

Final Draft

ARIZONA WATER BANKING AUTHORITY

ANNUAL PLAN OF OPERATION

2018



Thomas Buschatzke, Chair

December 2017

EXECUTIVE 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.

Over the last two decades, the AWBA has made considerable progress toward meeting its objectives, developing over 4.2 million acre-feet (MAF) of credits for future use, 3.6 MAF for Arizona uses and 0.6 MAF for interstate purposes on behalf of Nevada. In the face of decreasing excess CAP water availability, as a supplement to traditional water storage, the AWBA has developed about 126,577 acre-feet of additional credits: 91,577 acre-feet through credit purchase and 35,000 as firming credit equivalents described under the AWBA's firming agreement with the Gila River Indian Community (Community).

For 2018, the volume of excess CAP water available to the AWBA is 38,000 acre-feet. This water will be stored at both underground storage and groundwater savings facilities within the three Active Management Areas (AMA) that have made capacity available to the AWBA and includes 22,100 acre-feet in the Phoenix AMA, 8,100 acre-feet in the Pinal AMA and 7,800 acre-feet in the Tucson AMA. The AWBA also proposes to utilize the remaining funds to develop an estimated 24,620 acre-feet of credits: 15,620 acre-feet through the purchase of existing long-term storage credits and 9,000 acre-feet as firming credit equivalents pursuant to the AWBA's firming agreement with the Community. The total proposed costs for these activities under the 2018 Plan of Operation is just under \$12.9 million and includes \$7.8 million for storage and up to \$5.1 million for potential credit development.

For the first time since 2010, the 2018 Plan of Operation will also include a component for interstate banking. Nevada has requested the storage of 13,500 acre-feet of its unused Colorado River entitlement. Of this amount, 9,500 acre-feet is scheduled for storage in the Phoenix AMA and 4,000 acre-feet is scheduled for the Tucson AMA. Storage is planned for underground storage and groundwater savings facilities in both locations. The cost to Nevada for this storage is just over \$3.28 million.

Consistent with the recommendations of the AWBA's 2016 Annual Report and Ten-Year Plan, the 2018 Plan of Operation continues to focus on achieving municipal and industrial firming goals and meeting the responsibilities of the Arizona Water Settlements Act, while continuing to provide hydrologic water management benefits within the AMAs.

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 2018 Plan does not include the storage of other renewable supplies, however, it does include credit purchases in the Phoenix AMA.

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, are 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.

2017 PLAN OF OPERATION

The AWBA had 17,630 acre-feet of excess Colorado River water available for use in 2017. Arizona also plans to conserve over 282,500 acre-feet of water in Lake Mead to benefit system storage. As a result, Arizona's adjusted apportionment of Colorado River water in 2017 is approximately 2.52 MAF. The Bureau of Reclamation's forecasted water use report shows that as of November 20, 2017, Arizona's projected end of year use is 2.48 MAF, slightly lower than the adjusted apportionment (see Figure 1).

