



JANE DEE HULL
Governor

RITA P PEARSON
Director

STATE OF ARIZONA DEPARTMENT OF WATER RESOURCES

ANNUAL REPORT

FOR FISCAL YEAR 1997

06E
AZ
WRa
1996-97

WR 1.11.1997
Copy 2

002
A
WR 7

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North Third Street, Phoenix, Arizona 85004
Telephone (602) 417-2410
Fax (602) 417-2415



JANE DEE HULL
Governor

RITA P PEARSON
Director

HONORABLE JANE DEE HULL
Governor of Arizona, and

HONORABLE MEMBERS
Arizona State Legislature

I am pleased to submit to you the Annual Report for Fiscal Year 1997 for the Arizona Department of Water Resources. This report provides an overview of the Department's functions, as well as accomplishments between July 1, 1996 and June 30, 1997.

During Fiscal Year 1997, the Department invested a significant amount of time on the development of the Third Management Plan. The Department is mandated to develop the Third Management Plan by the Groundwater Management Code created by the Arizona State Legislature in 1980. The Third Management Plan will be promulgated in the year 2000 and will continue Arizona's commitment to ensure a long-term, secure available water supply.

In addition to developing this Plan, the Department has been involved in extensive discussions involving interstate water banking. The Department is also continuing to ensure its Assured Water Supply Program which has played an important role in managing Arizona's long-term water supply.

The Department is continuing to provide support for the Arizona Water Banking Authority and the Arizona Water Protection Fund. The Arizona Water Banking Authority was created in 1996 by the Arizona State Legislature to ensure Arizona's full use of its Colorado River water supply. The Arizona Water Protection Fund was created in 1994 to fund public grants for projects assisting in the maintenance and restoration of Arizona's rivers and streams and associated riparian habitats.

The Department of Water Resources is proud of its accomplishments during Fiscal Year 1997 and will continue to implement Arizona's water management laws and programs to ensure the quality of life and economic growth Arizonans are blessed with.

Sincerely,

Rita P Pearson
Director

Attachment

TABLE OF CONTENTS

Organizational Chart.....1

Arizona Water Supply and Demand.... 2

Legal Division.....3

Legislative Actions.....6

Active Management Areas.....8

Prescott Active Management Area

Phoenix Active Management Area

Pinal Active Management Area

Tucson Active Management Area

Santa Cruz Active Management Area

Groundwater User Advisory Councils

Assured and Adequate Water Supply Program/Groundwater Recharge.20

Colorado River Management.....22

Flood Warning and Dam Safety Section.....25

Licensing and Permitting.....27

Groundwater Filings

Drilling Licenses

Surface Water Permits

Statewide Water Resource Planning.....28

Planning Assistance

Hydrology Support.....30

Computer Support.....32

Arizona Water Banking Authority Support.....33

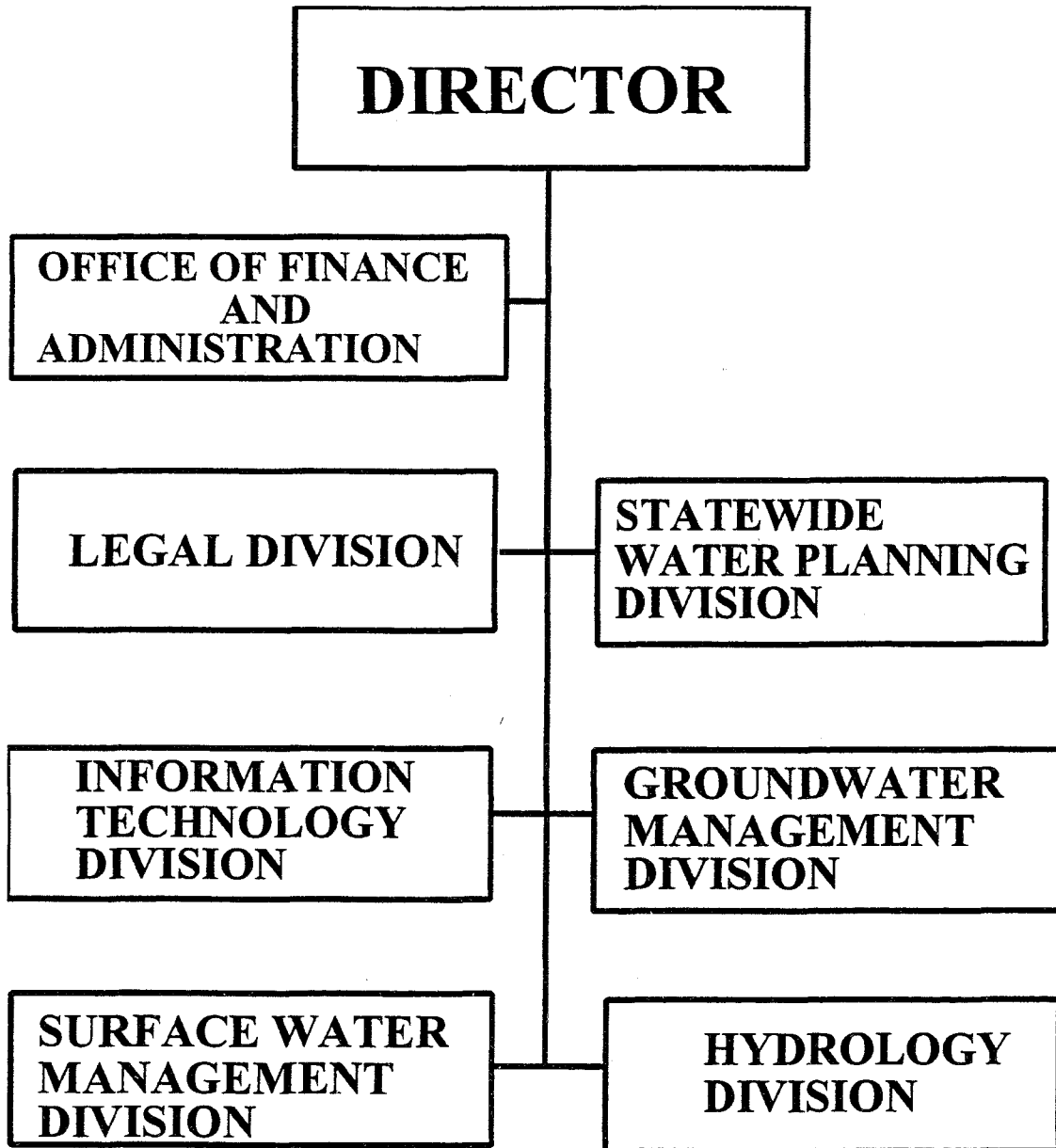
Arizona Water Protection Fund Support...34

Financial Information for Fiscal Year 1997.....35

Abbreviation Index.....39

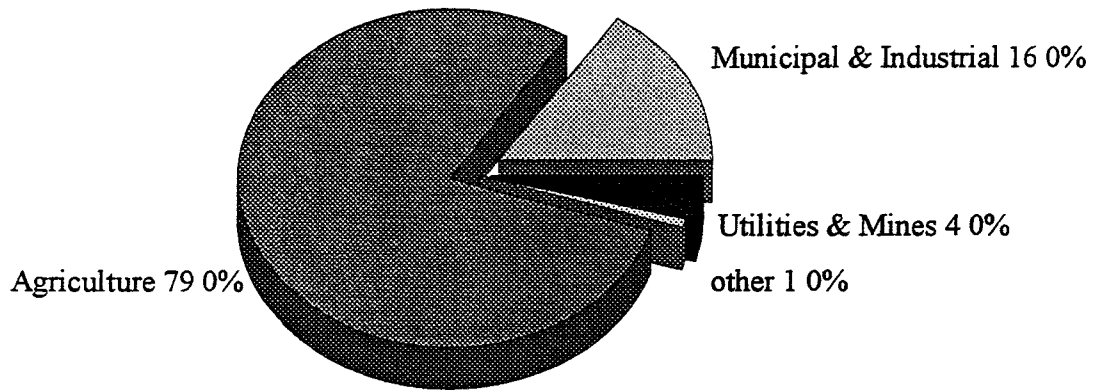
THE ARIZONA DEPARTMENT OF WATER RESOURCES

The Arizona Department of Water Resources (Department) was created in 1980 and entrusted with the responsibility of securing long-term water supplies for Arizona. Principle duties include implementing the Groundwater Management Code (Code), registering all surface water and groundwater rights, supporting the adjudication of water rights, ensuring the safety of non-federal dams, assisting local entities to manage floodplains, providing technical assistance to the state's water users and representing Arizona in interstate water discussions.

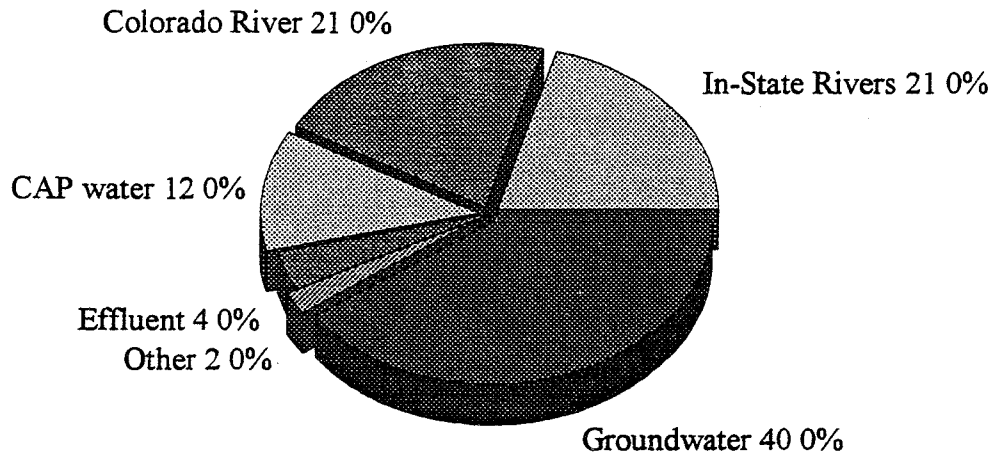


ARIZONA WATER SUPPLY AND DEMAND

Under normalized conditions, Arizona used approximately 6.8 million acre-feet (af) of water in Fiscal Year 1997 (One af equals 325,851 gallons). The following is a breakdown of Arizona's water use:



The following water sources were used to meet demands:



LEGAL DIVISION

Litigation

The Department initiates and defends against various court actions. During Fiscal Year 1997, activity occurred in the following cases:

Southwest Center for Biological Diversity v. United States Bureau of Reclamation (USBR), No. CV 97-0786 PHX EHC, United States District Court, Arizona. The Southwest Center for Biological Diversity filed, in Federal Court, for an injunction to compel the USBR to release water from Lake Mead on the Colorado River on the grounds that high lake levels would harm the Southwest Willow Flycatcher, an endangered species. The Seven Basin States, including Arizona, filed a special appearance and moved to dismiss on Eleventh Amendment grounds. The Plaintiff amended the complaint to add a claim challenging the Biological Opinion issued by the Secretary of the Interior (Secretary) on the operation of the lower Colorado River. The court dismissed the USBR, but the claim against the Secretary is pending. The States may again raise Eleventh Amendment issues or participate in other ways in the ongoing litigation.

