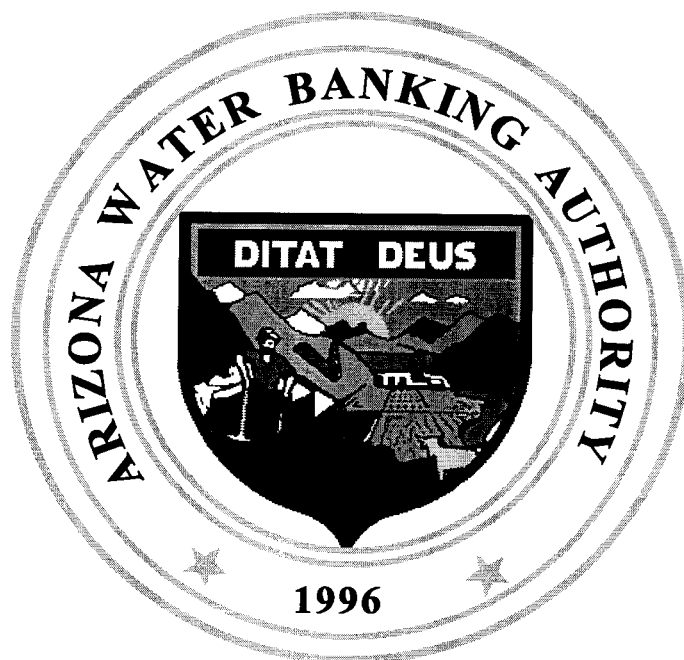


# ARIZONA WATER BANKING AUTHORITY

ANNUAL REPORT  
1998



Submitted  
July 1, 1999

# Arizona Water Banking Authority

## Annual Report 1998

Honorable Jane Dee Hull  
Governor of Arizona

### Members

Rita P. Pearson  
*Chairman*

Tom Griffin  
*Vice-chairman*

Bill Chase  
*Secretary*

Grady Gammage, Jr.  
*Member*

Richard S. Walden  
*Member*

*Ex officio*  
Senator Pat Connor  
Representative Gail Griffin

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# Arizona Water Banking Authority

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**AUTHORITY MEMBERS**  
Rita P. Pearson, Chairman  
Tom Griffin, Vice-Chair  
Bill Chase, Secretary  
George Renner  
Richard S. Walden

**OFFICIO MEMBERS**  
Representative Gail Griffin  
ate Vacant

June 22, 1999

The Honorable Jane Dee Hull  
Governor of Arizona  
1700 West Washington Street  
Phoenix, Arizona 85007

*Original letter  
for 73' and  
14'  
for use.*

Dear Governor Hull:

Enclosed is the third Annual Report describing the operation of the Arizona Water Banking Authority (AWBA) for calendar year 1998. The Annual Report has been prepared in compliance with Arizona Revised Statutes § 45-2426 (Supp. 1997). The Annual Report details the amount of water stored by the AWBA, the monies expended from the banking fund and the remaining funds available to the AWBA. It also provides updated information about the AWBA and an overview of the significant achievements of the past year.

During 1998, the AWBA's Study Commission completed its work and made recommendations concerning the AWBA's future powers and duties. The Study Commission recommended the AWBA be allowed to lend its long-term storage credits, recharge effluent when Central Arizona Project (CAP) water is unavailable, provide water banking services directly for Arizona entities, and firm water supplies for non-CAP municipal and industrial water service providers within the CAP service area to protect against non-CAP water shortages.

1998 was a highly successful year for the AWBA. The AWBA recharged approximately 220,000 acre feet of water in Maricopa, Pinal and Pima Counties through indirect recharge with seven irrigation districts as partners and through direct recharge at four underground storage facilities.

I continue to be proud of its accomplishments and goals and I am confident that the AWBA will continue to be a critical tool to achieve Arizona's water policy goals.

Sincerely,

Rita P. Pearson  
Chairman

RPP:th:kd



**Rita Pearson**, Director of the Arizona Department of Water Resources and Chairman of the Arizona Water Banking Authority

## *Message from the Chairman of the Arizona Water Banking Authority*

I am pleased to be provided with the opportunity to comment on the progress and the future of the Arizona Water Banking Authority.

1998 has been a tremendous year for the AWBA. The AWBA has continued to recharge water that would have otherwise gone unused by Arizona and at the same time replenishing aquifers and providing surface water alternatives to groundwater pumping. The AWBA continued to store water at several groundwater savings facilities, the Granite Reef Underground Storage Project and Avra Valley Recharge Project. It also began storing water at two new underground storage facilities in the Tucson Active Management area. All in all, the AWBA recharged approximately 220,000 acre feet of water in 1998.

One of the most exciting developments in 1998 was the work completed by the Arizona Water Banking Authority Study Commission. When it created the AWBA, the Arizona Legislature created a Study Commission to investigate opportunities for additional water banking uses, identify mechanisms to encourage participation in the program by Indian communities with rights to Colorado River water, and review the first year of the AWBA's operation. The Study Commission was broken down into five subcommittees to focus in more detail on additional water management opportunities available to the AWBA. The AWBA staff assisted the Study Commission by participating in subcommittee meetings and by assisting in the drafting of the subcommittee reports to the full Study Commission. The Study Commission's efforts resulted in numerous recommendations, including recommendations for legislative changes submitted to the Arizona Legislature in bill form (House Bill 2463) in December 1998.

At the end of 1997, the United States Department of the Interior released its draft interstate water banking rules which will someday enable Arizona to store its excess Colorado River water for use in Nevada and California. Throughout 1998, the AWBA and the ADWR provided extensive comments on the rules and raised several concerns. As of December 31, 1998, the proposed rule was still in draft form, and as such, no interstate water banking negotiations with Nevada or California have taken place. When the federal government finalizes the rule, and if the key portions of the rule meet with the ADWR Director's approval, the AWBA will commence discussions with our neighboring states to explore the possibility of interstate water banking.

When the AWBA was created in 1996, one of the policy goals was to enable it to assist in the settlement of Indian water rights. At the end of 1998, the AWBA focused much of its attention on ongoing Indian water rights settlement discussions. The AWBA may be able to assist in the settlement of disputes over water rights by "firming" a fixed quantity of Central Arizona Project water to guarantee supplies to Indian tribes.

In 1998, the AWBA has made great strides toward achieving all of its goals. The AWBA reflects Arizona's commitment to sound water policy. The AWBA provides Arizonans with added peace of mind that steps have been taken to ensure their high quality of life well into the future.

