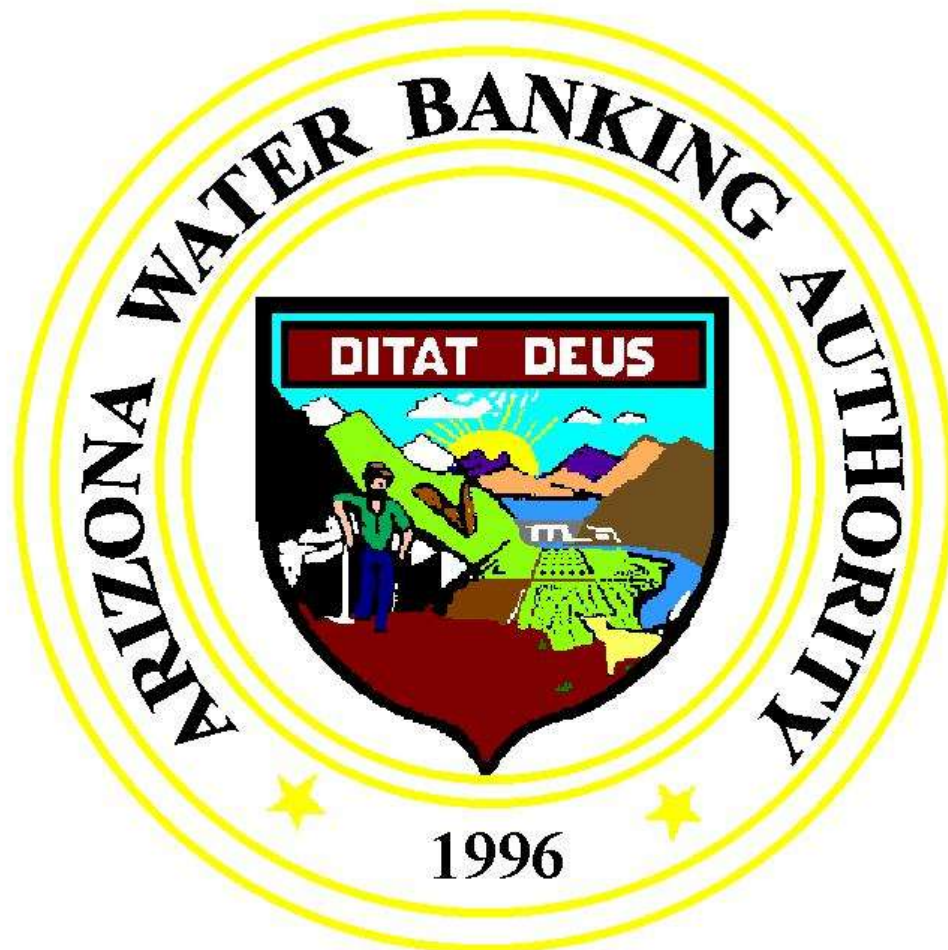


ARIZONA WATER BANKING AUTHORITY

ANNUAL REPORT
2011



Submitted

July 1, 2012

Arizona Water Banking Authority

Annual Report 2011

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Governor of Arizona**

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Acronyms and Abbreviations

ADWR	Arizona Department of Water Resources
Agreement to Firm	Agreement to Firm Future Supplies executed February 4, 2005 between the Arizona Water Banking Authority and the Mohave County Water Authority
Amended Agreement to Firm	Amended Agreement to Firm Future Supplies executed March 17, 2010.
AMA	Active Management Area
AWBA	Arizona Water Banking Authority
AWB Fund	Arizona Water Banking Fund
AWSA	Arizona Water Settlements Act
CAGRDR	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
CAWCD	Central Arizona Water Conservation District
CRCN	Colorado River Commission of Nevada
Credits	Long-term storage credits
CRSS	Colorado River System Simulation Model
Decree	Consolidated Decree of the United States Supreme Court in <i>Arizona v. California</i>
GRIC	Gila River Indian Community
GRIIDD	Gila River Indian Irrigation and Drainage District
GSF	Groundwater Savings Facility
ICUA	Intentionally Created Unused Apportionment
IGA	Intergovernmental Agreement
Inventory	Storage Facility Inventory
JLBC	Joint Legislative Budget Committee
Letter Amendment	Letter Amendment to Second Amended Agreement for Interstate Banking Agreement signed December 9, 2010
M&I	Municipal and Industrial
MAF	Million Acre-feet
Master Water Storage Agreement	Water Storage Agreement between CAWCD and AWBA effected July 1, 2002
MCWA	Mohave County Water Authority
MDWID	Metropolitan Domestic Water Improvement District
Metropolitan	Metropolitan Water District of Southern California
NIA	Non-Indian Agricultural
NMIDD	New Magma Irrigation and Drainage District
Plan	Annual Plan of Operation
Reclamation	U.S. Bureau of Reclamation
Recovery Agreement	Recovery Agreement executed June 9, 2010 among the Arizona Water Banking Authority, the Central Arizona Water Conservation District, the Southern Nevada Water Authority and the Colorado River Commission of Nevada
Second Amended Agreement	Second Amended Agreement for Interstate Water Banking signed April 1, 2009 between the Arizona Water Banking Authority and the Southern Nevada Water Authority and the Colorado River Commission of Nevada
SMRP	Superstition Mountains Recharge Project
SNWA	Southern Nevada Water Authority
SSRB	Southside Replenishment Bank
USF	Underground Storage Facility

Summary

The Arizona Water Banking Authority (AWBA) was created in 1996 to store the unused portion of Arizona's annual allocation of Colorado River water. Until the AWBA was created, Arizona had not fully utilized its 2.8 million acre-foot (MAF) allocation of Colorado River water and the state's leaders recognized that leaving a portion of Arizona's allocation in the river was a lost opportunity. The AWBA was created to provide assurances that water users within the state had secure, long-term water supplies.

The AWBA stores Colorado River water that would have otherwise been unused to accomplish the following goals:

- To firm (insure the availability of) water supplies for municipal and industrial users in the Central Arizona Water Conservation District (CAWCD) service area and along the Colorado River in times of shortages;
- To fulfill the management plan objectives of the Arizona Groundwater Code;
- To assist in the settlement of Indian water rights claims; and
- To assist Nevada and California through interstate water banking.

Each year, the AWBA pays the water delivery and storage costs to bring Colorado River water into Central and Southern Arizona through the Central Arizona Project (CAP) canal. The water is either stored underground in aquifers (direct recharge) at underground storage facilities (USF) or is used by irrigation districts in lieu of pumping groundwater (indirect or in lieu recharge) at groundwater savings facilities (GSF). The AWBA accrues a long-term storage credits that can be recovered and used in the future during times of a shortage in supply, either by Arizona or by Nevada.

The funding for water storage that benefits Arizona (intrastate storage) comes from three sources. There are restrictions regarding the manner in which these funds can be expended based 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 4¢ *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, an additional \$8 million for intrastate storage was made available from the Southern Nevada Water Authority (SNWA) pursuant to the Arizona-Nevada Shortage Sharing Agreement. This fund, referred to as the Shortage Reparation Fund, is intended to assist Arizona in storing water to offset impacts from Colorado River shortages that may occur during the Interim Period (2008 through 2026). In addition to the funding sources for intrastate storage, the AWBA also uses funds provided by Nevada pursuant to the Second Amended Agreement for Interstate Water Banking (Second Amended Agreement) to create credits for the benefit of Nevada.

In calendar year 2011, AWBA deliveries for recharge totaled 135,576 acre-feet and cost \$16.5 million. The AWBA also paid \$122,000 for the delivery of 1,000 acre-feet to the Gila River Indian Community

for the Southside Replenishment Bank (SSRB) as mandated by the intergovernmental agreement between the AWBA and the Gila River Indian Community.

The AWBA has accrued approximately 3,698,999 acre-feet of credits at a cost of \$287,328,493 from inception through calendar year 2011. Of this total volume, intrastate credits totaled 3,084,223 acre-feet at a cost of \$178,240,671 or \$57.53 per acre-foot and interstate credits totaled 550,651 acre-feet at a cost of \$109,087,822 or \$198.10 per acre-foot. 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 600,651 acre-feet of credits available for Nevada.

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.

Organizational Chart



There were three changes to the membership of the AWBA Commission in 2011. Chairman Herbert R. Guenther retired in January 2011. Sandra Fabritz-Whitney was appointed Director of the Arizona Department of Water Resources (ADWR) and by statute became the Chairperson of the AWBA. Tom Buschatzke retired from the City of Phoenix was replaced by Marshall P. Brown from the City of Scottsdale as the member who represents an entity that holds a Central Arizona Project municipal and industrial subcontract. Representative Adams was replaced by Representative Tobin. Lisa Atkins continued to serve in her role as designee of Susan Bitter Smith, President of the CAWCD Board and was elected Secretary replacing Tom Buschatzke.

Additionally, there were changes to the AWBA staff members. Virginia O'Connell replaced Kim Mitchell upon her retirement in January 2011 and Gerry Wildeman replaced Virginia O'Connell as the Technical Administrator.

Update

2011 Plan of Operation

The initial 2011 AWBA Plan of Operation (Plan) identified 136,441 acre-feet of planned intrastate deliveries utilizing water from CAWCD's AWBA/CAGRDR pool. Water deliveries were scheduled for storage facilities in all three counties. The AWBA also scheduled the direct delivery of 1,000 acre-feet of water to the Gila River Indian Community (GRIC) for the Southside Replenishment Bank (SSRB). Pursuant to the Letter Amendment to the Second Amended Agreement (Letter Amendment), the Plan did not include an interstate water banking component on behalf of Nevada.

In 2011, the AWBA continued its quarterly meeting schedule with meetings on March 30, June 15, October 4, and December 7, 2011. The AWBA held a special meeting on August 25, 2011 to discuss and take action on an amendment to the 2011 Plan of Operation.

The initial Plan was amended to accommodate a request for additional water by several of the AWBA's Groundwater Savings Facilities partners. (See discussion in Activities and Projects – 2011 Section) The amendment did not increase the amount of water stored by the AWBA in 2011.

In 2011, the AWBA received a total of 136,576 acre-feet of water. The quantity of water that was delivered to each facility is described in Appendix A and totaled 65,651 acre-feet in the Phoenix AMA, 33,052 acre-feet in the Pinal AMA, and 36,873 acre-feet in the Tucson AMA.

While no Intentionally Created Unused Apportionment (ICUA) was created in 2011, the AWBA certified that 8,159 acre-feet of ICUA was created for the benefit of California in 2010 by letter to the Bureau of Reclamation.

