

# ARIZONA WATER BANKING AUTHORITY

ANNUAL REPORT  
2007



Submitted

July 1, 2008

# **Arizona Water Banking Authority**

## **Annual Report 2007**

**Honorable Janet Napolitano  
Governor of Arizona**

### **Members**

**Herbert R. Guenther  
*Chairman***

**Maureen R. George  
*Vice-chairman***

**Tom Buschatzke  
*Secretary***

**John T. Mawhinney  
*Member***

**Gayle J. Burns  
*Member***

***Ex officio*  
Senator Jake Flake  
Representative Lucy Mason**

# Arizona Water Banking Authority

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#### AUTHORITY MEMBERS

Herbert R. Guenther, Chairman  
Maureen R. George, Vice-Chairman  
Tom Buschatzke, Secretary  
John Mawhinney  
Gayle J. Burns

#### EX OFFICIO MEMBERS

The Honorable Timothy Bee  
The Honorable Lucy Mason

July 1, 2008

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

Dear Governor Napolitano:

Enclosed is the Annual Report of the Arizona Water Banking Authority (AWBA) for Calendar Year 2007. The Annual Report details the amount of water stored by the AWBA, the monies received by the AWBA, the monies expended for the storage and delivery of excess CAP water and the remaining funds available to the AWBA. The Annual Report also includes a Ten-Year Plan that examines the ability of the AWBA to achieve its statutory purposes into the future.

As the AWBA entered its second decade of existence, the AWBA begins to realize its full potential for helping Arizona meet its water management goals. While the AWBA continued to play a pivotal role in assisting the State of Arizona maximize the use of its Colorado River entitlement, in 2007, the AWBA began activities that will allow the AWBA to meet the State's obligations under the Arizona Water Settlements Act. The AWBA will continue to play a major role in any future Indian settlements. The partnerships forged by the AWBA with both Nevada and California proved very beneficial as Arizona negotiated the Lower Basin position with those two States. This position was then used in the discussions with the Upper Basin States and the Secretary of the Interior on the future operation of the Colorado River.

As always, I take great pride in submitting this report detailing the accomplishments of the AWBA. While Arizona continues to stress the importance of wise water management, I am confident the AWBA will continue to be important and potentially expanding component of Arizona's water future.

Sincerely,

A handwritten signature in black ink, appearing to read 'Herbert R. Guenther', written in a cursive style.

Herbert R. Guenther  
Chairman

CC: The Honorable Timothy Bee, President of the Arizona State Senate  
The Honorable James Weiers, Speaker of the Arizona House of Representatives  
The Honorable Lucy Mason, Arizona House of Representatives

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# The Arizona Water Banking Authority

## Summary

The Arizona Water Banking Authority (AWBA; Water Bank) was created in 1996 to store the unused portion of Arizona's annual allocation of the Colorado River. Until the AWBA was created, Arizona had not used its full 2.8 million acre-foot share of Colorado River water. Leaving a portion of Arizona's water in the Colorado River was a lost opportunity; the AWBA has seized this opportunity to further secure dependable water supplies necessary to ensure the State's long-term prosperity.

The Water Bank stores unused Arizona Colorado River water to meet future needs for:

- Firming (to secure) adequate water supply to municipal and industrial users in the Central Arizona Water Conservation District (CAWCD) service area and along the Colorado River in times of shortages;
- Meeting the management plan objectives of the Arizona Groundwater Code;
- Assisting in the settlement of Indian water rights claims; and
- Assisting Nevada and California through interstate water banking.

Each year, the AWBA pays the delivery and storage costs to bring Colorado River water into Central and Southern Arizona through the Central Arizona Project (CAP) canal. The water is stored underground in existing aquifers (direct recharge) or is used by irrigation districts in lieu of pumping groundwater (indirect or in lieu recharge). For each acre-foot stored, the AWBA accrues a credit that can be redeemed in the future when Arizona's communities or neighboring states need this backup water supply.

The money that funds the AWBA and, specifically, water storage for the benefit of Arizona (intrastate storage) comes from three sources that are either from existing revenue sources or from fees charged to those benefiting directly from the stored water. Restrictions on the ways these monies can be used depend on the source of the monies, which currently include:

- Fees for groundwater pumping currently collected within the Phoenix, Pinal and Tucson Active Management Areas (AMA). These monies can only be used to benefit the AMA in which the fees are collected.
- A four cent *ad valorem* property tax collected in the three county CAWCD service area. These monies can only be used to benefit the county in which the tax is levied.
- A general fund appropriation received at the discretion of the Legislature.

In addition to these three sources of funding for intrastate storage, \$8,000,000 is being made available from the Southern Nevada Water Authority (SNWA) to assist Arizona in offsetting impacts from shortages that may occur during the Interim Period (2008 through 2026). This provision is in the Arizona-Nevada Shortage-Sharing Agreement executed on February 9, 2007 and allows for funds to be transmitted to the AWBA following adoption of the Record of Decision in December, 2007. A portion of these funds were transmitted to the AWBA in early 2008 and will be used to purchase and store water supplies to mitigate the impact of shortages on Arizona users. The AWBA also use funds

provided by Nevada pursuant to the Amended Agreement for Interstate Water Banking (Amended Agreement) to create credits for the benefit of Nevada.

Calendar year 2007 was a record year for AWBA deliveries. The Water Bank delivered for recharge a total of 384,890 acre-feet at a cost of \$37.5 million. Of that amount, 260,868 acre-feet was for intrastate storage at a cost of \$15.6 million and 124,022 acre-feet was for interstate storage at a cost of \$21.9 million.

From the Water Bank's inception through calendar year 2007, the AWBA has accrued approximately 3,013,614 acre-feet of credits at a cost of \$216,361,045. Of this total volume, intrastate credits totaled 2,486,168 acre-feet at a cost of \$121,880,426 and interstate credits totaled 477,447 acre-feet at a cost of \$94,480,618. In addition to the credits accrued by the AWBA, 50,000 acre-feet of credits previously accrued by CAWCD were transferred to the account creating a total of 527,447 acre-feet of credits available for Nevada.

## Arizona Water Banking Authority Annual Report Requirement

Arizona Revised Statutes § 45-2426 mandates that the 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 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.

## Update

Calendar year 2006 was a transition year for the AWBA which subsequently affected operations in 2007. Because of the low cost of incentive recharge, several entities began storing water that had previously not participated in underground water storage. This new interest in groundwater storage had significant impacts on the AWBA. First, it reduced the amount of excess water available to the AWBA. Second, several of the AWBA's storage partners opted to store with these other entities. The AWBA continued to see this trend as it developed its 2007 Plan of Operation in the fall of 2006. Prior to 2006, the AWBA was the major user of incentive recharge water; however, in 2006 and 2007, the AWBA began to have competitors for that supply. Given the AWBA has the lowest priority for that supply, this transition had a significant impact on the AWBA's 2007 operations.

Despite this period of transition, 2007 was a record year for AWBA with water deliveries totaling 384,890 acre-feet. A large portion of these deliveries were supplemented by CAWCD from CAP water mined from Lake Pleasant storage to meet demand.

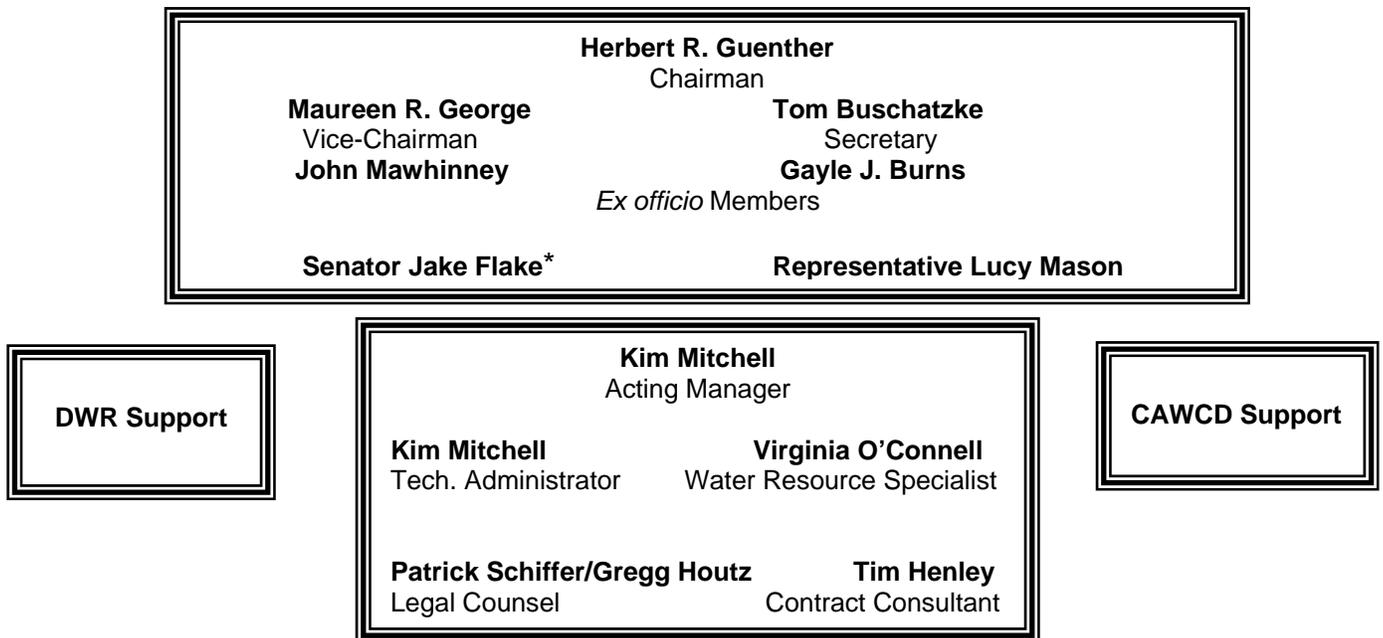
In addition to the impact of increased competition, the limited funding available for intrastate deliveries in Pinal County resulted in significant interstate deliveries to that area. In Maricopa County, with the loss of a significant GSF partner, USFs became the main opportunity for storage. In Pima County, the increased use by Tucson Water of its subcontract water reduced the opportunities for storage in that area.

With respect to membership, there was one change to the AWBA Commission in 2007 as a result of the election of new Central Arizona Water Conservation District (CAWCD) Board of Director members in November, 2006 (Figure 1). By statute, the President of the CAWCD or their designee serves on the AWBA Commission. Ms. Susan Bitter Smith was elected President of the CAWCD Board in March, 2007. At the AWBA meeting on March 21, 2007, Ms. Bitter Smith designated Ms. Gayle Burns as the AWBA commission member. Additionally, there were two changes to the AWBA staff members in December, 2007. Chairman Guenther appointed Kim Mitchell as Manager, and Virginia O'Connell as Technical Administrator of the AWBA.

The AWBA's new website became available to the public in June, 2007. The website was redesigned with drop-down menus and additional organizational categories to aid viewers in efficiently obtaining information on AWBA activities.

The Agreement between the Secretary of Interior and the State of Arizona for the Firming of Central Arizona Project Indian Water (Secretarial Agreement) was executed on November 15, 2007. The Secretarial Agreement identifies the obligations that must be met and develops the method for meeting the obligations between the State and Federal governments.

