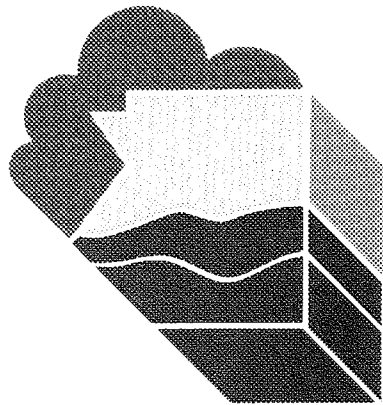


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**ARIZONA
DEPARTMENT
OF WATER
RESOURCES**

**ANNUAL REPORT
1991-1992**



Published by

Arizona Department of Water Resources
Public Information Office
15 South Fifteenth Avenue
Phoenix, Arizona 85007
(602) 542-1553



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ARIZONA DEPARTMENT OF WATER RESOURCES

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HONORABLE FIFE SYMINGTON
Governor of Arizona, and

FIFE SYMINGTON
Governor

HONORABLE MEMBERS
Arizona State Legislature:

RITA P. PEARSON
Director

On behalf of former director Elizabeth Ann Rieke, I am pleased to submit to you the 1991-92 Annual Report of the Arizona Department of Water Resources. This report provides an overview of the agency's functions and highlights activities and accomplishments that occurred between July 1, 1991 and June 30, 1992. Ms. Rieke was the Director during that time period.

The Department's efforts focused on securing the state's long-term water resources, while reducing and reorganizing staff to most effectively meet existing responsibilities and accept new challenges. The Department of Water Resources was one of the twelve agencies to be reviewed by Project SLIM (State Long-term Improved Management). The organizational chart included in this report reflects the changes that were implemented as part of the Project SLIM review. Most noteworthy is the consolidation of planning functions in one area with the creation of the Program Planning and Management Group.

This fiscal year marked the first year of the Department's new Conservation Assistance Program, which provides grants for water conservation projects that benefit local users. The Program is funded through fees levied on groundwater withdrawals and is intended to help water users meet their conservation requirements.

One of the major new challenges facing the Department in 1991 and 1992 was educating the public and business and community leaders about the problems facing the Central Arizona Project (CAP). Concerns about underutilization of CAP supplies led to the appointment of a 16-member Governor's Task Force on Central Arizona Project Issues, which was staffed by the Department of Water Resources. With this initial effort the State began moving in a positive direction to generate the changes that are needed to make the Project a success.

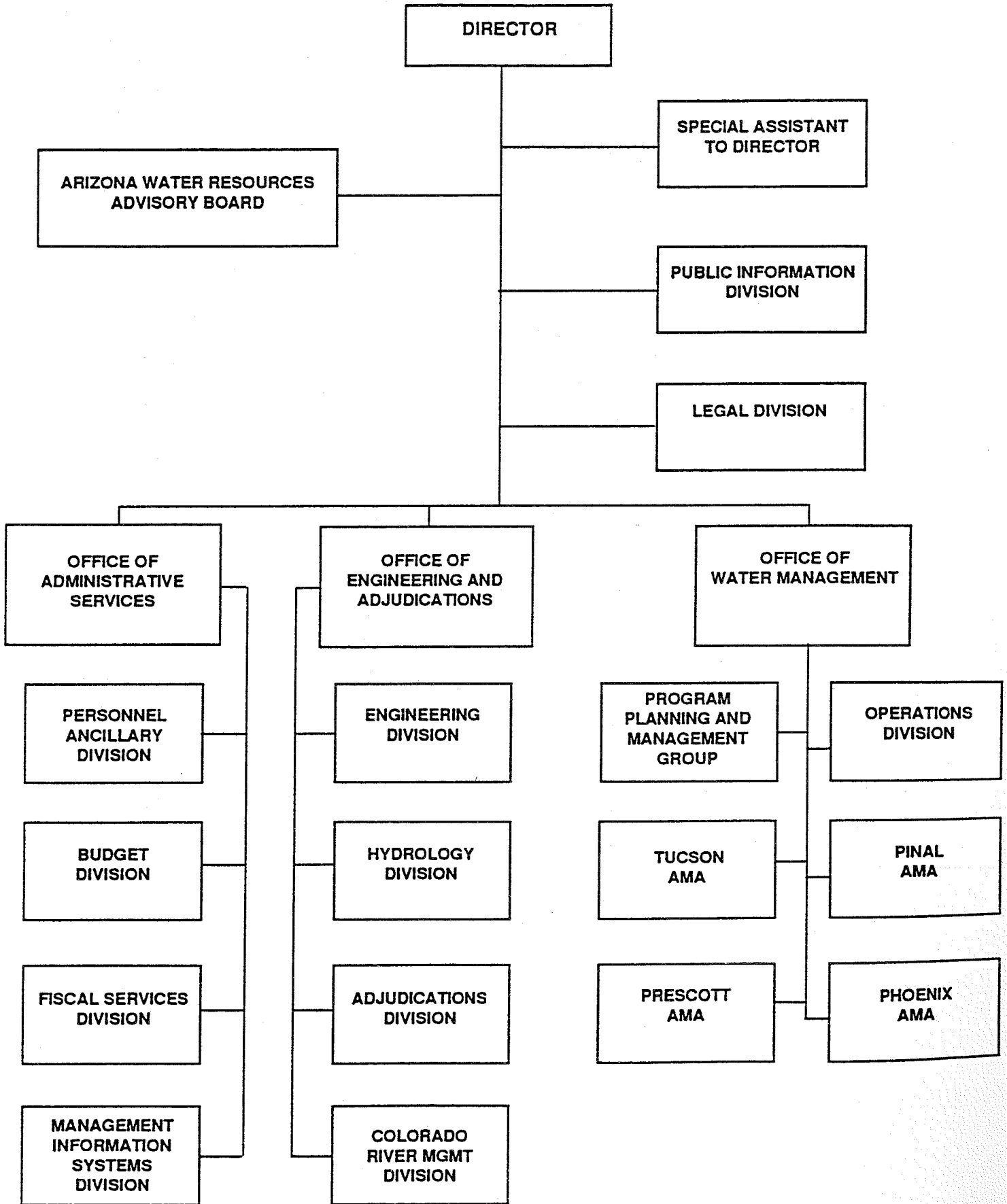
I am pleased to be associated with the Department of Water Resources and will continue to implement Arizona's water management laws and programs to ensure that future generations of Arizonans have the quality of life and economic growth we've come to expect and enjoy.

Sincerely,

A handwritten signature in cursive script that reads "Rita P. Pearson".

Rita P. Pearson
Director

**ARIZONA DEPARTMENT OF WATER RESOURCES
ORGANIZATIONAL CHART FOR FISCAL YEAR 1992-93**



ARIZONA WATER COMMISSION

The Arizona Water Commission is an advisory body to the Director of the Arizona Department of Water Resources (DWR or Department). The Commission held five meetings during fiscal year 1991-92. Commission members provided input that will impact the drafting of the State Water Resources Assessment. In addition, a special subcommittee met to discuss proposed changes to the federal Clean Water Act.

Members of the Commission serving during fiscal year 1991-92 are listed below including the year their term expires and the Active Management Area (AMA) or groundwater basin they represent:

Pete Shumway, Chairman, 1994
Little Colorado River Plateau

Carol Anderson, 1996
Sacramento Valley

Karen Barfoot, 1992
Phoenix AMA

Bob John Barker, 1992
Verde River

George Britton, 1994
Phoenix AMA

Stephen Davis, 1996
Tucson AMA

Clyde Gould, 1992
Lower Gila

Jim Hennessey, 1994
Pinal AMA

Kevan Larson, 1994
Prescott AMA

C. Marshall Pattea, 1996
Phoenix AMA

Gail Peters, 1994
Phoenix AMA

Ronald Rayner, 1992
Phoenix AMA

Marco Rivera, 1992
Tucson AMA

Oren Thompson, 1996
Phoenix AMA

Fred Zumwalt, 1996
Duncan Valley

In 1990, the Arizona Water Commission underwent a sunset review, which resulted in the Arizona Legislature directing the Commission to prepare a recommendation on the need for a permanent water resources advisory body. In response, the Commission prepared legislation clarifying the function of the Arizona Water Commission and the terms and qualifications for membership. During fiscal year 1991-92 this legislation was passed and became effective in October 1992. The legislation also changed the name of the Arizona Water Commission to the Arizona Water Resources Advisory Board (AWRAB).

The Board consists of 15 members appointed by the Governor, with members selected to represent various groundwater basins of the State. Under the new

legislation, members of AWRAB will confer with the Director of DWR to exchange information on state and local water resource issues, and to recommend actions on water resource matters of vital state interest including:

- water resource policy;
- interstate and intrastate water issues;
- water resource planning;
- state and federal water legislation;
- existing and proposed rules of the Department; and
- other water resource matters the Director may request.

OFFICE OF THE DIRECTOR

The Director of the Department of Water Resources is responsible for overseeing the development and implementation of policies and programs to fulfill the agency mission of *assuring a dependable water supply for Arizona's future and protecting against floods and dam failures*. The Deputy Directors for the Office of Water Management and the Office of Engineering and Adjudications, the Assistant Director for the Office of Administrative Services and the Chief Legal Counsel report to the Director. The Special Assistant to the Director and the Public Information Officer are within the Director's Office.

The Director is involved in establishing and implementing the State's water policies and represents the State on interstate water matters. Each year new water management laws are enacted and the Director guides all of the Department's legislative efforts. A number of bills were enacted this fiscal year that affect Department activities and they are summarized in this report.

The Special Assistant to the Director assists with legislative matters, coordinates responses to constituent concerns, and works on a variety of special assignments.

In early 1992, Governor Symington appointed a 16-member Governor's Task Force on Central Arizona Project (CAP) Issues, which was staffed by the Department and chaired by DWR's Director. The objective of the Task Force was to address the problem of underutilization of CAP water and to develop recommendations to assure

that the long-term security of Arizona's Colorado River entitlement is not jeopardized. The Task Force held eleven meetings from February 6 through July 7, 1992, and produced a report containing their conclusions and recommendations. The Task Force meetings provided a forum to inform various water interests, members of the public, and the news media about the reasons for, and possible consequences of, underutilization of CAP supplies.