Arizona Water Company v. Department of Water Resources, No. CV 90-01840, Superior Court of Maricopa County, Arizona. Arizona Water Company appealed the Director's decision adopting the Second Management Plan (SMP) for the Phoenix, Tucson and Pinal Active Management Areas (AMA). Plaintiff challenged the procedures followed by the Department in adopting the SMP and substantive provisions of the municipal conservation programs. The Judge established a briefing schedule for the issue of whether the case should proceed as an appeal or whether it

could be dismissed and filed later as a declaratory judgment action. Briefing concluded on September 18, 1997.

Desert Mountain Properties v. Department of Water Resources, No. CV 90-1843, Superior Court of Maricopa County, Arizona. Desert Mountain Properties filed an appeal of the Director's decision adopting the SMP for the Phoenix AMA. Plaintiff challenged the procedures followed by the Department in adopting the SMP and its conservation requirements for golf courses. The case was dismissed without prejudice on September 23, 1997.

City of Tucson v. ASARCO v. Department of Water Resources, Case No. 296600, Superior Court of Pima County, Arizona. ASARCO filed a third party claim against the Department seeking a declaratory judgment on whether ASARCO's groundwater right would be lost or reduced by Tucson's condemnation of an easement over acres appurtenant to ASARCO's right. The Department consented to the Court's jurisdiction to assure proper interpretation of water law in this situation. Judgment was granted resolving the water issue.

Arlington Canal Company v. Department of Water Resources, No. CV 96-1644, Superior Court of Maricopa County, Arizona. The Department issued a permit on October 2, 1996 for appropriation of water by the USBR and the six Valley cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale and Tempe. Arlington Canal Company, a protester to the permit, sued. The suit was voluntarily dismissed by the Plaintiff on January 28, 1997.

Administrative Rules

Interstate Water Banking The Department worked closely monitoring the process undertaken by the USBR to draft rules for interstate water banking on the Colorado River. The Department is working with Nevada to develop workable interstate banking concepts on issues of common interest.

Time Frame Rules On June 13, 1997, the Department filed with the Secretary of State a Notice of Rulemaking Docket Opening for Time Frame Rules. Promulgation of Time Frame Rules is required by Arizona Revised Statutes (A.R.S.) §41-1072, et seq.

Well Impact Rules A work group is studying concepts for amendments in the Well Impact Rules, found in the Arizona Administrative Code, R12-15-830 and R12-15-840.

Administrative Cases

Enforcement Cases During Fiscal Year 1997, the Department initiated 38 administrative enforcement actions for violations of the Code. Fourteen cases were concluded and closed. One hearing was held. Eight cases were resolved through Stipulation and Consent Orders. The Department collected \$96,518.73 in late fees and civil penalties. These receipts are deposited into the General Fund.

Surface Water Applications During Fiscal Year 1997, the Department held an extensive administrative hearing on a protested Application to Appropriate, filed by Carlota Copper Company, and issued a permit. A second protested Application to Appropriate, filed by Phoenix International Raceway, was resolved by a stipulation between the applicant and protesters. A permit was issued.

Grant Programs

Conservation Assistance and Augmentation Grants The Office of Legal Services provides extensive support to this program in the form of document review, term negotiations and general legal advice to Department personnel responsible for administering the program. During Fiscal Year 1997, the legal staff participated in the processing of approximately 39 Conservation Assistance grants and nine Augmentation grants, 34 of which were implemented during this period.

Contracts The Office of Legal Services provided legal comment and review for approximately 29 standard contracts that were processed for the Department during the 1997 Fiscal Year.

Arizona Water Protection Fund (WPF) The WPF awards grants for the protection and restoration of river and stream systems and associated riparian habitats. Of 22 projects that were funded in the first year of the program, three were completed in Fiscal Year 1997 and 19 are continuing. Twenty-eight new projects were funded in Fiscal Year 1997 in 13 Arizona counties, for a total of over \$5.4 million. The successful proposals were submitted by private individuals, organizations, Indian Tribes, universities and city, state and federal agencies. The projects include constructed wetlands for wastewater treatment, water conservation planning, restoration of backwater habitats and watershed improvements.

Indian Water Settlements

Throughout the western United States, states have statutory processes for establishing the quantity and priority of surface water rights that have not been certificated under provisions of a state water code or are being integrated with

other rights in a larger watershed. These processes are known as General Stream Adjudications. In Arizona, General Stream Adjudications are conducted according to A.R.S. §45-251 to 45-264. Two major portions of Arizona are being adjudicated: the Gila and Little Colorado River systems. The Gila River General Stream Adjudication is assigned to Judge Susan Bolton of the Maricopa County Superior Court. The Little Colorado River General Stream Adjudication is being conducted in the Apache County Superior Court under Judge Allen G. Minker. Special Master John E. Thorson was appointed by the Arizona Supreme Court to conduct hearings and recommend a determination of rights for both adjudications. The Department's role in the process is to provide both administrative and technical assistance to the state's Superior Court.

Administrative support includes notifying potential claimants of the need to file claims in the adjudication, receiving and transferring to the Court all filed claims, maintaining a central repository of all pleadings and documents filed in the proceedings, responding to public inquiries and assisting the Special Master and the Courts in records management.

The technical role of the Department is to investigate all claims in the two ongoing General Stream Adjudications and prepare Hydrographic Survey Reports (HSRs) for Indian Reservations or watershed areas within each river system. HSRs consist of several volumes and include both a general assessment of the watershed and a detailed factual report on nearly all water uses within the watershed. Various other technical reports are also prepared at the request of the Court.

Little Colorado Adjudication The Court has stayed action in the Little Colorado Adjudication to allow the parties an opportunity

to negotiate a settlement among the major claimants, including the United States and the Indian Tribes. The Department has continued to participate in the Little Colorado River Settlement Committee.

Gila River Adjudication The Department is currently involved in an assessment of the physical constraints on the Gila River Indian Community's claim under the practicably irrigable acreage standard. The Department anticipates completion of this assessment by the end of 1998.

Central Arizona Project (CAP) Water Transfers Federal law provides that a subcontract for delivery of CAP water may be assigned to a different water user, with the approval of the Department, the Central Arizona Water Conservation District (CAWCD) and the USBR. In Fiscal Year 1997, the Department adopted a policy governing transfers of non-Indian municipal and industrial (M&I) CAP subcontracts. In addition, numerous transfers were completed. The cities of Mayer, Nogales, Rio Rico, Prescott and the Yavapai-Prescott Indian Tribe transferred their CAP subcontracts to the City of Scottsdale. Consolidated Water Utilities transferred its subcontract to Brook Water LLC and the Water Utilities Community Facilities District. In addition, Cañada Hills completed transfer of its subcontract to Oro Valley.

LEGISLATIVE ACTIONS

The following water related legislation was enacted in Fiscal Year 1997:

After nearly three years of negotiation, the State Legislature passed a bill containing major changes to the Water Quality Assurance Revolving Fund (WQARF). WQARF, administered by the Arizona Department of Environmental Quality (ADEQ), was established in 1986 to clean up hazardous waste sites within Arizona.

The bill stemmed from the Groundwater Cleanup Task Force, formed by the Department and ADEQ. The Task Force spent man-hours evaluating the WQARF and crafting a report containing recommended program modifications.

The WQARF program reforms include \$18 million in annual funding, changes in the program's liability allocation process, relief for businesses unable to pay, incentives for early settlement, preclusion of the use of federal authority by the State of Arizona, enhanced community involvement and many other modifications. The WQARF program changes involving the Department include:

- ◆ Authority for the Department to voluntarily waive regulatory requirements
 - ◆ Increased remedy flexibility, including the ultimate management of sites rather than clean up
 - ◆ Accounting of remediated water as surface water for approved projects
 - ◆ Requirement that the Department submit annual reports and budgets to the Legislature
 - ◆ Establishment of a WQARF Advisory Board on which the Department has a seat
- Other Legislation**
- The Departments' Omnibus Bill included the following modifications to A.R.S. Title 45:
- Amendments to the Lakes Bill** A.R.S. § 45-132 (B) generally prohibits persons from using water for filling or refilling a body of water within an AMA. An exception is provided for public recreational facilities owned or operated by the United States, the State of Arizona, a city or town, a flood control district or a multi-county water conservation district. This amendment allows counties to receive the exception.
- Procedural Adjustments to Groundwater Withdrawal Permit Denials** A.R.S. § 45-524 (A) requires the Director to return a denied permit application along with a statement of reasons for denial. This amendment stipulates that the Director notify the applicant in writing.

stating the causes of denial and that the application be filed to facilitate any subsequent reviews of modified applications

This should expedite the process for subsequent review of groundwater permits or application modifications by eliminating the time involved in retrieving original applications that were denied