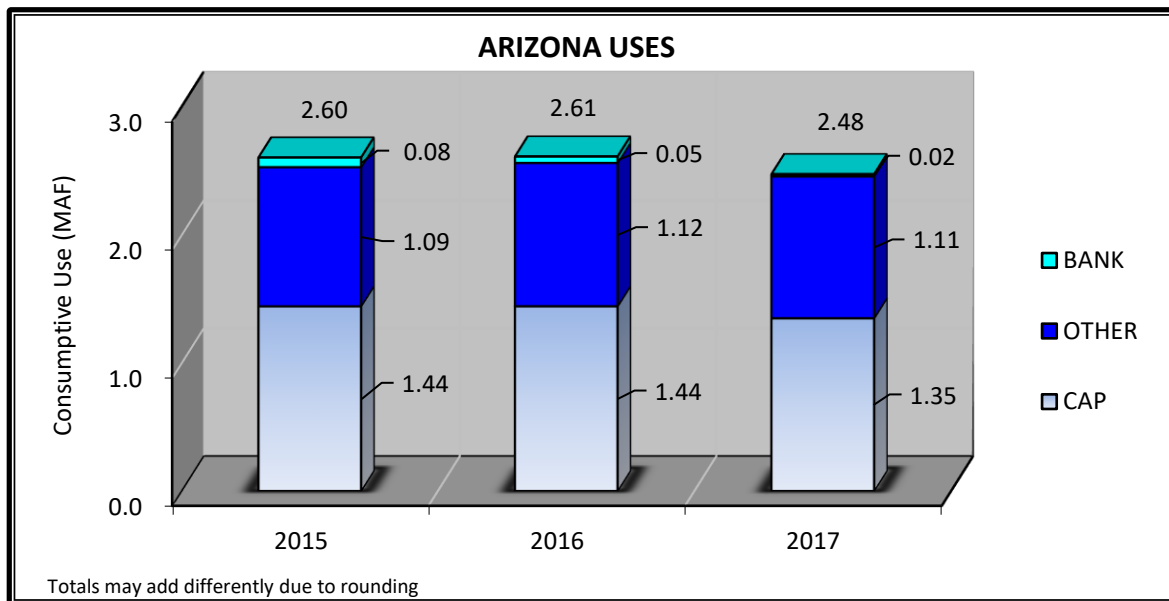


Figure 1. Recent Comparison of Colorado River Water Uses by Arizona

Forecasted use of Colorado River water in 2017 in the Lower Basin is 6.64 MAF (see Figure 2).

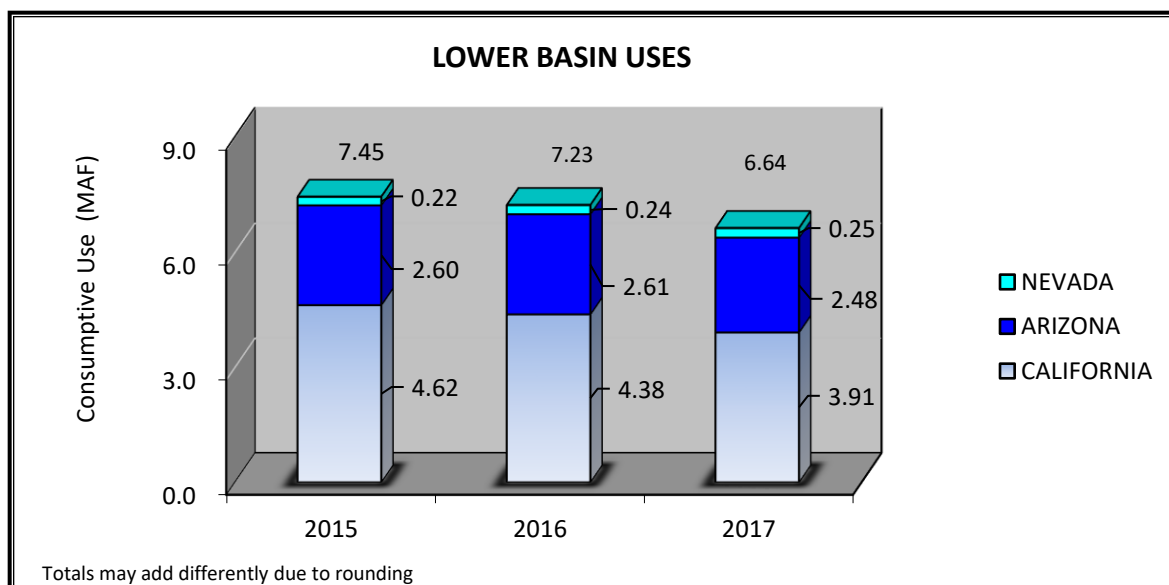


Figure 2. Recent Comparison of Lower Basin Uses of Colorado River Water

The AWBA stored water at both USFs and GSFs in 2017. Table 1 lists the AWBA's recharge partners for 2017, 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. The amount of water delivered is always greater than the amount of long-term storage credits accrued by the AWBA because credits are computed by subtracting losses (approx. 1 to 3 percent) and 5 percent 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 1. Recharge Facilities and Water Storage Deliveries for 2017