Based on the Decree accounting data, total consumptive use of Colorado River water by Arizona for 2011 was 2.78 MAF. Distribution of the 2.78 MAF was approximately 1.15 MAF for direct uses along the Colorado River and CAP diversions of approximately 1.63 MAF (U.S. Bureau of Reclamation, Lower Colorado River Operations, Colorado River Accounting and Water Use Report Arizona, California, Nevada – Calendar Year 2011, dated May 2011). In 2011, storage by the AWBA assisted Arizona in using its entitlement to Colorado River water.

Again in 2011, legislative transfers to assist in balancing the State's budget negatively impacted the Arizona Water Banking (AWB) Fund. The total impact to the AWB Fund, while not as great as in past years, totaled \$327,300 reducing both the Withdrawal Fee and Administration subaccounts.

In 2010, CAWCD filed a lawsuit in Superior Court claiming that the legislative transfer of funds from the Arizona Water Banking Fund Nevada Resource subaccount was unconstitutional. A hearing was held on June 10, 2011, and Judge Kreamer issued his decision that the legislative sweep of Nevada's money from the AWB Fund was unconstitutional. However, he did note that the claims statutes applied meaning that the swept funds would not be returned to the AWBA because the original claim was not considered timely filed. In his written decision, the judge ruled that the taking was unconstitutional but did not rule that the money needed to be returned to the Water Banking Fund. Judge Kreamer's decision was very specific and only applies to the funds the AWBA received from Nevada. The ruling was not appealed by either party.

For additional information regarding the AWBA, please see the AWBA website at www.azwaterbank.gov or contact Virginia O'Connell (voconnell@azwater.gov), Terri Sue Rossi (tsrossi@azwater.gov) or Tim Henley (tjhenley@azwater.gov), or by phone at 602-771-8487.

Activities and Projects - 2011

Amended 2011 Plan of Operation

Due to a series of unforeseen events, certain AWBA partners were in a situation where they would not have water available to irrigate their crops. The Plan was amended for two reasons. The first was to change the delivery points of previously scheduled water and the second was to modify the payment schedule to accommodate the change in deliveries.

The Plan was modified as follows:

- I. 5,000 acre-feet of water initially scheduled for the Tonopah Desert Recharge Project was redirected to the New Magma Irrigation and Drainage District (NMIDD) Groundwater Savings Facility (GSF). Because the water did not leave the Phoenix AMA, NMIDD paid the AWBA partner cost share of \$33 per acre-foot. Final end of year deliveries identified 2,626 acre-feet of the 5,000 acre-feet delivered to NMIDD.
- II. 15,000 acre-feet of water initially scheduled for storage in the Tucson AMA was redirected to the Pinal AMA for storage at the GSFs. Because water was moved from the Tucson AMA to the Pinal AMA where the AWBA had no remaining funds, in order to accomplish the storage, the GSF partners agreed to pay all of the AWBA's costs of \$137 per acre-foot.

The AWBA's 2012 Plan of Operation, approved in December 2011, included an estimated 34,000 acre-feet of water for storage in the Tucson AMA. This storage utilizes all estimated funds available in the Tucson area, including funds carried over for water that was not ultimately stored in 2011. Since the cost of water has remained the same from last year, the 15,000 acre-feet that was redirected last year will cost the same to deliver and store in 2012. Because the AWBA utilized all funds available in the Tucson area, the AWBA is still storing the same amount of water it would have stored in the Tucson AMA over the two year period (2011 and 2012).

One advantage of having redirected the water is that the Pinal AMA GSF partners paid all of the AWBA's costs. Because the funds used to develop the long-term storage credits were not AWBA funds, the AWBA has some flexibility in how it distributes these credits in the future. As an example, during times of shortage, the credits could be recovered in the Pinal AMA but used for the benefit of other AMAs, on River firming or Indian Settlement firming. The AWBA has discussed the opportunity to use these credits to assist the AWBA in meeting its firming goal in the Tucson AMA. However, the AWBA could use these credits for other purposes if not needed in the Tucson AMA. The total amount of credits in this category is 14,125 acre-feet.

Interstate Banking

Pursuant to the Letter Amendment to the Second Amended Agreement for Interstate Water Banking executed in December 2010, there was no storage or recovery for Nevada in 2011. The parties had agreed that because of hydrologic and economic conditions, the AWBA would forego additional interstate water banking for SNWA through 2014, and SNWA would forego requests for development of ICUA in the same time frame. The Letter Amendment also modified the payment schedule making the first \$23 million dollar payment due in 2015. The AWBA's long-term storage credit sub-account for SNWA remained at 600,651 acre-feet. Annual interstate storage for 2002 through 2011 is

displayed in Table 6b. In 2011, staffs of CAP, SNWA, CRCN, ADWR and the AWBA continue to meet and discuss all aspects of the Second Amended Agreement for Interstate Water Banking.

Interstate Water Banking Report

Since 2006, the AWBA has been required to submit a report to the Joint Legislative Budget Committee (JLBC) pursuant to A.R.S. § 45-2473. This report must be submitted by October 1 for the previous fiscal year if the AWBA was owed or received any monies pursuant to an interstate water banking agreement. The report shall account for all of the money received or disbursed pursuant to an interstate water banking agreement. The AWBA transmitted the Interstate Water Banking Report for Fiscal Year 2010-2011 to the JLBC as required. A report that accounts for the distribution of interstate monies for the time period July 1, 2011 through June 30, 2012 will be submitted in October of 2012.

Agreements

Groundwater Savings Facility Agreements

The AWBA currently has nine agreements with GSF operators for storage at their facilities. These GSF Agreements were scheduled to terminate on December 31, 2011. There are two versions of the GSF Agreement, a version for operators who own or control the wells within the GSF and a version for operators who do not own or control the wells within the GSF. As a result of discussions with the GSF operators, changes were made to the language for clarification purposes. The amended agreements are currently in place and are effective through December 2021.

Master Storage Agreement

The Master Water Storage Agreement is the AWBA's contract with CAWCD that allows for storage at its facilities. Exhibit A to the agreement identifies the individual storage facilities available to the AWBA in any given year. The exhibit was modified (Master Storage Agreement - Amendment No. 2) to remove the Avra Valley Recharge Project, no longer owned by CAWCD, and to add the Superstition Mountain Recharge Project (SMRP), a new facility owned and operated by CAWCD. This is the only CAWCD facility located in the eastern portion of the Phoenix AMA.

The Amended Agreement to Firm Future Supplies

The Agreement to Firm Future Supplies (Agreement to Firm) was amended in 2010 due to the acquisition of additional Colorado River entitlements by the Mohave County Water Authority (MCWA). The Amended Agreement to Firm included a new exhibit, Exhibit C, which reserves an additional 25,894 acre-feet of credits for MCWA. Based on the Amended Agreement to Firm, staff invoiced the MCWA, and subsequently received the first two payments for the credits identified in Exhibit C. MCWA will make an additional 18 equal quarterly installments of \$25,894. The credits were transferred to the MCWA subaccount of the AWBA long-term storage credit account in September. The balance of the MCWA subaccount is now 256,174 acre-feet.

Water Storage Permits

The AWBA applied for a water storage permit for the Superstition Mountain Recharge Project in March of 2011. ADWR issued the permit and the AWBA stored 2,444 acre-feet at the facility in 2011. In September of 2010, the AWBA had applied for water storage permit renewals for the Queen Creek

Irrigation District, Central Arizona Irrigation and Drainage District, and Maricopa-Stanfield Irrigation and Drainage District GSFs. These renewals were issued in 2011.

Storage Facility Inventory

Pursuant to A.R.S. §45-2452(A), the AWBA was required to develop a Storage Facility Inventory (Inventory) of all existing storage facilities in Arizona prior to March 1, 1997. The primary purpose of the Inventory is to identify storage capacity available to the AWBA to meet its water storage goals and evaluate if additional storage capacity is needed to meet those goals. The AWBA is required to update the Inventory at least once every five years. The 1997 Inventory was previously updated in 2002, 2005 and again in 2011. In addition to meeting the mandatory update requirement, the Inventory is also synergistic with the Storage and Interstate Release Agreement (SIRA) that requires identification of recharge facilities in the Inventory prior to the AWBA utilizing those facilities for interstate water storage. The Inventory identified 75 permitted recharge facilities within the three AMAs. The AWBA has water storage permits at 22 of those facilities for a total permitted capacity of approximately 1 million acre-feet. The conclusion of the Inventory is that storage facilities exist in this state to meet the AWBA's water storage needs for the next 10 years.

Indian Firming Program

During 2011, AWBA staff participated with several Indian, non-Indian and Federal parties in discussions of various Indian water settlements. The AWBA concerns were mainly related to the need to firm water supplies resulting from the settlements.

The Claims Resolution Act of 2010, which includes the White Mountain Apache Tribe Water Rights Quantification, was signed by the President in December 2010. Under this settlement, the AWBA is required to firm 3,750 acre-feet per year of non-Indian agricultural (NIA) CAP water. This obligation is part of the 8,724 acre-feet per year of firming identified for future settlements under the Arizona Water Settlements Act (AWSA). The effective date of the settlement could be in two to three years depending on when the conditions of the settlement are met. The AWBA continues to work with the other parties to the settlement on the activities that need to be completed to meet the enforceability date of April 30, 2021. The parties are re-drafting the settlement agreement to conform to the federal legislation. It is anticipated that the enforceability date will be sometime in 2014. The AWBA's obligation to firm NIA CAP water under this settlement is thru 2107.

As we began 2011, the Northeastern Arizona Indian Water Rights Settlement, the settlement dealing with the Navajo Nation and Hopi Tribe's claims to the Lower Colorado River and the Little Colorado River, was moving forward. In March, Senator Jon Kyl met with all parties to the settlement and provided direction for the negotiations. Senator Kyl indicated that the settlement, as it had been proposed, was too expensive and that the parties needed to reduce the cost. He also noted that if he would be sponsoring the bill, it would need to be submitted by June. As a result of Senator Kyl's comments, the parties restructured the settlement to address only the Navajo/Hopi claims to the Little Colorado River and renamed it as such. By removing the Lower Colorado River component of the settlement, the cost of the settlement was greatly reduced. The Navajo/Hopi proposed claims to the Lower Colorado River will be addressed at a later date. The current settlement includes an allocation of NIA CAP water to Window Rock that would have an AWBA firming obligation of up to 3,205.5 acre-feet per year. While not specifically identified, this obligation was included in the AWSA as part of the firming obligation for future settlements. Therefore, this settlement would not increase the AWBA's firming obligations. As 2011 ended, all the parties were hopeful that Senator Kly could introduce

Navajo-Hopi Water Rights Settlement Act legislation early in 2012. [Senator Kyl introduced the bill on February 14, 2012]

Southside Replenishment Bank

In 2009, the AWBA executed an intergovernmental agreement (IGA) with the Gila River Indian Community (GRIC) for the purpose of establishing the Southside Replenishment Bank (SSRB) as mandated by the AWSA. The AWBA must schedule the delivery of at least 1,000 acre-feet per year to the SSRB until 15,000 acre-feet have been delivered. The first delivery was made in 2009. Since then, the AWBA has scheduled the delivery of 1,000 acre-feet of water each year bringing the total volume of the SSRB to 3,000 acre-feet.

