PERFORMANCE AUDIT

DEPARTMENT OF WATER RESOURCES

ARIZONA WATER COMMISSION

Report to the Arizona Legislature
By the Auditor General
August 1989
89-4

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August 31, 1989

Members of the Arizona Legislature
The Honorable Rose Mofford, Governor
Mr. William Plummer, Director
Department of Water Resources
Mr. Pete Shumway, Chairman
The Arizona Water Commission

Transmitted herewith is a report of the Auditor General, a Performance Audit of the Department of Water Resources and Arizona Water Commission. This report is in response to a June 2, 1987, resolution of the Joint Legislative Oversight Committee.

The report addresses problems with the groundwater code including its safe-yield, assured water supply and municipal conservation provisions. The report concludes that more effort is needed to protect the public from hazardous open wells. The report also identifies areas in which several million dollars could be saved annually by requiring those primarily benefitting from services to pay a greater share of the program's costs. Finally, the report concludes that the Arizona Water Commission should be allowed to terminate under the provisions of the Sunset Law and be replaced with an advisory council with statewide membership.

My staff and I will be pleased to discuss or clarify items in the report.

Sincerely,

Douglas R. Norton

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Auditor General

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SUMMARY

The Office of the Auditor General has conducted a Sunset Review of the Arizona Department of Water Resources in response to a June 2, 1987, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

The Department of Water Resources (DWR) was established in 1980 when the Groundwater Management Act became law. DWR administers all State water law except those laws relating to water quality. Primary responsibilities include implementing the groundwater code, supporting the adjudication of water rights, ensuring safety of dams, implementing surface water law, surveying water resources statewide, and assessing water quality in conjunction with the Department of Environmental Quality. DWR is funded primarily through general fund appropriations. The Legislature appropriated approximately $12.7 million and 223 full-time equivalent staff to DWR for fiscal year 1988-89.

To Help Ensure More Effective Water Management, the Legislature Should Address Several Problems That Have Surfaced Since the Groundwater Code's Inception in 1980 (see pages 13 through 21)

The Legislature should consider addressing problems that have developed since the groundwater code was enacted. Although the code reflects Arizona's need for strong water regulation and has resulted in better water management, several key provisions of the code may not always provide for effective water management. For example, the code's safe-yield goal may not be a realistic or appropriate basis for planning. It is unlikely that either Phoenix or Tucson will reach safe-yield by 2025 because the potential for further water conservation and augmentation is limited. Further, achieving safe-yield may not even be necessary because of the several hundred years worth of water in storage beneath both metropolitan areas.

In addition, potential problems exist with the code's assured water supply provision and municipal conservation measure. The assured water supply provision could work against the code's safe-yield goal because it

authorizes developers to use additional groundwater. The municipal conservation measure may not truly reflect cities' efforts to conserve groundwater because it includes surface water in the measurement criteria.

Other issues that might need to be reviewed include developing a more comprehensive water management program; providing incentives for using water other than groundwater; providing for increased water marketing flexibility; and possibly establishing metropolitan water districts to enhance water management in large urban areas.

A Stronger Enforcement Program May Be Needed (see pages 23 through 26)

A more effective enforcement program may be needed. Adequate enforcement of groundwater use is necessary to ensure that groundwater users are not using more groundwater than allotted so that long-term water management goals are reached. DWR review of annual groundwater withdrawal reports has identified over 900 potential violators in 1987 in the Phoenix area alone. Even more violations may be occurring because DWR's detection methods are not comprehensive. Further, more stringent conservation requirements in the future may create an added incentive for increased noncompliance. DWR will need to study the extent of noncompliance and underreporting, and determine whether additional staff and stronger enforcement efforts are needed.

More Effort Is Needed to Protect the Public from Hazardous Open Wells (see pages 27 through 33)

In October 1988, an elementary school teacher from the town of Maricopa reported a hazardous open well near her school. The well was three feet in diameter, 600 feet down to water, and unobstructed (nothing to break a fall). School children were playing by the well, dropping rocks into it. This well is just one of what DWR estimates could be hundreds of hazardous open wells in the State. DWR has documented approximately 700 open wells in Arizona. Many of these wells are hazardous because of the

potential for people falling in and/or because of the pollutants (such as fertilizers and pesticides) entering the aquifer. DWR estimates that thousands more open wells are undiscovered.

Because these wells present a significant health and safety threat to the public, more effort is needed to address this hazard. Although given the responsibility for open well enforcement in 1986, DWR does not have sufficient staff to perform the work. DWR estimates that initially an additional $240,000 including eight staff will be needed. To support increased open well enforcement, DWR and the Legislature should consider either establishing a self-supporting funding method, using any available DWR enforcement fund monies, or appropriating general fund monies.

The State Could Save At Least $1.5 Million Annually by Increasing the Groundwater Withdrawal Fee **(see pages 35 through 36)**

Though State law mandates that groundwater user fees finance half the cost of groundwater code regulation, a separate statutory provision restricts DWR's ability to do this by limiting the maximum fee amount to one dollar per acre-foot of groundwater used. As a result, for fiscal year 1990 an estimated $1.5 million in general fund monies will be needed to compensate for the shortfall in user fees. The Legislature should consider raising the fee to provide sufficient monies for groundwater code regulation.

Water Rights Claimants Should Support a Greater Share of the Adjudications Costs **(see pages 37 through 43)**

Claimants primarily benefiting from the adjudications of surface water rights in Arizona should support a greater portion of the overall cost. DWR serves as the technical arm of the courts which are now adjudicating (or determining the nature, extent, and priority of) all rights to water on the Gila River and Little Colorado River watersheds. While the statutes provide for recovery of DWR's cost of legal process and service, all of the agency's other adjudication administrative expenses are supported from the general fund. These expenses are substantial and will occur for at least the next ten years. DWR is expected to spend nearly $1.8 million in general fund monies for these expenses in fiscal year 1989.

The Legislature could amend current statutes to allow for a more equitable sharing of DWR's adjudications costs between the State and claimants. Precedents exist in both Arizona and other states for greater cost-sharing. Idaho, for example, has established a fully self-supporting adjudications process.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a Sunset Review of the Arizona Department of Water Resources in response to a June 2, 1987, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

The Department of Water Resources (DWR) was established on June 12, 1980, when the Groundwater Management Act became law. The department administers all State water laws except those directly regulating water quality. Key projects currently underway include: establishing new conservation requirements for agricultural, municipal, and industrial water users; developing a program to augment the water supply for specified areas within the State; supporting the adjudication of water rights; dam safety; and assessing groundwater quality in cooperation with the Department of Environmental Quality.

History Of Water Regulation In Arizona

Arizona's surface water code was enacted in 1919. Arizona State government first became administratively involved in water management in 1948 when the first groundwater code was enacted and the Arizona Interstate Stream Commission was established to secure the State's rights to water from the Colorado River and other interstate streams. In addition, the commission's responsibilities included statewide water resource planning.

The State's role in water management has continually expanded since that time. In 1971, the Arizona Water Commission (AWC) replaced the Interstate Stream Commission and was given additional responsibilities including: the supervision of dam safety functions, watershed management, hydrologic data collection, and licensing of weather modification projects. Two years later the Legislature gave the AWC extensive flood control responsibilities. In 1979, legislation was passed transferring the administration of water rights from the State Land Department to the AWC, giving the commission total responsibility for water planning and regulation. The 1979 legislation also authorized the superior court to

conduct the general adjudication of water rights and designated the AWC as the technical arm of the court.

In June 1980, the Legislature passed the Groundwater Management Act. The Groundwater Management Act created the Department of Water Resources, and made the department the focal point for water management and regulation in the State. Under the provisions of the act, DWR became responsible for the administration and enforcement of the groundwater code which sets two primary goals for the State: 1) to control the severe overdraft of groundwater, and 2) to provide a means for effectively allocating the State's limited groundwater. In addition, the act transferred the powers and duties of the Arizona Water Commission to DWR, reducing the commission's role in water management to that of an advisory council.