| AMA | Facility | Type | AWBA Permit Capacity (acre-feet) | Delivered* (acre-feet) |
|----------------------------------|-----------------------------|------|----------------------------------|------------------------|
| PHOENIX AMA | Agua Fria | USF | 100,000 | 0 |
| | Hieroglyphic Mtn. | USF | 35,000 | 1,900 |
| | Superstition Mtns. | USF | 25,000 | 0 |
| | GRUSP | USF | 93,000 | 0 |
| | Queen Creek ID | GSF | 28,000 | 2,230 |
| | Phoenix AMA Subtotal | | | |
| PINAL AMA | Central Arizona IDD | GSF | 110,000 | 3,800 |
| | Hohokam IDD | GSF | 55,000 | 3,800 |
| | Maricopa-Stanfield IDD | GSF | 120,000 | 3,800 |
| | Pinal AMA Subtotal | | | |
| TUCSON AMA | Avra Valley | USF | 11,000 | 0 |
| | Lower Santa Cruz | USF | 50,000 | 0 |
| | SAVSARP | USF | 60,000 | 0 |
| | Cortaro-Marana ID | GSF | 20,000 | 2,100 |
| | BKW Farms | GSF | 14,316 | 0 |
| | KAI FARMS -RED ROCK | GSF | 11,231 | 0 |
| | Tucson AMA Subtotal | | | |
| TOTAL RECHARGE DELIVERIES | | | | 17,630 |

*November and December deliveries estimated

Figure 3 identifies the storage breakdown between GSFs and USFs for 2017 and provides a comparison between 2017 and the two previous years. Unlike previous years, storage in 2017 was predominantly at GSFs and can be attributed to the low volume of excess CAP water available to the AWBA. Because of the decrease in supplies, storage was focused at GSFs to provide water management benefits by using renewable supplies in lieu of groundwater for agricultural irrigation. If additional water were made available, the percentage of storage at

USFs would have increased because the storage capacity available to the AWBA at GSFs was fully utilized.

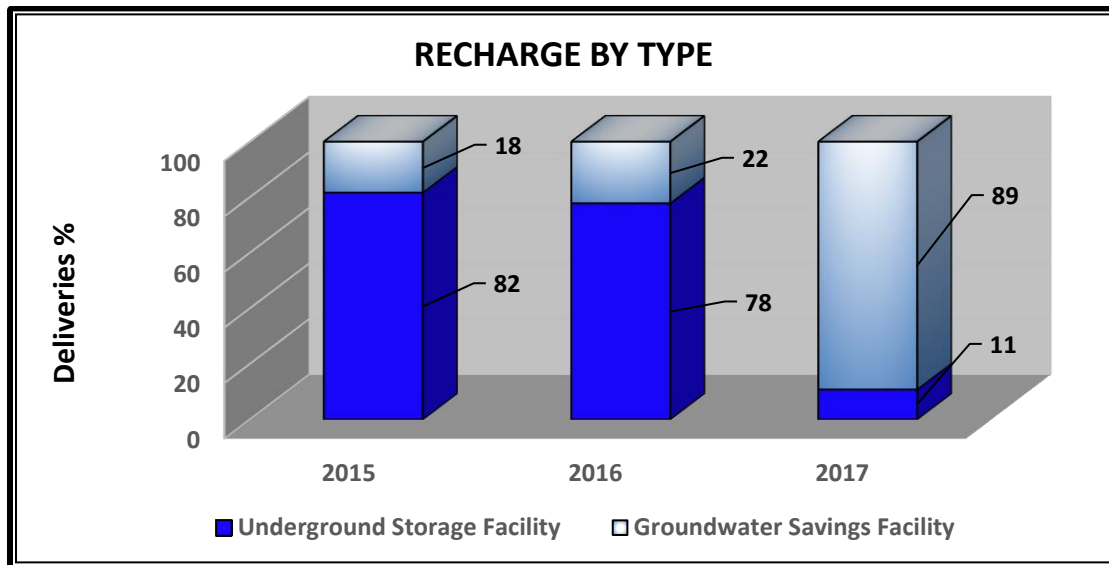


Figure 3. Recent Comparison of Annual Deliveries to GSFs and USFs

As a supplement to water storage, the AWBA also accrued 7,000 acre-feet of “firming credits” developed on Gila River Indian Community lands pursuant to its agreements with the Community for meeting firming obligations.¹ Additionally, the AWBA purchased a total of 73,177 acre-feet of existing long-term storage credits. This amount includes 59,082 acre-feet and 12,570 acre-feet for firming CAP M&I priority supplies in the Phoenix and Tucson AMAs, respectively, and 1,525 acre-feet of credits in the Tucson AMA for water management purposes, which includes M&I firming.