By memorandum dated September 16, 2011, the AWBA was informed by ADWR that there were no irrigation replenishment obligations for the 2010 reporting year. It is not anticipated that there will be irrigation replenishment obligations for the 2011 reporting year, but that information will not be available until later in 2012 and will be reported in the 2012 Annual Report.

Water Supply and Demand Study

An analysis was made to assist the AWBA in determining the potential for use of existing and future AWBA long-term storage credits (credits) to meet the CAP and On-river Municipal and Industrial (M&I) and Indian firming requirements during times of shortage. A series of operational scenarios were developed and modeled using the Colorado River System Simulation (CRSS), which was modified by using Arizona assumptions for operating the Colorado River. Based on the analysis, the AWBA will be able to estimate if and when additional supplies will be needed to meet its obligations. If additional supplies are needed, an estimate of the cost of those future supplies can be developed based on potential sources and when they are needed.

The CRSS Model was run for the period of 2008 to 2138 (2138 was used to accommodate the potential for a Northeastern Arizona Indian Water Rights Settlement). A number of scenarios were modeled to test the sensitivity of shortages to various assumptions. From this initial analysis three scenarios were selected for further analysis: (1) 1997 Base, (2) AWBA Base, and (3) Maximum Firming. The 1997 Base represents the conditions present when the existing AWBA goals were established. The AWBA Base was modeled using the most current assumptions for operating the River and the 60th percentile water supply. The 60th percentile water supply is a conservative water supply (59% of the model's water supplies produce fewer shortages). Maximum Firming is the worst case scenario (the largest number of shortages) using the AWBA Base assumptions.

The Water Supply and Demand Study identified the number of shortages for each firming obligation, the firming and shortage volumes, and the volume of credits that will be remaining after the firming period. Based on the initial analysis, the probability of shortage before 2022 is very low (6%) and will likely only affect Indian water uses. However, this is based on the 60th percentile. If another percentile was selected the year and probability could change. Under maximum firming conditions (total firming of over 4.4 MAF), there is a 15.4% chance that the first M&I shortage will occur in 2035. While the planning scenario shows that the AWBA will have credits remaining for most firming obligations, under current circumstances, the AWBA does not develop sufficient credits to firm M&I shortages in Pima County after 2057. Under Maximum Firming, by the year 2091, there is also a deficit of approximately 128 KAF of credits needed for meeting the Indian firming obligations.

Credit Distribution

As CAWCD's continued its recovery planning process, questions arose concerning the AWBA's role in recovery, specifically firming, and if the AWBA needs to develop policies regarding the distribution of its credits. The AWBA's role is fairly specific in the distribution of the credits earned with the 4¢ *ad valorem* tax:

"...shall distribute long-term storage credits accrued with monies deposited in the fund in accordance with section 48-3715.03, subsection B only for the benefit of the county in which the monies were collected. The Authority shall distribute these long-term storage credits to CAWCD to the extent necessary to meet the demands of CAWCD's municipal and industrial subcontractors during times in which CAWCD's diversions from the Colorado River have been or will be disrupted by shortages on the Colorado River or by disruptions in operation of the central Arizona project." §45-2457(B)(7).

However, the statute is silent on how the AWBA will accomplish the distribution. The recovery process could benefit by the AWBA developing guidance or policies on how it will distribute these credits.

The AWBA's role is not as specific in the distribution of the credits earned with the withdrawal fees:

"...shall distribute or extinguish long-term storage credits accrued with monies collected in accordance with section 45-611, subsection C, paragraph 3 only for the benefit of the active management area in which the monies were collected. The Authority may distribute or extinguish these long-term storage credits to the extent necessary to meet the demands of CAWCD's municipal and industrial subcontractors during times in which CAWCD's diversions from the Colorado river have been or will be disrupted by shortages on the Colorado river or by disruptions in operation of the central Arizona project, to implement the settlement of water right claims by Indian communities in this state or, on request from the director, to meet the other water management objectives set forth in chapter 2 of this title." §45-2457(B)(6).

Because the statute is not as specific when dealing with the withdrawal fee credits, an entire set of different issues could arise leading to additional guidance and policies. An initial workshop with interested parties was held to assist the AWBA in developing guidance and policies. The primary goal was to solicit input with respect to the transfer of AWBA long-term storage credits during declared shortages.

Several issues were raised by the participants at the workshop:

1. Issues associated with distribution of credits during shortage are both procedural and policy in nature.
2. There is a need to gain clarity on what the phrase "to the extent necessary" means.
3. Is equity a consideration when policies are being developed?
4. Perception of other states, particularly in the Lower Basin, will be important when developing potential policies.
5. Discussion will first focus on 4¢ *ad valorem* tax and then on withdrawal fees.
6. Do priorities regarding use of credits need to be established?
7. Meeting participants indicated that they thought staff from AWBA, ADWR and CAWCD needed to have internal discussion and that some basic decisions need to be made.

The IGA among ADWR, AWBA, and CAWCD identifies certain cooperative activities and joint planning processes that the parties must participate in periodically. These activities include developing a coordinated and cooperative planning process that addresses issues such as: 1) the future distribution and use of water stored by the AWBA, and 2) the recovery of water stored by the AWBA and CAWCD for water management objectives set forth in statute. Based on their recovery planning process, CAWCD has developed a good understanding of the physical aspects of recovering credits and delivering water during shortages. However, as identified at the workshop, several process and policy questions have been raised. AWBA staff identified these questions in a preliminary draft on *Potential Policies Regarding Distribution of Long-Term Storage Credits for M&I Firming*, which was provided at the AWBA Commission meeting on March 30, 2011. AWBA, CAWCD, and ADWR staff began meeting on a regular basis to discuss the issues that were identified.

These discussions primarily concern the distribution of AWBA credits during shortages and are currently focused on distribution of 4¢ *ad valorem* tax credits. As an outcome of these discussions, staff recommended that an IGA would be a likely method of coordinating the activities of the three organizations, i.e. ADWR, AWBA, and CAWCD, allowing each organization to maintain and adhere to its respective regulations, authorities and policies.

At the December AWBA Quarterly Meeting, staff provided a conceptual outline for an IGA. The outline focuses on the responsibilities of each organization and how they will collectively work together to insure recovery and distribution of water during shortages or CAP outages.

Summary of potential policies and concerns that are included in the draft Conceptual IGA:

- AWBA Policies/Rules/Statutes
 - a. Considering credit preservation when distributing AWBA credits
 - b. Limiting the amount of credits to up to 20% of the shortage amount
 - c. Use of AWBA credits for the purpose of accruing long-term storage credits
 - d. Distribution of the credits within the AMA or County that is being benefited
 - e. When to use 4¢ *ad valorem* tax credits vs. withdrawal fee credits

- CAWCD Policies/Rules/Statutes
 - a. Meeting its CAP M&I subcontractors' full orders during a shortage event using a combination of Project Water and AWBA credits
 - b. Delivery of recovered credits as Project Water
 - c. Creation of a credit recovery schedule
 - d. Recovery agreements CAWCD may have with entities that will be recovering credits on behalf of CAWCD
 - e. Managing the shortage and distribution of supplies

- ADWR Policies/Rules/Statutes
 - a. Develop credit transfer form and fees
 - b. Recovery for M&I firming
 - c. Use of AWBA long-term storage credits
 - d. Annual recovery reports long-term storage accounting

The AWBA, ADWR and CAWCD continue to meet to discuss the distribution of AWBA credits during times of shortage.

2012 Plan of Operation

Under the AWBA's 2012 Plan approved December 7, 2011, projected deliveries include 119,002 acre-feet for intrastate storage and 1,000 acre-feet for direct delivery to the GRIC for the SSRB. Based on the Plan, 57,062 acre-feet will be recharged at USFs and 61,940 acre-feet at GSFs. There is no interstate storage planned for 2012.

Website

Staff continues to utilize the AWBA website in an effort to provide timely and accurate information to the water community regarding the AWBA's activities: www.azwaterbank.gov. The web page contains information about the AWBA, Commission members and staff, announcements, meetings, storage facilities and water deliveries. It also contains documents that may be downloaded and provides links to other water-related websites. In order to comply with State mandated website guidelines, the website had a significant remodel in 2011. While the interface changed, the information previously provided did not.

Monies Expended from the Banking Fund

Arizona Revised Statutes §45-2425 mandates the various sources of monies for the AWB Fund. The AWB fund is administered by the AWBA. In 2011, 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. No *ad valorem* tax revenues were deposited into the AWB Fund in 2011. In June of 2010, the CAWCD Board again resolved that all taxes to be levied for the following tax year would be retained by CAWCD. All *ad valorem* monies previously held in the AWB Fund were expended by 2007. Money from this source must be used to benefit the county in which it was collected.
3. No general fund appropriation money was deposited in the AWB Fund in 2011.
4. Pursuant to the Agreement to Firm, MCWA agreed to prepay the AWBA to set aside 230,280 acre-feet of credits that were transferred to the MCWA sub-account. Once the credits were identified for use by an entity outside of the three-county service area, CAWCD was required to charge the AWBA a fee in lieu of the 4¢ *ad valorem* tax. Monies collected from MCWA are used to offset the CAWCD fees which are charged at the same rate and on the same quarterly schedule as MCWA's prepayments to the AWBA. The final payment due under the Agreement to Firm was made by MCWA in November of 2010 for the first quarter of 2011. The first prepayment under the Amended Agreement to Firm that sets aside an additional 25,894 acre-feet of credits was made in September of 2011 for the quarter beginning on October 1.

Table 1 shows the money the AWBA collected and the money that was expended for delivery and storage of water in 2011 by source of funds. Table 2 shows the total money received, expended and remaining through December 2011 by source of funds.