On December 13, 2007, Interior Secretary Dirk Kempthorne executed the Record of Decision (ROD) for the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead. One of the main objectives of the ROD is to minimize shortages in the Lower Colorado River Basin and avoid asking for a curtailment of water uses in the Upper Basin to meet the water delivery requirements to the Lower Basin.



\*On June 8, 2008, prior to publishing this report, ex-officio member, Senator Jake Flake passed away.

Figure 1. Arizona Water Banking Authority Organizational Chart for 2007

In addition to the agreement on how shortages should be allocated between the states, Southern Nevada Water Authority (SNWA) also agreed to provide to the AWBA \$8,000,000 to assist Arizona in offsetting impacts from shortages that may occur during the Interim Period. A portion of the \$8,000,000 was transmitted to the AWBA in 2008 following adoption of the ROD. These funds will be used to purchase and store excess water to mitigate the impact of shortages on Arizona users. Additional discussion regarding the ROD can be found in the Activities and Projects section of this report.

On December 14, 2007, the Secretary published two separate findings stating that requirements for enforceability in the Arizona Water Settlements Act, Public Law 108-451 are completed. These two published findings met the conditional effective date for the State legislation, and Chapters 15 and 16 of Title 45 Arizona Revised Statutes are now fully effective and enforceable.

The AWBA staff again participated in a poster session at the Colorado River Water Users Association meeting in December. The exhibit, “Arizona-Living the Vision through Planning, Partnering and Performing”, focused on three areas of Arizona’s resources: the Groundwater Management Act, recharge, and reuse. Additionally, the display included a video of Chairman Guenther delivering a message regarding the State’s water supply management programs. The exhibit was completed in conjunction with ADWR, CAWCD, Arizona Municipal Water Users Association, and the Salt River Project.

In 2007, the AWBA delivered for recharge a total of 384,890 acre-feet of water; 260,868 acre-feet for intrastate purposes and 124,022 acre-feet of water on behalf of the Southern Nevada Water Authority (SNWA). The interstate credits accrued through 2007 totaled 527,447 acre-feet and fulfills about 42% of Arizona’s obligation to Nevada under the Amended Agreement for Interstate Banking (Amended Agreement). The quantity of water received by each facility is described in Appendix A

and totaled 150,218 acre-feet of water in the Phoenix AMA, 189,757 acre-feet of water in the Pinal AMA, and 44,915 acre-feet in the Tucson AMA.

In addition to the 2007 deliveries, 16,804 acre-feet of Intentionally Created Unused Apportionment (ICUA) was created and made available to California. This ICUA was created pursuant to the *Amended Letter Agreement for the Creation of Intentionally Created Unused Apportionment with Credits Created Under the 1992 Demonstration Agreement between CAWCD and MWD, December 11, 2007*.

Based on provisional data, total consumptive use of Colorado River water by Arizona for 2007 was approximately 2.75 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 1.61 million acre-feet (U.S. Bureau of Reclamation, Lower Colorado River Operations, Actual Water Use – 2007). In 2007, storage by the AWBA assisted Arizona in using its entitlement to Colorado River water.

For more information about the Arizona Water Banking Authority, consult the AWBA website at [www.azwaterbank.gov](http://www.azwaterbank.gov) or contact Kim Mitchell ([krmitchell@azwater.gov](mailto:krmitchell@azwater.gov)), Virginia O'Connell ([voconnell@azwater.gov](mailto:voconnell@azwater.gov)), or Tim Henley ([tjhenley@azwater.gov](mailto:tjhenley@azwater.gov)), or by phone at 602-771-8487.

## Activities and Projects - 2007

### Indian Firming Program

#### *Arizona Water Settlements Act*

On December 14, 2007, the legislation that passed in 2004 approving the Arizona Water Settlements Act (Settlements Act) P.L. 108-451, became enforceable, thus settling longtime claims to water by the Gila River Indian Community (Community; GRIC) and the Tohono O'odham Nation. A key provision within the Settlements Act is the provision authorizing the Secretary of the Interior (Secretary) and the State of Arizona (State) to develop a Firming Program to ensure that 60,648 acre-feet of Non-Indian agricultural (NIA) priority CAP water reallocated to Indian tribes shall be delivered during water shortages in the same manner as water with a municipal and industrial (M&I) priority is delivered during water shortages.

The Settlements Act identifies specific firming responsibilities for the Secretary and the State. Of the 60,648 acre-feet, the Secretary has responsibility for 28,200 acre-feet, as required by the Southern Arizona Water Rights Settlement Act (SAWRSA). The State agreed to firm 15,000 acre-feet for the Community, consistent with the Settlements Act. Responsibility for the remaining 17,448 acre-feet, which is to be dedicated for future Indian settlements, was divided equally (8,724 acre-feet each) between the Secretary and the State. Therefore, the State's total responsibility under this program is 23,724 acre-feet.

In 2006, the Legislature provided the AWBA the statutory authorities to act as Arizona's agent in meeting its firming obligations. HB 2835 was signed by Governor Napolitano on April 12, 2006. The Legislature also provided an initial appropriation of \$13.5 million to assist the AWBA in meeting the State's obligation under the Settlements Act. These monies must be used to carry out state obligations related to Indian Firming. None of these monies were expended prior to the Settlements Act becoming enforceable. These funds were deposited into a sub-account held at the Arizona State Treasurer's Office.

#### *Secretarial Agreement*

Throughout 2006 and 2007, AWBA staff met with representatives from the U.S. Bureau of Reclamation (Reclamation) to develop an agreement to firm non-Indian agricultural (NIA) priority CAP water for tribal settlements. The Agreement between the Secretary of Interior and the State of Arizona for the Firming of Central Arizona Project Indian Water (Secretarial Agreement) was executed on November 15, 2007.

The Secretarial Agreement identifies the obligations that must be met and develops the method for meeting the obligations between the State and Federal governments. The Settlements Act and Secretarial Agreement recognize three categories where the State has firming responsibilities. The first two obligations pertain to firming of water for the GRIC and other Arizona tribes; the third obligation pertains to providing assistance to the Secretary in carrying out obligations of the Southern Arizona Water Rights Settlement Act.

The State must ensure that for a 100-year period, CAP NIA priority water be made available in the same manner as water with a municipal and industrial (M&I) delivery priority as follows:

- Firm 15,000 acre-feet of CAP NIA priority water reallocated to the GRIC
- Firm 8,724 acre-feet of CAP NIA priority water reallocated to other Arizona Indian tribes

The Secretarial Agreement allows for the development of agreements between the AWBA and the tribes receiving the water, identifying an acceptable plan for achieving the firming. To facilitate development of a plan for firming 15,000 acre-feet of NIA water to the GRIC, AWBA staff held preliminary meetings with the GRIC to discuss options for meeting the State's responsibility for firming the GRIC supply. Options discussed included: 1) off-reservation underground storage of excess water, 2) direct delivery of water, and 3) long-term lease of NIA priority or Indian priority CAP water. Staff will be working with the GRIC in 2008 to discuss a firming mechanism that is advantageous for both the Tribe and State. The plan for firming 8,724 acre-feet of NIA to other Arizona Indian tribes will be developed as other Indian settlements begin moving forward.

The State has committed to provide support to the Federal government for the Tohono O'odham Nation by contributing \$3 million in either cash or in-kind goods and services. In the 2008 Plan of Operation approved in December, 2007, the AWBA included a component for meeting this portion of the State's Indian firming obligations. The Plan expends approximately \$1.7 million from the \$13.5 million dedicated for Indian firming to develop credits in the Tucson area. These credits will later be assigned to the Secretary to satisfy the State's obligation to assist the Federal Government in meeting its obligation to firm Tohono O'odham water.

#### *Southside Replenishment Bank*

In addition to the firming requirements of the Settlements Act, the AWBA, acting as agent for the State, is required to enter into an inter-governmental agreement with GRIC for direct delivery of 15,000 acre-feet for the purpose of establishing the Southside Replenishment Bank. The Southside Replenishment Bank will fulfill the obligations created under the Settlements Act for protection of the Reservation from off-reservation groundwater pumping.

#### Seven Basin States Agreement

##### *Execution of ROD*

On December 13, 2007, Interior Secretary Dirk Kempthorne signed an historic agreement that establishes guidelines for shortage allocations among the Lower Basin States and for coordinated operation of Lakes Powell and Mead under low reservoir conditions. The Secretary executed the Record of Decision (ROD) for the Interim Shortage Guidelines and Coordinated Reservoir Operations Final Environmental Impact Statement (EIS) during the annual meeting of the Colorado River Water Users Association (CRWUA) in Las Vegas, Nevada. Concurrent with execution of the ROD, the Seven Basin States (Basin States) and other Colorado River water user groups executed a number of related agreements (posted on USBR website: [www.usbr.gov/lc/region/](http://www.usbr.gov/lc/region/) ).

The continuing drought on the Colorado River led to the efforts to craft shortage criteria. The efforts main objectives was to minimize shortages in the Lower Colorado River Basin and avoid asking for a curtailment of water uses in the Upper Basin to meet the water delivery requirements to the Lower Basin as specified in the 1922 Colorado River Compact. The execution of these documents is a pioneering step for the Basin States who have made tremendous progress over the last three years in

setting aside contentious issues and reaching agreement regarding operation of the Colorado River system reservoirs. Using extraordinary water conservation, water supply augmentation and a coordinated operation for Lakes Mead and Powell, it is expected that the Interim operations (Interim Period 2008 thru 2026) will reduce the risk of shortages to Arizona and help provide a more secure water supply for all of the States.

### *Coordinated Management of Lakes Powell and Mead*

The coordinated management of the water supplies in Lakes Powell and Mead should significantly reduce the risk of shortages to Arizona. The new coordinated operations would cause the release of water from Lake Powell to Lake Mead if shortage elevations in Lake Mead are being approached. If Lake Mead levels are relatively high, the water would be stored in Lake Powell to be released in later years when Lake Mead is low. The reservoirs had been operated somewhat independently under the previous rules, so Lake Mead could have been in shortage while Lake Powell was relatively full. The new coordinated operation should balance the water supply in the reservoirs and help to keep Lake Mead from entering shortage conditions as often as the previous operations.

### *Arizona Shortage-Sharing*

The Basin States Agreement includes the shortage strategy that Arizona had recommended as a result of numerous impact studies completed by the Director's Shortage-Sharing Stakeholder Workgroup (Workgroup). This Workgroup was established in 2005 to develop a recommendation for allocating shortages in the Lower Basin and for allocating shortages among Arizona's fourth priority Colorado River water users.

The policy for allocation of shortages in the Lower Basin is a "tiered" or stepped-shortage strategy that was adopted from the Workgroup recommendations. The tiered or stepped-shortage reductions to the Lower Basin, will be triggered by key elevations in Lake Mead. Under this strategy, Arizona's shortage amount will range from 320,000 acre-feet to 480,000 acre-feet. If hydrologic conditions worsen and additional shortage reductions are required, the Basin States and Reclamation will consult on how those additional reductions will be achieved.

Another Workgroup recommendation that was incorporated into the Basin States Agreement outlines how shortages will be allocated among the fourth priority Colorado River water users. The shortage supply for the fourth priority mainstream users along the River will be calculated by determining the percentage derived by dividing the total fourth priority mainstream entitlement (164,652 acre-feet) by the available fourth priority water supply, and then multiplying this percentage by the available fourth priority water supply after shortage reductions. The remaining fourth priority water supply, after the mainstream amount is subtracted, will be available for diversion by CAP.