¹ Agreements include the *IGA between the AWBA and the GRIC* executed June 16, 2015 and the *Agreement between the AWBA and the GRIC for the Development of Firming Credits* executed June 30, 2016.

Table 2 provides an estimate of funds expended for water storage and credit purchases, including firming credits developed with the Gila River Indian Community, and the location of those credits.

Table 2. Cumulative Expenditures and Long-term Storage and Firming Credits 1997-2017¹

| Funding Source | Phoenix AMA | | Pinal AMA | | Tucson AMA | | Total | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Funds Expended (\$M) | Credits Accrued (AF) | Funds Expended (\$M) | Credits Accrued (AF) | Funds Expended (\$M) | Credits Accrued (AF) | Funds Expended (\$M) | Credits Accrued (AF) |
| Withdrawal Fees | \$ 28.7 | 370,904 | \$ 20.3 | 427,019 | \$ 9.8 | 108,622 | \$ 58.8 | 906,545 |
| Ad valorem Tax | \$ 122.2 | 1,478,641 | \$ 14.0 | 221,025 | \$ 56.6 | 473,002 | \$ 192.8 | 2,172,668 |
| General Fund² | \$ 1.5 | 42,316 | \$ 6.4 | 306,968 | \$ 3.2 | 54,546 | \$ 11.1 | 403,830 |
| Indian Appropriation | \$ - | - | \$ - | - | \$ 2.6 | 28,481 | \$ 2.6 | 28,481 |
| Shortage Reparatons³ | \$ 1.1 | 20,642 | \$ 1.7 | 60,507 | \$ 5.2 | 28,340 | \$ 8.0 | 109,489 |
| Pinal Redirect⁴ | | - | \$ - | 14,125 | \$ - | - | \$ - | 14,125 |
| Subtotal | \$ 153.5 | 1,912,502 | \$ 42.4 | 1,029,644 | \$ 77.3 | 692,991 | \$ 273.2 | 3,635,137 |
| Interstate – Nevada⁵ | \$ 11.4 | 51,009 | \$ 71.5 | 440,241 | \$ 26.1 | 109,791 | \$ 109.1 | 601,041 |
| Total | \$ 164.9 | 1,963,511 | \$ 113.9 | 1,469,885 | \$ 103.5 | 802,782 | \$ 382.3 | 4,236,179 |

¹Actual expenditures and credits for 1997-2016; 2017 estimated. Totals may add differently due to rounding.

²A total of 256,174 acre-feet of credits reserved for the Mohave County Water Authority pursuant to the Amended Agreement to Firm Future Supplies

³ Monies made available to the AWBA from the Southern Nevada Water Authority to assist Arizona in offsetting impacts from shortages pursuant to the 2008 Arizona-Nevada Shortage-Sharing Agreement.

⁴ Credits 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.

⁵ Includes 50,000 acre-feet of credits transferred from CAWCD pursuant to Amended Agreement for Interstate Banking.

2018 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 CAP water available for delivery from the Colorado River and from CAP system storage; and (2) the amount of CAP water available to the AWBA for delivery under the existing CAWCD Board Policy regarding the distribution of Excess Water.

The proposed 2018 Annual Operating Plan (AOP) for the Colorado River Reservoirs, distributed by the Bureau of Reclamation (Reclamation), states that the Intentionally Created Surplus (ICS) Surplus Condition is the criterion that will govern the release of water for the states in the Lower Basin during calendar year 2018. Arizona will continue its efforts to assist in protecting against water level declines in Lake Mead with the objective of delaying or avoiding a shortage declaration on the Colorado River. For calendar year 2018, a Lake Mead Protection volume of approximately 200,000 acre-feet from Arizona contributors, in concert with other efforts in the Lower Basin, is estimated to maintain Lake Mead at a similar elevation at the end of year 2018 as is projected for end of year 2017. For the Arizona portion of the system conservation, CAWCD is planning to provide about 150,000 acre-feet of excess water as a voluntary contribution to Lake Mead in 2018. Reclamation's Pilot System Conservation Program has approved conservation projects for 2018 totaling 9,635 acre-feet and is currently accepting additional proposals.