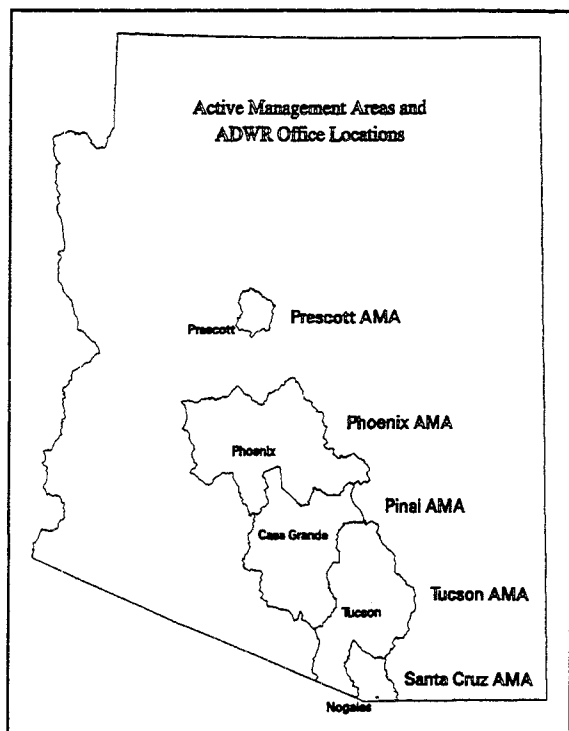
Procedural Changes for Noticing Recovery Well Applications A R S § 45-871 01 (F) specifies that notice by first-class mail must be made under three separate conditions This amendment consolidates the noticing qualifiers for recovery well applicants to provide consistency among the various categories of recovery well applicants

Groundwater Withdrawal Allowances Associated with Conveyed Irrigation Grandfathered Rights (IGFR's) A R S § 45-472 (B)(1)(a) and (D)(2) currently provides that water drawn under an IGFR be from a well on the IGFR lands When an owner purchases a portion of an IGFR without an appurtenant well, this owner is required to either drill a new well to serve the parcel, or to retrieve groundwater from the other parcel containing the well on the condition that the well owner does not withdraw any groundwater for use on his/her parcel Requiring new owners of IGFR parcels to drill new wells is considered unnecessarily burdensome This amendment permits new IGFR owners to receive groundwater from a well located off the land to which the right is appurtenant

ACTIVE MANAGEMENT AREAS

AMAs are specially designated groundwater basins, which require specific management and regulatory programs due to excessive groundwater overdraft. There are five AMAs: Prescott, Phoenix, Pinal, Tucson and Santa Cruz.

The map below shows the location of the AMAs. The Department maintains an office in each AMA.



The individual AMA offices are primarily responsible for carrying out, within their respective areas, the provisions of the Code, SMP and Department rules and regulations. All efforts are designed to help achieve the water management goals in each AMA. In the Prescott, Phoenix and Tucson AMAs, the goal is to reach safe-yield of groundwater resources by the year 2025. The goal in the Santa Cruz

AMA is to maintain safe-yield and to prevent local water tables from declining over the long-term. Safe-yield is achieved when the amount of water being put into the ground is equal to the amount being taken out. In the Pinal AMA, where a predominantly agricultural economy exists, the goal is to manage for planned depletion.

Each AMA carries out its programs in a manner consistent with these goals, while attempting to consider and incorporate the unique character of each AMA and the many water users within.

Within each AMA, numerous programs and activities are conducted on an annual basis. These activities include:

- ◆ Keeping water user rights and databases current and accurate
- ◆ Evaluating water use characteristics of water right holders and determining their consistency with the applicable section of the Code, management plan and rule provisions, as well as their relationship to the respective AMA goals
- ◆ Implementing enforcement programs designed to insure compliance with the Code, management plan and rule provisions
- ◆ Reviewing and evaluating the soundness of the various sections of the Code, plan and rule requirements, and modifying such requirements when appropriate

- ◆ Analyzing requests for water augmentation and water conservation proposals and recommending to the Director the approval of such projects and, when applicable, project funding
- ◆ Conducting special studies on water management issues or problems unique to each AMA

PRESCOTT ACTIVE MANAGEMENT AREA

Overview

The Prescott AMA is in the north central portion of the state and encompasses 485 square miles within Yavapai County. The physical environment in the AMA varies, with significant differences in elevation, climate and precipitation within its borders.

There are four population centers in the AMA. Approximately 49% of the population of the AMA resides in the greater Prescott area, 28% in Prescott Valley, 9% in Chino Valley, and 4% in the Dewey-Humboldt area. The remaining 10% of the population reside in unincorporated areas of Yavapai County.

Within the AMA, two large and 18 small water providers deliver municipal water. Approximately 97% of municipal water demand is supplied by the three large water providers (excluding exempt well usage).

The AMA's 5,783 agricultural acres are described in approximately 90 Certificates of Irrigation. Grandfathered Rights Non-agricultural water users are regulated through Non-Irrigation Grandfathered Rights and Groundwater Withdrawal Permits.

The AMA employs three permanent full-time staff members. Staff development is a high priority in the AMA. Training involves technical, educational, management and leadership development programs.

SMP Implementation

Nearly all water users within the Prescott AMA are in compliance with the conservation requirements contained within the SMP 1990-2000 for the Prescott AMA. Potential compliance issues are typically addressed through education efforts and are resolved in cooperation with staff before they become formalized enforcement cases.

Water use characteristics of water right holders in the AMA are routinely evaluated to determine consistency with management plan provisions and impact on safe-yield conditions.

The AMA conducts and/or participates on special studies on water management issues within the area as needed or requested.

Community Assistance & Involvement

The Prescott AMA staff routinely fields public information requests from citizens throughout northern Arizona and regularly participates in community activities. The general public often credits the office for its high quality of service. During Fiscal Year 1997, nearly 4,000 office hours were dedicated to public assistance. The AMA often contributes to water and natural resource presentations in the community. Water resource related information is presented and distributed to area schools and colleges as well as to community and business/professional groups.

Staff researched and implemented an ongoing adopt-a-highway program for state employees in the Prescott area as a community service project

The AMA contributed to the continuing success of the joint endeavor between the Department and the Arizona Department of Real Estate (ADRE) on the water law in the Arizona education program. An AMA staff member was certified by ADRE to help present the program.

Cooperative Efforts

Yavapai-Prescott Indian Water Rights Settlement- The Prescott AMA office provided assistance and facilitation to the various parties during negotiation of the agreement. As a result of the agreement, the AMA will have a continuing role regarding water use and conservation.

SMP Irrigation Water Duty Study Contract Development & Contract Administration- The AMA continues to be involved in the evaluation, coordination and administration of this Contract. Contract results will have far-reaching implications on agricultural water conservation programs in all of the AMAs.

Water Monitoring Program- This Program, currently being expanded, has required local entity coordination and cooperation with the Department's Hydrology Division. This Program will significantly impact future water resource decisions in the Prescott AMA.

Implementation of Legislation Relating to Well Site Location- Given the high concentration of exempt domestic wells being drilled in the Prescott AMA, and in Yavapai County generally, coupled with residential septic waste water disposal systems, AMA staff have been actively involved in the development of the

implementation strategy of this legislation. The purpose of this legislation is to ensure that new wells are drilled the prescribed distance from septic systems to protect water quality.

PHOENIX ACTIVE MANAGEMENT AREA

Overview

The Phoenix AMA encompasses approximately 5,646 square miles in central Arizona and includes seven groundwater sub basins. The AMA has an estimated population of 2,400,000 and contains 14 large irrigation districts, 24 small irrigation districts, 32 large municipal water providers and 91 small municipal providers. During Fiscal Year 1997, water use in the AMA totaled approximately 1,866,594 af, of which agricultural water use was 958,278 af, or 51%, while combined M&I use was 908,316 af, or 49%.

Staff administered over 8,500 groundwater rights in the Phoenix AMA, Harqhahala Irrigation Non-Expansion Area (INA) and Joseph City INA. Approximately 7,500 of these rights are IGFR's, 500 are Type 1 and Type 2 Non-Irrigation Grandfathered Rights, 123 are rights held by municipal water providers and 38 are rights held by irrigation districts. An assortment of other groundwater withdrawal authorities hold rights as well.

During Fiscal Year 1997, the AMA processed three water exchanges and reviewed 27 groundwater permit applications. Staff also reviewed six applications by large municipal providers for designation of an AWS and 60 subdivision applications for Certificates of AWS to ensure consistency with the AMA management plan and goal. A total of 35 field investigations of various sorts were also conducted.

Over 4,000 annual water withdrawal and use reports were processed this Fiscal Year, resulting in the collection of over \$2.7 million in groundwater withdrawal fees. Of this amount, \$1,014,993 was collected for administration and enforcement activities, \$1,608,785 for conservation assistance and augmentation programs, \$10,005 for late fees and non-payment charges and \$160,785 for WQARF. The Department collects WQARF fees for ADEQ to address regional water quality problems.

AMA Program Efforts

The Conservation and Augmentation Assistance Grant Program

- ◆ The Conservation and Augmentation Assistance Grants Team conducted a modified grant cycle which offered continuation funding to existing projects that had a secondary project phase and a demonstrated need for additional funding.
- ◆ Five Conservation Assistance grants totaling \$421,686 and two Augmentation grants totaling \$199,638 were funded. The grand total for the Fiscal Year 1997 grant cycle was \$621,324. Major grants receiving continuation funding include the Central Arizona Water Conservation Management Program, the City of Mesa Multifamily Water Use Study, the City of Phoenix Tres Rios Project and the University of Arizona Dairy Wetlands Project.
- ◆ Currently 39 additional grants, representing over \$3,552,581 in grant awards, are being administered. Of these, 15 grants are recharge or

augmentation related, five are for water conservation education, four involve retrofit programs, three focus on agricultural conservation, three are related to low water use landscaping, four are industrial or turf related, four are municipal and one is for greywater research.

- ◆ The modified grant cycle also allowed for staff to begin an evaluation of the entire program. This process will involve an evaluation of the benefits/results of past and current grants and a general "needs" assessment. The purpose of conducting such an evaluation is to develop and better define the future direction of the program.
- ◆ Two awards were given to Phoenix AMA grantees. The Seniors Helping Seniors Retrofit Program was awarded a 1997 Water Conservation Award for Outstanding Water Conservation Achievement from the USBR, while the American Society for Public Administration presented the Team Award for Superior Service to the Neighbors Helping Neighbors Retrofit Program.

SMP Implementation

- ◆ Administrative reviews associated with the SMP conservation requirements continue to be processed and resolved. 1,825 agricultural applications of the 1,900 received are complete, 37 of the 90 industrial applications received to date are complete, while seven administrative reviews filed by large municipal providers were completed in 1996 (13 of 20 are complete).