### *Arizona-Nevada Shortage-Sharing Agreement*

As part of the overall Basin States Agreement, Arizona including the AWBA and Nevada agreed on how Secretarial shortage declarations of up to 500,000 acre-feet within the United States would be shared between them during an Interim Period (2008 through 2026).

Based on the stepped-shortage strategy, Arizona and Nevada agree that during the Interim Period shortages shall be allocated in the following quantities: At the first step, when Lake Mead elevation is at or below 1,075 ft. and at or above 1,050 ft., Nevada's share of the shortage equals 13,000 acre-feet and Arizona's share equals 320,000 acre-feet. At the second step, when Lake Mead elevation is

below 1,050 ft. and at or above 1,025 ft., Nevada's share of the shortage equals 17,000 acre-feet and Arizona's share equals 400,000 acre-feet. During the third step when Lake Mead's elevation is below 1,025 ft., Nevada's share of the shortage equals 20,000 acre-feet and Arizona's share equals 480,000 acre-feet.

If shortage declarations within the United States exceed the 500,000 acre-feet that Arizona and Nevada have agreed to share, then the Secretary would consult with representatives from the seven Colorado River Basin States before allocating additional shortage reductions. That consultation would be initiated anytime that the water surface elevation of Lake Mead is at or below water surface elevation 1,025 feet.

In addition to the agreement on how shortages should be allocated between the states, Southern Nevada Water Authority (SNWA) also agreed to provide to the AWBA \$8,000,000 to assist Arizona in offsetting impacts from shortages that may occur during the Interim Period. A portion of the \$8,000,000 was transmitted to the AWBA in 2008 following adoption of the Record of Decision. These funds will be used to purchase and store water supplies to mitigate the impact of shortages on Arizona users.

## Interstate

### *Amended Agreement*

Pursuant to the Amended Agreement for Interstate Banking (Amended Agreement), \$100 million was received from the Southern Nevada Water Authority (SNWA) in 2005 and deposited into the Nevada sub-account (Resource Account) of the Fund. Monies from this source continued to be used for interstate water banking in 2007. In 2009, SNWA will begin making scheduled payments of \$23 million to the Operating Account and funds borrowed from the Resource Account will be repaid with interest.

Storing water for Nevada had two main benefits in 2007; it allowed Arizona to use its full Colorado River entitlement and allowed the AWBA to meet a portion of its obligations under the amended agreement. In addition to these benefits, the AWBA was able to offer its GSF partners CAP water at a reduced rate. This was done in recognition of the extreme importance of full utilization of Arizona's Colorado River entitlement.

Facilities that agreed to accept additional water for interstate storage did not receive interstate water until the quantity of intrastate water agreed upon in the original Plan had been delivered. The additional water stored on behalf of Nevada was stored in facilities located in two AMAs. Storage for interstate purposes included 113,377 acre-feet stored in three GSFs in the Pinal AMA and 10,645 acre-feet of water stored in a USF in the Tucson AMA (see Appendix A). In 2007, there was a preference by water users in the Tucson AMA to minimize interstate storage and focus on M&I firming purposes. No interstate storage occurred in the Phoenix AMA due to the need to expend 4 cent *ad valorem* monies.

The AWBA sub-account for Nevada had a balance of 527,447 acre-feet of LTSCs at the end of 2007. Of that balance, 50,000 acre-feet of credits were transferred from CAWCD for storage done in the early 1990's under the demonstration project. Annual interstate storage for 2002 through 2007 is displayed in Table 6b.

*Amended Letter Agreement for the Creation of Intentionally Created Unused Apportionment with Credits Created Under the 1992 Demonstration Agreement between CAWCD and MWD, December 11, 2007*

On December 11, 2006, Metropolitan Water District of Southern California (Metropolitan), CAWCD, and the AWBA entered into a Letter Agreement to facilitate appropriate accounting of Colorado River consumptive use pursuant to the terms of the 1992 Demonstration Agreement as amended between CAWCD and Metropolitan. This 2006 Letter Agreement was amended one year later on December 11, 2007 to allow for long-term storage credits (LTSC; credits) to be recovered and/or exchanged. It further identified the amount of Intentionally Created Unused Apportionment (ICUA) to be created shall be equal to the amount of LTSC to be recovered or exchanged. The discussion below provides a progression of these agreements.

Based on the 1992 Demonstration Agreement, amended in 1994, CAWCD stored 89,000 acre-feet of water in Pinal County in the early 1990s, resulting in 80,909 acre-feet of credits that could be recovered for the benefit of Metropolitan. These credits have been held in CAWCD's long-term storage account.

The AWBA, created after the execution of the Demonstration Agreements, is now the agency of the State of Arizona expressly authorized to store Colorado River water in Arizona on behalf of California and Nevada, and is the entity that can request the Secretary release ICUA to California and Nevada.

In 2006, by correspondence to CAWCD, Metropolitan requested recovery of 16,804 acre-feet of LTSCs in 2007 in accordance with the terms of the Demonstration Agreement. The 2006 Letter Agreement was executed between Metropolitan, CAWCD, and the AWBA to allow for appropriate accounting of recovery of water stored under the 1992 Demonstration Agreement. It also outlined the process by which ICUA would be made available to Metropolitan, recognizing that CAWCD is responsible for recovering the credits, AWBA is responsible for notifying the Secretary of creation of ICUA, and Metropolitan is responsible for the diversion of ICUA.

Late in 2007, it became apparent that 16,804 acre-feet of ICUA could not be developed through the recovery of LTSCs alone. The 2006 Letter Agreement between Metropolitan, CAWCD, and the AWBA was therefore amended to allow for LTSC to be recovered and/or exchanged and that the amount of ICUA to be created shall be equal to the amount of LTSC to be recovered and/or exchanged. While the credit exchange method was not identified in the original Letter Agreement, the Bureau of Reclamation approved its use as a mechanism for creating ICUA in the Storage and Interstate Release Agreement (SIRA).

Development of and Requests for Creation of Intentionally Created Unused Apportionment

For the first time, ICUA was developed in 2007. In December, 2006 the AWBA provided notice to the Bureau of Reclamation (USBR) of 16,804 acre-feet of ICUA to be created in 2007 through the development of LTSC on behalf of Metropolitan. Of the 16,804 acre-feet of ICUA to be developed in 2007, 10,921 acre-feet of LTSC were recovered from wells used within two irrigation districts in Pinal County, Arizona. The remaining balance of 5,883 acre-feet of ICUA were developed utilizing the credit exchange method. CAWCD exchanged LTSCs with the Central Arizona Groundwater Replenishment District (CAGR) in lieu of CAGR receiving CAP water that had been scheduled for delivery to an underground storage facility. AWBA is required to certify the creation of ICUA to the

Secretary, Metropolitan, and CAWCD. This will happen in 2008 after ADWR verifies the recovery or exchange of LTSCs.<sup>1</sup>

In addition to the development of ICUA, Metropolitan requested from CAWCD development of 25,000 acre-feet of ICUA in 2008 (letter dated June 27, 2007). This request for ICUA was included in the AWBA's 2008 Plan of Operation.

### Agreement to Firm Future Supplies

In 2005, the AWBA entered into an Agreement to Firm Future Supplies (Agreement to Firm) with Mohave County. The AWBA agreed to set aside credits to firm water for the Mohave County Water Authority (MCWA). Once those credits were reserved for use by an entity outside of the three-county service area, CAWCD was required to charge the AWBA a fee in lieu of taxes. When the AWBA set aside these credits in 2005, the in lieu tax rate was \$20 per acre-foot. In 2007, the CAWCD continued charging the AWBA the in lieu tax at that same rate of \$20 per acre-foot which will be paid quarterly for the next four years. This is the same schedule as the MCWA prepayments to the AWBA under the Agreement to Firm.

The Director's Shortage-Sharing Stakeholder Workgroup (discussed previously in the section on Seven Basin States Agreement) had, in their Final Director's Shortage-Sharing Workgroup Recommendation included a provision to establish a "revolving fund" for the credits used for On-river M&I firming. It was proposed that as AWBA credits are used and replaced, the new credits would be earmarked for the entities that replaced the credits. Additionally, On-river fourth priority M&I users that had not contracted with the AWBA for firming would have another opportunity to participate. These provisions were discussed at AWBA quarterly meetings in 2007.<sup>2</sup>

### Recovery

CAWCD staff continued their planning efforts for the recovery of credits accrued by the AWBA. Beginning in 2007, the CAWCD entered into agreements for the recovery of credits previously stored in Pinal County for the benefit of Metropolitan. Recovery in 2007 occurred from two irrigation districts in Pinal County; Central Arizona Irrigation and Drainage District (CAIDD) recovered 8,804 acre-feet and Maricopa-Stanfield Irrigation & Drainage District (MSIDD) recovered 2,117 acre-feet. CAWCD also amended a number of its existing recovery well permits to include additional wells located within district boundaries.

CAWCD staff completed a report entitled *Conceptual Plans to Recover Stored Water* which was adopted by the CAWCD Board of Directors in June, 2007. The CAWCD Board members approved their budget in November which included funding for recovery planning. These plans include hiring an outside consultant to evaluate recovery options for the Phoenix, Pinal, and Tucson AMAs and hiring additional staff to assist with recovery planning efforts. Throughout 2007 CAWCD staff provided updates to AWBA members at their quarterly meetings. In 2008, CAWCD will begin stakeholder discussions on detailed recovery plans, well capacity, and recovery agreements.

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<sup>1</sup> By letter dated June 3, 2008, the AWBA certified the creation of 16,804 acre-feet of ICUA in 2007.

<sup>2</sup> The AWBA executed Resolution 2008-1, March 12, 2008, that included provisions recommended by the Workgroup.

## Accounting

The AWBA statutes established two separate and distinct accounting activities. First, the statute established the Arizona Water Banking Fund (Fund) and required that it be administered according to the statutes (A.R.S. §45-2425). All monies made available to the AWBA are deposited in separate subaccounts in the Fund based on where the monies originated. The Arizona State Treasurer's Office (ASTO) manages the Fund and ADWR, based on guidance from AWBA staff, manages all transactions both in and out of the Fund.

The second accounting requirement established in the statute is for the accounting of long-term storage credits (LTSCs) accrued by the AWBA. In 2007, AWBA staff undertook a detailed review of the accounting of LTSCs. While the review allowed staff to understand and evaluate how the accounting of LTSCs was being administered, it also allowed staff to incorporate a new method into the spreadsheet for purchasing water from CAWCD. The prior method entailed making 12 equalized payments to CAWCD based on planned deliveries for the entire year. Under the new method, CAWCD invoices the AWBA only for the water delivered to the AWBA in the previous month. Based on the review, the spreadsheet was updated and modified to accurately incorporate the transition to the new method. The review also reconciled any differences between Fund transactions and LTSC accounting.

### *Financial Accounting*

The Arizona Department of Administration established the initial subaccounts within the Arizona Water Banking Fund (Fund). All monies received by the AWBA are deposited with the ASTO into these subaccounts. Monies received include general fund appropriations for water banking purposes, general fund appropriations for Indian settlement activities, reimbursement from on-river water users for reserved shortage credits, transferred collections of withdrawal fees, monies transferred to AWBA by CAWCD of the 4 cent tax, interstate banking payments and monies received for banking services. Gifts, grants, and donations received by the AWBA are also deposited into this Fund.

The AWBA has the authority to invest all banking funds, yet that authority is limited to investing with the State Treasurer. The AWBA does not currently have any authority to create its own investment opportunities, nor loan funds to any other entity.