PUBLIC INFORMATION OFFICE

The Public Information Officer coordinates the agency's contact with the news media, and prepares news releases, brochures, reports and speeches explaining the Department's policies and activities. This office also responds to general requests for information about DWR's programs and water management issues affecting Arizona.

In addition, during this fiscal year the Public Information Officer began publishing an internal newsletter that is distributed to DWR employees every two weeks. This newsletter has increased employee awareness of issues facing the Department.

LEGAL DIVISION

The Legal Division provides in-house counsel to the Department of Water Resources. It is comprised of nine attorneys

occupying eight full-time positions. The Legal Division is responsible for representing the Department's interests in litigation involving water issues in both state and federal courts; for advocating the Department's interests in all contested administrative hearings conducted by the Department; for drafting and reviewing proposed legislation; for assisting the Department in the adoption of administrative rules and management plans; for negotiating intergovernmental agreements and business contracts; and for providing legal analysis and advice on specific questions of law related to the Department's programs. Highlights of the division's activities for fiscal year 1991-92 are summarized below.

Litigation

The Department both initiates and defends against various court actions. During this fiscal year, activity occurred in the following cases where the Legal Division represented the Department:

St. Johns Irrigation and Drainage District v. Arizona Water Commission, 127 Ariz. 350, 621 P.2d 37 (App. 1980) -- In a 1978 judgement, the Department was enjoined from accepting any new applications to appropriate in the Upper Little Colorado River drainage area, known as the Norviel Decree area. The Town of Springerville moved to intervene to reopen the judgement to allow Springerville's application. The motion was denied and the Legal Division represented the Department in the matter before the Court of Appeals.

AMWUA v. ADWR, Maricopa Court Cause CV 90-1776 -- The Arizona Municipal

Water Users Association ("AMWUA") filed this action to have two specified aspects for the Second Management Plan declared invalid. The case was briefed and prepared for oral argument held in July 1991. The Court rendered a decision adverse to the Department. The Legal Division then filed for review by the Court of Appeals, prepared and filed an opening brief and a brief in reply to AMWUA's brief. Oral argument has not been scheduled.

ADWR v. Herdegen, Pima County Superior Court CIV 274017, Pinal County Superior Court Cause CIV 39269 -- The Department filed these actions against a well driller in central/southern Arizona believed to be defrauding customers and posing a threat to the aquifers of the state by failing to observe mandatory construction standards. The Department sought civil damages in excess of \$200,000. Motions for summary judgement were granted in both Pinal and Pima Counties and judgements filed and recorded.

Rules

DWR continues to develop rules to carry out its numerous legislative mandates. The Legal Division is responsible for guiding these rules throughout the formal adoption process. This involves drafting proposed rules after the underlying concepts have been developed, appearances before the Governor's Regulatory Review Council, certification by the Arizona Attorney General's office and final adoption by the Secretary of State. In fiscal year 1991-92, the following progress was made:

Assured Water Supply Rules -- The Legal Division participated in the development of an Assured Water Supply rules concept paper that received extensive public review and comment. Development of draft rules was then initiated and the Legal Division provided drafting assistance and legal analysis of the many questions posed by this complex program. The Department anticipates that these rules will proceed to the Governor's Regulatory Review Council during fiscal year 1993-94.

Audit and Inspection Rules -- The Legal Division participated in development of the Audit and Inspection Rules which formalize the procedures for entry upon private lands and inspection of records, wells, facilities, projects and lake bodies to determine compliance with the requirements of the law. These rules were published by the Secretary of State in October, 1991, and adopted by the Director in April, 1992. (Note: During the fiscal year that followed, the rules were certified by the Attorney General's office and became effective on August 31, 1992).

Fee Rules -- The Legal Division participated in development of a revision to the Department's schedule of fees for applications, permits and administrative services to the public. The Department anticipates these rules will proceed to the Governor's Regulatory Review Council during the next fiscal year.

Recharge Rules -- The Legal Division participated in the development of a Recharge Rules concept paper that has been reviewed internally. These rules will address the procedures for permitting under several groundwater recharge, storage and recovery statutes.

Surface Water Rules -- The Legal Division participated in the drafting of revisions to surface water rules which formalize the procedures governing surface water rights. During the next fiscal year this draft will be reviewed internally.

Water Measurement Rules -- The Legal Division has worked with the Department's Compliance Committee to draft a comprehensive set of rules governing the proper measurement of water withdrawal and use. It is anticipated that these rules will be reviewed internally during the next fiscal year.

Legislation

The Legal Division assists the Directorate staff in the analysis and drafting of legislation affecting the Department. Legal staff devoted substantial time to the water management bills that were passed during fiscal year 1991-92. These bills are described later in this report.

Administrative Permits

The Department administers a number of its programs through permits, including the surface water program, the groundwater rights and permits program, the water exchange program, and the recharge, storage and recovery program. Although the Operations Division coordinates these permit programs, the Legal Division participates in the application processes by responding to requests for legal opinions, meeting with the applicants and giving legal approval at specified points in the application approval process.

Administrative Hearings

Enforcement Cases -- The Legal Division represents the Department in administrative and judicial actions against suspected violators of Arizona's water laws. In fiscal year 1991-92, the Legal Division processed over 134 such cases. Thirty-one cases were set for hearing.

Administrative Review Cases -- When water users are notified of mandatory conservation requirements imposed by the Management Plans, they are entitled to request administrative review of the reasonableness of those requirements. After adoption of the Second Management Plan in 1989, the Department received in excess of 2000 such requests. The Legal Division oversees disposition of all these requests, through settlement or hearing. In fiscal year 1991-92, 290 such requests were settled, 406 were dismissed or withdrawn, and many more were partially processed toward eventual completion.

Director Support -- Two attorneys provide legal support to the Director, the Department's final decision-maker in enforcement and administrative review cases. These attorneys, who are screened from the enforcement and administrative review activities of the rest of the legal staff, provide review and legal analysis of the hearing officer recommendations, as requested by the Director.

Miscellaneous Administrative Cases -- The Department generally regulates the issuance of certificates of right to withdraw groundwater and divert surface water. In the event that one or more parties contest the issuance or denial of such a certificate, the Legal Division advances the Department's

interests throughout the administrative proceedings and through the courts, if necessary. In addition, the Legal Division reviews applications for designation or certificates for assured water supply inside the AMAs and for water supply adequacy outside the AMAs. The Legal Division reviews agreements with other state and federal agencies on issues which impact the state's water resources. The Legal Division also negotiates on behalf of the Department in Federal Superfund clean up sites, leading to the Department's participation in consent orders and decrees.

Contracts

The Legal Division is responsible for negotiating intergovernmental agreements and business contracts. All contracts to be entered into by the Department are reviewed by the Legal Division and often attorneys become involved in the negotiation of key provisions. In 1991 and 1992, the Legal Division assisted the Department in the development of a program in which conservation assistance programs will be funded through grants. The Legal Division began reviewing grant contracts in June of 1992 and the Department anticipates that contract negotiations and review will continue in the next fiscal year.

STATE WATER RESOURCES ASSESSMENT

In February of 1990, DWR began preparation of an assessment of water resources for the entire State of Arizona.

The objectives of the State Water Resources Assessment are to describe the physical occurrence of water in the State, explain the legal framework for water resource management, and identify areas of the state that may experience significant water resource management problems during the next 50 years.

In 1991, the Department made several presentations to the Arizona Water Commission regarding the water supply and demand conditions throughout Arizona. By May 1992, an internal draft of the assessment was being reviewed by the Department's management team.

During the first year of the preparation of the assessment, an extensive data gathering and public information program was initiated. The information gathering process focused on compiling the best information available, determining the assumptions used in analyzing the data, and identifying where further data is needed. The public involvement process included numerous meetings around the state providing individuals an opportunity to contribute information and voice concerns that could be addressed through the Department's work effort.

The assessment will include two reports: the first describing the water supplies in the state and the second discussing major water resource issues in the states's six planning areas.

Charts showing Arizona's water demand and water supply for calendar year 1990 appear on the next page.

NEW LEGISLATION AFFECTING DEPARTMENT ACTIVITIES

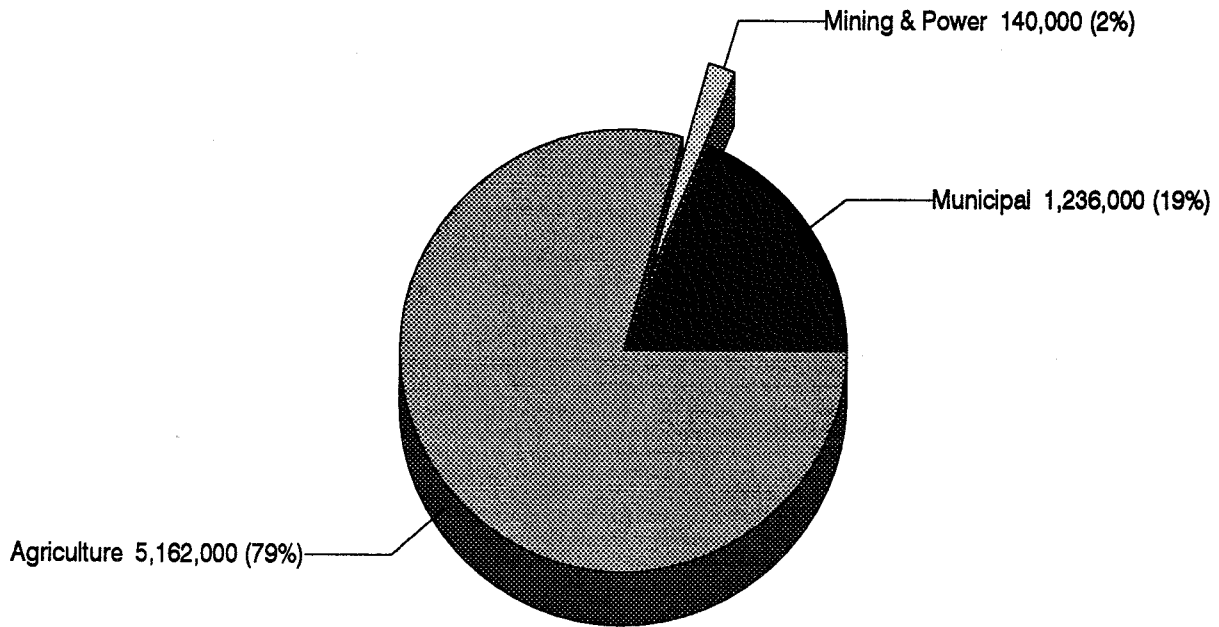
From a water legislation perspective the 1992 legislative session was one of the busiest ever. There were approximately fifty bills that addressed water resources topics. Many of the bills that finally were signed into law by Governor Symington will have substantial impacts on Arizona's water management. The most significant bills that passed this session are summarized below.

