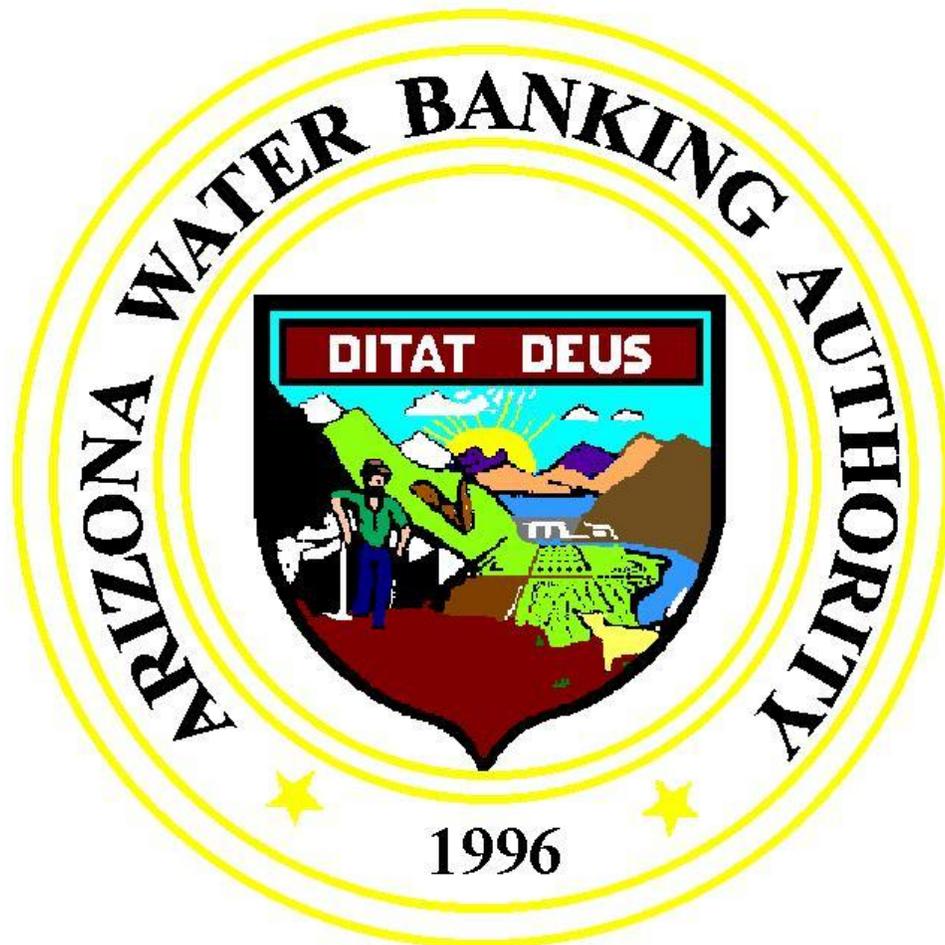


ARIZONA WATER BANKING AUTHORITY

ANNUAL REPORT
2003



Submitted

July 1, 2004

Arizona Water Banking Authority

Annual Report 2003

**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**

Table of Contents

Arizona Water Banking Authority Annual Report Requirement	1
Members of the Arizona Water Banking Authority	2
Organizational Chart.....	3
Update.....	4
Activities and Projects - 2003	6
Monies Expended from the Banking Fund	12
Long-term Storage Credits.....	14
Long-term Storage Credits Distributed or Extinguished by the Authority	18
Ten Year Plan for Calendar Year 2003.....	19
Appendices.....	25

List of Tables

Table 1. Monies Collected and Expended in 2003 by Source of Funds	13
Table 2. Monies Collected and Expended through December 2003 and Monies Remaining Available to the Authority	13
Table 3. Number and Location of Long-term Storage Credits Accrued in 2003.....	14
Table 4. Cumulative Total and Location of Long-term Storage Credits Accrued through December 2003	15
Table 5. Identified Uses of Long-term Storage Credits Accrued through December 2003 and Percentage of AWBA Goals Achieved	16
Table 6. Average Annual Cost for the AWBA to Obtain a Long-term Storage Credit	17
Table 7. Ten Year Plan.....	20
Table 8. AWBA Percentage of Goals Achieved through 2014.....	21

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 (M&I) 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

Herb Guenther was appointed by Governor Napolitano and confirmed by the state Senate on March 3, 2003 as the eighth director of the Arizona Department of Water Resources (ADWR). As director of ADWR, Sen. Guenther serves as chairman of the AWBA.



"The Arizona Water Banking Authority is wise management and insurance against an uncertain future." ~H. Guenther



George Renner serves as a member of the AWBA in his capacity as President of the Central Arizona Water Conservation District (CAWCD). Mr. Renner was appointed to the CAWCD Board of Directors in 1992 by Gov. Symington and elected to consecutive six-year terms representing Maricopa County in 1994 and 2000. He was re-elected President of the CAWCD Board in March 2003. Mr. Renner currently serves as vice-chairman of the AWBA.



Charles (Chuck) Cahoy, an attorney for the City of Mesa, was appointed to the AWBA representing an entity that holds a CAP M&I subcontract. Mr. Cahoy was elected Secretary of the AWBA in May of 2003. Prior to his employment with the City of Mesa, Mr. Cahoy was employed by the ADWR. In that capacity, he served as legal counsel to the AWBA and was the principle draftsman of both the AWBA enabling legislation and existing recharge and recovery statutes.

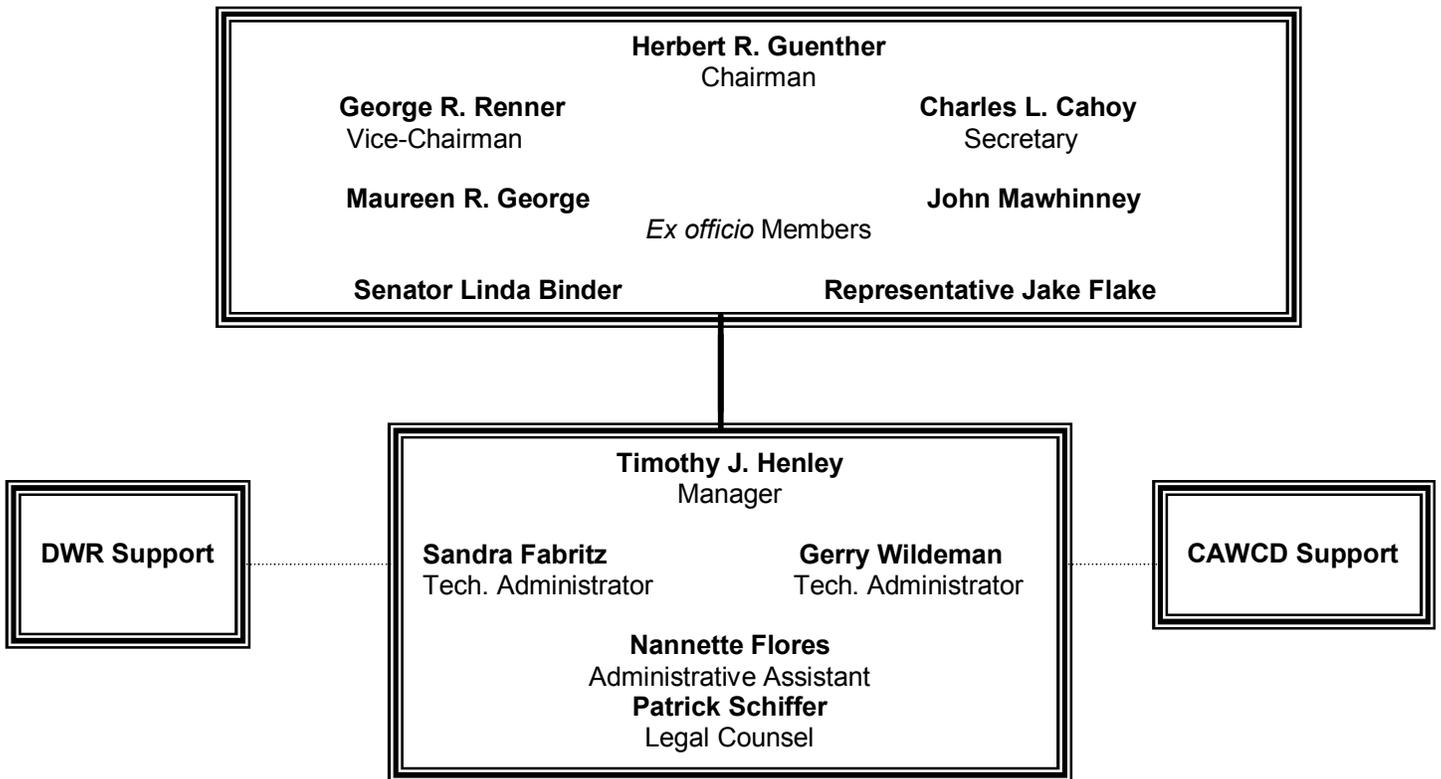


“The extended drought has shown us all the benefit of the forward thinking which created the Arizona Water Bank. It is now time to use that same thinking to explore new ways to meet the goals of the Bank and protect its existence.” ~M. George

