

ARIZONA WATER BANKING AUTHORITY
ANNUAL PLAN OF OPERATION
2016



Thomas Buschatzke, Chair

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SUMMARY

The role of the AWBA has changed considerably since its inception in 1996. The AWBA was initially established to utilize the unused portion of Arizona's annual Colorado River entitlement. In doing so, the AWBA's objectives were to store water to protect Central Arizona Project and Colorado River municipal and industrial water users against future shortages, to assist the state in meeting Tribal water rights claims, to provide groundwater management benefits, and finally to assist both California and Nevada through interstate banking. Over time, as the AWBA's objectives have become more defined, its responsibilities have expanded in some cases to obligations and in all cases to the development of a resource relied upon by many water providers to create a reliable water supply.

During its nearly twenty years of operation, the AWBA has made considerable progress toward meeting its objectives, storing over 4 million acre-feet (MAF) of water for future use, 3.5 MAF for Arizona uses and .6 MAF for interstate purposes on behalf of Nevada. Storage includes over 2.7 MAF specifically to provide back-up supplies during Colorado River shortages to Arizona cities and Indian communities and over 860,000 acre-feet of credits for groundwater management benefits. Additionally, the AWBA has fully satisfied its obligation to establish the Southside Replenishment Bank, a State requirement under the Arizona Water Settlements Act (Settlements Act), by delivering 15,000 acre-feet of excess CAP water directly to the Gila River Indian Community. Although much has been accomplished, more is needed for the AWBA to be fully prepared to meet its future firming obligations.

For 2016, the volume of excess CAP water available to the AWBA is 65,708 acre-feet. Of this amount, the AWBA plans to store 33,988 acre-feet in the Phoenix Active Management Area (AMA), 17,520 acre-feet in the Pinal AMA and 14,200 acre-feet in the Tucson AMA. All funds estimated to be available in the Pinal and Tucson AMAs will be utilized for storage. In addition to water storage, the AWBA also proposes to acquire an estimated 25,950 acre-feet of developed credits: 13,950 acre-feet through the purchase of existing long-term storage credits and 12,000 acre-feet as firming credit equivalents described under the AWBA's firming agreement with the Gila River Indian Community. The total proposed cost of the 2016 Plan of Operation is \$16.3 million and includes \$11.3 million for storage and up to \$4.9 million for potential credit development. There is no interstate storage planned for 2016. The Plan also does not include storage for inter-AMA firming. However, with inclusion of this concept into a comprehensive firming plan, the 2016 Plan could be amended to include this as a component.

Consistent with the recommendations of the AWBA's 2014 Annual Report and Ten-Year Plan, the 2016 Plan of Operation continues to focus on achieving municipal and industrial firming goals, particularly in the Tucson AMA, and meeting the responsibilities of the Settlements Act.

INTRODUCTION

The AWBA was initially created in 1996 to store Arizona's unused Colorado River water entitlement in central and southern Arizona to develop long-term storage credits (credits) to: (1) firm existing water supplies for Colorado River and CAP M&I water users during Colorado River shortages or CAP service interruptions; (2) help meet the water management objectives of the Groundwater Code; (3) meet the State's obligations in the settlement of Indian water rights claims; and (4) assist Nevada and California through interstate banking. The AWBA's enabling legislation has been amended over time allowing it to store other renewable supplies and to purchase credits on top of excess CAP water supplies. The 2016 Plan does not include the storage of other renewable supplies, however, it does propose purchasing credits.

Although the AWBA can utilize general fund appropriations to conduct its business, in recent years the only funds available to the AWBA have been groundwater withdrawal fees collected in the Active Management Areas (AMA) and *ad valorem* property taxes levied and collected by the Central Arizona Water Conservation District (CAWCD). The availability of these funds for AWBA use varies both on an annual basis and by the amounts collected within each AMA/County. There are also restrictions on how the AWBA may utilize these revenues to meet its firming responsibilities. The costs to store water for Nevada, the AWBA's only interstate partner at this time, would be paid by Nevada at the time storage occurs.

The AWBA's storage of water is accomplished through the Underground Water Storage, Savings and Replenishment Program that is administered by the Arizona Department of Water Resources (ADWR). Through this program, the AWBA stores renewable water supplies in either underground storage facilities (USF) or groundwater savings facilities (GSF), also referred to as indirect storage. The program mandates an accounting of the water stored and the corresponding long-term storage credits accrued. The credits will be distributed by the AWBA when future conditions warrant. The use of the credits is dependent on the source of funds utilized to develop the credits.

The AWBA is required by statute to approve an annual Plan of Operation (Plan) by January 1 of each year. Prior to approval of the final Plan, the AWBA is required to solicit public comment. Presentation of the draft Plan must be made at publicly-noticed open meetings at which members of the public are permitted to provide comment. A draft of the Plan was presented at meetings of the Groundwater Users Advisory Councils (GUAC) for the Phoenix, Pinal and Tucson AMAs. The AWBA also makes the Plan available on its web page and accepts public comment in writing up to the time the final draft Plan is presented for approval.

The Plan is intended to govern the operations of the AWBA over the course of the entire calendar year. The AWBA recognizes that day-to-day adjustments in the normal operations of the CAP or the individual storage facilities may affect the actual monthly deliveries made on behalf of the AWBA. If the adjustments do not impact the overall annual delivery projections contained in the Plan, they will be addressed by staff and reported to the AWBA members on an as-needed basis.

2015 PLAN OF OPERATION

The AWBA had 75,360 acre-feet of Colorado River water available for use in 2015. This amount includes 24,912 acre-feet of additional water both from unused on-River entitlements and water turned back by other CAP customers during the year. Arizona also plans to leave approximately 190,000 acre-feet of water in Lake Mead as both intentionally created surplus (ICS) (96,000 acre-feet) and system conservation water (94,000 acre-feet). Arizona's estimated use of Colorado River water in 2015 is 2.6 MAF (see Figure 1).

