

# ARIZONA WATER BANKING AUTHORITY

WEDNESDAY, DECEMBER 17, 1997

ARIZONA DEPARTMENT OF WATER RESOURCES

**PLEASE PRINT**

1	NAME: <i>Mike Block</i> REPRESENTING: <i>Metro Water District</i>	BUSINESS ADDRESS: <i>on file</i>	TEL: <i>on file</i> FAX: E-MAIL:
2	NAME: <i>Kevin Kish</i> REPRESENTING: <i>Pascua Yaqui Tribe</i>	BUSINESS ADDRESS: <i>7474 S. Camino de Oeste</i> <i>Tucson AZ 85746</i>	TEL: <i>883-5000</i> <i>Ext 5364</i> FAX: E-MAIL:
3	NAME: <i>Richard Siegel</i> REPRESENTING: <i>SRP</i>	BUSINESS ADDRESS: <i>PO Box 52025</i> <i>Phx 85072-2025</i>	TEL: <i>236-2277</i> FAX: <i>236-2159</i> E-MAIL: <i>rsiegel@srp.gov</i> ✓
4	NAME: <i>Dennis Rule</i> REPRESENTING: <i>Tucson Water</i>	BUSINESS ADDRESS: <i>On file</i>	TEL: FAX: E-MAIL:
5	NAME: <i>POT CONNER</i> REPRESENTING: <i>Pot Conner</i>	BUSINESS ADDRESS: <i>1700 W. Washington</i>	TEL: FAX: E-MAIL:
6	NAME: <i>Grant Ward</i> REPRESENTING: <i>MSIDD</i>	BUSINESS ADDRESS: <i>on file</i>	TEL: FAX: <i>on file</i> E-MAIL:
7	NAME: <i>GRANT L. EDWARDS</i> REPRESENTING: <i>ERC-NV</i>	BUSINESS ADDRESS: <i>555 E. WASHINGTON AV.</i> <i>LAS VEGAS NV. 89101</i>	TEL: <i>702-486-2690</i> FAX: <i>702-486-2697</i> E-MAIL:

# ARIZONA WATER BANKING AUTHORITY

WEDNESDAY, DECEMBER 17, 1997

ARIZONA DEPARTMENT OF WATER RESOURCES

**PLEASE PRINT**

8	NAME: Bob McLan REPRESENTING: AMWUA	BUSINESS ADDRESS: O.F.	TEL: FAX: O.F. E-MAIL:
9	NAME: Elizabeth Story REPRESENTING: Tonopah Irrigation Dist.	BUSINESS ADDRESS: P.O. Box 159 Tonopah, Az 85326	TEL: (602) 386-4066 FAX: E-MAIL:
10	NAME: DANA WALKER REPRESENTING: PHELPS DODGE CORP	BUSINESS ADDRESS: ON FILE	TEL: FAX: ON FILE E-MAIL:
11	NAME: Beth Miller REPRESENTING: Mesa	BUSINESS ADDRESS: on file	TEL: FAX: E-MAIL:
12	NAME: ROGER KLINGLER REPRESENTING: SCOTTSDALE	BUSINESS ADDRESS 9389 E. SAN SALVADOR SCOTTSDALE, AZ 85258	TEL: 391-5681 FAX: 391-5615 E-MAIL:
13	NAME: Larry Dozier REPRESENTING:	BUSINESS ADDRESS CAP	TEL: FAX: E-MAIL:
14	NAME: TONIA GARRETT REPRESENTING: ABC	BUSINESS ADDRESS on file	TEL: FAX: on file E-MAIL:

# ARIZONA WATER BANKING AUTHORITY

WEDNESDAY, DECEMBER 17, 1997

ARIZONA DEPARTMENT OF WATER RESOURCES

**PLEASE PRINT**

15	NAME: Sharon B. Megdal REPRESENTING: MegEcon Consulting for Pima Co. FCD	BUSINESS ADDRESS on file	TEL: FAX: on file E-MAIL:
16	NAME: Paul Deme REPRESENTING: mson/cadd	BUSINESS ADDRESS file	TEL: FAX: file E-MAIL:
17	NAME: Chuck Cullow REPRESENTING: Bookman - Edmonston	BUSINESS ADDRESS file	TEL: FAX: file E-MAIL:
18	NAME: Harry Ruzgarian REPRESENTING: mwd of So Cal	BUSINESS ADDRESS 350 Grand LA CA	TEL: 213 217 6082 FAX: E-MAIL:
19	NAME: REPRESENTING:	BUSINESS ADDRESS	TEL: FAX: E-MAIL:
20	NAME: REPRESENTING:	BUSINESS ADDRESS	TEL: FAX: E-MAIL:
21	NAME: REPRESENTING:	BUSINESS ADDRESS	TEL: FAX: E-MAIL:

## **Arizona Water Banking Authority**

500 North Third Street, Phoenix, Arizona 85004

Telephone 602-417-2418

Fax 602-417-2401

### **FINAL AGENDA**

**Wednesday, December 17, 1997**

9:30 a.m.

**Arizona Department of Water Resources**

Third floor conference room

- I. Welcome / Opening Remarks
- II. Adoption of Minutes of November 19 Meeting
- III. Update of 1997 Plan of Operation and staff activities
- IV. Discussion and approval of the 1998 Annual Plan of Operation
- V. Discussion and approval of the Central Avra Valley Storage and Recovery Project Agreement
- VI. Status of Innovations in Government Application
- VII. Update on Interstate Discussions
- VIII. Call to the Public
- IX. Adjournment

#### **Future Meeting Dates:**

**Wednesday, January 21, 1998**

**Wednesday, February 18, 1998**

Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting the Arizona Water Banking Authority at (602) 417-2418 or (602) 417-2455 (T.D.). Requests should be made as early as possible to allow time to arrange the accommodation.

**ARIZONA WATER BANKING AUTHORITY**  
**Draft Minutes**

**November 19, 1997**  
**Arizona Department of Water Resources**



**AUTHORITY MEMBERS**  
Rita P. Pearson, Chairman  
Tom Griffin, Vice-Chairman  
Bill Chase, Secretary  
Grady Gammage, Jr.  
Richard S. Walden

**EX OFFICIO MEMBERS**  
Senator Pat Conner  
Rep. Gail Griffin

**Welcome / Opening Remarks**

Chairman Pearson opened the Arizona Water Banking Authority meeting. All members of the Authority were present with the exception of Senator Conner.

Chairman Pearson invited Representative McGibbon to introduce Representative Gail Griffin as the new ex officio member of the Water Banking Authority. Ms. Griffin replaced Representative McGibbon effective November 14.

Representative Griffin represents District 8, which comprises portions of Cochise, Santa Cruz, Graham, and Greenlee counties.

**Adoption of Minutes of October 15 Meeting**

The October 15 meeting minutes were adopted as submitted.

**Update of 1997 Plan of Operation**

Tim Henley stated that for the months of November and December there will not be a lot of activity. For 1997, it is anticipated that the Water Banking Authority (Bank) will be recharging approximately 330,000 af of water.

The recharge in the Phoenix AMA was behind schedule due to water not getting to GRUSP for the full year because of some capacity problems with CAP. For the Tucson area, the Avra Valley three-party agreement has been completed. The in lieu process was better than expected in Pinal County.

Mr. Henley stated that the Web Page for the Bank is now available to the Banking staff for review. The pages should be up and running by the end of the year.

Mr. Henley gave an update on the Innovations in Government application. The application will have to be finalized in December in order for the Bank to meet the January 1998 deadline.

On October 14, 1997, Secretary of the Interior Bruce Babbitt declared that the Colorado River will be in surplus in 1998 and essentially all uses of the River will be met. By law, Arizona has the right to claim 46% of surplus water. This will allow Arizona (either through the Arizona Department of Water Resources (ADWR) or CAWCD), to approach the Bureau of Reclamation (BOR) to discuss a reclamation waiver under the Reclamation Reform Act, as was done in 1996. Larry Dozier of CAP will be pursuing that issue from CAP's perspective. A reclamation waiver could affect the Bank's total use.

BOR's projects that Arizona's total use of Colorado River water in 1997 will be 2.728 maf (more than 1.4 for CAP users and 1.3 maf for other users).

Mr. Henley stated that California will still be at or exceed 5.2 maf and Nevada is getting close to their 300,000 af.

Mr. Henley stated that the Bank could expect a similar type of use for 1998.

Ms. Pearson commented that if there is a surplus declaration in 1998, the only constraint on the Bank, in terms of water being banked, will be revenues and system capacity. The Bank could buy a substantial amount of water, even more than 400,000 af, if sufficient funds are available and if sufficient capacity is available in the CAP.

### **Presentation and initial recommendation of the 1998 Annual Plan of Operation**

Mr. Henley presented the current draft Plan of Operation for 1998, stating that the plan should be approved at the Water Banking Authority's December meeting.

The distribution of water was high for in lieu recharge, mainly because the direct recharge facilities were not available and because of some capacity problems at GRUSP.

Mr. Henley stated that he is still talking with SRP. He hopes the Bank's storage at GRUSP may exceed the 50,000 af shown in the Plan for GRUSP. There are opportunities for the Bank to move water in the 'shoulder' months, and there is funding in Maricopa County to increase the deliveries.

- There are no in lieu partners in the Tucson AMA at this time.
- The Bank plans to recharge approximately 5,000 af in Avra Valley.
- CAVSARP is up and running and the Bank is currently working with Tucson Water to allow the Bank to utilize the CAVSARP facility.
- The Bank is working on a permit with Pima Mine Road to begin recharging water in March 1998. The Bank is planning to recharge approximately 6,000 af.
- The Lower Santa Cruz is still in the negotiating process regarding an IGA with various entities. This facility would be operated by the CAWCD, the Town of Marana and Pima County.

The Plan of Operation estimates delivery of approximately 326,000 to 340,000 af depending on various circumstances.

Mr. Walden inquired as to how the Bank could get more water into Pima County. Mr. Henley stated that the lack of facilities and the direct recharge cost of \$21 af are two barriers.