AWBA Members Maureen George and John Mawhinney were appointed by the governor to meet specific statutory requirements. Ms. George, city attorney for Lake Havasu City, represents an entity located in a county adjacent to the mainstream of the Colorado River that holds a valid contract with the Secretary of the Interior (Secretary) executed before June 1, 1996 for a diversion and beneficial consumptive use of Colorado River water in that county. Mr Mawhinney, a former state legislator, was selected as an individual knowledgeable in water resource management.



Organizational Chart



Update

Calendar year 2003 could best be described as a year of uncertainty and that uncertainty greatly impacted the planning and operations of the AWBA. From a water management perspective, uncertainty existed both regionally and locally. The failure of parties in California to execute the Quantification Settlement Agreement by December 31, 2002 resulted in discontinuation of surplus declarations for the Lower Colorado River basin in 2003 under the Interim Surplus Guidelines. This led to unanticipated requests for creation of Intentionally Created Unused Apportionment from both Nevada and California to which the AWBA had to respond. A detailed discussion regarding these events follows later in this report. Locally, the uncertainty was largely due to continuing drought conditions and the resultant uncertainty regarding the quantity of excess CAP water available for the AWBA. This uncertainty led to the AWBA approving an Annual Plan of Operation (Plan) for 2003 that included approximately 100,000 acre feet of water whose status was unknown with the recognition that the AWBA's projected storage for 2003 could only be met if other parties in Arizona did not fully utilize CAP water as scheduled. There was additional uncertainty regarding water supply in October and November of 2003 as the AWBA developed the 2004 Plan. The on-going drought conditions resulted in agricultural sector demand in excess of the 400,000 acre foot agricultural pool. The CAWCD did not make a decision regarding a supplemental agricultural pool until December of 2003. As any additional agricultural water would have meant less water for the AWBA, this uncertainty impacted the AWBA's planning process throughout the latter part of the year.

It was also a year of uncertainty with regard to budget and funding. As discussed later in this report, revenues in the AWBA banking fund were directly impacted as a result of the on-going state budget crisis. Revenues were also directly impacted as the CAWCD Board resolved for the first time since the AWBA's inception to retain the 4¢ *ad valorem* tax revenues for the 2003-2004 fiscal year.

Senator Herbert R. Guenther was appointed as the director of the ADWR by Governor Napolitano in December of 2002 and confirmed by the state Senate on March 3, 2003. Pursuant to statute, Senator Guenther serves as the chairman of the AWBA. Three new AWBA members were appointed by the Governor and confirmed by the Senate in 2003 to replace three of the original AWBA members whose appointments had expired. The new members were identified previously in this report. Leadership changes in both the state Senate and House of Representatives resulted in new AWBA *ex officio* members. Representative Jake Flake and Senator Linda Binder began serving in this capacity in 2003.

In 2003, the AWBA continued its quarterly meeting schedule with special meetings, workshops and study sessions scheduled as needed. Details about meetings held regarding firming for Indian water rights settlements can be found in the Activities and Projects section of this report.

The AWBA annually coordinates with current and potential recharge entities in the process of development of the Plan for the following year. As previously discussed, this process was filled with uncertainty as the 2003 Plan was being developed. As in the prior year, the amount of excess water available to the AWBA was limited and it was unclear even late in the planning process exactly how limited it would be. Additionally, development of ICUA had been requested in 2003. Consequently, development of the 2003 Plan was a process that required extensive cooperation and coordination between AWBA and CAWCD staff and the facility operators.

The necessity for extensive cooperation and coordination carried over into development of the 2004 Plan, as well, as there continued to be increased demand for excess CAP water. Pursuant to the 2004 Plan, the AWBA anticipates recharging almost 305,000 acre feet of water using both withdrawal fee and 4¢ *ad valorem* tax revenues. Use of both revenue sources accrues credits that the AWBA can utilize for firming of M&I supplies in case of operational outage or shortage or to meet water management objectives or to implement the settlement of Indian water right claims. For the 2004 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, New Magma Irrigation District, Queen Creek Irrigation District, Central Arizona Irrigation and Drainage District, Hohokam Irrigation and Drainage District, Maricopa Stanfield Irrigation and Drainage District, Tonopah Irrigation District, the Central Avra Valley Storage and Recovery Project and the Herb Kai Red Rock Facility.

Because of the on-going drought, entities in central Arizona continue to rely on the CAP to supplement their water supplies. As a result of increased demand there is less excess water available to the AWBA. In 2003, the AWBA recharged only slightly more than 213,000 acre-feet of CAP water, the lowest quantity since the AWBA began operations. This included the first storage at the newest CAP recharge facility, the Hieroglyphics Mountain Recharge Project (see Appendix A). Of this storage, more than 106,000 acre-feet were stored in the Phoenix Active Management Area (AMA), 43,525 acre-feet were stored in the Pinal AMA and more than 63,500 acre-feet were stored in the Tucson AMA. For the first time since inception, the AWBA stored more water at underground storage facilities than at groundwater savings facilities.

Total consumptive use of Colorado River water by Arizona for 2003 was approximately 2.82 million acre-feet. Distribution of that quantity was approximately 1.14 million acre-feet for direct uses along the Colorado River and CAP diversions of approximately 1.68 million acre-feet. Of the CAP diversions, AWBA use was slightly more than 213,000 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), Sandy Fabritz (safabritz@adwr.state.az.us) or Gerry Wildeman (glwildeman@adwr.state.az.us) or by phone at 602-417-2418.

Activities and Projects - 2003

Firming for Indian Water Rights Settlements

Section 105 of the Arizona Water Settlement Act (Act) details how CAP water delivered to Indian tribes will be provided in times of shortage on the Colorado River and is the culmination of extensive discussion and disagreement between Arizona and the Department of the Interior that has taken place since the 1970s. Although the Act has not yet been executed and some concepts still require negotiation between the state and the federal government, the quantity of water to be firming has been identified. Consequently, the state has some idea of the potential obligation to be borne pursuant to the Act. In short, if the Act is passed, the state will be required to firm 15,000 acre feet toward the Gila River Indian Community Settlement and 8,742 acre feet for future Indian water rights settlements, and establish a 15,000 acre foot Southside Replenishment Bank. In recognition that the AWBA could potentially provide assistance to the state in meeting this obligation, Senator Guenther, as director of the ADWR, requested that the AWBA develop draft alternatives and recommendations regarding AWBA participation in Indian firming. At the May 7, 2003 AWBA meeting, the concept of Indian firming was presented and staff requested approval to hold an informational workshop regarding the issue. The AWBA approved the workshop.