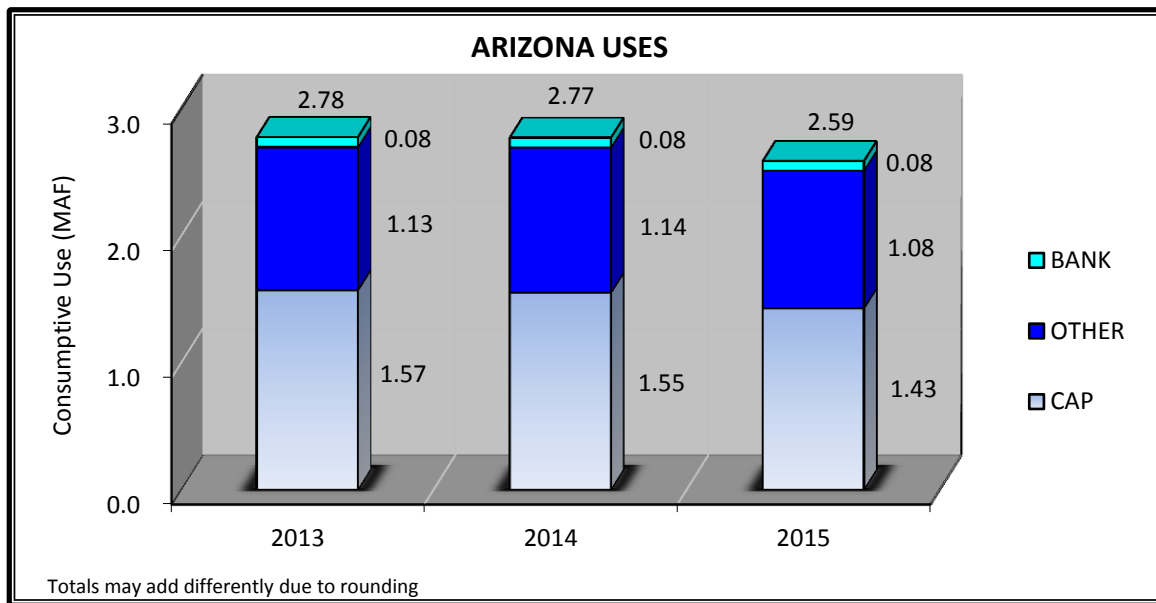


Figure 1. Recent Comparison of Colorado River Water Uses by Arizona

Forecasted use of Colorado River water in 2015 in the Lower Basin is 7.27 MAF as of November 16, 2015 (see Figure 2). Totals include use of ICS and interstate storage by Nevada in California.

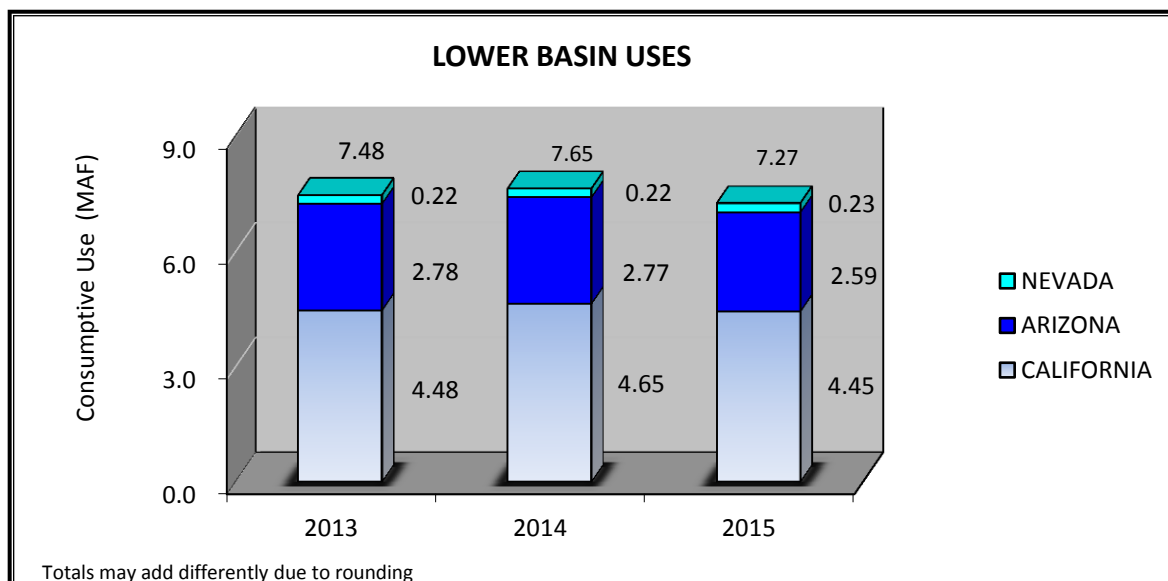


Figure 2. Recent Comparison of Lower Basin Uses of Colorado River Water

The AWBA stored water at both USFs and GSFs in 2015. Table 1a lists the AWBA's recharge partners for 2015, the amount of water that can be stored under each of the AWBA's water storage permits, and the amount of water delivered to the facility for the AWBA in 2015. The amount of water delivered to a facility is always greater than the amount of long-term storage credits accrued by the AWBA because credits are computed by subtracting approximately 1% to 3% for losses and 5% for a "cut to the aquifer" from the total annual deliveries. Final figures for credits accrued generally become available in the middle of the following year after review of the annual reports filed with the ADWR. These numbers are reported in the AWBA's Annual Report.