Alternative Conservation Program (H.B. 2452)

The Alternative Conservation Program legislation was the result of a consensus reached among agricultural water users, municipal representatives, and DWR. The legislation consists of two components. The first part is a non-per capita conservation program which certain municipal water providers may apply for in lieu of the current gallons per capita per day requirements. The second part addresses conservation requirements for agricultural water users by specifying the amount by which agricultural water duties could be reduced during the Third, Fourth and Fifth Management Periods. It also allows certain municipal and agricultural water users to use water beyond their Second Management Plan conservation requirements if the water is not groundwater. This bill addresses many of the uncertainties in the Groundwater Code regarding future water conservation requirements.

1990 - ARIZONA WATER DEMAND

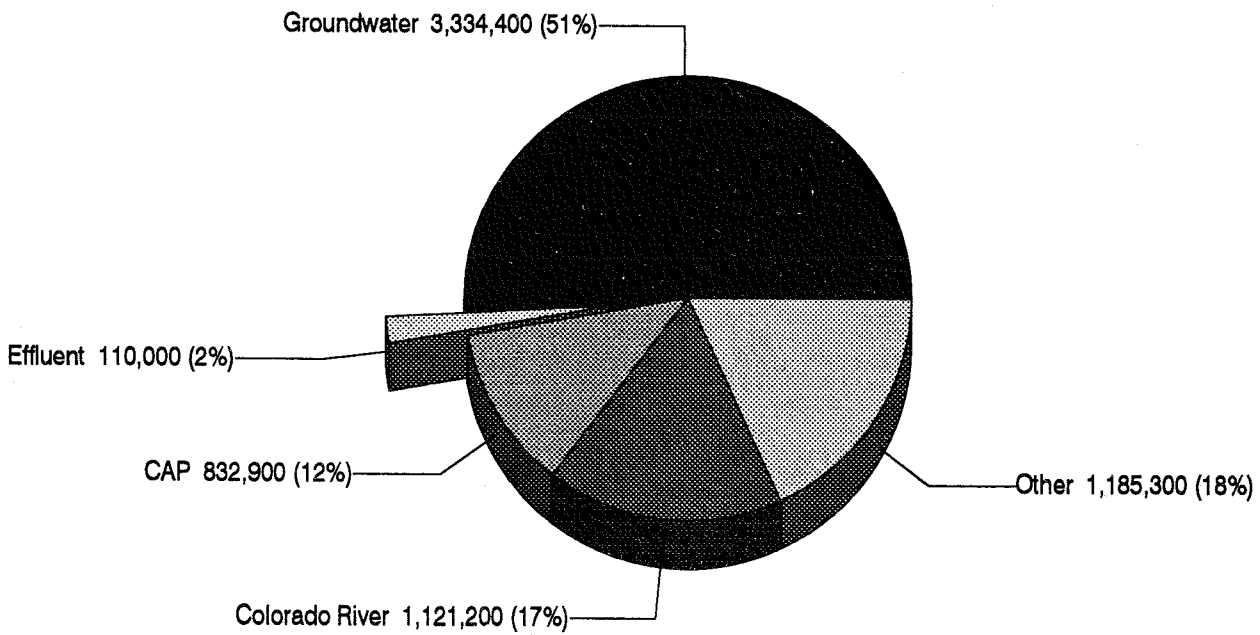
ACRE-FEET ESTIMATE



TOTAL DEMAND ESTIMATE 6,538,000 ACRE-FEET

1990 - ARIZONA WATER SUPPLY

ACRE-FEET NORMALIZED



Water Exchanges (H.B. 2407)

DWR proposed this legislation in order to clarify the authority to exchange one type of water for another. Under this law exchanges will be classified as follows: 1) Existing exchanges will be grandfathered if they are registered with DWR; 2) Exchanges involving only effluent or of fifty acre-feet or less water per year are exempt; and 3) Exchanges that are not exempt or grandfathered will be subject to a noticing requirement, unless surface water is involved. If surface water is involved, a permit is required.

The bill also established an accounting system to clarify how conservation requirements apply to water involved in exchanges.

Storage and Recovery (S.B. 1285, S.B. 1380, H.B. 2485, H.B. 2475)

There were three topics addressed relating to underground storage and recovery. The Santa Cruz County water interests proposed S.B. 1285, which provides that effluent and CAP water discharged to maintain vegetation in a national park or monument would receive underground storage and recovery credits to the extent that recharge of the aquifer occurs.

H.B. 2475 allows the Central Arizona Water Conservation District and private water entities to recover water from an underground storage and recovery project outside the area of hydrologic impact. Until passage of this act, such entities could recover water stored underground only from within the area where the water has been physically recharged.

Originally proposed by the City of Scottsdale as H.B. 2485, S.B. 1380 creates an annual storage and recovery program to allow underground storage and recovery within the same calendar year. This program will encourage the use of surface water and CAP supplies by reducing the need to construct treatment plants, water delivery systems and back-up systems.

Riparian Area and Instream Flow Protection (S.B. 1030)

Legislation to protect riparian areas and instream flows took a variety of forms during the session. As finally adopted in S.B. 1030, DWR, the Arizona Game and Fish Department, and the Department of Environmental Quality (DEQ) are directed to undertake studies regarding identification and protection of riparian areas and instream flows in the state. The Game and Fish Department will map and classify riparian areas by December 1, 1993. DWR will undertake an evaluation of the effect of groundwater pumping and surface water diversions on riparian areas and will evaluate alternative regulatory programs by December 1, 1993. DEQ will identify activities that impact riparian areas by October 1, 1993 and chair a 25 member Riparian Area Advisory Committee. The Advisory Committee must submit a report by December 1, 1994 recommending the scope and parameters of any necessary regulatory program and statutory provisions for a riparian area protection program.

**Statewide Water Efficient
Plumbing Act (H.B. 2440)**

This bill was proposed by DWR with the support of a wide range of urban and rural water interest groups and plumbing industry representatives. It establishes statewide water conservation standards for toilets, urinals, showerheads, faucets, evaporative coolers and decorative fountains. The standards were modeled after the standards used in many Arizona cities, other states, and the American National Standards Institute.

Omnibus Water Bill (S.B. 1102)

Each year DWR proposes modifications to Title 45 (Water) of the Arizona Revised Statutes. These modifications clarify existing provisions, streamline administrative processes or address relatively minor issues.

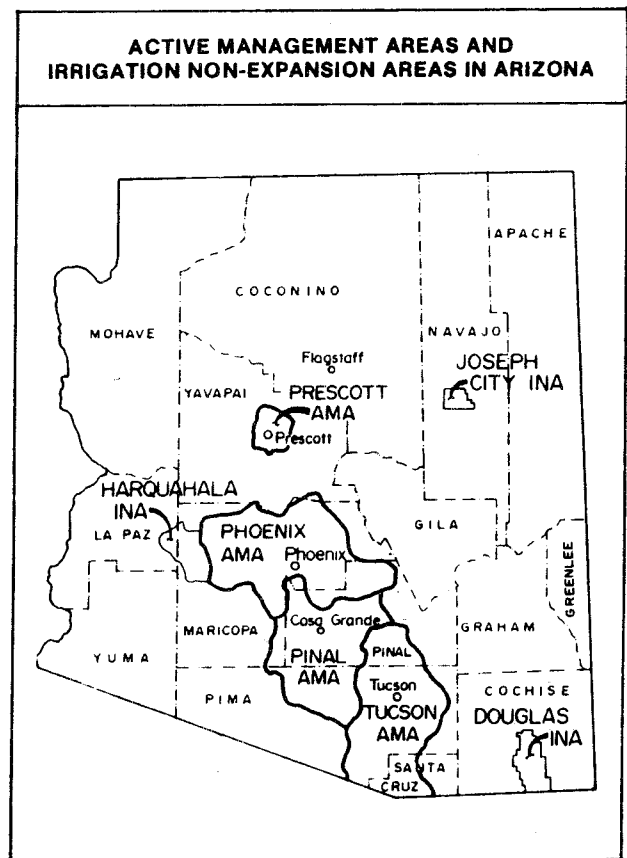
OFFICE OF WATER MANAGEMENT

The Office of Water Management has the primary responsibility for administration of the surface water and groundwater codes. It is comprised of the four Active Management Area offices, the Operations Division, the Water Management Support Division, and the Planning Division. The office is responsible for developing and implementing groundwater management plans and administrative rules; coordinating statewide planning activities; administering the conservation assistance grants program; providing technical assistance and educational programs in the area of water conservation; conducting special studies; and implementing public involvement programs associated with those functions. Representatives from the Office of Water Management also participate on many inter-agency coordinating committees such as the Riparian Area Task Force, Commission on the Arizona Environment, Small Water Systems Coordinating Council and various Central Arizona Project committees and task forces.

Active Management Areas

Active Management Areas (AMAs) are specially designated groundwater basins, which, due to excessive groundwater overdraft, require specific management and regulatory programs. There are four Active Management Areas: Phoenix, Pinal, Prescott and Tucson.

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 Groundwater Code, Second Groundwater Management Plan and agency rules and regulations. All efforts are designed to assist in the achievement of the primary water management goal of reaching safe-yield of the groundwater resources in the Phoenix,

Prescott and Tucson AMAs by the year 2025, while managing for planned depletion in the Pinal AMA. 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 include:

- Keeping water user rights and data bases current and accurate.
- Evaluating water use characteristics of water right holders and determining their consistency with applicable code, management plan and rule provisions, as well as their relationship to the respective AMA goals.
- Implementing enforcement programs designed to insure compliance with code, management plan and rule provisions.
- Reviewing and evaluating the soundness of the various code, plan and rule requirements, and modifying such requirements when appropriate.
- Analyzing requests for water augmentation 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.

In addition, the Conservation Assistance Grants Program was successfully implemented for the first time during this fiscal year. In 1990 the Groundwater Code was amended to require the Department to include a program in the Second Management Plan for conservation assistance to water users within the AMAs. The program provides a dedicated funding source for water conservation projects that benefit local users and is funded through fees levied on groundwater withdrawals. The goal of the Conservation Assistance Program is to help water users achieve their conservation requirements. The program was developed in accordance with the modified Second Management Plan, with significant involvement from all four Groundwater Users Advisory Councils (GUAC).