## **Arizona Water Banking Authority** *Annual Report Requirement*

Arizona Revised Statutes section 45-2426 provides that the Arizona Water Banking Authority (AWBA) must file an Annual Report each year. The report must be submitted to the Governor of Arizona, President of the Arizona Senate, and Speaker of the Arizona House of Representatives on or before July 1 of each year and must contain a full and complete account of its transactions and proceedings for the preceding calendar year. The report must contain all of the following:

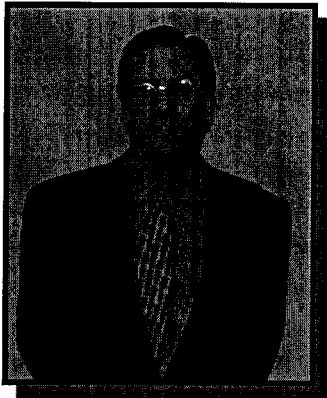
- An accounting of all monies expended from the banking fund.
- An accounting of all monies in the banking fund remaining available to the Authority.
- The amount of water stored by the Authority.
- The number of long-term storage credits distributed or extinguished by the Authority.
- The purposes for which long-term storage credits were distributed or extinguished by the Authority.
- Any other matter determined by the Authority to be relevant to the policy and purposes of this chapter.

In 1997, the statute was amended so that the Annual Report would reflect the activity of the previous calendar year (January to December) rather than the fiscal year (July to June).

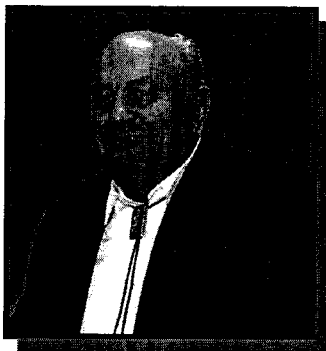
**ARIZONA WATER BANKING AUTHORITY**  
*Members<sup>1</sup>*



**RITA P. PEARSON** - In March of 1993, Governor Symington appointed Rita Pearson Director of the Arizona Department of Water Resources. By statute, the Director also serves as Chairperson of the Arizona Water Banking Authority. Ms. Pearson also chaired the Arizona Water Banking Authority Study Commission.

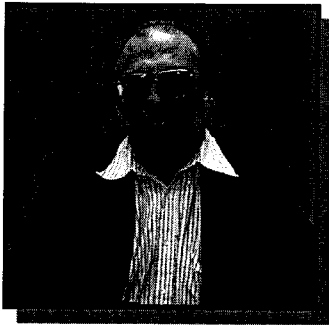


**GRADY GAMMAGE, JR.**- Mr. Gammage serves as a member of the Arizona Water Banking Authority in his capacity as President of the Central Arizona Water Conservation District (CAWCD). Mr. Gammage founded the law firm of Gammage & Burnham in 1983, specializing in land use and real estate development.

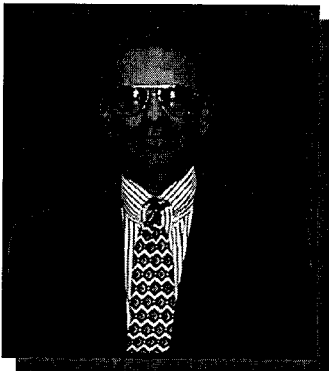


**THOMAS E. (TOM) GRIFFIN** - Mr. Griffin was appointed to the Authority by Governor Symington in July 1996 as a representative of the communities along the Colorado River. Mr. Griffin served as Vice-Chairman of the Arizona Water Banking Authority and also served as Chairman of the AWBA Study Commission's subcommittee on Issues Outside the CAP Service Area. In 1985, he founded and still operates The Planning Group, a planning and development consulting firm in Arizona, California, and Nevada.

<sup>1</sup> Full biographies are available on the AWBA web page at <http://www.awba.state.az.us>.



**WILLIAM L. CHASE, JR.** - Mr. Chase was appointed to the Authority by Governor Symington in 1996 representing an entity that holds a Central Arizona Project Municipal and Industrial contract. Mr. Chase served as Secretary of the Arizona Water Banking Authority. Since December 1980, Mr. Chase has served as the Water Advisor for the City of Phoenix.



**RICHARD S. WALDEN** - Mr. Walden was appointed to the Authority in July 1996 by Governor Symington as a person knowledgeable in water resource management. He currently serves as President and Chief Executive Officer of Farmers Investment Company in Sahuarita, Arizona.

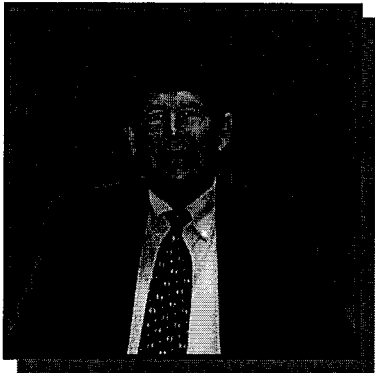
*Ex Officio Members<sup>2</sup>*



**THE HONORABLE GAIL GRIFFIN** - Representative Griffin was appointed as an *ex officio* member of the Arizona Water Banking Authority by Speaker of the Arizona House of Representatives Jeff Groscost. Ms. Griffin represents Legislative District 8 and serves as co-chairman of the House Natural Resources and Agriculture committee and as a member of the House Commerce, Environment and Government Operations committees. Ms. Griffin has lived in Arizona for almost 30 years and is a licensed real estate broker at Sierra Vista Realty.

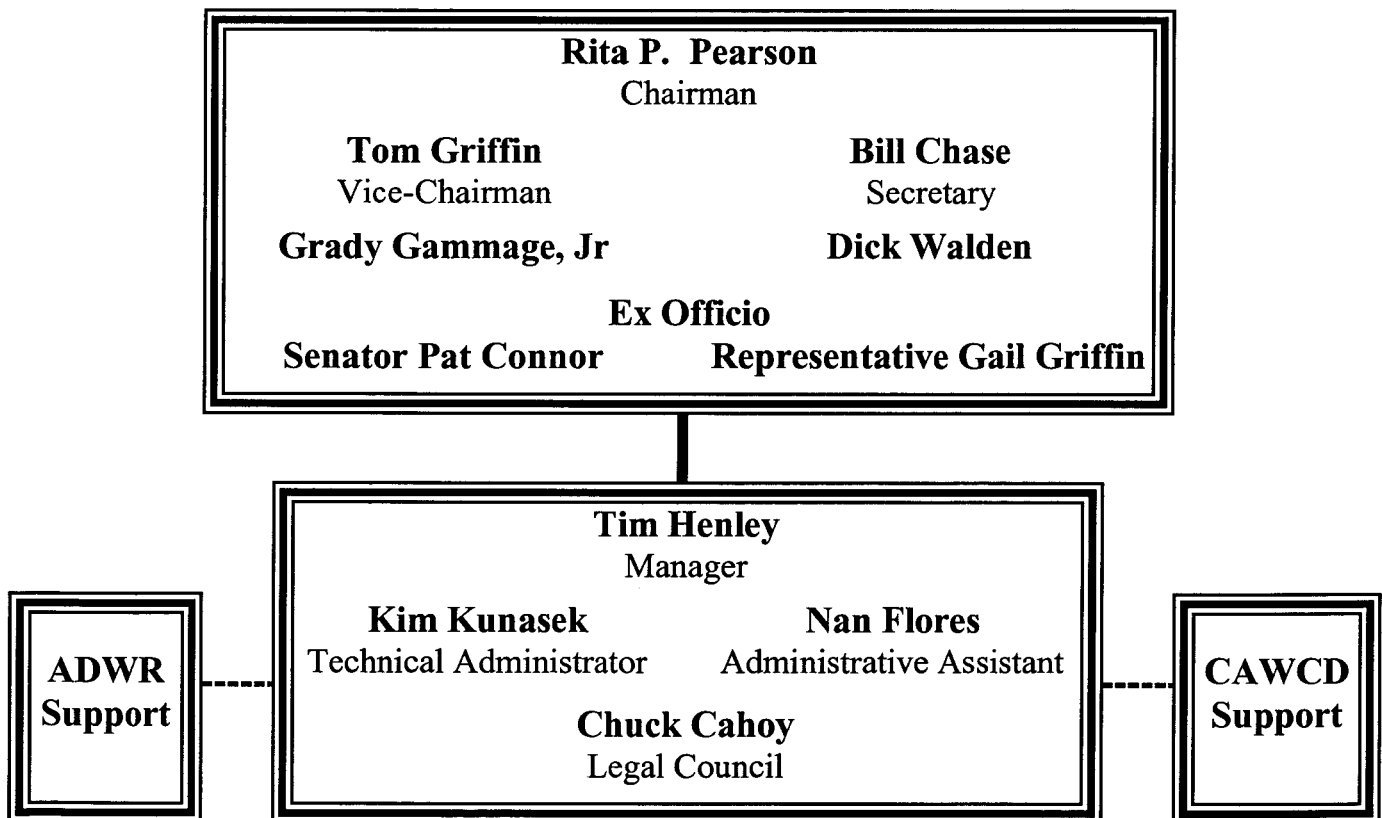
<sup>2</sup> More information on the Arizona Legislature is available at: <http://www.azleg.state.az.us>.