The code provides for strict groundwater regulation in the four initially established active management areas (AMA): Phoenix, Tucson, Prescott, and Pinal. AMAs are designated geographical areas requiring increased management of groundwater. The code requires all AMAs except Pinal to attempt to achieve the AMA's goal of safe-yield water use by the year 2025. Safe-yield means using no more groundwater than is replaced either naturally or artificially. Because of its primarily agricultural nature, Pinal is allowed to gradually deplete its aquifers, but the AMA must still maintain enough groundwater for future nonirrigation uses. The code requires DWR to develop and implement a series of five management plans for each AMA over a 45-year period for the purpose of achieving the safe-yield goal. Management plans must establish conservation requirements for all groundwater users and may contain other water management requirements.

Organization and Personnel

The Department of Water Resources was allocated 223 full-time employees in fiscal year 1989. The agency is divided into five offices: the Director's Office, the Office of Administrative Services, the Office of Planning and Adjudications, the Office of Engineering, and the Office of Water Management.

The Director's Office - In addition to preparing the annual budget and providing information and educational services to water users and the public, the Director's Office, consisting of 16 full-time employees (FTEs), also contains a legal division. DWR is not represented by the Attorney General's Office; therefore, the department's in-house legal staff provides all legal support on issues of water management. The legal division reviews contracts, represents Arizona on water right matters related to the Colorado River, and is a key player in the enforcement of the groundwater code and management plans.

The Office of Administrative Services - This office is responsible for departmental purchasing, accounting, payroll, personnel, and Management Information Systems (MIS) support. It operates with 31 FTEs.

The Office of Planning and Adjudications - The office consists of two divisions, Adjudications and Colorado River Management. The Adjudications Division has an investigations section, a litigation support section, and a technical support section. The investigations section investigates claims to surface water rights and produces the hydrographic survey reports used by the courts in determining rights in adjudicated watersheds. The litigation support section mails dockets out monthly to all claimants, and handles public inquiries and aerial photography. Finally, the technical support section provides technical support to the investigations section. The Colorado River Management Division plans for and monitors Colorado River and CAP water usage. The 45 FTEs of the Office of Planning and Adjudications perform these various functions.

The Office of Engineering - This office consists of 58 FTEs and is divided into the divisions of engineering, hydrology, and remedial action. The engineering division ensures dam safety for almost 200 dams throughout the State, and assists counties with the planning of flood control projects. The hydrology division is a support group which collects and disseminates water data throughout the department. The role of the remedial action division is to coordinate water quality issues within DWR and with the Department of Environmental Quality.

The Office of Water Management - The office's primary responsibility is water rights administration. Operating with 73 FTEs, the office oversees the activities of the department's four active management areas of Phoenix, Tucson, Pinal, and Prescott. Each AMA has initial responsibility for developing conservation requirements, enforcing the groundwater code and management plans, processing water rights, and issuing water permits and transfers within their geographic boundaries. In addition, the office contains a planning/compliance division to insure that AMAs operate in a uniform manner, and an operations division, which primarily collects and files groundwater and surface water applications, permits, and registries.

Revenue and Expenditures

Department functions are funded primarily through general fund appropriations. This funding includes some special appropriations for such purposes as flood warning, flood control plans, environmental quality, and groundwater recharge. In addition, the department receives federal monies for various water-related programs. Moreover, the agency maintains several special fund accounts. For example, an enforcement fund, comprised primarily of civil penalties collected from violators of the groundwater code, is available for departmental enforcement efforts. Table 1 (page 5) summarizes actual and anticipated agency expenditures for fiscal years 1987 through 1989.

Audit Scope and Purpose

Our audit of DWR concentrated on several water management issues. Detailed work was conducted to determine:

- Whether the Legislature needs to address several groundwater code provisions and other water management issues.
- Whether a stronger enforcement program is needed.
- Whether DWR needs to devote greater effort to protecting the public from open wells.

- Whether groundwater withdrawal fees should be raised to cover half the costs of groundwater code administration and enforcement.

- Whether additional fees should be assessed to recover the administrative costs of water rights adjudications.

TABLE I

DEPARTMENT OF WATER RESOURCES
STATEMENT OF FULL-TIME EQUIVALENTS AND ACTUAL AND BUDGETED EXPENDITURES FISCAL YEARS 1986-87, 1987-88, AND BUDGET YEAR 1988-89
(unaudited)

	Actual 1987	Actual 1988	Budgeted 1989
FTEs	217.2	223.2	223.2
Personal services	$ 5,565,041	$ 6,065,395	$ 6,140,700
Employee-related expenditures	1,132,561	1,161,216	1,426,300
Professional and outside services	585,133	872,663	786,700
Travel, in-state	204,373	199,416	206,800
out-of-state	23,293	50,158	25,400
Aid to organizations	1,145,529	1,838,516	-0-
Other operating	2,007,096	2,626,965	2,017,700
Capital outlay	216,287	118,707	2,700
Special line items			2,160,000
Continuing appropriation			6,672,838(a)
TOTAL EXPENDITURES	$10,879,313	$12,933,036	$19,439,138

(a) The "continuing appropriation" category is for carryforward monies previously appropriated for various planning projects, primarily related to flood control.

Source: Arizona Financial Information Systems and Joint Legislative Budget Committee Appropriations Report

This audit was conducted in accordance with generally accepted governmental auditing standards.

The Auditor General and staff express appreciation to the Director and staff of the Department of Water Resources for their cooperation and assistance throughout the audit.

SUNSET FACTORS

In accordance with Arizona Revised Statutes (A.R.S.) §41-2354, the Legislature should consider the following 12 factors in determining whether the Department of Water Resources (DWR) should be continued or terminated.

1. **Objective and purpose in establishing DWR**

The Groundwater Management Act of 1980 established the Department of Water Resources to focus responsibility for water management and reduce groundwater depletion. The act transferred to DWR all previous Arizona Water Commission (AWC) responsibilities and also established comprehensive groundwater regulation administered by DWR. The act clearly delineates the purpose for DWR's establishment:

> " 1. Focus the responsibility for water management and administration of water-related programs within this state.
> 2. Stabilize the use of water resources, particularly groundwater resources, in this state according to management practices, procedures, standards and plans provided for by statute.
> 3. Compile and maintain information which is necessary for intelligent management, administration and planning for water resources and programs."

2. **The effectiveness with which DWR has met its objective and purpose and the efficiency with which the department has operated**

DWR has generally been effective in implementing its groundwater management and other responsibilities. In regards to groundwater management, DWR has implemented the groundwater code and developed first and second management plans. Other important programs implemented include assisting the court in the adjudication of surface water rights, monitoring and ensuring the safety of dams, water rights conveyance, groundwater code violation enforcement, regulation of wells and well drillers, and other programs. However, our audit did identify two areas in which DWR could improve its effectiveness.

- A stronger enforcement program may be needed (see Finding II, pages 23 through 26).

- More effort is needed to protect the public from hazardous open wells (see Finding III, pages 27 through 33).

3. **The extent to which the DWR has operated within the public interest**

DWR has operated within the public interest by performing a variety of functions related to the management of both surface and groundwater resources. DWR has implemented the groundwater code and related programs requiring groundwater conservation. Other programs such as ensuring safe dams, flood control, and well regulation, also benefit the public.

4. **The extent to which rules and regulations promulgated by DWR are consistent with the Legislative mandate**

DWR has sufficient authority to promulgate rules and regulations; however, not all required rules have been promulgated. DWR is in the process of promulgating rules relating to assured water supply, inspections and audits of groundwater user records, well construction, and open well resolution. According to DWR, rule making has been delayed for two reasons. First, other legal matters having statutory or court imposed deadlines have had a higher priority. Second, DWR has taken a cautious approach because of the significant impact of some of the rules.