Table 1a. Recharge Facilities and Water Storage Deliveries for 2015

| AMA | Facility | Type | AWBA Permit Capacity (acre-feet) | Delivered* (acre-feet) |
|----------------------------------|-----------------------------|------|----------------------------------|------------------------|
| PHOENIX AMA | Agua Fria | USF | 100,000 | 13,530 |
| | Hieroglyphic Mtns. | USF | 35,000 | 13,775 |
| | Superstition Mtns. | USF | 25,000 | 8,609 |
| | GRUSP | USF | 93,000 | 3,312 |
| | Queen Creek ID | GSF | 28,000 | 3,134 |
| | Phoenix AMA Subtotal | | | |
| PINAL AMA | Central Arizona IDD | GSF | 110,000 | 0 |
| | Hohokam IDD | GSF | 55,000 | 3,700 |
| | Maricopa-Stanfield IDD | GSF | 120,000 | 4,200 |
| | Pinal AMA Subtotal | | | |
| TUCSON AMA | Avra Valley | USF | 11,000 | 1,200 |
| | Lower Santa Cruz | USF | 50,000 | 1,846 |
| | Pima Mine Road | USF | 30,000 | 1,300 |
| | SAVSARP | USF | 60,000 | 14,354 |
| | Cortaro-Marana ID | GSF | 20,000 | 900 |
| | BKW Farms | GSF | 14,316 | 500 |
| | Tucson AMA Subtotal | | | |
| TOTAL RECHARGE DELIVERIES | | | | 70,360 |

*November and December deliveries estimated

In addition to recharging water, the AWBA also delivered water to meet the requirements of the Gila River Indian Community Water Settlement Program. As identified in Table 1b, the AWBA delivered 5,000 acre-feet to the Southside Replenishment Bank. With this delivery, the AWBA has satisfied its obligation to deliver an initial 15,000 acre-feet to the Community. The Replenishment Bank can be used as an option for offsetting a replenishment obligation that is

incurred because of pumping limitations identified in the Arizona Water Settlements Act (Settlements Act) for the Southside Protection Zones. There was no replenishment obligation in 2015.

Table 1b. Southside Replenishment Activities through 2015

| Southside Replenishment Activities | 2015 Obligations/Deliveries (acre-feet) | Cumulative Obligations/Deliveries (acre-feet) |
|------------------------------------|---|---|
| Replenishment Obligations | 0 | 0 |
| Replenishment Bank Deliveries | 5,000 | 15,000 |
| TOTAL DIRECT DELIVERIES | 5,000 | 15,000 |

The 2015 Plan initially identified 45,448 acre-feet of scheduled water deliveries for recharge purposes. Additional water became available to the AWBA later in the year from CAP customers that turned back water. As a result, the AWBA recharged an estimated 70,360 acre-feet of water. Because of heavy monsoon precipitation, 4,396 acre-feet of the 16,830 acre-feet originally scheduled for GSFs was redirected for storage at USFs. Figure 3 identifies the storage breakdown between GSFs and USFs for 2015 and provides a comparison between 2015 and the two previous years.

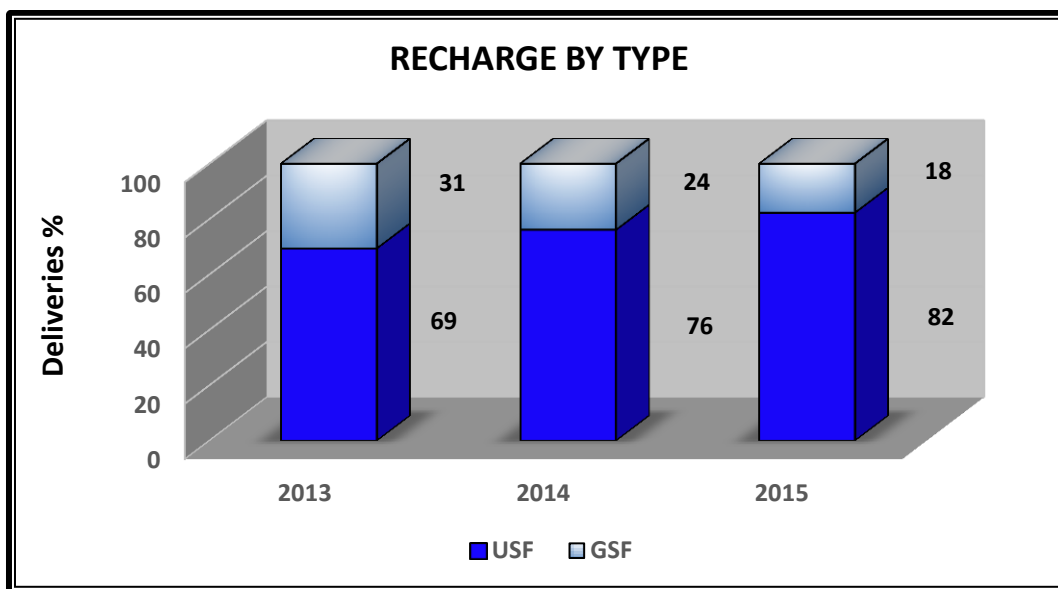


Figure 3. Recent Comparison of Annual Deliveries to GSFs and USFs

Table 2 provides an estimate of funds expended for water storage and credit purchases through 2015 and the location of those credits.

Table 2. Cumulative Long-term Storage Credits 1997-2015

| Funding Source | Phoenix AMA | | Pinal AMA | | Tucson AMA | | Total ¹ | |
|--|-----------------------------|-----------------|----------------|-----------------|-----------------------------|-----------------|--------------------|-----------------|
| | Funds ² Expended | Credits Accrued | Funds Expended | Credits Accrued | Funds ³ Expended | Credits Accrued | Funds Expended | Credits Accrued |
| Withdrawal Fees | \$ 26.9 | 345,500 | \$ 18.6 | 413,388 | \$ 9.1 | 104,995 | \$ 54.6 | 863,884 |
| Ad valorem Tax | \$ 101.8 | 1,389,398 | \$ 11.8 | 207,632 | \$ 51.0 | 447,076 | \$ 164.5 | 2,044,106 |
| General Fund⁴ | \$ 1.5 | 42,316 | \$ 6.4 | 306,968 | \$ 3.2 | 54,546 | \$ 11.1 | 403,830 |
| Indian Appropriation | \$ - | - | \$ - | - | \$ 2.3 | 28,481 | \$ 2.3 | 28,481 |
| Shortage Reparations | \$ 1.1 | 20,642 | \$ 1.7 | 60,507 | \$ 5.8 | 28,274 | \$ 8.6 | 109,423 |
| Pinal Redirect⁵ | | - | \$ - | 14,125 | \$ - | - | \$ - | 14,125 |
| Subtotal | \$ 131.3 | 1,797,856 | \$ 38.5 | 1,002,620 | \$ 71.4 | 663,373 | \$ 241.2 | 3,463,849 |
| Interstate - Nevada⁶ | \$ 11.4 | 51,009 | \$ 71.5 | 440,241 | \$ 26.1 | 109,791 | \$ 109.1 | 601,041 |
| Total | \$ 142.8 | 1,848,865 | \$ 110.0 | 1,442,861 | \$ 97.5 | 773,164 | \$ 350.2 | 4,064,890 |

¹Actual expenditures and credits for 1997-2014; 2015 estimated (Totals may differ due to rounding).