On May 30, 2003, the workshop was convened. At this meeting, historical information regarding Indian settlements was presented, as was the concept of firming as detailed within the Act. Various individuals discussed the federal perspective regarding firming and the necessity for creation of the Southside Replenishment Bank. ADWR staff presented information regarding the potential water supply available to be used for firming. Specifically, the Law of the River and the operational parameters and computer model utilized by the Bureau of Reclamation for the Colorado River were discussed. The information obtained from the models indicated that the quantity of water to be stored to meet the long-term firming needs would range between 439,000 and 963,000 acre feet. There was also discussion regarding potential funding options and alternative ways in which the AWBA could participate. The meeting concluded with a recommendation to bring the issue before the AWBA at the June meeting for determination of potential future action. At the June meeting, the AWBA approved a motion to create a technical committee to further investigate the AWBA's potential to provide assistance to the state in meeting its Indian firming obligation.

At the first meeting of the Indian Firming Technical Committee (Committee), four objectives were identified: (1) identification of the water volume needed to firm the state's obligation under the Act; (2) identification of the water supply available; (3) identification of potential funding sources; and (4) identification of alternative approaches. The objectives were reviewed, a schedule for completion was proposed and the Committee was asked to consider the structure of the group, i.e. should the larger group break down into subgroups or work groups for evaluation of specific objectives. The current statutory authorities of the AWBA were also reviewed because certain alternatives could require legislative change for the AWBA to participate. Lastly, attendees were asked to review handout information regarding the Colorado River model for the next meeting which would focus on meeting the first objective of identification of firming volume.

The Colorado River Operational Model and the assumptions within it were the focus of the second meeting. ADWR staff presented information and discussed eight scenarios selected as representative of actual conditions. Attendees were asked to review the assumptions and were informed that selection of assumption parameters would be the topic of the next meeting. There was additional discussion regarding the model runs at the third meeting, in addition to discussion

regarding the Southside Replenishment Bank and the variety of potential water sources available for Indian firming. As Central Arizona Groundwater Replenishment District (CAGRDR) staff are in the process of developing a plan of operation that includes an analysis of these potential sources, they led the discussion. It was noted that there could ultimately be some competition for water between the AWBA and the CAGRDR and also within the AWBA between non-Indian firming and Indian firming.

In the next two meetings, the Committee determined that a reasonable firming volume ranged between 508,000 and 601,000 acre feet and that this would fully meet the state's firming obligation for the next 100 years. It was estimated that this would cost approximately \$60 million. The Committee continues to meet in 2004 as the issues of identification of water available for firming and evaluation of costs associated with firming are discussed. Summaries of all Indian firming meetings and copies of all handouts are available from the AWBA web page.

Legislative Issues

On May 6, 2003, Governor Napolitano signed House Bill 2477 that amended statutes pertaining to the CAWCD. Of import to the AWBA was the requirement for the CAGRDR to establish a replenishment reserve equal to 20 years of replenishment obligation. This was an issue that carried over from recommendations made by the Governor's Water Management Commission. Institution of this reserve requirement had the potential to negatively impact the quantity of excess water available for use by the AWBA. However, the statute was written such that CAGRDR's priority for use of excess Colorado River water for establishment of the replenishment reserve is co-equal to the AWBA priority for the use of water stored for M&I firming.

Interstate Issues

In 2003, the decision making processes of the Lower Basin states were largely guided by events taking place in California. The failure of California entities to successfully execute the Quantification Settlement Agreement (QSA) by December 31, 2002 resulted in the suspension of surplus declarations under the Interim Surplus Guidelines (ISG). Although the QSA was ultimately executed in October of 2003, the suspension triggered activity in the Lower Basin early in the year that directly impacted the AWBA.

Requests for Creation of Intentionally Created Unused Apportionment

On January 31, 2003, the Southern Nevada Water Authority (SNWA) sent a letter to the AWBA inquiring about the deadline for SNWA to request development of intentionally created unused apportionment (ICUA) in 2003 pursuant to the interstate water banking agreements¹. Because the previously discussed suspension of surpluses had the potential to impact the SNWA they were in the process of developing contingency plans to obtain water to meet demands in excess of their 300,000 acre foot allocation. At that time, the SNWA believed they would need to produce approximately 10,000 acre feet of ICUA. On the same day, the Metropolitan Water District of Southern California (MWD) reiterated a similar request of the CAWCD for credits they had developed in Arizona in 1992. The AWBA does not currently have an agreement for creation of ICUA with MWD so the request was

¹ There were three agreements executed to permit interstate water banking on behalf of Nevada. The Agreement for Interstate Water Banking among the AWBA, the SNWA and the Colorado River Commission of Nevada (CRCN) was executed on July 3, 2001. The Agreement for the Development of Intentionally Created Unused Apportionment between the AWBA and the CAWCD and the Storage and Interstate Release Agreement among the United States, the AWBA, SNWA and the CRCN were executed on December 18, 2002.

made directly to CAWCD. The amount of recovery requested by MWD was almost 81,000 acre feet and both requests noted that this water would only be needed if the terms of the ISG were not reinstated in 2003.

By letter dated March 11, the SNWA was informed that a formal request for development of ICUA must be received by March 19, 2003 and should also include a request to waive the timeframe requirements detailed in the Agreement for Interstate Water Banking (Agreement). The Agreement included a three-year timeframe for requests for development of ICUA as it was recognized that establishing the framework for recovery would require time for planning and execution. However, in light of the situation being faced by the SNWA, the AWBA was willing to take steps to facilitate development of ICUA. The letter of request for waiver and development of ICUA was received on March 20, 2003.

On May 13, 2003, MWD submitted a preliminary request for development of ICUA for the credits held by CAWCD on their behalf. The AWBA could only comply with this request if there was agreement between MWD and the AWBA similar to the agreements between the AWBA and the SNWA, thus negotiations between the MWD and the AWBA were initiated at this time.

On May 29, 2003, the SNWA submitted a preliminary request for development of 20,000 acre feet of ICUA for 2004 and a request to initiate discussions regarding the potential development of ICUA in 2005 and 2006. On July 18, 2003, pursuant to requirements of the Storage and Interstate Release Agreement (SIRA), the AWBA informed all Arizona Colorado River entitlement holders of the SNWA request for development of ICUA. On August 1, 2003, also pursuant to provisions of the SIRA, the SNWA requested that the Secretary of the Interior release the 10,000 acre feet of ICUA for consumptive use in Nevada in 2003. In August, MWD made similar requests of both the Secretary of the Interior and CAWCD.

The AWBA is statutorily prohibited from holding recovery well permits, therefore, some other entity must recover the long-term storage credits developed by the AWBA. With respect to development of ICUA, all Colorado River entitlement holders must be afforded the opportunity to develop ICUA. However, the CAWCD has been recognized as potentially being the primary recovery entity for water stored by the AWBA for both interstate and intrastate purposes. Regardless of who is doing the actual recovery, it is recognized that the AWBA should be extensively involved in the recovery process. In 2003, the AWBA assisted the CAWCD with collecting well data needed to complete their recovery well permit application, attended meetings with CAP and irrigation district staff to discuss recovery, and facilitated processing of the permit application with the ADWR. The CAWCD was issued two recovery well permits in August of 2003, only five months after the request for ICUA was made.

The AWBA identified a number of issues associated with recovery in the process of the CAWCD obtaining their permit. First, pursuant to statute in effect at the time, specific entities had the ability to object to recovery of long-term storage credits when the recovering entity is different than the storing entity. As previously discussed, this would always be the case with the AWBA as it is prohibited from holding recovery well permits. On June 1, 2004, the governor signed legislation amending the statute regarding recovery. Now, when the water stored is Colorado River water and the recovering entity is not the entity that stored the water, there is no requirement to obtain consent nor is there a requirement for the director of ADWR to find that the recovery is consistent with the AMA management plan and goals. Other issues identified in this process were long-term maintenance of specific wells identified in recovery well permits and the potential for well capacity constraints when recovery is done during CAP shortages.

In the end, there was no ICUA developed in 2003 as the QSA was executed in October and neither California nor Nevada exceeded their annual allocation. However, the requests for development of ICUA resulted in the CAWCD obtaining recovery well permits in Pinal County that can be used at any time in the future. Additionally, the requests provided a successful trial run recovery situation for the AWBA, the CAWCD, the Secretary of the Interior and the states.