Table 1. Monies Collected and Expended in 2011 by Source of Funds

Source of Funds	Money Collected	Money Expended
General Funds	\$0	\$0
In-Lieu Fund – MCWA Prepayments	\$25,894	\$25,894
State Indian Firming	\$0	\$0
Interstate Water Banking - Nevada		
Nevada Resource ¹	\$37	\$0
Operating ¹	\$482	\$0
Subtotal for Interstate	\$519	\$0
Shortage Reparations - NV	\$0	\$0
4¢ Ad valorem Tax²		
Maricopa County	\$0	\$7,726,206
Pinal County	\$0	\$1,032,200
Pima County	\$0	\$5,067,961
Subtotal for Ad valorem	\$0	\$13,826,367
Groundwater Withdrawal Fees		
Phoenix AMA	\$1,533,282	\$1,408,732
Pinal AMA	\$1,195,491	\$961,800
Tucson AMA	\$388,801	\$468,641
Subtotal for Withdrawal Fees	\$3,117,574	\$2,839,173
TOTAL	\$3,143,988	\$16,691,434

¹ Amount collected is interest.

² Money expended by CAWCD to offset the AWBA delivery costs.

Table 2. Monies Collected and Expended through December 2011 and Monies Remaining Available

Source of Funds	Money Collected	Money Expended	Money Available ¹
General Funds	\$11,100,865	\$11,100,865	\$0
In-Lieu Fund - MCWA Pre-payments	\$4,631,494	\$4,631,494	\$0
State Indian Firming²	\$2,338,171	\$2,338,171	\$0
Interstate Water Banking-NV			
Pre-Amended Agreement	\$10,053,945	\$10,053,945	\$0
Nevada Resource ²	\$86,594,163	\$86,589,032	\$5,131
Operating	\$12,698,179	\$12,444,845	\$253,334
Subtotal for Interstate	\$109,346,287	\$109,087,822	\$258,466
Shortage Reparations - NV	\$2,999,748	\$2,999,748	\$0
4¢ Ad valorem Tax⁴			
Maricopa County	\$199,074,663	\$80,096,219	\$118,978,444
Pinal County	\$9,172,397	\$8,465,665	\$706,732
Pima County	\$38,500,287	\$34,513,773	\$3,986,514
Subtotal for Ad valorem	\$246,747,347	\$123,075,656	\$123,671,690
Groundwater Withdrawal Fees			
Phoenix AMA ²	\$17,176,549	\$17,175,551	\$998
Pinal AMA ²	\$14,537,146	\$14,412,367	\$124,779
Tucson AMA ²	\$7,526,804	\$7,486,313	\$40,491
Subtotal for Withdrawal Fees	\$39,240,499	\$39,074,231	\$166,268
TOTAL	\$416,404,411	\$292,307,987	\$124,096,424

¹ Money remaining in AWB Fund or collected by CAWCD; includes monies committed for the 2012 Plan of Operation.

² Total money collected was decreased to reflect legislative transfers in CY 2004, CY 2005, CY 2009, CY 2010 and CY 2011.

³ Interest accrued prior to, but deposited after Legislative transfer in CY 2010.

⁴ Includes money collected and money expended by CAWCD to offset the AWBA delivery costs.

Again in 2011, legislative transfers to assist in balancing the State’s budget negatively impacted the AWB Fund. The total impact to the AWB Fund, while not as great as past years, totaled \$327,300 reducing both the Withdrawal Fee and Administration subaccounts.

Long-term Storage Credits

The AWBA has established long-term storage credit accounts with ADWR for each AMA. After receiving the AWBA’s annual reports, ADWR calculates and issues long-term storage credits to the appropriate accounts. The AWBA receives credit for 95 percent of the stored water. After credits are issued to the account, AWBA staff allocates the credits to the appropriate sub-accounts based on source of funding. The number and distribution of long-term storage credits for 2011 are listed in Table 3. The cumulative totals of long-term storage credits accrued by the AWBA through December 2011 are listed in Table 4.

Table 3. Number and Location of Long-term Storage Credits Accrued in 2011

Location and Funding Source		Long-term Storage Credits Accrued (acre-feet)
Phoenix AMA		
	4¢ <i>Ad valorem</i> Tax	52,715
	Groundwater Withdrawal Fee	9,268
	General Fund	0
	Indian Firming	0
	Shortage Reparations	0
	Interstate - Nevada	0
	AMA Total	61,983
Pinal AMA		
	4¢ <i>Ad valorem</i> Tax	9,289
	Groundwater Withdrawal Fee	7,534
	General Fund	0
	Indian Firming	0
	Shortage Reparations	0
	Interstate - Nevada	0
	Other- (GSF Operator Full Cost Share)	14,125
	AMA Total	30,947
Tucson AMA		
	4¢ <i>Ad valorem</i> Tax	31,688
	Groundwater Withdrawal Fee	2,986
	General Fund	0
	Indian Firming	0
	Shortage Reparations	0
	Interstate - Nevada	0
	AMA Total	34,674
Totals by Funding Source		
	4¢ <i>Ad valorem</i> Tax	93,691
	Groundwater Withdrawal Fee	19,788
	General Fund	0
	Indian Firming	0
	Shortage Reparations	0
	Interstate - Nevada	0
	Other- (GSF Operator Full Cost Share)	14,125
	TOTAL	127,605

Table 4. Cumulative Total and Location of Long-term Storage Credits Accrued through December 2011

Location and Funding Source	Long-term Storage Credits Accrued (acre-feet)
Phoenix AMA	
4¢ <i>Ad valorem</i> Tax	1,271,392
Groundwater Withdrawal Fee	278,253
General Fund	42,316
Indian Firming	0
Shortage Reparations	20,642
Interstate Water Banking - Nevada	51,009
AMA Total	1,663,612
Pinal AMA	
4¢ <i>Ad valorem</i> Tax	181,373
Groundwater Withdrawal Fee	381,796
General Fund	306,968
Indian Firming	0
Shortage Reparations	60,507
Interstate Water Banking - Nevada	439,851
Other- (GSF Operator Full Cost Share)	14,125
AMA Total	1,384,620
Tucson AMA	
4¢ <i>Ad valorem</i> Tax	361,150
Groundwater Withdrawal Fee ¹	95,573
General Fund	54,546
Indian Firming	28,481
Shortage Reparations	1,227
Interstate Water Banking - Nevada	109,791
AMA Total	650,768
Totals by Source of Funds	
4¢ <i>Ad valorem</i> Tax	1,813,916
Groundwater Withdrawal Fee	755,622
General Fund ²	403,830
Indian Firming	28,481
Shortage Reparations	82,375
Interstate Water Banking – Nevada ³	600,651
Other- (GSF Operator Full Cost Share)	14,125
TOTAL	3,698,999

¹ Includes 234 acre-feet of credits purchased from the Tohono O’odham Nation pursuant to § 45-841.01.

² 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 MCWA dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term storage subaccount for the MCWA in 2005. An additional 25,894 acre-feet of credits have been reserved under Exhibit C the Amended Agreement to Firm, dated December 8, 2010, for a total of 256,174 acre-feet. By resolution passed in 2008, the AWBA established a replacement account for 4th priority Colorado River M&I users.

³ Includes 50,000 acre-feet of credits transferred to SNWA.

Since inception, the AWBA has focused its efforts on developing long-term storage credits for firming purposes. The AWBA has identified 2,700,000 acre-feet of credits as a reasonable amount of credits to firm the CAP M&I subcontracts over the next 100 years. This volume is divided based on a pro-rata distribution by county based on CAP M&I subcontracts as follows: 58 percent Maricopa County, 32 percent Pima County, and 9 percent Pinal County.

The AWBA has also identified 420,000 acre-feet of credits as a reasonable amount of credits 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 will collect reimbursement for the replacement cost of credits used for on-river firming. In 2008, the AWBA executed Resolution 2008-1 that established a long-term storage credit replacement account for 4th priority Colorado River M&I users. As credits are used and replaced, these replacement credits will be placed in a separate replacement subaccount and be earmarked for the entity that reimburses the AWBA for the replacement of those credits. Table 5 illustrates the progress made by the AWBA towards meeting its established goals.

Table 5 also identifies the estimated remaining costs for meeting the AWBA's goals and obligations. These estimates are developed based on the assumptions contained in the AWBA's Ten-Year Plan for 2013-2022 and are subject to potential shortages discussed under the recovery section. For obligations that are not met in the Ten-Year Plan, 2023 estimated costs were assumed when calculating the amount remaining to meet the goals.

As described in the Ten-Year Plan section of this report, most of the firming goals will be met during the next ten years. Those not met include the Tucson AMA and on-river M&I firming goals, and the Nevada contract obligation. Approximately 70 percent of the Tucson AMA firming goal will have been met by 2022. Since all of the *ad valorem* tax monies will have been expended by 2017, the AWBA will need to rely on withdrawal fees to meet the remainder of this firming goal. Because revenue from withdrawal fees is limited in the Tucson AMA (less than \$500,000 per year), the firming goal would not be met until well beyond 2025. Therefore, estimated rates for 2023 were used to calculate the total remaining costs for the Tucson AMA firming goal. Expenditures under the Ten-Year Plan for the Tucson AMA are estimated at \$31 million, utilizing *ad valorem* tax monies (\$21 million) and withdrawal fees (\$5 million), and the remaining costs, which would be limited to the use of withdrawal fees, are estimated at \$52 million for a total cost of \$78 million.

Likewise, because it is not known if, or when, the AWBA will receive general fund appropriations in the future, the same method was applied to calculate the remaining on-river firming costs. It was also assumed that storage for on-river firming purposes would be at GSFs.

Although funding is not the limiting factor for meeting the Nevada contract obligation, the same assumption was used to calculate the remaining interstate costs because the amount of water available for this purpose after 2022 is not known. Interstate storage costs for the Ten-Year Plan are estimated at \$11 million, which results in a cumulative balance of 642,518 acre-feet of credits. Utilizing estimated 2023 rates and average USF/GSF storage costs, the remaining 607,482 acre-feet of credits would cost an additional \$141 million for a total cost of \$152 million.

Lastly, the remaining costs for meeting the Indian firming goals were estimated by assuming that because the M&I firming goals could be met using *ad valorem* taxes and only a portion of existing withdrawal fee credits from the Pinal AMA, all withdrawal fee credits accrued in the Phoenix and Pinal AMAs in the next ten years would be applied toward meeting these goals. Existing withdrawal fee credits in the Pinal AMA and credits accrued from storage at the Gila River Indian Irrigation and Drainage District GSF, could be used to meet the remaining firming goal. Existing withdrawal fee credits from the Phoenix AMA could be used to meet the firming goal for future Indian settlements. Because funding has already been expended for these credits, they were not included in the calculation for remaining costs.