²Includes expenditure of \$2,512,000 in withdrawal fees for the development of 16,000 AF of firming credits pursuant to a letter agreement between the AWBA and the GRIC dated June 16, 2015.

³Includes expenditure of \$22,698 in withdrawal fees and \$579,842 in shortage reparation funds for the assignment of 234 AF and 3,665 AF, respectively, of credits to the AWBA from the Tohono O'odham Nation pursuant to §45-841.01. Also includes the expenditure of \$3,041,433.59 in Pima ad valorem tax monies for the purchase of 14,750 AF of credits from Tucson Water.

⁴Includes a total of 256,174 acre-feet of credits reserved for the Mohave County Water Authority pursuant to the Amended Agreement to Firm Future Supplies.

⁵Credits accrued from water scheduled for the Tucson AMA and redirected to the Pinal AMA for storage at GSFs. Facility operators paid 100% of the water delivery rate.

⁶Includes 50,000 acre-feet of credits transferred from CAWCD pursuant to Amended Agreement for Interstate Banking.

2016 PLAN OF OPERATION

When developing its Plan of Operation, the AWBA evaluates four critical factors: (1) the amount of water available to the AWBA for delivery; (2) the CAP canal capacity available to the AWBA for the delivery of water; (3) the funds available and the costs required to deliver the water; and (4) the capacity available for use by the AWBA at the various recharge facilities. In addition to these critical factors, the AWBA takes into consideration comments solicited from the public as well as recommendations made by the Groundwater Users Advisory Councils (GUAC) of the three AMAs regarding water management objectives and priorities for storage.

I. Water Availability

The factor of water availability consists of two parts: (1) the amount of water available on the Colorado River for diversion by the CAP within Arizona's allocation; and (2) the amount of CAP water available to the AWBA for delivery under the existing pool structure.

The proposed Annual Operating Plan (AOP) for water year 2016 distributed by the Bureau of Reclamation (Reclamation) stated that the Intentionally Created Surplus (ICS) Condition is the criterion that will govern the release of water for the states in the Lower Basin during calendar year 2016. To assist in protecting against water level declines in Lake Mead, Arizona is proposing to create an estimated 142,270 acre-feet of conservation and system water in 2016: 103,072 acre-feet pursuant to the Memorandum of Understanding (MOU) among the Lower Basin States and Reclamation and 39,198 acre-feet pursuant to the Pilot System Conservation Project developed among the upper and lower basin states. An estimated 2.66 MAF of water will be available for use within Arizona. Arizona's on-river use is forecast to be roughly 1.14 MAF, leaving approximately 1.52 MAF available for diversion by CAP.

For 2016, the AWBA will purchase excess CAP water from the Statutory Firming Pool made available for use by the AWBA, CAGR, and Bureau of Reclamation pursuant to the CAWCD Board of Directors (Board) policy approved on March 6, 2014. The CAGR uses this pool to create its replenishment reserve and has an equal priority to the AWBA. The Federal government may also order water from this pool for meeting its Indian firming obligations. The CAWCD Board establishes the volume available in this pool on an annual basis. The quantity available in this pool for 2016 is 79,308 acre-feet.

Subtracting the projected uses for the CAGR replenishment reserve (8,600 acre-feet) and Reclamation (5,000 acre-feet), leaves a remaining balance of 65,708 acre-feet for the AWBA. Water availability is the primary limiting factor in developing the 2016 Plan.

II. CAP System Capacity

CAP system capacity is approximately 1.8 MAF. Under normal operating conditions, CAP diverts approximately 1.6 MAF of water. Reclamation estimates that this amount would be available for delivery by CAP in 2016. This amount includes the volume of water to be delivered for the AWBA. Because there is still capacity available in the CAP aqueduct to deliver additional supplies, capacity within the CAP canal for the delivery of AWBA water is not a limiting factor in this Plan.

III. Available Funds

The AWBA will have an estimated \$3.9 million in withdrawal fee revenues available for use in 2016. Of this amount, \$2.1 million is estimated to be available for the Phoenix AMA, \$1.4 million for the Pinal AMA, and \$400,000 for the Tucson AMA.

As in previous years, the CAWCD Board resolved to retain the *ad valorem* property taxes collected in its three-county service area and not to deposit those revenues into the

Arizona Water Banking Fund. Property tax revenues retained by CAWCD can be used to offset the cost of AWBA water deliveries in CAWCD's service area. Estimated funds available from CAWCD for the 2016 Plan are: Maricopa County (\$14 million), Pinal County (\$1.27 million) including carryover, and Pima County (\$2.37 million).

Given the amount of water available for AWBA use, funding was not a limiting factor in developing the 2016 Plan overall. However, funding did limit the amount of water that could be stored in both the Pinal and Tucson AMAs.

IV. Available Storage Facility Capacity

AWBA staff conferred with facility operators to discuss the availability of storage capacity at their facilities and their continued interest in participating with the AWBA. These discussions confirmed that there was significant interest from facility operators in all three AMAs. As a result, the AWBA is also pursuing a water storage agreement with the Salt River Valley Water Users' Association to store water at the Salt River Project GSF in the Phoenix AMA. In the Tucson AMA, storage capacity was used according to the preference expressed by Tucson CAP M&I subcontractors who had requested that the AWBA prioritize storage for firming at locations with existing recovery capabilities. The 2016 Plan utilizes all storage capacity currently available to the AWBA in the Phoenix AMA. However, if additional supplies become available during the year, CAWCD could decide to resume operation of the Tonopah Desert Recharge Project to make additional storage capacity available. Storage capacity is also available in the Pinal and Tucson AMAs, however, use of that capacity is still subject to Tucson storage priorities and the availability of funds.