Mr. Henley recommended that the Authority members should carry the plan forward with some minor adjustments and that the Bank leave the direct recharge cost at \$21.

Mr. Gammage asked why it is costing the Bank \$3 million more in 1998 and have the same amount of credits as in 1997. Mr. Henley explained that the Bank will be doing more direct recharge, and direct recharge is more expensive and that the delivery cost increased by \$5 /af.

Bob McCain, representing AMWUA, asked about the impact of El Niño on the 1998 Plan of Operation. Mr. Henley answered that the Bank would see much less water delivered overall if there was a significant El Niño. There could be operational problems involving GRUSP.

### **Discussion of Central Avra Valley Storage and Recovery Project Agreement**

Mr. Henley stated that the Bank is proceeding with an agreement with Tucson's Water District. The CAVSARP is permitted and they are currently recharging water at the facility. Tucson Water would operate the facility. Tucson Water plans to take the agreement to the City Council on December 15 to obtain approval.

Dennis Rule, of Tucson Water District, commented that Tucson Water is proposing a \$12 - \$13 af charge to the Bank, which eliminates capital recovery and monitoring costs. Tucson Water is working with the gas company to assess what rate for the gas and other issues.

### **Pinal County Recovery Report**

Mr. Henley explained that recovery of water continues to be a complicated issue. The Banking staff met with the two large districts of Pinal County, Maricopa-Stanfield Irrigation & Drainage District (MSIDD) and Central Arizona Irrigation & Drainage District (CAIDD) about recovery and suggested that they look at some water recovery options because much of the water is being put in the ground in Pinal County with general fund monies which will require some type of recovery. MSIDD and CAIDD retained the services of Bookman-Edmonston Engineering to look at the potential for recovery in their districts.

Larry Linser and John Munderloh, representing Bookman-Edmonston Engineering, presented to the Authority members a summary report of Recovery Assessment for Bank Water. Mr. Linser stated that the objectives of the analysis were to estimate the capability of recovery potential with the Water Bank in the two districts (MSIDD/CAIDD); to estimate the relative magnitude of what the cost is going to be for recovery; and make an evaluation of the impact that recharge is going to have on the groundwater basin. The report indicated a range of recovery opportunities in the Pinal AMA from a low cost alternative which could generate up to 100,000 af/y.

### **Tucson Regional Plan**

Kathy Jacobs, Area Director of the ADWR Tucson AMA, presented to the Authority members the results of the Tucson AMA Regional Recharge Plan Institutional and Policy Advisory Group. She presented information on additional recharge facilities in the Tucson AMA.

Sharon Megdal, representing Pima County Flood Control District, explained that the Regional Recharge Plan may be confusing Pima County with the Pima County Flood Control District. The problem is being addressed.

Ms. Pearson stated that she would like to review the report more closely and encouraged the Authority members to review the report and possibly discuss the report in greater detail later.

### **Interim Report of the AWBA Study Commission**

Herb Dishlip presented the Water Banking Authority's Study Commission Interim Report, covering the activities of the four subcommittees. The interim report was submitted to the legislature on November 1.

The Study Commission Interim Report and Interim Report Summary pamphlet have been prepared and made available to the public.

### **Update on Interstate Discussions**

Ms. Pearson stated there are no updates on the seven basin states discussions. The Metropolitan Water District of Southern California and the San Diego Water Authority Board Chairman recently released a joint press statement indicating that they have agreed to continue to talk.

### **Call to the Public**

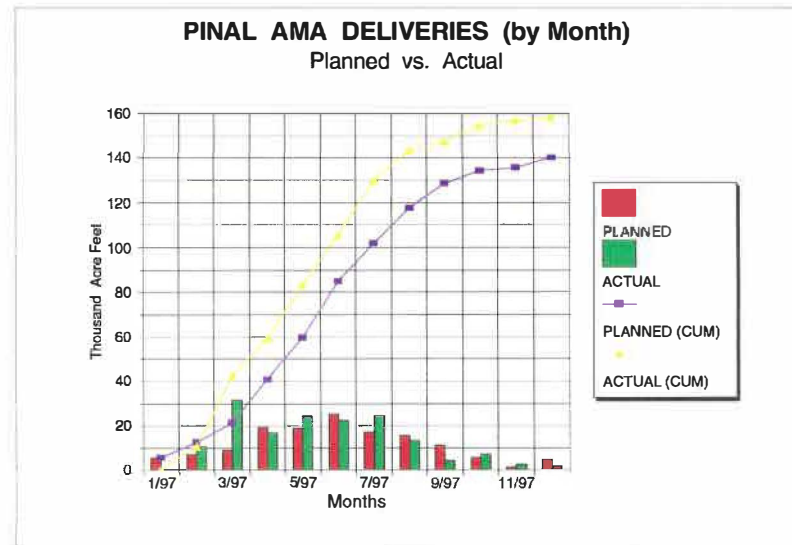
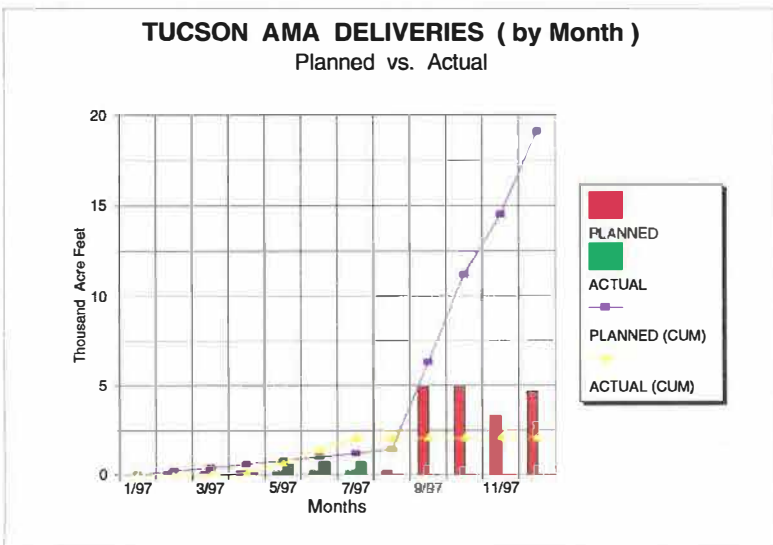
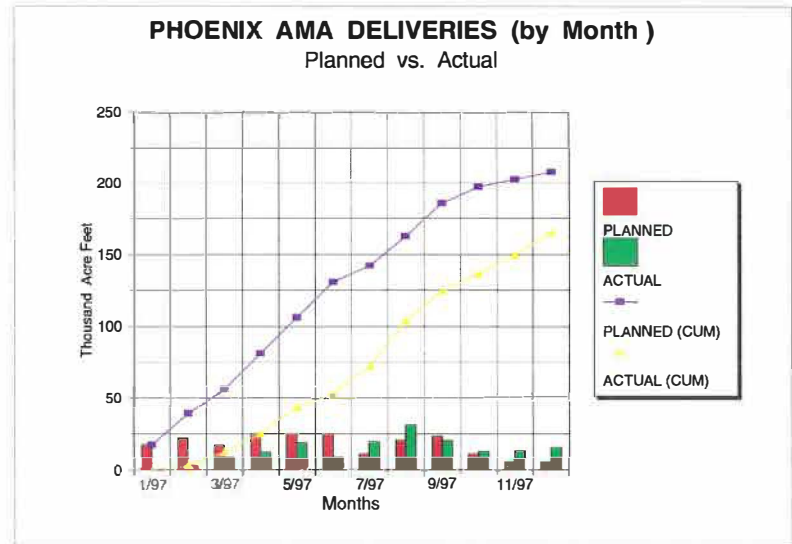
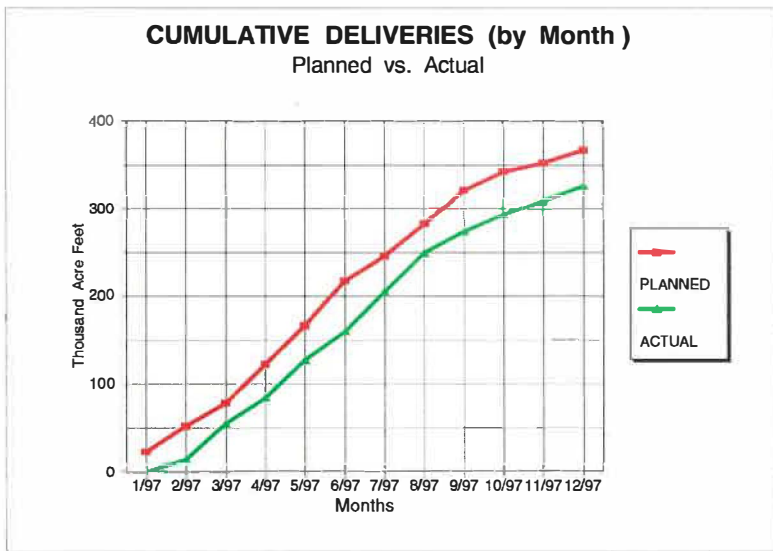
Chairman Pearson adjourned the meeting at 12:00 p.m.