**THE HONORABLE PAT CONNER** - Senator Conner was appointed as an *ex officio* member of the Arizona Water Banking Authority by Arizona Senate President Brenda Burns. Mr. Conner represents Legislative District 5 and served on the Senate Appropriations Committee, Senate Commerce & Economic Development Committee (as Vice Chairman), Senate Judiciary Committee, and Senate Natural Resources, Agriculture & Environment Committee (Chairman). Senator Conner is a native of Arizona and is involved in real estate and investments in the Yuma area and owns Soft Cloth Car Washes.

*Organizational Chart*



## **The Arizona Water Banking Authority** *Update*

The AWBA has been working diligently to carry out its mission to take the formerly unused portion of Arizona's Colorado River allotment and recharge the water in Arizona to develop long-term storage credits for future use. This recharge by the AWBA does not substitute for existing uses or storage of Colorado River water by entities in Arizona but utilizes Colorado River water that would otherwise go unused by Arizona.

The AWBA holds monthly meetings at the ADWR to keep the public apprised of its progress and has held additional meetings with entities interested in participating in recharge either at underground storage facilities or groundwater savings facilities. Representatives from California and Nevada have attended several of these AWBA meetings, and possible future interstate water banking continues to be a topic of discussion.

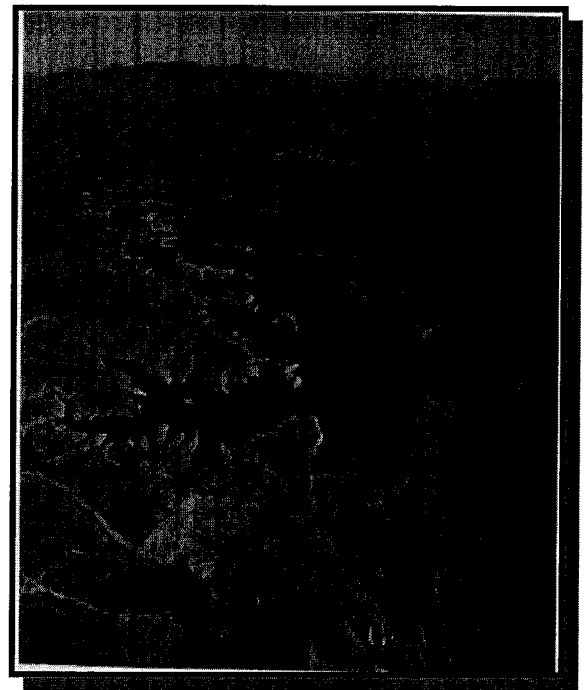
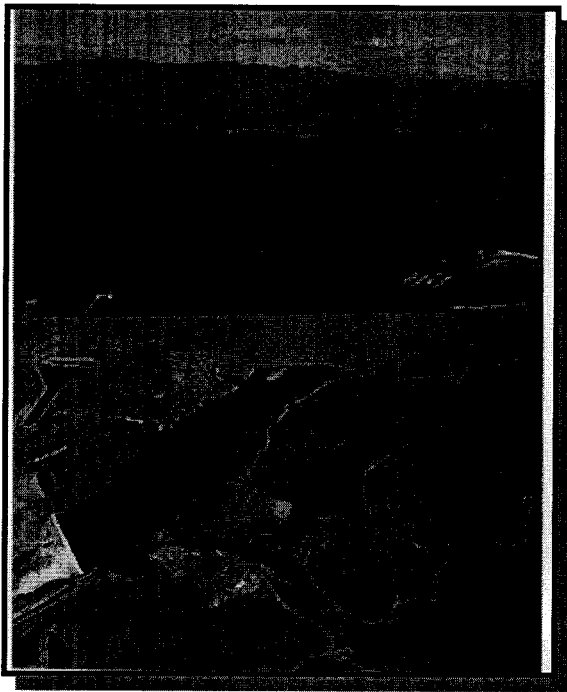
The AWBA members and staff meet annually with all current and potential recharge entities in developing the Annual Plan of Operation. These entities include the Salt River Project (SRP), the CAP, and all permitted irrigation districts in Maricopa, Pinal, and Pima counties. All potential recharge opportunities are then matched with delivery capacities of the CAP aqueduct. The AWBA systematically adjusts each entity's amount to match CAP delivery constraints. An analysis is then made of the amount of potential recharge in each Active Management Area (AMA) and county and the amount of funds generated monthly in each AMA and county to keep monies in the AMA or county of generation.

The AWBA recharged approximately 330,000 acre feet of CAP water in 1997 and approximately 220,000 acre feet in 1998. Total consumptive use by Arizona for 1997 was approximately 2.7 million acre feet, including: 1.38 million acre feet Colorado River uses along the Colorado River; CAP subcontractor deliveries of an estimated 975,000 acre feet, including municipal and industrial, Indian, Agricultural Pools 1, 2, and 3, and incentive recharge water; and approximately 330,000 acre feet for recharge by the AWBA. Total consumptive use by Arizona for 1998 was approximately 2.46 million acre feet, including: 1 million acre feet Colorado River uses along the Colorado River; CAP subcontractor deliveries of an estimated 1.23 million acre feet, including municipal and industrial, Indian, Agricultural Pools 1, 2, and 3, and incentive recharge water; and approximately 220,000 acre feet of recharge by the AWBA. The AWBA expects to recharge approximately 307,000 acre feet of water in 1999.