5. **The extent to which DWR has encouraged input from the public before promulgating its rules and regulations and the extent to which it has informed the public as to its actions and their expected impact on the public**

DWR uses several methods to inform the public of its proposed rules and other activities. With proposed rules, DWR uses the statutorily required published notice and public hearing. DWR also keeps the public informed of its activities through a newsletter, education programs in schools, workshops, pamphlets, and audiovisual productions, and by making its staff available to representatives of the news media.

6. **The extent to which DWR has been able to investigate and resolve complaints that are within its jurisdiction**

DWR's ability to investigate and resolve complaints has varied depending upon the amount of statutory authority provided. For groundwater code violations, DWR has full authority and has established a complete process for complaint resolution. Also, DWR's authority to rectify dangerous dams is sufficient. However, DWR does not have enforcement authority for illegal uses of surface water or floodplain management problems. For both of these types of complaints, DWR only has the authority to refer the cases to the applicable county attorney.

7. **The extent to which the Attorney General or any other applicable agency of State government has the authority to prosecute actions under enabling legislation**

A.R.S. §45-104.G authorizes DWR to employ its own legal counsel rather than using Attorney General representation. This is done primarily because DWR may be involved in legal matters with other State agencies that are represented by the Attorney General. In addition, DWR's legal counsel represents DWR and the State in litigation concerning affairs of the department.

DWR's authority to prosecute actions varies. The statutes establish penalties for groundwater code violations, illegal filling of decorative lakes, operation of dangerous dams, and illegal recovery or use of stored water. DWR can impose a civil penalty through a stipulation and consent agreement or through a formal hearing process. Criminal violations are referred to the County Attorney or the Attorney General. In contrast, DWR has no administrative enforcement authority for violations regarding the use or misuse of surface water. If DWR cannot persuade the violator to comply, the case is referred to the County Attorney or the Attorney General. (Although untested in court, DWR argues that it can also bring a lawsuit directly to enjoin a water user from violating the surface water law.) Also, although DWR can delineate floodplains, the department lacks enforcement authority for violations of floodplain requirements. This enforcement authority belongs to local zoning authorities.

8. **The extent to which DWR has addressed deficiencies in the enabling statutes which prevent it from fulfilling its statutory mandate**

DWR has consistently sought legislation relating to its enabling legislation over the past several years. For example, DWR has requested introduction of bills relating to adjudications, dam safety, flood control assistance, artificial lakes, groundwater recharge, and others. In addition, DWR facilitates an annual groundwater omnibus bill that addresses necessary changes in the statutes. This bill is developed by an ad hoc group comprised of members of the water community.[1]

9. **The extent to which changes are necessary in the laws of DWR to adequately comply with the factors listed in the subsection**

Based on our audit work we recommend that the Legislature consider the following changes to DWR statutes and the groundwater code:

- changing the code's safe-yield and assured water supply provisions and providing for comprehensive water management (see Finding I, pages 13 through 21);
- requiring open well information to be reported on all conveyance reports (see Finding III, pages 27 through 33);
- amending A.R.S. §45-611.1 to allow an increase in the groundwater withdrawal fee (see Finding IV, pages 35 through 36); and
- amending the statutes to allow for additional assessments of water rights claimants so that more of the costs of the adjudications process are borne by those that are primarily benefiting from it (see Finding V, pages 37 through 43).

DWR has identified two areas for statutory change. DWR currently lacks administrative enforcement authority over surface water violations and is limited to referring violators to either the Attorney General or the County Attorney. In addition, the statutes

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(1) Water community is a term used to describe entities involved in water provision, use, regulation, and policy development.

do not address the regulation of effluent (wastewater product from a municipal sewage treatment plant that can be used in lieu of potable water for some applications).

10. **The extent to which the termination of DWR would significantly harm the public health, safety or welfare**

Terminating DWR could cause significant harm to the public's health, safety, and welfare. DWR was established because of the recognition that without focused management of water-related programs, the general economy and welfare of the State and its citizens would suffer. DWR is charged with the responsibility of ensuring that in the long-term, sufficient water is available for use without further depletion of groundwater supplies in the Phoenix, Tucson, and Prescott active management areas. For the Pinal active management area, DWR must ensure that sufficient groundwater is maintained for future nonirrigation uses. DWR plans to achieve these goals through management plans requiring conservation and development of additional water resources.

DWR also plays a critical role in terms of public safety and health. DWR is responsible for helping to ensure that many of the dams in the State are safe. In addition, DWR regulates well construction. Open wells can be both a safety and health hazard. Not only can people fall into open wells, but open wells are also a direct conduit for pollution to reach aquifers used for drinking water. DWR shares responsibility with the Department of Environmental Quality (DEQ) regarding water quality. Although DEQ has primary water quality responsibility, DWR provides technical data and analyses. DWR is required by statute to assess groundwater quality in the AMAs and to develop groundwater quality protection programs. DWR along with DEQ implements resolution of Superfund sites (hazardous waste and groundwater pollution sites) in Arizona.

11. **The extent to which the level of regulation exercised by DWR is appropriate and whether less or more stringent levels of regulation would be appropriate**

DWR's only licensing function is the licensing of well drillers. The level of regulation is appropriate regarding licensing of well drillers.

12. **The extent to which DWR has used private contractors in the performance of its duties and how effective use of private contractors could be accomplished**

DWR contracts for a variety of services from the private sector. For example, DWR contracts for hearing officers, electronic data processing (EDP) services, various technical studies and analyses, flood control construction and maintenance, legal counsel, audiovisual productions, and other services. DWR states that private sector services are most cost-effective for short-term projects and for when DWR lacks the necessary expertise.

FINDING I

TO HELP ENSURE MORE EFFECTIVE WATER MANAGEMENT, THE LEGISLATURE SHOULD ADDRESS SEVERAL PROBLEMS THAT HAVE SURFACED SINCE THE GROUNDWATER CODE'S INCEPTION IN 1980

The Legislature should consider addressing problems that have developed since the groundwater code was enacted. Although the groundwater code reflects Arizona's need for strong water regulation and has resulted in better water management, several key provisions of the code may actually work against its goal. The Legislature should consider addressing these code deficiencies and other water management issues. In doing so, the Legislature may wish to create a study commission.

Statutes Include Groundwater Code in Sunset Review

A.R.S. §41-2374.15 includes the groundwater code as a part of the sunset review of the Department of Water Resources (DWR). The code along with DWR is scheduled for termination on July 1, 1990, and its enabling statutes are automatically repealed on January 1, 1991, unless continued by the Legislature. A review of the agency's enabling legislation, including the groundwater code, is a part of the sunset review process. A.R.S. §41-2354 requires the legislative committee of reference to consider the extent to which changes are necessary in the laws of the agency.

Groundwater Code Is Needed and Has Provided Better Water Management

The groundwater code is needed because it has provided better water management in Arizona. Efficient water use is a basic tenet for communities, industry, and agriculture coexisting in a desert environment. Recognizing this, in 1980 the Legislature adopted the Groundwater Management Act. The act established DWR to implement its provisions and provide for general water management in the State. The code's provisions include strong conservation and other measures to be

implemented for the purpose of attempting to achieve safe-yield groundwater use by the year 2025.

The code's implementation over the last nine years has resulted in generally better water management. The code's conservation requirements have been a factor in reducing the amount of groundwater used. For example, in the Phoenix area groundwater pumping has been reduced from 1,365,000 acre-feet in 1980 to an estimated 870,000 acre-feet in 1988. DWR has recently developed a new series of management plans that require even less groundwater use.

Several Code Provisions May Not Provide for Effective Water Management

Several of the key provisions in the groundwater code have not in some instances provided for effective water management. The code's safe-yield provisions probably will not be attained and may not be necessary. The code's assured water supply provision may, in practice, actually work against the goal of safe-yield. The municipal conservation measure required by the code may not in all cases accurately reflect groundwater use reduction and may in practice be applied improperly.