On a monthly and annual basis, the ADWR Finance tracks monies collected, expended and available in each of the AWBA's subaccounts. As previously mentioned, these subaccounts are based on funding and involve monthly analysis of accounts receivable, accounts payable, and remaining balances. ADWR Finance provide monthly summaries to the AWBA on all financial transactions at the ASTO involving the AWBA fund and subaccounts. Additionally, the AWBA reviews account summaries developed monthly by CAWCD Finance. Both of these summaries are routinely checked against the AWBA long-term storage credit (LTSC) accounts.

### *Credit Accounting*

The Department of Water Resources is the entity responsible for establishing a LTSC account for each entity that holds LTSCs. A separate LTSC account is established for each AMA, Irrigation Non-Expansion Area (INA), or groundwater sub-basin. The LTSC accounts are further subdivided by the amount of credits accrued by storage facility, the type of water that was stored, and the amount of credits that are recovered and/or assigned to other LTSC account holders. An updated LTSC account balance is provided to LTSC account holders each year based on ADWR's review of annual

reports received for activities occurring the previous year. The AWBA holds a LTSC account for the Phoenix, Pinal, and Tucson AMAs. Within each of these accounts, subaccounts have been created for credits the AWBA developed for California, Nevada, and the Mohave County Water Authority pursuant to agreements the AWBA has with these entities.

The AWBA has additional responsibilities, beyond that of ADWR, for tracking credits in its LTSC accounts. Statute requires that the AWBA develop and maintain an accounting system that allows the AWBA to determine which funding source was used to accrue the credits in its accounts and subaccounts. Staff bases its monthly funding expenditures for water delivery and storage facility costs on its Annual Plan of Operation for that year. Final accounting of deliveries and storage is based on actual deliveries for that year. The credit accounting system tracks credits accrued annually and the cumulative credits accrued for each fund.

### Revenue Impacts

As part of the Arizona-Nevada Shortage-Sharing Agreement executed on February 9, 2007, Arizona including the AWBA and Nevada agreed on how the reduction caused by shortage criteria would be shared between the states. Southern Nevada Water Authority (SNWA) also agreed to provide to the AWBA \$8,000,000 to assist Arizona in offsetting impacts from shortages that may occur during the Interim Period. A portion of the \$8,000,000 was transmitted to the AWBA in mid - 2008 following adoption of the Record of Decision in December, 2007. These funds will be used to purchase and store water supplies to mitigate the impact of shortages on Arizona users.

The Legislature provided an initial appropriation of \$13.5 million in October, 2006 to assist the AWBA in meeting the State's obligation under the Arizona Water Settlements Act (Settlements Act). These monies must be used to carry out state obligations related to Indian Firming and were not to be expended until after the Settlements Act enforceability date. The AWBA will spend monies from this appropriation in 2008 as part of the State's obligation to the Secretary of Interior under the Settlements Act.

### Agreement and Facility Permit Activity

The AWBA executed two new agreements for water storage in 2007. The water storage agreement for Harquahala Valley Irrigation District was executed March 21, 2007 and for West Maricopa Combine was executed on June 20, 2007.

The AWBA submitted one new application and three renewal applications for water storage permits in 2007. The new water storage permit was for Harquahala Valley Irrigation District, issued on September 20, for a maximum storage volume of 50,000 acre-feet/year.

The three renewal water storage applications were permitted as follows: Tonopah Irrigation District, issued on January 1, for 15,000 acre-feet/year; Hohokam Irrigation District issued on September 20 for 55,000 acre-feet/year; and New Magma Irrigation and Drainage District issued on September 20 for 54,000 acre-feet/year.

### 2008 Annual Plan of Operation

Pursuant to the 2008 Plan, projected recharge for the AWBA is 188,273 acre-feet. Of this quantity, 37,550 acre-feet are projected to be recharged at USFs and 150,723 acre-feet are projected to be

recharged at GSFs. Recharge for interstate was not included in this amount. The 2008 Plan of Operation is available on the AWBA website.

In the spring of 2008, the AWBA was informed that an estimated 77,000 acre-feet in additional supplies could potentially be made available to the AWBA due to scheduled deliveries that had been turned back. Of this amount, 6,400 acre-feet was full cost M&I subcontract water. Staff was directed by the Authority to develop an amended Plan of Operation that expends interstate money for remarketed M&I subcontract water, uses 4-cent *ad valorem* tax monies to store water in the Tucson AMA using any remaining capacity, and that uses the \$8 million shortage-sharing fund to store any remaining water in the Pinal and Phoenix AMAs.

### Media Coverage

The AWBA did not receive any direct press coverage during 2007. There was a multitude of articles on the Seven Basin State discussions, climate change, and historic signing of the Seven Basin States Agreement.

### Website

In June, 2007, staff provided an enhanced AWBA website to provide timely and accurate information regarding the AWBA's activities to the water community: [www.azwaterbank.gov](http://www.azwaterbank.gov). Completion of the new website design was a culmination of many months of effort to improve its organization and ease of use for both the public to find critical items quickly and for staff to post important announcements and other information more efficiently.

The web page contains information about the AWBA, AWBA members and staff, announcements, meetings, storage facilities and water deliveries. It also contains publications and documents that may be downloaded and provides links to other water-related websites. The AWBA staff continue to review and update the web page to ensure that it contains accurate information and 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 2007, the AWBA obtained its funding from the following sources:

1. Fees for groundwater pumping are collected within the Phoenix, Pinal and Tucson AMAs. Fees for water banking purposes are charged at \$2.50 per acre-foot. Legislative changes allow for groundwater withdrawal fees to be collected and available to the AWBA beyond 2016 (A.R.S. §45-611(c)(3)). 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 2006, the CAWCD board again resolved that all taxes to be levied for the following tax year would be retained by the CAWCD. Consequently, there were no *ad valorem* tax revenues deposited into the Fund in 2007. All *ad valorem* monies previously held in the AWBA Fund have now been expended. Money from this source must be used to benefit the county in which it was collected.
3. The Arizona Legislature provided an initial appropriation of \$13.5 million in October, 2006 to assist the AWBA in meeting the State's obligation under the Settlements Act. These monies must be used to carry out state obligations related to Indian Firming and were not to be expended until after the enforceability date (December 14, 2007) of the Settlements Act.
4. Mohave County Water Authority (MCWA) agreed to prepay the AWBA to set aside 230,280 acre-feet of credits that were transferred to a sub-account in MCWA's name pursuant to the Agreement to Firm. Since those credits were reserved for use by an entity outside the three-county service area, CAWCD is required to charge the AWBA a fee in lieu of taxes. Monies collected from MCWA are used to offset these CAWCD fees which are charged at the same rate and on the same quarterly schedule as MCWA's prepayments to the AWBA.
5. Pursuant to the Agreement for Interstate Water Banking executed in 2001, \$10,053,945 was collected from the Southern Nevada Water Authority (SNWA) and used to purchase water on behalf of Nevada. Pursuant to the Amended Agreement for Interstate Water Banking (Amended Agreement), \$100 million was received from SNWA in 2005 and deposited into the Nevada sub-account (Resource Account) of the Fund. Monies from this source continued to be used for interstate water banking in 2007 to meet the state's obligation under the Amended Agreement. In 2009, SNWA will begin making scheduled payments of \$23 million to the Operating Account and funds borrowed from the Resource Account will be repaid with interest. There were no additional interstate monies deposited into the Fund in 2007.

Table 1 shows the money the AWBA collected and the money that was expended for delivery and storage of water in 2007 by source of funds. Table 2 shows the total money received, expended and remaining through December 2007 by source of funds. Any remaining money is available to be expended in subsequent years; any interest that accrues on this money is available for use.

**Table 1. Monies Collected and Expended in 2007 by Source of Funds**

Source of Funds	Money Collected	Money Expended
<b>General Funds</b>	\$0	\$0
MCWA Prepayments	\$921,120	\$921,120
Subtotal for General Funds	<b>\$921,120</b>	<b>\$921,120</b>
<b>State Indian Firming<sup>1</sup></b>	<b>\$663,903</b>	<b>\$0</b>
<b>Interstate Water Banking-NV</b>	<b>\$0</b>	<b>\$21,853,906</b>
<b>4¢ Ad valorem Tax<sup>2</sup></b>		
Maricopa County	\$0	\$7,838,916
Pinal County	\$0	\$562,680
Pima County	\$0	\$3,064,156
Subtotal for Ad valorem	<b>\$0</b>	<b>\$11,465,752</b>
<b>Groundwater Withdrawal Fees</b>		
Phoenix AMA	\$1,774,766	\$1,845,746
Pinal AMA	\$1,187,520	\$1,803,603
Tucson AMA	\$483,739	\$526,601
Subtotal for Withdrawal Fees	<b>\$3,446,025</b>	<b>\$4,175,950</b>
<b>TOTAL</b>	<b>\$5,031,048</b>	<b>\$38,416,728</b>

<sup>1</sup> Expenditures planned after the enforceability date of the AZ Water Settlements Act, December 14, 2007; amount shown is interest earnings.

<sup>2</sup> Money expended by CAWCD to offset the AWBA delivery costs. All ad valorem previously held in AWBA Fund have been expended.

**Table 2. Monies Collected and Expended through December 2007 and Monies Remaining Available**

Source of Funds	Money Collected	Money Expended	Money Available <sup>1</sup>
<b>General Funds</b>	\$11,100,865	\$11,100,865	\$0
MCWA Pre-payment	\$1,842,240	\$1,842,240	<b>\$0</b>
Subtotal for General Fund	<b>\$12,943,105</b>	<b>\$12,943,105</b>	<b>\$0</b>
<b>State Indian Firming</b>	<b>\$14,189,239</b>	<b>\$0</b>	<b>\$14,189,239</b>
<b>Interstate Water Banking-NV</b>	<b>\$110,053,945</b>	<b>\$94,480,618</b>	<b>\$15,573,327</b>
<b>4¢ Ad valorem Tax<sup>2</sup></b>			
Maricopa County	\$116,229,102	\$57,981,228	\$58,247,874
Pinal County	\$4,419,512	\$3,713,865	\$705,647
Pima County	\$23,801,516	\$19,083,370	\$4,718,145
Subtotal for Ad valorem	<b>\$144,450,130</b>	<b>\$80,778,463</b>	<b>\$63,671,667</b>
<b>Groundwater Withdrawal Fees</b>			
Phoenix AMA	\$13,025,185 <sup>3</sup>	\$13,020,064	\$5,121
Pinal AMA	\$11,161,422	\$10,949,927	\$211,495
Tucson AMA	\$6,031,678	\$6,031,108	\$570
Subtotal for Withdrawal Fees	<b>\$30,218,284</b>	<b>\$30,001,098</b>	<b>\$217,186</b>
<b>TOTAL</b>	<b>\$311,854,703</b>	<b>\$218,203,284</b>	<b>\$93,651,419</b>

<sup>1</sup> Money remaining in AWBA Fund or collected by CAWCD; includes monies committed for the 2008 Plan of Operation.

<sup>2</sup> Includes money collected and money expended by CAWCD and used to offset the AWBA delivery costs.

<sup>3</sup> Total money collected was decreased to reflect the \$9 million legislative transfer in FY 2004 and the \$2 million legislative transfer in FY 2005.