By storing substantial amounts of water in central Arizona, the AWBA safeguards against future shortages on the CAP system, assists in meeting the goals of the Arizona Groundwater Code, and aids neighboring states without harming Arizona. The AWBA is Arizona's "water savings account" and ensures that the water supplies future generations inherit from us are just as secure as those we inherited.

For more information about the Arizona Water Banking Authority, please consult our web page at <http://www.awba.state.az.us>, or contact Tim Henley ([tjhenley@adwr.state.az.us](mailto:tjhenley@adwr.state.az.us)) or Kim Kunasek ([kskunasek@adwr.state.az.us](mailto:kskunasek@adwr.state.az.us)) at (602)417-2418.

At a **Groundwater Savings Facility**, Colorado River water is delivered from the Central Arizona Project via smaller canals to irrigate crops leaving precious groundwater in the ground. About 50% of AWBA long-term storage credits have been developed at groundwater savings facilities such as the one pictured below.

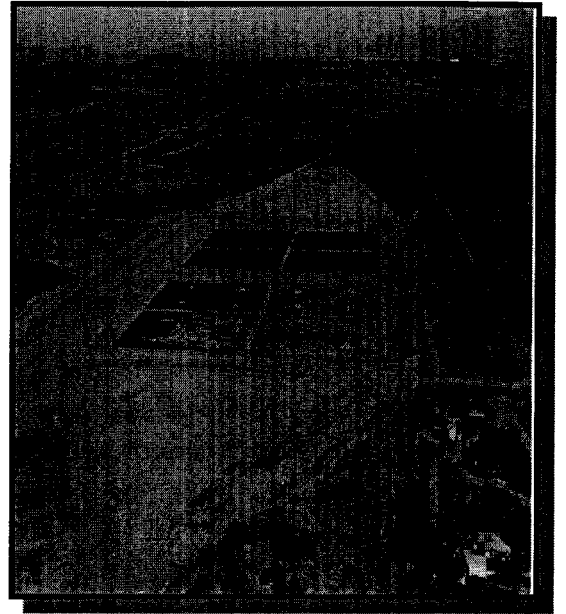


**New Waddell Dam**, pictured above, is operated by the Central Arizona Water Conservation District (CAWCD). The CAWCD provides operational support for the AWBA. New Waddell Dam is key to the CAWCD's ability to operate the CAP system.

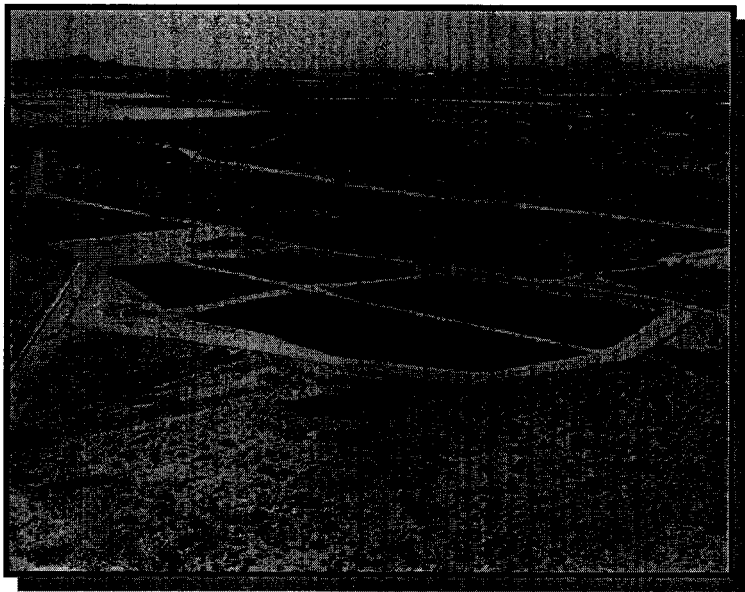
In addition to providing operational support to the AWBA, CAWCD also operates two of the **Underground Storage Facilities** used by the AWBA.

The **Pima Mine Road Recharge Facility (PMR)**, located in the Tucson AMA, consists of approximately fourteen acres of spreading basins divided into eight cells or spreading basins (which resemble shallow ponds) that can be operated individually. Raw CAP water is delivered from the CAP aqueduct to the recharge basins via a conveyance pipeline to these spreading basins, and the water is allowed to seep into the ground. The water penetrates many layers of soils and ultimately reaches the underground aquifer.

The AWBA recharged 1,859 acre feet of CAP water at PMR in 1998 and plans to store up to 5,000 acre feet there in 1999.



***Pima Mine Road Recharge Facility***  
Owned and operated by the  
Central Arizona Project



***Avra Valley Recharge Project***  
Owned and Operated by the  
Central Arizona Project

The **Avra Valley Recharge Project**, located in the Tucson AMA, consists of approximately eleven acres of spreading basins which are divided into four cells which can be operated individually.

The AWBA recharged 2,739 acre feet of CAP water at AVRP in 1998 and plans to recharge 6,400 acre feet in 1999.

**Arizona Water Banking Authority**  
*Activities and Projects*  
1998

Below are summaries of several activities undertaken by the Arizona Water Banking Authority in 1998.

**The Arizona Water Banking Authority Study Commission**

***Background***

When it created the AWBA, the Arizona Legislature created a Study Commission to investigate opportunities for additional water banking uses, identify mechanisms to encourage participation in the program by Indian communities with rights to Colorado River water, and review the first year of the AWBA's operation. The Study Commission consisted of all five AWBA members and its two *ex officio* members plus nine people appointed by the Director of the Arizona Department of Water Resources (ADWR). The Study Commission was broken down into five subcommittees to focus in more detail on additional water management opportunities available to the AWBA. The AWBA staff assisted the Study Commission by participating in subcommittee meetings and by assisting in the drafting of the subcommittee reports to the full Study Commission.

***Subcommittees***

The Study Commission was comprised of five subcommittees: the Planning and Modeling Subcommittee, the Taxation and Finance Subcommittee, the Interstate and Intrastate Water Banking and Marketing Issues Subcommittee, the Water Banking Benefits Outside the CAP Service Area Subcommittee, and the Indian Issues Subcommittee.

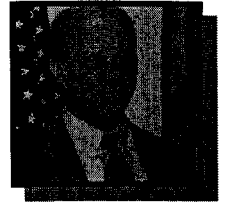
The **Planning and Modeling Subcommittee** was formed to develop a consistent set of water planning assumptions to evaluate the availability of water supply to meet demands in order to best address the opportunities for additional water banking uses and Indian communities' participation in water banking. These assumptions were used in the Colorado River System Simulation (CRSSez) model to quantify the potential future shortages of water that may occur for existing municipal and industrial CAP subcontractors and others. The potential shortages represent the amount of water that must be banked to firm long-term water supplies. The output from the model also quantifies the potential amount of water that is surplus to the projected annual demands and is consequently available for banking purposes.