- ◆ Three applications by large municipal providers for entrance into the Non-Per Capita Conservation Program were reviewed by the Municipal Team during Fiscal Year 1997. Of those reviewed, one provider has formally entered the program.
- ◆ The AMA reviewed and input data submitted on the annual withdrawal and use reports and calculated the associated flexibility account balances if applicable. Information from recharge reports were also reviewed and input so that recharge credits could be calculated.
- ◆ The Compliance Team, with the implementation of a courtesy card reminder mail-out and an intensive failure to file campaign, reduced the number of those right holders or permittees who failed to file an Annual Report to less than 1%.
- ◆ The Groundwater Recharge Program issued 12 Recharge Facility Permits which permitted storage capacity of 250,000 af, 26 Water Storage Permits and seven Recovery Well Permits last year in the Phoenix AMA. Also, two full-scale effluent Underground Storage Facilities were permitted to recharge 4,970 af of effluent annually. Currently, there are 28 recharge facilities in the Phoenix AMA permitted to store 676,000 af annually.

TMP Development

In preparation for the development of the TMP, the AMA conducted a State of the AMA evaluation, which included sector use and source characteristics, water use trends, projections and issues requiring resolution.

Groundwater Rights Administration

- ◆ The Water Rights Team, working with the Hydrology Division, drafted and implemented a land elevation monitoring program that requires persons drilling new wells in areas of known land subsidence to conduct land elevation monitoring in the vicinity of their new well.
- ◆ The Industrial Team noticed 20 new general industrial, sand and gravel and turf users of their respective SMP Conservation Requirements, while the Agricultural Team successfully implemented the modification to the Flexibility Account Calculation pursuant to A.R.S. § 45-467 G & H. This Team also led the effort to coordinate the 1996 Annual Water Withdrawal and Use Report (Annual Reports) revisions and mail-out as well as the 1996 Flexibility Account Balance Noticing for IGFR's.

Cooperative Efforts

- ◆ Phoenix AMA staff are active throughout the AMA. Staff serve on several committees including the Arizona Municipal Water Users Association (AMWUA) Water Conservation Committee, the AMWUA Low Water Use Plant Committee, the WESTMARC Water Resources Subcommittee and the Salt River Project (SRP) Joint Planning Committee. Staff also work regularly with all the major AMA cities, irrigation districts, Maricopa County Government, Soil Conservation Service, Maricopa Association of Governments, Agri-business Council, USBR, CAWCD, the Central Arizona Groundwater

Replenishment District (CAGRD) and the Arizona Water Banking Authority (AWBA),

Accomplishments

- ◆ The Phoenix AMA received the 1996 Section of the Year Award from the Director of the Department of Water Resources
- ◆ The AMA was awarded the 1996 American Society of Public Administrators Team Award for its participation in the Neighbors Helping Neighbors Grant Program
- ◆ The September 1996 AMWUA Xeriscape Award of Special Recognition was given to the AMA for the promotion of low water use plants through the development and administration of the Low Water Use Plant/Tree List

PINAL ACTIVE MANAGEMENT AREA

Overview

The Pinal AMA encompasses approximately 4,000 square miles in south central Arizona and includes five groundwater sub basins. The AMA has an estimated population of 80,000 people and contains four incorporated municipalities, with Casa Grande the most populous. In addition, there are four large irrigation districts, together encompassing nearly 250,000 acres of irrigable farmland. Farming is the largest and most vital industry in the AMA, with cotton and wheat the principle crops. Other important industries include tourism, light manufacturing and food processing.

Total water use in the Pinal AMA in Fiscal Year 1997 (not including effluent) was over 1,050,000 af, of which 47% was groundwater, 36% was CAP water (including in-lieu recharge), and 17% was water diverted from the Gila River. Agricultural water use accounted for over 97% of total demand, municipal use, about 2%, and industrial use, less than 1%.

In addition to over 1,100 non-exempt irrigation rights (generally defined as farms that are ten or more acres in size), ten irrigation districts, and 28 municipal water providers, the Pinal AMA administers approximately 170 other groundwater rights and withdrawal permits. During Fiscal Year 1997, 106 groundwater right conveyances were processed by the AMA, and all non-exempt irrigation right holders and municipal providers were notified of their flexibility account balances.

A total of 1,317 annual withdrawal and use reports for Fiscal Year 1997 were distributed in the Pinal AMA and 1,266 were filed, for a response rate of over 96%. All of the annual reports received were reviewed for completeness and accuracy by AMA staff, and nearly all right holders were found to be in compliance with the Code and the SMP.

The Fiscal Year 1997 annual reports generated approximately \$536,000 in administration and enforcement fees and about \$268,000 in conservation assistance and augmentation fees.

SMP Implementation

The Pinal AMA received 277 applications for administrative review or variance from the SMP water conservation requirements established in 1990. Of these applications, 273 involved irrigation water duties and four involved municipal conservation requirements. By the end of Fiscal Year 1997, AMA staff had

resolved all but one municipal application for administrative review and one irrigation application for variance

TMP Development

Pinal AMA staff worked throughout Fiscal Year 1997 on the second and third stages of the development of the TMP for the period 2000-2010. The second stage involved proposing and evaluating alternative groundwater management programs based upon the assessment of water use trends and issues presented in the State of the AMA report, which was published in June 1996. The third stage involves compiling preferred water management programs to create a draft management plan. This stage is expected to be completed by December 1997.

To assist the AMA in these efforts, several work groups were established: one for growers and irrigation districts, one for municipal providers and one for dairies and cattle feedlots. Each work group provided valuable input to AMA staff in developing alternative management programs for their particular water use sector.

Cooperative Efforts

Pinal AMA staff continuously advocates sound water conservation and management practices and has facilitated the development of many cooperative conservation programs within its jurisdiction. Major cooperative activities during Fiscal Year 1997 included:

Irrigation Management Service (IMS)- The Pinal AMA funded IMS for the tenth consecutive year. Since its inception in 1987, the IMS program has received funds in excess of \$800,000 from the AMA. IMS provides on-farm training to irrigators within the AMA to improve their management of irrigation water. During Fiscal Year 1997, IMS provided season-

long services to 17 growers and provided technical assistance to five others. The program is a cooperative effort involving the AMA, the three local Natural Resources Conservation Districts (NRCD), the United States Natural Resources Conservation Service and USBR.

Management Improvement Program (MIP)

The Pinal AMA continued its participation on the Coordinating Group for the MIP for the Maricopa-Stanfield Irrigation and Drainage District (MSIDD). This program began in 1990 as the first of its kind in the United States. It is a collaborative interagency approach to improve the profitability and sustainability of irrigated agriculture in the MSIDD area. During Fiscal Year 1997, the grower-led Coordinating Group sponsored several town hall meetings and continued to publish a newsletter. Other coordinating group participants include MSIDD, the West Pinal NRCD, the CAWCD, The University of Arizona Cooperative Extension, the Natural Resources Conservation Service, the United States Farm Services Agency and USBR.

Pinal County Water Augmentation Authority (PCWAA)

The Pinal AMA worked throughout the fiscal year to assist PCWAA with the development of water augmentation and recharge projects for the AMA. After authorizing legislation was enacted in the spring of 1994, PCWAA was officially formed by the Pinal County Board of Supervisors in September of that year. The Board of Directors for PCWAA includes representatives from Pinal County, the AMA's four incorporated municipalities, two of its four large irrigation districts and two private water companies. In 1996, the board retained the services of a consultant to assist with project development. By the end of Fiscal Year 1997, the consultant had evaluated several recharge alternatives, including a direct recharge facility.

at Picacho Reservoir and groundwater savings arrangements (in-lieu recharge), with the two irrigation districts

Prior to enactment of the AWBA in 1996, with House Bill 2494, PCWAA automatically received one-half of the AMA's unencumbered conservation assistance and augmentation monies collected for each calendar year. With the Bill's enactment, PCWAA is now required to justify its annual funding request to the Director of the Department. The amount that may be requested is limited to \$200,000 of the AMA's groundwater withdrawal fees collected annually. Through Fiscal Year 1997, PCWAA had received, on average, about \$57,000 annually from the AMA.

TUCSON ACTIVE MANAGEMENT AREA

The Tucson AMA covers 3,866 square miles in south east Arizona and includes the Avra Valley Sub-basin and the northern part of the Upper Santa Cruz Sub-basin. The Tucson AMA covers portions of Pima, Santa Cruz and Pinal Counties. Incorporated cities include Tucson, South Tucson, Marana, Oro Valley and Sahuarita.

Groundwater supports almost all water requirements in the AMA. About 12,000 af of water demand is met with treated effluent supplies. Total water use in Fiscal Year 1997 (not including effluent) was about 330,000 af. Municipal water use was 46% of water demand, agriculture was 37% and copper mining and other industrial users accounted for 17%.

The AMA population in Fiscal Year 1997 was approximately 780,000. The majority (76%) of the population is served by Tucson Water, operated by the City of Tucson. The Tucson AMA contains one consolidated irrigation

distribution system which is operated by the Cortaro-Marana Irrigation District. It serves more than 80 farms.

CAP water has not been directly delivered for municipal purposes since 1994 and will not be used until water quality issues associated with it are resolved. The Water Consumer Protection Act (Act) passed by Tucson citizens in late 1995 prohibits the delivery of CAP water for potable use unless it is treated to the same quality as Avra Valley groundwater. This can only be accomplished through advanced treatment techniques, which effectively precludes delivery of CAP water for potable purposes for a number of years. The Act has had a major impact on water management in the AMA. To address the Act and public perceptions of CAP water quality, the City of Tucson is conducting pilot membrane treatment studies at the CAP treatment plant and is proceeding with basin recharge and groundwater savings projects utilizing CAP water.

The Act's provisions also resulted in Tucson Water basing its December 1996 AWS application on CAP recharge including membership in the CAGR. Tucson AMA staff spent considerable time processing the Tucson Water application and associated recharge permitting activities.

Tucson AMA staff participated in reviewing the Town of Oro Valley AWS designation, reviewed 14 applications for Certificates of AWS and were involved in renewable supply issues and regional planning activities. Tucson AMA staff provided conservation assistance to the public including working with conservation assistance fund grantees to produce a water conservation video and workbook for cooling tower operators and on a metal mine study which evaluated conservation potential and the potential for CAP water use.