## Long-term Storage Credits

The AWBA has established long-term storage credit (LTSC) accounts with ADWR. The Phoenix AMA account number is 70-441150, the Pinal AMA account number is 70-431135, and the Tucson AMA account number is 70-411150. 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 LTSCs 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 most storage of water for long-term credit. 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 LTSCs for 2007 are listed in Table 3. The cumulative totals of LTSCs accrued by the AWBA through December 2007 are listed in Table 4.

**Table 3. Number and Location of Long-term Storage Credits Accrued in 2007**

Location and Funding Source	Long-term Storage Credits Accrued (AF)
<b>Phoenix AMA</b>	
4¢ <i>Ad valorem</i> Tax	107,785
Groundwater Withdrawal Fee	34,185
General Fund	0
Interstate - Nevada	0
<b>AMA Total</b>	<b>141,970</b>
<b>Pinal AMA</b>	
4¢ <i>Ad valorem</i> Tax	18,990
Groundwater Withdrawal Fee	51,983
General Fund	0
Interstate - Nevada	104,806
<b>AMA Total</b>	<b>175,780</b>
<b>Tucson AMA</b>	
4¢ <i>Ad valorem</i> Tax	25,511
Groundwater Withdrawal Fee	6,674
General Fund	0
Interstate - Nevada	10,006
<b>AMA Total</b>	<b>42,192</b>
<b>Totals by Funding Source</b>	
4¢ <i>Ad valorem</i> Tax	152,286
Groundwater Withdrawal Fee	92,843
General Fund	0
Interstate - Nevada	114,813
<b>TOTAL</b>	<b>359,942</b>

**Table 4. Cumulative Total and Location of Long-term Storage Credits  
Accrued through December 2007**

Location and Funding Source	Long-term Storage Credits Accrued (AF)
<b>Phoenix AMA</b>	
4¢ <i>Ad valorem</i> Tax	1,094,149
Groundwater Withdrawal Fee	219,052
General Fund	42,316
Interstate Water Banking - Nevada	23,820
<b>AMA Total</b>	<b>1,379,337</b>
<b>Pinal AMA</b>	
4¢ <i>Ad valorem</i> Tax	122,355
Groundwater Withdrawal Fee	318,142
General Fund	306,968
Interstate Water Banking - Nevada	415,244
<b>AMA Total</b>	<b>1,162,708</b>
<b>Tucson AMA</b>	
4¢ <i>Ad valorem</i> Tax	244,843
Groundwater Withdrawal Fee	83,797
General Fund	54,546
Interstate Water Banking - Nevada	88,383
<b>AMA Total</b>	<b>471,569</b>
<b>Totals by Source of Funds</b>	
4¢ <i>Ad valorem</i> Tax	1,461,347
Groundwater Withdrawal Fee <sup>1</sup>	620,991
General Fund	403,830
Interstate Water Banking - Nevada	527,447
<b>TOTAL</b>	<b>3,013,614</b>

<sup>1</sup> 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. Pursuant to the AWBA Agreement to Firm with the Mohave County Water Authority (MCWA) dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term-storage sub-account for the MCWA in 2005.

Since inception, the AWBA has focused its efforts on developing LTSCs for firming purposes and the AWBA has identified 2,700,000 acre-feet of LTSCs as reasonable to firm the CAP M&I subcontracts over the next 100 years. This volume would be divided as 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 of LTSCs 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. It should be noted that the AWBA collects reimbursement for the replacement cost of credits used for on-river firming. As those credits are used

and replaced, they can be utilized by the AWBA for other authorized purposes<sup>1</sup>. 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 2007 and Percentage of AWBA Goals Achieved**

<b>Location and Objective</b>	<b>Goal (AF of Credits)</b>	<b>LTS Credits Accrued (AF)</b>	<b>Percent of Goal Achieved</b>
Phoenix M&I Firming	1,566,000	1,094,149	70%
Phoenix Groundwater Mgmt <sup>1</sup>		219,052	84%
Pinal M&I Firming	243,000	122,355	50%
Pinal Groundwater Mgmt <sup>1</sup>		318,142	100%
Tucson M&I Firming	864,000	244,843	28%
Tucson Groundwater Mgmt <sup>1</sup>		83,797	38%
On-River M&I Firming <sup>2</sup>	420,000	403,830	96% <sup>3</sup>
Interstate Water Banking - NV	1,250,000 <sup>4</sup>	527,447	42%

<sup>1</sup> Withdrawal fees could be utilized in addition to 4¢ *ad valorem* tax revenues for M&I firming if needed to reach firming goals.

<sup>2</sup> 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. Pursuant to the AWBA Agreement to Firm with the Mohave County Water Authority (MCWA) dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term-storage sub-account for the MCWA in 2005.

<sup>3</sup> This percentage reflects full utilization of general fund credits accrued to date and would change as other objectives are identified by the AWBA.

<sup>4</sup> Pursuant to the Amended Agreement for Interstate Water Banking, the AWBA has committed to have this number of long-term storage credits within the Nevada sub-account.

The average annual cost for the AWBA to obtain one acre-foot of LTSCs for intrastate and interstate storage is presented in Tables 6a and 6b, respectively. Table 6a illustrates that the unit cost per LTSC for intrastate storage has increased each year the AWBA has been in operation with the exception of 2001, 2005, and 2007. 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. Similarly, Table 6b illustrates that the unit cost per LTSC for interstate storage increased each year between 2002 and 2005 and then decreased in 2006 and 2007. Although the unit cost of developing interstate LTSCs is also influenced by the same factors as intrastate storage, interstate storage is additionally affected by the fluctuating cost of energy.

<sup>1</sup> The AWBA executed Resolution 2008-1, March 12, 2008, that created a replacement fund utilizing the replaced credits for those that paid to replace the credits.

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

Year	Credits <sup>1</sup>	Funds Expended	Average Cost (per acre-foot)	% 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	272,123	\$11,163,000	\$41.02	60% : 40%
2001	275,406	\$10,893,590	\$39.55	62% : 38%
2002	262,317	\$13,700,300	\$52.23	64% : 36%
2003	200,168	\$11,077,666	\$55.34	47% : 53%
2004	251,456	\$17,855,997	\$71.01	41% : 59%
2005	85,782	\$5,615,201	\$65.46	58% : 42%
2006	162,340	\$14,782,313	\$91.06	17% : 83%
2007	245,129	\$15,641,702	\$63.81	37% : 63%

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

**Table 6b. Average Annual Cost for the AWBA to Obtain a Long-term Storage Credit for Storage on Behalf of Nevada**

Year	Credits	Funds Expended	Average Cost (per acre-foot)	% Stored in GSF: % Stored in USF
2002	61,098	\$8,617,393	\$141.04	100% : 0%
2003	50,000 <sup>1</sup>			
2004	14,162	\$2,899,647	\$204.75	66% : 34%
2005	111,805	\$25,723,366	\$230.07	65% : 35%
2006	175,569	\$35,386,306	\$201.55	68% : 32%
2007	114,813	\$21,853,906	\$190.34	91% : 09%

<sup>1</sup> Long-term Storage Credits transferred from CAWCD.

## **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 CAWCD 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 2007. 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 2007.

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 2007, no credits were developed or distributed under such agreements.

There was recovery of long-term storage credits previously stored by CAWCD on behalf of Metropolitan in 2007. The AWBA certified the creation of 16,804 acre-feet of ICUA that was made available to California. Of the 16,804 acre-feet of ICUA developed in 2007, 10,921 acre-feet of LTSCs were recovered from wells and 5,883 acre-feet were developed utilizing the credit exchange method.

# Ten-Year Plan

## 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 of Operation.

The ten-year plan analyzes activity for the period 2009-2018 (Table 7) and was derived using the information found in Appendices B through I. AWBA accounting for previous years can be found in the 2007 Annual Report and 2008 Plan of Operation. 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 2009-2018.
3. The plan is 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 currently has 14 water storage permits for GSFs with a total permitted storage capacity of 723,846 acre-feet per year. Of these, two are water storage permits for the Gila River Indian Irrigation and Drainage District (GRIIDD) GSF, which was permitted to operate through December 30, 2007. A permit renewal application for this facility is currently pending with ADWR. The renewed GSF permit is expected to have an expiration date of December 31, 2010. However, the GSF may only operate while it meets the statutory requirements for operating a GSF. In 2010, the Secretary will begin offsetting the water delivery costs to the GRIIDD, thereby making the cost of CAP water reasonably available. In doing so, the permit conditions for operating a GSF will no longer be met resulting in the termination of the facility. Therefore, this ten-year plan only utilizes the GRIIDD GSF through December 2009. In 2007, the AWBA was issued an additional water storage permit for storage at the newly permitted Harquahala Valley Irrigation District GSF, located in the Harquahala Valley Irrigation Non-

expansion Area. Storage capacity at this facility is 50,000 acre-feet per year. The AWBA is currently the only storage partner at this facility. Appendix C describes the storage partners, storage permits, and capacity available for use by the AWBA. It also identifies the partners that the AWBA included in development of this ten-year plan.

Most of the facility permits associated with the GSFs will expire within this ten-year plan. In most instances, the AWBA's water storage permits expire simultaneously with the partners' facility permits. Due to the rapid rate of urbanization in the AMAs, ADWR has limited the issuance of GSF permits to a five-year term rather than the usual ten-year term, unless the applicant can provide evidence that development will not change their ability to store water. An increase in development may reduce the acreage available for irrigation, thus reducing the amount of water available for storage at the GSF. Furthermore, all of the agreements for water storage expire within this ten-year planning period. Impacts of this nature cannot be predicted and, although they are recognized, they were discounted in development of this ten-year plan.

The AWBA currently has 11 water storage permits for USFs with a total permitted storage capacity of 841,000 acre-feet per year until 2009 and 778,500 acre-feet per year for the remainder of the planning period. Recharge volumes at the Tonopah Desert Recharge Project are reduced from 150,000 acre-feet per year to 87,500 acre-feet per year after 2009. In 2007, the AWBA obtained a water storage permit for the Southern Avra Valley Storage and Recovery Project (SAVSARP) located in the Tucson AMA, which added an additional 60,000 acre-feet to the total storage capacity. This facility began operations in 2008. The GRUSP and Avra Valley USF permits are the only permits that expire during this planning period. They expire December 2010 and March 2018, respectively.

Any difficulty in obtaining new permits could impact 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. However, impacts of this nature cannot be predicted and were discounted in the analysis of this ten-year plan.