The **Taxation and Finance Subcommittee** investigated the funding mechanisms available to the AWBA under its current statutory authorities. AWBA staff prepared preliminary projections of the revenues expected from these sources and compared those revenues with the potential needs to accomplish currently authorized purposes. The subcommittee was required to consider whether the mechanism for the tax

collected pursuant to A.R.S. §48-3715.02 (four cent *ad valorem* tax in Maricopa, Pinal, and Pima Counties) was satisfactory and whether the tax provision should be continued as currently drafted. It also considered whether charges for the AWBA's interstate banking services should require out of state entities to

participate in storage and recovery options that are most compatible with Arizona's groundwater management objectives, even if those options are more costly, and how to determine any fees in lieu of taxes that out of state entities would be required to pay for water storage in Arizona.

*"The efforts and results of the Study Commission are examples of the best kind of public policy development. We had a group of qualified and interested citizens and water professionals working together to develop recommendations as to how to manage a portion of Arizona's valuable water resources."*



**- Larry Dozier, Chairman**  
Taxation and Finance Subcommittee



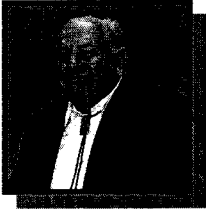
*"The Study Commission process was both thought-provoking and focused. The fact that consensus recommendations were adopted by as diverse a group as the Study Commission members with respect to a volatile topic like water policy reflects the effectiveness of the Study Commission process."*

**- Mark Myers, Chairman**  
Interstate and Intrastate Water Banking and Marketing Issues Subcommittee

The **Interstate and Intrastate Water Banking and Marketing Issues** subcommittee was charged with evaluating the opportunities for the AWBA to perform additional services that could assist water users in Arizona in meeting their needs for a reliable water supply. The Study Commission determined that a number of opportunities may exist for the AWBA to perform additional services that could assist water users in Arizona in meeting their needs for a reliable water supply. It also recognized that the program for banking water for interstate purposes could potentially be expanded in a variety of ways.

The subcommittee also identified three primary issue areas. It considered whether Arizona and the United States Bureau of Reclamation should develop a policy and process for transferring or leasing entitlements between parties in Arizona (including transfers with Indian tribes), whether the benefits and services provided by the AWBA should be expanded and, if so, which services are most appropriate, and whether the AWBA should be authorized to meet future needs for water supply by using techniques other than the long-term storage credit system.

The **Water Banking Benefits Outside the CAP Service Area** Subcommittee analyzed the additional opportunities for the AWBA to provide benefits and services to those portions of the state that are not a part of the CAP service area. The AWBA's enabling legislation established a role for the AWBA to provide limited banking services for municipal and industrial users of Colorado River water that are outside of the CAP service area. For the purpose of the subcommittee's discussions, the term "outside of the CAP service area" was defined to be those portions of Arizona that could not receive water directly through the CAP delivery system.



*“The diversity and quality of the people serving on the Study Commission and subcommittees is shown by the successful results.”*

**- Tom Griffin, Chairman**  
Benefits Outside the CAP Service Area Subcommittee

The subcommittee first determined the frequency and magnitude of potential shortages to municipal and industrial water users of Colorado River water who are not Central Arizona Project subcontract holders. It then considered whether the AWBA should be empowered to obtain and make available water supplies to new Colorado River M&I water providers or to supplement the supplies and allocations of existing Colorado River M&I water providers in areas located outside of the CAP service area. The subcommittee examined whether the AWBA should be empowered to store water at recharge sites that do not have direct access to excess CAP water and identified the needs and opportunities for the AWBA to provide assistance for water supply enhancement or drought protection for M&I water users who are neither located within the CAP service area nor located along the Colorado River and whether the AWBA should be empowered to provide water supply enhancement assistance for non-M&I uses within Arizona such as environmental enhancement projects. The subcommittee studied and determined the mechanisms for forbearance and exchange that could be used to deliver AWBA-developed supplies to water users outside of the CAP service area. And finally, the subcommittee considered whether M&I water users located outside of the CAWCD service area who receive credits from the AWBA to offset a water shortage be required to pay to have those credits replaced and whether the reimbursement rate should be equal to what the AWBA *originally* paid for the credits or at the rate in effect at the time the purchase of replacement water is needed.

The **Indian Issues Subcommittee** was formed to consider the opportunities for the AWBA to further involve Indian communities in its water banking activities. The AWBA’s enabling legislation established an important policy for the state by providing that the public policy and general purposes of the laws are to provide the opportunity for storing water brought into Arizona through the CAP to be available to implement the settlement of water right claims by Indian communities within Arizona.

The subcommittee examined the respective water rights and supplies of the Arizona Indian tribes and how will they interact with the AWBA, how the AWBA could assist in achieving implementation of Indian water rights settlements, how the AWBA could provide additional water supplies or marketing services to Indian communities, and finally considered some of the unique challenges facing Indian community participation in AWBA activities.

*“The Study Commission results illustrate the benefits and the future potential when the state and the tribes really work together.”*

**-Gary Hansen, Co-Chairman**  
Indian Issues Subcommittee



## ***Final Report***

The Study Commission has concluded its activities and completed both a comprehensive Interim Report (November 1997) and a Final Report (November 1998) containing research findings, conclusions, and recommendations regarding the issues it considered. These reports are available on the AWBA's web page (<http://www.awba.state.az.us>).

The Study Commission's final report contains, among other things, recommendations for statutory changes that would confer new powers and duties on the AWBA. If a bill amending the AWBA statutes passes the Arizona Legislature, the AWBA will have several new duties and responsibilities.

First, A.R.S. § 45-2401 would be amended to recognize a need in the future to provide for the efficient use of all water resources in Arizona and the need for a centralized source of water banking services. The bill would also amend A.R.S. §§ 45-2423 to allow the AWBA to perform banking services for specific entities in Arizona and would create a mechanism for distribution of long-term storage credits earned on behalf of specific Arizona entities.

The Interstate Water Banking and Marketing Subcommittee considered that some Arizona entities have expressed an interest in using the AWBA's services to store water they have a legal right to store. While nothing in Title 45 prevents these entities from banking water on their own, the subcommittee's consensus was that it may be more efficient for the AWBA to administer and oversee water banking for individual Arizona entities if they choose to do so.

Second, A.R.S. § 45-2423(B) would be amended to permit the AWBA to store effluent for the same purposes allowed for CAP water but only when all available excess CAP water has been stored or when excess CAP water is not available to the AWBA. In order to maximize efficient water management, when available excess CAP supplies are unavailable, the AWBA should be able to recharge effluent if it is available. Recharging effluent will not, however, take priority over the AWBA's duty to recharge as much CAP water as possible.

Third, A.R.S. § 45-2401 would be amended to state a need to protect non-CAP surface water supplies. The AWBA would have the ability to determine the amount of four-cent tax generated long-term storage credits needed to "firm" supplies for CAP municipal and industrial (M&I) subcontractors, and based on that determination, it could use any "excess" four-cent tax monies to firm supplies for *non*-CAP M&I surface water users (such as the Salt River Project, Maricopa Water Conservation District, and Roosevelt Water Conservation District) within the CAP service area. Under current law, long-term storage credits accrued with four-cent tax revenues can only be used to firm *CAP* M&I subcontractors' supplies in times of shortage or disruption of the *CAP* system. Ideally, non-CAP sources could be protected through the AWBA's water resource management authority.