For 2018, 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. CAWCD establishes the volume available in this pool on an annual basis. The quantity available in this pool for 2018 is 43,000 acre-feet. The CAGR has opted not to order water from this pool in 2018. Subtracting the projected use of 5,000 acre-feet for Reclamation leaves a remaining balance of 38,000 acre-feet for the AWBA.

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 2018. 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, including Nevada's unused apportionment for interstate storage, is not a limiting factor in this Plan.

III. Available Funds

The AWBA will have an estimated \$2.85 million in withdrawal fee revenues available for use in 2018 and includes an estimated \$1.614 million for the Phoenix AMA, \$961,000 for the Pinal AMA, and \$274,000 for the Tucson AMA. Total available revenues take into consideration over \$1.6 million in legislative transfers for fiscal year 2017-2018. This amount was deducted proportionally from each AMA withdrawal fee subaccount based on revenues collected resulting in 57 percent for the Phoenix AMA, 34 percent for the Pinal AMA and 10 percent 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 for costs related to operation and maintenance (O&M) and/or for repayment of the Project. Property tax revenues retained by CAWCD have been used to offset the cost of AWBA water deliveries and storage at its recharge projects as part of O&M. For 2018, the CAWCD Board further resolved that it would make only half of the revenues collected in each county available for AWBA purposes. Estimated funds available from CAWCD for the 2018 Plan include \$8.2 million for Maricopa County, \$435,000 for Pinal County, and \$1.5 million for Pima County.

The reduction in available withdrawal fees and *ad valorem* tax funds was a limiting factor in developing the 2018 Plan with respect to water storage in the Pinal AMA and Tucson AMAs.

IV. Available Storage Facility Capacity

Storage in all three AMAs was focused on utilizing groundwater savings facilities before underground storage facilities since indirect storage at these facilities provides water management benefits through the continued use of renewal supplies in lieu of groundwater for agricultural irrigation. There is storage capacity available to the AWBA in all three AMAs should additional water become available during the year. However, use of that capacity is still subject to the availability of funds.

The Water Delivery Schedule (Table 3) identifies the storage sites for the AWBA's partners for 2018 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 in some cases 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 2018**