Actual deliveries updated 15-Dec-97

	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total	
<b>Phoenix AMA</b>														
GRUSP	0	0	1,961	0	8,302	727	0	0	4,448	6,021	9,439	10,000	40,898	GRUSP
RWCD	0	0	3,689	8,121	8,326	4,676	8,267	6,164	3,529	4,253	2,133	2,500	51,658	RWCD
NMIDD	0	3,310	3,490	4,400	2,100	3,700	6,992	15,590	7,618	0	0	1,200	48,400	NMIDD
QCID	0	0	0	0	0	0	3,566	7,263	3,719	1,559	1,044	2,000	19,151	QCID
MWD	0	0	0	0	0	0	578	2,171	904	919	531	0	5,103	MWD
CHCID	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	CHCID
Subtotal	0	3,310	9,140	12,521	18,728	9,103	19,403	31,188	20,218	12,752	13,147	15,700	165,210	
<b>Pinal AMA</b>														
CAIDD	0	6,825	19,967	8,208	10,000	0	0	0	0	0	0	0	45,000	CAIDD
MSIDD	0	2,446	8,422	5,402	8,923	12,780	10,940	3,838	1,496	5,492	2,247	1,500	63,486	MSIDD
HIDD	<u>0</u>	<u>1,400</u>	<u>3,300</u>	<u>3,300</u>	<u>5,015</u>	<u>9,575</u>	<u>13,485</u>	<u>9,423</u>	<u>2,667</u>	<u>1,520</u>	<u>5</u>	<u>0</u>	<u>49,690</u>	HIDD
Subtotal	0	10,671	31,689	16,910	23,938	22,355	24,425	13,261	4,163	7,012	2,252	1,500	158,176	
<b>Tucson AMA</b>														
Avra Vally	0	0	0	55	644	743	695	20	0	0	0	0	2,157	Avra Vally
CAVSRP	0	0	0	0	0	0	0	0	0	0	0	0	0	CAVSRP
Pima Mine	0	0	0	0	0	0	0	0	0	0	0	0	0	Pima Mine
Lower Santa Cruz	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	L. Santa Cru
Subtotal	0	0	0	55	644	743	695	20	0	0	0	0	2,157	
<b>TOTAL</b>	0	13,981	40,829	29,486	43,310	32,201	44,523	44,469	24,381	19,764	15,399	17,200	325,543	



# 1997 PLAN OF OPERATION



AGREEMENT BETWEEN  
THE ARIZONA WATER BANKING AUTHORITY  
AND THE CITY OF TUCSON PROVIDING FOR THE  
STORAGE OF CENTRAL ARIZONA PROJECT WATER AT  
THE CENTRAL AVRA VALLEY STORAGE AND RECOVERY PROJECT

1. Preamble

The Parties to this Agreement made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 1997, are the ARIZONA WATER BANKING AUTHORITY (the "Authority"), and the CITY OF TUCSON ("Tucson").

2. Explanatory Recitals

WITNESSETH, THAT:

- 2.1. WHEREAS, the Colorado River Basin Project Act of 1968 (82 Stat. 885) provides, among other things, that for the purposes of furnishing irrigation and municipal and industrial water supplies to water deficient areas of Arizona and western New Mexico through direct diversion or exchange of water, control of floods, conservation and development of fish and wildlife resources, enhancement of recreation opportunities, and for other purposes, the Secretary shall construct, operate, and maintain the Central Arizona Project, hereinafter referred to as the "Project"; and
- 2.2. WHEREAS, the Arizona Legislature has declared that it is the public policy of the State of Arizona to use the Project to deliver Colorado River water that would otherwise be unused in Arizona for purposes specified in A.R.S. § 45-2401; and
- 2.3. WHEREAS, the Arizona Legislature has created the Authority to implement this policy and has specifically authorized the Authority, in A.R.S. § 45-2423(B)(3), to execute agreements with the Central Arizona Water Conservation District ("CAWCD") to obtain water for storage at permitted facilities; and
- 2.4. WHEREAS, CAWCD, the Authority, and the Arizona Department of Water Resources have entered into an intergovernmental agreement ("AWBA/ADWR/CAWCD IGA") providing for the purchase and delivery of Excess Water to the Authority for water storage; and

2.5. WHEREAS, Tucson has agreed to store Authority Water on behalf of the Authority at the Central Avra Valley Storage and Recovery Project;

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, it is agreed as follows:

3. Definitions

3.1. "Authority Water" shall mean Excess Water made available by CAWCD to the Authority for Water Storage, which water would not otherwise have been used within Arizona.

3.2. "CAVSARP" shall mean the Underground Storage Facility operated by Tucson pursuant to Underground Storage Facility Permit, No. 71-562029.

3.3. "Excess Water" shall mean Project water which, in any year, is available for delivery and has not been scheduled for delivery pursuant to a contract with the United States or a subcontract with the United States and CAWCD providing for Project Water service for a period of 50 years or more.

3.4. "Party or Parties" shall mean either one or, in the plural, both of the parties to this Agreement.

3.5. "Point(s) Of Delivery" shall mean the point(s) at which Authority Water is diverted into the CAVSARP basins for the Authority and measured at the flow meters represented on the attached Appendix A.

3.6. Terms defined in A.R.S. § 45-802.01 shall have the meanings ascribed to them therein. The first letters of such terms are also capitalized herein.

4. Scope of Services

This Agreement is limited to the storage of Authority Water by Tucson at the CAVSARP for the benefit of the Authority.

5. Term

This Agreement shall terminate on October 7, 1999, unless the Parties agree in writing to extend the term or unless it is sooner terminated or canceled in accordance with Subarticle 11.4 or Articles 15, 20, 27 and 28 hereof.

6. Authorized Representatives

Within thirty (30) days after execution of this Agreement, each Party shall designate in writing to the other Party an authorized representative (“AR”) and an alternate to administer, on behalf of the designating Party, the provisions of Article 8. Written notice of a change of an AR or alternate shall be provided within thirty (30) days of such change. The alternate shall act only in the absence of the AR. Neither the ARs nor the alternates shall have authority to amend this Agreement. Agreements of the ARs or alternates pursuant to this Agreement shall be in writing, signed by them and be binding upon the Parties.

7. Conditions Relating to Storage

The storage of water under this Agreement is conditioned on the following:

- 7.1. All storage of Authority Water shall be consistent with Arizona water law and with federal law applicable to the Project.
- 7.2. Authority Water made available pursuant to this Agreement shall be stored by Tucson only at the CAVSARP. Tucson shall be responsible for all expenses and administrative requirements, including filing annual reports with the Arizona Department of Water Resources (“ADWR”), associated with maintaining the CAVSARP permit. Tucson’s storage of Authority Water at the CAVSARP shall at all times comply with Underground Storage Facility Permit No. 71-562029. If Underground Storage Facility Permit No. 71-562029 is canceled or expires for any reason, the Authority may discontinue deliveries of Authority Water to Tucson.

8. Procedure for Scheduling Authority Water

- 8.1 As soon as practicable after the date of execution of this Agreement, Tucson shall submit to the Authority in writing the amount of capacity available to the Authority in the CAVSARP during each month of the year in which this Agreement is executed and for the following year. Upon receipt of that information, the Authority shall submit in writing to Tucson a proposed schedule indicating the amount of Authority Water desired by the Authority to be stored at the CAVSARP during each month of the year in which this Agreement is executed and for the

following year. Thereafter, on or before September 1 of each year, Tucson shall submit to the Authority in writing the amount of capacity available to the Authority in the CAVSARP during each month of the following year. By November 15 of each year, the Authority shall submit in writing to Tucson a proposed schedule indicating the amount of Authority Water desired by the Authority to be stored at the CAVSARP during each month of the following year.

- 8.2. As soon as practicable after receipt of the Authority's proposed schedule following the date of execution of this Agreement, Tucson shall return to the Authority the schedule, as adjusted by and acceptable to Tucson, for the year in which this Agreement is executed and for the following year. Thereafter, on or before December 15 of each year, Tucson shall return to the Authority the schedule, as adjusted by and acceptable to Tucson, for the following year. Such schedule shall constitute the maximum amount of Authority Water to be stored at the CAVSARP during each month of that year, subject to modification pursuant to Subarticle 8.3.
- 8.3. The Authority may increase or decrease its monthly schedule upon written approval by Tucson. Unless otherwise agreed by the Parties, the Authority shall submit proposed modifications to its schedule to Tucson not less than 15 days before the desired change is to become effective. Tucson shall accept the Authority's timely request to decrease its schedule, and shall revise the schedule to reflect the decrease. Tucson will review the Authority's timely request to increase its schedule, and Tucson will make any necessary adjustment to that request. Tucson will notify the Authority in writing of Tucson's action concerning the Authority's request to increase its schedule within 10 days of receipt of such request. The schedule shall be revised to reflect changes made pursuant to this paragraph.
- 8.4. The Authority shall authorize Tucson to order Authority Water for delivery to the Point of Delivery directly from CAWCD in accordance with CAWCD water ordering procedures and limits to be established by the ARs. Authority Water

ordered by Tucson shall not exceed the amounts provided for in the monthly schedule or in the then-current plan of operation of the Authority, unless expressly approved by the Authority.

8.5. Except as otherwise provided in this Agreement, Tucson shall store at the CAVSARP all Authority Water scheduled for storage in accordance with this Article 8.

9. CAVSARP Operations

9.1. Tucson as the operator of the CAVSARP shall have the sole discretion in determining whether a curtailment or stoppage of water flows to the CAVSARP is made necessary by circumstances existing at any time, and shall assume no liability to the Authority for such curtailment or stoppage.

9.2. Tucson shall retain sole responsibility and authority for decisions, relating to the CAVSARP operating and maintenance practices, including maintenance scheduling and the selection of periods when maintenance will be done.

9.3. Whenever practicable, Tucson shall inform the Authority ninety (90) days in advance of any matter which may substantially affect the CAVSARP or the rights of the Authority, and of any actions to be taken by Tucson related thereto.

10. Rates

The Authority shall pay to Tucson a maximum of \$14.00 per acre foot for each acre foot of water delivered to the CAVSARP pursuant to this agreement to compensate Tucson for the cost of storing Authority Water on behalf of the Authority. The \$14.00 maximum per acre foot charge includes a \$7.00 per acre foot charge which covers the cost to Tucson of maintenance and daily operation of the pumping facilities needed to transport Authority Water from the Central Arizona Project aqueduct to the CAVSARP. The remaining \$7.00 per acre foot charge covers the approximate per acre foot cost of the energy needed to pump Authority Water from the Central Arizona Project aqueduct to the CAVSARP. Tucson shall bill, and the Authority shall pay, the actual energy cost or \$7.00 per acre foot, whichever is less.