The Water Delivery Schedule (Table 3) identifies the storage sites for the AWBA's partners for 2016 and the amount of water scheduled for storage. The second column in this section identifies the AWBA's water storage permit capacities for each facility, which are based on the maximum permitted storage amounts of the facilities. The actual storage capacities available to the AWBA do not typically equal the AWBA's permitted volume because the storage facility operators may have agreements with other storage partners.

**Table 3
Water Delivery Schedule (Acre-Feet)
Calendar Year 2016**

| AWBA-Storage Sites | | Permitted Capacity (AF) | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------------------------------|------------------------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|
| PHOENIX AMA : | | | | | | | | | | | | | | | |
| USF | AGUA FRIA | 100,000 | 0 | 0 | 0 | 0 | 1,500 | 2,000 | 0 | 0 | 157 | 1,400 | 145 | 975 | 6,177 |
| | GRUSP | 93,000 | 0 | 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 |
| | HIEROGLYPHIC MTN | 35,000 | 0 | 0 | 1,000 | 0 | 700 | 1,000 | 500 | 0 | 1,500 | 800 | 3,000 | 2,236 | 10,736 |
| | SUPERSTITION MTNS | 35,000 | 0 | 0 | 0 | 0 | 0 | 0 | 1,345 | 0 | 0 | 0 | 0 | 0 | 1,345 |
| | TONOPAHA DESERT | 150,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | 18,758 |
| GSF | NEW MAGMA | 54,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | QUEEN CREEK | 28,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,230 | 2,000 | 1,000 | 500 | 500 | 5,230 |
| | SALT RIVER PROJECT ¹ | 89,000 | 0 | 0 | 0 | 0 | 2,500 | 2,500 | 2,500 | 2,500 | 0 | 0 | 0 | 0 | 10,000 |
| | | | | | | | | | | | | | | | 15,230 |
| AMA TOTAL INTRASTATE | | | 0 | 500 | 1,000 | 0 | 4,700 | 5,500 | 4,345 | 3,730 | 3,657 | 3,200 | 3,645 | 3,711 | 33,988 |
| PINAL AMA : | | | | | | | | | | | | | | | |
| GSF | CAIDD | 110,000 | 0 | 0 | 0 | 0 | 0 | 0 | 1,040 | 4,800 | 0 | 0 | 0 | 0 | 5,840 |
| | HOHOKAM | 55,000 | 0 | 0 | 0 | 0 | 0 | 3,000 | 2,000 | 840 | 0 | 0 | 0 | 0 | 5,840 |
| | MSIDD | 120,000 | 200 | 500 | 1,090 | 1,200 | 1,260 | 510 | 510 | 310 | 200 | 60 | 0 | 0 | 5,840 |
| | | | | | | | | | | | | | | | 17,520 |
| AMA TOTAL INTRASTATE | | | 200 | 500 | 1,090 | 1,200 | 1,260 | 3,510 | 3,550 | 5,950 | 200 | 60 | 0 | 0 | 17,520 |
| TUCSON AMA: | | | | | | | | | | | | | | | |
| USF | AVRA VALLEY | 11,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 650 | 650 | 1,500 |
| | LOWER SANTA CRUZ | 50,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | PIMA MINE ROAD | 30,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | CAVSARP | 100,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SAVSARP | 60,000 | 1,020 | 1,020 | 1,020 | 1,020 | 1,020 | 1,020 | 1,020 | 1,020 | 1,020 | 0 | 0 | 1,020 | 10,200 |
| | | | | | | | | | | | | | | | 11,700 |
| GSF | CORTARO-MARANA ID | 20,000 | 250 | 0 | 250 | 0 | 250 | 0 | 0 | 750 | 0 | 0 | 0 | 0 | 1,500 |
| | KAI FARMS (Red Rock) | 11,231 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | BKW Farms | 14,316 | 0 | 0 | 0 | 0 | 0 | 200 | 200 | 200 | 200 | 200 | 0 | 0 | 1,000 |
| | | | | | | | | | | | | | | | 2,500 |
| AMA TOTAL INTRASTATE | | | 1,270 | 1,020 | 1,270 | 1,020 | 1,270 | 1,220 | 1,220 | 1,970 | 1,220 | 400 | 650 | 1,670 | 14,200 |
| TOTAL INTRASTATE | | | | | | | | | | | | | | | |
| | | | 1,470 | 2,020 | 3,360 | 2,220 | 7,230 | 10,230 | 9,115 | 11,650 | 5,077 | 3,660 | 4,295 | 5,381 | 65,708 |
| TOTAL INTERSTATE | | | | | | | | | | | | | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL RECHARGE | | | | | | | | | | | | | | | |
| | | | 1,470 | 2,020 | 3,360 | 2,220 | 7,230 | 10,230 | 9,115 | 11,650 | 5,077 | 3,660 | 4,295 | 5,381 | 65,708 |
| DIRECT DELIVERY (Non-Storage): | | | | | | | | | | | | | | | |
| | Southside Replenishment Bank | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Southside Replenishment Obligation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TOTAL DIRECT | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL DELIVERIES | | | 1,470 | 2,020 | 3,360 | 2,220 | 7,230 | 10,230 | 9,115 | 11,650 | 5,077 | 3,660 | 4,295 | 5,381 | 65,708 |

¹ Water storage is subject to execution of a water storage agreement with the Salt River Valley Water Users' Association.

INDIAN SETTLEMENTS

The Plan does not specifically identify water storage for meeting other future State firming obligations under the Settlements Act; however, it does focus on the AWBA's firming responsibilities to the Gila River Indian Community (GRIC).

Indian Firming

CAP supplies will not be shorted in 2016 and no long-term system outages are anticipated that would reduce deliveries to CAP customers. Therefore, the AWBA has no obligation to firm Non-Indian Agricultural (NIA) Priority CAP water supplies in 2016.