Several problems with the code's safe-yield provisions - The safe-yield goal of 2025 may not be a realistic and appropriate basis for planning. First, it is unlikely that the goal can be met in either Phoenix or Tucson. Second, achieving the goal by 2025 may not be necessary.

Safe-yield may not be achieved in the Phoenix and Tucson active management areas. According to DWR's Second Management Plan, both the Phoenix and Tucson AMAs will fall short of achieving safe-yield even with the implementation of Second Management Plan requirements. Depending upon the category of the user (municipal, agricultural, etc.), implementation of the First and Second Management Plans will only produce from 6 to 31 percent of the total reductions needed to achieve safe-yield, according to DWR's deputy director for water management. Those figures are significant because the Second Management Plan includes accounting for full use of the Central Arizona Project (CAP) water, the largest new non-groundwater supply, and requires maximum conservation

from agriculture, the primary groundwater user in the Phoenix AMA. The Second Management Plan state that safe-yield will not be achieved without further conservation and augmentation efforts.[1]

However, the potential for further conservation is limited. Although DWR can impose conservation requirements, it cannot stop rights holders from pumping groundwater. The code has established several types of groundwater pumping rights which essentially "grandfathered" in all entities legally using groundwater prior to the Groundwater Management Act. The total amount of groundwater associated with these rights is significant, well over one million acre-feet for the Phoenix AMA and over 300,000 acre-feet for the Tucson AMA.

The potential for significant augmentation also appears to be limited under existing code provisions. For safe-yield to occur, other non-groundwater supplies must be developed and used in lieu of groundwater, or groundwater rights must be purchased and retired. The code provides DWR authority to collect fees for the purposes of augmentation and for the purchasing and retirement of groundwater rights. In either case, fee amounts that could be collected may fall well short of any amounts needed.

Finally, achieving safe-yield by 2025 may not be necessary hydrologically because of the large amounts of groundwater in storage beneath the Phoenix and Tucson AMAs. According to DWR, the Phoenix AMA has approximately 160 million acre-feet of groundwater in storage, whereas Tucson has approximately 71 million acre-feet. According to experts in the water community, there is enough water for several hundred years for the Phoenix AMA and for 700 years for Tucson. Further, according to DWR, pumping has declined. Much less groundwater was pumped in 1988 as compared to 1980 in both the Phoenix and Tucson areas.

Assured water supply provisions can work against safe-yield - The code's assured water supply provisions can, in practice, work against the

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(1) "Augmentation" here means to supplement a water supply.

code's goal of safe-yield. Before they can develop an area, the code requires that developers demonstrate an assured water supply (sufficient water of adequate quality continuously available to satisfy needs) of at least 100 years. The code, however, allows both groundwater and surface water to be used to demonstrate an assured supply. This statutory language has, in practice,allowed for a very liberal policy of issuing permits seemingly in a manner not consistent with the AMA management goal of safe yield. By allowing groundwater to be used, the code further increases the number of groundwater rights and the potential amount of groundwater pumped. As of early 1989, nearly 190,000 acre-feet of groundwater has either been granted, applied for, or projected in the AMAs, mainly in the Phoenix area. This works against the code's safe-yield goal if the land being developed did not have previous agriculture water rights because an even greater amount of groundwater will have to be replaced through further conservation and augmentation efforts by other users.

Currently, the use of groundwater for assured supplies is determined by DWR based on guidelines established in 1973 which take into account the impact on the level of the water table. However, DWR believes that through the rulemaking process the groundwater code and the assured supply provisions can be interpreted jointly to require all new assured supplies to be consistent with the goal of safe-yield. DWR is currently developing rules which will phase in a reduction in the use of groundwater for assured supplies. These rules may allow the department to address the assured water supply problem administratively.

Problems with code's municipal conservation measure - The code's measure of municipal conservation may not accurately reflect groundwater use reduction and may in practice be applied improperly. The code and DWR management plans require "reasonable reductions in per capita use" as part of the municipal water provider conservation program. Per capita use, however, has two problems. First, it may not be a true indication of efficient groundwater use and may not work in concert with the code's safe-yield goal. A city can reduce its reliance on groundwater and still be out of compliance with per capita use requirements because DWR also includes surface water in the calculation. For example, one city has

reduced its reliance on groundwater from 99 per cent of total supply down to 40 percent since 1980 by using CAP water instead of groundwater. However, that city is currently over its per capita use rate according to DWR and may be subject to fines or other enforcement actions.

Second, DWR may have improperly applied the per capita use measure of the groundwater code. Per capita computations have included both surface water and groundwater components of a city's water use and are subject to mandatory plan requirements. According to legislative Council only the groundwater components of a city's water use are subject to mandatory plan requirements (see Appendix). However, DWR maintains it must consider surface water use to be able to properly interpret whether the statutory criteria of "reasonable reductions" is met. DWR notes that surface water supplies are more variable than groundwater which could cause a greater or lesser use of groundwater depending on conditions. Accordingly, DWR has adopted a policy of including surface water in the per capita use calculations to determine when a city is over its per capita goal. If a city is over its goal, DWR then bases its enforcement action on the amount of groundwater used.[1] However, DWR's interpretation of the statutes regarding this issue is arguably subject to challenge and has not yet been tested in court.

Problems with Code and Other Water Management Issues Need to Be Reviewed

Now may be an appropriate time for the Legislature to address problems with the groundwater code. In doing so, the Legislature may wish to create a study commission.

Many within the water community indicated that it would be appropriate to begin a review of the code and other water issues. They stated four reasons. First, action should be taken before any potential additional time, money, and water is lost. The Second Management Plan marks the

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(1) To illustrate how this works, DWR gives the following example: If a city has a goal of 200 gallons per capita per day (gpcd), and actual usage of 400 gpcd, DWR would look at the surface and groundwater usage. If the city used 350 gpcd of surface water and 50 gpcd of groundwater, DWR would take enforcement action based on the 50 gpcd.

beginning of a number of significant expenses which will have to be met to comply with the code. For example, the city of Phoenix estimates it will spend nearly $515 million over the next 50 years to address the code and other water requirements. Second, the discussion should occur before any additional controversies surface, such as the water transfer issue. The water transfer issue, which involves the moving of rural Arizona groundwater to the metropolitan areas, is a direct result of current code provisions. Third, because of the nonseverability clause in the code (if a portion of the code is challenged and struck down in court, the entire code is struck because the code is intended to be nonseverable), problems should be addressed before they are challenged in court, and the entire code is lost. Finally, problems and issues should be addressed now so they can be addressed comprehensively rather than on a piecemeal basis.

There may be additional issues that need attention that either were not identified or that we did not have time to develop.[1] However, based on our analysis, at least the following code problems and issues should be reviewed.

- **More reasonable approach to safe-yield may be needed** - Currently, although the code requires safe-yield, it does not provide the tools to achieve it. Many people in the water community recognize that safe-yield probably will not be achieved by the year 2025. However, in response to the code, cities have begun to purchase water farms outside of AMAs for the purpose of supplementing their supply. These types of actions taken to achieve safe-yield can be controversial, are expensive, and may not be necessary because of the large amount of groundwater in storage in both the Phoenix and Tucson AMAs. The safe-yield goal should be reviewed to determine if it is actually needed, needed by 2025 or later, or if a slow depletion of the aquifer is acceptable.

- **Assured water supply provisions should be reviewed** - The assured water provisions may need to be modified to work in concert with the safe-yield goal. As discussed previously, the assured water supply requirement works against the safe-yield goal by establishing additional groundwater pumping rights that have to be made up with additional conservation and augmentation efforts. If safe-yield is retained as a goal, the current assured water supply provision may need to be restricted.

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(1) Two other issues that we did not have time to develop include potential problems with the agriculture conservation requirement found in the Second Management Plan and the possibility of limiting growth because of the lack of new water supplies.