**Table 7. Ten-year plan**

<b>ARIZONA WATER BANKING AUTHORITY – Ten-Year Plan</b>																
<b>2009 – 2018</b>																
<b>(Acre-feet)</b>																
<b>YEAR</b>	<b>(a) CAP Water Avail for AWBA</b>	<b>(b) CAP M&amp;I Firming (4¢ tax)</b>		<b>(c) Water Management (Withdrawal Fees)</b>		<b>(d) Appropriation from General Fund</b>		<b>(e) Shortage Reparations (\$8 Million)</b>		<b>(f) Indian Settlement</b>		<b>(g) (h) (i) (j) (k) Interstate Banking</b>				
		Del.	Credits	Del.	Credits	Del.	Credits	Del.	Credits	Del.	Credits	Water Avail.	AWBA Capacity Avail.	Credits	ICUA	Remaining Credits
Pre- Plan <sup>(h)</sup>	n/a	1,522,094		724,504		403,830		43,543		21,185				533,463		
2009	160,622	70,011	64,410	33,516	26,235	0	0	35,769	32,905	21,328	19,622	0	169,376	0	0	533,463
2010	161,795	51,008	46,928	47,391	39,000	0	0	51,062	46,977	12,334	11,347	0	181,204	0	0	533,463
2011	126,942	49,457	45,500	32,087	29,520	0	0	5,411	4,978	36,626	33,696	3,361	254,516	3,160	0	536,623
2012	129,609	56,453	51,936	27,704	25,487	0	0	0	0	35,864	32,995	9,588	271,836	9,013	40,000	505,636
2013	115,208	58,258	53,597	25,866	23,796	0	0	0	0	25,437	23,402	5,648	274,306	5,309	40,000	470,945
2014	136,719	83,935	77,220	25,805	23,740	0	0	0	0	0	0	26,979	286,261	25,361	40,000	456,306
2015	114,891	76,629	70,499	24,904	22,912	0	0	0	0	0	0	13,358	292,467	12,557	40,000	428,862
2016	97,587	64,606	59,438	24,110	22,182	0	0	0	0	0	0	8,871	303,283	8,338	40,000	397,201
2017	168,546	97,337	89,550	24,891	22,900	0	0	0	0	0	0	46,318	269,772	43,539	40,000	400,740
2018	157,587	93,500	86,020	24,273	22,331	0	0	0	0	0	0	39,814	274,227	37,425	40,000	398,165
<b>TOTAL</b>		2,167,315		982,607		403,830		128,403		142,247				678,165		

**FOOTNOTES:**

(a) See Appendix B.

(b) See Appendix D.

(c) See Appendix E. Includes direct delivery of 5,000 AF of water for 2008-2010 to meet the Southside Replenishment obligation of 15,000 AF.

(d) See Appendix F.

(e) See Appendix G.

(f) See Appendix H. A.R.S. §45-2491(B)(2) allows for the use of withdrawal fees after legislative appropriations for Indian firming have been expended. Withdrawal fee credits accrued in the Phoenix and Pinal AMAs could be utilized to meet this obligation. The State Indian settlement firming obligation is estimated at 550,000 AF. In addition, 30,876 AF of credits are accrued to meet the State's obligation under Section 306 of the AZ Water Settlement's Act (\$3 million for Federal assistance).

(g) Available CAP supplies minus AWBA intrastate delivery requirements.

(h) See Appendix I.

(i) Cumulative totals for 1997-2008; 2007 are actual credits and 2008 are estimated based on projected deliveries.

(j) Assumes maximum allowable recovery pursuant to the Amended Agreement for Interstate Banking.

(k) Credits remaining available in Nevada sub-account after recovery.

**Table 8. AWBA Percentage of Goals Achieved through 2018**

<b>Location and Objective</b>	<b>Goal (AF of Credits)</b>	<b>LTS Credits Accrued (AF)<sup>1</sup></b>	<b>Percent of Goal Achieved</b>
Phoenix M&I Firming	1,566,000	1,240,517	80%
Phoenix Groundwater Mgmt <sup>3</sup>		391,136	N/A
Pinal M&I Firming <sup>2</sup>	243,000	357,748	147%
Pinal Groundwater Mgmt <sup>3</sup>		466,302	N/A
Tucson M&I Firming	864,000	568,929	66%
Tucson Groundwater Mgmt <sup>3</sup>		135,247	N/A
On-River M&I Firming <sup>4</sup>	420,000	403,830	96% <sup>5</sup>
State Indian Firming <sup>6</sup>	550,000	111,370	20%
Interstate Water Banking – NV <sup>7</sup>	1,250,000	678,165	54%

<sup>1</sup> 1997-2008; actual credits through 2007 and estimated credits for 2008 based on projected deliveries.

<sup>2</sup>The M&I firming goal will be met in 2012.

<sup>3</sup> Pursuant to House Bill 2835, firming M&I supplies is a water management objective for the use of credits developed by groundwater withdrawal fees. With full utilization of withdrawal fees in the Tucson AMA, the percent of goal achieved through 2018 is 82%.

<sup>4</sup> 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. Pursuant to the AWBA Agreement to Firm with the Mohave County Water Authority (MCWA) dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term-storage sub-account for the MCWA in 2005.

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

<sup>6</sup> A.R.S. §45-2491(B)(2) allows for the use of withdrawal fees after legislative appropriations for Indian firming have been expended. By utilizing credits accrued from storage at the GRIIDD and credits accrued from withdrawal fees from the Phoenix & Pinal AMAs in this ten-year plan, in addition to the legislative appropriation, about 71% of the goal is estimated to be met in 2018.

<sup>7</sup> Pursuant to the Amended Agreement for Interstate Water Banking, the AWBA has committed to accrue 1,250,000 acre-feet of credits on behalf of the Southern Nevada Water Authority.

## 2. Recovery

This ten-year plan includes a recovery component for interstate purposes pursuant to the Amended Agreement for Interstate Water Banking (Amended Agreement). The Amended Agreement authorized Nevada to request development of intentionally created unused apportionment (ICUA), if needed, as follows: in 2009 and 2010, an amount not exceeding 30,000 acre-feet; and in subsequent years, an amount not exceeding 40,000 acre-feet. This ten-year plan also includes a recovery component for the development of ICUA for California pursuant to the Amended Letter Agreement between Metropolitan, CAWCD and AWBA discussed earlier. The Amended Letter Agreement allows for the creation of ICUA through recovery and the credit exchange method. In 2007, the AWBA certified the creation of 16,804 acre-feet of ICUA for Metropolitan, which was developed through the recovery of 10,920 acre-feet of credits and by exchanging 5,883 acre-feet of credits in lieu of delivering water that had been scheduled for an underground storage facility. For 2008, Metropolitan requested 25,000

acre-feet ICUA, which will be created primarily through recovery, but may again utilize the credit exchange method to account for approximately 1,000 acre-feet. Additional ICUA made available during this ten-year plan is subject to approval on an annual basis as part of the AWBA Annual Plan of Operation. Of the initial 80,909 acre-feet of credits held by CAWCD on behalf of Metropolitan, 39,105 acre-feet of credits remain available for recovery during this ten-year plan. Recovery of these credits is the responsibility of CAWCD and will occur in the Pinal AMA.

This ten-year plan does not include any shortage years based on model analysis. While shortages are possible during the next ten years, the probability is very low that shortages will actually occur. If shortages do occur however, they would impact the ten-year plan. The major impact to the plan would be significant reductions in supplies in the shortage years. The AWBA has the lowest priority for CAP water so any reduction in CAP supplies would impact the AWBA first. A shortage would also cause the recovery of credits to meet firming obligations. It is not likely that credits would have to be recovered to firm CAP M&I supplies because there should be enough lower priority CAP water to absorb any shortage during the next ten years. On-river M&I and NIA water being delivered pursuant to Indian settlements could be at risk. Reductions to the on-river M&I users could trigger the need to recover credits and exchange the recovered water with CAWCD to create water that could be diverted by the on-river M&I users to firm their supplies. In addition to the recovery required for the on-river users, the AWBA might be required to recover credits to meet its obligation for Indian firming. However absent shortages, the only recovery planned for this ten-year plan is for interstate purposes. Even though recovery for shortages is not anticipated for this ten-year plan, any additional recovery provisions should be put in place due to the lead time needed.

### 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. With the exception of 2005, Arizona has been meeting this goal since 2002. Another primary objective of the AWBA was meeting the M&I firming goals. By the end of 2008 the AWBA anticipates having stored over 1.5 MAF of credits for that purpose.

#### *Central Arizona Groundwater Replenishment District (CAGRDR) Replenishment Reserve*

Pursuant to statute, the CAGRDR must develop a 20% replenishment reserve. The CAGRDR 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 for this ten-year plan.

#### *The CAP Water Forecast Group*

The forecast group is composed of CAWCD, CAGRDR, 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, demand forecasts, and cost estimates for water storage. Portions of this ten-year plan were developed using projections obtained from the forecast group.

#### 4. Funding

##### *AWBA General Fund Appropriation*

The AWBA has not received a general fund appropriation that was not subject to restrictions since 2001. Consequently, the AWBA does not anticipate receiving general fund appropriations and did not include expenditure of these funds in this ten-year plan. However, the AWBA will continue to seek appropriations from the Legislature for future ten-year plans.

##### *Groundwater Withdrawal Fees*

In 2006, the statutes concerning the collection and utilization of credits accrued through the expenditure of groundwater withdrawal fees by the AWBA had been amended subject to the enforceability of the Arizona Water Settlements Act (Settlements Act) P.L. 108-451, which became effective December 14, 2007. Under A.R.S. §45-2457(B)(6), in addition to meeting the water management objectives of the AMAs in which the fees were collected, the AWBA may also utilize withdrawal fees to meet the M&I demands of CAP subcontractors and to implement the settlement of water rights claims by Indian communities in Arizona. A.R.S. §45-2491(B)(2) further clarifies that groundwater withdrawal fees however, may only be used to accomplish Indian firming goals after the expenditure of any legislative appropriations. Furthermore, A.R.S. §45-611(C)(3) was amended to allow the AWBA to collect groundwater withdrawal fees beyond 2016 and to allow fees collected in the Pinal AMA to be utilized for meeting the AWBA Southside Replenishment obligation. This ten-year plan utilizes withdrawal fees beyond 2016 for the accrual of credits and for the purchase of CAP water for the purpose of establishing the Southside Replenishment Bank. However, credits accrued from expenditure of these funds were not assigned for a specific objective.

##### *Ad valorem Tax*

Pursuant to A.R.S. §48-3715.03(B), 4¢ *ad valorem* taxes levied and collected by CAWCD that are not deposited in the District fund, shall be deposited into sub-accounts held by the AWBA; one for each of the three counties in which the taxes were collected. For the past several years, CAWCD has not deposited monies collected into these AWBA sub-accounts. As a result, the AWBA expended all available funds that remained in its sub-accounts. CAWCD has however assisted the AWBA by offsetting AWBA water delivery and storage costs using the 4¢ *ad valorem* tax held in its own accounts. This ten-year plan relies on the continuation of CAWCD offsetting the AWBA's costs. It is important to note that A.R.S. §48-3715.02, which provides CAWCD the authority to levy the *ad valorem* tax for water storage, will be repealed effective January 2, 2017. Therefore this ten-year plan does not include collections of the *ad valorem* tax beyond 2016.

##### *Appropriations for Indian Firming*

In 2006, the AWBA received an appropriation of \$13.5 million from the Legislature to be utilized specifically for meeting the State's Indian firming obligations. Expenditure of these funds began in 2008. Of these monies, a total of \$3 million is expended in the Tucson AMA for the purpose of assisting the Federal government in meeting its portion of the firming obligation under Section 306 of the Settlements Act. A detailed discussion of the expenditure of these funds is discussed in section 6 later in this report.

### *Funding for Interstate Banking*

The AWBA continues to loan Nevada monies from the Resource account; the account consisting of \$100 million received from Nevada in 2005 pursuant to the Amended Agreement for Interstate Water Banking. By the end of 2008 this account will have a balance of approximately \$14 million. This ten-year plan includes the expenditure of these remaining funds and begins to utilize the annual payments of \$23 million from Nevada, scheduled to begin in 2009. The plan identifies expenditure of these funds until such time the AWBA's obligation of 1.25 million acre-feet of credits has been met.

