportionment for their benefit pursuant to federal rule. The Storage and Interstate Release Agreement (SIRA) is an agreement between the AWBA, the United States Bureau of Reclamation (USBR), the Southern Nevada Water Authority (SNWA)<sup>4</sup> and the Colorado River Commission of Nevada (CRCN)<sup>5</sup>. The SIRA is the agreement that mandates the manner in which the Secretary of the Interior will monitor and account for the storage and recovery of water pursuant to an interstate water agreement. Due to a federal entity being a signatory to the SIRA, an Environmental Assessment (EA) was required as mandated by the National Environmental Protection Act. The EA was completed and a Finding of No Significant Impact was signed on June 19, 2002. As of the September 18, 2002 AWBA meeting, all other parties to the SIRA, except the AWBA, had approved the agreement. At that meeting, a decision was made to approve the SIRA but not to execute it until such time as the Agreement for the Development of Intentionally Created Unused Apportionment (ICUA Agreement) was approved. Approval of the SIRA in this manner provided the other parties assurances regarding the AWBA's commitment to the process but provided the AWBA protection in the event the ADICUA could not be completed.

The ICUA Agreement was the final agreement to be negotiated and is the agreement between the AWBA and the Central Arizona Water Conservation District (CAWCD) that facilitates development of ICUA using the CAP system. The ICUA Agreement enables the AWBA to create ICUA by exchanging long-term storage credits for water that CAP had anticipated delivering thus reducing Arizona's Colorado River diversions. Absent the ICUA Agreement, the AWBA could store water for an interstate entity but could not complete the "pay back" portion. Therefore, execution of the ICUA Agreement was needed to enable the AWBA to meet the provisions of the SIRA. The ICUA Agreement was approved by the CAWCD on December 5, 2002 and by the AWBA on December 18, 2002. The SIRA was also signed by the AWBA on the same date.

#### Interstate Water Storage-2002

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<sup>4</sup> A political subdivision of the State of Nevada created to manage water resources for the Las Vegas Valley.

<sup>5</sup> An agency of the State of Nevada with a mission, in part, to acquire, manage and protect all of Nevada's water and hydropower resources from the Colorado River for southern Nevada.

The original 2002 Annual Plan of Operation projected 97,330 acre feet of deliveries to three irrigation districts in Pinal County. This level of deliveries required expenditure of almost \$1.5 million of general fund appropriations in addition to full utilization of the 4¢ *ad valorem* tax and withdrawal fee revenues generated in the area. Due to the budget dilemma in the state, the legislature withheld \$1 million of the anticipated \$2 million general fund appropriation from fiscal year 2002. The \$1 million would have been distributed to the AWBA in January and April of 2002. Without the \$1 million, the AWBA was unable to meet their planned deliveries to Pinal County. The AWBA, recognizing that interstate storage could be a solution, directed staff to initiate discussion with Nevada regarding the possibility of interstate storage in Pinal County. Consequently, at the June 19 meeting, the AWBA amended the 2002 Plan to include 40,000 acre feet of storage on behalf of Nevada. The total amount of water actually delivered was 66,595 acre feet.

### State Budget Shortfall and Impacts to the AWBA

Since inception, the AWBA has received an annual \$2 million general fund appropriation from the state legislature. The general fund money is used to develop credits that can be used for firming Colorado River supplies, to meet water management objectives and to help meet the state's obligations under Indian water rights settlements. Due to statutory restrictions regarding use of the other sources of funds, the AWBA has the most flexibility when using long-term storage credits developed with general fund money.

There is overlap between the fiscal year (FY), upon which the state budget operates, and the calendar year (CY), upon which the AWBA operates. Consequently CY 2002 included activity that occurred in the last half of FY 2002 and the first half of FY 2003. In FY 2002, two events took place that impacted the AWBA. First, \$1 million of the proposed FY 2002 \$2 million general fund appropriation was withheld by the legislature in light of the state's current budget shortfall. The loss of this \$1 million primarily impacted the Pinal AMA, as described above. Second, the legislature swept \$1 million from the AWBA's administrative account. This account is comprised of the interest earned on the other account balances and is used to pay for the AWBA's operating expenses such as salaries, supplies, overhead, technical assistance, travel, etc.