- **The code's municipal conservation measure should be reviewed** - The code's measure of municipal water use and conservation (gallons per capita per day) should be reviewed. The goal may not reflect municipalities' efforts to lessen dependence on groundwater because, as noted earlier, it includes both surface and groundwater. If the primary purpose of the code is to reduce groundwater use and reach safe-yield, the measure may need to be changed to reflect groundwater used.

- **The need for more comprehensive water management should be reviewed** Currently, the statutes limit comprehensive water regulation to groundwater. Therefore, according to the Arizona Legislative Council, only groundwater is regulated by DWR management plans. Surface water is a major component in Arizona's water supply. Effluent was recently declared by the Arizona Supreme Court to be a third type of water, not under regulation by the code. Effective management of Arizona's limited water resources may require that all water types be subject to planning and conservation requirements so that the total resource is used most effectively.

  Statewide water planning and management may also be needed. The code focuses on water management in the AMAs. However, areas outside of the AMAs also have water management challenges, as witnessed by the recent water transfer issue. In addition, the large amount of Colorado River water allocated to western Arizona, 1.3 million acre-feet, has been viewed by some officials as a possible augmentation source for central Arizona. Statewide planning and management may be needed to help ensure that water is allocated wisely and fairly.

- **Incentives for non-groundwater use and increased water marketing flexibility should be examined** - Two related issues, incentives for non-groundwater use and increased water marketing flexibility, should be examined. According to water officials at all levels, there are no incentives for municipalities or other entities to use other water or to recharge (pumping water back into the aquifer for future use) surplus water. Instead, it is much less expensive to pump groundwater. For example, much of Arizona's CAP allocation is not being used because of the limited incentives to either use or recharge the water. According to DWR, unused CAP water goes to California or down the river to Mexico. This involves potentially millions of acre-feet of water.

  Increased water marketing flexibility (less restrictive barriers to water transfer or sale) may be needed to help ensure that water is available and used most efficiently and effectively. Marketing water from the CAP and Arizona rivers is limited because of the federal Colorado River law and State surface water law. The State has to work with the federal government for any changes in Colorado River management. However, the Department of Interior has recently acknowledged the need for water marketing.

- **Provisions for metropolitan water districts could enhance water management in large urban areas** - Including provisions in the code for the establishment of metropolitan water districts could enhance water management in large urban areas. Currently, the Phoenix AMA

has many municipalities and other water using entities separately addressing water supply, conservation, and augmentation challenges. Some in the water community have indicated that competition for limited supplies has been and will be a costly proposition. Smaller communities do not have the resources to acquire additional supplies. Several water officials identified benefits that may result from the establishment of a municipal water district including a united effort for securing additional supplies; less cost due to more efficient acquisition, transfer, and treatment costs; and a valleywide uniform conservation requirement. If this concept is considered, the current DWR and its AMA responsibilities and structure may need to be reexamined.

Legislature may wish to create study commission - The Legislature may wish to create a study commission to review potential problems with the code and other water management issues. A precedent for this was the establishment of the Groundwater Study Commission by the Legislature in 1977 to develop the groundwater code. The primary benefit of a study commission would be that, if structured properly, it would bring together the various interests within the water community to resolve the problems and issues. Historically, water policy development has been most successful when consensus was forged within the water community. Another benefit of a study commission is that it could be given a limited, focused mission of addressing specific issues rather than the entire code.

RECOMMENDATION

The Legislature should consider establishing a study commission to address the following groundwater code problems and other water management issues including whether:

a. changes are needed in the safe-yield, assured water supply, and the municipal conservation measure provisions of the code;

b. the State needs 1) more comprehensive water management including regulation of surface water and effluent, and 2) a statewide approach to water planning and management;

c. the code should provide incentives for using water other than groundwater;

d. the code should increase the ability of water rights holders to market water; and

e. the code should allow for the establishment of municipal water districts to manage water supplies and usage in metropolitan areas.

FINDING II

A STRONGER ENFORCEMENT PROGRAM MAY BE NEEDED

A more effective enforcement program may be needed. DWR's review of annual groundwater withdrawal reports and other independent analyses indicates that noncompliance with management plan requirements could be significant. Moreover, this noncompliance may increase in the future as conservation requirements become more stringent.

Enforcement of Conservation Plans Is Critical for Successful Water Management

Effective implementation of DWR's water management plans would be severely hampered without adequate provisions for enforcement. To determine if conservation goals are actually being achieved, DWR must be able to monitor groundwater usage and enforce compliance with plan requirements.

Recognizing this need, the framers of the Groundwater Management Act included provisions designed to ensure user compliance. Most water right holders are required to "maintain current accurate records of . . . withdrawals, transportation, deliveries, and use of groundwater," and to report this information annually to DWR.[1] Over 11,000 water rights holders are expected to file reports with the department for 1988. Moreover, the agency can conduct any inspections, investigations, or audits it deems necessary to ascertain compliance with statutory requirements. If violations occur, DWR can conduct administrative hearings, issue cease and desist orders, assess civil penalties of up to $10,000 per day, and/or seek injunctive relief.

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(1) A.R.S. §45-632.C provides that persons who withdraw groundwater from some wells, and many nonirrigation customers of cities, towns, private water companies, and irrigation districts are exempt from this requirement.

Numerous Violations Have Been Identified

DWR's review of annual withdrawal reports has identified many potential violators of plan requirements. Other DWR analyses also indicate that noncompliance may be significant enough to warrant concern and further study.

DWR identified many potential violators by reviewing annual withdrawal reports filed for the 1987 reporting period. For example, staff in the Phoenix AMA, who monitor the State's largest reporting area, identified over 900 potential violators through an initial review of annual reports. More extensive file reviews were conducted for 579 right holders. As a result of these reviews, 397 filers were chosen for audits.[1]

However, reviewing annual reports can only detect instances of noncompliance if filers, in effect, "voluntarily confess" to overuse of groundwater. Filers are not required to submit supporting documentation with their reports. If false or erroneous data is calculated or used on an annual report, a file review or exception report will not detect a problem. Although audits can uncover inaccurate reporting, they are generally conducted only if a report review reveals a problem. According to the deputy director of water management, DWR can only conduct a limited number of random audits or on-site inspections due to insufficient staff. Further, although power records would be useful in verifying reported information, power companies have not made the records available to DWR.[2]

Analyses by DWR's basic data section have found that underreporting is not always detected by reviewing annual filings. The analyses also provide further evidence of noncompliance with groundwater management

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(1) Potential violators identified and investigated by DWR included all types of water users such as cities and towns, irrigation districts, private providers, and turf facilities (e.g., golf courses).

(2) Power records can be used to help calculate approximations of the amount of water that has been pumped.

plan requirements. A recent study conducted by the department on a sample of users in the Eloy sub-basin of the Pinal AMA revealed that:

> " . . . there are undoubtedly many bona fide cases of unintentional and intentional underreporting.
>
> On the basis of this investigation, withdrawals were underreported by owners for 1985 by approximately 7.9 percent (in the area evaluated). This figure is similar to the 7 percent underreporting figure computed for 99 wells in the Hassayampa sub-basin in the Phoenix AMA."

The report concluded that the agency could identify "more than a third" of the State's private irrigation wells as potential violators. Since the analysis relied on some estimated data, agency officials stressed that these results are not conclusive. Differences in pump efficiencies, pump lifts, and discharge pressures can also affect the results. However, the results of the study are significant enough to warrant further study and concern by DWR.

Limited Enforcement Capability and More Stringent Requirements May Be a Formula for Future Noncompliance

Weaknesses in current procedures for detecting noncompliance combined with more stringent conservation requirements may create both the opportunity and the incentive for future noncompliance. DWR will need to study the extent of noncompliance and underreporting, and determine whether additional staff and stronger enforcement efforts are needed.