Interstate Water Banking

Pursuant to the interstate water banking agreements, the CAWCD transferred 50,000 acre feet of long-term storage credits to the AWBA sub-account for the SNWA in January. The credits were credits that had been developed and held by the CAWCD on behalf of the SNWA since the early 1990s. In July, the credits were transferred back to the CAWCD in anticipation of development of ICUA.

There was no water delivered or stored on behalf of the SNWA in 2003. The AWBA sub-account for the SNWA currently has a balance of 111,098 acre feet of long-term storage credits.

Impacts to the Water Banking Fund Accounts and Revenues

There are three primary revenue sources available to the AWBA and each was impacted to some extent in 2003, largely as a result of the on-going state budget crisis. In some cases, the impacts were to current revenues and in some cases the impacts were to existing monies in the Water Banking Fund (Fund). The three revenue sources are a general fund appropriation, groundwater withdrawal fees and an *ad valorem* property tax. Pursuant to statute, there are restrictions and limitations to how the different revenue sources can be expended with regard to purpose and location of use. The AWBA has the most flexibility in using long-term storage credits developed with the general fund appropriation revenues. It should be borne in mind that there is overlap between the fiscal year (FY), upon which the state budget operates, and the calendar year (CY), upon which the AWBA operates and this report is prepared. Consequently, CY 2003 included activity that occurred in the last half of FY 2003 and the first half of FY 2004.

Existing Fund Account Balance Impacts

On March 28, 2003, Governor Napolitano signed House Bill (HB) 2002, the FY 2003 Omnibus Reconciliation Bill (ORB), that authorized the ADWR to expend up to \$1,115,900 from the AWBA Fund for ADWR's operating expenses incurred in FY 2003. Although authorized, the ADWR ultimately did not expend any money from the AWBA Fund pursuant to the ORB.

On June 11, 2003, the AWBA approved the operating budget for the AWBA for FY 2004. This budget included \$1,830,300 of budget support for the operation of the ADWR to permit full retention of ADWR staff. Retaining ADWR staff insured that ADWR efforts in support of the AWBA and AWBA constituents would not be reduced or eliminated. Throughout the remainder of CY 2003, money was transferred to ADWR on a percentage basis at a rate such that the total amount approved for the FY would be achieved. AWBA members approved this ADWR support with the condition that it be viewed as a one time only event.

On June 17, 2003, Governor Napolitano signed HB 2531, the General Appropriations Act for FY 2004 and 2005 that included a fund transfer from the AWBA to the general fund in the amount of \$9 million. On June 30, 2003, Senator Guenther sent letters to Governor Napolitano, Speaker of the House, Jake Flake and President of the Senate, Ken Bennett, expressing his concern over this action. Due to the nature of the AWBA Fund accounts, it is the AWBA's belief that this transfer must come from the groundwater withdrawal fee accounts. As those revenues can be used to assist the state in settling Indian water rights claims and the \$9 million could have purchased more than 200,000 acre feet of long-term storage credits, this transfer will likely impact the ability of the AWBA to assist the state in meeting their obligation under any water rights settlement. The fund transfer did not occur in CY 2003, however, the transfer must occur before July 1, 2004. With current account balances, the \$9 million transfer will effectively utilize all monies remaining in the AWBA withdrawal fee accounts.

Revenue Impacts

Historically, the AWBA has received an annual \$2 million general fund appropriation from the state legislature but budget problems have impacted the appropriation over the last few years. In CY 2003, the AWBA did not receive any general fund appropriation money.

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 AWBA Fund. For the first time since the AWBA's inception, the CAWCD Board resolved that all taxes to be levied would be retained by CAWCD. CAWCD has determined that it will use these funds to support their OM&R activities thus reducing the cost of water to the AWBA.

2004 Annual Plan of Operation

Pursuant to the 2004 Plan, the AWBA projects recharge in excess of 304,000 acre feet. Of this quantity, almost 178,000 acre feet are projected to be recharged at underground storage facilities (USF) and almost 127,000 acre feet are projected to be recharged at groundwater savings facilities (GSF). This is the second Plan to project higher deliveries to USF than GSF. The 2004 Annual Plan of Operation is available on the AWBA web page.

Media Coverage

The AWBA received very limited press coverage during 2003 with the majority of articles being published in association with the requests for ICUA made by California and Nevada.

"California, Nevada ask Arizona for Water", Arizona Republic, March 10, 2003

"Arizona's Neighbors Working to Reclaim Water", AP Newswires, March 10, 2003

Agreement and Facility Permit Activity

The AWBA executed a new agreement for water storage at the Central Avra Valley Storage and Recovery Project (CAVSARP) on March 3, 2003. The agreement established the various conditions

for storage at the facility operated by Tucson Water Company and is effective until December of 2008.

The AWBA submitted one water storage permit application in 2003. The amended Lower Santa Cruz Recharge Project application was permitted in December of 2003. The new permit increased the maximum storage volume from 30,000 to 50,000 acre feet.

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 2003, the AWBA obtained its funding from the following sources:

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 \$2.25 per acre-foot in 2003. 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 June of 2002, the CAWCD board resolved that all taxes to be levied for the following tax year would be deposited in the Fund. This money was deposited into the Fund in December of 2002 and May of 2003. In June of 2003, the CAWCD board resolved to retain the tax revenues. Consequently, there were no *ad valorem* tax revenues deposited into the Fund in December of 2003. 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 2003 by source of funds. Table 2 shows the total money received, expended and remaining in the Fund through December 2003 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.

Table 1. Monies Collected and Expended in 2003 by Source of Funds

Source of Funds	Money Collected	Money Expended
General Fund	\$0	\$0
Interstate Water Banking - Nevada ¹	\$399,570	\$399,570
4¢ Ad valorem Tax		
Maricopa County	\$9,434,806	\$1,837,609
Pinal County	\$358,241	\$358,248
Pima County	\$1,936,837	\$185,701
Subtotal for Ad Valorem	\$11,729,884	\$2,381,558
Groundwater Withdrawal Fee		
Phoenix AMA	\$2,439,322	\$3,652,303
Pinal AMA	\$1,250,635	\$1,078,077
Tucson AMA	\$513,175	\$3,965,728
Subtotal for Withdrawal Fees	\$4,203,132	\$8,696,108²
TOTAL	\$16,332,586	\$11,477,236

¹OM&R reconciliation for water delivered in 2002; completed in August of 2003

² Includes carryover from previous years

Table 2. Monies Collected and Expended through December 2003 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	\$8,746,945	\$8,746,945	\$0
4¢ Ad valorem Tax			
Maricopa County	\$53,858,037	\$30,431,390	\$23,426,647
Pinal County	\$2,051,081	\$2,050,088	\$993
Pima County	\$11,188,188	\$8,262,875	\$2,925,313
Subtotal for Ad Valorem	\$67,097,306	\$40,744,353	\$26,352,953
Groundwater Withdrawal Fee			
Phoenix AMA	15,239,080	\$6,252,303	\$8,986,777
Pinal AMA	6,519,048	\$6,407,829	\$111,219
Tucson AMA	3,965,728	\$3,965,728	\$0
Subtotal for Withdrawal Fees	\$25,723,856	\$16,625,860	\$9,097,996
TOTAL	\$112,263,107	\$76,812,158	\$35,450,949

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 2003 are listed in Table 3. The cumulative totals of long-term storage credits accrued by the AWBA through December 2003 are listed in Table 4.