The second half of CY 2002 coincided with the first half of FY 2003. The FY 2003 state general fund budget was approved and then subject to much scrutiny, evaluation and discussion by the legislature due to the ever-increasing predicted budget shortfall. At the end of CY 2002, there had been no changes to the approved budget although there had been discussions of actions that could negatively impact the AWBA. Discussions focused on transferring AWBA funds to ADWR to assist with maintaining vital operations of the department and sweeping money from the AWBA to assist the legislature in meeting the budget shortfall.<sup>6</sup>

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<sup>6</sup> There was no action taken on the FY 2003 budget through December 31, 2002. On March 28, 2003, Governor Napolitano signed the FY 2003 Omnibus Reconciliation Bill (ORB) that authorized the ADWR to expend up to \$1,115,900 from the AWBA accounts for ADWR's operating expenses incurred in FY 2003. No money was swept by the legislature in the FY 2003 ORB.

## 2003 Plan of Operation

The AWBA plans to recharge more than 274,000 acre feet of water in calendar year 2003. Of this quantity, almost 163,00 acre feet are projected to be recharged at underground storage facilities (USF) and almost 112,000 acre feet are projected to be recharged at groundwater savings facilities (GSF). This is the first Plan to project higher deliveries to USF than GSF. The 2003 Plan also includes: (1) 1,250 acre feet of storage at the BK Wong GSF marking the first storage at the facility and storage at the second GSF in Pima County; (2) 12,500 acre feet of storage at the Roosevelt Water Conservation District; the AWBA has not partnered with RWCD since 1997; and (3) re-initiation of storage at the Central Avra Valley Storage and Recovery Project in the amount of 10,000 acre feet. The Annual Plan of Operation is available on the AWBA web page.

## Media Coverage

The AWBA received very limited press coverage during 2002 with the majority of articles being published in association with the amendment to the 2002 Annual Plan of Operation that was done to authorize storage at groundwater savings facilities in Pinal County on behalf of Nevada. There were no articles published in association with execution of the final two interstate water banking agreements.

“Arizona, Nevada discussing water sharing plan”, Arizona Republic, April 11, 2002

“Arizona and Nevada about to tap water-sharing plan”, U.S. Water News, May 2002

“Deal to store water good for Pinal County”, Arizona Republic, June 19, 2002

“Arizona: Water sharing”, the Bond Buyer, June 25, 2002

## Agreement and Facility Permit Activity

The AWBA executed new agreements with eleven of the GSF between September 4 and November 27, 2002. The new GSF agreements are between the AWBA and the facility operators, have a term ending December 31, 2011 and include a component for recovery. The AWBA also executed a new inter-governmental agreement (IGA) with the ADWR and the CAWCD. This agreement describes the cooperative activities between the agencies and the process for provision of, and payment for, administrative, technical and legal support. The IGA was executed on July 1, 2002. Also on that date, the AWBA executed a Master Water Storage Agreement (MWSA) and an Excess Water Contract (EWC) with the CAWCD. The single MWSA replaced the individual storage facility agreements and the EWC provides for the delivery of excess CAP water to the AWBA.

The AWBA submitted three water storage permit applications in 2002. The Hieroglyphic Mountains application was permitted for 35,000 acre feet in March, 2002. The West Maricopa Combine #2 application was permitted for 25,000 acre feet in October, 2002. The BK Wong application was submitted in September 2002 but not permitted until January 2003 for 16,614 acre feet.

## AWBA Newsletter

The AWBA continued to distribute the quarterly newsletter to provide the public with periodic updates on water deliveries and other AWBA related water management issues. The 2002 issues were published in February, May and August and can be accessed on the AWBA web page. AWBA staff encourages individuals to submit items of interest for inclusion in the newsletter.

## Web Page

The AWBA has maintained a web page (<http://www.awba.state.az.us>) since 1997 to provide timely and accurate information regarding the AWBA's activities to the water community. The web page contains information about the AWBA, AWBA members and staff, the AWBA's recharge partners, monthly water deliveries, the AWBA newsletter, AWBA announcements and scheduled meetings and meeting minutes. It also contains publications and documents that may be downloaded and provides links to other water related web sites. The AWBA staff continue to review and update the web page to insure that it contains accurate information that can be accessed in an efficient manner.