More stringent conservation plans could increase users' incentive to underreport unless current detection methods are strengthened. Conservation requirements under the First Management Plan are relatively lenient. The Second Management Plan, however, which will be implemented in 1990, is more strict. The second plan will require a significant monetary investment on the part of water users, and perhaps economic and other hardships, to comply with its conservation provisions. Those not wishing to make the necessary investment or changes in water usage may be tempted to avoid complying by misrepresenting water consumption in their annual reports.

Consequently, the department needs to continue to assess the accuracy of water users' reporting and the impact it has on the State's conservation goals. Although the analysis conducted to date has been very valuable, more work is needed. As noted earlier, estimated data used in previous research requires that results and conclusions be qualified. Determining the extent and impact of inaccurate reporting, however, may require additional staffing.

If further analysis determines that inaccurate reporting is a serious threat to achieving the current safe-yield goal, then DWR should consider strengthening its enforcement effort. Instituting a system of more frequent random audits and on-site inspections are two alternatives. DWR could also require filers to provide documentation supporting power usage information contained in their filings. Finally, DWR will need to determine what additional staffing and resources would be needed to implement this enhanced enforcement program.

RECOMMENDATIONS

1. The department should determine the impact underreporting has on the State's conservation goals. If necessary, the agency should request additional staffing from the Legislature to perform the required analysis.

2. If DWR determines that inaccurate reporting is a serious threat to safe-yield, DWR should take steps to strengthen its enforcement effort. Possible alternatives include: a) instituting a system for conducting random audits of water users, b) increasing the number of on-site inspections, and c) requiring filers to provide supporting documentation for power usage data contained in reports.

FINDING III

MORE EFFORT IS NEEDED TO PROTECT THE PUBLIC FROM HAZARDOUS OPEN WELLS

In October 1988, an elementary school teacher from the town of Maricopa reported a hazardous well near her school. The well was three feet in diameter, 600 feet to water, and unobstructed (nothing to break the 600-foot fall). School children were playing by the well, dropping rocks into it. This well is just one of what DWR estimates could be hundreds of hazardous open wells in the State. Because these wells present a significant health and safety threat to the public, more effort is needed to address this hazard. The Legislature should consider several ways to fund the staffing needed for this effort.

DWR was given open well enforcement responsibilities in 1986. A.R.S. §45-594 gives the director of DWR the responsibility to determine whether an open well is dangerous to property or to public health or safety. The director has the authority to require the well to be capped. During the course of the audit, the department adopted emergency rules enabling the director to exercise this authority.

Large Numbers of Open Wells Present a Significant Health and Safety Hazard

Public health and safety are threatened in Arizona by the presence of thousands of open wells. DWR has documented approximately 700 open wells in active management areas and other regions of the State. Many of these wells are hazardous because they are located close to inhabited areas. In addition, these wells provide a direct route for fertilizer, pesticides, and other pollutants to enter the aquifer.

Hundreds of open wells found - Hundreds of open wells have been identified but remain uncapped in Arizona. DWR directed its field staff to record all open wells found in the Pinal AMA during the course of

performing other duties. During a two-week period in November 1988, 488 open wells were documented. Forty-eight of these wells are categorized as "high hazard" indicating that they present a threat to the public. Subsequently, DWR found 100 open wells in the Phoenix AMA during a two-day period. DWR also found 52 wells in Harquahala and Butler Valley.

DWR estimates that thousands more open wells have yet to be discovered. The Pinal AMA may have approximately 500 additional uncapped wells, and the Phoenix AMA may have hundreds more. In addition, DWR estimates that there are hundreds of open wells in the Tucson and Prescott AMAs, where there have been no efforts to discover them, and in the southeast section of the State near Safford and San Simon.

Open wells threaten public safety - Many open wells are hazardous because they have openings large enough for children to enter and are located near inhabited areas. For example, DWR staff found:

- An open well with a 20-inch diameter along a road in the Pinal AMA. An occupied home was located across the road 50 yards away.

- A well with a 14-inch diameter located on residential property where a small child lived. A rusty oil drum was covering the hole.

- An open well of unknown size covered only by a mattress spring.

- Another open well located between two bushes. This well was 30 feet away from a residence.

Even wells small in diameter can be dangerous. In a well-publicized Texas case, Jessica McClure fell down a well only 8 inches in diameter. Forty-eight of the wells found in the Pinal AMA are at least 8 inches in diameter and are located within 300 feet of inhabited areas. These wells present a clear threat to the community.

Groundwater can be polluted - Further, open wells threaten public health because these wells provide a direct conduit through which pollutants may enter aquifers. In agricultural areas, pesticides,

herbicides, and fertilizers can enter aquifers through open wells located on or near farmland. In limited testing since 1979, the Department of Health Services (DHS) and later, the Department of Environmental Quality (DEQ), have found pesticide contamination in groundwater. Unhealthful concentrations of DBCP and EDB (two active ingredients in pesticides) have been discovered in Yuma, the East Salt River Valley, and the West Salt River Valley. While there is no evidence to date that this contamination occurred due to open wells, DEQ officials recognize the risks these wells present for swift contamination of groundwater.

Fertilizers and other contaminants may also enter the aquifers through open wells. The Arizona State Chemist estimates that approximately 300,000 tons of agricultural fertilizers are used in the State every year. Even in urban areas, various runoff pollutants may enter the aquifer by way of open wells.

More Effort Is Needed to Address Open Well Hazards

More can be done to address the problem of open wells. Due to limited staff and other priorities, DWR does not have an organized program for discovering open wells. Once wells are discovered, investigation and follow-up need to be more comprehensive and timely.

Discovery - DWR does not currently have an organized program for discovering open wells. Several divisions of the department sporadically find and report open wells during the course of performing other duties. As a result, discovery is haphazard and limited to areas where DWR is in the field for other reasons. A more comprehensive and systematic effort to find open wells would require assigning staff specifically to this effort and organizing a broader sweep of areas to be observed.

DWR also could use other innovative methods to discover open wells. For example, conveyance of water rights reports are a potential source of open well information. DWR already requires that all land transfers involving water rights be reported to the department. DWR could require that open wells be identified, capped, and reported to DWR on the existing report before the land transfer can take place. This technique

is used in Iowa to identify open wells. According to officials there, land owners discover their own open wells while preparing their conveyance reports.

DWR's well registry is also a potentially useful discovery tool. All well owners must register their wells with DWR. Approximately 77,000 wells are on record presently with the department. The registry has never been used to help identify wells which are no longer in use and need to be capped.

Investigation and follow-up - More also needs to be done to investigate and follow up on potentially hazardous wells that have been discovered. Due to limited staff and competing planning and enforcement priorities, follow-up has been limited.

Investigation of an open well involves finding the owner of the well and ensuring that it is properly capped. Determining ownership may require researching records at the county assessor's office. In addition, staff may need to visit the well site to determine what must be done to properly and safely cap or abandon the well.

Currently, only high hazard open wells are given attention by DWR and the AMAs: other potentially hazardous ones are not being addressed. For example, the Pinal AMA is now investigating the 48 most hazardous of the 500 wells found in its area. The Phoenix AMA does not presently have resources to follow up on any of the 100 wells found in its area. Other open wells discovered outside the active management areas are also a low priority for DWR follow-up.

A recently drafted policy directive on open wells does not ensure that all hazardous wells will be addressed in a timely manner, if at all. The directives use distance from inhabited areas as a criteria for categorizing open wells by hazard level. A well at least 8 inches in diameter which is within 100 feet of an inhabited area is considered the most hazardous and will receive immediate attention. A similar well within 300 feet will not to be addressed immediately but will be scheduled for follow-up along with other priorities. Wells farther from

inhabited areas may not be addressed at all. To children playing near these wells, the differences in distance between 100 feet and 301 feet may not be sufficient to prevent an accident.

Open Well Enforcement Program Could Be Funded Several Ways

DWR and the Legislature should consider several methods to fund a more effective open well enforcement program. Other revenue sources may be available to supplement general fund monies.