Table 3. Number and Location of Long-term Storage Credits Accrued in 2003

Location and Funding Source	Long-term Storage Credits Accrued (AF)
Phoenix AMA	
4¢ Ad valorem Tax	33,395
Groundwater Withdrawal Fee	66,372
General Fund	0
AMA Total	99,767
Pinal AMA	
4¢ Ad valorem Tax	10,110
Groundwater Withdrawal Fee	30,423
General Fund	0
AMA Total	40,533
Tucson AMA	
4¢ Ad valorem Tax	2,685
Groundwater Withdrawal Fee	57,342
General Fund	0
AMA Total	60,027
Totals by Funding Source	
4¢ Ad valorem Tax	46,190
Groundwater Withdrawal Fee	154,137
General Fund	0
TOTAL	200,327

Table 4. Cumulative Total and Location of Long-term Storage Credits Accrued through December 2003

Location and Funding Source		Long-term Storage Credits Accrued (AF)
Phoenix AMA		
	4¢ <i>Ad valorem</i> Tax	742,734
	Groundwater Withdrawal Fee	113,181
	General Fund	59,937
	AMA Total	915,852
Pinal AMA		
	4¢ <i>Ad valorem</i> Tax	80,661
	Groundwater Withdrawal Fee	218,667
	General Fund	296,814
	Interstate Water Banking - Nevada	111,000
	AMA Total	707,142
Tucson AMA		
	4¢ <i>Ad valorem</i> Tax	130,051
	Groundwater Withdrawal Fee	57,342
	General Fund	39,748
	AMA Total	227,141
Totals by Source of Funds		
	4¢ <i>Ad valorem</i> Tax	953,446
	Groundwater Withdrawal Fee	389,190
	General Fund	396,499
	Interstate Water Banking - Nevada	111,098
	TOTAL	1,850,233

Since inception, the AWBA has focused its efforts on developing long-term storage credits for firming purposes and the AWBA has identified 2,700,000 acre feet as reasonable to firm the CAP M&I subcontracts over the next 100 years. This would be divided 58% to Maricopa County, 32% to Pima County and 9% to Pinal County based on a pro-rata distribution to the three counties on the basis of CAP M&I subcontracts. The AWBA has also identified 420,000 acre feet as reasonable to firm the on-river communities over the next 100 years. In 2002, the AWBA adopted a resolution that identified on-river firming as the highest priority of use for the general fund credits and established priorities for other uses (Indian settlements, etc.). Consequently, all or part of the general fund credits could be utilized to firm on-river M&I users. Table 5 illustrates the progress made by the AWBA towards meeting its established goals.

Table 5. Identified Uses of Long-term Storage Credits Accrued through December 2003 and Percentage of AWBA Goals Achieved

Location and Objective	Goal (AF of Credits)	LTS Credits Accrued (AF)	Percent of Goal Achieved
Phoenix M&I Firming ¹	1,566,000	742,734	47%
Phoenix Groundwater Mgmt ²		113,181	N/A
Pinal M&I Firming ¹	243,000	80,661	33%
Pinal Groundwater Mgmt ²		218,667	N/A
Tucson M&I Firming ¹	864,000	130,051	15%
Tucson Groundwater Mgmt ²			
General Fund ³			
On-River M&I Firming ⁴	420,000	396,499	94% ⁵
Interstate Water Banking - NV	1,200,000 ⁶	61,098	5%

¹ All three Active Management Areas have stated that withdrawal fees could be utilized in addition to 4¢ *ad valorem* tax revenues for M&I firming if needed to reach firming goals.

² Specific water management objectives have not yet been identified or quantified.

³ Specific uses of general fund credits have not been determined by the AWBA.

⁴ 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.

⁵ This percentage reflects full utilization of general fund credits and could change as other objectives are identified by the AWBA.

⁶ Pursuant to the Agreement for Interstate Water Banking the AWBA agreed to use it's best efforts to store this quantity of water on behalf of the Southern Nevada Water Authority.

The average annual cost for the AWBA to obtain an acre-foot of long-term storage credit is presented in Table 6. Table 6 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. 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 2003, the AWBA stored more water in USFs than in GSFs. Although earlier plans projected more storage in USFs than GSFs, this was the first time since inception that the storage actually took place. 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. However, the CAP policy regarding recharge rate facilities that became effective in 2004 should help stabilize costs to some extent.

Table 6. Average Annual Cost for the AWBA to Obtain a Long-term Storage Credit¹

Year	Credits	Funds Expended	Average Cost	% Stored in GSF:% Stored in USF
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 ²	64% : 36%
2003	200,327	\$11,077,666	\$55.30	47% : 53%

¹ 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.

² Average cost is for intrastate credits only.

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 2003. 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 2003.

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 2003, no credits were developed or distributed under such agreements.

Interstate credits may be recovered and exchanged at the request of Nevada. In 2003, there was no recovery of long-term storage credits on behalf of the SNWA ².

² The SNWA did request development of ICUA in 2003, however, changing circumstances led to withdrawal of that request. For more information see discussion under "Interstate Issues" in the Activities and Projects Section.

Ten Year Plan for Calendar Year 2003

Introduction

Preparation of the ten year plan is statutorily mandated. The ten year plan must include a description of any water banking activities the AWBA intends to undertake in addition to the three primary AWBA functions of firming for M&I supplies, assisting in Indian water rights settlements, and fulfilling state water management objectives. The ten year plan is presented in Table 7. The ten year plan must also provide an analysis of the AWBA's ability to complete those activities. This analysis is provided in Table 8. The ten year plan is not a guarantee of future storage activities and is completed for planning purposes only. In any given year, the AWBA's activities are governed by the annual Plan.

The ten year plan for the year 2003 analyzes activity for the period 2005-2014 (Table 7) and was derived using the information found in Appendices B through G. AWBA accounting for previous years can be found in the 2003 Annual Report. AWBA staff developed the ten year plan based on the following guiding principles:

1. The intent of the plan is to evaluate if the AWBA can engage in water banking activities beyond the scope of the currently established AWBA role and to what extent.
2. The plan covers a ten year time period beginning with the next calendar year. For example, this ten year plan covers the time period 2005-2014.
3. The plan will be updated annually based on current priorities of the AWBA.
4. The plan is an important tool to be utilized in development of the next year's annual Plan of Operation.

Ten Year Plan Components

The following factors are recognized to be important elements in developing the model used to generate the ten year plan. Inclusion or exclusion of a specific factor or component of a factor was based on whether the extent of the effect of the factor could be predicted over the planning period, and whether the factor was anticipated to be at issue over the planning period.

1. Storage Partners and Storage Capacity

The AWBA has 13 water storage permits for GSFs with a total storage capacity of 743,359 acre-feet per annum. Appendix C describes the storage partners, storage permits and capacity available for use by the AWBA.

All of the permits associated with GSFs expire within this ten year plan. The AWBA's storage permits expire simultaneously with the partners' facility permits. Consequently, any difficulty on the part of the partners or the AWBA to obtain new permits could affect the ability of the AWBA to maintain adequate storage capacity to fulfill water banking activities. Discussions with ADWR recharge staff have indicated that there is typically no difficulty in obtaining new permits for GSF facilities. Nonetheless, impacts of this nature cannot be predicted and are not included in this ten year plan.

Table 7. Ten Year Plan

ARIZONA WATER BANKING AUTHORITY – 10 YEAR PLAN 2005 – 2014 (Acre-feet)															
YEAR	(a)	(b)		(c)		(d)		(e)		(f)		(g)	(h)	(i)	(j)
	CAP Water Avail for AWBA	CAP M&I Firming (4¢ Tax)		Water Management (Withdrawal Fees)		General Fund		Indian Settlement		Loaned Credits		Storage for Others	Interstate Banking		
		Delivered	Credits	Delivered	Credits	Delivered	Credits	Delivered	Credits	Delivered	Credits		Water Avail.	AWBA Capacity Avail.	Credits Earned
Pre-Plan ^(k)	n/a	1,153,376		464,676		396,499									61,098
2005	492,918	234,531	216,638	93,200	84,879	0	0						0	109,362	0
2006	633,159	283,117	257,635	105,948	97,142	0	0						244,095	143,783	135,156
2007	621,749	322,191	292,868	103,882	94,975	0	0						195,676	145,154	136,445
2008	634,365	325,775	296,030	98,062	89,498	47,993	44,823						162,534	105,797	99,450
2009	613,364	299,796	272,598	119,740	108,952	45,906	42,887						147,922	111,563	104,869
2010	544,735	199,206	182,013	96,992	88,336	43,938	41,059						204,599	244,960	192,323
2011	513,688	195,501	178,626	89,381	81,429	42,095	39,346						186,711	264,825	175,508
2012	509,982	192,085	175,504	85,677	78,041	40,377	37,750						191,843	277,007	180,332
2013	471,855	188,110	171,878	81,150	73,926	38,756	36,243						163,840	272,591	154,010
2014	443,673	183,786	167,941	75,615	68,907	37,230	34,824						147,042	287,634	138,219
TOTAL		3,365,107		1,330,761		673,431									1,377,410