Recharge permitting activities continue to increase Tucson AMA staff held six pre-application meetings, two for groundwater savings facilities and four for underground storage facilities Recharge related applications reviewed included five facility permits, two recovery well permits and 12 storage permits Of the applications, three facility permits and all the recovery and storage permit applications were issued By the end of Fiscal Year 1997, permits allowing the recharge of 48,831 af of CAP water had been issued The Tucson AMA expects continued heavy activity in recharge permitting in the next fiscal year

The Tucson AMA is responsible for the regulation of 1,297 water rights in the Tucson area and the Douglas INA Tucson AMA staff processed 1,265 annual water withdrawal and use reports This involved 313,867 af of groundwater for the AMA, 16,661 af of which was in-lieu CAP water delivered to farms and 43,009 af for the INA Staff completed 100 conveyances of grandfathered water rights, three Type 1 conversions, six extinguishments of water rights for AWS credits and notified all irrigation and large municipal right holders of their flexibility account balances

SMP Implementation

Tucson AMA compliance activities in Fiscal Year 1997 included approximately 100 hand audits, seven office audits and eight field inspections A total of three enforcement cases were resolved, two through stipulated agreements and one through stipulation and fine

Approximately 140 applications for administrative review and variance were filed with the Department following adoption of the SMP The only outstanding applications are 78 administrative review applications from agricultural users in the Cortaro-Marana

Irrigation District (CMID) Although each application has been analyzed and draft stipulations have been prepared, the applications are on stay pending a decision from the CMID board to accept the stipulated findings

TMP Development

During Fiscal Year 1997, Tucson AMA planning staff have been heavily involved in developing conservation programs for the TMP This included meeting with Technical Advisory Committees composed of regulated users and experts and considering their issues and recommendations in program development Staff also made numerous public presentations on program development to the Groundwater Users Advisory Council (GUAC) Staff drafted responses to issues, developed discussion and research papers for review and developed regulatory programs Staff also began drafting Tucson AMA management plan chapters

Cooperative Efforts

Tucson AMA staff are very active in the community, attempting to facilitate resolution of various water issues Staff serve as active participants in a number of local committees involving water quality and water management The following are examples of efforts that occurred during Fiscal Year 1997

Regional Recharge Plan (RRP)- The RRP is a collaborative planning effort initiated by the Tucson AMA office and the Tucson GUAC to develop a coordinated approach to recharge activities in the Tucson AMA A Regional Recharge Committee (RRC), composed of technical individuals, began meeting in late 1995 to identify sites most suitable for recharge as well as areas where additional information and research was needed A report was issued in September 1996 which included an assessment

of recharge issues in the AMA, especially water quality related issues. In conjunction with the RRP effort, an Institutional and Policy Advisory Group (IPAG) was established in August 1996 to review the work of the RRC and develop the regional plan.

Upper Santa Cruz Water Users Group- Tucson AMA staff provided assistance to this group, composed of Green Valley area water users, in development of a proposal to assess the potential for CAP water utilization in the area. This involved providing technical and planning expertise and developing the Request For Proposal (RFP) selecting a contractor. The study is intended to outline the costs and benefits of providing CAP water to multiple potential users, including the Farmers Investors Company pecan groves, copper mines, golf courses, water companies and recharge projects.

SANTA CRUZ **ACTIVE MANAGEMENT AREA**

The Santa Cruz AMA was created by the Legislature in 1994. The Santa Cruz AMA consists of 716 square miles of the southern portion of the Upper Santa Cruz Sub Basin and is bordered to the south by Sonora, Mexico.

The Santa Cruz AMA is in the final stages of clarifying its management goal, which will address the AMA's unique hydrologic, environmental and geographical characteristics. Currently, the Santa Cruz AMA's most important water resource, the Santa Cruz River aquifer, is presumed to be at safe-yield. However, regional growth both in Arizona and Sonora will increase pressure on local water supplies.

AMA staff administered 90 IGFR's, as well as 14 service area providers, four of which are designated as large providers.

AMA staff is assessing water use in the AMA as part of the TMP. Approximately 60% of all water withdrawn from wells in the Santa Cruz AMA is used for irrigation on forage and crops totaling an area of 4,850 acres. Municipal providers served approximately 6,426 af of water in 1996. The four large providers within the AMA are the City of Nogales, Rio Rico, Tubac Valley and Valle Verde. They account for nearly 90% of reported municipal water use. Additionally, there are nearly 600 exempt wells which supply water to beneficial use in the AMA.

The industrial sector accounts for nearly 10% of the reported water use in the AMA. The primary industrial water users are golf courses, produce packaging facilities and, to a lesser extent, sand and gravel operators. The industrial sector water use is projected to increase as more golf courses are planned and the impacts of the North American Free Trade Agreement (NAFTA) begin to unfold.

Santa Cruz AMA staff additionally administered an \$180,000 Augmentation Grant. These grant monies quantify effluent recharge, riparian water use and water education programs which benefit the constituents of the AMA.

SMP Implementation

Currently all water providers within the Santa Cruz AMA are in compliance with the SMP conservation requirements.

The recent notification of Tubac Valley Water Company as the AMA's fourth large provider in 1996 could include an administrative review request.

The AMA staff is coordinating with the Hydrology Division of the Department in formulating a computer model of the Santa Cruz

River watershed Incorporating the numerous influences on the watershed, this model will assist in long-range resource planning for the Santa Cruz AMA

Cooperative Efforts

The primary source of water in the AMA, the Santa Cruz River and its watershed, is shared with Sonora, Mexico Because of this unique relationship, the Santa Cruz AMA is involved with international water resource issues The Department continues to support Arizona communities through the North American Development Bank and project certification by the Border Environmental Cooperation Commission The Santa Cruz AMA staff has developed and is reinforcing the data exchange relationship with the State of Sonora's water resource planners

Additionally, the Santa Cruz AMA is involved with water quality issues which directly affect regional water resources The AMA staff has assisted with the Santa Cruz County Well Head Protection Program and has supplied data exchange with the City of Nogales Watershed Protection Program

GROUNDWATER USER ADVISORY COUNCILS

The Code established a five-person GUAC for each AMA GUAC members are appointed by the Governor to six year terms The GUACs meet monthly to review groundwater management programs in their respective AMAs and provide advice to the Director and comment on such matters as management plans, proposed rules and pending legislation

GUAC members serving Fiscal Year 1997 are listed below

Prescott AMA

John Olsen, Chair
Marvin Larson
Lincoln Hathaway
Brad Huza
Ed Smith

Phoenix AMA

Eva Patten, Chair
Stephen Cleveland, Vice-Chair
Frank Fairbanks
Bruce Heiden
John Williams, Jr

Pinal AMA

Oliver Anderson, Chair
David Snyder, Vice-Chair
Dean Weatherly
Tom Isom
Paul Prechel

Tucson AMA

Priscilla Robinson, Chair
Alan Lurie, Vice-Chair
Warren Culbertson
John Jones
Chuck Sweet

Santa Cruz AMA

Mr Ron Morriss, Chair
Mr Duke Petty, Vice-Chair
Ms Sherry Sass
Mr Roy Ross
Mr Ron Fish

During the Spring of 1997, each GUAC reviewed applications and made recommendations to the Director for Conservation Assistance and Augmentation Grants Based on the GUAC's recommendations, the Director awarded 39 grants totaling more than \$2,269,588

Each AMA's GUAC was also involved in a variety of diverse activities

The **Prescott AMA GUAC** recommended that 1997 water withdrawal fees remain at \$1 00, the same as 1996, and the Conservation/Augmentation fee remain at \$1 00 The GUAC also recommended that conservation and augmentation monies continue to be available for water monitoring activities, a proposal that was enacted with the 1996 Omnibus Water Bill

The **Phoenix AMA GUAC** was active in a number of issues during Fiscal Year 1997 including the review and comment on the Omnibus Bill and the TMP development The GUAC also recommended the Fiscal Year 1997 groundwater withdrawal fee of \$2 75 for the AMA to the Director, as well as funding recommendations for the Conservation Assistance and Augmentation Program

The **Pinal AMA GUAC** recommended that the Director keep the AMA groundwater withdrawal fee for conservation assistance and augmentation at \$ 50 per af for Fiscal Year 1997 and award grants to three conservation assistance projects and one augmentation project for 1997, commented on the AWBA's draft 1997 plan of operation and its proposed facility inventory, reviewed alternative groundwater management programs for the TMP and held a joint meeting with the governing boards of the three local NRCs to discuss the future directions and funding for the IMS Program The Pinal GUAC also monitored the status of the 1996 conservation assistance grants and 1997 water legislation as well as the activities of the PCWAA

The **Tucson AMA GUAC** reviewed and commented on the AWBA Plan of Operation, funding for grants in the Conservation Assistance and Augmentation Programs (including open-ended contracts to support recharge activities), the proposed distribution of the withdrawal fees for calendar year 1997, water related legislation and Colorado River/CAP issues The Tucson GUAC also discussed the effects of the Endangered Species Act (ESA) litigation on the Colorado River, Tucson membership in the Groundwater Replenishment District, CAP delivery priorities, the Regional Effluent Plan and the Safe and Sensible Water Initiative made recommendation on the WPF Applications The GUAC reviewed the development of TMP concepts for all sectors Ongoing support was provided in the development of the RRP and the recharge program status

When the **Santa Cruz AMA** was created, the Governor appointed members to the GUAC shortly thereafter Since then, the GUAC has served as a community forum for discussion of the water issues facing the region, including well head protection proposals, an effluent recharge study and development of project concepts for WPF grant applicants The Council has also made recommendations regarding clarification of the AMA goal, WPF applications and the disposition of water from a local groundwater cleanup project Also, due to the Santa Cruz AMA's reliance on water inflows from Mexico, the GUAC has monitored international water issues as well as developments related to a Mexican water proposal for neighboring Nogales, Sonora

ASSURED AND ADEQUATE WATER SUPPLY PROGRAM

GROUNDWATER RECHARGE

The Department's AWS and Recharge Programs require concerted efforts throughout the Department. These "supply-side" programs are somewhat interrelated because several water suppliers undertake recharge activities as a means of satisfying AWS requirements.