Table 5. Identified Uses of Long-term Storage Credits Accrued through December 2011 and Percentage of AWBA Goals Achieved

Location and Objective	Funding Source	Goal	Obligation	Non-Credit Goal/Oblig. Achieved	Credits Accrued (AF)	Percent Goal/Oblig. Achieved	Estimated ¹ Remaining Costs (\$ Million)
Phoenix AMA M&I Firming Groundwater Mgmt ²	<i>Ad valorem</i> tax Withdrawal Fees	1,566,000 AF			1,271,392 278,253	81% 99%	\$44
Pinal AMA M&I Firming Groundwater Mgmt ²	<i>Ad valorem</i> tax Withdrawal Fees	243,000 AF			181,373 381,796	75% 232%	\$5
Tucson AMA M&I Firming Groundwater Mgmt ²	<i>Ad valorem</i> tax Withdrawal Fees	864,000 AF			361,150 89,952	42% 52%	\$21 \$57
On-River M&I Firming³	General Fund	420,000 AF			403,830	96%	\$2.5
Indian Settlements: GRIC Firming	Withdrawal Fees	350,000 AF ⁴	up to 15,000 AF/YR		0 ⁵	0%	\$14
Future Settlements	Withdrawal Fees	200,000 AF ⁴	up to 8,724 AF/YR		0 ⁵	N/A	\$18
Federal Assistance ⁶ Tucson AMA	Appropriation Withdrawal Fees Cost of Services		\$3,000,000	\$3,000,000 \$2,338,171 \$630,490 \$31,339	34,102 28,481 5,621 n/a	100%	\$0
Southside Repl. Bank	Withdrawal Fees		15,000 AF Direct Delivery		3,000	20%	\$1.8
Interstate Water Banking - NV	Contract with Nevada		1,250,000 AF ⁷		600,651	13%	\$152
Other: Shortage Repair -Nevada	Gifts, Grants, Donations	\$8,000,000		\$2,999,748	82,375	37%	\$5
Pinal Redirect Credits ⁸	n/a				14,125		

¹ Based on the ten-year plan and an assumed rate escalation of 1% for water storage costs after 2017

² Withdrawal fees could be utilized in addition to 4¢ *ad valorem* tax revenues for M&I firming if needed to reach firming goals.

³ 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 subaccount for the MCWA in 2005. An additional 25,894 acre-feet of credits have been reserved under Exhibit C the Amended Agreement to Firm, dated December 8, 2010, for a total of 256,174 acre-feet

⁴ Based on estimates from the Indian Firming Study Commission Report dated January 6, 2006.

⁵ No credits have been dedicated for this purpose but Withdrawal Fee Credits could be used if a shortage were to occur.

⁶ Expenditures include \$14,883 and \$16,456 deducted for payment of cost of services for FY 08 and FY 09, respectively.

⁷ Pursuant to the Second Amended Agreement for Interstate Water Banking, the AWBA has committed to have this number of long-term storage credits within the Nevada subaccount.

⁸ Credits accrued from AWBA water provided to Pinal AMA GSFs at full cost to the GSF operators. These credits are currently identified for use in the Tucson AMA.

The average annual cost for the AWBA to obtain one acre-foot of long-term storage credit for intrastate and interstate storage is presented in Tables 6a and 6b, respectively. Table 6a illustrates that the unit cost per credit for intrastate storage fluctuates yearly. CAWCD establishes the cost for delivery and storage of excess water. The significant increase beginning 2010 is due to CAWCD eliminating the incentive recharge cost structure.

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

Year	Credits ¹	Funds Expended	Average Cost (per acre-foot)	Ratio of GSF to USF
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	162,342	\$14,720,277	\$90.67	17% : 83%
2007	245,221	\$14,589,390	\$59.49	37% : 63%
2008	203,373	\$8,168,100	\$40.16	65% : 35%
2009 ²	99,453	\$6,977,590	\$70.16	76% : 24%
2010	181,214	\$26,027,947	\$143.63	21% : 79%
2011	127,605	\$16,543,540	\$129.65	33% : 67%

¹ Information in this table is reconciled on an annual basis.

² Does not include credits purchased pursuant to § 45-841.01.

Table 6b illustrates the unit cost per long-term storage credit for interstate also fluctuates yearly. No interstate storage occurred in 2011.

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)	Ratio of GSF to USF
2002	61,098	\$8,617,393	\$141.04	100% : 0%
2003	50,000 ¹			
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	114,886	\$21,853,906	\$190.22	91% : 09%
2008	None	None	\$0	0% : 0%
2009	55,252	\$10,781,853	\$195.14	45% : 55%
2010	17,879	\$3,825,350	\$213.96	0% : 100%
2011	None	None	\$0	0% : 0%

¹ 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 for five purposes:

- Firming CAP M&I entitlements;
- Firming the post-1968 M&I entitlements for entities outside the CAP service area;
- Firming for the Federal obligation under the AWRSA;
- Fulfilling the water management objectives set forth in Chapter 2 of Title 45 (Arizona Revised Statutes); and
- Interstate water banking purposes pursuant to agreements with Nevada.

Credits created by the AWBA 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 2011. No credits were distributed or extinguished in 2011 for water management purposes.

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 2011, no credits were developed or distributed under such agreements.

The AWBA did not recover or distribute any credits in 2011.

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 (Table 7) analyzes activity for the period 2013-2022 and was derived using the information found in Appendices A through J. AWBA accounting for previous years can be found in the 2010 Annual Report and 2012 Plan of Operation. AWBA staff developed the Ten-Year Plan based on the following guiding principles:

1. There are no legislative transfers from the AWB Fund.
2. 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.
3. The plan covers a ten-year time period beginning with the next calendar year. For example, this Ten-Year Plan covers the time period 2013-2022.
4. The plan is updated annually based on current priorities of the AWBA.
5. The plan is an important tool to be utilized in development of: 1) the next year's annual Plan of Operation and 2) policy guidelines for future AWBA activities.

Ten-Year Plan Components

The following factors are recognized to be important elements in developing 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 nine water storage permits for GSFs with a total permitted storage capacity of 427,547 acre-feet per year. Storage at these facilities under this Ten-Year Plan is limited due to storage by other GSF partners. Even though there has historically been very little storage at GSFs in the Tucson AMA, storage has increased over the last two years because of the different cost share paid by the facility operators in that AMA. Therefore GSF storage, while still minimal, has been included in this Ten-Year Plan for the Tucson AMA.

The AWBA has renewed water storage agreements with its GSF partners. The new agreements will expire December 31, 2021, the end of this ten-year planning period. The Ten-Year Plan assumes the agreements will be renewed and that the AWBA will continue to participate with these GSF partners.

The AWBA currently has nine water storage permits for USFs with a total permitted storage capacity of 561,000 acre-feet per year. Storage capacity available to the AWBA, primarily at CAWCD operated facilities, has decreased over the last few years because of storage by other participants. Storage capacity could continue to decline as additional entities contract with CAWCD and are issued water storage permits by ADWR. However, the actual capacity used by these entities could be limited by the availability of water to those entities. The Ten-Year Plan assumes that sufficient storage capacity exists to store the amount of water assumed to be available to the AWBA under CAWCD's policy for distributing Excess CAP water. However, it is possible the location of AWBA storage could be affected in the future.

In addition, five of the USF permits will expire within this Ten-Year Plan. Any difficulty in obtaining new permits could impact the capacity available to the AWBA. However, because impacts of this nature cannot be predicted, they were discounted in the analysis of this Ten-Year Plan and the permits were assumed to be renewed.

The AWBA's water storage agreement with the Metropolitan Domestic Water Improvement District for storage at the Avra Valley Recharge Project will expire on December 31, 2015. Likewise, the AWBA's Master Water Storage Agreement with CAWCD for storage at its facilities will expire December 31, 2016. Renewal of these agreements is anticipated therefore storage at these facilities was included for the full Ten-Year Planning period.

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.

Table 7. Ten-Year Plan

ARIZONA WATER BANKING AUTHORITY – Ten-Year Plan 2013 – 2022 (Acre-feet)																
YEAR	(a)	(b)		(c)		(d)		(e)		(f)		(g)	(h)	(i)	(j)	(k)
	CAP Water Available for AWBA	CAP M&I Firming (4¢ tax)		Water Management (Withdrawal Fees)		Appropriation from General Fund		Shortage Reparations (\$8 Million)		Indian Settlement		Interstate Banking				
		Delivery	Credits	Delivery	Credits	Delivery	Credits	Delivery	Credits	Delivery	Credits	Water Available	AWBA Capacity Available	Credits	ICUA	Remaining Credits
Pre-Plan ^(h)	n/a	1,899,944		534,674		403,830		82,651		244,408				600,651		
2013	82,800	43,942	40,866	4,372	3,136	0	0	9,414	8,755	25,072	23,317	0	248,000	0	0	600,651
2014	78,400	42,207	39,253	4,129	2,910	0	0	8,845	8,226	23,150	21,529	0	264,509	0	0	600,651
2015	72,400	41,742	38,820	3,881	2,679	0	0	5,499	5,114	21,278	19,788	0	270,959	0	0	600,651
2016	66,500	37,340	34,727	3,753	2,560	0	0	5,287	4,917	20,119	18,711	0	276,542	0	0	600,651
2017	155,700	125,403	116,625	3,685	2,497	0	0	0	0	21,668	20,152	4,944	191,286	4,598	0	605,249
2018	154,200	124,495	115,780	3,669	2,482	0	0	0	0	21,660	20,143	4,377	192,219	4,070	0	609,319
2019	152,800	121,141	112,661	3,640	2,455	0	0	0	0	21,537	20,029	6,483	195,725	6,029	20,000	595,348
2020	151,300	115,316	107,244	3,611	2,429	0	0	0	0	21,415	19,916	10,958	201,700	10,191	30,000	575,539
2021	149,900	115,417	107,338	3,583	2,402	0	0	0	0	21,295	19,804	9,605	200,605	8,933	40,000	544,471
2022	148,400	115,017	106,966	3,555	2,377	0	0	0	0	21,175	19,693	8,652	200,252	8,046	40,000	512,517
TOTAL		2,720,224		560,601		403,830		109,663		447,490				642,518	130,000	

FOOTNOTES:

- (a) See Appendix B.
- (b) See Appendix D.
- (c) See Appendix E. Includes direct delivery of 1,000 acre-feet of water each year to the Southside Replenishment Bank.
- (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 pre-plan amount includes credits accrued from storage at the GRIIDD GSF and withdrawal fee credits accrued in the Phoenix and Pinal AMAs since 2008. The State Indian settlement firming obligation is estimated at 550,000 acre-feet. In addition, 34,102 acre-feet of credits have been accrued to meet the State's obligation under Section 306 of the AWSA (\$3 million for Federal assistance).
- (g) Available AWBA CAP supplies minus intrastate deliveries.
- (h) See Appendix I.
- (i) Cumulative totals for 1997-2012; 2012 are estimated based on projected deliveries.
- (j) Pursuant to the Recovery Agreement among the AWBA, CAWCD, SNWA, and CRCN executed June 9, 2010, recovery is anticipated to begin on or after 2018. The Ten-Year Plan assumes maximum allowable annual recovery as described in the Second Amended Agreement.
- (k) Credits remaining available in Nevada sub-account after recovery.