FOOTNOTES:
 (a) See Appendix B
 (b) See Appendix D
 (c) See Appendix E
 (d) See Appendix F
 (e) Currently no Indian settlement requirements identified for the AWBA
 (f) Currently no requests for loaned credits
 (g) Currently the AWBA is not providing banking services for others
 (h) Available CAP Supplies minus AWBA intrastate delivery requirements
 (i) Additional capacity may be needed to fully accommodate the opportunity for interstate banking
 (j) See Appendix G
 (k) Cumulative totals for 1997-2004; 2004 credits estimated based on projected deliveries

Table 8. AWBA Percentage of Goals Achieved through 2014

Location and Objective	Goal (AF of Credits)	LTS Credits Accrued (AF)	Percent of Goal Achieved
Phoenix M&I Firming	1,566,000	2,550,789 ¹	163%
Phoenix Groundwater Mgmt ²		632,087	N/A
Pinal M&I Firming ³	243,000	196,832	81%
Pinal Groundwater Mgmt ²		576,099	N/A
Tucson M&I Firming ³	864,000	617,485	71%
Tucson Groundwater Mgmt ²		122,576	N/A
General Fund ⁴			
On-River M&I Firming ⁵	420,000	673,431 ⁶	160% ⁷
Interstate Water Banking - NV	1,200,000 ⁸	1,377,410 ⁹	115%

¹The firming goal will be met in 2008.

² Specific water management objectives have not yet been identified or quantified.

³ All three Active Management Areas have stated that withdrawal fees could be utilized in addition to 4¢ *ad valorem* tax revenues for M&I firming if needed to reach firming goals.

⁴ Specific uses of general fund credits have not been determined by the AWBA.

⁵ 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.

⁶ The firming goal will be met in 2008.

⁷ This percentage reflects full utilization of general fund credits and could change as other objectives are identified by the AWBA.

⁸ Pursuant to the Agreement for Interstate Water Banking the AWBA agreed to use it's best efforts to store this quantity of water on behalf of the Southern Nevada Water Authority.

⁹ The goal will be met in 2013.

The AWBA has nine water storage permits for USFs with a total storage capacity of 611,000 acre-feet per annum. The USF permit issued for the Pima Mine Road facility limits total storage for the term of the permit to 500,000 acre-feet with the ability to request an amendment to 600,000 acre-feet. This storage quantity limitation will not be a factor within this ten year plan. The GRUSP permit is the only permit that expires within this planning period.

As previously described in the GSF discussion, any difficulty in obtaining new permits could effect the capacity available to the AWBA. As the process of obtaining a new USF permit can be more complex and extensive than obtaining a new GSF permit, the possibility of impact is greater. Again, impacts of this nature cannot be predicted and are not included in the analysis of this ten year plan.

2. Recovery

This ten year plan does not include a recovery component because recovery for Colorado River shortages, Indian firming or interstate purposes is not anticipated within the scope of this ten year plan. Due to the on-going drought and public concern regarding reservoir levels, the CAP has completed dry year scenario modeling of the Colorado River system. These model

runs show a small potential for shortage in 2011. However, due to projected M&I demand levels, there will be no shortages to M&I users within the scope of this ten year plan, even with the dry year hydrology used by CAP in modeling. Recovery for Indian firming purposes is also not anticipated due to demand levels. However, the Indian Firming Technical Committee continues to meet in 2004 as the issues of identification of water available for firming and evaluation of costs associated with firming are discussed. Lastly, while there exists the potential for requests for development of ICUA as occurred in 2003, recovery for interstate purposes is not anticipated. If requests were made, the recovery would occur pursuant to existing recovery well permits held by the CAWCD.

Although recovery is not anticipated within the scope of this ten year plan, the AWBA will initiate discussions regarding recovery planning with the CAWCD to develop a general recovery strategy and recovery principles. This will occur early in this ten year plan time period in recognition of the CAP subcontractors' need for long-range infrastructure planning.

3. Water management objectives

The early activities of the AWBA were focused on achieving the goal of full utilization of Arizona's Colorado River allocation. In 2002, Arizona fully utilized its 2.8 million acre-foot allocation. Additionally, the AWBA has focused its activities on meeting the firming goals and has stored almost 1 MAF of credits to meet these goals. Consequently, the evaluation of water management activities will become more complex as the available excess CAP water and storage facility capacity becomes limited, new storage facilities are sited and AWBA's funding sources are impacted by economic factors.

Central Arizona Groundwater Replenishment District (CAGRD) Replenishment Reserve

Pursuant to statute, the CAGRD must develop a 20% replenishment reserve. The CAGRD replenishment reserve shares co-equal priority for excess water with AWBA M&I firming. However, the reserve has a higher priority for excess CAP water than the AWBA's deliveries for other non-firming purposes (i.e. water management). Therefore, a component for the proposed replenishment reserve as well as the advance replenishment was included in the model beginning in 2003.

The CAP Water Forecast Group

The group is composed of CAP, CAGRD, ADWR and AWBA staff and was formed to facilitate consistency and understanding between the entities with regard to assumptions used for short- and long-term Colorado River water supply and demand forecasts. Portions of this ten year plan were developed using projections obtained from this group.

AWBA General Fund Appropriation

Since inception, the AWBA has received an annual general fund appropriation of \$2 million. To date, the AWBA has primarily utilized the money to augment the revenues generated in Pinal County to develop credits to be used to firm on-river uses. It is recognized that the economic factors resulting in the loss of the AWBA's general fund appropriation will exist for some time. Therefore, the ten year plan was developed with no general fund appropriation through calendar year 2007. The model included a \$2 million general fund appropriation for the period 2008-2014.

4. Modifications within CAP with regard to pricing and pool allocation

In May 2000, the CAWCD Board adopted a policy for marketing the non-Indian agriculture (NIA) pool of excess water. This policy established a NIA pool of 400,000 acre-feet from 2004-2016. The pool will decline to 300,000 acre-feet from 2017-2023 and to 225,000 acre-feet from 2024-2030. This use will be the highest priority use for excess water. It is recognized that this is a factor that could impact the AWBA's ability to participate in recharge at groundwater savings facilities, however, as the policy has not yet initiated it is difficult to predict an effect. Therefore, only the 400,000 acre-foot pool concept was utilized in this ten year plan.

The CAWCD Board has also discussed the marketing of excess water for other users including the CAGRDR replenishment and replenishment reserve, incentive recharge programs, other M&I uses and the AWBA. These discussions have centered on the recognition that policies developed early on were intended to insure full utilization of CAP and Arizona's Colorado River allocation. As Arizona reached use of their full allocation in 2002, perhaps policies require modification. In light of current discussions, this ten year plan included a component for decreased availability of the incentive recharge pool.

5. Participation in Indian settlements

One objective of the AWBA is assisting with the settlement of water rights claims by Indian communities within Arizona. Settlements dealing with the CAP repayment and reallocation would require the state to firm some NIA priority water for Indian settlements. In order to achieve this, it is anticipated that the state will rely on the AWBA at some time within this ten year planning horizon. However, this issue was not considered in this ten year plan pending finalization of the Indian Firming Technical Committee process.

6. New recharge facilities and/or expanded capacities at existing facilities

The AWBA is currently in the process of completing a revised inventory of existing storage facilities in the state as required by A.R.S. § 45-2452. The revised inventory will be utilized in developing future ten year plans.

The CAP has been active in the evaluation of locations for additional storage facilities. In January 2002, the CAP initiated a regional feasibility study for sites in the East Salt River Valley. Out of this study two sites were identified, with one more favorable site located on the Queen Creek Wash. CAP is moving forward with design, land acquisition, and permitting of the Superstition Mountain USF and anticipates this facility (designed for 80,000 acre-feet of storage capacity) will be operational in mid-2006. The CAP also conducted a Western Arizona Recharge Capacity Feasibility Study in 2002. Construction will begin on the Tonapah Desert USF in the summer of 2004 and is anticipated to be operational by 2005, with 100,000 acre-feet of storage capacity. The AWBA has recognized additional capacity available in Maricopa County in this ten year period as a result of the anticipated construction of these facilities.