## Monies Expended from the Banking Fund

Arizona Revised Statutes § 45-2425 mandates the various sources of monies for the Water Banking Fund (Fund) that is administered by the AWBA per the statute. In 2002, the AWBA obtained its funding from the following sources<sup>7</sup>:

1. Fees for groundwater pumping are collected within the Phoenix, Pinal and Tucson AMAs. Fees are calculated two different ways because there exists a gradual increase in fees for entities not associated with irrigation districts within the Pinal AMA. In the Phoenix AMA, Tucson AMA and most areas of the Pinal AMA, fees for water banking purposes are charged at \$2.50 per acre-foot. Fees for entities in Pinal County who are not associated with an irrigation district were charged at \$0.75 per acre-foot in 1997 with planned increases of \$0.25 per acre-foot annually until the \$2.50 per acre-foot amount is reached. Therefore, the fee charged for these entities was \$2.00 per acre-foot in 2002. The fees for groundwater pumping are statutorily available to the AWBA through 2016. Long-term storage credits accrued with these monies must be used to benefit the AMA in which they were collected.
2. The CAWCD is statutorily authorized through 2016 to levy an *ad valorem* property tax in the three-county CAP service area that cannot exceed four cents per \$100 of assessed valuation and is used either for repayment or OM&R costs of the CAP. If the taxes levied are not needed for those purposes, an annual resolution of the CAWCD board can direct them to the Fund. In 2002, the CAWCD board resolved that all taxes to be levied would be deposited in the Fund. The Fund receives this money in two payments that are roughly concurrent with the due dates for property taxes; funds are typically received in December and May. Money from this source must be used to benefit the county in which it was collected.

Table 1 shows the money the AWBA received and expended in 2002 by source of funds. Table 2 shows the total money received, expended and remaining in the Fund through December 2002 by source of funds. The money listed as “Available” is money that is either remaining in the Fund or money that has been prepaid to CAWCD. Any money that remains in the Fund is available to be expended in subsequent years; any interest that accrues on this money is credited to the Fund and is available for use.

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<sup>7</sup> For a discussion regarding the general fund appropriation, please see “State Budget Shortfall and Impacts to the AWBA” in the Activities and Projects section of this report.

**Table 1. Monies Collected and Expended in 2002 by Source of Funds**

Source of Funds	Money Collected	Money Expended
General Fund	\$0	\$862,218 <sup>1</sup>
Interstate Water Banking - Nevada	\$8,642,699 <sup>2</sup>	\$8,642,699
<b>4¢ Ad valorem Tax</b>		
Maricopa County	\$9,781,000	\$4,485,700
Pinal County	\$340,000	\$340,000
Pima County	\$2,197,000	\$3,731,500 <sup>1</sup>
Subtotal for Ad Valorem	<b>\$12,318,000</b>	<b>\$8,557,200</b>
<b>Groundwater Withdrawal Fee</b>		
Phoenix AMA	\$2,786,000	\$2,600,000
Pinal AMA	\$1,031,000	\$1,680,900 <sup>1</sup>
Tucson AMA	\$649,000	\$0
Subtotal for Withdrawal Fees	<b>\$4,466,000</b>	<b>\$4,280,900</b>
<b>TOTAL<sup>3</sup></b>	<b>\$25,426,699</b>	<b>\$22,343,017</b>

<sup>1</sup> Includes carryover from previous years

<sup>2</sup> This amount does not include reconciliation of Interstate water deliveries. Reconciliation was charged and paid in 2003.

<sup>3</sup> Total includes money collected and expended for interstate water banking. Fees paid for interstate water banking are directly passed through to CAP.

**Table 2. Monies Collected and Expended through December 2002 and Monies Remaining Available to the Authority**

Source of Funds	Money Collected	Money Expended	Money Available
General Fund	\$10,695,000	\$10,695,000	\$0
Interstate Water Banking - Nevada	\$8,642,699	\$8,642,699	\$0
<b>4¢ Ad valorem Tax</b>			
Maricopa County	\$48,751,465	\$28,581,860	\$20,169,605
Pinal County	\$1,751,000	\$1,750,991	\$9
Pima County	\$9,959,104	\$8,077,174	\$1,881,930
Subtotal for Ad Valorem	<b>\$60,461,569</b>	<b>\$38,410,025</b>	<b>\$22,051,544</b>
<b>Groundwater Withdrawal Fee</b>			
Phoenix AMA	\$12,448,701	\$2,600,000	\$9,848,701
Pinal AMA	\$5,235,838	\$5,283,508	-\$47,670
Tucson AMA	\$3,354,370	\$0	\$3,354,370
Subtotal for Withdrawal Fees	<b>\$21,038,909</b>	<b>\$7,883,508</b>	<b>\$13,155,401</b>
<b>TOTAL</b>	<b>\$100,838,177</b>	<b>\$65,631,232</b>	<b>\$35,206,945</b>