Cost of program - DWR has estimated that an open well enforcement program would require $239,000 to fund in its first year. The program would employ eight staff (including three limited positions) who would work in the Phoenix, Tucson, and Pinal AMAs and in the central office. These staff would be responsible for discovering open wells, prioritizing wells based on hazard level, performing ownership searches, notifying and working with owners to cap wells, and conducting follow-up.

Funding would be reduced in subsequent years as the backlog of open wells requiring follow-up is reduced or eliminated. DWR estimates that $148,600 would be sufficient to operate an adequate open well enforcement program in its fourth year.

Funding - In addition to using general fund monies, DWR and the Legislature should consider other methods for funding an open well enforcement program. The department's enforcement fund is one source of additional support. Arizona's groundwater management code permits the use of enforcement fund money for the capping of high hazard wells. DWR has proposed using some of these monies for well capping. The department can later seek reimbursement from well owners. The enforcement fund, which collects monies from code violators, currently has a balance of $215,850 and generates approximately $100,000 annually. However, the amount of enforcement funds available for the open well program may be limited. DWR has indicated that some of these monies are needed to hire an enforcement attorney and support staff to address the backlog of other enforcement actions.

Another innovative way to fund at least a portion of the program would involve placing a tax or surcharge on fertilizers and/or pesticides sold in Arizona. Iowa has adopted this method to fund a substantial portion of its groundwater management program.[1] This approach is based on the philosophy that fertilizers and pesticides pose a threat to the aquifers through open wells, and therefore, users of substances which may enter and pollute the aquifer through open wells should help pay to remove the threat.

A tax on fertilizer could raise a significant amount of revenue with minimal impact on the price of fertilizer. According to the Arizona State Chemist, approximately 300,000 tons of fertilizers are used in the State each year. A charge of 80 cents per ton, which represents less than one percent of the purchase price of a ton of fertilizer, would generate $240,000 in enforcement funds.[2] A lower fertilizer tax could be imposed if pesticides were also taxed.

RECOMMENDATIONS

1. DWR should improve efforts to discover open wells by:

    a. Assigning employees who spend time in the field specific responsibility for identifying and documenting open wells, and

    b. Using the well registry to assist in efforts to locate open wells.

2. DWR should reevaluate its criteria for determining open well hazard levels to determine if these criteria adequately protect the public.

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(1) Iowa taxes all fertilizers containing nitrogen at the rate of 75 cents per ton. In addition, pesticide manufacturers are charged one-fifth of one percent of their gross annual sales ($250 minimum and $3,000 maximum charge), and pesticide dealers are taxed one-tenth of one percent of gross annual sales.

(2) A tax or surcharge on fertilizer would not be difficult to administer. The State Chemist already collects a similar tax of 25 cents per ton of fertilizer sold. This existing tax, which supports operations of the State Chemist's office, is paid by licensed dealers who report sales on a quarterly basis to the State Chemist.

3. The Legislature should consider requiring open well information to be reported on all conveyance reports processed by the department.

4. The Legislature and DWR should consider several different methods for funding an open well enforcement program.

FINDING IV

THE STATE COULD SAVE AT LEAST $1.5 MILLION ANNUALLY BY INCREASING THE GROUNDWATER WITHDRAWAL FEE

The State would save at least $1.5 million annually if the Department of Water Resources were allowed to raise its groundwater withdrawal fee. Although groundwater withdrawal fees were intended to finance half the cost for administration and enforcement of the groundwater code, a separate provision in the code prohibits the agency from collecting this amount. A change in statute to allow DWR to collect sufficient monies would result in only a minimal increase in water costs.

A Provision in the Groundwater Code Prevents DWR from Collecting Sufficient Fees for Administration and Enforcement

Though State law mandates that groundwater user fees finance half the cost of groundwater code regulation, a separate provision restricts DWR's ability to do this. Arizona Revised Statutes (A.R.S.) §45-612 specifies that the director of DWR each year:

> " . . . shall estimate the total amount of groundwater withdrawn in all active management areas...and set the administration and enforcement fee...to produce an amount equal to one-half of the amount budgeted by the director for administration and enforcement purposes for the following fiscal year." (emphasis added)

However, A.R.S. §45-611.1 prohibits the agency from assessing a user fee of more than one dollar per acre-foot. According to former Commission staff, this cap on fees was a compromise agreed to by the Groundwater Management Study Commission to help insure the support of agricultural interests for the groundwater code. A representative from the Agri-Business Council of Arizona agrees that farmers at the time supported the one dollar limit to minimize the economic impact of a withdrawal fee. Consequently, the fee was limited to one dollar even though 1) it was not demonstrated that a higher fee would produce financial hardship for water users; and 2) the costs for regulating groundwater use were unknown at the time.

The one dollar per acre-foot limit has in fact prevented DWR from collecting monies sufficient to cover half the cost of groundwater code regulation. For example, the cost for code regulation in fiscal year 1988 was an estimated $5,252,804. Because of the current limit on fees, the department was only able to assess approximately $1,712,000 in fees, or 33 percent of the cost to regulate the groundwater code. The department's budget office projects a greater shortfall for fiscal year 1990, and estimates that only 27 percent of DWR's expenses for code-related administration and enforcement will be covered.

Funding not derived from groundwater users is supplemented through other general fund appropriations. For fiscal year 1990, DWR estimates that approximately $1,500,000 in additional revenue will be needed from the general fund to compensate for the shortfall in user fees. The department estimates that user fees would have to be raised an additional $.87 per acre foot to eliminate this shortfall.

A Change in Statute Would Result in Only a Minimal Increase in Water Costs

Our analysis indicates that raising the groundwater withdrawal fee to cover half the cost of code administration and enforcement would result in only a minimal increase in water costs.[1] The current average cost for pumping groundwater in the Phoenix active management area is $32.73 per acre-foot. For example, raising the groundwater fee $1.00 an acre-foot to cover current costs would only increase users' per acre cost by approximately three percent and would not significantly add to the overall water cost incurred by irrigation users.[2]

RECOMMENDATION

The Legislature should consider amending A.R.S. §45-611.1 to raise or remove the current limit on groundwater fee assessments so that DWR can collect monies sufficient to finance half the costs for administering and enforcing the groundwater code as required by A.R.S. §45-612.

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(1) Derived from economic data compiled by DWR.

(2) This analysis does not include any additional well or other enforcement costs that may be approved by the Legislature and funded from the general fund as a result of this report.

FINDING V

WATER RIGHTS CLAIMANTS SHOULD SUPPORT A GREATER SHARE OF THE ADJUDICATIONS COSTS

Claimants who will benefit from the outcome of general adjudications should support a greater portion of their costs. Filing fees paid by claimants are insufficient to recover most of DWR's administrative costs which are currently supported by a general fund appropriation. Because claimants will benefit more than the general public from water rights adjudications, the Legislature should consider amending current law to allow for a more equitable sharing of this growing and long-term cost burden.

General Water Rights Adjudications

According to State law, all surface water belongs to the public but is subject to appropriation for beneficial uses. Beneficial uses include irrigation, mining, power generation, watering of stock, recreation, and municipal and other uses. Water rights, which are real property rights similar to rights to land, are established and based on appropriations of water for beneficial uses. The extent and priority of each water right depends on the nature and amount of water use and when the water was first appropriated for this purpose. In times of shortage, the oldest water rights take precedence.

Adjudication of surface water rights is needed in Arizona to settle Indian claims. Therefore, in 1979, the Legislature enacted statutory provisions (Laws of 1979, Chapter 139) authorizing a general adjudication in State courts. This legislation was intended to permit settlement of Indian water rights claims within a framework established by federal law and the U.S. Supreme Court. For example, State adjudications must be judicial, not administrative, determinations. Therefore, the 1979 legislation transferred adjudication authority from the State Land Department to Superior Court.