The SRP has applied to ADWR for a recharge facility permit for a project located in the west valley near the confluence of the Agua Fria River and New River. The project has a planned initial capacity of 30,000 acre-feet increasing to a maximum of 100,000 acre-feet. Storage at this facility was not included in this ten year plan because of uncertainty regarding

development of an agreement between AWBA and SRP, cost of storage and availability of capacity to the AWBA.

7. Interstate banking

The ten year plan includes an interstate water banking component for Nevada but does not include California.

Conclusion

The ten year plan is intended to serve as a guide to assist the AWBA in the development of the Annual Plan of Operation (Plan). The AWBA is required to develop a Plan for activities to be undertaken the following calendar year. As part of the Annual Report, the ten year plan is reviewed and updated annually. Therefore, it is possible that the ten year plan may change significantly depending on the goals set by the AWBA.

Appendices

Appendix A.
**Colorado River Water Deliveries for Water Banking Purposes for Calendar Year 2003 by
Partner and Active Management Area**

Phoenix Active Management Area

Partner	Quantity of Water (Acre-feet)
Agua Fria Recharge Project	11,989
Chandler Heights Citrus Irrigation District	929
Granite Reef Underground Storage Project	22,599
Hieroglyphic Mountains Recharge Project	19,944
Maricopa Water District	4,600
New Magma Irrigation and Drainage District	22,378
Queen Creek Irrigation District	765
Roosevelt Water Conservation District	12,500
Salt River Project	10,354

Pinal Active Management Area

Partner	Quantity of Water (Acre-feet)
Central Arizona Irrigation and Drainage District	5,500
Hohokam Irrigation and Drainage District	27,075
Maricopa-Stanfield Irrigation and Drainage District	10,950

Tucson Active Management Area

Partner	Quantity of Water (Acre-feet)
Avra Valley Recharge Project	3,539
B.K Wong	1,527
Central Avra Valley Storage and Recovery Project	7,660
Kai-Red Rock	3,092
Lower Santa Cruz Recharge Project	30,380
Pima Mine Road Recharge Project	17,315

APPENDIX B
CAP DELIVERY SCHEDULE
(Acre-feet)

Year	CAP Demands				Average Year Supply ⁽⁵⁾	Available for AWBA ⁽⁶⁾
	M&I ⁽¹⁾	Indian ⁽²⁾	Ag ⁽³⁾	Total ⁽⁴⁾		
2005	340,282	99,800	400,000	1,032,082	1,525,000	492,918
2006	374,541	102,300	400,000	891,841	1,525,000	633,159
2007	385,951	102,300	400,000	903,251	1,525,000	621,749
2008	368,835	106,800	400,000	890,635	1,525,000	634,365
2009	374,836	121,800	400,000	911,636	1,525,000	613,364
2010	422,937	142,328	400,000	980,265	1,525,000	544,735
2011	434,384	161,928	400,000	1,011,312	1,525,000	513,688
2012	420,625	179,393	400,000	1,015,018	1,525,000	509,982
2013	433,652	204,493	400,000	1,053,145	1,525,000	471,855
2014	461,834	204,493	400,000	1,081,327	1,525,000	443,673

- (1) Includes M&I, CAGRD, CAGRD replenishment reserve, Indian M&I lease and M&I incentive water
- (2) From settlement discussions
- (3) Based on current agricultural pool policy, includes 32,537 for Harquahala
- (4) Includes secondary excess uses of 192,000 AF in 2005 and 15,000 AF per annum 2006 through 2014.
- (5) Based on average year delivery of 1,600,000 AF per year minus losses
- (6) Average year supply minus CAP demands; AWBA last priority for intrastate use

APPENDIX C
STORAGE FACILITIES AVAILABLE TO THE AWBA¹
(as used in the 10 year plan)

AMA and Facility Type	Facility Permit Expiration	Facility Permitted Capacity (Acre-feet)	Capacity Available to AWBA ⁽²⁾ (Acre-feet)	Year Water Last Stored	Volume of Water Last Stored (Acre-feet)
PHOENIX – GSF⁽³⁾					
New Magma IDD	12/2007	54,000	45,000	2003	22,378
Queen Creek ID	12/2004	28,000	3,000	2003	765
Salt River Project	12/2005	200,000	20,000	2003	10,354
PHOENIX – USF					
GRUSP	12/2010	200,000	50,000	2003	22,599
Agua Fria Recharge Project	05/2019	100,000	40,000	2003	11,989
Hieroglyphic Mtns.	12/2021	35,000	26,000	2003	19,944
PINAL – GSF					
Central Arizona IDD	12/2007	110,000	15,000	2003	5,500
Hohokam IDD	12/2007	55,000	50,000	2003	27,075
Maricopa-Stanfield IDD	12/2004	120,000	50,000	2003	10,950
TUCSON – GSF					
Kai – Red Rock	12/2006	11,231	3,000	2003	3,092
TUCSON – USF					
Avra Valley	03/2018	11,000	7,000	2003	3,539
CAVSARP	07/2021	60,000	40,000 ⁽⁵⁾	2003	7,660
Lower Santa Cruz	09/2019	50,000	40,000	2003	30,380
Pima Mine Road	09/2020	30,000	28,000	2003	17,315
Other Facilities Currently or Anticipated to be Available to the AWBA					
Vidler – USF	09/2020	100,000	80,000	⁽⁴⁾	0
West Maricopa Combine - USF	05/31/2021	25,000		⁽⁴⁾	0
Tonopah Desert – USF ⁽⁶⁾		100,000	100,000		n/a
Superstition Mountain ⁽⁶⁾		80,000	40,000		n/a
SRP New River – USF ⁽⁶⁾					n/a

Footnotes:

- (1) As additional facilities are developed, they will be included in future plans. However, it should be recognized that availability of water and funding will likely be the limiting factors in future plans.
- (2) This does not reflect the actual “permitted” volume for these facilities, instead for the purposes of this plan, staff relied on average historical storage volumes and potential for future storage.
- (3) The AWBA holds water storage permits at Chandler Heights Citrus ID (3KAF), Maricopa Water District (18KAF), Roosevelt Water Conservation District, BKW Farms (16KAF), Kai-Avra (12KAD) and the Tonopah (15KAF) GSFs. These were not considered significant uses in this 10 year outlook.
- (4) No deliveries to date.
- (5) 20,000 acre-feet of additional capacity anticipated being available beginning in 2003.
- (6) Not yet permitted.

APPENDIX D
Credits Developed for M&I Firming Utilizing the 4¢ Tax ⁽¹⁾
(Acre-feet)

	Year	Groundwater Savings			Underground Storage			
		Capacity Available ⁴	Capacity Used	Credits Earned	Capacity Available ⁴	Capacity Used	Credits Earned	
PHOENIX AMA²	Pre-plan ³			481,832			402,168	
	2005	72,000	18,720	16,848	116,000	116,000	104,400	
	2006	69,746	18,134	16,321	210,155	210,155	189,140	
	2007	72,000	18,720	16,848	246,933	246,933	222,240	
	2008	72,000	18,720	16,848	252,024	252,024	226,822	
	2009	71,429	18,571	16,714	251,912	227,392	204,652	
	2010	70,393	18,302	16,472	251,415	128,289	115,460	
	2011	69,196	17,991	16,192	250,132	126,063	113,456	
	2012	69,100	17,898	16,109	252,717	123,811	111,430	
	2013	67,686	16,665	14,998	251,024	122,124	109,912	
	2014	66,300	14,520	13,068	247,345	120,955	108,859	
	Total			642,250			1,908,539	
	PINAL AMA²	Pre-plan ³			98,284			
		2005	115,000	10,718	9,861	-	-	-
2006		115,000	11,502	10,582	-	-	-	
2007		115,000	12,392	11,400	-	-	-	
2008		115,000	11,733	10,795	-	-	-	
2009		115,000	11,219	10,322	-	-	-	
2010		115,000	10,742	9,883	-	-	-	
2011		115,000	10,298	9,474	-	-	-	
2012		115,000	9,884	9,093	-	-	-	
2013		115,000	9,496	8,736	-	-	-	
2014		115,000	9,132	8,402	-	-	-	
Total				196,832				
TUCSON AMA²		Pre-plan ³			3,610			167,482
		2005	5,000	0	0	89,093	89,093	85,529
	2006	5,000	0	0	92,946	43,325	41,592	
	2007	5,000	0	0	92,294	44,146	42,380	
	2008	5,000	0	0	93,604	43,298	41,566	
	2009	5,000	0	0	93,665	42,614	40,909	
	2010	5,000	0	0	103,289	41,873	40,198	
	2011	5,000	0	0	112,474	41,149	39,503	
	2012	5,000	0	0	113,329	40,492	38,872	
	2013	5,000	0	0	101,897	39,825	38,232	
	2014	5,000	0	0	110,620	39,179	37,612	
	Total			3,610			613,875	