11. Billing and Payment

- 11.1. Bills for water storage shall be submitted by Tucson to the Authority on or before the twenty-fifth (25th) day of each month (or if such day is not a business day, on the next succeeding business day) immediately following the month during which the Authority has incurred charges for such services. Such bills may include adjustments or corrections to bills previously submitted by Tucson to the Authority.
- 11.2. Payment by the Authority to Tucson shall be made in good funds on or before the thirtieth (30th) day following the date on which the bill was postmarked or if such day is not a business day, on the next succeeding business day. Bills which are not paid by this date shall be delinquent and thereafter accrue an interest charge at the prime rate of interest as established by the Bank of America on the last business day of the month following the month for which the bill was submitted. Any payment received shall first be applied to any interest charges owed, and then to any bills owed for services rendered.
- 11.3. In the event any portion of any bill is disputed, the disputed amount shall be paid when due, but may be accompanied by a written statement indicating the basis for any dispute. If the dispute is found to be valid, the Authority shall be refunded any overpayment plus interest, accrued at the rate set forth in Subarticle 11.2, prorated by days from the date payment was credited to the Authority to the date the refund check is mailed.
- 11.4. In the event any delinquent amount is not paid by the Authority within thirty (30) days after receipt by the Authority of written notice from Tucson of the delinquency, Tucson shall have the right, without liability of any kind, to refuse to store Authority Water so long as the said amount remains unpaid, and may terminate this Agreement. Nothing herein shall limit the rights of Tucson to use any other available legal remedy to effect collection of said amounts.

12. Water Measurement and Accounting

- 12.1. Tucson will provide daily water accounting of Authority Water stored at the CAVSARP. Such water accounting shall be retained by Tucson for at least three (3) years and be made available for the Authority's inspection upon request.
- 12.2. Tucson shall prepare a monthly water accounting report based on the daily water accounting provided under Subarticle 12.1. Such water accounting report may be combined with other reports provided by Tucson to the Authority and shall include Authority Water delivered to each Point of Delivery and Authority Water stored at the CAVSARP during that month.
- 12.3. Tucson shall base its accounting for water delivered on:
  - 12.3.1. actual measurements;
  - 12.3.2. methods required by Underground Storage Facility Permit No. 71-562029; and/or
  - 12.3.3. generally accepted accounting and engineering practices.
- 12.4. Tucson shall install and maintain flow measurement systems to measure the amount of Authority Water diverted into the CAVSARP.
- 12.5. Tucson shall test and maintain the accuracy of these systems within plus or minus five (5) percent of actual flows.
- 12.6. Tucson shall determine evaporation losses representative of the conditions at or near the CAVSARP using the method indicated in Underground Storage Facility Permit No. 71-562029, or using actual measurement, when available. Any other losses in the CAVSARP shall be calculated using generally accepted engineering practices.

13. Quality of Water

- 13.1. Nothing in this Agreement shall be construed so as to require that Tucson store water from any source when Tucson reasonably determines that such storage is likely to result in a violation of then existing federal, state or local laws or regulations regarding water quality.



13.2. The Authority shall defend, indemnify and hold harmless Tucson and entities storing water at the CAVSARP against all losses to third parties resulting from water quality degradation caused by the Authority's water storage at the CAVSARP, due to the commingling of Authority Water with the groundwater. Further, the Authority waives any claim on its own behalf against Tucson and other entities storing water at the CAVSARP for water quality degradation arising from such commingling, unless such claim is intended to enforce the indemnification provision of this Subarticle 13.2; provided however, that the Authority's indemnification shall only extend to the percentage of degradation attributable to the Authority Water stored at the CAVSARP under the terms of this Agreement. The Authority retains the right to claim over against any other entity, including Tucson, storing water in the CAVSARP in the amount proportionate to such amount stored by those other entities.

13.3. Tucson shall cooperate fully with the Authority in the defense of all claims of loss by third parties, and shall provide the Authority with all information, expert witnesses and records necessary for the Authority to defend against such claims.

13.4. The Authority's obligation to indemnify under this Article 13 shall encompass only:

13.4.1. The payment of losses to third parties that have been determined by mutual agreement of the Authority and Tucson, arbitration or a court of competent jurisdiction to have resulted from water quality degradation caused by the commingling of Authority Water with groundwater.

13.4.2. All reasonable costs of defending against claims by third parties for such losses and all costs incurred by Tucson in cooperating with the Authority under Subarticle 13.3 in the defense of such claims.

#### 14. Liability

14.1. Each Party shall assume liability for its own negligence and shall indemnify the

other against any damages the non-negligent Party incurs as a result of the negligent Party's action or inaction.

14.2. Tucson shall assume no liability to the Authority for claims of damage resulting from Tucson's decision, or the decision of the State of Arizona, to curtail or stop water flows to the CAVSARP for any of the following reasons:

14.2.1. during storm or emergency conditions;

14.2.2. in accordance with the requirements of Underground Storage Facility Permit No. 71-562029.

14.3. Neither Tucson nor any other entity storing water at the CAVSARP shall assume any liability for quantities of recoverable or unrecoverable water stored underground or removed from underground storage; nor to replace water lost, misdirected or otherwise failing to reach the underlying aquifer. Each entity storing water at the CAVSARP shall share in any deficiency resulting from such lost, misdirected or otherwise unstored water in proportion to the amount of the CAVSARP capacity it used at the time the deficiency occurred.

14.4. The obligations set forth in this Article shall survive expiration or termination of this Agreement, and remain in full force and effect.

15. Default

In the event of a default by a Party, within thirty (30) days following notice of such default by a non-defaulting Party, the defaulting Party shall remedy such default either by advancing the necessary funds and/or rendering the necessary performance. Such notice shall specify the existence and nature of the default. If such default is not remedied within the time specified, the non-defaulting Party may terminate this Agreement effective 24 hours following written notice, without prejudice to its rights and remedies established pursuant to this Agreement.

16. Interruptions or Curtailments in Delivery

Storage of Authority Water shall be in accordance with Authority requests as set forth in

Article 8 of this Agreement, and shall be subject to availability of Authority Water at the Points of Delivery.

17. Uncontrollable Forces

Neither Party shall be considered to be in default in the performance of any of its obligations hereunder when a failure of performance shall be due to uncontrollable forces.

The term “uncontrollable forces” shall mean any cause beyond the control of the Party unable to perform such obligation, including, but not limited to, failure of or threat of failure of facilities, flood, earthquake, storm, fire, lightning and other natural catastrophes, epidemic, war, riot, civil disturbance or disobedience, strike, labor dispute, labor or material shortage, sabotage, government priorities and restraint by court order or public authority, and action or nonaction by, or failure to obtain the necessary authorizations or approvals from, any governmental agency or authority, which by exercise of due diligence such Party could not reasonably have been expected to avoid and which by exercise of due diligence it shall be unable to overcome. Nothing contained herein shall be construed to require either Party to settle any strike or labor dispute in which it is involved.

18. Resolution of Disputes

18.1. A Party having a dispute under this Agreement that cannot be resolved by the Parties, may submit the dispute to arbitration. Arbitration shall be subject to the following provisions:

18.1.1. Arbitration shall be binding only upon the consent of the Parties.

18.1.2. A Party wishing to submit a dispute to arbitration shall provide thirty (30) days written notice to the other Party of its intent to pursue arbitration and shall name one arbitrator at that time. Within fifteen (15) days of receiving this notice, the other Party to the dispute shall name one arbitrator and give written notice to the other Party of its selection. The two selected arbitrators shall, within five (5) days of selection of the second arbitrator, jointly select a third arbitrator.

18.1.3. Within thirty (30) days from the selection of the third arbitrator, the arbitrators shall hold a hearing. Within thirty (30) days from the conclusion of the hearing the arbitrators shall render a decision on the dispute.

18.1.4. Arbitration shall be subject to the Arizona Arbitration Act, Arizona Revised Statutes, Title 12, Chapter 9, Article 1. In the event of a conflict between this Agreement and the Act, the provisions of this Agreement shall prevail.

18.2. A Party that is dissatisfied with the results of non-binding arbitration may pursue any other legal or equitable remedy not expressly provided for in this Article 18 and available to resolve the dispute.

19. Action Pending Resolution of Disputes

Pending the resolution of a dispute pursuant to Article 18, each Party shall proceed, to the extent legally permissible, in a manner consistent with this Agreement, and shall make payments required in accordance with the applicable provisions of this Agreement. Amounts paid by a Party pursuant to this Article 19 during the pendency of such dispute shall be subject to refund and adjustment upon a final resolution of any dispute involving an amount due. Upon such final resolution, the owed amounts shall be remitted with interest in accordance with the remittance procedures/arrangements contained in Article 11.

20. Termination of Agreement

This Agreement may be terminated under the following circumstances:

20.1. If the intergovernmental agreement among the Authority, ADWR, and CAWCD regarding delivery of Authority Water is terminated, the Authority may terminate this Agreement, which termination shall be effective fifteen (15) days after mailing written notice of termination to Tucson; or

20.2. If the Authority determines in its sole discretion that Tucson is operating the

CAVSARP in a manner which is likely to jeopardize the ability of the Authority to earn Long-Term Storage Credits for Authority Water delivered to the CAVSARP for the benefit of the Authority, the Authority may terminate this Agreement, which termination shall be effective ten (10) days after mailing written notice of termination to Tucson; or

20.3 Upon 180 days written notice by either party; or

20.4. In the manner and for any reason otherwise provided herein.

21. Compliance with Laws

Tucson, in carrying out this Agreement, shall comply with all applicable laws and regulations of the United States and the State of Arizona, and shall obtain all required permits or licenses from the appropriate federal, state, and local authorities.

22. Books, Records, and Reports

Tucson shall establish and maintain accounts and other books and records pertaining to administration of the terms and conditions of this Agreement. Reports shall be furnished to the Authority in such form and on such date or dates as the Authority may reasonably require. Subject to applicable federal and state laws and regulations, each Party to this Agreement shall have the right during office hours to examine and make copies of the other Party's books and records relating to matters covered by this Agreement.

23. Notices

Any notice, demand, or request authorized or required by this Agreement shall be in writing and shall be deemed to have been duly given if mailed, first class postage prepaid, or delivered to the Parties at the following addresses:

If to the Authority:

Manager  
Arizona Water Banking Authority  
500 North Third Street  
Phoenix, Arizona 85004-3903

If to Tucson:

Director  
Tucson Water  
PO Box 27210  
Tucson, AZ 85726-7210

The designation of the address or addressee for the giving of notice may be changed by notice given as provided in this Article 23.