Table 8. AWBA Percentage of Goals Achieved through 2022

Location and Objective	Funding Source	Goal	Obligation	Non-Credit Goal/Oblig. Achieved	Credits ¹ Accrued (AF)	Percent Goal/Oblig. Achieved
Phoenix AMA M&I Firming Groundwater Mgmt ²	Ad valorem tax Withdrawal Fees	1,566,000 AF			2,138,563 118,855	137%
Pinal AMA M&I Firming Groundwater Mgmt ²	Ad valorem tax Withdrawal Fees	243,000 AF			220,575 216,058	91% 180%
Tucson AMA M&I Firming Groundwater Mgmt ²	Ad valorem tax Withdrawal Fees	864,000 AF			482,665 121,351	56% 70%
On-River M&I Firming³	General Fund	420,000 AF			403,830	96% ³
Indian Settlements: GRIC Firming Phoenix AMA Pinal AMA	Withdrawal Fees	350,000 AF ⁵	up to 15,000 AF/YR		350,000.0 0 88,313 261,687	0%
Future Settlements	Withdrawal Fees	200,000 AF ⁵	up to 8,724 AF/YR		200,000	N/A
Federal Assistance ⁶ Tucson AMA	Appropriation Withdrawal Fees Cost of Services		\$3,000,000	\$3,000,000 \$2,338,171 \$630,490 \$31,339	34,102 28,481 5,621 n/a	100%
Southside Repl. Bank	Withdrawal Fees		15,000 AF Direct Delivery		14,000	93%
Interstate Water Banking - NV	Contract with Nevada		1,250,000 AF ⁷		642,518	51%
Other: Shortage Reparations- Nevada	Gifts, Grants, Donations	\$8,000,000		\$8,000,000	109,663	100%
Pinal Redirect Credits ⁷	n/a				14,125	

¹ 1997-2012; actual credits through 2011 and estimated credits for 2012 based on projected deliveries.

² The M&I firming goal for the Phoenix AMA is met in 2018. Firming goals may be exceeded if monies, water and capacity are available.

³ M&I firming has been statutorily identified as a water management objective. Utilizing withdrawal fee credits for this purpose, 70% of the Tucson AMA firming goal will be met by 2022. Existing withdrawal fee credits can be used to meet the Pinal AMA firming goal.

⁴ By resolution passed in 2002, the AWBA established on-river firming as the highest priority of use for credits accrued through expenditure of general fund appropriations. A total of 256,174 acre-feet of credits have been reserved pursuant to the AWBA's contract with MCWA.

⁵ 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 in the Pinal and Phoenix AMAs in this Ten-Year Plan, about 55% of the GRIC and 58% of the future settlement firming goals are estimated to be met in 2022. Existing withdrawal fee credits from the Pinal and Phoenix AMAs were used to meet the remainder of the firming goals for the GRIC and future settlements, respectively.

⁶ Based on estimates from the Indian Firming Study Commission Report dated January 6, 2006. The AWBA is required to firm up to 23,724 AF/yr during shortages. If the firming goal has been underestimated, there are additional withdrawal fee credits available in the Phoenix and Pinal AMAs to meet this obligation.

⁷ These credits are currently identified for use in the Tucson AMA and would meet 1.6% of the firming goal.

2. Recovery

This Ten-Year Plan includes a recovery component for interstate purposes pursuant to the Second Amended Agreement. The Second Amended Agreement authorizes Nevada to request development of ICUA, as follows: in the initial year, an amount not exceeding 20,000 acre-feet; the second year, an amount not exceeding 30,000 acre-feet and in all subsequent years, an amount not exceeding 40,000 acre-feet.

The water supply for this Ten-Year Plan includes only normal year deliveries and does not include any shortage year deliveries. ADWR and CAWCD staff work cooperatively on long-range shortage projections. Model analyses based on Reclamation's Colorado River System Simulation model indicate that by the end of the ten years there is approximately a one-in-four chance (25 percent probability) that shortages may occur. Using Arizona's assumptions in the model, the probability of shortage could be reduced to approximately 10-15 percent. Shortages occur near the end of the period and the probability is low enough that a shortage delivery scenario was not evaluated in this Ten-Year Plan. Under CAWCD's policy for distributing excess water (Appendix J), shortages would first be applied to the M&I users in the excess pool. Absent this policy, the AWBA has the lowest priority for CAP water so any reduction in CAP supplies would impact the AWBA first.

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 to CAP during the next ten years. If shortages do occur, they would most likely reduce excess CAP supply available for storage. However, a shortage could require the recovery of credits to meet some other firming obligations. On-river M&I deliveries and NIA CAP water being delivered pursuant to Indian settlements could be at risk but not until late in the ten-year period. If reductions to the on-river M&I users occur, those reductions could trigger the need to recover credits to firm M&I on-river 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, recognizing the lead time to implement recovery, plans should be developed and put in place. AWBA, CAWCD and interested parties continue to evaluate recovery options and analyze impacts of shortage on excess CAP water supply.

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 is meeting the M&I firming goals. By the end of 2011 the AWBA anticipates having accrued over 1.8 MAF of credits for that purpose. The Ten-Year Plan again shows that meeting the goal set for firming Tucson AMA supplies is problematic.

4. Funding

AWBA General Fund Appropriation

The AWBA has not received a general fund appropriation that was not subject to restrictions since 2001. The AWBA may request general fund appropriations during this planning period primarily to assist in meeting the AWBA's Indian firming obligations. However receipt of an appropriation cannot be expected. Consequently, the Ten-Year Plan does not include the expenditure of general fund appropriations.

Groundwater Withdrawal Fees

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, implement the settlement of water rights claims by Indian communities in Arizona, and meet the AWBA SSRB obligation. This Ten-Year Plan utilizes withdrawal fees to accrue long-term storage credits and to purchase CAP water for delivery to the SSRB.

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 CAWCD fund, shall be deposited into subaccounts held by the AWBA; one for each of the three counties in which the taxes were collected. CAWCD has not deposited monies collected into these AWBA subaccounts since 2003. The AWBA expended all of the funds that remained in the subaccounts for Pinal and Pima Counties in 2004 and Maricopa County in 2007. 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 collection of the *ad-valorem* tax beyond 2016.

Appropriations for Indian Firming

While it is anticipated that the AWBA might be requesting appropriations for Indian firming, given the recent history, this Ten-Year Plan does not include any general fund appropriations for Indian firming. Any recovery needed to meet the AWBA's Indian firming obligations during shortages would require the use of withdrawal fee credits.

Funding for Interstate Banking

Provisions in the Second Amended Agreement allow the AWBA and the SNWA to revise the annual payment schedule to provide operational flexibility. As discussed earlier, the agreement was modified in December 2010 to defer AWBA storage on behalf of SNWA until 2015, and likewise, to defer SNWA's payments of \$23 million to the AWBA for the same time period. Even so, water supplies available for interstate storage during this Ten-Year Plan are expected to be minimal and do not become available until 2017, which is due primarily to a decrease in water storage utilizing the 4¢ *ad valorem* tax.

Gifts, Grants, or Donations

Pursuant to the Arizona-Nevada Shortage-Sharing Agreement, Nevada will provide to the AWBA \$8 million in order to assist Arizona in offsetting impacts that may occur during the “Interim Period”. The Interim Period begins on December 13, 2007, the date the Secretary of the Interior issued the Record of Decision for the Colorado River Interim Guidelines for Lower Basin Storage and the Coordinated Operation for Lake Powell and Lake Mead, and ends on December 31, 2025. The AWBA has since expended approximately \$3 million of these funds for purchase and storage of CAP water. While a final plan for the use of the credits accrued from the use of these funds has not yet been adopted by the Authority, expenditure of the remaining \$5 million has been included in this Ten-Year Plan. Expenditure of these funds has been distributed among the three AMAs.

5. Modifications within CAWCD with regard to pricing and pool allocation

Because of the demand for Excess CAP water, CAWCD adopted a policy in June, 2009 that established four separate pools in addition to the NIA pool previously established, thereby accounting for all excess CAP water (see Appendix J). While CAWCD’s policy is effective through 2014, this Ten-Year Plan assumes a similar policy will be in effect for the entire ten-year period. The AWBA’s water availability estimates were provided by CAWCD staff. It should be noted that even though CAWCD established the AWBA/CAGR pool of 175,000 acre-feet, the amount of water that is available in that pool in a given year is subject to the total amount of excess CAP water available. Because M&I subcontract and Indian contract uses have recently increased, the amount of water that was available in this pool for recharge in 2012 was approximately 140,000 acre-feet. This trend is anticipated to continue for the next few years. However, when the NIA AG pool decreases from 400,000 acre-feet to 300,000 acre-feet in 2017, additional water is likely to become available for other excess CAP water users. This Ten-Year Plan also incorporates CAWCD’s 2012-2013 rate schedule, which was adopted on June 7, 2012.

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 AWSA. The AWBA also has statutorily mandated responsibilities for the SSRB.

This Ten-Year Plan includes a component for meeting the State’s Indian settlement firming obligation. While the AWBA is anticipating requesting appropriations during this Ten-Year Plan, future appropriations from the Legislature cannot be expected. Withdrawal fee credits from the Phoenix and Pinal AMAs could be used to meet this obligation while still maintaining credits for other water management purposes. This includes credits that were previously accrued from water stored at the Gila River Indian Irrigation and Drainage District GSF. The AWBA retains full rights to the credits developed at the 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 initial SSRB obligation of 15,000 acre-feet. The AWBA will have delivered 4,000 acre-feet for this purpose by the end of 2012 and has identified an additional 10,000 acre-feet of deliveries under this plan, at a rate of 1,000 acre-feet each year, leaving 1,000 acre-feet that must be delivered after 2022. 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 17, 2011. The revised inventory was utilized to develop this Ten-Year Plan. There are no new recharge facilities identified in this Ten-Year Plan.