Fourth, the legislation would create a mechanism for long-term storage credit lending. This would enable the AWBA to loan credits to any Arizona entity for use in Arizona and allows the AWBA to receive reasonable compensation for lending credits. An example of how this function could provide a useful function is for assistance with assured water supply requirements: while these long-term storage credits could not be used to meet a 100-year assured water supply requirement, a quantity of credits could be



purchased to help an entity working toward obtaining a 100-year water supply (for example, to meet a five-year supply until the longer-term arrangement is finalized).

Finally, the legislation would require the AWBA to include in each annual report a section that discusses how the previous year's activity fits in with the overall long-term goals of the AWBA. By adding information that projects into the future, the annual report could provide a better long-term projection of AWBA activities over the next ten years and how each year's activities are working toward accomplishing the AWBA's long-term goals. These goals may evolve and change over time, so updating each year will give the public a better grasp of the changing role (if any) of the AWBA.

### ***Other Recommendations***

In addition to the legislative changes recommended, the Study Commission also made other policy recommendations.

#### **Planning & Modeling Subcommittee Recommendations**

- Specific modeling assumptions should be used for planning purposes
- Specific quantities of water should be stored to protect against projected shortages
- Criteria for the USBR to adopt for a procedure for determining how shortages to Arizona fourth priority contractors will be shared between CAP contractors and non-CAP contractors
- The method the USBR should use to determine how reduced deliveries to the CAP will be shared between M&I priority subcontractors and Indian priority contractors.

#### **Taxation & Finance Subcommittee Recommendations**

- Current provisions of A.R.S. § 48-3715.02 (tax levied by the CAWCD with revenues spent by the AWBA) should be continued without modification
- Interstate water storage agreements for recharge and recovery should not necessarily reflect the lowest cost options for the participating states but should recognize the need to meet Arizona's groundwater management objectives, including provisions relating to management plans.
- The appropriate in lieu tax charges for interstate banking activities should be based upon the amount of ad valorem taxes paid per acre foot by non-Indian M&I and agricultural water users in the three county CAP service area. The tax collection should be compared to the average delivery over the previous three years.
- The Arizona Legislature should continue to provide adequate funding to the AWBA program, including the potential for increased levels of funding in the future.

#### **Interstate and Intrastate Water Banking and Marketing Issues Subcommittee Recommendations**

- The ADWR, the USBR, the CAWCD, and the AWBA should, in a coordinate manner, identify and establish policies and procedures regarding transfers and also for transporting non-CAP water through the CAP aqueduct system.

## **Benefits Outside the CAP Service Area Subcommittee Recommendations**

- When determining the quantity of water needed to firm the River communities M&I supplies, the AWBA should adopt a conservative set of water shortage assumptions.
- The USBR should clarify the method that will be used for determining how reduced deliveries to non-CAP fourth priority contractors will be shared between M&I and agricultural contractors.
- The ADWR and the AWBA should work directly with any interested community and with representatives of the Arizona Rural Water Association to consider ways that rural communities can obtain additional water supplies in the future.
- The AWBA, the CAWCD, and affected communities along the Colorado River should enter into exchange agreements and file notice of those agreements with the ADWR to enable recovery and delivery of banked water to river area communities.

## **Indian Issues Subcommittee Recommendations**

- In order to best familiarize itself with the wide ranging interests of Indian water rights issues, the AWBA should be updated by the ADWR on the status of Indian water rights settlement negotiations and progress on Indian related issues coming out of the ongoing adjudication process.
- Water storage and recovery techniques performed by the AWBA can and should be an important component of Indian water rights settlements but should be undertaken on a settlement by settlement basis.
- Legal questions about marketing Indian water must be explored in more detail

## ***Conclusion***

The AWBA's primary function, maximizing use of Arizona's 2.8 million acre foot apportionment of Colorado River water by recharging excess CAP water, will remain its primary function. Most of the new functions discussed above will be entirely discretionary and will only be undertaken if they do not jeopardize the AWBA's ability to recharge excess CAP water to protect Arizonans from water shortages in the future and to help Arizona achieve its groundwater management goals.

## **Reserving Credits for Areas Outside the CAP Service Area**

The Authority's enabling legislation requires the Authority to reserve a reasonable number of long-term storage credits accrued with the general fund appropriations for the benefit of the municipal and industrial (M&I) users of Colorado River water in Arizona that are outside of the Central Arizona Project (CAP) service area.

The Study Commission determined the frequency and magnitude of potential shortages to the Colorado River water M&I users. Based on that information the AWBA determined that approximately 420,000 af of credits would be needed to firm the water supplies of the M&I users outside the CAP area for the next 100 years.

The Authority also determined the 420,000 af of credits could be further subdivided among the three Counties along the River pro-rata based on the amount of the post-1968 M&I entitlements in each County. Using the current post-1968 entitlements, the pro-rata share to each County would be as follows:

<u>Mohave County</u>	<u>La Paz County</u>	<u>Yuma County</u>
96%	3%	1%
403,200 af	12,600 af	4,200 af

While the enabling legislation requires the Authority to reserve the credits, it is silent on how quickly those credits should be developed. Based on the current studies shortages are not expected until the mid 2020s, which means the Authority could have several years to actually develop the credits.

General fund appropriation credits, can be used for four basic purposes: (1) firming M&I supplies for outside the CAP, (2) firming M&I supplies for CAP subcontractors, (3) assisting in American Indian settlements, and (4) fulfill the water management objectives of the Third Management Plan. The Authority will have to determine an appropriate distribution for the other three purposes. The Authority will also have to decide how the credits will be distributed in any given year among the four purposes.

Recognizing that in 1998, no other purposes for the use of the general fund appropriation credits were identified, the Authority reserved the approximately 150,000 af of general fund appropriation credits developed in 1997 for firming the M&I supplies for outside the CAP.

Using the pro-rata approach and the above percentages, the distribution of the 150,000 af among the Counties would be as follows:

<u>Mohave County</u>	<u>La Paz County</u>	<u>Yuma County</u>
144,000 af	4,500 af	1,500 af

## **Facility Plan**

AWBA staff completed a Facility Plan for the Tucson Active Management Area. By law, the AWBA must follow a specific process prior to developing its Facility Plan. To develop the final Facility Plan in accordance with A.R.S. § 45-2453, the AWBA considered the amount of additional storage capacity needed to meet the AWBA’s needs, consulted with the ADWR with respect to where water storage would most contribute to meeting the water management objectives, considered the advice of CAWCD regarding the feasibility of delivering and storing CAP water at any proposed storage facility; sought the advice of the ADEQ regarding any potential adverse impacts from a proposed storage facility; considered the potential costs to the AWBA of facilitating construction or development of a proposed storage facility and cost-effectiveness of any proposed storage facility; asked the CAWCD whether it or other entities would be willing to construct, maintain, and operate any proposed storage facility; and considered the way in which water stored at a proposed storage facility could be used by the AWBA to achieve policy goals.