Department staff provide guidance to applicants and communities, evaluate filings, resolve policy questions and maintain the operational aspects of the program.

ASSURED WATER SUPPLY PROGRAM (Program)

In our desert environment, wise allocation and use of water supplies is critical to maintaining our standard of living and a healthy economy. The Department's AWS Program plays an important role in long-term management of our water supplies.

Arizona's AWS Program is designed to support the state's economic health by preserving groundwater resources and promoting long-term water supply planning. The Program mandates the demonstration of available water supplies for new subdivisions in AMAs. The Program is the regulatory component of the Code that limits groundwater use in the AMAs. The Program also serves as a consumer protection role by requiring developers to demonstrate that sufficient water supplies are available for new subdivisions prior to sale.

Outside of AMAs, new subdivisions must obtain an adequacy statement from the Department describing the availability of water. Although lots may be sold even if the water supply is

inadequate, prospective buyers must be informed of the inadequacy.

Status

Application-related activity in Fiscal Year 1997 increased almost 25% from Fiscal Year 1996, with the Department receiving 168 applications for AWS or water adequacy.

At the end of Fiscal Year 1997, 82 subdivisions, comprising 11,863 lots, have enrolled in the CAGR. Seventy-four percent of these subdivisions are in the Phoenix AMA. In addition, six municipal providers (five in the Tucson AMA and one in the Phoenix AMA) have enrolled as member service areas.

Significant activities and accomplishments in Fiscal Year 1997 included:

- ◆ Assisting developers and municipal water providers seeking AWS determinations
- ◆ Conducting detailed evaluations of applications for Designation of AWS from cities currently deemed to have an AWS
- ◆ Processing applications for Certificate of AWS and Water Adequacy Reports
- ◆ Developing and maintaining an annual report and groundwater allowance accounting mechanism in cooperation with the CAGR.

- ◆ Facilitating local water supply and planning issues
- ◆ Developing draft concepts to be used in establishing AWS rules tailored to the Santa Cruz AMA
- ◆ Developing and evaluating various policy, procedural, rule and legislative proposals
- ◆ Continued outreach assistance to several entities and communities interested in participating in recharge activities
- ◆ Support of activities related to the AWBA
- ◆ Preparation of annual report forms, evaluation of completed forms and calculation of credit balances

RECHARGE PROGRAM

The Recharge Program (Program) was created by the Legislature in 1986 and has evolved into a major groundwater management tool. The Program encourages underground storage of renewable water supplies either directly (through discharge of water to recharge basins or stream channels) or indirectly (by replacing groundwater use with surface water or effluent). The Program provides a sound and inexpensive alternative to constructing water treatment facilities for providers attempting to demonstrate an AWS.

Status

Recharge application activity remained high during Fiscal Year 1997 as municipalities and other entities prepared to meet AWS requirements. A total of 68 permits were issued for various types of recharge and recovery related projects. Significant activities included

- ◆ Processing of permit applications for underground storage facilities, groundwater savings facilities, water storage and recovery wells
- ◆ Development and implementation of new procedures and guidelines

- ◆ At the end of Fiscal Year 1997, there were 38 permit applications in various stages of review

COLORADO RIVER MANAGEMENT

The renewable water supplies of the Colorado River serve seven states and several Indian Tribes. The Department works to promote, protect and comprehensively manage Arizona's entitlement of 2.8 million af annually of Colorado River water. This entitlement is Arizona's water supply for future growth and is critical to the state's progressive water management policies.

The United States, through the USBR, operates the Colorado River reservoir system and contracts for all uses from the Colorado River in the Lower Basin. The Department coordinates with the Secretary on all matters related to the Colorado River, including recommending allocations and contracts for Colorado River water, consulting with the Department of the Interior regarding the Colorado River Annual Operating Plan and representing the State of Arizona in forums and work groups that address Colorado River issues. The Department works cooperatively with representatives of the other six Colorado River Basin states, various federal agencies, Indian Tribes, the United States Congress, local governments and water users within Arizona. The activities generally require engineering, legal, environmental and economic analysis.

The major activities of the Department involving the Colorado River in Fiscal Year 1997 included the following:

- ◆ Served on and provided technical support to several interstate and interagency committees, including the Colorado River Management Work Group for the Annual Operating Plan, Seven Basin States/Ten Tribes Committee, Lower Colorado River

Multi-Species Conservation Program (MSCP) Steering Committee and Work Group, Colorado River Basin Salinity Control Forum and Work Group, Lower Colorado River Program Management Work Group and the Glen Canyon Adaptive Management Work Group Federal Advisory Committee.

- ◆ Adopted a new policy regarding the transfer of CAP M&I water subcontracts. Reviewed, analyzed, commented and participated with the USBR and other parties in the negotiations of contracts for use of Colorado River water including, but not limited to, the development of recommendations for the transfers of CAP M&I subcontracts from the City of Nogales, City of Prescott, Camp Verde Water Company, Cottonwood Water Company, Rio Rico Utilities and the Mayer Water Improvement District to the City of Scottsdale, completion of a recommendation of the transfer of the Berneil Water Company CAP M&I subcontract in part to the Cave Creek Water Company, in part to the City of Scottsdale and in part to the City of Phoenix, completion of a recommendation to transfer the McMicken M&I subcontract to several water providers including Peoria, Avondale, Goodyear and Surprise.

The Department conferred with several entities who wished to enter into contracts for mainstream Colorado River water including the Town of Parker, the Arizona State Land Department and Arizona State Parks Board.

- ◆ Reviewed technical reports and studies of the Colorado River and its tributaries including the Long Range Operating Criteria for the Operation of the lower Colorado River, the U S Geological Survey (USGS) report regarding the source of water pumped from wells along the lower Colorado River and reports from the Western Water Policy Review and Advisory Commission
- ◆ Developed Geographic Information System maps showing individual farm and irrigation district boundaries and municipal water provider and service area boundaries Also, developed Colorado River and CAP contract area maps The Department started an inventory of water uses along the Colorado River to determine the most current information on the location of diversions, place and amounts of water uses The information will be used to advise the public and develop state policy with regard to future federal actions and long-term water allocation issues As part of the Department's overall analysis of water supply and uses, a model of the Colorado River system is operated to test different surplus and shortage strategies to determine the impact of different reservoir operations on the supply of Colorado River water to Arizona
- ◆ Also prepared information for the AWBA Study Commission regarding the long-term Colorado River water supply availability, priorities of water use, interstate marketing issues, Indian and rural county water issues A report from the Study Commission on the issue areas was completed November 1997
- ◆ In response to the 1994 designation of critical habitat for the four listed "big river" fishes of the Colorado River Basin, the Department continued participation in the Lower Colorado River MSCP Steering Committee and Work Group The MSCP Steering Committee is currently in the process of retaining consultant services for development of the MSCP and group facilitation services Additionally, in Fiscal Year 1997, the Steering Committee has agreed to fund interim conservation measures (ICMs), while the MSCP is being developed, which are targeted to provide immediate benefits to the Southwestern Willow Flycatcher, Razorback Sucker and Bonytail
- ◆ Continued participation in the public process which has resulted in the United States Fish and Wildlife Service's (USFWS) Final Biological Opinion regarding the USBR's Lower Colorado River Operations and Maintenance Activities in the Lower Colorado Region Although the Final Biological Opinion resulted in a finding of jeopardy for the Southwestern Willow Flycatcher, Razorback Sucker and Bonytail, implementation of the Biological Opinion's Reasonable and Prudent Alternative, which alleviates jeopardy to the species, involving the MSCP Steering Committee and others in the Lower Colorado Region
- ◆ A representative of the Department was recently appointed, by the Secretary, to the Glen Canyon Dam Adaptive Management Work Group Federal Advisory Committee Based upon the Record of Decision signed by the Secretary, at the conclusion of the Glen

Canyon Dam Environmental Impact Statement (EIS) process, the Adaptive Management Work Group is charged with developing recommendations regarding the management of Glen Canyon Dam and the downstream resources in the Marble and Grand Canyon reaches of the Colorado River

- ◆ Participated in the tri-state discussions, involving Arizona, California and Nevada, concerning the future management of water resources in the lower basin Colorado River Also participated with the technical subcommittee of this group

FLOOD WARNING AND DAM SAFETY

The Department manages floodplains and non-federal dams to reduce loss of life and damage to property. Responsibilities include conducting safety inspections of dams, assisting local flood management entities to administer the National Flood Insurance Program (NFIP) and participating in the development of flood warning systems.

Safety of Dams

The Department oversees the design, construction, operation and maintenance of non-federal dams in Arizona, except for mine tailing dams. Dams under state jurisdiction are those 25 feet or more in height or with a storage capacity of more than 50 af.

As of June 30, 1997, there were 216 dams under state jurisdiction. During Fiscal Year 1997, the Department activities included

- ◆ 147 site inspections related to applications, construction monitoring and operations for dams
- ◆ Detailed review of ten applications to construct new dams (1 approved)
- ◆ Detailed review of five applications to repair existing safe dams (3 approved)
- ◆ Detailed review of six applications to repair existing unsafe dams (0 approved)
- ◆ Detailed review of four applications to repair existing unregistered dams (0 approved)
- ◆ Monitoring the construction of nine dams (7 approved)
- ◆ Investigation and site inspection at seven structures constructed outside the state's jurisdiction

Flood Management

The Department serves to ensure that Arizona's communities participate in the NFIP and to assist communities with any problems that may arise as a result of their participation in the NFIP. Department activities in this area during Fiscal Year 1997 include

- ◆ Participated on technical committee at Maricopa County Flood Control District (MCFCD) to review plans for flood control projects and relocation of at-risk residents
- ◆ Participated in discussions with consultants and Federal Emergency Management Agency representatives regarding problems of mapping "alluvial fans" for floodplain management purposes
- ◆ Participated in conferences designed to open communications with federal rule makers regarding the unique flood hazards in the arid southwest
- ◆ Reviewed 25 flood insurance studies for communities for revisions to Flood Insurance Rate Maps
- ◆ Arranged for restudies and new Flood Insurance Rate Maps for three communities