8. Interstate banking

The Ten-Year Plan includes an interstate water banking component for Nevada and indicates that only 51 percent, or 642,518 acre-feet of credits out of the 1.25 MAF of credits needed to meet the Nevada obligation, could be created by 2022.

Although this Ten-Year Plan identifies storage for interstate purposes beginning in 2017, it is not certain that water will be available for this purpose if the amount of water available in the AWBA's pool is less than predicted. In contrast, it is also possible that additional water could become available for interstate banking due to unanticipated precipitation or decreased water orders by other CAP customers. Nevada could also make its unused apportionment available to the AWBA for storage in Arizona. However, these events cannot be foreseen and are therefore not included in this plan.

Recognizing that there is limited water available for interstate banking, the AWBA Commission has directed staff to pursue opportunities with CAWCD to increase Project water supplies through the acquisition of additional water supplies. Some of the supplies being assessed include Colorado River water, Colorado River tribal leases, and uncommitted recharge credits and may require AWBA to pursue new legislation. Based on the outcome of staff's discussions with Nevada, if additional supplies become available they would be addressed as part of the AWBA's Annual Plan of Operation and succeeding Ten-Year Plans.

Conclusion

The Ten-Year Plan is intended to serve as a guide to assist the AWBA in the development of its Annual 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 and the funding and water supply available to the AWBA. Several conclusions that could be reached given this Ten-Year Plan are:

- 1) There may not be sufficient excess CAP water to meet the state's obligation to Nevada.
- 2) Funding becomes a limiting factor in both Pinal and Pima County.
- 3) The magnitude of carryover funds in Maricopa County could become an issue in future years.
- 4) Absent future appropriations, withdrawal fees will become the principle source of funding for Indian firming.

Appendices

APPENDIX A
Colorado River Water Deliveries for Water Banking Purposes
for Calendar Year 2011 by Partner and Active Management Area

	Partner	Quantity of Water (Acre-feet)	
		Intrastate	Interstate
PHOENIX AMA	Tonopah Desert Recharge Project	53,830	0
	Superstition Mountains Recharge Project	2,444	0
	New Magma Irrigation & Drainage District	2,626	0
	Queen Creek Irrigation District	6,751	0
	<i>Intrastate/Interstate AMA Subtotal</i>	65,651	0
	<i>Phoenix AMA Subtotal</i>	65,651	
	PINAL AMA	Central Arizona Irrigation & Drainage District	21,610
Hohokam Irrigation & Drainage District		3,942	0
Maricopa-Stanfield Irrigation & Drainage District		7,500	0
<i>Intrastate/Interstate AMA Subtotal</i>		33,052	0
<i>Pinal AMA Subtotal</i>		33,052	
TUCSON AMA	Avra Valley Recharge Project	1,572	0
	Lower Santa Cruz Recharge Project	11,801	0
	CAVSARP	500	0
	SAVSARP	20,923	0
	Cortaro-Marana Irrigation District	1,000	0
	Kai Farms – Red Rock	1,077	0
	<i>Intrastate/Interstate AMA Subtotal</i>	36,873	0
	<i>Tucson AMA Subtotal</i>	36,873	
TOTAL INTRASTATE & INTERSTATE DELIVERIES		135,576	0
TOTAL DELIVERIES		135,576	

Appendix B
CAP Delivery Schedule
(Acre-Feet)

Year	Total CAP Deliveries ¹	M&I ²	Indian ³	Ag ⁴	Banking Pool ⁵	
					Federal & CAGR	AWBA
2013	1,590,000	671,500	425,700	400,000	10,000	82,800
2014	1,585,000	672,500	426,200	400,000	7,900	78,400
2015	1,580,000	673,500	426,700	400,000	7,400	72,400
2016	1,575,000	674,500	427,200	400,000	6,800	66,500
2017	1,575,000	675,500	427,700	300,000	16,100	155,700
2018	1,575,000	676,500	428,200	300,000	16,100	154,200
2019	1,575,000	677,500	428,700	300,000	16,000	152,800
2020	1,575,000	678,500	429,200	300,000	16,000	151,300
2021	1,575,000	679,500	429,700	300,000	15,900	149,900
2022	1,575,000	680,500	430,200	300,000	15,900	148,400

¹ Based on average deliveries and remaining use of SRP exchange water

² Includes excess CAP, and federal water used by M&I users through leases, exchanges and assignments

³ Includes on and off-reservation deliveries for Indian uses (including recharge)

⁴ NIA pool water, including deliveries made to the Harquahala Irrigation Non-expansion Area

⁵ Based on a planning assumption that CAWCD's current Access to Excess policy is extended

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

Name of Facility ¹	Facility Permit Expiration	Facility Permitted Capacity (AF)	Capacity Available to AWBA ² (AF)	Year Water Last Stored	Volume of Water Last Stored (AF)
PHOENIX – GSF³					
Queen Creek Irrigation District	12/2015	28,000	7,000	2011	6,751
New Magma Irrigation & Drainage District	8/2012 ⁴	54,000			
PHOENIX – USF					
Agua Fria Recharge Project	05/2019	100,000	5,000	2010	2,604
Hieroglyphic Mtns. Recharge Project	12/2021	35,000	5,000	2010	5,002
Tonopah Desert Recharge Project	09/2025	150,000	100,000	2011	53,830
Superstition Mtns. Recharge Project	01/2028	56,500 ⁵	10,000	2011	2,444
PINAL – GSF					
Central Arizona Irrigation & Drainage District	12/2017	110,000	60,000	2011	21,610
Hohokam Irrigation & Drainage District	10/2012 ⁴	55,000	20,000	2011	3,942
Maricopa-Stanfield Irrigation & Drainage District	12/2019	120,000	60,000	2011	7,500
TUCSON – GSF					
BKW Farms	9/2014	14,316	2,000	n/a ⁶	n/a
Cortaro-Marana Irrigation District	11/2013	20,000	5,000	2011	1,000
Kai-Farms – Red Rock	11/2016	11,231	2,000	2011	1,077
TUCSON – USF					
Avra Valley Recharge Project	03/2018	11,000	2,000	2011	1,572
CAVSARP	12/2028	100,000	5,000	2011	500
Lower Santa Cruz Recharge Project	02/2019	50,000	25,000	2011	11,801
Pima Mine Road Recharge Project	09/2020	30,000	5,000	2009	16
SAVSARP	01/2028	60,000	30,000	2011	20,923

Footnotes:

- (1) As additional facilities are developed, they will be included 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. Capacity available to the AWBA at the Avra Valley Recharge Project is based on the operator’s estimated annual averages for the Ten-Year Planning period.
- (3) The AWBA also holds a water storage permit at Tonopah Irrigation District GSF (15,000 AF), however use of the facility was not considered significant in this Ten-Year Plan.
- (4) Permit renewal application pending with ADWR.
- (5) Phase one of the facility is permitted for 25,000 AF per year.
- (6) No deliveries to date.

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

	Year	Groundwater Savings			Underground Storage		
		Capacity Available ⁴	Capacity Used	Credits Earned	Capacity Available ⁴	Capacity Used	Credits Earned
PHOENIX AMA²	Pre-plan ³			560,960			757,914
	2013	16,135	0	0	100,243	21,033	19,561
	2014	15,922	0	0	100,448	18,561	17,262
	2015	15,977	0	0	101,271	19,104	17,766
	2016	17,040	0	0	100,863	13,230	12,304
	2017	7,075	7,075	6,580	108,000	108,000	100,440
	2018	7,110	7,110	6,613	108,000	108,000	100,440
	2019	7,214	7,214	6,709	108,000	108,000	100,440
	2020	7,316	7,316	6,804	108,000	108,000	100,440
	2021	7,417	7,417	6,898	108,000	108,000	100,440
	2022	7,517	7,517	6,991	107,500	107,500	99,975
	Total			601,555			1,426,982
	PINAL AMA²	Pre-plan ³			191,167		
2013		115,550	0	0	-	-	-
2014		128,480	0	0	-	-	-
2015		129,474	0	0	-	-	-
2016		129,978	0	0	-	-	-
2017		130,256	10,328	9,605	-	-	-
2018		130,230	9,385	8,728	-	-	-
2019		130,250	5,927	5,512	-	-	-
2020		130,269	0	0	-	-	-
2021		130,288	0	0	-	-	-
2022		130,307	0	0	-	-	-
Total				215,012			
TUCSON AMA²		Pre-plan ³			16,927		
	2013	3,628	3,628	3,374	56,386	19,281	17,931
	2014	3,871	3,871	3,600	58,064	19,844	18,455
	2015	4,119	4,119	3,831	61,860	18,519	17,223
	2016	4,247	4,247	3,950	61,755	19,864	18,473
	2017	4,315	0	0	67,042	0	0
	2018	4,331	0	0	67,042	0	0
	2019	4,360	0	0	67,042	0	0
	2020	4,389	0	0	67,042	0	0
	2021	4,417	0	0	65,900	0	0
	2022	4,445	0	0	65,500	0	0
	Total			31,682			445,058

Footnotes:

- (1) Development of M&I firming credits followed utilization of other funds in the Arizona Water Banking Fund.
- (2) M&I firming targets are Phoenix AMA - 1.566 MAF, Pinal AMA – 243,000 AF, and Tucson AMA – 864,000 AF.
- (3) Cumulative totals for 1997-2012; 2012 credits estimated based on projected deliveries.
- (4) The capacity available is based on the capacity remaining at the USFs and GSFs after all higher priority demands have been met.