The first grant applications for conservation assistance were submitted to DWR during the spring of 1992. AMA staff were involved in evaluating 47 requests for conservation assistance funding and worked with their GUAC to recommend to the Director how approximately \$400,000 in funding should be distributed. Sixteen projects were selected for funding. A full list of conservation projects, grant recipients and the amounts awarded are listed on the following page.

ARIZONA DEPARTMENT OF WATER RESOURCES
CONSERVATION ASSISTANCE GRANTS
 (Reviewed & Selected During Fiscal Year 1991-92)

Phoenix Active Management Area

<u>Grantee</u>	<u>Project Description</u>	<u>Grant Amount</u>
Arizona Municipal Water Users Association	Junior High School Conservation Curriculum	\$ 16,000
Alfred's Plumbing	Indoor water management workshops	3,000
Department of Commerce Energy Office - Seniors Helping Seniors Program	Senior adult homeowner retrofit program	40,000
University of Arizona Office of Arid Land Studies	Evaporative cooler study	40,000
Agua Fria-New River and Buckeye-Roosevelt Natural Resource Conservation Districts and Maricopa Water District - Water Conservation Management Program	Irrigation management analysis of agricultural water users through a mobile lab	110,000
Arizona Municipal Water Users Association	Conservation Clearinghouse	52,560

Tucson Active Management Area

<u>Grantee</u>	<u>Project Description</u>	<u>Grant Amount</u>
Arizona Department of Water Resources	Conservation brochure (joint funding)	\$ 2,000
Arizona Department of Water Resources	Water Resource Specialist II position dedicated to conservation assistance	35,722
Green Valley Water Companies	Education and retrofit program	6,000
Arizona Department of Water Resources	Turf management workshop in conjunction with Tucson Water	3,500

Pinal Active Management Area

<u>Grantee</u>	<u>Project Description</u>	<u>Grant Amount</u>
Eloy, Florence - Coolidge, West Pinal Natural Resource Conservation Districts - Irrigation Management Services	Technical and educational assistance to water users through a mobile lab	\$ 92,000
Eloy Natural Resource Conservation District	On-farm water measuring device study	4,000
USDA-ARS, US Water Conservation Laboratory	Interagency management improvement program for irrigated agriculture	10,000
Arizona Department of Water Resources	Conservation brochure (joint funding)	3,000

Prescott Active Management Area

<u>Grantee</u>	<u>Project Description</u>	<u>Grant Amount</u>
Prescott AMA GUAC	Exempt well metering program	\$ 4,000
Arizona Department of Water Resources	Water awareness program for Prescott Unified School system	4,908
City of Prescott	Education and retrofit program	20,000

**PRESCOTT
ACTIVE MANAGEMENT AREA**

The Prescott Active Management Area is situated in the north-central portion of the state, approximately 80 miles northwest of Phoenix, and encompasses roughly 485 square miles. The physical environment in the Prescott AMA is varied, and there are significant differences in elevation, climate, and precipitation within its borders.

There are currently over 200 grandfathered rights within the Prescott AMA's jurisdiction, most of which were granted for crop irrigation. Three large municipal providers are located within the AMA; the City of Prescott, Shamrock Water Company (serving Prescott Valley), and Triangle Development Company (serving Diamond Valley). There is one irrigation district which serves only surface water to its customers.

The City of Prescott recharged approximately 2,000 acre-feet of treated effluent into the aquifer at their recharge site during fiscal year 1991-92.

The use of groundwater in the Prescott AMA has declined during recent years. This is due in large part to the number of irrigated farms which have ceased pumping groundwater for irrigation. The volume of groundwater being withdrawn by municipal and industrial users has increased, but not at a high enough rate to offset the decline in use by agriculture. The accompanying table illustrates the historical change in use by the different sectors since 1985.

Prescott AMA staff routinely administer and field monitor water rights within their jurisdiction. This involves on-site or drive-by verification of approximately 6,000 acres with

irrigation grandfathered rights, and frequent interaction with municipal and industrial rightholders. For calendar year 1991, \$13,793 in withdrawal fees were collected from AMA rightholders for general administration of the Groundwater Code, while an additional \$13,791 was collected for augmentation and conservation assistance.



**PRESCOTT AMA WATER
USE BY SECTOR
(figures in acre-feet)**

<u>SECTOR</u>	<u>1985</u>	<u>1987</u>	<u>1989</u>	<u>1991</u>
Agriculture	11,289	5,674	7,068	5,708
Municipal	4,214	4,726	7,556	7,610
Industrial	745	864	655	475



Activities of the Prescott AMA center around implementation of the Groundwater Code, including the management plan conservation requirements, and involvement in community water issues. Due to the office's location in north-central Arizona, the Prescott AMA is generally viewed as the northern Arizona branch office of DWR and the work load goes far beyond activities typically associated with AMAs. Prescott AMA staff perform many tasks normally handled by the Operations or Adjudications Divisions. The Prescott AMA received over 5,000 telephone inquiries and over 2,000 walk-in inquiries this year.

Management Plan Implementation

Almost all water users within the Prescott AMA are in compliance with the First Management Plan conservation requirements. As a rule, potential compliance issues within the AMA are resolved in concert with staff before they become formalized enforcement cases.

Five requests for administrative review of the Second Management Plan conservation requirements adopted in December, 1989 were received by the Prescott AMA. Two requests were from agricultural users in the Chino Valley area, and three were from the City of Prescott. One request for an administrative review by an agricultural user has been withdrawn, and all other requests for administrative review are currently under consideration for withdrawal by the applicants.

Cooperative Efforts

During this fiscal year the Prescott Chamber of Commerce Regional Water Steering Committee assisted the Prescott AMA staff and the Groundwater Users Advisory Council in conducting a safe-yield study for the Prescott AMA. Results of this study and other related issues will be used to represent the unique status of the Prescott AMA during the planning of the proposed assured water supply rules.

PHOENIX ACTIVE MANAGEMENT AREA

The Phoenix AMA encompasses an area of approximately 5,646 square miles in central Arizona and includes seven groundwater sub-basins. The AMA has an estimated population of 2,120,000 and contains 14 large irrigation districts, 24 small irrigation districts, 48 large municipal water providers and 78 small municipal providers. Agricultural water use was 916,000 acre-feet which represents 58% of the total water used in the AMA (1,580,000 acre-feet), while municipal use comprised 42% or 664,000 acre-feet.

Phoenix AMA staff administer over 8,500 groundwater rights in the Phoenix AMA, Harquahala Irrigation Non-Expansion Area (INA) and Joseph City INA. Approximately 7,500 of these rights are irrigation grandfathered rights, 550 are type 1 and type 2 non-irrigation grandfathered rights, 126 municipal water providers, 38 irrigation districts, and an assortment of other groundwater withdrawal authorities. During this fiscal year, 868 groundwater right conveyances were processed by the Phoenix AMA.

Over 8,000 annual water withdrawal and use reports were processed this fiscal year, resulting in total groundwater withdrawal fees collected of over two million dollars. Of this amount, \$910,913 was collected for administration and enforcement activities, \$978,206 for conservation assistance and augmentation programs, \$21,782 for late fees and non-payment charges and \$139,188 for the Water Quality Assurance Revolving Fund (WQARF). DWR collected

WQARF fees for the Department of Environmental Quality to address regional water quality problems.

Management Plan Implementation

Phoenix AMA rightholders filed over 1,900 requests for administrative review or variance from Second Management Plan requirements in 1990. Approximately 1,800 requests were filed by agricultural rightholders while more than 100 requests were filed by municipal and industrial right holders. As of June 30, 1992, AMA staff had reviewed and resolved 800 administrative review requests.

AMA staff sent out 7,300 flexibility account notices, and processed 75 flex account transfers totalling 5,943 acre-feet.

Since adoption of the First Management Plan in 1984 and the compliance date of 1987 of various mandatory conservation requirements, over 300 rightholders were determined to be significantly out of compliance with these requirements. During this fiscal year, AMA staff worked to resolve compliance issues from previous years. Numerous hearings were held, hundreds of advisory letters sent, stipulation and consent orders signed, and penalties paid. A number of agricultural flexibility account violations were mitigated through the transfer of flexibility account credits.

Cooperative Efforts

Phoenix AMA staff are active in a variety of issues throughout the AMA. During this fiscal year activity has occurred in the following areas:

West Salt River Valley - CAP Water Utilization Study -- This study, initiated by the West Salt River Valley Water Users Group, is designed to identify and evaluate alternatives for putting CAP allotments, held by west side water users, to use. In cooperation with DWR's hydrology staff, the Phoenix AMA is using a computer model to analyze the affects of different levels of CAP utilization on the area's groundwater levels. The study is funded by the Bureau of Reclamation.

Irrigation Management Service -- DWR, through the Phoenix AMA, entered into a three year contractual agreement with the Maricopa County Municipal Water Conservation District Number One and the Agua Fria-New River Natural Resource Conservation District to help finance an irrigation management service for farm lands within those districts. Fiscal year 1991-92 marked the first year of this cooperative effort between the agricultural community and the AMA.

Groundwater Recharge -- AMA staff has worked with various members of the water using community in the area of groundwater recharge, storage and recovery. Numerous pre-application meetings were held with potential project applicants. During this fiscal year two Underground Storage and Recovery projects were permitted allowing a total of 201,100 acre-feet of water to be recharged and eight Indirect Storage and Recovery projects were permitted totalling 227,500 acre-feet of water.

Cooperative Committees -- Staff serve on several cooperative committees including the Arizona Municipal Water Users Association (AMWUA) Water Conservation Committee, the AMWUA Low Water Use Plant Committee and the Salt River Project Joint Planning Committee. They also work with all the major AMA cities, irrigation districts, Maricopa County Government, Soil Conservation Service, Maricopa Association of Governments, Agri-Business Council, U.S. Bureau of Reclamation and the Central Arizona Water Conservation District.

In addition, staff have worked with regulated water users to simplify annual water withdrawal and use reporting requirements. Form simplification and reductions in requested data contributed to a less burdensome process for water users.