The Facility Plan identified the facilities in the Tucson area that could be available to the AWBA to meet its statutory objectives. When developing its annual Plan of Operation, the AWBA will determine

through a public notice process which facilities would actually be used and the quantity of water to be stored at those facilities.

The Facility Plan is available on the AWBA's web page (<http://www.awba.state.az.us>).

## **1999 Plan of Operation**

The AWBA plans to recharge approximately 307,000 acre feet of water in 1999. The AWBA will recharge approximately 192,000 acre feet at groundwater savings facilities and approximately 115,000 acre feet at underground storage facilities. The AWBA's Plan of Operation anticipates recharging about 8,000 acre feet with two new partners: Vidler Water Company's MBT Ranch Underground Storage Facility in LaPaz County and Kai Farms/Avra Groundwater Savings Facility in the Tucson AMA. The 1999 Plan of Operation is available on the AWBA's web page.

## **Web Page**

The AWBA improved and expanded the information contained on its web page (<http://www.awba.state.az.us>). The web page contains information about the AWBA, the AWBA's recharge partners, monthly updates in graph and table format on water deliveries around the state, announcements from the AWBA, a schedule of upcoming meetings, numerous publications that may be downloaded, links to other water-related sites, and a great deal of other information.

## **Media Coverage**

The AWBA again received considerable press coverage over during 1998.

"Putting water in the bank," Las Vegas Review-Journal, January 1, 1998.

"One with the River," Las Vegas Review-Journal, March 15, 1998.

"Key benefits of water banking," Parker Pioneer, May 27, 1998, Front Page.

"Water law changes shown to area board," Casa Grande Dispatch, November 11, 1998.

"County Supervisors discuss water banking issues," Parker Pioneer, December 9, 1998.

"Saving for a Dry Day," River Report, Winter 1998.

"Babbitt Stresses Water Use Deal," Las Vegas Review-Journal, December 18, 1998.

The AWBA was discussed frequently during the debate over interstate water banking that arose during the 1998 gubernatorial race.

“Hull denies Nevada influence on water,” Tucson Citizen, October 6, 1998.

“Johnson’s water charges are wrong,” Arizona Daily Star, October 6, 1998.

“Hull not making water-use deals,” Mesa Tribune, October 6, 1998.

“Johnson’s future floats on water,” Arizona Republic, October 6, 1998.

“Johnson’s Waterloo?” The New Times, Page 6, October 15-21, 1998.

“A Desperate, Irresponsible Claim,” Editorial, Arizona Republic, October 11, 1998.

“Johnson’s noises about Hull’s water theft have no basis,” William H. Swann, Arizona Republic, October 26, 1998.

## **Indian Reservation Water Banking**

AWBA and ADWR staff met with representatives from the Tohono O’Odham Nation, the Gila River Indian Community, and the Colorado River Indian Tribes regarding possible future on-reservation water banking. These meetings provided an opportunity to determine the level of interest by the Indian Communities and to better understand the Communities’ concerns and goals. In addition, AWBA and ADWR staff collected hydrologic data and maps and visited the potential underground storage facility sites.

## **Interstate Water Banking**

On December 31, 1997, the United States Bureau of Reclamation (USBR) published a draft rule governing offstream storage of Colorado River Water for the Lower Basin states (Nevada, California, Arizona). The USBR held two public hearings in Ontario, California in February and March to hear interested parties’ concerns. The initial comment period was extended into April 1998. The AWBA and the ADWR submitted extensive comments. After reviewing the comments from numerous entities, the USBR in September reopened the public comment period but restricted those comments to two specific components of the proposed water banking regulations. The AWBA and the ADWR again submitted extensive comments to the narrow portion of the proposed rule (October 1998), but because the rule was not finalized, did not begin interstate water banking negotiations with Nevada and California representatives. The USBR took no further action on finalization of the rule in 1998.

**Arizona Water Banking Authority**  
*Monies Expended from the Banking Fund*

Arizona Revised Statutes section 45-2425 established a Water Banking Fund (Fund). The AWBA administers the Fund. Section 45-2425 provides a breakdown of the sources of monies in the Fund.

The AWBA currently obtains its funding from the following sources:

- 1) Fees for groundwater pumping are currently collected within the Phoenix, Pinal, and Tucson Active Management Areas (AMAs). In the Phoenix AMA, Tucson AMA, and most areas of the Pinal AMA, pumping fees for water banking purposes are \$2.50 per acre foot. Fees are based on annual groundwater pumping and in-lieu deliveries in the AMAs. The groundwater users file their reports by March of each year. ADWR collects the fees and deposits them in the Fund. The AWBA actually receive the fees for the previous year groundwater use. *Money from this source must be used for the benefit of the Active Management Area in which it was collected.*
- 2) The CAWCD levies a four cent *ad valorem* property tax and dedicates it to the AWBA. The tax is collected by the counties in the CAP service area and place in the Fund. The Fund receives monies collected from the four cent tax in two installments: the first is due in November of each year, the Fund receives most of these revenues by the end of December; the second is due in April, the Fund receives most of these revenues by the end of May. To help finance the AWBA's efforts, the tax can be levied, collected and deposited in the Fund through 2016. *Money from this source must be used to benefit the county in which it was collected.*
- 3) A general fund appropriation is made to the Fund in the amount the Arizona Legislature and Governor believe to be appropriate. The appropriation is determined annually, in 1998 the appropriation was \$2 million. General fund monies are made available to the Fund in four equal payments on a quarterly basis. *Water stored with these funds may be used to assist communities along the Colorado River, to help Arizona meet its water management objectives, or as a component of an Indian water rights settlement.*

Any monies remaining in the Fund at the end of the year remain in the Fund and are available to be expended in subsequent years.

**Table 1** shows fees the AWBA collected and expended in 1998 their source. **Table 2** shows total funds collected, expended and remaining in the Water Banking Fund by source through December 1998.

**Table 1**

<i>Monies Collected, and Expended in 1998 by Source</i>		
<i>Source</i>	<i>Collected</i>	<i>Expended</i>
<b>General Fund</b>		
<b>Sub-Total</b>	<b>\$2,000,000</b>	<b>\$1,950,000</b>
<b>4¢ Ad Valorem Tax</b>		
Maricopa County	\$6,752,000	\$4,047,000
Pinal County	\$242,000	\$173,000
Pima County	\$1,112,000	\$644,000
<b>Sub-Total</b>	<b>\$8,106,000</b>	<b>\$4,864,000</b>
<b>Groundwater Pumping Fee</b>		
Phoenix AMA	\$2,692,000	\$0
Pinal AMA	\$1,196,000	\$0
Tucson AMA	\$716,000	\$0
<b>Sub-Total</b>	<b>\$4,604,000</b>	<b>\$0</b>
<b>Administration</b>		
<b>Sub-Total</b>	<b>\$407,000<sup>1</sup></b>	<b>\$329,000</b>
<b>TOTAL</b>	<b>\$13,119,000</b>	<b>\$7,143,000</b>