24. Assignments Limited -- Successors and Assigns Obligated

The provisions of this Agreement shall apply to and bind the successors and assigns of the Parties hereto, but no assignment or transfer of this Agreement or any interest therein shall be valid unless and until approved in writing by the non-assigning Party.

25. No Third Party Beneficiaries

This Agreement is solely for the benefit of the Parties, and does not create nor shall it be construed to create rights in any third party unless expressly provided herein. No third party may enforce the terms and conditions of this Agreement.

26. Waiver

The waiver by either Party of any breach of any term, covenant or condition herein contained shall not be deemed a waiver of any other term, covenant or condition, or any subsequent breach of the same or any other term, covenant or condition herein contained.

27. Cancellation

This Agreement is subject to cancellation in accordance with the provisions of A.R.S. § 38-511.

28. Consistency With Other Agreements

This Agreement is intended to be consistent with the AWBA/ADWR/CAWCD IGA. Upon agreement by the Parties this Agreement may be amended or supplemented to conform to an amended or supplemented AWBA/ADWR/CAWCD IGA; provided, if the Parties cannot agree within 90 days after written notice from either Party to the other Party to amend or supplement this Agreement pursuant to this Article, either Party may terminate this Agreement.

29. Entire Agreement

The terms, covenants and conditions of this Agreement constitute the entire agreement between the Parties relative to the storage of Authority Water for the Authority by Tucson at the CAVSARP, and no understandings or obligations not herein expressly set forth shall be binding upon them. This Agreement may not be modified or amended in any manner unless in writing and signed by the Parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement effective the day and year first above-written.

ARIZONA WATER BANKING  
AUTHORITY

Attest: \_\_\_\_\_  
Secretary

By: \_\_\_\_\_  
Chairman

CITY OF TUCSON

Attest: \_\_\_\_\_

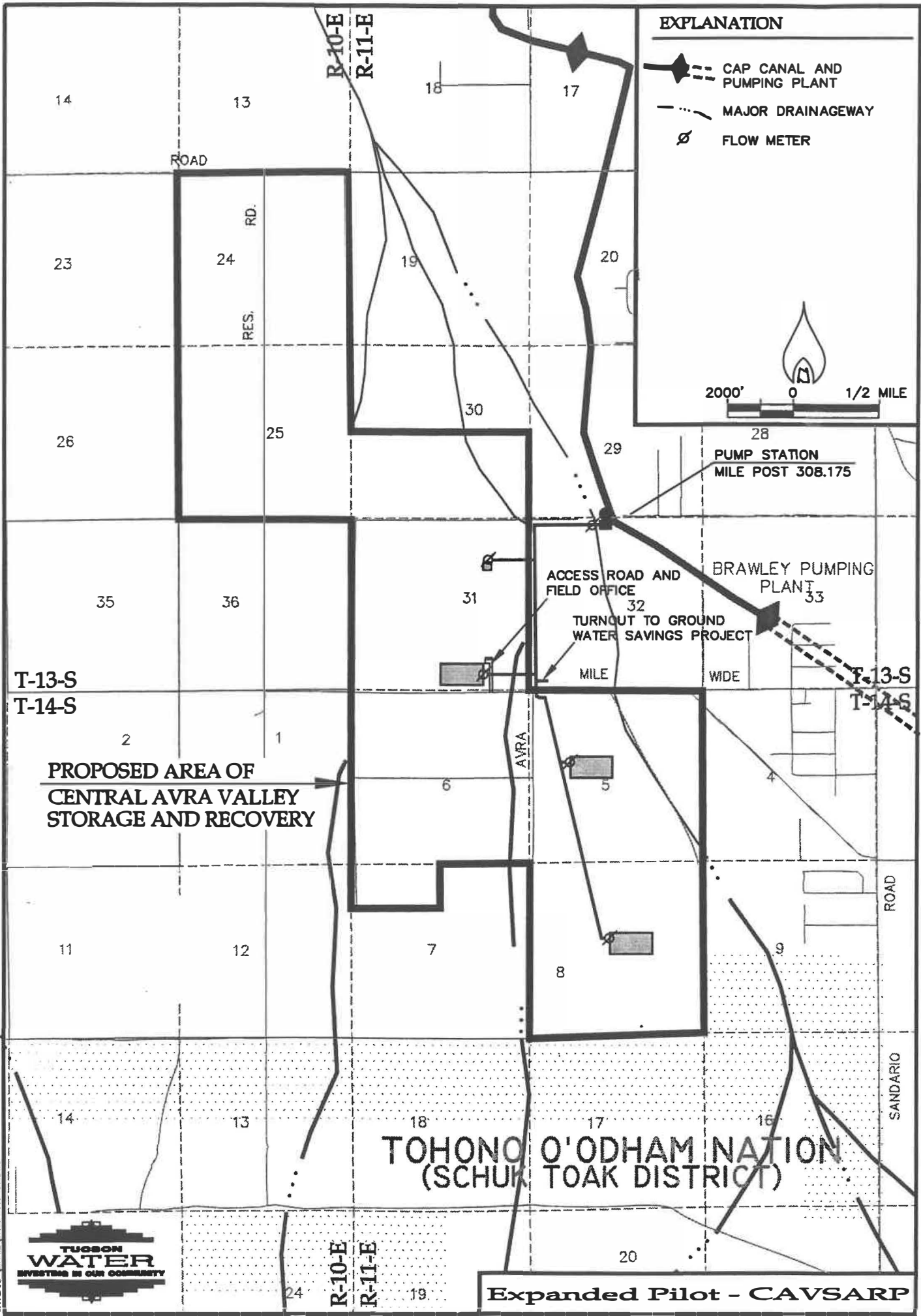
By: \_\_\_\_\_

Title: \_\_\_\_\_ Title: \_\_\_\_\_

Approved as to form:

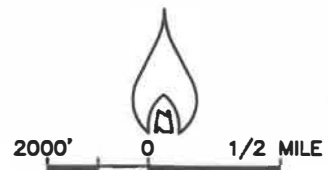
\_\_\_\_\_





**EXPLANATION**

- CAP CANAL AND PUMPING PLANT
- MAJOR DRAINAGEWAY
- FLOW METER



**PROPOSED AREA OF  
CENTRAL AVRA VALLEY  
STORAGE AND RECOVERY**

**TOHONO O'ODHAM NATION  
(SCHUK TOAK DISTRICT)**

**Expanded Pilot - CAVSARP**

CAVSARP/AVARE\_SITING/01-07.DWG



# ARIZONA WATER BANKING AUTHORITY

1998

## ANNUAL PLAN OF OPERATION



Rita P. Pearson, Chairman

January 1, 1998

## INTRODUCTION

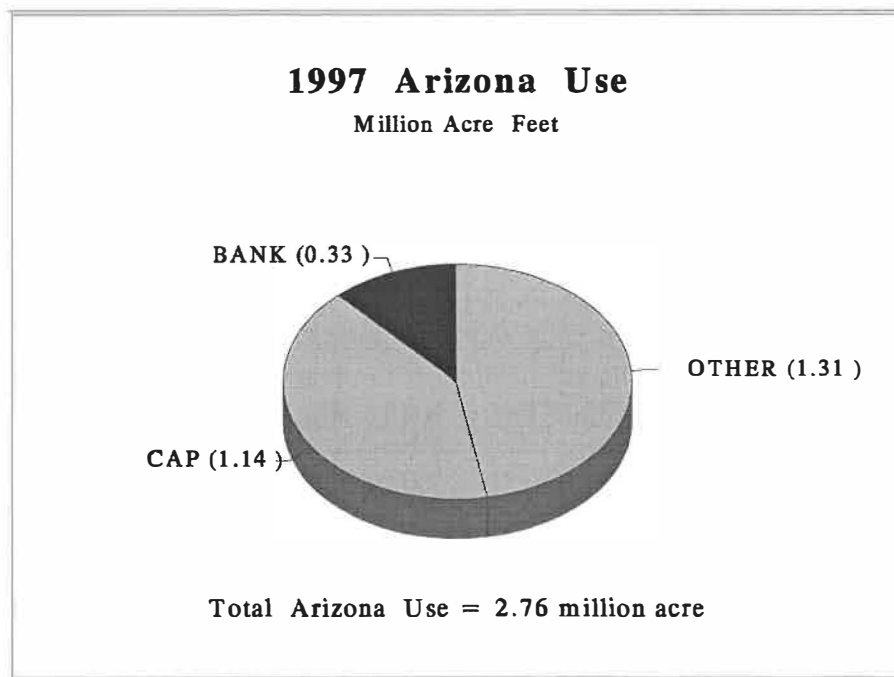
The Arizona Water Banking Authority (Authority) was created to store unused Arizona Colorado River entitlement in western, central and/or southern Arizona to develop long-term storage credits to: (1) firm existing water supplies for municipal users during Colorado River shortages or Central Arizona Project (CAP) service interruptions; (2) help meet the water management objectives of the Arizona Groundwater Code; and (3) assist in the settlement of American Indian water rights claims. The Authority is required by statute to approve an annual Plan of Operations by January 1 of each year.

The Plan of Operation is intended to govern the operations of the Authority over the course of the entire calendar year. During the course of the year, changing circumstances may present limitations or provide new opportunities not contemplated in the adopted Plan, which could affect the overall delivery projections. In such circumstances, the Authority may choose to modify its adopted Plan. If such modifications are required, the proposed modifications will be discussed and approved at a public meeting of the Authority.

The Authority recognizes that day-to-day adjustments in the normal operations of the CAP or the individual storage facilities caused by maintenance and fluctuations in the weather may affect the actual monthly deliveries made on behalf of the Authority. However, if the adjustments do not impact the overall annual delivery projections contained in the Plan, those adjustments will not be deemed modifications to the Plan and will be addressed by staff and reported to the Authority on an as-needed basis.