The Settlements Act recognizes three categories where the State has firming responsibilities. The first two obligations pertain to firming of NIA Priority CAP water for the GRIC and other Arizona tribes in times of shortage for a 100-year period; the third obligation pertains to providing assistance to the Secretary of the Interior (Secretary) in carrying out obligations of the Southern Arizona Water Rights Settlement Act.

1. GRIC - The AWBA must ensure that up to 15,000 acre-feet per year of NIA Priority CAP water be made available to the GRIC during shortages. To date, 105,390 acre-feet of withdrawal fee credits accrued from water previously stored at the Gila River Indian Irrigation and Drainage District GSF have been dedicated specifically for meeting this obligation. In 2015, pursuant to a letter agreement between the AWBA and the GRIC, the AWBA developed an additional 16,000 acre-feet of "firming credits" on GRIC lands as described in Exhibit B of the IGA between the parties. The AWBA proposes to develop an additional 12,000 acre-feet of firming credits in 2016 using this firming method. This will result in a total of 133,390 acre-feet of water or 38 percent of the 350,000 acre-feet estimated to be needed to meet future firming obligations. Absent general fund appropriations, the AWBA has been utilizing withdrawal fees collected in the Phoenix and Pinal AMAs toward this obligation.
2. Other Tribes - The AWBA is also required to firm up to 8,724 acre-feet per year of CAP NIA priority water for other Indian Settlements. The White Mountain Apache Tribe has entered into an agreement that will require the AWBA to firm 3,750 acre feet per year of the 8,724 acre-feet once the agreement becomes enforceable. The AWBA has not dedicated credits specifically to this obligation. However, existing withdrawal fee credits, including long-term storage credits accrued under this plan, could be used for this purpose if needed. Settlements for other Indian Tribes have not been enacted at this time.
3. Federal Assistance - The AWBA has completed the State obligation to contribute \$3 million in cash or in-kind services to assist the Secretary in meeting the Federal obligation to the Tohono O'odham Nation. This obligation was met by accruing an equivalent amount of credits that will be distributed to the Secretary during shortages.

Southside Replenishment Bank

In addition to the firming requirements of the Settlements Act, the AWBA was required to deliver 15,000 acre-feet of water to the GRIC for the purpose of establishing the Southside Replenishment Bank. The Replenishment Bank can be used to fulfill the obligations created under the Settlements Act for protection of the Reservation from off-reservation groundwater pumping. This obligation was satisfied in 2015 and as such not included in the 2016 Plan.

Assignment of Long-term Storage Credits by the Tohono O'odham Nation

Pursuant to A.R.S. § 45-841.01, the Tohono O'odham Nation (Nation) must offer ten percent of any credits they accrue at the Mission Mine Complex to the AWBA at a price per acre-foot that is equal to the AWBA's delivery and storage costs at the time of sale. If the Nation offers the AWBA credits in 2016, the AWBA will evaluate its funding resources at that time to determine if there are sufficient funds available to purchase those credits. While these credits may be used for M&I firming or for water management purposes, there is a restriction that the credits not be recovered within five miles of the exterior boundary of the reservation.

INTERSTATE WATER BANKING

The AWBA, SNWA, and CRCN executed a Third Amended and Restated Agreement for Interstate Banking on May 20, 2013. The amended agreement removed the AWBA's obligation to accrue 1.25 MAF of LTS credits on behalf of SNWA. Under the amended agreement, storage for interstate purposes will be determined by the parties on an annual basis and may include the storage of Nevada's unused apportionment. Storage will be paid for by Nevada on a pay-as-you-go basis. There is no interstate storage planned for Nevada in 2016. Additionally, SNWA has not requested the development of intentionally created unused apportionment (ICUA) for 2016.

STORAGE FOR INTER-AMA FIRING

The Arizona Municipal Water Users Association (AMWUA) and Southern Arizona Water Users Association (SAWUA) have developed a proposal for Inter-AMA firming between the Phoenix and Tucson AMAs. The goal of the proposal is to provide additional water management flexibility to CAP M&I subcontractors and the AWBA.

Under the proposal, a CAP M&I subcontractor in the Phoenix AMA could store a portion of its entitlement in the Tucson AMA at a Tucson CAP M&I subcontractor's USF. In-turn, a Tucson M&I subcontractor would agree to accept the stored water in the future in lieu of a direct delivery to their USF, which would be delivered instead to the Phoenix M&I subcontractor's treatment plant. This has since been termed "supplemental firming". Likewise, the AWBA could store water in the Tucson AMA for M&I firming purposes using monies collected in the Phoenix AMA to pay for the storage. The stored water would be applied toward the firming goal for the Phoenix AMA. During shortages, the stored water would be recovered and used in lieu of a direct delivery to the Tucson AMA. The water that would have been delivered to the Tucson AMA would instead be

delivered to treatment plants in Phoenix, making the cost for recovery infrastructure more affordable for all M&I users.

To evaluate the concepts of the supplemental firming proposal, the City of Phoenix, Tucson Water, and Metropolitan Domestic Water Improvement District (Metro Water) participated in a pilot phase of the program in 2015. CAWCD, ADWR, AWBA and the Bureau of Reclamation (Reclamation) continue to evaluate the proposal as part of a comprehensive firming program. Therefore, the 2016 Plan does not include an Inter-AMA firming component at this time. AWBA participation in the program once final could be addressed as an amendment to the 2016 Plan. The program could provide the AWBA with additional flexibility, particularly if additional supplies become available during the year.

PRICING

In June of 2015, the CAWCD Board approved its final water delivery rate schedule for calendar years 2015/2016. The AWBA 2016 rate for recharge is equivalent to the rate for excess M&I water at \$184 per acre-foot, an increase of \$5 per acre-foot from the previous year.