| 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 | 0 | 0 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 0 | 5,000 |
| | AGUA FRIA - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 650 | 650 | 620 | 2,070 |
| | GRUSP | 93,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | HIEROGLYPHIC MTN | 35,000 | 0 | 0 | 0 | 0 | 0 | 800 | 800 | 800 | 1,340 | 1,240 | 1,290 | 741 | 7,011 |
| | SUPERSTITION MTNS | 35,000 | 0 | 0 | 2,000 | 2,000 | 2,000 | 0 | 0 | 2,000 | 687 | 0 | 0 | 0 | 8,687 |
| | Subtotal | | | | | | | | | | | | | | 22,768 |
| GSF | NEW MAGMA | 54,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | NEW MAGMA - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,000 | 1,000 | 1,000 | 0 | 0 | 3,000 |
| | QUEEN CREEK | 28,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | QUEEN CREEK - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,230 | 1,500 | 500 | 500 | 200 | 3,930 |
| | TONOPAHO ID | 15,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 302 | 400 | 300 | 250 | 150 | 1,402 |
| | TONOPAHO ID - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 500 |
| | Subtotal | | | | | | | | | | | | | | 8,832 |
| | TOTAL INTRASTATE | | 0 | 0 | 2,000 | 2,000 | 2,000 | 800 | 1,800 | 4,102 | 3,427 | 2,540 | 2,540 | 891 | 22,100 |
| | TOTAL INTERSTATE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,330 | 2,750 | 2,250 | 1,250 | 920 | 9,500 |
| AMA TOTAL | | | 0 | 0 | 2,000 | 2,000 | 2,000 | 800 | 1,800 | 6,432 | 6,177 | 4,790 | 3,790 | 1,811 | 31,600 |
| PINAL AMA : | | | | | | | | | | | | | | | |
| GSF | CAIDD | 110,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,700 | 0 | 0 | 0 | 0 | 2,700 |
| | HOHOKAM | 55,000 | 0 | 0 | 0 | 0 | 0 | 2,700 | 0 | 0 | 0 | 0 | 0 | 0 | 2,700 |
| | MSIDD | 120,000 | 0 | 310 | 510 | 410 | 540 | 310 | 210 | 210 | 200 | 0 | 0 | 0 | 2,700 |
| | Subtotal | | | | | | | | | | | | | | 8,100 |
| AMA TOTAL | | | 0 | 310 | 510 | 410 | 540 | 3,010 | 210 | 2,910 | 200 | 0 | 0 | 0 | 8,100 |
| TUCSON AMA: | | | | | | | | | | | | | | | |
| USF | AVRA VALLEY | 11,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | LOWER SANTA CRUZ | 50,000 | 0 | 0 | 0 | 1,500 | 1,500 | 0 | 1,000 | 1,000 | 500 | 0 | 500 | 300 | 6,300 |
| | PIMA MINE ROAD | 30,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 0 | 250 | 0 | 500 |
| | PIMA MINE ROAD - INT. | | 0 | 0 | 0 | 0 | 0 | 500 | 500 | 500 | 500 | 0 | 0 | 0 | 2,000 |
| | SAVSARP | 60,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Subtotal | | | | | | | | | | | | | | 8,800 |
| GSF | CORTARO-MARANA ID | 20,000 | 0 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 0 | 0 | 0 | 1,000 |
| | CMID - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,000 | 500 | 0 | 0 | 0 | 1,500 |
| | KAI FARMS (Red Rock) | 11,231 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | KAI FARMS - Interstate | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 0 | 0 | 500 |
| | BKW Farms | 14,316 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Subtotal | | | | | | | | | | | | | | 3,000 |
| | TOTAL INTRASTATE | | 0 | 0 | 0 | 1,500 | 1,500 | 0 | 2,000 | 1,000 | 750 | 0 | 750 | 300 | 7,800 |
| | TOTAL INTERSTATE | | 0 | 0 | 0 | 0 | 0 | 500 | 500 | 2,000 | 1,000 | 0 | 0 | 0 | 4,000 |
| AMA TOTAL | | | 0 | 0 | 0 | 1,500 | 1,500 | 500 | 2,500 | 3,000 | 1,750 | 0 | 750 | 300 | 11,800 |
| TOTAL INTRASTATE | | | | | | | | | | | | | | | |
| TOTAL INTERSTATE | | | | | | | | | | | | | | | |
| TOTAL RECHARGE | | | | | | | | | | | | | | | |

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 2018 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 2018.

The Settlements Act recognizes three categories where the State has firming responsibilities. The first two obligations relate 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 assisting the Secretary of the Interior (Secretary) in carrying out the 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. Additionally, 35,000 acre-feet of similar "firming credits" have been developed on GRIC lands since 2015 as described in the AWBA's agreements with the Community for meeting firming obligations. The AWBA proposes to develop up to an additional 9,000 acre-feet of firming credits in 2018 using this firming method. Thus, the AWBA could accrue a total of 149,390 acre-feet of water on Reservation or forty-three percent of the 350,000 acre-feet estimated to be needed to meet future firming obligations.
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. Legislation approving and authorizing the settlement of the Hualapai Indian Tribe's claims to the Colorado River was re-introduced in 2017. If enacted, the AWBA would have an obligation to firm 557.5 acre-feet per year under the settlement.
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 to establish 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. The AWBA has not had to meet a replenishment obligation or utilize the Replenishment Bank. Therefore, water deliveries for replenishment purposes have not been included in the 2018 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 the AWBA ten percent of any credits determined accruable by ADWR from storage at the Mission Mine Complex 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 2018, the AWBA will evaluate the offer to determine if it is reasonable to purchase those credits. There is a restriction that the credits may not be recovered within five miles of the exterior boundary of the reservation.

INTERSTATE WATER BANKING

The AWBA, Southern Nevada Water Authority (SNWA), and Colorado River Commission of Nevada (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. Storage is determined annually by the parties and may include Nevada's unused apportionment. For 2018, SNWA has requested the storage of 13,500 acre-feet of Nevada's unused apportionment in the Phoenix and Tucson AMAs. Storage will be at both GSFs and USFs. The total cost is just over \$3.28 million and will be paid for by SNWA.