### *Gifts, Grants, or Donations*

Pursuant to the Arizona-Nevada Shortage-Sharing Agreement discussed under the Activities and Projects section of the Annual Report, Nevada will provide to the AWBA \$8 million in order to assist Arizona in offsetting impacts that may occur during the Interim Period; the period beginning on the date the Secretary issues a Record of Decision (ROD) and ending on December 31, 2025. The AWBA began utilizing a portion of these funds in 2008 for the purchase and storage of CAP water and will expend the remainder of these funds in this ten-year plan.

#### 5. 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 an 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 results in an increase in the amount of water available to the AWBA for the last two years of this ten-year plan.

The CAWCD Board continues to discuss 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. In the beginning of 2008, CAWCD recognized that increased demand for subcontract and higher priority CAP water has reduced the need for the incentive priced recharge pool. Therefore, in its preliminary rate schedule for 2009/2010, CAWCD proposed a phase-out of the incentive rate by 2012. Since this is the pool available to the AWBA, the cost to the AWBA will increase. The ten-year plan incorporates these increased costs based on the proposed elimination of the incentive recharge pool.

#### 6. Participation in Indian settlements

One objective of the AWBA is assisting with the settlement of water rights claims by Indian communities within Arizona. The State of Arizona has a 100-year firming obligation under the Settlements Act. In addition, pursuant to HB 2728 executed on April 18, 2005, the AWBA has statutorily mandated responsibilities for the Southside Replenishment obligation. The Indian Firming Study Commission (Study Commission), created by the Arizona Legislature to evaluate the potential alternatives for meeting these obligations, concluded that the AWBA, in cooperation with ADWR and CAWCD is the most appropriate entity to fulfill the State's firming obligations. HB 2835, which included the Study Commission's recommendations, was signed by Governor Napolitano on April 12, 2006.

As previously discussed, the Legislature appropriated \$13.5 million to the AWBA for fiscal year 2007 for the purpose of meeting the State's Indian settlement firming obligation. The AWBA had postponed expenditure of these funds until the Settlements Act became enforceable. This ten-year plan includes a component for meeting the State's Indian settlement firming obligation, as well as the State's obligation to the Federal government under Section 306 of the Settlements Act. The ten-year plan identifies the State's \$3 million obligation to the Federal government through the accrual of long-term storage credits. It is recognized however, that the State's obligation is not limited to earning long-term storage credits and may be accomplished by other means such as in-kind goods and services.

With regard to meeting the State's Indian settlement obligation, since future appropriations from the Legislature cannot be predicted, withdrawal fee credits from the Phoenix and Pinal AMAs could be used to meet this obligation. This includes credits that were previously accrued from water stored at the GRIIDD GSF and credits that will have accrued from storage planned at this facility under this ten-year plan. It should be noted that the AWBA will retain full rights to the credits developed at the GRIIDD GSF until such time the credits are dedicated specifically for meeting the State's Indian firming obligation. This ten-year plan also includes a component for meeting the Southside Replenishment obligation of establishing the Southside Replenishment Bank totaling 15,000 acre-feet. The AWBA plans to deliver 5,000 acre-feet for this purpose in 2008 and has identified the remaining deliveries in the first two years of the ten-year plan. Withdrawal fees collected in the Pinal AMA are used to meet this obligation.

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

The AWBA completed a revised inventory of existing storage facilities in the state as required by A.R.S. §45-2452, which was approved by the Authority on March 22, 2006. The revised inventory will be utilized in developing future ten-year plans.

CAWCD was issued an underground storage facility permit from ADWR to operate the Superstition Mountains Recharge project located in the east Salt River Valley in January 2008. The proposed annual volume for the facility is 56,500 acre-feet. The AWBA expects to utilize capacity at this facility once constructed and has therefore included it in this ten-year plan.

8. Interstate banking

The ten-year plan includes an interstate water banking component for Nevada, but does not include California. This ten-year plan indicates that 54%, or 678,165 acre-feet of credits of the 1,250,000 acre-feet of credits needed to meet the Nevada obligation, could be met by 2018.

### 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 2007 by Partner and Active Management Area**

AMA	Partner	Quantity of Water (Acre-Feet)	
		Intrastate	Interstate
<b>PHOENIX AMA</b>	Agua Fria Recharge Project	4,177	0
	Hieroglyphic Mountains Recharge Project	7,693	0
	Tonopah Desert Recharge Project	117,004	0
	Queen Creek Irrigation District	7,522	
	Gila River Indian Irrigation & Drainage District	13,822	0
	<i><b>Intrastate/Interstate AMA Subtotal</b></i>	<i><b>150,218</b></i>	<i><b>0</b></i>
	<i><b>Phoenix AMA Subtotal</b></i>	<i><b>150,218</b></i>	
<b>PINAL AMA</b>	Central Arizona Irrigation and Drainage District	21,573	35,787
	Hohokam Irrigation and Drainage District	25,000	17,500
	Maricopa-Stanfield Irrigation and Drainage District	23,000	60,090
	Gila River Indian Irrigation & Drainage District	6,807	0
	<i><b>Intrastate/Interstate AMA Subtotal</b></i>	<i><b>76,380</b></i>	<i><b>113,377</b></i>
	<i><b>Pinal AMA Subtotal</b></i>	<i><b>189,757</b></i>	
<b>TUCSON AMA</b>	Avra Valley Recharge Project	6,823	0
	Central Avra Valley Storage and Recovery Project	14,500	0
	Lower Santa Cruz Recharge Project	12,941	10,645
	Pima Mine Road Recharge Project	6	0
	<i><b>Intrastate/Interstate AMA Subtotal</b></i>	<i><b>34,270</b></i>	<i><b>10,645</b></i>
	<i><b>Tucson AMA Subtotal</b></i>	<i><b>44,915</b></i>	
<b>TOTAL INTRASTATE &amp; INTERSTATE DELIVERIES</b>		<b>260,868</b>	<b>124,022</b>
<b>TOTAL DELIVERIES</b>		<b>384,890</b>	

**APPENDIX B**  
**CAP DELIVERY SCHEDULE**  
(Acre-feet)

Year	CAP Demands				Average Year Supply <sup>5</sup>	Available for AWBA <sup>6</sup>
	M&I <sup>1</sup>	Indian <sup>2</sup>	Ag <sup>3</sup>	Total <sup>4</sup>		
2009	835,114	103,752	409,026	1,364,378	1,525,000	160,622
2010	834,161	104,424	409,026	1,363,205	1,525,000	161,795
2011	846,724	127,308	409,026	1,398,058	1,525,000	126,942
2012	834,349	137,016	409,026	1,395,391	1,525,000	129,609
2013	839,042	146,724	409,026	1,409,792	1,525,000	115,208
2014	807,823	156,432	409,026	1,388,281	1,525,000	136,719
2015	820,081	166,002	409,026	1,410,109	1,525,000	114,891
2016	827,815	175,572	409,026	1,427,413	1,525,000	97,587
2017	847,285	185,143	309,026	1,356,454	1,525,000	168,546
2018	848,012	195,375	309,026	1,367,413	1,525,000	157,587

- (1) Includes M&I, CAGR, CAGR replenishment reserve, Indian M&I lease and M&I incentive water.
- (2) From CAWCD demand forecast.
- (3) Based on current agricultural pool policy, includes 32,537 AF for Harquahala Valley ID. Also includes subcontract water of 9,026 AF/YR.
- (4) Includes secondary excess uses of 15,000 AF/YR.
- (5) Based on average year delivery of 1,600,000 AF/YR per year minus losses.
- (6) Average year supply minus CAP demands; AWBA last priority for intrastate use.

**APPENDIX C  
STORAGE FACILITIES AVAILABLE TO THE AWBA  
(as used in the Ten-Year Plan)**

AMA and Facility Type <sup>1</sup>	Facility Permit Expiration	Facility Permitted Capacity (AF)	Capacity Available to AWBA <sup>2</sup> (AF)	Year Water Last Stored	Volume of Water Last Stored (AF)
<b>PHOENIX – GSF<sup>3</sup></b>					
Queen Creek ID	12/2010	28,000	10,000	2007	7,522
Gila River Indian IDD	12/2010	37,520	35,000	2007	13,822
<b>PHOENIX – USF</b>					
Agua Fria Recharge Project	05/2019	100,000	15,000	2007	4,177
Hieroglyphic Mtns.	12/2021	35,000	20,000	2007	7,693
Tonopah Desert RP	09/2025	100,000 <sup>4</sup>	60,000	2007	117,004
West Maricopa Combine - USF	05/2021	25,000	15,000	<sup>5</sup>	0
<b>PINAL – GSF</b>					
Central Arizona IDD	Renewal pending	110,000	60,000	2007	57,360
Hohokam IDD	10/2012	55,000	40,000	2007	42,500
Maricopa-Stanfield IDD	12/2009	120,000	85,000	2007	83,090
Gila River Indian IDD	12/2010	18,480	12,000	2007	6,807
<b>TUCSON – GSF<sup>3</sup></b>					
Kai – Red Rock	12/2006	11,231	1,000	2005	461
<b>TUCSON – USF</b>					
Avra Valley	03/2018	11,000	7,000	2007	6,823
CAVSARP	10/2025	80,000	10,000	2007	14,500
Lower Santa Cruz	09/2019	50,000	30,000	2007	23,586
Pima Mine Road	09/2020	30,000	10,000	2007	6
SAVSARP	01/2028	60,000	10,000	<sup>5</sup>	n/a
<b>Other Facilities Currently or Anticipated to be Available to the AWBA</b>					
Harquahala Valley ID	03/2011	50,000	10,000	<sup>5</sup>	n/a
Superstition Mtn.-USF	01/2028	56,500	30,000	<sup>6</sup>	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 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. For 2009-2013 capacity is not expected to be available to the AWBA at the Hohokam ID GSF due to storage by other partners.
- (3) The AWBA holds water storage permits at Chandler Heights Citrus ID (3 KAF), Salt River Project (100 KAF), Roosevelt Water Conservation District (100 KAF), New Magma ID (54 KAF), Tonopah ID (15 KAF), and the BKW Farms (16 KAF) GSFs. These were not considered significant uses in this ten-year outlook.
- (4) Facility is permitted for 150 KAF for the first 4 years (2010) and 87.5 KAF for the next 16 years; the 100 KAF listed is a weighted average.
- (5) No deliveries to date.
- (6) Water storage permit application to be submitted to ADWR.