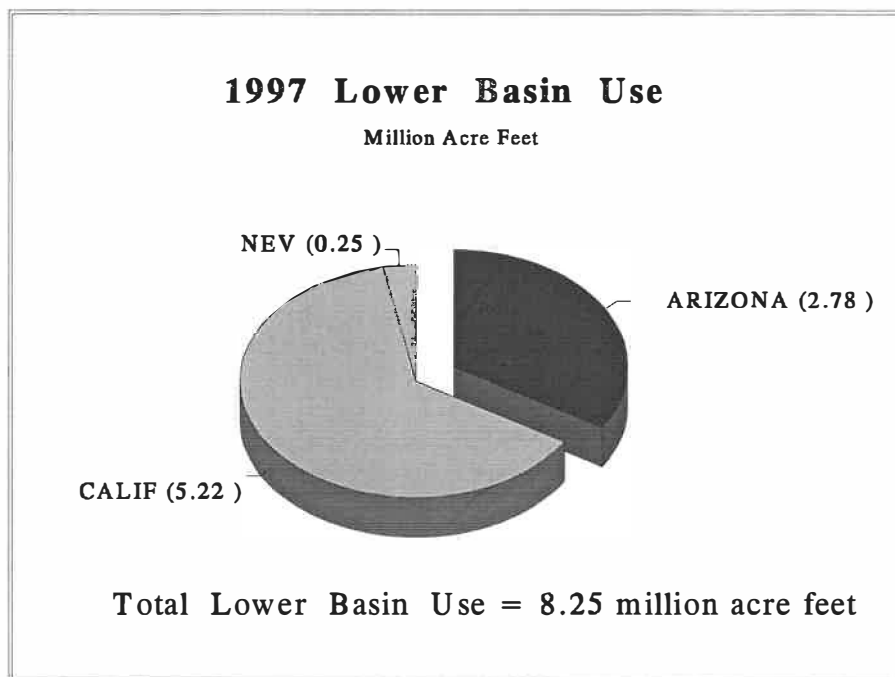
## 1997 PLAN OF OPERATION

In its first year of operations, the Authority recharged approximately 331,000 acre feet of Colorado River water pushing Arizona's total use of Colorado River water close to its normal year entitlement of 2.8 million acre feet (See Figure 1).



**Figure 2**

Because the Secretary of the Interior declared that the Colorado River was in surplus for 1997, the increased use by Arizona did not impact the other Lower Basin States' uses. Total estimated use of Colorado River water in the Lower Basin exceeded 8.2 million acre feet in 1997 (see Figure 2).



**Figure 3**

The Authority utilized both Underground Storage Facilities (USF) and Groundwater Saving Facilities (GSF) to store water in 1997. Table 1 lists the Authority's recharge partners, the amount of the Authority's Water Storage Permits, and the amount recharged at each facility in 1997.

**Table 1**

AMA	Facility	Type	Annual Capacity	Amount Recharged
Phoenix	GRUSP (SRP)	USF	200,000 af	45,400 af
	Queen Creek ID	GSF	28,000 af	16,000 af
	Chandler Heights ID	GSF	3,000 af	0
	New Magma IDD	GSF	54,000 af	47,200 af
	RWCD	GSF	100,000 af	46,500 af
	MWD	GSF	18,000 af	9,500 af
Pinal	MSIDD	GSF	120,000 af	65,000 af
	CAIDD	GSF	110,000 af	45,000 af
	Hohokam ID	GSF	55,000 af	52,800 af
Tucson	Avra Valley (CAP)	USF	8,000 af	2,200 af
	CAVSARP (Tucson)	USF	10,000 af	1,000 af
<b>Total</b>			<b>706,000 af</b>	<b>330,600 af</b>

## **1998 PLAN OF OPERATION**

When developing the 1998 Plan, four critical factors were evaluated: (1) the amount of unused water available to the Authority for delivery, (2) the CAP capacity available to the Authority for the delivery of unused water, (3) the funds available and the costs required to deliver the unused water, and (4) the capacity available for use by the Authority at the various recharge facilities.

For water year 1998, the Secretary of the Interior has declared that the Colorado River is in a surplus condition. This means that surplus water would be available to the Authority as a source of unused water. Therefore, water availability will not be a limiting factor for the Authority in 1998.

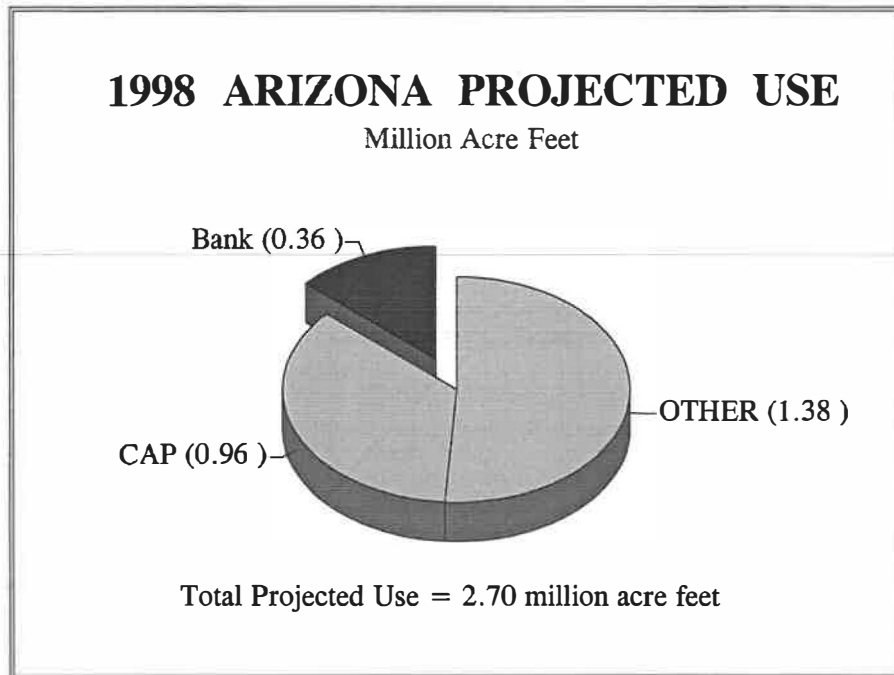
CAP's 1998 operating plan accommodates the delivery of approximately 1.45 million acre feet of water. However, the plan only delivers approximately one million acre feet to its subcontractors, which leaves approximately 450,000 acre feet of capacity available for the Authority. Based on this available capacity, CAP's operations will not be a limiting factor for the Authority in 1998.

The funding available to the Authority from its three funding sources (taxes, withdrawal fees, and the general fund) to pay for the delivery of water in 1998 will be approximately \$13.9 million including the carryover from the previous years. Given the costs associated with the delivery of water and the fact that the GSF operators continue to pay \$21 of that cost when the water is delivered to their facilities, the \$13.9 million should be adequate to fund the Plan and not be a limiting factor in 1998. For more information about the cost of the plan, see the section on Pricing later in this report.

To assist in developing the 1998 Plan, each facility operator submitted an annual delivery schedule to CAP. (CAP scheduled the Authority's deliveries for those GSFs they will be operating.) The CAP staff utilized these schedules to compile an annual schedule for the CAP, including municipal and industrial (M&I), Indian, incentive recharge, agricultural pool, and Authority water. As discussed previously, this integrated schedule was developed to conform to a 1.45 million acre feet delivery year. Concurrently, the Authority staff met with the facility operators to discuss their delivery schedules and confirm their continued interest in participating with the Authority. As a result of these discussions it was determined that while there is substantial permitted recharge capacity not all that capacity is available to the Authority. In the case of some of the GSFs, the delivery cost was a limiting factor, and for others their operations limited their participation. For the USFs, operational constraints or previous commitments to other partners limited the availability to the Authority. For 1998, available recharge capacity was the constraining factor in the development of the Plan.

Based on its adopted Plan, the Authority anticipates recharging approximately 360,000 acre feet of Colorado River in 1998. The Plan was developed utilizing facilities that have already been permitted or are anticipated to be permitted in 1998 and are located in Maricopa, Pinal, and Pima Counties. The Plan attempts to optimize, on a monthly basis, the delivery of Colorado River water to meet the Authority's objectives. However, the Plan remains flexible, and if additional recharge capacity can be identified and funding remains available, the Plan can be modified in the future to include additional facilities.

Based on projected uses, Arizona’s use of Colorado River water in 1998 will be 2.70 million acre feet (see Figure 3), which is less than Arizona’s 1997 use. However, the overall Lower Basin use is projected to continue at approximately 8.2 million acre feet.



**Figure 4**

Table 2 shows the Authority’s 1998 delivery schedule. The first line or section of this table is an estimate of CAP’s deliveries to its M&I, agricultural, incentive recharge, and Indian customers. These deliveries have a scheduling priority over the Authority’s deliveries. CAP has the capability to deliver approximately 180,000 acre feet of water in a given month.

The second section is the capacity available to the Authority. This capacity is determined by subtracting customer deliveries from the available capacity. The first and second sections do not always total 180,000 acre feet/month because of unique situation such as filling of Lake Pleasant in the winter months, and deliveries to the western portion of the aqueduct and New Waddell Dam releases to the aqueduct in the summer months. During the fall and winter months the capacity available to Authority is constrained because CAP is making deliveries to Lake Pleasant, which are not reflected in the first section.

The third section represents the Authority’s 1998 Plan of Operation. The Authority’s partners for 1998 and the amount of water scheduled to be recharged is identified. The second column of this section identifies the permitted capacities of each facility and the amount of that capacity which is available to Authority in 1998.

The fourth section lists the CAP capacity remaining after the Authority’s deliveries are scheduled. The amount in parentheses in the months of April, July, and November represents an over-commitment of capacity in those months. The Authority will work closely with the CAP and its partners in an attempt to meet the scheduled deliveries during those months.