PRICING

In June of 2017, the CAWCD Board approved its final water delivery rate schedule for calendar years 2017/2018. The AWBA 2018 rate for recharge is equivalent to the rate for excess M&I water at \$205 per acre-foot, an increase of \$10 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 2018 for the GSF partners in the Phoenix and Pinal AMAs will remain at \$34 per acre-foot. The cost share for the Tucson AMA will also remain the same at \$16 per acre-foot.

The rate established for interstate banking is \$254.00 per acre-foot, plus facility costs and facility capital costs. The cost share for GSF partners is \$30 per acre-foot in the Phoenix AMA and \$16 per acre-foot in the Tucson AMA.

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 at CAWCD recharge facilities other than for M&I firming and water management purposes, the AWBA also pays a facility capital charge. There is no administrative cost component in the facility cost because the AWBA pays the CAWCD and any Salt River Project (SRP) administrative costs on an annual basis.

Table 4. 2018 Water and Facility Rates

| Recharge Rates | Cost per Acre-foot |
|--|--------------------|
| CAWCD delivery rate for AWBA | \$205.00 |
| CAWCD Interstate delivery rate ¹ | \$254.00 |
| Groundwater Savings Facility operator cost share rate ² | |
| Phoenix and Pinal AMAs | \$34.00 |
| Tucson AMA | \$16.00 |
| Interstate | |
| Phoenix and Pinal AMAs | \$30.00 |
| Tucson AMA | \$16.00 |
| Underground Storage Facility rate paid by AWBA | |
| CAWCD – Phoenix Facilities ³ | \$13.00 |
| CAWCD – Tucson Facilities ⁴ | \$15.00 |
| Avra Valley Recharge Project | \$17.39 |
| Clearwater Facility (CAVSARP/SAVSARP) | \$17.58 |
| Granite Reef Underground Storage Project | \$15.00 |

¹ Includes an estimated in lieu tax equivalency rate of \$49/AF for entities outside the CAP service area

² This rate is paid directly to CAP by the GSF operators and is not available as revenue to the AWBA

³ Additional capital charge of \$15/AF for interstate storage

⁴ Additional capital charge of \$9/AF for interstate storage

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 2018, 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 priority firming goals for the Phoenix AMA. Accordingly, the AWBA will request that the CAWCD Board reserve \$3.62 million in Maricopa County funds for this purpose, which includes just over \$1.5 million toward the purchase of 6,500 acre-feet of credits purchased pursuant to the AWBA's agreement with the City of Peoria. The rates are the same as the AWBA's costs to accrue an equivalent volume of credits through water storage at CAWCD's recharge projects located in the Phoenix AMA.

RECOVERY

Recovery of AWBA long-term storage credits for any purpose or for the development of Intentionally Created Unused Apportionment is not anticipated in 2018.

However, as part of the implementation of the Joint Recovery Plan adopted in 2014, staff representatives for ADWR, CAWCD and the AWBA, in cooperation with stakeholders, continue to make progress, including development of recovery agreements between CAWCD and its potential recovery partners and the evaluation of water quality and recovery infrastructure needs at recharge sites identified in the Joint Recovery Plan. A stakeholder group, called the Recovery Planning Advisory Group (RPAG), will also convene in January of 2018, to assist staff in this process. Additionally, commensurate with the execution of the CAP system use agreement between CAWCD and the Bureau of Reclamation (Reclamation) in 2017, CAWCD Board President Lisa Atkins established a Water Quality Standards Task Force comprised of CAWCD Board members to review the legal, operational and policy matters associated with the introduction of non-project water into the CAP system. The goal of the task force is to develop, through stakeholder involvement, water quality standards for approval by the full Board and recommendation to Reclamation.

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, 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 2018 Plan was developed to store all available excess CAP water supplies and to use the remaining funds to purchase credits to make further progress on achieving AWBA firming goals. The estimated cost of the AWBA's 2018 Plan is just over \$16.16 million and is

anticipated to develop 72,530 acre-feet of credits. Of this amount, \$12.88 million (59,970 acre-feet) is for Arizona uses and \$3.28 million (12,560 acre-feet) is for interstate purposes. Arizona uses include expenditures for water storage of just over \$4.75 million for the Phoenix AMA and just under \$1.39 and \$ 1.69 million for the Pinal and Tucson AMAs, respectively. Additionally, the AWBA anticipates expending up to \$1.44 million to develop firming credits with the Gila River Indian Community and proposes to purchase up to \$3.6 million in existing long-term storage credits for firming CAP M&I priority supplies in the Phoenix AMA. 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 2018 Plan.