Groundwater pumping costs in the Phoenix, Pinal and Tucson AMAs vary depending on energy sources used and the location of wells, i.e. depth to water. The AWBA cost share in 2016 for the GSF partners in the Phoenix and Pinal AMAs will remain at \$34 per acre-foot. Based on the range of groundwater pumping costs and cost shares paid by other partners, it was determined the cost share in 2016 for the Tucson AMA will also remain the same at \$16 per acre-foot. Table 4 reflects the water delivery rate CAWCD will charge the AWBA, the cost share GSF operators pay, and the rates the AWBA pays to utilize different USFs. When storing water for other than M&I firming and water management purposes at CAWCD recharge facilities, the AWBA also pays a facility capital charge. There is no administrative cost component in the facility cost because the AWBA pays the CAWCD administrative costs on an annual basis.

Table 4. 2015 Water and Facility Rates

| Recharge Rates | Cost per Acre-foot |
|--|--------------------|
| CAWCD delivery rate to AWBA for water storage | \$184.00 |
| Groundwater Savings Facility operator cost share rate ¹ | |
| Phoenix and Pinal AMAs | \$34.00 |
| Tucson AMA | \$16.00 |
| Underground Storage Facility rate paid by AWBA | |
| CAWCD – Phoenix Facilities | \$10.00 |
| CAWCD – Tucson Facilities | \$15.00 |
| Avra Valley Recharge Project | \$16.39 |
| Clearwater Facility (CAVSARP/SAVSARP) | \$16.57 |
| Granite Reef Underground Storage Project | \$15.00 |

¹ This rate is paid directly to CAP by the GSF operators and is not available as revenue to the AWBA. The AWBA’s rate for delivery of in lieu water is therefore reduced to \$150/af for intrastate deliveries to the Phoenix and Pinal AMAs and \$168/af to the Tucson AMA.

PURCHASE OF LONG-TERM STORAGE CREDITS

The AWBA’s governing statutes were amended in 2014 to allow the AWBA to purchase long-term storage credits after all available excess CAP water supplies have been scheduled for storage, thus providing the AWBA with additional flexibility in meeting its responsibilities. When purchasing credits, the AWBA may use all funding sources authorized for AWBA use, however, the use of *ad valorem* tax funds for this purpose is subject to approval by the CAWCD Board. Additionally, in developing its Plan for the following year, the AWBA must confer with the ADWR and CAWCD on the potential purchase of credits, particularly if CAWCD is anticipated to be the AWBA’s recovery agent for those credits.

For 2016, the AWBA is proposing to purchase credits using *ad valorem* tax funds collected in Maricopa County to make further progress on the CAP M&I firming goals for the Phoenix AMA. Accordingly, the AWBA will request that the CAWCD Board reserve funds for this purpose from monies collected in Maricopa County during the 2016 tax year. The AWBA is aiming to purchase credits at costs similar to that of the AWBA’s 2016 storage costs. In addition to cost, careful consideration will also be given to the location of the credits that are available for sale.

RECOVERY

Recovery of AWBA long-term storage credits for firming purposes or for the development of ICUA is not anticipated in 2016.

Staff representatives for ADWR, CAWCD and the AWBA, in cooperation with stakeholders, have developed a recovery plan that identifies the duties and responsibilities of the parties as they relate to recovery of the AWBA's long-term storage credits and delivery of that water during Colorado River shortages or for the development of ICUA. Further progress is also being made on the implementation aspects of the plan, including the development of recovery agreements between CAWCD and its potential recovery partners and evaluating other agreements that will be necessary to carry out future firming requirements and the development of ICUA. While the recovery of AWBA credits for CAP M&I priority subcontract firming, on-River domestic supplies and interstate is not projected for at least the next ten years, recovery for Indian CAP NIA priority may occur sooner. If recovery is necessary, potential opportunities to provide this firming exist.

ACCOUNTING

The AWBA's enabling legislation required the development of an accounting system that allows the tracking of all credits accrued by the AWBA and the funding sources from which they were developed. ADWR maintains the accounting of the credits, the AWBA accounts for the expenditure of the funds utilized from the Water Banking Fund, and CAWCD accounts for the expenditure of the *ad valorem* tax monies and reports that expenditure to the AWBA.

The estimated water delivery and storage costs for the AWBA's 2016 Plan total just over \$11.3 million and includes \$5.9 million for the Phoenix AMA, \$2.6 million for the Pinal AMA and \$2.8 million for the Tucson AMA. Additionally, the AWBA anticipates expending up to \$1.93 million to develop firming credits on GRIC lands and proposes to purchase up to \$3 million in existing long-term storage credits for firming M&I supplies in the Phoenix AMA. Therefore, the total estimated cost of the 2016 Plan is \$16.3 million. Table 5 provides estimates of the funds available to the AWBA, the funds to be utilized, the entity that holds the funds, and the credits estimated to accrue to those accounts based on the 2016 Plan.

The 2016 Plan was developed to prioritize storage in the Tucson AMA to make progress on the M&I firming goal for that AMA. All funds estimated to be available in 2016 are utilized. The remaining water supplies were divided between the Phoenix and Pinal AMAs based on funding and storage capacity availability. All available funds are used in the Pinal AMA. The Plan anticipates utilizing all withdrawal fees collected in the Phoenix AMA and a portion of the *ad valorem* tax monies collected in Maricopa County.

Table 5. Funding for 2016 Annual Plan of Operation

| Funding Source | Estimated Funds Available | | Estimated Funds Utilized | | Estimated Credits (AF) | |
|---------------------------------|------------------------------|--------------------|-----------------------------|-------------|------------------------|--------------------------------|
| | AWBA | CAWCD ¹ | AWBA | CAWCD | Water Storage | Developed Credits ² |
| Withdrawal Fees | | | | | | |
| Phoenix AMA ³ | \$2,100,000 | - | \$2,100,000 | - | 920 | 12,000 |
| Pinal AMA | \$1,400,000 | - | \$1,400,000 | - | 8,680 | 0 |
| Tucson AMA | \$400,000 | - | \$400,000 | - | 1,910 | 0 |
| Four Cent Tax | | | | | | |
| Phoenix AMA ⁴ | \$0 | \$14,000,000 | \$0 | \$8,753,000 | 30,680 | 13,950 |
| Pinal AMA | \$0 | \$1,268,000 | \$0 | \$1,228,000 | 7,610 | 0 |
| Tucson AMA ⁵ | \$0 | \$2,370,000 | \$0 | \$2,370,000 | 11,300 | 0 |
| General Fund⁶ | \$0 | | | | | |
| Phoenix AMA | | - | \$0 | - | 0 | 0 |
| Pinal AMA | | - | \$0 | - | 0 | 0 |
| Tucson AMA | | - | \$0 | - | 0 | 0 |
| | | | | | | |
| | Total Funds Available | | Total Funds Expended | | Total Credits | |
| | \$21,538,000 | | \$16,251,000 | | 61,100 | 25,950 |

¹The figures shown are estimates provided by CAWCD staff based on anticipated collections during the 2015-2016 tax year. Collections for Pima County were decreased by \$630,000 to account for monies expended on AWBA storage in 2015 and Pinal County estimates include \$468,000 in carryover funds. If utilization is greater than estimated, there may be additional funds held by CAWCD that could be made available at the discretion of the CAWCD Board of Directors.