<sup>1</sup> Interest collected on Fund balance

**Table 2**

<i>Monies Collected, Expended, and Available through December 1998</i>			
<i>Source &amp; Location</i>	<i>Collected</i>	<i>Expended</i>	<i>Available<sup>1</sup></i>
<b>General Fund</b>			
<b>Sub-Total</b>	<b>\$5,000,000</b>	<b>\$4,741,000</b>	<b>\$259,000</b>
<b>4¢ Ad Valorem Tax</b>			
Maricopa County	\$15,747,000	\$7,480,000	\$8,267,000
Pinal County	\$579,000	\$468,000	\$111,000
Pima County	\$3,066,000	\$817,000	\$2,249,000
<b>Sub-Total</b>	<b>\$19,392,000</b>	<b>\$8,765,000</b>	<b>\$10,627,000</b>
<b>Groundwater Pumping Fee (collected in 1998 only)</b>			
Phoenix AMA	\$2,692,000	\$0	\$2,692,000
Pinal AMA	\$1,196,000	\$0	\$1,196,000
Tucson AMA	\$716,000	\$0	\$716,000
<b>Sub-Total</b>	<b>\$4,604,000</b>	<b>\$0</b>	<b>\$4,604,000</b>
<b>Administration</b>			
<b>Sub-Total</b>	<b>\$1,002,000</b>	<b>\$707,000</b>	<b>\$295,000</b>
<b>TOTAL</b>	<b>\$29,998,000</b>	<b>\$13,506,000</b>	<b>\$15,785,000</b>

<sup>1</sup> Includes monies remaining in Fund and prepayment to CAWCD

<sup>2</sup> Includes \$305,000 transferred to Admin. account for first two years of operation

**Arizona Water Banking Authority**  
*Long-term Storage Credits*

The AWBA has established a Long Term Storage Account (Account Number 70-441150) with the ADWR. After receiving the AWBA's annual report, ADWR calculates and issues long term storage credits to AWBA's account. Under A.R.S. § 45-852.01, the ADWR only credits the account with 95% of the recoverable amount of stored water. For example, for each 100 acre feet the AWBA recharges (either at groundwater savings facilities or underground storage facilities), the ADWR credits the AWBA's long-term storage account with 95 acre feet of credits. The 5% that is not credited to the AWBA is known as the "cut to the aquifer" and provides additional groundwater replenishment benefits. The recoverable amount is determined by reducing the quantity of water delivered to the recharging facility by any losses that occur at the facility. After the credits are issued to the account, the AWBA's staff divides the credits into the appropriate sub-accounts based on funding sources.

**Table 3** shows the long-term storage credits earned by the AWBA in each of the AMAs in 1998 divided by funding source. **Table 4** shows the long-term storage credits earned by the AWBA in each of the AMAs to date divided by funding source through December 1998.

**Table 3**

<i>Long-term Storage Credits Accrued in 1998</i>	
<i>Location &amp; Funding Source</i>	<i>Credits Accrued</i>
<b>Phoenix Active Management Area</b>	
4¢ <i>Ad Valorem</i> Tax (for the benefit of the County)	103,743 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	13,532 af
<b>AMA Total</b>	<b>117,275 af</b>
<b>Pinal Active Management Area</b>	
4¢ <i>Ad Valorem</i> Tax (for the benefit of the County)	7,992 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	65,874 af
<b>AMA Total</b>	<b>73,866 af</b>
<b>Pima Active Management Area</b>	
4¢ <i>Ad Valorem</i> Tax (for the benefit of the County)	11,316 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	0 af
<b>AMA Total</b>	<b>11,316 af</b>
<b>Outside the Active Management Areas</b>	
General Fund	0 af
<b>Totals by Funding Source</b>	
4¢ <i>Ad Valorem</i> Tax (for the benefit of the County)	123,051 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	79,406 af
<b>TOTAL</b>	<b>202,457 af</b>



**Table 4**

<i>Long-term Storage Credits Accrued through December 1998</i>	
<i>Location &amp; Funding Source</i>	<i>Credits Accrued</i>
<b>Phoenix Active Management Area</b>	
4¢ Ad Valorem Tax (for the benefit of the County)	231,082 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	27,923 af
<b>Sub-Total</b>	<b>259,005 af</b>
<b>Pinal Active Management Area</b>	
4¢ Ad Valorem Tax (for the benefit of the County)	25,893 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	193,338 af
<b>Sub-Total</b>	<b>219,231 af</b>
<b>Pima Active Management Area</b>	
4¢ Ad Valorem Tax (for the benefit of the County)	14,248 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	0 af
<b>Sub-Total</b>	<b>14,248 af</b>
<b>Outside the Active Management Areas</b>	
General Fund	0 af
<b>Totals by Funding Source</b>	
4¢ Ad Valorem Tax (for the benefit of the County)	271,223 af
Groundwater Pump Fee (for the benefit of the AMA)	0 af
General Fund	221,261 af
<b>TOTAL</b>	<b>492,484 af</b>

**Arizona Water Banking Authority**

*Number of long-term Storage Credits Distributed or Extinguished by the Authority*

The credits developed by the AWBA to date are for the purpose of firming the post-1968 Colorado River M&I entitlements. Currently, shortages to the post-1968 supplies are not anticipated for 25 to 30 years. Because there have been no Colorado River shortages, the AWBA did not distribute any long-term storage credits in 1998. The AWBA did reserve 150,000 af of credit, developed with general fund monies, to firming the post-1968 M&I entitlements of entities outside the CAP service area. However, no credits have actually been distributed. The actual distribution will occur when shortages are declared. Because no other uses for the long-term credits have been identified, the AWBA did not extinguish any credits in 1998.

**Appendix 1**

**ARIZONA WATER BANKING AUTHORITY**  
*Colorado River Water Deliveries*  
*for Calendar Year 1998*

<b><i>Partner</i></b>	<b><i>Water Delivered</i></b>
<b><u>Phoenix Active Management Area (AMA)</u></b>	
Maricopa Water District.....	19,800 af
Queen Creek Irrigation District (QCID).....	12,086 af
Granite Reef Underground Storage Project (GRUSP).....	57,896 af
New Magma Irrigation and Drainage District (NMIDD).....	37,552 af
Chandler Heights Irrigation District (CHCID).....	88 af
<b>Total Deliveries in Phoenix AMA.....</b>	<b>127,422 af</b>
<b><u>Pinal Active Management Area (AMA)</u></b>	
Central Arizona Irrigation and Drainage District (CAIDD).....	8,048 af
Hohokam Irrigation and Drainage District (HIDD).....	38,388 af
Maricopa-Stanfield Irrigation and Drainage District (MSIDD).....	33,311 af
<b>Total Deliveries in Pinal AMA.....</b>	<b>79,747 af</b>
<b><u>Tucson Active Management Area (AMA)</u></b>	
Avra Valley Recharge Project (AVRP).....	2,739 af
Central Avra Valley Storage and Recovery Project (CAVSARP).....	7,465 af
Pima Mine Road.....	1,859 af
<b>Total Deliveries in Tucson AMA.....</b>	<b>13,063 af</b>
<b>Total Water Banking Authority Deliveries.....</b>	<b>219,232 af</b>