- ◆ Presented four workshops for community officials on NFIP, including Arizona requirements for floodplain management
- ◆ Assisted the State Standards Committee which is developing standards for flood hazard- mitigation through floodplain management
- ◆ Visited 25 communities to assist with floodplain management activities and ensure their understanding of the NFIP and Arizona statutes
- ◆ Prepared and distributed four floodplain management newsletters for local officials
- ◆ Participated in two council workshops/public meetings
- ◆ Researching channel changes in the Santa Cruz/Greens Canal/Los Robles Wash area due to subsidence
- ◆ New flood insurance study will be starting after October 1, 1997

teamed up, along with the National Weather Service (NWS), SRP, USGS, MCFDC, Pima County Flood Control District and the Arizona Department of Emergency Management (ADEM) completed the design for the Statewide Flood Warning Communications Network This system will consist of three major hubs (Phoenix, Flagstaff and Tucson) that will branch out to all of Arizona's 15 county emergency management offices

Flood Warning

In 1994, the Legislature authorized the Department to develop flood warning systems throughout the state During Fiscal Year 1997, the Department funded the Fountain Hills Flood Warning System, added two new gages to monitor the Yavapai System and one new gage to the Clifton System

The Department, in conjunction with the United States Corps of Engineers (COE), visited, documented and radio validated 80 gages as part of the Arizona Statewide Flood Warning System The Department and the COE have

GROUNDWATER FILINGS

DRILLING LICENSES/SURFACE WATER PERMITS

The Department processes all surface water, groundwater and adjudication filings and well drilling licenses. Department staff assists the public in filing water rights documents, responds to information requests and collects permit and groundwater withdrawal fees. Groundwater and well drilling actions during Fiscal Year 1997 included

- ◆ The Department processed 7,226 annual groundwater withdrawal and use reports and deposited \$4,698,098 in withdrawal fees
- ◆ Issued approvals to drill 6,291 new wells and updated ownership of 1,463 existing wells
- ◆ Issued permits for 43 projects to recharge or store groundwater
- ◆ Issued 359 well-driller licenses and/or renewals
- ◆ Issued 38 new groundwater withdrawal permits
- ◆ Responded to 357 public requests for computer generated information on groundwater and surface water rights or copies of file documents

Surface water actions during Fiscal Year 1997 are as follows

- ◆ Received 38 new applications for Permit to Appropriate
- ◆ Received 125 applications for Permit to Appropriate subject to some type of administrative processing
- ◆ Issued 23 permits
- ◆ Issued 25 certificates
- ◆ Completed 467 Assignments
- ◆ Processed 102 Claims for Stockpond Rights
- ◆ Issued one new Stockpond Certificate

STATEWIDE WATER RESOURCE PLANNING

Though most of the Department's regulatory focus is on the five AMAs, the Department assists with water resource planning statewide

In 1994, the Department published the Arizona Water Resources Assessment. The last comprehensive assessment of the state's water resource issues was published in 1975. Since then, the state has experienced many changes. More than two million people have moved into the state, the long awaited CAP has been completed, the state is adjudicating the major watersheds in Arizona, Indian water settlements are being vigorously pursued, the state has established comprehensive groundwater management programs in central Arizona to eliminate overdraft and there is a growing concern for the protection of water quality and natural habitat. The Assessment's inquiry into the state's water supplies and demands is a valuable resource for water policy makers, as well as the general public.

PLANNING ASSISTANCE

The Department focused a substantial amount of its planning assistance to two areas of the state, the Verde Watershed and the Upper San Pedro groundwater basin. These areas have expanding populations, limited groundwater resources and unique environmental features associated with free flowing reaches of the Verde River and San Pedro River. The Department assisted citizen organizations and local governments in both areas by providing technical information, analysis and advice regarding water issues.

Verde Watershed- The Department continues to provide on-going leadership to a Water Planning Subcommittee of the Verde Watershed Association. The Association adopted a

recommended plan of study for the Verde Watershed. A cooperative River Basin Study was begun to implement phase one of the plan. This study is being led by the U S Department of Agriculture. The Department is providing technical data and analysis to the project.

Upper San Pedro Groundwater Basin- The Department participated in the Cochise County Technical Committee by developing a groundwater modeling for a portion of the area. A large citizens' group, locally known as the Water Issues Group (WIG), debated ways to balance long-term groundwater demand for Sierra Vista and Ft Huachuca in order to protect the water supplies for the San Pedro National Riparian Conservation Area. The Department prepared draft water management legislation for the WIG, however it was not introduced due to a lack of community support. A federal water rights negotiating team for the San Pedro was initiated by the Secretary. The Department provided technical support as well as participating in the negotiations.

Little Colorado River Watershed (LCRW)- The Department is providing planning assistance to the LCRW by assisting with the development of a planning committee and an annual action plan. A two-year time frame is proposed to complete the action planning process. Annual action plans would complement a general watershed management plan. In addition, sub-watershed areas may also develop plans guided by the general plan, but based upon both local needs and resources. The LCRW is expected to develop a common vision and identify activities to accomplish the vision, coordinate and communicate with stakeholders concerning projects and actions proposed in the watershed.

Pine-Strawberry-Payson- The Department is currently playing an active role in technically advising these communities to identify possible new water supplies and identify long-term water needs based upon full and part-time residents and seasonal demands. The Department's role is to contact stakeholders in the study area and seek recommendations on the membership of a local steering committee. The Department will also provide technical staff support to the steering committee and provide planning support in planning, hydrology and Geographic Information Systems (GIS).

San Pedro Groundwater Basin- The Department continues to provide on-going technical assistance to the San Pedro Technical Committee. Several agencies, along with the Department, are currently working with the Commission for Environmental Cooperation (CEC), the Semi-Arid Land Surface-Atmosphere (SALSA) program at the University of Arizona Agriculture Research Service and the Cochise County Technical Review Committee (TRC). These entities are cooperating to develop information that will assist stakeholders understand the groundwater hydrology and its interaction with surface water resources.

Eager - Springerville- The Department is actively providing technical assistance in developing a Round Valley Comprehensive Water Plan (RVCWP) for these communities. Workshops have been scheduled to determine needs and goals of all concerned citizens and stakeholders.

HYDROLOGY SUPPORT

The Department's team of hydrologists provide technical support to the Agency, including statewide water resources data collection and analysis and maintenance of the state's Groundwater Site Inventory (GWSI) database

Groundwater Modeling- The Department develops hydrologic computer models for regional geographic areas and maintains hydrologic databases in a format accessible throughout the Department. The models are digital replicas of groundwater basin conditions and are used to assist the Department's water management and planning efforts. Modeling activities during Fiscal Year 1997 include

- ◆ Continuation of hydrologic studies of the West Salt River Valley and Northwest Tucson area. The Legislature mandated these studies in 1994 to assist long-range water resources planning in both areas
- ◆ Completion of the Upper San Pedro groundwater flow model. The model will assist local leaders in Cochise County to analyze the water situation in the Upper San Pedro Basin
- ◆ Initiation of a modeling study of the Santa Cruz AMA. This model will be used to analyze a variety of complex hydrologic problems in this newly created AMA

Special Studies - During Fiscal Year 1997, Department hydrologists performed several special studies included the following

- ◆ Assistance in developing groundwater flow model of the Santa Cruz AMA

- ◆ Assistance in hydrologic impact analysis of various groundwater recharge facilities
- ◆ Development of Land Subsidence and Aquifer Storage Monitoring Program for the Phoenix, Tucson and Pinal AMAs
- ◆ Technical assistance with the State of AMA reports, as well as the TMP

Well Impact Analyses- Department hydrologists review and perform well impact analyses to determine if proposed wells within AMAs will adversely impact existing water users. In Fiscal Year 1997, the Department performed 74 well impact analyses. In addition, special studies for areas with anticipated high growth or water shortages were conducted

Hydrology Data Collection- The Department collects groundwater data from wells and springs throughout the state. These data are evaluated, reduced, quality assured and made available to the public and other state and federal agencies

The data collection is in its 57th year of cooperation with the USGS. Currently, the Department collects data for virtually all of the groundwater in the state, while the USGS is principally responsible for surface water data collection

In Fiscal Year 1997, Department staff measured water levels in the Hualapai, Peach Springs, Big Sandy, Sacramento and Detrital Wash basins, collected water quality samples in the Little Colorado River Plateau basin and performed discharge measurements on wells throughout

the AMAs and INAs. As part of the annual well monitoring program, about 1,300 water levels were measured and about 130 water quality samples were collected.

Recharge/Surface Water- The recharge/surface water section of the Hydrology Division has the responsibility of technically reviewing all recharge project applications, instream flow applications and WPF projects. Some of the accomplishments for Fiscal Year 1997 are as follows:

- ◆ Completion of the Application Packet for Underground Storage, Savings and Replenishment Projects. Two hundred copies made and distributed to all government and private entities. The packet provides a more detailed document to guide applicants through the application process.
 - ◆ Participation at recharge pre-application meetings and field investigations.
 - ◆ Technical review of approximately 15 recharge projects including permit development and technical meeting review.
 - ◆ Groundwater modeling to estimate the impacts of recharge projects on surrounding lands.
 - ◆ Participation on the recharge policy committee and the process and procedure committee.
 - ◆ Presentation of two recharge papers and one instream flow poster session at technical conferences.
- ◆ Technical assistance and review of approximately ten instream flow applications. This also includes pre-application meetings and field investigations.
 - ◆ Surface water/groundwater appropriability investigations.
 - ◆ Technical support to the WPF.

COMPUTER SUPPORT

During Fiscal Year 1997, the Department continued to focus on the migration of its application systems to a relational database client-server environment. The decision to move to this new environment was an important strategic decision for the Department and has significantly improved the ability to perform complex analysis and make timely decisions regarding the State of Arizona's changing water needs.

Relational Database Client-Server- With a commitment to improve access to data and make staff more productive, we have made significant progress in transitioning our systems to the new relational database/client-server environment. With four of the six major applications in the post-implementation phase, the benefits have increased with the completion of each new application system. The Department continues to upgrade or replace older network and desktop hardware and software to support the transition. The application development team has continued to utilize consultants as mentors, in a partnership, to increase our staff's development and support expertise.

GIS - Understanding the importance of data in fulfilling the Department's mission, we have made considerable progress in integrating GIS databases with the new Oracle® databases, expanding the use of spatially represented business data to the desktop. The availability of better tools has enabled us to take advantage of these capabilities. To help the Department disseminate this information, GIS has taken the lead in establishing the GIS Network which was installed, facilitating the use of ArcView® by many of the divisions and remote offices that had no independent capability to use GIS

information. Conducting training courses and providing documentation about the GIS databases on the Department's intranet has also been very successful.