² Includes purchased long-term storage credits and contractual firming credit equivalents.

³ Includes up to \$1.93 million toward the development of firming credits as described in Exhibit B of the IGA between the AWBA and the Gila River Indian Community.

⁴ Includes up to \$3 million toward the potential purchase of credits for M&I firming.

⁵ Estimates include revenue from CAWCD's Underground Water Storage Capital Charge.

⁶ Availability of funds subject to legislative appropriation.

Table 6 identifies the progress expected to be made on the AWBA's goals and obligations through 2016. Proposed credit purchases were not included in the totals due to the uncertainty in the acquisition of those credits.

Table 6. Projected Percent of Goals and Obligations Achieved through 2016

| Location and Objective | Funding Source | Estimated Goal | Non-Credit Goal Achieved | Credits Accrued (AF) | Goal Achieved |
|---|---|-------------------------|--------------------------|----------------------|---------------|
| CAP M&I FIRMING | | | | | |
| Phoenix AMA | Water Storage Tax (4¢ <i>Ad valorem</i>) collected by County | 1,566,000 AF | | 1,420,078 | 91% |
| Pinal AMA | | 243,000 AF | | 215,242 | 89% |
| Tucson AMA | | 864,000 AF | | 458,376 | 53% |
| On-River M&I FIRMING¹ | General Fund | 420,000 AF | | 403,830 | 96% |
| Indian Settlement Obligations: | | | | | |
| GRIC FIRMING ² <i>up to 15 KAF/yr</i> | General Fund Withdrawal Fees | 350,000 AF ³ | | 121,390 | 35% |
| | | | | 0 | |
| Future Settlements - <i>up to 8.7 KAF/yr</i> | General Fund Withdrawal Fees | 200,000 AF ³ | | 0 | N/A |
| Federal Assistance (SAWRSA)- <i>\$3 million</i> | General Fund Tucson W/Fees | | \$3,000,000 | 34,102 | 100% |
| | | | \$2,338,171 | 28,481 | |
| | | | \$630,490 | 5,621 | |
| | Cost of Services ⁴ | | \$31,339 | n/a | |
| Southside Repl. Bank - <i>15 KAF direct delivery</i> | General Fund Pinal W/Fees | | | 15,000 | 100% |
| | | | | 1,342 | |
| | | | | 13,658 | |
| Groundwater Management⁵ | | | | | |
| Phoenix AMA | Withdrawal Fees collected by AMA | | | 242,107 | |
| Pinal AMA | | | | 404,991 | |
| Tucson AMA ⁶ | | | | 101,284 | |
| Other: | | | | | |
| Shortage Reparations ⁷ | Agreement with Nevada | \$8,000,000 | \$8,000,000 | 109,423 | 100% |
| Pinal Redirect Credits ⁸ | N/A | | | 14,125 | N/A |

¹ 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 Agreement to Firm dated February 4, 2005, a total of 230,280 acre-feet of credits were transferred to the AWBA long-term storage subaccount for MCWA in 2005. An additional 25,894 acre-feet of credits have been reserved under Exhibit C of the Amended Agreement to Firm, dated December 8, 2010, for a total of 256,174 acre-feet.

² Credits accrued and reserved for firming pursuant to the Agreement between the AWBA and the Gila River Indian Irrigation and Drainage District of the Gila River Indian Community for storage of Central Arizona Project Water at a GSF, executed June 16, 2006. Credits include 88,313 AF accrued in the Phoenix AMA and 17,077 AF accrued in the Pinal AMA. Also includes 16,000 AF of firming credits developed in accordance with the IGA between the AWBA and the Community.

³ Based on estimates from the Indian FIRMING Study Commission Report dated January 6, 2006.

⁴ Expenditures include \$14,883 and \$16,456 deducted for payment of cost of services for FY08 and FY09, respectively.

⁵ Withdrawal fees could be utilized in addition to 4¢ ad valorem tax revenues for M&I firming if needed to reach firming goals and for Indian settlement obligations in the absence of general fund appropriations.

⁶ Includes 234 AF of credits acquired from the Tohono O'odham Nation pursuant to § 45-841.01.

⁷ Includes 3,665 AF of credits acquired from the Tohono O'odham Nation pursuant to § 45-841.01.

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

PUBLIC REVIEW AND COMMENT

AWBA staff presented the Plan to the public in conjunction with the Groundwater Users Advisory Councils (GUAC) meetings for the Phoenix, Pinal and Tucson AMAs as required by statute. Council members supported the Plan and there were no requested changes.

In the Phoenix AMA, GUAC members had questions regarding the ability to store additional water if it should become available during the year or if conditions change and there are surpluses available in the future. Staff indicated that the AWBA had historically stored more water and that if necessary, CAWCD Board could also resume operation of the Tonopah Desert Recharge Project to provide additional storage capacity.

In the Pinal AMA, there were comments in support of the AWBA's storage plans for the AMA and satisfaction that the Southside Replenishment Bank has been fully established.

In the Tucson AMA, members responded positively and expressed appreciation on the AWBA's efforts over the last several years to focus storage in that AMA and the progress that has been made as a result.

Additional comments received from the public via email or letter were incorporated into the Plan where appropriate.