Table 5. Funding for 2018 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 | \$1,614,000 | - | \$1,614,000 | - | 750 | 9,000 |
| Pinal AMA | \$961,000 | - | \$961,000 | - | 5,230 | 0 |
| Tucson AMA | \$274,000 | - | \$274,000 | - | 1,180 | 0 |
| Four Cent Tax | | | | | | |
| Phoenix AMA ⁴ | \$0 | \$8,200,000 | \$0 | \$8,200,000 | 19,800 | 15,620 |
| Pinal AMA | \$0 | \$435,000 | \$0 | \$423,870 | 2,310 | 0 |
| Tucson AMA | \$0 | \$1,500,000 | \$0 | \$1,411,000 | 6,080 | 0 |
| General Fund | \$0 | | | | | |
| Phoenix AMA | | - | \$0 | - | 0 | 0 |
| Pinal AMA | | - | \$0 | - | 0 | 0 |
| Tucson AMA | | - | \$0 | - | 0 | 0 |
| Interstate - SNWA⁵ | \$3,280,000 | | | | | |
| Phoenix AMA | | | \$2,248,000 | | 8,840 | |
| Pinal AMA | | | \$0 | | 0 | |
| Tucson AMA | | | \$1,032,000 | | 3,720 | |
| | Total Funds Available | | Total Funds Expended | | Total Credits | |
| | \$16,264,000 | | \$16,163,870 | | 47,910 | 24,620 |

¹ The figures shown are estimates provided by CAWCD staff based on anticipated collections during the 2017-2018 tax year and carryover for Maricopa County. If water storage is greater than estimated, there are additional funds held by CAWCD for Maricopa County 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 \$1.44 million toward the development of firming credits pursuant to the IGA between the AWBA and the Gila River Indian Community for the Development of Firming Credits.

⁴ Includes \$3.62 million toward the potential purchase of credits for M&I firming.

⁵ Monies made available by the Southern Nevada Water Authority.

Table 6 identifies the progress expected to be made on the AWBA's goals and obligations through 2018. 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 2018

| 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 | | 1,498,441 | 96% |
| Pinal AMA | | 243,000 AF | | 223,335 | 92% |
| Tucson AMA | | 864,000 AF | | 479,082 | 55% |
| 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 | | 149,390 0 149,390 | 43% |
| 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 Cost of Services ⁴ | | \$3,000,000 \$2,338,171 \$630,490 \$31,339 | 34,102 28,481 5,621 <i>n/a</i> | 100% |
| Southside Repl. Bank - <i>15 KAF direct delivery</i> | General Fund Pinal W/Fees | | | 15,000 1,342 13,658 | 100% |
| Groundwater Management⁵ | | | | | |
| Phoenix AMA | Withdrawal Fees collected by AMA | | | 248,341 | N/A |
| Pinal AMA | | | | 415,172 | N/A |
| Tucson AMA | | | | 104,181 | N/A |
| Other: | | | | | |
| Interstate Banking - SNWA | Agreement with Nevada | | | 613,601 | N/A |
| Shortage Reparations | Agreement with Nevada | \$8,000,000 | \$8,000,000 | 109,489 | N/A |
| Pinal Redirect Credits ⁶ | 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 44,000 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 Credits accrued from water provided to Pinal AMA GSFs at full cost to the GSF operators.

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. The Plan was also distributed to the public for review and comment.

The GUACs in all three AMAs supported the Plan as presented and commended the accomplishments of the AWBA to date. In the Phoenix AMA, there were questions related to the liquidity of the long-term storage credit market, progress towards meeting the AWBA's goals and ongoing recovery planning activities. In the Pinal AMA there were comments regarding the desire to store any additional supplies assuming funding is available to store the water. In the Tucson AMA, there were comments expressing the importance of the role of the AWBA and concern over the continued legislative transfers from the Arizona Water Banking Fund.