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

	Year	Groundwater Savings			Underground Storage		
		Capacity Available ³	Capacity Used	Credits Earned	Capacity Available ³	Capacity Used	Credits Earned
PHOENIX AMA	Pre-plan ²			151,151			138,492
	2013	22,000	5,865	5,454	108,000	7,757	7,214
	2014	21,000	5,078	4,722	108,000	7,552	7,023
	2015	21,000	5,023	4,671	108,000	6,729	6,258
	2016	21,000	3,960	3,683	108,000	7,137	6,637
	2017	20,000	12,925	12,020	108,000	0	0
	2018	20,000	12,890	11,987	108,000	0	0
	2019	20,000	12,786	11,891	108,000	0	0
	2020	20,000	12,684	11,796	108,000	0	0
	2021	20,000	12,583	11,702	108,000	0	0
	2022	20,000	12,483	11,609	107,500	0	0
	Total			240,686			165,624
	PINAL AMA	Pre-plan ²			391,332		
2013		128,000	12,450	10,649	-	-	-
2014		140,000	11,520	9,784	-	-	-
2015		140,000	10,526	8,859	-	-	-
2016		140,000	10,022	8,390	-	-	-
2017		140,000	9,744	8,131	-	-	-
2018		140,000	9,770	8,156	-	-	-
2019		140,000	9,750	8,138	-	-	-
2020		140,000	9,731	8,120	-	-	-
2021		140,000	9,712	8,102	-	-	-
2022		140,000	9,693	8,084	-	-	-
Total				477,745			0
TUCSON AMA		Pre-plan ²			5,715		
	2013	7,000	3,372	3,136	56,386	0	0
	2014	7,000	3,129	2,910	58,064	0	0
	2015	7,000	2,881	2,679	61,860	0	0
	2016	7,000	2,753	2,560	61,755	0	0
	2017	7,000	2,685	2,497	67,042	0	0
	2018	7,000	2,669	2,482	67,042	0	0
	2019	7,000	2,640	2,455	67,042	0	0
	2020	7,000	2,611	2,429	67,042	0	0
	2021	7,000	2,583	2,402	65,900	0	0
	2022	7,000	2,555	2,377	65,500	0	0
	Total			31,642			92,387

- (1) Expenditure of withdrawal fees was given the highest priority.
(2) Cumulative totals for 1997-2012; 2012 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^{1,2}
(Acre-feet)

	Year	Groundwater Savings			Underground Storage			
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned	
PHOENIX AMA	Pre-plan ³			16,275			26,041	
	2013	16,135	0	0	100,243	0	0	
	2014	15,922	0	0	100,448	0	0	
	2015	15,977	0	0	101,271	0	0	
	2016	17,040	0	0	100,863	0	0	
	2017	7,075	0	0	108,000	0	0	
	2018	7,110	0	0	108,000	0	0	
	2019	7,214	0	0	108,000	0	0	
	2020	7,316	0	0	108,000	0	0	
	2021	7,417	0	0	108,000	0	0	
	2022	7,517	0	0	107,500	0	0	
	Total				16,275			26,041
	PINAL AMA	Pre-plan ³			306,968			
2013		128,000	0	0	-	-	-	
2014		140,000	0	0	-	-	-	
2015		140,000	0	0	-	-	-	
2016		140,000	0	0	-	-	-	
2017		140,000	0	0	-	-	-	
2018		140,000	0	0	-	-	-	
2019		140,000	0	0	-	-	-	
2020		140,000	0	0	-	-	-	
2021		140,000	0	0	-	-	-	
2022		140,000	0	0	-	-	-	
Total					306,968			
TUCSON AMA		Pre-plan ³			2,846			51,700
	2013	7,000	0	0	65,800	0	0	
	2014	7,000	0	0	66,909	0	0	
	2015	7,000	0	0	67,359	0	0	
	2016	7,000	0	0	67,042	0	0	
	2017	7,000	0	0	67,042	0	0	
	2018	7,000	0	0	67,042	0	0	
	2019	7,000	0	0	67,042	0	0	
	2020	7,000	0	0	67,042	0	0	
	2021	7,000	0	0	65,900	0	0	
	2022	7,000	0	0	65,500	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 1997-2012.

APPENDIX G
Credits Developed Utilizing Funds Dedicated for Shortage Reparations ¹
(Acre-feet)

PHOENIX AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available ²	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan ³				4,590		
2013	16,135	0	0	100,243	0	0	0
2014	15,922	0	0	100,448	0	0	0
2015	15,977	0	0	101,271	0	0	0
2016	17,040	0	0	100,863	0	0	0
2017	7,075	0	0	108,000	0	0	0
2018	7,110	0	0	108,000	0	0	0
2019	7,214	0	0	108,000	0	0	0
2020	7,316	0	0	108,000	0	0	0
2021	7,417	0	0	108,000	0	0	0
2022	7,517	0	0	107,500	0	0	0
Total				4,590			16,051

PINAL AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available ²	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan ³				60,782		
2013	128,000	0	0	-	-	-	-
2014	140,000	0	0	-	-	-	-
2015	140,000	0	0	-	-	-	-
2016	140,000	0	0	-	-	-	-
2017	140,000	0	0	-	-	-	-
2018	140,000	0	0	-	-	-	-
2019	140,000	0	0	-	-	-	-
2020	140,000	0	0	-	-	-	-
2021	140,000	0	0	-	-	-	-
2022	140,000	0	0	-	-	-	-
Total				60,782			

TUCSON AMA	Year	Groundwater Savings			Underground Storage		
		Capacity Available ²	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
	Pre-plan ³				0		
2013	7,000	0	0	65,800	9,414	8,755	
2014	7,000	0	0	66,909	8,845	8,226	
2015	7,000	0	0	67,359	5,499	5,114	
2016	7,000	0	0	67,042	5,287	4,917	
2017	7,000	0	0	67,042	0	0	
2018	7,000	0	0	67,042	0	0	
2019	7,000	0	0	67,042	0	0	
2020	7,000	0	0	67,042	0	0	
2021	7,000	0	0	65,900	0	0	
2022	7,000	0	0	65,500	0	0	
Total				0			28,239

Footnotes:

- (1) \$8 million received from Nevada pursuant to the Arizona-Nevada Shortage-Sharing Agreement to assist Arizona in offsetting the impacts of shortages during the Interim Period.
- (2) The capacity available is based on the capacity remaining at the USFs and GSFs after all higher priority demands have been met.
- (3) Cumulative totals for 1997-2012.

APPENDIX H
Credits Developed Utilizing Indian Settlement Appropriations ¹
(Acre-feet)

	Year	Groundwater Savings			Underground Storage		
		Capacity Available	Capacity Used	Credits Earned	Capacity Available	Capacity Used	Credits Earned
PHOENIX AMA	Pre-plan			0			0
	2013	16,135	0	0	100,243	0	0
	2014	15,922	0	0	100,448	0	0
	2015	15,977	0	0	101,271	0	0
	2016	17,040	0	0	100,863	0	0
	2017	7,075	0	0	108,000	0	0
	2018	7,110	0	0	108,000	0	0
	2019	7,214	0	0	108,000	0	0
	2020	7,316	0	0	108,000	0	0
	2021	7,417	0	0	108,000	0	0
	2022	7,517	0	0	107,500	0	0
	Total				0		0
	PINAL AMA	Pre-plan			0		
2013		128,000	0	0	-	-	-
2014		140,000	0	0	-	-	-
2015		140,000	0	0	-	-	-
2016		140,000	0	0	-	-	-
2017		140,000	0	0	-	-	-
2018		140,000	0	0	-	-	-
2019		140,000	0	0	-	-	-
2020		140,000	0	0	-	-	-
2021		140,000	0	0	-	-	-
2022		140,000	0	0	-	-	-
Total				0			
TUCSON AMA		Pre-plan			0		
	2013	7,000	0	0	65,800	0	0
	2014	7,000	0	0	66,909	0	0
	2015	7,000	0	0	67,359	0	0
	2016	7,000	0	0	67,042	0	0
	2017	7,000	0	0	67,042	0	0
	2018	7,000	0	0	67,042	0	0
	2019	7,000	0	0	67,042	0	0
	2020	7,000	0	0	67,042	0	0
	2021	7,000	0	0	65,900	0	0
	2022	7,000	0	0	65,500	0	0
	Total			0			28,481

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 Banking¹
(Acre-feet)

Year	Available CAP Supplies²	Available AWBA Capacity³	Remaining Supply⁴	Interstate Credits⁵
Pre-plan ⁶				600,651
2013	0	248,000	0	0
2014	0	264,509	0	0
2015	0	270,959	0	0
2016	0	276,542	0	0
2017	4,944	191,286	0	4,598
2018	4,377	192,219	0	4,070
2019	6,483	195,725	0	6,029
2020	10,958	201,700	0	10,191
2021	9,605	200,605	0	8,933
2022	8,652	200,252	0	8,046
Total				642,518

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 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. 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 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.
- (6) Cumulative totals for 2002-2012; 2012 credits estimated based on projected deliveries.

APPENDIX J

CAWCD PROCEDURE TO DISTRIBUTE EXCESS WATER IN 2010 THROUGH 2014 Adopted June 4, 2009

Staff has worked with stakeholders to develop procedures that balance competing interests for the limited supply of Excess CAP water. The outcome of this "Access to Excess" process is a Staff Proposal that relies, where possible, on consensus among the stakeholders.

From the total available Excess supply, the Agricultural Settlement Pool is filled first, and is not subject to "Access to Excess" provisions. The Staff Proposal then creates four separate pools, in effect for a five year period (2010 through 2014). The pools are: AWBA & CAGRDR Replenishment Reserve; CAGRDR Annual Replenishment; Municipal; Industrial & Other.

The AWBA and CAGRDR Replenishment Reserve share a pool of a fixed volume of 175,000 acre-feet (AWBA/RR pool). Allocation within this pool is set as part of the existing annual AWBA-CAWCD coordination and public meetings. AWBA may use the water for any authorized purpose.

The pool established for the CAGRDR's annual replenishment is capped at 35,000 acre-feet. The remaining volume is split evenly between a Municipal pool and an Industrial & Other pool. Water not used by the AWBA or CAGRDR in either of their pools is split between the Municipal pool and the Industrial & Other pool.

The Municipal Pool is for public & private water providers. Access within the pool incorporates two different approaches: historic use, and equal shares. Historic use is based on each provider's maximum use (Incentive plus Full Cost Excess) between 2005 and 2009. In the first year (2010), historic use is the primary allocation mechanism (90%), with a small volume (10%) apportioned equally. By the fifth year (2014), the two approaches have equal weighting.

The Industrial & Other pool is open to all other users, but is broken into two tiers—Industrial Tier (direct use or users storing water for a specific project) and Remarketer Tier (users storing water for future credit resale). All of the orders for the Industrial Tier users will be filled before allocating and filling orders for the Remarketer Tier. Access within the pool is based on a three year rolling average of actual water deliveries for each entity. Small users (orders less than 1,000 acre feet/year) will receive their full order as long as that order is not greater than in the previous three years.