PINAL ACTIVE MANAGEMENT AREA

The Pinal AMA encompasses an area of approximately 4,000 square miles in southcentral Arizona and includes five groundwater sub-basins. The AMA has an estimated population of 70,000 people and contains four large irrigation districts, six small irrigation districts, 13 large municipal water providers, and 14 small municipal water providers. Farming is the largest and most vital industry in the Pinal AMA, with cotton as the principal crop.

The Pinal AMA administers around 1,500 Irrigation Grandfathered Rights, involving

over 280,000 acres of farmland. Approximately 250 other groundwater rights and withdrawal permits belonging to various municipalities, private water companies, and industries are also administered. During this fiscal year, 87 groundwater right conveyances were processed by the Pinal AMA and all agricultural rightholders (approximately 1,500) were notified of their flexibility account balances.

A total of 1,758 annual water withdrawal and use reports for calendar year 1991 were distributed and 1,743 were filed, for a response rate of over 99 percent. All of the annual reports received were reviewed for completeness and accuracy, and nearly all rightholders were found to be in compliance with the Groundwater Code.

The 1991 annual reports generated \$461,880 in administration and enforcement fees, \$140,532 in conservation assistance and augmentation fees, \$8,599 in WQARF fees, and \$2,221 in late fees and non-payment charges, for a total of \$613,232.

Management Plan Implementation

The Pinal AMA received 277 requests for administrative review or variance from the Second Management Plan water conservation requirements in 1990, and one additional administrative review request was submitted in 1992. All but four of these requests involved irrigation water duties. By June 30, 1992, the staff had analyzed 250 requests and 85 requests were completed, with one request resolved through an administrative hearing.

The City of Eloy, under a Stipulation and Consent Order (SCO) since February 1991, worked to implement a comprehensive water conservation program, which led the city to use Central Arizona Project (CAP) water at its new golf course instead of groundwater. The SCO is in effect through 1995.

Cooperative Efforts

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

Planning Assistance -- Pinal County is developing a comprehensive plan which includes four planning areas. Pinal AMA staff were appointed to citizen task forces for Planning Areas 2 and 3, which together encompass nearly all portions of the AMA within Pinal County. These task forces met regularly in 1992, first to conduct a series of neighborhood workshops to obtain public input and then to assist Pinal County staff with developing the plan. This involvement by AMA staff provides an excellent opportunity to advocate that assured water supply and other water management concepts be included in the plan.

Irrigation Management Service -- DWR funded the Irrigation Management Service (IMS) for the fifth consecutive year. Total funding of this project over the five years has been approximately \$350,000. IMS

provides extensive on-farm training to irrigators within the Pinal AMA to improve their management of irrigation water. IMS performed 41 on-farm evaluations during fiscal year 1991-92. The program is a cooperative effort involving DWR, three local Natural Resources Conservation Districts, and the U.S. Soil Conservation Service.

Inter-agency Management Improvement Program (IMIP)

-- The Pinal AMA staff continued its involvement with the Inter-agency Management Improvement Program (IMIP) for the Maricopa-Stanfield Irrigation and Drainage District (MSIDD). This long-term study, the first of its kind in the United States, is designed to examine the ability of an irrigation district to deliver water efficiently, evaluate the effectiveness of existing conservation programs, and identify on-farm conservation improvements to increase growers' profitability margins. Other parties involved in the study include local growers, the Central Arizona Water Conservation District, Arizona Department of Environmental Quality, University of Arizona College of Agriculture, Irrigation Management Service, U.S. Department of Agriculture and the U.S. Bureau of Reclamation.

In March 1992, the IMIP published its research findings in the form of a Diagnostic Analysis. The findings were used to establish three performance areas, for which a set of coordinated action plans is being developed. The three performance areas were:

- 1) The overall economic viability of irrigated agriculture in the district;
- 2) The management of the farm units, MSIDD, and their interface; and
- 3) Technology upgrading and new technology adoption, both on and off farm.

TUCSON ACTIVE MANAGEMENT AREA

The Tucson AMA encompasses an area of approximately 4,500 square miles in southern Arizona and includes two groundwater sub-basins. The AMA has an estimated population of 682,000 people and contains one irrigation district, 44 large municipal water providers, and 138 small municipal providers. Municipal water use has a large impact on the AMA's water budget, consuming 46% of the total water use (293,000 acre-feet) in 1991. Agricultural water use has declined from 44% to 35% of the total water use since 1984.

The Tucson office administers 1,575 water rights in the Tucson AMA and the Douglas INA. During this fiscal year, 1,535 annual water withdrawal and use reports and 34 groundwater right conveyances were processed by the Tucson AMA. All agricultural rightholders (504) were notified of their flexibility account balances; 12 flexibility account credit transfers totalling 7,506 acre-feet were processed.

The 1991 annual reports generated \$309,356 in administration and enforcement fees, \$465,684 in conservation assistance and augmentation fees, \$115,850 in WQARF fees, and \$5,407 in late fees and non-

payment charges, for a total of \$896,297. As of August of 1992, \$792,348.88 in augmentation fees was transferred to the Santa Cruz Valley Water District; these funds derived from withdrawal fees from 1989, 1990 and 1991 withdrawals.

Management Plan Implementation

Since adoption of the First Management Plan in 1984, the Tucson AMA has confirmed that a total of 23 rightholders (15 municipal, 6 industrial, and 2 agricultural) were not in compliance with their conservation requirements. Of these, 13 cases were fairly minor and were handled through an advisory letter. Three municipal providers implemented comprehensive conservation programs pursuant to Stipulation and Consent Orders. Two rightholders paid civil penalties, leaving 5 cases awaiting resolution. An additional 175 audits and 41 compliance actions were taken for failure to file annual reports, measuring violations, and other violations of the Groundwater Code.

Tucson AMA rightholders filed 140 requests for administrative review or variance from Second Management Plan conservation requirements in 1990, including 115 from agricultural interests, 12 municipal and 7 turf. By June 30, 1992, the staff had analyzed 99 requests and 25 requests were completed or withdrawn.

Cooperative Efforts

Tucson AMA staff are active in the community, attempting to facilitate resolution of numerous water issues. Following are

examples of such efforts that occurred during fiscal year 1991-92:

Rillito Recharge Project -- The Project is an inter-governmental groundwater recharge demonstration project which is managed by the Tucson AMA in cooperation with Tucson Water and the Pima County Flood Control District. A document on transferable recharge technologies was produced and progress was made toward selecting the preferred design, with the assistance of a consultant.

Santa Cruz Valley Water District -- Support was provided to the new District's Board and Directors. Tucson AMA staff served on committees working on developing the operating plan for the District, a public input process, and addressing governance issues. The District's operating funds come from withdrawal fees collected by DWR and managed through the Tucson office.

CAP Terminal Storage -- Reliability is a key issue in CAP utilization in the Tucson area; the City of Tucson has the largest municipal CAP allocation, and is implementing a complete redesign of their delivery system to accommodate CAP. Tucson AMA staff participate in terminal storage discussions involving CAWCD and the Bureau of Reclamation through the Southern Arizona Water Resources Association. Progress on terminal storage

continued to be limited, though the City of Tucson did develop a joint surface reservoir/groundwater recharge option that is generally supported by the community.

SAWRSA -- The Southern Arizona Water Rights Settlement Act of 1982 has never actually been implemented. Lack of implementation of the 1982 Act is due to a variety of unresolved issues including: "replacement water" for the effluent acquired by the Secretary of the Interior from the City of Tucson has never been identified, the delivery systems for CAP water and other farm improvements have not been completed, and the allottees within the San Xavier District have failed to withdraw their lawsuit. During fiscal year 1991-92 amendments to the settlement were considered that would assist in resolution of some of these outstanding issues. Tucson AMA staff participated in inter-agency negotiations and reviewed proposed amendments.

Assured Water Supply -- Tucson AMA staff were assigned responsibility for coordinating development of draft assured water supply rules for implementation statewide. During fiscal year 1991-92 a concept paper on "Consistency with the Management Goal" was developed and distributed statewide. Public meetings were held in all four AMAs, with comments collected for use in developing the draft rules.

GROUNDWATER USERS ADVISORY COUNCILS

The Groundwater Code established a five person Groundwater Users Advisory Council (GUAC) for each Active Management Area. Council members are appointed by the Governor to six year terms. Advisory Council meetings are held either monthly or bi-monthly in each of the AMA's. The Advisory Councils review groundwater management programs in their respective AMAs, and provide advice and comments on such matters as management plans, proposed rules and pending legislation.

GUAC members serving during fiscal year 1991-92 are listed below, including the year their term expires:

PRESCOTT AMA

Ken Shafer, Chair, resigned 1/92
Rink Goswick, 1993
Marshall Hartman, 1993
Linc Hathaway, 1998
John Olsen, 1994 (replacing Shafer)
Ed Smith, 1994

PHOENIX AMA

Sue Lofgren, Chair, 1992
Kent Cooper, Vice-Chair, resigned 5/92
Frank Fairbanks, 1996
Bruce Heiden, 1996
John Lassen, 1994

PINAL AMA

Russ Schlittenhart, Chair, 1996
Dean Weatherly, Vice-Chair, 1998
Oliver Anderson, 1996
Jamie Gillum, 1994
David Snider, 1994

TUCSON AMA

Ron Morriss, Chair, 1996
Bill Ealy, Vice-Chair, 1994
Warren Culbertson, 1996
Hugh Holub, 1994
Priscilla Robinson, 1998

Highlights of GUAC Activity

During the spring of 1992 each GUAC reviewed applications and made recommendations to the Director for the first Conservation Assistance Grants. A total of 47 grant applications were received. Based on the GUAC's recommendations, DWR's Director awarded 16 grants totaling more than \$457,000. A full list of conservation projects, grant recipients and the amounts awarded are listed on page 15.

Each AMA's GUAC was also involved in a variety of diverse activities. The Prescott AMA GUAC focused on supporting local efforts to insure that the AMA's unique status was represented in the Department's proposed assured water supply rules.

The Phoenix AMA GUAC was active in a number of issues during this fiscal year including: reviewing the modification proposals for the Second Management Plan and making recommendations on them to the Director; recommending annual groundwater withdrawal fees to the Director; supporting the Statewide Plumbing Efficiency Act (H.B. 2440) and Omnibus Water Bill (S.B. 1102); and hosting the Third Annual Joint GUAC meeting.

Other issues discussed by the Phoenix AMA GUAC were DWR's assured water supply rule concepts, potential implementation of a Phoenix Groundwater Replenishment District, the State Water Resources Assessment and CAP issues.