## Long-term Storage Credits

The AWBA has established Long-term Storage Accounts with ADWR. The Phoenix AMA account number is 70-441150, the Tucson AMA account number is 70-411150 and the Pinal AMA account number is 70-431135. After receiving the AWBA's annual reports for its water storage and water transfer permits and the annual reports for the recharge facilities, ADWR calculates and issues long-term storage credits to the appropriate accounts. The AWBA receives credit for 95% of the recoverable quantity of stored water. The 5% that is not credited is termed the cut to the aquifer and provides additional groundwater replenishment benefits. This cut to the aquifer is mandated by statute and applies to almost all storage of water for long-term credit, with some exceptions. The recoverable amount of stored water is determined by subtracting facility losses from the quantity of water delivered to the facility. After credits are issued to the account, AWBA staff allocate the credits to the appropriate sub-accounts based on source of funding.

The number and distribution of long-term storage credits for 2002 are listed in Table 3. Cumulative totals of long-term storage credits through December 2002 are listed in Table 4. The average annual cost for the AWBA to obtain an acre-foot of long-term storage credit is presented in Table 5.

**Table 3. Number and Location of Long-term Storage Credits Accrued in 2002**

Location and Funding Source	Long-term Storage Credits Accrued (AF)
<b>Phoenix AMA</b>	
4¢ Ad valorem Tax	78,000
Groundwater Withdrawal Fee	45,000
General Fund	0
<b>AMA Total</b>	<b>123,000</b>
<b>Pinal AMA</b>	
4¢ Ad valorem Tax	9,000
Groundwater Withdrawal Fee	46,000
General Fund	23,000
Interstate Water Banking - Nevada	111,000 <sup>1</sup>
<b>AMA Total</b>	<b>189,000</b>
<b>Tucson AMA</b>	
4¢ Ad valorem Tax	54,000
Groundwater Withdrawal Fee	0
General Fund	0
<b>AMA Total</b>	<b>54,000</b>
<b>Totals by Funding Source</b>	
4¢ Ad valorem Tax	141,000
Groundwater Withdrawal Fee	91,000
General Fund	23,000
Interstate Water Banking - Nevada	61,000
<b>TOTAL</b>	<b>366,000<sup>1</sup></b>

<sup>1</sup>Includes 50,000 acre feet of long-term storage credits transferred in 2002 to the AWBA from the CAWCD on behalf of Nevada

**Table 4. Cumulative Total and Location of Long-term Storage Credits Accrued through December 2002**

Location and Funding Source		Long-term Storage Credits Accrued (AF)
<b>Phoenix AMA</b>		
	4¢ <i>Ad valorem</i> Tax	699,183
	Groundwater Withdrawal Fee	45,000
	General Fund	61,612
	<b>AMA Total</b>	<b>805,795</b>
<b>Pinal AMA</b>		
	4¢ <i>Ad valorem</i> Tax	73,884
	Groundwater Withdrawal Fee	186,969
	General Fund	294,318
	Interstate Water Banking - Nevada	111,000 <sup>1</sup>
	<b>AMA Total</b>	<b>666,171</b>
<b>Tucson AMA</b>		
	4¢ <i>Ad valorem</i> Tax	127,765
	Groundwater Withdrawal Fee	0
	General Fund	39,748
	<b>AMA Total</b>	<b>167,513</b>
<b>Totals by Source of Funds</b>		
	4¢ <i>Ad valorem</i> Tax	900,832
	Groundwater Withdrawal Fee	231,969
	General Fund	395,678
	Interstate Water Banking - Nevada	111,000 <sup>1</sup>
	<b>TOTAL</b>	<b>1,700,479<sup>1</sup></b>