Footnotes:

- (1) Developing M&I firming credits has the first priority for water and storage capacity.
- (2) M&I firming targets are Phoenix AMA-1.56 MAF, Tucson AMA-810 KAF, and Pinal AMA 230 KAF
- (3) Cumulative totals for 1997-2004; 2004 credits estimated based on projected deliveries.
- (4) The capacity available is based on the capacity remaining at the USFs and GSFs after all higher priority demands have been met.

APPENDIX E
Credits Developed for Meeting AMA Water Management Goals
Utilizing Withdrawal Fees ⁽¹⁾
(Acre-feet)

	Year	Groundwater Savings			Underground Storage		
		Capacity Available ³	Capacity Used	Credits Earned	Capacity Available ³	Capacity Used	Credits Earned
PHOENIX AMA	Pre-plan ²			104,658			37,900
	2005	53,280	53,280	47,952	0	0	0
	2006	51,612	51,612	46,451	0	0	0
	2007	53,280	53,280	47,952	0	0	0
	2008	53,280	53,280	47,952	0	0	0
	2009	52,857	52,857	47,571	24,521	24,521	22,069
	2010	52,091	52,091	46,882	123,126	6,296	5,666
	2011	51,205	51,205	46,085	124,069	1,795	1,615
	2012	51,202	50,942	45,848	128,906	413	372
	2013	51,021	47,431	42,688	128,899	834	750
	2014	51,780	41,327	37,195	126,390	2,756	2,481
	Total			561,234			70,853
	PINAL AMA	Pre-plan ²			278,481		
2005		104,282	34,920	32,127	-	-	-
2006		103,498	36,774	33,832	-	-	-
2007		102,608	38,876	35,766	-	-	-
2008		103,267	36,117	33,228	-	-	-
2009		103,781	33,883	31,173	-	-	-
2010		104,258	31,826	29,280	-	-	-
2011		104,702	29,929	27,534	-	-	-
2012		105,116	28,174	25,920	-	-	-
2013		105,504	27,034	24,871	-	-	-
2014		105,868	25,964	23,887	-	-	-
Total				576,099			0
TUCSON AMA		Pre-plan ²			8,084		
	2005	5,000	5,000	4,800	0	0	0
	2006	5,000	5,000	4,800	49,621	12,561	12,059
	2007	5,000	5,000	4,800	48,148	6,726	6,457
	2008	5,000	0	0	50,306	8,665	8,318
	2009	5,000	0	0	51,051	8,479	8,140
	2010	5,000	0	0	61,416	6,779	6,507
	2011	5,000	0	0	71,325	6,453	6,195
	2012	5,000	0	0	72,837	6,148	5,902
	2013	5,000	0	0	62,072	5,852	5,617
	2014	5,000	0	0	71,441	5,568	5,345
	Total			22,484			100,092

(1) Withdrawal fees are used to develop credits for AMA water management goals after the 4¢ tax is utilized.
(2) Cumulative totals for 1997-2004; 2004 credits estimated based on projected deliveries.
(3) The capacity available is based on the capacity remaining at the USFs and GSFs after all higher priority demands have been met and water is stored using the 4¢ tax as illustrated in Appendix D.

APPENDIX F
Credits Developed Utilizing Annual General Fund Appropriations^(1,2)
(Acre-feet)

	Year	Groundwater Savings			Underground Storage			
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned	
PHOENIX AMA	Pre-plan ³			37,964			21,973	
	2005	0	0	0	0	0	0	
	2006	0	0	0	0	0	0	
	2007	0	0	0	0	0	0	
	2008	0	0	0	0	0	0	
	2009	0	0	0	0	0	0	
	2010	0	0	0	116,830	0	0	
	2011	0	0	0	122,275	0	0	
	2012	260	0	0	128,493	0	0	
	2013	3,590	0	0	128,066	0	0	
	2014	10,452	0	0	123,634	0	0	
	Total			37,964			21,973	
	PINAL AMA	Pre-plan ³			296,814			
		2005	69,362	0	0	-	-	-
2006		66,724	0	0	-	-	-	
2007		63,733	0	0	-	-	-	
2008		67,149	31,250	28,750	-	-	-	
2009		69,897	29,586	27,219	-	-	-	
2010		72,431	28,047	25,804	-	-	-	
2011		74,773	26,622	24,492	-	-	-	
2012		76,942	25,297	23,273	-	-	-	
2013		78,470	24,064	22,139	-	-	-	
2014		79,904	22,913	21,080	-	-	-	
Total				469,571				
TUCSON AMA		Pre-plan ³			2,306			37,442
		2005	0	0	0	0	0	0
	2006	0	0	0	37,060	0	0	
	2007	0	0	0	41,422	0	0	
	2008	5,000	5,000	4,800	41,641	11,743	11,273	
	2009	5,000	5,000	4,800	42,572	11,321	10,868	
	2010	5,000	5,000	4,800	54,637	10,891	10,455	
	2011	5,000	5,000	4,800	64,872	10,473	10,054	
	2012	5,000	5,000	4,800	66,689	10,080	9,677	
	2013	5,000	5,000	4,800	56,221	9,692	9,305	
	2014	5,000	5,000	4,800	65,873	9,316	8,944	
	Total			35,906			108,018	

Footnotes:

- (1) General Fund appropriations are used to supplement the 4¢ tax and withdrawal fees in AMAs where funding is a constraint.
- (2) The on-river M&I firming target is 420 KAF.
- (3) Cumulative totals for 1997-2004; 2004 credits estimated based on projected deliveries.

APPENDIX G
Potential Credits Developed for Interstate Water Banking⁽¹⁾
(Acre-feet)

Year	Available CAP Supplies⁽²⁾	Available AWBA Capacity⁽³⁾	Remaining Supply⁽⁴⁾	Interstate Credits⁽⁵⁾
Pre-plan				61,098
2005	0	109,362	0	0
2006	244,095	143,783	100,312	135,156
2007	195,676	145,154	50,522	136,445
2008	162,534	105,797	56,736	99,450
2009	147,922	111,563	36,358	104,869
2010	204,599	244,960	0	192,323
2011	186,711	264,825	0	175,508
2012	191,843	277,007	0	180,332
2013	163,840	272,591	0	154,010
2014	147,042	287,634	0	138,219
Total				

(1) Interstate Banking is the last priority of the AWBA.

(2) Water available for Interstate Banking is calculated by subtracting the water delivered and stored by individual subcontractors, contractors, and the AWBA for intrastate water banking from the Total Available Supply (see Appendix B).

(3) Reflects the unused capacity available to the AWBA at USFs and GSFs in the Phoenix, Pinal, and Tucson AMAs as well as capacity available from other storage facilities permitted by the AWBA outside of the AMAs. Additional capacity may be available at individual facilities based on the utilization by individual water storage permit holders

(4) Remaining supplies after subtracting the water delivered and stored by individual subcontractors, contractors, and the AWBA for intrastate water banking and water delivered for interstate water banking.

(5) Based on the Available Supplies or the Available AWBA Capacity, whichever is less, resulting stored water multiplied by an average 6% cut and loss factor.