During this fiscal year the Pinal AMA GUAC established policies and procedures for evaluating future water augmentation and recharge projects under the Pinal AMA's Augmentation Program. The Pinal AMA GUAC commented on a variety of legislative matters, including the Instream Flow and Riparian Area Protection Bill (H.B. 2404), the Riparian Area Control Bill (S.B. 1349), and other water-related legislation. The GUAC also strongly supported legislation to establish an augmentation authority for the Pinal AMA (H.B. 2198). Additional issues addressed by the GUAC included Colorado River issues, DWR assured water supply rule concepts, modifications to the Second Management Plan, alternatives to irrigation water duties, the conservation assistance and augmentation fee, the Pinal County Comprehensive Plan, and long-range water resources planning for Florence, Coolidge and Eloy.

The Tucson AMA GUAC discussed a number of issues during fiscal year 1991-1992. Ongoing developments associated with the Santa Cruz Valley Water District (formerly the Tucson AMA Augmentation Authority) were a frequent topic including legislative agendas, governance, financing, and the role of the GUAC and the District within the boundaries of the Tucson AMA. The GUAC reviewed and commented on proposed Second Management Plan modifications, including the development of the Conservation Assistance program. Other issues addressed included the EPA Border Plan and other border related issues, setting of the annual withdrawal fees, alternative conservation requirements for agricultural

users, and the concept paper on consistency with the management goal for the assured water supply rules. The Tucson AMA GUAC was briefed on CAP utilization issues, and adopted positions on CAP terminal storage, exchange contracts and reallocation.

OPERATIONS DIVISION

The Operations Division is responsible for processing all surface water, groundwater and adjudication filings and well drilling licenses. As the custodian of most public records for the Department, the Operations Division manages both computer and physical files. The division staff assists the public in filing water rights documents, responds to information requests and collects permit and groundwater withdrawal fees. Two main sections make up the Operations Division: groundwater systems and surface water rights.

Groundwater Systems Section

During fiscal year 1991-92, the Groundwater Systems Section completed numerous functions required by statute and rule. These functions included:

- Processing 11,314 annual groundwater withdrawal and use reports and depositing \$3,572,876 in withdrawal fees.
- Issuing approvals to drill 3,489 new wells and updating ownership of 1,716 existing wells.
- Issuing permits for 10 projects to recharge or store and recover groundwater.

- Issuing 329 well-drill licenses and/or renewals.
- Issuing 36 new groundwater withdrawal permits.
- Responding to 699 public requests for computer generated information on groundwater and surface water rights or copies of file documents.

Surface Water Rights Section

The Surface Water Rights Section performed numerous administrative actions required by statute and rule involving rights to use surface water. Administrative actions this fiscal year included:

- Accepting and processing 76 applications to appropriate surface water.
- Conducting administrative cancellation of 46 surface water right filings.
- Issuing 146 permits to appropriate surface water.
- Issuing 275 surface water right certificates.
- Processing 1,022 filings for change of ownership of surface water rights.
- Accepting and processing 34 new claims for stockpond water rights and issuing 135 stockpond water rights certificates.
- Accepting and processing 1,183 statements of claimants submitted for inclusion in the ongoing water rights adjudication proceedings.

WATER MANAGEMENT SUPPORT DIVISION

The Water Management Support Division provides technical assistance to the Department in the area of water quality and promotes public awareness and appreciation of the nature and importance of water. The division is responsible for the integration of water quality concerns in the Department's water resource management and planning programs. In addition, the division provides conservation and education assistance to water users and providers to ensure wise water use.

Water Quality Section

The Water Management Support Division continued its water quality activities during the fiscal year. Division staff provided administrative and technical oversight for the following federal Superfund sites in Arizona: North Indian Bend Wash, South Indian Bend Wash, Hassayampa Landfill, Apache Powder Co., Phoenix Goodyear Airport, Luke Air Force Base, Williams Air Force Base, Tucson Airport Area, Motorola 52nd Street, and Yuma Marine Corps Air Station. Staff also participated in consent decree negotiations for cleanups at these sites, and reviewed the final Record of Decision and Proposed Plan documents for the North Indian Bend Wash site.

The division continued administration of the Department's Poor Quality Groundwater Permit program, meeting with permittees, drafting permits and reviewing quarterly reports. The division's Geographic Information Systems staff generated maps

and charts for the State Water Resources Assessment and for water quality and other purposes.

In early 1992, Project SLIM recommended the elimination of many of the Department's water quality activities. However, the Department has continuing responsibilities governing the withdrawal and use of water from Superfund sites, and will continue to conduct groundwater quality assessments in the four AMAs for use in the water management plans.

Education Section

The Department's Environmental Education Program is diverse and extensive. Education staff act as facilitators at educator conferences, seminars and workshops; meet with the public at major environmental events; develop information and water education materials for statewide use; oversee distribution of the Department's materials through regional Distribution Centers; coordinate in-school conservation programs in two counties; fill educators' and youth groups' requests for materials; actively participate as a member of Arizona's Interagency Committee on Environmental Education; and assist other agencies in developing new water education teaching tools.

During fiscal year 1991-92 DWR's education programs, materials and teaching tools reached over 168,600 students, 480 educators and 110,800 members of the general public.

Achievements during this time frame included: coordination of, and participation in, the Interagency Committee On Environmental Education's first "Arizona Mini-Summit on Environmental Education; establishment of a new Distribution Center for materials at Red Rock State Park in Sedona; participation in EarthFest '92 and the Maricopa County Fair's "Environmental Expo;" distribution of DWR's water education materials to students in 9 counties; coordination and administration of a middle school water conservation program in the Prescott and Pinal AMAs; and hands-on training of educators at five major environmental conferences and workshops.

In addition, DWR's Education staff worked with the Arizona Departments of Environmental Quality and Agriculture, and SAWARA to create new fact sheets on groundwater, nitrates and household hazardous waste. These materials are now being used by our Operations Division staff with well drillers, and as part of a household hazardous waste teacher's packet with student activities.

Staff also provided support to the Natural Resource Education Project, part of the Big Sandy Natural Resource Conservation District, in developing a community wide Water Conservation And Education Plan for the City of Kingman. DWR's contributions to the project included program planning, research on sources and costs for appropriate products, and providing a variety of materials, teaching tools and videos for use by 39, K-6 educators and 1,277 youth.

PLANNING SUPPORT DIVISION

The Planning Support Division is responsible for water resource planning activities within the Department which includes planning assistance to outside organizations. This year's water resource planning activities included:

State Water Resources Assessment --

The State Water Resources Assessment will describe the current water supply and demands in Arizona and the projections for the next 50 years. Staff prepared baseline population estimates and projections for all groundwater basins in the state, population analyses and water use by sector. Geographical Information System support was provided as well as assistance in drafting text for the region profiles.

Upper San Pedro Water Management Council -- The San Pedro Water Management Council was created by the Cochise County Board of Supervisors to evaluate water resource issues and management options within the Upper San Pedro Basin. Division staff represented the Department on the Council and chaired the Technical Review Subcommittee.

Verde Watershed Bridging Committee -- The Verde Watershed Bridging Committee was established to develop the purpose and structure of a permanent, locally directed organization that would focus on natural resource issues in the Basin. The permanent organization will be made up of community leaders, landowners, organizations and agencies, and will

coordinate solutions to resource problems for the entire Verde Basin. The Bridging Committee was directed to conclude its studies and produce a set of recommendations by December 1992. Division staff participated in this process and provided technical support to the Committee.

Geographical Information Systems (GIS) Support -- GIS gives DWR the ability to analyze and display spatial water resource data to assist in planning and management programs. During fiscal year 1991-92, division staff developed methods to integrate water provider service areas with 1990 census data. They also mapped instream flow applications and perennial streams in Arizona, and produced many of the maps needed for the State Water Resources Assessment.

Second Management Plan Augmentation Program -- The Groundwater Code required the Department to include a water supply augmentation program in the Second Management Plans. The following studies were underway during the year:

- **Arizona Atmospheric Modification Program** -- Supported by a team of atmospheric scientists from the University of Arizona, the National Oceanic and Atmospheric Administration and the National Center for Atmospheric Research, the Department is exploring the feasibility of utilizing cloud seeding to increase water supplies in Arizona. The Department's role in this multi-year program is to manage the funding and

coordinate activity among the various agencies.

- **Continuous Flow Model** -- The division is involved in a cooperative study with the Corps of Engineers to develop a continuous flow simulation model for Arizona rivers. The model will be used for predicting runoff and channel losses in the Salt and Verde River systems. In fiscal year 1991-92 Phase I of the model development was completed and tested for small experimental watersheds. Phase II will determine if the model can be successfully used to model precipitation runoff processes on larger watersheds.
- **Arizona Water Resources Study** -- Through the U.S. Department of Agriculture River Basin Program, this study is evaluating the economic and environmental impacts of managing watersheds for multipurpose objectives including increased water yield. During the year, the Planning Support Division represented the Department on the study management committee and provided staff support to the study work team.

OFFICE OF ENGINEERING AND ADJUDICATIONS

The Office of Engineering and Adjudications is comprised of four divisions: Colorado River Management, Hydrology, Adjudications and Engineering. Each division has distinct responsibilities. In addition to the specific responsibilities of the four divisions, the Office of Engineering and Adjudications represents the Department in Indian water rights settlement negotiations, coordinates with members of Congress in developing federal legislation which affects Arizona's water resources, and consults and cooperates with federal agencies and representatives from other states on federal and interstate water resource matters which affect Arizona.

In fiscal year 1991-92 the office was involved in discussions with the Colorado River Basin State representatives on issues related to satisfying future water needs of California and Nevada. Also, considerable effort went into working with the Bureau of Reclamation, the Central Arizona Water Conservation District and water users with the objective of resolving financial and water utilization problems associated with the Central Arizona Project.

COLORADO RIVER MANAGEMENT DIVISION

The United States, through the Department of the Interior's Bureau of Reclamation, is responsible for operation of the Colorado River reservoir system and

contracting for all uses from the river. One of the Department's major functions is coordinating with the Secretary of the Interior on all matters related to the use and operation of the Colorado River. This involves recommending allocations and contracts for river water, consulting with the Department of the Interior in the development and administration of the Colorado River Annual Operating Plan and representing the State of Arizona in the various forums and work groups which address Colorado River issues. These activities are accomplished through working with representatives of the other six Colorado River Basin states, various federal agencies, Indian tribes, the U.S. Congress, local governments and water users within Arizona. The activities generally require engineering, legal, environmental and economic analysis.