<sup>1</sup>Includes 50,000 acre feet of long-term storage credits transferred in 2002 to the AWBA from the CAWCD on behalf of Nevada

Table 5 illustrates that the unit cost per long-term storage credit has increased each year the AWBA has been in operation with the exception of 2001. In 2002, there was a significant increase in the unit cost to develop a long-term storage credit. Increases are typically a function of three primary factors: annual increases in the cost per acre-foot of water delivered, annual increases in the cost of storage facilities and increased percentage of total water stored in USFs. In 2002, there was an increase of \$10 per acre foot of AWBA water delivered. Additionally, there was an increase in the cost of storage at the Agua Fria USF. Overall, AWBA storage at USFs is increasing, however, there was a slight reversal in 2002 due to the high demand for storage at GSFs and lower than projected storage at USFs. The Agua Fria and GRUSP stored less than projected and the Hierophytic Mountains USF did not become operational in 2002 as anticipated. It is anticipated that the increasing trend in cost of developing credits will continue in the future as more USFs become operational and water delivery and facility costs increase.

**Table 5. Average Annual Cost for the AWBA to Obtain a Long-term Storage Credit<sup>1</sup>**

<b>Year</b>	<b>Credits</b>	<b>Funds Expended</b>	<b>Average Cost</b>	<b>% Stored in GSF:% Stored in USF</b>
1996	None	None	\$0	0% : 0%
1997	296,987	\$6,387,000	\$21.51	85% : 15%
1998	202,542	\$7,143,000	\$35.27	68% : 32%
1999	232,142	\$8,733,000	\$37.61	68% : 32%
2000	272,122	\$11,163,000	\$41.02	60% : 40%
2001	269,687	\$10,893,590	\$40.39	62% : 38%
2002	255,000	\$13,700,300	\$53.73 <sup>2</sup>	64% : 36%

<sup>1</sup> The information in this table was obtained from previous Annual Reports. Any differences between the number of credits displayed here and the total cumulative number in Table 4 are due to the on-going nature of the accounting process.

<sup>2</sup> Average cost is for intrastate credits only. Average cost for interstate credit before reconciliation is \$141.68.

## **Long-term Storage Credits Distributed or Extinguished by the Authority**

The long-term storage credits developed by the AWBA to date have been identified as reserved for four purposes: firming the post-1968 Colorado River municipal and industrial (M&I) entitlements; firming the post-1968 M&I entitlements for entities outside the CAP service area; fulfilling the water management objectives set forth in Chapter 2 of Title 45 (Arizona Revised Statutes); and for interstate water banking purposes pursuant to agreements with Nevada. Credits for firming purposes may be distributed or extinguished when the Colorado River system is deemed to be in a shortage or if there is an operational disruption of the CAP. There were no shortages or unplanned CAP operational problems, therefore, no credits were distributed or extinguished for these purposes in 2002. Credits may be distributed or exchanged for water management purposes upon request of the director of ADWR. There were no requests made for distribution or extinguishment of credits for water management purposes in 2002. Under the 1999 amendments to the AWBA legislation, the AWBA is authorized to develop credits with monies collected pursuant to water banking services agreements. In 2002, no credits were developed or distributed under such agreements. Interstate credits may be recovered and exchanged at the request of Nevada. In 2002, Nevada did not request such recovery and exchange.

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# Appendix A

**Colorado River Water Deliveries for Water Banking Purposes for Calendar Year 2002 by  
Partner and Active Management Area**

**Phoenix Active Management Area**

<b>Partner</b>	<b>Quantity of Water (Acre-feet)</b>
Granite Reef Underground Storage Project	43,365
New Magma Irrigation and Drainage District	47,200
Queen Creek Irrigation District	8,234
Agua Fria	26,830
Salt River Project	11,189
Chandler Heights Citrus Irrigation District	959

**Pinal Active Management Area**

<b>Partner</b>	<b>Quantity of Water (Acre-feet)</b>
Central Arizona Irrigation and Drainage District	41,929
Maricopa-Stanfield Irrigation and Drainage District	53,710
Hohokam Irrigation and Drainage District	55,755

**Tucson Active Management Area**

<b>Partner</b>	<b>Quantity of Water (Acre-feet)</b>
Avra Valley	6,805
Pima Mine Road	22,307
Kai – Red Rock	1,722
Lower Santa Cruz	25,884