**Table 2**  
**ARIZONA WATER BANK AUTHORITY**  
**Water Delivery Schedule**  
**Calendar Year 1998**  
**(ACRE-FEET)**

			January	February	March	April	May	June	July	August	September	October	November	December	Total		
Estimated Total CAP Deliveries + Losses : (M&I, Indian, Ag Pools 1 & 2, Incentive Recharge)			29,000	33,000	91,000	100,000	115,000	147,000	185,000	113,000	56,000	42,000	27,000	26,000	964,000		
Available Excess CAP Capacity for AWBA :			42,000	24,000	41,000	29,000	51,000	40,000	10,000	74,000	45,000	26,000	18,000	25,000	425,000		
A W B A - Recharge Sites :																	
		Permitted Capacity (AF)	Requested Capacity (AF)														
PHOENIX AMA :																	
Direct >	GRUSP	200,000	80,000	8,000	8,000	8,000	8,000	7,200	7,200	7,200	7,200	7,200	6,400	2,400	3,200	80,000	
	AGUA FRIA (1)	100,000	12,000	0	0	0	0	0	0	0	0	3,000	3,000	3,000	3,000	12,000	
Indirect >	CHCID	3,000	500	0	0	0	50	50	50	50	50	100	100	50	0	500	
	MWD (1)	18,000	20,000	0	588	2,471	2,471	2,588	2,588	2,588	2,470	1,412	1,412	1,412	0	20,000	
	NEW MAGMA	52,000	47,200	2,000	2,000	3,200	2,500	3,000	3,500	3,700	9,700	9,600	3,500	2,500	2,000	47,200	
	QUEEN CREEK	28,000	20,015	0	0	0	0	0	0	4,252	7,263	3,000	2,000	1,500	2,000	20,015	
	RWCD	10,000	24,000	0	0	0	0	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	24,000	
	TONOPAH ID	15,000	4,000	0	0	0	0	0	0	1,000	2,000	1,000	0	0	0	4,000	
PINAL AMA :																	
Indirect >	CAIDD	110,000	35,000	0	0	0	0	0	0	0	21,241	9,384	1,145	504	2,726	35,000	
	HOHOKAM	55,000	50,440	1,500	2,400	8,500	6,000	8,900	6,890	1,600	10,300	2,000	700	250	1,400	50,440	
	MSIDD	120,000	52,780	2,070	3,420	9,630	8,280	7,660	9,350	6,110	1,760	620	730	1,240	1,910	52,780	
TUCSON AMA																	
Direct >	AVRA VALLEY (1)	11,000	7,500	0	200	400	750	850	850	0	850	900	900	900	900	7,500	
	CAVSARP	10,000	5,040	460	460	460	460	460	460	0	460	460	460	460	440	5,040	
	PIMA MINE RD (1) (2)	10,000	5,000	0	0	100	600	600	600	0	625	625	625	625	600	5,000	
	Lower S. C. (1)	30,000	5,000	0	0	0	0	0	0	0	0	0	1,500	1,500	2,000	5,000	
TOTAL (Direct + Indirect) :			771,000	368,475	14,030	17,068	32,761	29,111	34,308	34,488	29,500	66,919	42,301	25,472	19,341	23,176	368,475
Remaining CAP Capacity :			27,970	6,932	8,239	(111)	16,692	5,512	(19,500)	7,081	2,699	528	(1,341)	1,824	56,525		

(1) Not yet permitted

(2) Capacity divided between CAP and Tucson Water, the Authority will lease CAP's 5,000 af.

The values in Table 2 reflect the delivery amounts at the CAP turnout and do not account for losses incurred between the turnout and the actual point of use. Those losses must be calculated and deducted from the deliveries to determine the actual credits earned by the Authority.

No recovery is anticipated in 1998. The Authority intends to develop recovery concepts during 1998 to ensure that the benefit of the credits developed will be realized by the area from which the funds are collected.

## PRICING

For 1997 and 1998, the CAP Board adopted a rate for the delivery of the Authority's water of the pumping energy plus a \$5 contribution to the fixed operation and maintenance cost of the CAP. The Authority's policy of recovering \$21 from its in-lieu partners will continue for 1998.

Table 3 reflects the water delivery rate the CAP will charge the Authority, the rate the GSF operators will pay for use of the Authority's water, and the various rates the Authority will be charged to utilize the different USFs.

**Table 3**

<b>1998 Water Rates</b>	
CAP's delivery rate to AWBA	\$41 per acre foot
GSF operator portion of delivery rate	\$21 per acre foot <sup>1</sup>
Unredground Stroage Facility rate paid by AWBA	
GRUSP (SRP)	\$14 per acre foot
Agua Fria (CAP)	\$10 per acre foot (estimate)
Avra Valley (CAP)	\$15 per acre foot (estimate)
Pima Mine Road (CAP)	\$10 per acre foot (estimate)
Central Avra Valley (Tucson Water)	\$14 per acre foot (estimate)
Lower Santa Cruz (CAP/Pima County)	\$20 per acre foot (estimate)

<sup>1</sup> This rate is paid directly to CAP by the GFS operators and is not available as revenue to the Authority. It does reduce the Authority's rate for delivery of in-lieu water to \$20/af.

The CAP has established a subcommittee to review the existing delivery rate for the Authority's water. Two members of the Authority sit on this subcommittee. The subcommittee hopes to make a recommendation on a long-term delivery rate for inclusion in CAP's 1999 pricing decisions.

The estimated total cost of the Authority's 1998 Plan of Operation is \$11,300,000, which includes the direct facility use fees and the CAP delivery rate minus cost recovery by the CAP from the GSF operator.

## ACCOUNTING

The Authority's enabling legislation requires the development of an accounting system that allows the tracking of all long-term storage credits accrued by the Authority and the funding sources from which they were developed. The Arizona Department of Water Resources has established accounts that allow for the tracking of both credits and funds.



Table 4 provides estimates of the funds available including funds carried over from previous years, the funds to be expended, and the credits that will accrue to those accounts based on the 1998 Plan.

**Table 4**

<b>1998 Plan of Operation</b>				
	<b>Funding Available<sup>1</sup></b>	<b>Expended</b>	<b>Credits<sup>2</sup> Amount</b>	<b>Location</b>
<b>Withdrawal Fee</b>				
Phoenix AMA	\$2,000,000	\$911,000	23,000 af	
Tucson AMA	\$725,000	\$0	0	
Pinal AMA	\$1,000,000	\$1,000,000	45,000 af	
<b>Four Cent Tax</b>				
Maricopa County	\$6,151,000	\$6,125,000	158,000 af	Phoenix AMA
Pima County	\$2,020,000	\$1,260,000	20,000 af	Tucson AMA
Pinal County	\$240,000	\$240,000	11,000 af	Pinal AMA
<b>Other</b>				
General Fund	\$1,760,000	\$1,759,000	75,000 af	
<i>Phoenix AMA</i>		<i>\$235,000</i>	<i>6,000 af</i>	<i>Phoenix AMA</i>
<i>Tucson AMA</i>		<i>\$0</i>	<i>0</i>	
<i>Pinal AMA</i>		<i>\$1,524,000</i>	<i>79,000 af</i>	<i>Pinal AMA</i>
California	(not applicable)			
Nevada	(not applicable)			
<b>Total</b>	<b>\$13,896,000</b>	<b>\$11,295,000</b>	<b>296,000 af</b>	

<sup>1</sup> Does not include in-lieu partners' payment, partners' payment made directly to CAP

<sup>2</sup> Estimate based on annual deliveries (annual delivery - 5% losses - 5% cut to the aquifer)

Table 5 provides an estimate of the funds expended and the credits that will accrue to various accounts based on the Authority's recharge activities since its inception. Because the Authority has only been in operation for one year the Cumulative Totals only represent 1997.

**Table 5**

<b>Cumulative Totals (1997)</b>			
	<b>Funds Expended</b>	<b>Credits<sup>1</sup> Amount</b>	<b>Location</b>
<b>Withdrawal Fee</b>			
Phoenix AMA	Non available in 1997		
Tucson AMA	Non available in 1997		
Pinal AMA	Non available in 1997		
<b>Four Cent Tax</b>			
Maricopa County	\$3,744,000	133,000 af	Phoenix AMA
Pima County	\$175,000	3,000 af	Tucson AMA
Pinal County	\$225,000	14,000 af	Pinal AMA
<b>Other</b>			
General Fund	\$2,490,000	150,000 af	
<i>Phoenix AMA</i>	<i>\$270,000</i>	<i>16,000 af</i>	<i>Phoenix AMA</i>
<i>Tucson AMA</i>			
<i>Pinal AMA</i>	<i>\$2,220,000</i>	<i>134,000 af</i>	<i>Pinal AMA</i>
California	Not applicable		
Nevada	Not applicable		
<b>Total</b>	<b>\$6,634,000</b>	<b>300,000 af</b>	

<sup>1</sup> Estimate based on annual deliveries (annual delivery - 5% losses - 5% cut to the aquifer)

## **Public Review and Comment**

Authority staff met with the Groundwater User Advisory Councils (GUACs) for the Phoenix, Tucson, and Pinal AMAs as required by the Authority's enabling legislation. The GUACs were generally supportive of the Authority's efforts in 1997 and of the proposed 1998 Plan. The Tucson GUAC was concerned about the small quantity of water being recharged in their AMA. They would like to see additional recharge activity in their AMA. They recognize the facility constraints, but felt a short term answer could be the use of GSFs. They suggested the Authority revisit its decision to recover the \$21 from the GSF operators, especially in the Tucson AMA, where the \$21 limits participation.

The Authority received three letters commenting on the Plan from the Tucson GUAC, the Metro Water District and the Salt River Project. All three were supportive of the Authority's efforts. The GUAC's and Metro Water's letters supported the position expressed at the Tucson meeting. Salt River Project's letter suggested the Authority continue to pursue groundwater savings opportunities with the Project because of their overall benefit to the AMA.

**1. Describe the program. Please emphasize its creative and novel elements. What is the innovation?**

Since the 1963 United States Supreme Court ruling in Arizona vs. California in which the Lower Basin States' Colorado River water allocation was finally established, Arizona has not fully utilized its 2.8 million acre foot annual Colorado River allocation. Arizona's unused portion has mainly been consumed by California.