The major activities of the Colorado River Management Division in fiscal year 1991-92 were:

- Participating in reviewing the long-range operating criteria that the U.S. Bureau of Reclamation must follow for the Colorado River reservoir system.
- Participating in the drafting of rules and regulations governing the administration of Lower Basin Colorado River entitlements.
- Participating in the National Environmental Protection Act process associated with the Glen Canyon

Environmental Impact Statement and reviewing information developed for the Glen Canyon Environmental Studies.

- Participating in various interstate committees, including the Colorado River Basin Salinity Control Forum, Colorado River Basin Water Quality Advisory Council, Western States Water Council, Colorado River Management Work Group, and Vegetative Management Work Group.

DWR continued meeting with the Colorado River Basin State representatives to discuss proposals by California water users which would modify operations of the Colorado River reservoir system. The proposed modification would allow use of more Colorado River water by California until such time as programs are implemented in California to resolve their water supply problems without reliance on additional Colorado River water.

HYDROLOGY DIVISION

The Hydrology Division serves as a technical arm of DWR. Its main functions are statewide water resource data collection and analysis, maintenance of the State's Groundwater Site Inventory (GWSI) database and provision of technical assistance to other areas of the Department. The division consists of four sections: Surface Water/Recharge, Assured Water Supply, Basic Data, and Modeling.

Surface Water/Recharge Section

The Surface Water/Recharge Section is responsible for reviewing applications for various types of recharge projects, instream flow permits and other applications to appropriate public waters. The review process includes meeting with the applicants, field inspections, and technical reviews of hydrologic reports (if required). Activity in the groundwater recharge program in fiscal year 1991-92 included attending 14 pre-application meetings, followed by the receipt of 11 applications for recharge projects, and the issuance of 9 permits to recharge water.

Regarding applications for instream flow water rights, the Surface Water/Recharge section received 3 applications, made 6 site inspections, approved 4 technical studies, and recommended issuance of 5 permits and one certificate.

This section also conducts special studies in support of the ongoing Gila River and Little Colorado River general stream adjudications. During fiscal year 1991-92, staff completed a hydrologic report on the general hydrology of the Upper Salt River system in support of the Upper Salt Hydrographic Survey Report.

Analysis of technical data is provided by this section in support of a wide variety of Department projects, including: reviewing proposed augmentation projects, developing concepts relating to riparian legislation proposals, assisting in developing guidelines for filing of instream flow water rights and providing hydrologic services for the State Water Resources Assessment.

Assured Water Supply Section

The Assured Water Supply Section is responsible for processing applications for assured and adequate water supply determinations. Under Arizona's Groundwater Code, real estate developers in AMAs must demonstrate that sufficient water exists for new developments before land can be subdivided. Outside of AMAs the law requires a department determination of adequacy or inadequacy before subdividing. Public disclosure is required if the supply is inadequate, but outside of AMAs state law does not prohibit development based on an inadequate supply. The assured water supply program provides consumer protection for new home buyers and assists in managing the State's water supplies.

Depending on the type of water provider and geographic location of the development, the following determinations and reviews are conducted: certificates of assured water supply are issued inside of AMAs; adequacy statements are issued for subdivisions outside of AMAs; and designations are made for water provider's service areas as having adequate or assured supplies throughout the state.

The Assured Water Supply Section reviews well impact analyses to make sure proposed wells in AMAs do not adversely impact existing water users. They also undertake special studies for areas with anticipated high growth or water shortages. Section staff assisted in preparing the State Water Resources Assessment by analyzing aquifer systems to determine future water production and dependability.

During fiscal year 1991-92, the Assured Water Supply Section reviewed and issued

10 certificates of assured water supply, 38 water adequacy statements, 30 domestic water reports, 3 hydrologic studies, 36 well impact analyses and 4 groundwater basin assessments.

Basic Data Section

The Basic Data Section is responsible for the timely and accurate collection and dissemination of groundwater data for the State. Such data include well logs, water levels, site and owner verification, and general chemistry water-quality analyses. This program of data collection is in its 52nd year of cooperation with the U.S. Geological Survey. Currently, the Basic Data Section collects virtually all groundwater data within the State, while the U.S. Geological Survey is responsible principally for surface-water data collection.

Field data collection efforts in fiscal year 1991-92 concentrated on the Phoenix Active Management Area to update work performed during 1983. Over 2,000 water levels were obtained, marking the first time the entire AMA was measured in a single season. In support of water management, discharge measurements were performed on about 300 wells in the AMAs, and some 500 wells in the Tucson AMA were inventoried. In the annual well monitoring programs, which cover virtually the entire State, about 1,300 water levels were measured and about 130 water-quality samples were collected.

Data reduction and report writing continued for Hydrologic Map Series reports scheduled to be published during the next two fiscal years. The reports will be on the following basins: Upper San Pedro, Phoenix

AMA, Big Chino Subbasin, Wilcox and Douglas. Also, over 1,700 public inquiries for well records and other groundwater data were recorded.

Modeling Section

The Modeling Section is responsible for two principal functions: developing hydrologic computer models for specific geographic areas and maintaining an updated hydrologic database in a form accessible to other DWR divisions and the public. The models are digital replicas of groundwater basin conditions, and are used as predictive and planning tools in support of many of the Department's mandated functions.

Aside from Groundwater Code activities, modeling efforts support the adjudication program, cooperative efforts with ADEQ, development of riparian protection strategies, recharge programs, Colorado River planning, local government planning efforts (Upper San Pedro and Yuma areas), and Department responses to legislative requests.

Projects accomplished during the year included: analysis of various additional water management scenarios after completion of the Pinal AMA model; continued modeling support to ADEQ on a Superfund site; analysis of Phoenix AMA water management scenarios for utilization in the Phoenix AMA model; and developing and maintaining data bases for several state and federal agencies and private consulting firms working on local and regional projects.

ADJUDICATIONS DIVISION

Throughout the western United States, each state has its own statutory process 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 adjudications are conducted under the authority of Arizona Revised Statutes §§45-251 to 45-260. The Arizona Supreme Court assigned the general adjudication of the Gila River system to Judge Stanley Z. Goodfarb of the Maricopa County Superior Court. The Little Colorado River general adjudication is being conducted in the Apache County Superior Court under Judge Allen G. Minker. Special Master John E. Thorson was appointed by the Supreme Court to conduct hearings and recommend a determination of rights for both adjudications.

The Arizona adjudication statutes direct DWR to provide administrative and technical assistance to the courts conducting the general adjudications. The Adjudications Division is responsible for both of these functions. There are five sections within the Division: Administrative Support, Investigations, Litigation Support, Technical Support, and Mapping.

The primary technical function performed by the Division is to investigate all claims in the two ongoing general adjudications and prepare comprehensive Hydrographic Survey Reports (HSRs) for watershed areas within each river system. These HSRs are typically six to nine volumes in size 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 or Special Master. These include technical assessments of Indian water right settlements brought before the adjudication Court for its approval, reports which identify and illustrate legal issues which must be resolved during the course of the general adjudication, special reports on the hydrology of a river system or on the hydrologic relationship between groundwater and surface water, and reports which brief the Court on unique problems encountered in preparing an HSR such as integrating existing water right decrees into the eventual general stream adjudication decree.

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.

During fiscal year 1991-92, the Division filed the San Pedro River watershed HSR with the Gila River general adjudication Court. As part of preparing that report 8,017 claimed water uses and numerous unclaimed water uses were investigated, categorized, and many were mapped. The Division also prepared two technical reports on legal issues being litigated in the Little Colorado River general adjudication: the first on issues associated with quantifying water rights and the second on issues associated

with discontinued uses. Investigations also continued toward preparing future HSRs in the Upper Salt River watershed, Upper Little Colorado River watershed, the Upper Verde River watershed, and in the Upper Gila River watershed.

The Division mailed approximately 23,000 notifications to claimants in the Gila River system informing them of the official filing of the San Pedro River HSR with the Court and the deadline for filing objections to the HSR with the Court. The Division responded to over 2500 inquiries from the general public, claimants, and claimant's attorneys.

ENGINEERING DIVISION

The major function of the Engineering Division is to carry out the Department's statutory responsibilities related to flood control, floodplain management, flood warning and safety of dams. The division has two sections: Safety of Dams & Flood Engineering and Floodplain Management.

Safety of Dams & Flood Engineering Section

The Department oversees the design, construction, operation and maintenance of nonfederal 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 acre-feet.

As of June 30, 1992, there were 198 dams under state jurisdiction. During the fiscal year, the Safety of Dams & Flood Engineering Section made 58 construction and operational inspections and approved

eight applications (one for construction of a new dam; one for enlargement, five for alteration and one for removal of existing dams). The section also performs activities related to flood control, including providing assistance in developing flood control projects, construction of early flood warning projects, delineation of floodplains and setting state standards for floodplain management.

In fiscal year 1991-92, the section performed two studies for flood warning projects, two floodplain delineations and provided planning assistance for 3 flood control projects. Approximately \$1,900,000 is committed or available for completion of various projects.

The state cooperates with the National Weather Service and the USGS in a state-wide flood warning system which includes thirty-four satellite telemetered gages. In addition, DWR is state coordinator for six flood alert systems. The Department assisted in the planning, design, installation and construction of systems in Sedona, Prescott, Gila County, Pinal County and Clifton.

Flood Management Section

The function of the Flood Management Section is to assure that all Arizona communities are participants in the National Flood Insurance Program (NFIP) and to assist communities with any problems that may arise as a result of their participation in the NFIP.

During fiscal year 1990-91, the Community Rating System was introduced by the Federal Emergency Management

Agency. This program credits communities for floodplain management activities that are more stringent than those required by the NFIP regulations and allows for insurance premium reductions for buildings in those communities. DWR staff assisted Arizona communities in completion of their applications for the program. Twenty-four communities qualified for a 5% credit in the first year. This year three additional communities qualified for the 5% credit, two of the original communities were rated Class 7 for a 15% discount and four were a Class 8 for a 10% discount.

Three workshops on floodplain management were held for local officials, and four quarterly floodplain management newsletters were completed.