ARIZONA WATER BANKING AUTHORITY SUPPORT

For more than 70 years, Arizona leaders have worked to ensure that Arizona's communities have dependable long-term water supplies. In continuing with this commitment, the Arizona State Legislature created the AWBA in 1996 to ensure Arizona's full use of its 2.8 million af of Colorado River water supply.

Until the AWBA was created, Arizona did not use its full entitlement of Colorado River water. Without the AWBA, Arizona would not have used its full allocation until the year 2030.

During that interim period, the accumulated amount of water left in the Colorado River would have amounted to approximately 14 million af. Most of that water would have gone to southern California.

A five person Authority directs the activities of the AWBA. The Director of the Department chairs the AWBA and members include the President of the Board of the CAP and three persons appointed by the Governor. By law, of these appointments, one person represents CAP M&I water users, one person represents Colorado River water users along the Colorado River, and one person must be knowledgeable in water resource management issues. Additionally, the Arizona State Senate and House of Representatives each appoints one non-voting *ex officio* member to the AWBA.

During Fiscal Year 1997, the Department provided administrative, technical and legal support to the AWBA. The AWBA will release an Annual Report to the Arizona State Legislature on July 31, 1998.

ARIZONA WATER PROTECTION FUND SUPPORT

The 1994 Arizona Legislature established the Arizona Water Protection Fund and Commission to provide grants "for the development and implementation of measures to protect water of sufficient quality and quantity to maintain, enhance and restore rivers and streams and associated riparian resources " This includes fish and wildlife species that are dependent on these resources

Funds for the program come from an annual State General Fund appropriation and are administered by a 15-member Commission appointed by the Governor and the Legislature The Department provides legal, technical and administrative support to the Commission

Priority is given to grant applications that acquire CAP water or effluent for the purpose of protecting or restoring rivers and streams, develop, promote and implement water conservation programs that directly benefit a riparian ecosystem outside of the five AMAs, support research and data collection, compilation and analysis, develop and implement capital projects or specific measures that benefit riparian ecosystems In addition, man-made water resource projects may be funded if the project directly or indirectly benefits a river or stream and creates or restores riparian habitat

In Fiscal Year 1995, the Commission began the first funding cycle for the program and has completed two full funding cycles In 1995, the Commission funded 24 grant applications, totaling \$6.8 million In 1996, 28 projects totaling \$5.4 million were funded Currently, 47 projects are ongoing in 15 Arizona counties

The Department provides technical, administrative and legal support to the WPF The WPF's Fiscal Year 1997 Annual Report details their activities during this time period

FINANCIAL INFORMATION

Fiscal Year 1997

REVENUE TOTALS

Groundwater Withdrawal fees Deposited into the General Fund	\$2,081,200
General Adjudication Fund	\$20,400
Augmentation & Conservation Fund	\$3,026,100
Non-Emergency Dam Repair Fund	\$171,400
State Water Storage Fund	\$3,670,500
Administration Fund	\$10,300
Flood Control Loan Fund	\$79,800

FINANCIAL INFORMATION
Fiscal Year 1997

OTHER NON-APPROPRIATED FUND EXPENDITURES

AUGMENTATION AND CONSERVATION FUND

Personal Services	\$165,200
Employee Related Expenses	\$34,600
Other Operating Expenses	\$37,400
Augmentation and Conservation Grants	\$1,577,900
Equipment	\$0
Total	\$1,865,100

NON-EMERGENCY DAM REPAIR

Professional & Outside Services	\$373,700
---------------------------------	-----------

STATE WATER STORAGE FUND

Transfer to State Demonstration Project	\$4,121,000
-----------------------------------------	-------------

ADMINISTRATION FUND

Revenue Refunds	\$10,000
-----------------	----------

FLOOD CONTROL LOAN FUND

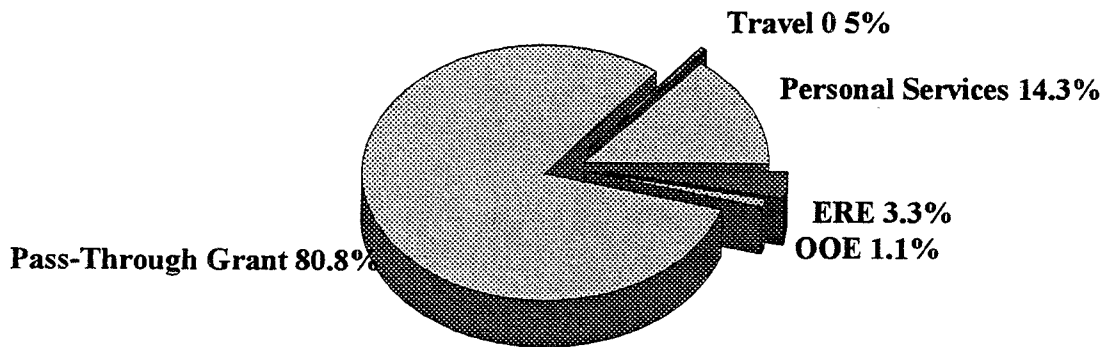
Transfer to Flood Warning System Fund	\$75,000
---------------------------------------	----------

FINANCIAL INFORMATION FISCAL YEAR 1997

FEDERAL FUND EXPENDITURES by Expense Classification

Personal Services	\$ 53,900
Employee Related Expenses (ERE)	\$ 12,300
Professional and Outside Services (P&O)	\$ 0
Pass-Through Grant to University of Arizona	\$303,900
Travel	\$ 1,900
Other Operating Expenses (OOE)	\$ 4,100
Total Expenditures	\$376,100

FEDERAL FUND EXPENDITURES

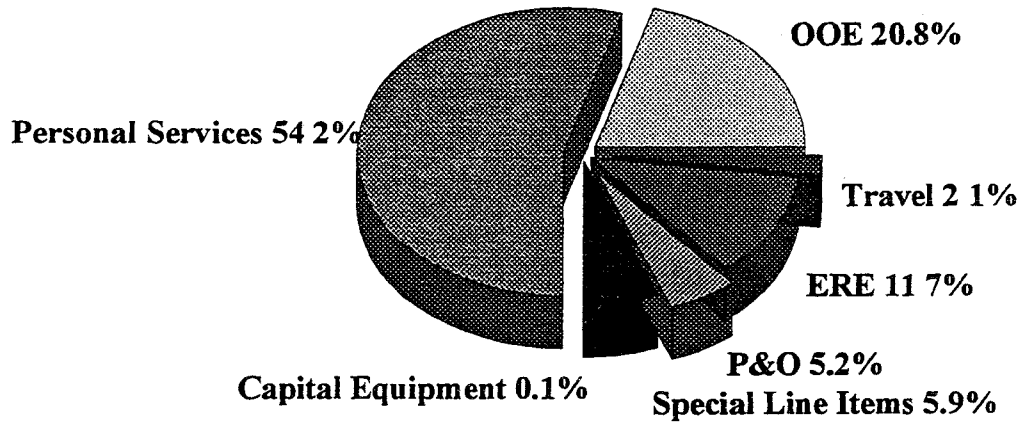


FINANCIAL INFORMATION FISCAL YEAR 1997

GENERAL FUND EXPENDITURES by Expense Classification

Personal Services	\$6,846,900
Employee Related Expenses (ERE)	\$1,475,600
Professional and Outside Services (P&O)	\$ 656,900
Travel	\$ 267,000
Other Operating Expenses (OOE)	\$2,630,400
Capital Equipment	\$ 10,400
Special Line Items	\$ 750,100
Sub-Total Operating Expenses	\$12,637,300
Other	
Arizona Water Banking Authority	\$2,000,000
Arizona Water Protection Fund	\$5,000,000
Total Expenditures	\$19,637,300

OPERATING GENERAL FUND EXPENDITURES



ABBREVIATION INDEX

ADEM	Arizona Department of Emergency Management
ADEQ	Arizona Department of Environmental Quality
AF	Acre-Feet
AMA	Active Management Area
ADRE	Arizona Department of Real Estate
AMWUA	Arizona Municipal Water Users Association
A.R.S.	Arizona Revised Statutes
AWBA	Arizona Water Banking Authority
AWS	Assured Water Supply
CAGRD	Central Arizona Groundwater Replenishment District
CAP	Central Arizona Project
CAWCD	Central Arizona Water Conservation District
CEC	Commission for Environmental Cooperation
Code	Groundwater Management Code
CMID	Cortaro-Marana Irrigation District
COE	United States Corps of Engineers
Department	Arizona Department of Water Resources
EIS	Environmental Impact Statement
ESA	Endangered Species Act
GIS	Geographic Information Systems
GUAC	Groundwater Users Advisory Council
GWSI	Groundwater Site Inventory
HSR	Hydrographic Survey Reports
ICMs	Interim Conservation Methods
IGFR	Irrigation Grandfathered Right
IMS	Irrigation Management Service
INA	Irrigation Non-Expansion Area
IPAG	Institutional and Policy Advisory Group
LCRW	Lower Colorado River Watershed
M&I	Municipal and Industrial
MCFCDD	Maricopa County Flood Control District
MIP	Management Improvement Program
MSCP	Multi-Species Conservation Program
MSIDD	Maricopa-Stanfield Irrigation and Drainage District
NAFTA	North American Free Trade Agreement

NFIP	National Flood Insurance Program
NRC	Natural Resources Conservation District
PCWAA	Pinal County Water Augmentation Authority
RFP	Request for Proposal
RRC	Regional Recharge Committee
RRP	Regional Recharge Plan
RVCWP	Round Valley Comprehensive Water Plan
SALSA	Semi-Arid Land Surface Atmosphere program
Secretary	Secretary of the Interior
SRP	Salt River Project
SMP	Second Management Plan
TMP	Third Management Plan
USBR	United States Bureau of Reclamation
USCWUG	Upper Santa Cruz Water Users Group
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Society
WIG	Water Issues Group
WPF	Arizona Water Protection Fund
WQARF	Water Quality Assurance Revolving Fund

Arizona State Library and Archives



20107105 3