In the early 1990s, Governor Symington and the Arizona Legislature created the Arizona Water Banking Authority to maximize utilization of Arizona's Colorado River entitlement and the Central Arizona Project aqueduct, which brings water to many Arizona communities.

The primary mission of the Water Bank is to "recharge" (or put back into the ground) currently unused Colorado River water for future use by municipal and industrial users in times of shortage on the Colorado River or in case of disruptions in the Central Arizona Project delivery system. The Water Banking Authority is permitted to purchase only water that is not currently being used by Arizona's Colorado River communities or by Central Arizona Project subcontractors.

The Water Bank helps Arizona meet the objectives of the state Groundwater Code by replenishing depleted groundwater aquifers. The Water Bank earns credits when it delivers water it has purchased from the Central Arizona Project to an entity that forebears from groundwater use or has the facilities to store that water directly in the ground in aquifers. This process helps prevent a condition known as "groundwater overdraft," or when pumping exceeds the rate at which aquifers are replenished.

Along with recharging Colorado River water in Arizona, the Water Bank has the opportunity to assisting in the settlement of Indian water rights claims. The affected parties often negotiate settlements to resolve these claims, and the Water Bank provides another pool of water to be used in settlements. For instance, credits for stored groundwater can be transferred to a tribe as a component of a settlement with Colorado River water.

Arizona communities along the Colorado River can also benefit. For example, cities in Mohave County (which is located along the Colorado River) may acquire credits through the Water Bank for water stored in central Arizona and may then redeem those credits by diverting water directly from the Colorado River. This process provides the communities with a more stable, guaranteed water source.

Finally, the Water Bank could contract with similar authorities in California and Nevada to allow these states to annually acquire a portion of Arizona's temporary surplus of Colorado River water. The contracting state would pay to store water in Arizona, helping to replenish Arizona's aquifers, and in the future would be able to draw a similar quantity directly from the Colorado River. This process does not involve the sale of any future rights to water, only a specific quantity of unused water.

**2. What problems does your innovative program address?**

Water banking addresses the critical issue of water scarcity by protecting against future water supply shortages to municipal and industrial water users. The program encourages conserving groundwater use today and eliminates the lost opportunity that results from leaving a portion of the state's Colorado River water entitlement in the River. Colorado River water is renewable: each year, snow melt and rainfall replenish the River's water supply. Groundwater is not easily replaced in an arid desert environment. The water banking program provides incentives for using a renewable resource rather than a finite one.

The Water Banking Authority helps the state meet the management plan objectives of Arizona's Groundwater Code. The goal of the management plans for the Phoenix, Tucson, and Prescott Active Management Areas is to achieve "safe-yield" (i.e., when long-term groundwater withdrawals do not exceed water placed back into the aquifer) of groundwater by the year 2025. The water banking program requires groundwater users who receive water from the Water Bank to forego groundwater use and take their water from another source. That other source is the excess Colorado River that the Water Bank has purchased. The groundwater that is so precious in a desert environment is not depleted, and the Water Bank acquires "credits" that allow it to pump the groundwater at a later time (perhaps when conditions are more favorable).

The Water Bank also addresses unforeseen problems with water delivery that could arise from a disruption of the Central Arizona Project system (a 336-mile long system of aqueducts, tunnels, pumping plants and pipelines), which delivers water to much of central and parts of western and southern Arizona. In so doing, the Water Banking Authority is looking well into the future to prevent water shortage rather than waiting for crisis and responding when water supplies could be threatened.

The Water Bank can assist in the settlement of Indian water rights claims. These claims stem from litigation in the federal courts, Acts of Congress, and ongoing negotiations between the federal government, the Arizona government, and the tribes to determine the proper allocation of water to each tribe. The Water Banking Authority's enabling legislation provides that one of the purposes for the Water Bank is to provide the opportunity for storing water brought into Arizona through the Central Arizona Project to help implement the settlement of water right claims by Indian Communities within Arizona. By providing credits for groundwater usage, the Water Bank (i.e., the State) can transfer water rights to Indian tribes without depriving other users.

The Water Bank facilitates water exchanges to assist Colorado River communities. The communities along the Colorado River are not able to obtain their water from the Central Arizona Project; instead, they pump groundwater. For example, cities in Mohave County (located along the Colorado River) may acquire credits through the Water Bank for water stored in central Arizona and redeem those credits by diverting water directly from the Colorado River.

**3. Who are the current and potential beneficiaries of your program? What are the direct or indirect benefits to citizens?**

The current direct beneficiaries of the Water Bank are irrigation districts and water districts, which obtain large quantities of “in lieu” Colorado River water that they use instead of (or “in lieu” of) groundwater. Agricultural water use in Arizona is significant, but prior to the creation of the Central Arizona Project (CAP), the source of all agricultural water was groundwater recharge. After construction of the CAP, Colorado River water was available but was still unaffordable for agricultural users. The Water Bank created an affordable supply of water for agricultural users until the creation of the Water Bank, virtually all of that water came from groundwater pumping. The Water Bank provides renewable, reliable Colorado River water to agricultural users, and this source of water mitigates the effect of pumping from underground aquifers. In so doing, Arizona is thinking ahead to prevent groundwater overdraft rather than consuming well above our allocation and leaving a shortage to future generations.

Arizona citizens benefit directly from this program by obtaining an additional source of water. The Water Bank protects municipal and industrial users of Colorado River against droughts or other shortages by providing a “backup” supply. The Water Bank enhances Arizona’s water management objectives by protecting against groundwater overdraft, which assures a continued high quality of life for all Arizonans.

The Arizona Indian tribes can be prospective participants through water rights settlement negotiations. The Water Bank can create additional water supplies for settlement purposes without impacting other Arizona water users. The Water Bank could store water when excess supplies are available to protect against drought or other shortages to Indian tribes’ CAP supplies. The water could then be withdrawn in times of need. In addition, there may be opportunities to use groundwater savings facilities and groundwater storage facilities to firm supplies for the tribes.

Potential beneficiaries of the Water Bank include Nevada and California, who will soon be permitted to bank their excess water in Arizona to protect against future shortages and create additional supplies in their own states. The water banked within Arizona helps replenish aquifers here while the other states accumulate credits that enable them to withdraw additional quantities of Colorado River water.

The primary indirect benefit to citizens is being part of responsible water management and planning for the future of all Arizonans. Arizona has a stringent groundwater code (which was the recipient of an Innovations in American Government award in 1983); the Water Bank provides a mechanism for achieving Arizona’s groundwater management goals. Arizona can be proud of its decision to look into the future, anticipate continued progress and growth, and create a mechanism to prevent a shortage of the west’s most precious natural resource.

**4. What are the most significant achievements of the program?**

No other state has a water bank like Arizona. Rather than focusing on water transfers and water marketing as some other states have, the Water Bank achieves its primary goal of water planning and groundwater conservation. The Water Bank enables Arizona to protect itself against future water shortages without taking more than its share of Colorado River water, and at the same time performs an invaluable conservation function by protecting against overuse of Arizona's increasingly scarce groundwater supplies.

In its first year of operation, the Water Bank has been an enormous success and has surpassed even its own goals. The Bank has purchased and recharged 330,000 acre feet of Colorado River water. (An acre foot is enough water to meet the needs of a family of four for one year.) That water is recharged using groundwater savings facilities or underground storage facilities. The first method involves the sale of water to irrigation districts who take water from the Colorado River in lieu of groundwater. The Water Bank then earns credits that enable it to pump water at a later time. The Water Bank recharges water by the second method by storing the water it purchases in large spreading basins in the ground that directly recharge water supplies in the aquifer by replenishing supplies.

Both methods of recharge demonstrate the value of water banking: taking water that is available today and storing it for use in times of shortage or drought in the future and helping replenish aquifers today. The program conserves groundwater today instead of depleting supplies and looking for emergency solutions later. While other western states such as California continue their heavy reliance on Colorado River water, Arizona uses what the law permits and takes any excess supplies that are not purchased by other Central Arizona Project subcontractors and makes it available for future use. This is a landmark achievement that Arizona has pioneered and that other states are sure to replicate.

**5. How replicable is the program? What obstacles might others encounter?**

The program is replicable to the extent that any entity may purchase water and store that water in a manner that facilitates groundwater replenishment and assures a water supply for a later point in time. Other private entities are permitted to engage in water banking if they meet all requirements in the groundwater code and other relevant laws.

Entities outside of Arizona (whether private or government) can engage in similar water banking activities, but they obviously cannot purchase Central Arizona Project water unless they are located in Arizona. The achievements of the Water Banking Authority can, however, be successfully replicated using other sources of water in other locations. A locality must have the infrastructure to support water transport and storage and must develop a means of tracking water usage and forbearance.

**6. List all current funding sources, with dollar and percentage contributions, for each for your current operating budget. If applicable, include separate subtotals for public and private funds and sources. Provide details of any unusual financial features not describes elsewhere.**

Much of the funding for the AWBA comes from existing revenue sources and from fees that are charged to those benefiting directly from the stored water. Sources of money include:

- (1) Fees for groundwater pumping currently collected within the Phoenix, Pinal, and Tucson Active Management Areas. In the Phoenix AMA, Tucson AMA, and most areas of the Pinal AMA pumping fees for water banking purposes is \$2.50 per acre foot. For groundwater pumping in areas of the Pinal AMA not served by the Central Arizona Project, the \$2.50 fee would phase-in over seven years. Money from this source must be used to benefit the area in which it was collected.

The amount of pumping fees collected to date for the Phoenix AMA is \$2,000,000.

The amount of pumping fees collected to date for the Tucson AMA is \$750,000.

The amount of pumping fees collected to date for the Pinal AMA is \$1,000,000.

- (2) The Central Arizona Water Conservation District (which administers the Central Arizona Project) is authorized to levy a four cent *ad valorem* property tax in the Central Arizona Project service area to pay for water storage. Revenues are deposited in the Water Banking Fund.
- (3) A general fund appropriation based on the level of water storage the legislature and governor believe to be appropriate. For 1998, the legislature has appropriated \$2 million to the effort.
- (4) Fees collected from the sale of stored water credits used for drought protection. Fees are charged only if the credits were originally paid for with general fund money.