The State Standards Work Group, which was formed last year to present additional technical and administrative criteria for floodplain delineation to DWR's Director, continued to function. The first floodplain delineation standard was adopted during the report year. DWR received the Tom Lee State Award from the Association of State Floodplain Managers. The award is for excellence in floodplain management and was given to DWR in recognition of the State Standards Work Group.

Staff represented DWR on both the Federal and State Hazard Mitigation Teams and are participating in writing the State Hazard Mitigation Plan, which will identify ways to decrease damage from future floods. Hazard mitigation strategies to reduce flooding can include evacuation plans, removing relocating or floodproofing existing structures or installing flood warning systems.

OFFICE OF ADMINISTRATIVE SERVICES

The Office of Administrative Services has two divisions: Administration and Management Information Systems. Both divisions provide important support to all areas of DWR and help the Department run more efficiently.

ADMINISTRATION DIVISION

The Administration Division is responsible for the administrative functions of the Department, including administrative policy and procedures, budget development and implementation, personnel and affirmative action, fiscal monitoring and reporting, accounting and payroll, purchasing, risk management, contracts, mail delivery, motor pool, volume copying and property management.

During fiscal year 1991-92, the Administration Division fully implemented, within the Department, the Arizona Department of Administration's (DOA) computerized human resource management and payroll system. The division also began implementation of the DOA's uniform statewide accounting system. These computerized systems will significantly streamline accounting functions.

To assure consistency in contract development within the Department, contract procedures were implemented which streamline and expedite the various contract processes.

MANAGEMENT INFORMATION SYSTEMS DIVISION

The Management Information Systems Division (MIS) supports the information processing requirements of the agency. The division's responsibilities include development and maintenance of applications supporting agency functions.

MIS also supports programs using remote sensing, geographic information systems (GIS), office automation systems and computer networks within the Department and with other agencies.

During fiscal year 1991-92, the MIS Division was involved in a number of projects aimed at enhancing the availability and security of agency data. The Division implemented a local area network, consisting of hardware and software, to link computers within the Department. At the end of the fiscal year, 92 of the 160 agency personal computers were linked and serve as office automation workstations. The Electronic Docket and Compliance Investigation Tracking applications supporting the Adjudications Division, the Courts and the Legal Division were installed on the mainframe utilizing new database software.

Long-term projects were initiated to:

- 1) replace the GIS hardware with new technology;
- 2) provide agency-wide information databases;
- 3) interconnect agency networks; and
- 4) share computerized data with other State and Federal agencies.



**ARIZONA DEPARTMENT OF WATER RESOURCES
FINANCIAL INFORMATION
Fiscal Year 1991-92**

REVENUE TOTALS

Withdrawal Fees Deposited in the General Fund	\$1,758,000
Groundwater Enforcement Fund	31,400
General Adjudications Fund	46,300
Augmentation & Conservation Fund	1,744,700
Non-Emergency Dam Repair Fund	106,000
State Water Storage Fund	5,844,100
Administration Fund	5,600
Surface/Groundwater Trust Fund (Weather Modification)	299,200
Flood Control Loan Fund	79,800

**ARIZONA DEPARTMENT OF WATER RESOURCES
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OTHER NON-APPROPRIATED FUND EXPENDITURES

GROUNDWATER ENFORCEMENT FUND

Personal Services	\$38,900
Employee Related Expenses	6,400
Professional & Outside Services	100
Travel	100
Other Operating Expenses	<u>20,300</u>
Total	\$65,800

SURFACE/GROUNDWATER TRUST

Personal Services	\$7,800
Employee Related Expenses	1,700
Professional & Outside Services	295,200
Travel	10,400
Other Operating Expenses	6,800
Equipment	<u>10,900</u>
Total	\$332,800

AUGMENTATION AND CONSERVATION FUND

Personal Services	\$4,300
Employee Related Expenses	900
Professional & Outside Services	235,900
Other Operating Expenses	792,400
Equipment	12,600
Transfer to General Fund (H.B. 2001)	<u>350,000</u>
Total	\$1,396,100

**ARIZONA DEPARTMENT OF WATER RESOURCES
FINANCIAL INFORMATION
Fiscal Year 1991-92**

**OTHER NON-APPROPRIATED FUND EXPENDITURES
(continued)**

GENERAL ADJUDICATION FUND

Other Operating Expenses	\$32,700
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NON-EMERGENCY DAM REPAIR

Professional & Outside Services	\$261,300
Transfer to Navajo County	1,495,700
Transfer to General Fund (H.B. 2001)	<u>200,000</u>
Total	<u>\$1,957,000</u>

EMERGENCY DAM REPAIR

Transfer to General Fund (H.B. 2001)	\$450,000
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FLOOD CONTROL LOAN FUND

Transfer to Alternate Flood Control Assistance Fund (H.B. 2098)	\$535,000
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ALTERNATE FLOOD CONTROL ASSISTANCE FUND

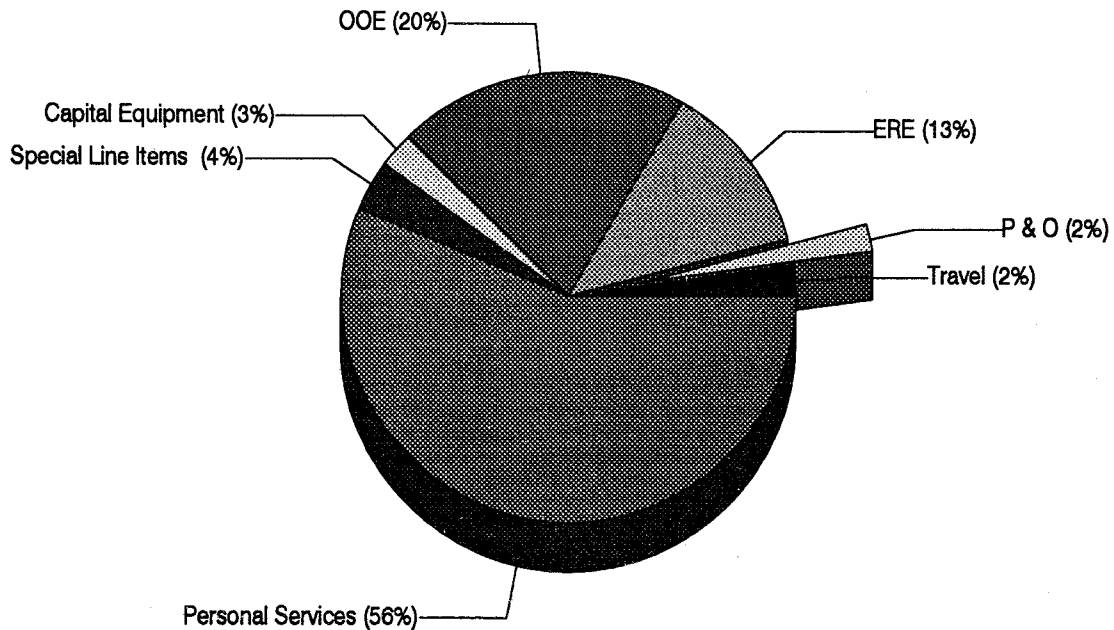
Transfer to Department of Emergency Services (H.B. 2139)	\$479,300
Administrative Adjustment	51,600
Equipment	<u>4,100</u>
Total	<u>\$535,000</u>

ARIZONA DEPARTMENT OF WATER RESOURCES
FINANCIAL INFORMATION
Fiscal Year 1991-92

GENERAL FUND EXPENDITURES
by Expense Classification

	<u>AMOUNT</u>
Personal Services	\$6,194,300
Travel	248,300
Employee Related Expenses (ERE)	1,405,000
Professional and Outside Services (P&O)	205,800
Other Operating Expenses (OOE)	2,270,200
Capital Equipment	291,000
Special Line Items	<u>405,800</u>
Total Expenditures	\$11,020,400

GENERAL FUND EXPENDITURES

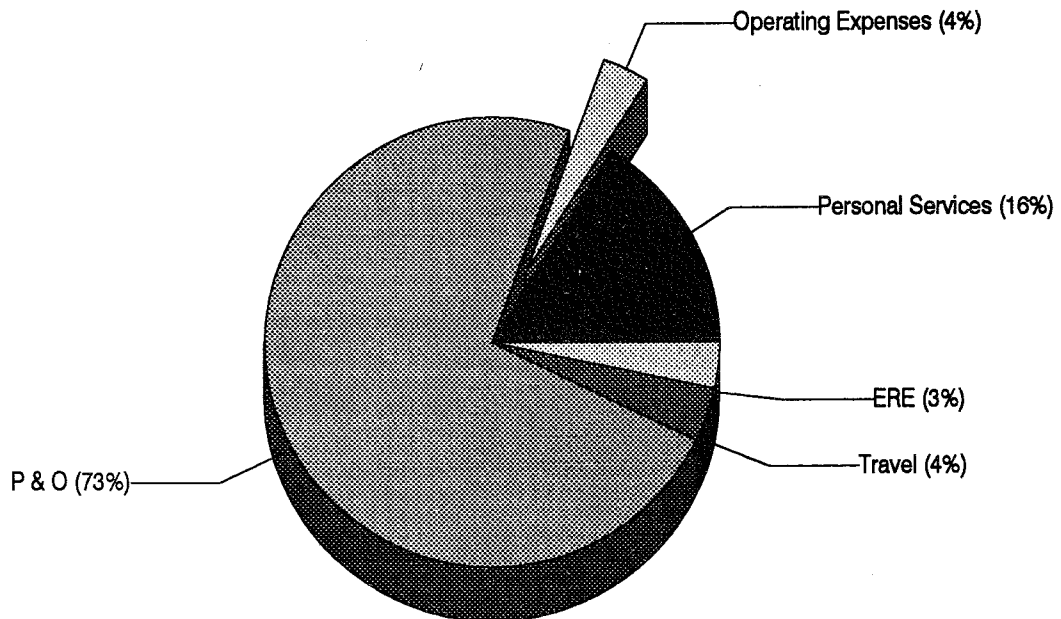


ARIZONA DEPARTMENT OF WATER RESOURCES
FINANCIAL INFORMATION
Fiscal Year 1991-92

FEDERAL FUND EXPENDITURES
by Expense Classification

	<u>AMOUNT</u>
Personal Services	\$62,200
Employee Related Expenses (ERE)	12,900
Professional & Outside Services (P & O)	282,600
Travel	15,000
Operating Expenses	13,300
Total Expenditures	\$386,000

FEDERAL FUND EXPENDITURES



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