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

	Year	Groundwater Savings			Underground Storage		
		Capacity Available <sup>4</sup>	Capacity Used	Credits Earned	Capacity Available <sup>4</sup>	Capacity Used	Credits Earned
<b>PHOENIX AMA<sup>2</sup></b>	Pre-plan <sup>3</sup>			488,417			605,732
	2009	23,890	0	0	53,320	320	295
	2010	11,010	0	0	86,698	3,456	3,179
	2011	11,338	0	0	99,886	2,742	2,523
	2012	14,403	0	0	115,136	10,377	9,547
	2013	15,013	0	0	117,947	5,638	5,187
	2014	12,973	0	0	127,187	28,866	26,557
	2015	12,717	0	0	126,105	21,160	19,467
	2016	12,353	0	0	125,074	7,762	7,141
	2017	7,982	0	0	128,477	42,306	38,922
	2018	8,980	0	0	127,914	36,467	33,550
	Total			488,417			752,100
	<b>PINAL AMA<sup>2</sup></b>	Pre-plan <sup>3</sup>			171,681		
2009		105,543	41,968	38,610	-	-	-
2010		76,062	18,689	17,194	-	-	-
2011		128,855	15,619	14,369	-	-	-
2012		134,358	13,621	12,531	-	-	-
2013		135,011	17,847	16,420	-	-	-
2014		165,328	17,988	16,549	-	-	-
2015		165,507	18,378	16,908	-	-	-
2016		165,638	18,869	17,360	-	-	-
2017		165,768	19,374	17,824	-	-	-
2018		165,896	19,893	18,302	-	-	-
Total				357,748			
<b>TUCSON AMA<sup>2</sup></b>		Pre-plan <sup>3</sup>			2,928		
	2009	0	0	0	56,633	27,722	25,505
	2010	0	0	0	58,442	28,864	26,555
	2011	0	0	0	63,894	31,096	28,608
	2012	0	0	0	64,390	32,455	29,859
	2013	0	0	0	64,593	34,772	31,991
	2014	0	0	0	64,708	37,080	34,114
	2015	0	0	0	64,767	37,091	34,124
	2016	0	0	0	64,825	37,975	34,937
	2017	0	0	0	64,882	35,657	32,804
	2018	0	0	0	64,938	37,140	34,168
	Total			2,928			566,001

Footnotes:

- (1) Development of M&I firming credits followed utilization of groundwater withdrawal fees.
- (2) M&I firming targets are Phoenix AMA - 1.566 MAF, Pinal AMA - 243 KAF, and Tucson AMA - 864 KAF.
- (3) Cumulative totals for 1997-2007; 2008 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 <sup>1</sup>**  
(Acre-feet)

	Year	Groundwater Savings			Underground Storage		
		Capacity Available <sup>3</sup>	Capacity Used	Credits Earned	Capacity Available <sup>3</sup>	Capacity Used	Credits Earned
<b>PHOENIX AMA</b>	Pre-plan <sup>2</sup>			149,369			113,556
	2009	45,000	8,666	7,973	60,000	0	0
	2010	15,000	2,394	2,202	115,000	26,091	24,004
	2011	15,000	2,197	2,022	120,000	12,850	11,822
	2012	20,000	3,358	3,089	135,000	10,094	9,287
	2013	19,000	2,392	2,201	135,000	10,077	9,271
	2014	18,000	5,027	4,625	135,000	7,813	7,188
	2015	16,000	3,283	3,020	135,000	8,895	8,184
	2016	14,000	1,647	1,516	135,000	9,926	9,132
	2017	14,000	6,018	5,536	135,000	6,523	6,001
	2018	14,000	5,020	4,619	135,000	7,086	6,519
	Total			186,172			204,964
	<b>PINAL AMA</b>	Pre-plan <sup>2</sup>			370,812		
2009		124,754	19,211	13,074	-	-	-
2010		90,217	14,155	8,422	-	-	-
2011		141,789	12,933	11,899	-	-	-
2012		145,000	10,642	9,790	-	-	-
2013		145,000	9,989	9,190	-	-	-
2014		175,000	9,672	8,899	-	-	-
2015		175,000	9,493	8,733	-	-	-
2016		175,000	9,362	8,613	-	-	-
2017		175,000	9,232	8,494	-	-	-
2018		175,000	9,104	8,376	-	-	-
Total				466,302			0
<b>TUCSON AMA</b>		Pre-plan <sup>2</sup>			3,982		
	2009	1,000	1,000	920	61,273	4,639	4,268
	2010	1,000	1,000	920	62,194	3,752	3,452
	2011	1,000	1,000	920	67,000	3,106	2,858
	2012	1,000	1,000	920	67,000	2,610	2,401
	2013	1,000	1,000	920	67,000	2,407	2,215
	2014	1,000	1,000	920	67,000	2,292	2,109
	2015	1,000	1,000	920	67,000	2,233	2,054
	2016	1,000	1,000	920	67,000	2,175	2,001
	2017	1,000	1,000	920	67,000	2,118	1,948
	2018	1,000	1,000	920	67,000	2,062	1,897
	Total			13,182			111,988

- (1) Expenditure of withdrawal fees was given the highest priority.  
(2) Cumulative totals for 1997-2007; 2008 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.

**APPENDIX F**  
**Credits Developed Utilizing Annual General Fund Appropriations<sup>1,2</sup>**  
(Acre-feet)

PHOENIX AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan <sup>3</sup>			16,275			26,041
2009	36,334	0	0	60,000	0	0	
2010	12,606	0	0	88,909	0	0	
2011	12,803	0	0	107,150	0	0	
2012	16,642	0	0	124,906	0	0	
2013	16,608	0	0	124,923	0	0	
2014	12,973	0	0	127,187	0	0	
2015	12,717	0	0	126,105	0	0	
2016	12,353	0	0	125,074	0	0	
2017	7,982	0	0	128,477	0	0	
2018	8,980	0	0	127,914	0	0	
Total			16,275			26,041	

PINAL AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan <sup>3</sup>			306,968			
2009	157,000	0	0	-	-	-	
2010	145,000	0	0	-	-	-	
2011	145,000	0	0	-	-	-	
2012	145,000	0	0	-	-	-	
2013	145,000	0	0	-	-	-	
2014	175,000	0	0	-	-	-	
2015	175,000	0	0	-	-	-	
2016	175,000	0	0	-	-	-	
2017	175,000	0	0	-	-	-	
2018	175,000	0	0	-	-	-	
Total			306,968				

TUCSON AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan <sup>3</sup>			2,846			51,700
2009	1,000	0	0	67,000	0	0	
2010	1,000	0	0	67,000	0	0	
2011	1,000	0	0	67,000	0	0	
2012	1,000	0	0	67,000	0	0	
2013	1,000	0	0	67,000	0	0	
2014	1,000	0	0	67,000	0	0	
2015	1,000	0	0	67,000	0	0	
2016	1,000	0	0	67,000	0	0	
2017	1,000	0	0	67,000	0	0	
2018	1,000	0	0	67,000	0	0	
Total			2,846			51,700	

Footnotes:

- (1) The ten-year plan does not include a component for General Fund appropriations.
- (2) The on-river M&I firming target is 420,000 AF.
- (3) Cumulative totals for 1997-2008.

**APPENDIX G**  
**Credits Developed Utilizing Funds Dedicated for Shortage Reparations <sup>1</sup>**  
(Acre-feet)

PHOENIX AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan			0			0
2009	23,890	0	0	60,000	6,680	6,143	
2010	11,010	0	0	88,909	2,211	2,034	
2011	11,338	0	0	99,886	2,200	2,024	
2012	14,403	0	0	115,136	0	0	
2013	15,013	0	0	117,947	0	0	
2014	12,973	0	0	127,187	0	0	
2015	12,717	0	0	126,105	0	0	
2016	12,353	0	0	125,074	0	0	
2017	7,982	0	0	128,477	0	0	
2018	8,980	0	0	127,914	0	0	
Total			0			10,201	

PINAL AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan			0			
2009	153,843	29,089	26,762	-	-	-	
2010	139,068	48,851	44,943	-	-	-	
2011	145,000	3,211	2,954	-	-	-	
2012	145,000	0	0	-	-	-	
2013	145,000	0	0	-	-	-	
2014	175,000	0	0	-	-	-	
2015	175,000	0	0	-	-	-	
2016	175,000	0	0	-	-	-	
2017	175,000	0	0	-	-	-	
2018	175,000	0	0	-	-	-	
Total			74,659				

TUCSON AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan			0			0
2009	1,000	0	0	67,000	0	0	
2010	1,000	0	0	67,000	0	0	
2011	1,000	0	0	67,000	0	0	
2012	1,000	0	0	67,000	0	0	
2013	1,000	0	0	67,000	0	0	
2014	1,000	0	0	67,000	0	0	
2015	1,000	0	0	67,000	0	0	
2016	1,000	0	0	67,000	0	0	
2017	1,000	0	0	67,000	0	0	
2018	1,000	0	0	67,000	0	0	
Total			0			0	

Footnotes:

(1) \$8 million received from Nevada pursuant to the Arizona-Nevada Shortage-Sharing Agreement of February 2007 to assist Arizona in offsetting the impacts of shortages during the Interim Period.

**APPENDIX H**  
**Credits Developed Utilizing Indian Settlement Appropriations <sup>1</sup>**  
(Acre-feet)

	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
<b>PHOENIX AMA</b>	Pre-plan			0			0
	2009	36,334	12,444	11,448	60,000	0	0
	2010	12,606	1,596	1,468	88,909	0	0
	2011	12,803	1,465	1,348	107,150	7,264	6,683
	2012	16,642	2,239	2,060	124,906	9,769	8,988
	2013	16,608	1,595	1,467	124,923	6,976	6,418
	2014	12,973	0	0	127,187	0	0
	2015	12,717	0	0	126,105	0	0
	2016	12,353	0	0	125,074	0	0
	2017	7,982	0	0	128,477	0	0
	2018	8,980	0	0	127,914	0	0
	Total				17,791		
<b>PINAL AMA</b>	Pre-plan			0			
	2009	157,000	3,157	2,904	-	-	-
	2010	145,000	5,932	5,457	-	-	-
	2011	145,000	27,897	25,665	-	-	-
	2012	145,000	23,856	21,947	-	-	-
	2013	145,000	16,866	15,517	-	-	-
	2014	175,000	0	0	-	-	-
	2015	175,000	0	0	-	-	-
	2016	175,000	0	0	-	-	-
	2017	175,000	0	0	-	-	-
	2018	175,000	0	0	-	-	-
	Total			71,490			
<b>TUCSON AMA</b>	Pre-plan			0			21,185
	2009	1,000	0	0	67,000	5,727	5,269
	2010	1,000	0	0	67,000	4,806	4,422
	2011	1,000	0	0	67,000	0	0
	2012	1,000	0	0	67,000	0	0
	2013	1,000	0	0	67,000	0	0
	2014	1,000	0	0	67,000	0	0
	2015	1,000	0	0	67,000	0	0
	2016	1,000	0	0	67,000	0	0
	2017	1,000	0	0	67,000	0	0
	2018	1,000	0	0	67,000	0	0
	Total			0			

Footnotes:

- (1) The State Indian firming target is estimated at 550,000 AF.
- (2) Credits accrued through the expenditure of \$3 million for assisting Federal government in meeting its firming obligation under Section 306 of the Arizona Water Settlements Act.

**APPENDIX I**  
**Potential Credits Developed for Interstate Water Banking<sup>1</sup>**  
(Acre-feet)

<b>Year</b>	<b>Available CAP Supplies<sup>2</sup></b>	<b>Available AWBA Capacity<sup>3</sup></b>	<b>Remaining Supply<sup>4</sup></b>	<b>Interstate Credits<sup>5</sup></b>
Pre-plan <sup>6</sup>				533,463
2009	0	169,376	0	0
2010	0	181,204	0	0
2011	3,361	254,516	0	3,160
2012	9,588	271,836	0	9,013
2013	5,648	274,306	0	5,309
2014	26,979	286,261	0	25,361
2015	13,358	292,467	0	12,557
2016	8,871	303,283	0	8,338
2017	46,318	269,772	0	43,539
2018	39,814	274,227	0	37,425
<b>Total</b>				<b>678,165</b>

Footnotes:

- (1) The AWBA has an obligation to have 1,250,000 acre-feet of credits for the SNWA.
- (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 water supply available for the AWBA (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, available funding and an annual limitation of 200,000 AF/YR; resulting stored water multiplied by an average 6% cut and loss factor.
- (6) Cumulative totals for 2002-2007; 2008 credits estimated based on projected deliveries.