Two adjudications are currently in progress. The largest involving the Gila River system (with over 62,000 claims) is before the court in Maricopa County. An adjudication of the Little Colorado River (involving approximately 11,000 claims) is underway in Apache County Superior Court. These adjudications are expected to take at least ten years to complete. Claimants in both adjudications are diverse; they include State and federal agencies, cities and towns, public utilities, mining companies, irrigation districts, as well as many individuals and small water users.

DWR's role - DWR is responsible for providing staff support to the courts. The department handles legal service and process (legal notice), maintains records of claims, and conducts technical studies, investigations, and analyses. Water right claims must be investigated and verified by DWR staff.

One of DWR's major tasks is to prepare hydrological survey reports (HSRs) for each adjudication. These reports inventory water uses, rights, claims, and hydrology within watersheds. Each adjudication generates multiple volume HSRs which are subject to review and comment by claimants.

Claimants Will Benefit from Adjudications

While the general public may benefit from adjudications of surface water rights, water rights claimants clearly have a more direct interest in the process. Claimants have more to gain or lose from the adjudications.

According to DWR officials, adjudication of water rights is important to remove uncertainty over what water is available to the State and to permit management of this vital resource. Water rights claimants, however, appear to have a more direct interest in, and more to gain or lose, from adjudications than the general public.

According to a professor of law at the University of Montana who is knowledgeable in western water rights adjudications, water rights can affect the value of land and influence land transactions. In a recent article, he stated:

> " Throughout the West, legislatures recognized the desirability of a permanent record of water rights so that people could tell how many rights there were on a particular source and their amounts and priority dates. Such information was essential to current holders of water rights, people who might be considering a new appropriation and those contemplating purchase of property to which a water right is attached. The latter was particularly important because the potential buyer would want to know the value of the right, which would depend on its volume and its priority in relation to other water rights." (1)

Since claimants benefit from the adjudications process, requiring fees or assessments to support the cost is accepted public policy in Arizona and some other western states. The original legislation authorizing adjudications in Arizona required a filing fee which was intended to be used to support DWR's costs for service and process and for masters (hearing officers who will be appointed and compensated by the courts).(2) A.R.S. §45-254 requires that individuals filing a water right claim pay a one-time fee of $20 for each claim filed. Corporations, cities, State agencies, political subdivisions, associations, and partnerships must pay $20 or 2 cents per acre-foot claimed, whichever is greater. Indian tribes are the only parties specifically exempted from the filing fee requirement.

Fees Collected Are Insufficient to Recover DWR Costs

Fees collected will be insufficient to recover even the limited DWR costs identified by law. As of March 1989, DWR has collected $1,788,867 in filing fees for the Gila and Little Colorado adjudications. Since most claimants have filed, little additional fee revenue is anticipated. These monies will be insufficient to cover DWR's costs incurred in effecting legal notice. DWR's costs for legal process and service

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(1) Albert W. Stone, "Montana Water Adjudication: A Centennial History," Western Wildlands (Winter 1989): 18-24.

(2) Masters will conduct hearings and report to the court on legal and factual matters involved in deciding entitlements and priority of water rights.

totaled $1,859,412 as of December 30, 1988. These costs already exceed the amount of fee revenues collected. Moreover, court master costs must be reimbursed first. Therefore, it is unlikely that all DWR costs for legal process and service will be recovered.[1]

While statutes provide for recovery of DWR's cost for legal process and service, none of the agency's other administrative expenses are subject to cost recovery under current law. DWR's costs for administering adjudications have increased greatly in recent years. Since 1983, staffing has grown to 42 full-time equivalent positions. The department expended over $1.4 million on adjudications in FY 1988 and expects to spend nearly $1.8 million during the current fiscal year. According to one DWR official, no one anticipated administrative expenses would be so substantial.

Unless claimants support a greater portion of the burden, adjudications will continue to require substantial general fund revenues annually with no known or certain ending date in sight. DWR has requested four additional positions for FY 1990, and officials indicate that the agency may eventually need 50 or more staff to properly fulfill its responsibilities.

Statutory Revisions Could Require a More Equitable Sharing of Costs

The Legislature could amend current statutes to allow for a more equitable sharing of DWR's administrative costs. Precedents for this cost-sharing can be found in other sections of Arizona water law and in that of other western states. At least one western state, Idaho, has also extended this policy to general adjudications of water rights.

Precedents for "user" fees - Assessing water users and regulated entities for a greater portion of the costs of administering Arizona

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(1) DWR plans to hold fee revenues and apply interest earnings, and principal if necessary, to pay for master costs. The department estimates that master costs may total $150,000 annually. However, costs may be greater and interest earnings alone may not be sufficient to cover these costs.

water laws has precedent under current law. As noted in Finding IV (page 33), A.R.S. §45-611.1 requires groundwater users to pay an annual fee to support DWR costs to enforce the provisions of the Groundwater Management Act. A.R.S. §45-612 requires groundwater user fees sufficient to cover one-half of DWR's costs of administrating and enforcing the act.

One state has plans to establish a "water master" administrative agency which is fully self-supporting through user fees. Texas is establishing this operation to monitor and enforce water rights. The anticipated $200,000 annual cost of the operation will be recovered through fees charged to each water right holder.

Another state has extended this concept to general water rights adjudications. Idaho has established what is intended to be a fully self-supporting process for the Snake River basin adjudication. This adjudication will involve 87 percent of the state's land mass, and is expected to cost about $28 million over a ten-year period. Each claimant is required to pay a fee, established by law, based on type of use and water quantity or power generating capacity. Fees range from a minimum of $25 for small domestic uses to an estimated $5.5 million which will be paid by a major utility company.

According to the chief of Idaho's adjudications bureau, fees were established after receiving input from a citizens' committee set up to find a way to equitably finance the adjudication. This official indicated that there had been limited success in getting general fund revenues to support the adjudication, yet, everyone recognized the benefit of eliminating the uncertainty over what water was available. The utility company, for example, was so committed to having the adjudication take place that it was willing to pay millions to support it.

Arizona adjudication fees are low - By contrast, claimants in Arizona have contributed far less to support adjudications. One-time fees generated as of March 1989 represent an average of about $24 per claim filed. This is slightly less than the minimum fee which will be paid in Idaho by small domestic and stock water users.

Government agencies have paid the most to support the adjudications in Arizona. The U.S. Forest Service has paid $239,140 for water rights claims in Arizona's national forests. The Arizona State Land Department, the second highest payer, remitted $154,817 to the Department of Water Resources for claims on State lands. Among Arizona cities and counties, the city of Phoenix has paid the most ($65,514) in filing fees. Power companies, irrigation districts, and other water users have paid considerably less. The Salt River Project has paid $57,101, and Arizona Public Service has paid $5,510. The highest paying irrigation district is the Maricopa-Stanfield district which remitted $7,566 to DWR.[1]

One DWR official argues that additional fees should not be assessed. He fears objections by claimants who may drop out of the process and risk its viability. This is not likely to happen, however, for two reasons. First, parties claiming smaller amounts of water would not be significantly impacted by additional assessments if an approach similar to Idaho's were adopted. Estimates provided by the Idaho Department of Water Resources indicate that almost 89 percent of total revenues to be raised through fees will come from the largest water users who represent only about one-third of all claimants. Second, larger users of water, who would be impacted by additional assessments, are not likely to drop out of the process because they have the most to lose and would jeopardize their water rights. Since these claimants have paid such a small proportion to support DWR costs thus far, it is not unreasonable to expect a greater cost-sharing commitment from them.

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(1) These amounts are based primarily on computer generated data provided by the Department of Water Resources and were confirmed with the organization named. In two cases, small discrepancies (± about 1 percent) with claimant records were identified. DWR has not audited claims to determine if amounts paid comply with statutory requirements. Therefore, amounts quoted could represent under or over payments.

The Legislature could amend current statutes to permit additional assessments of claimants on an equitable basis.[1] In considering statutory revisions, the Legislature could require that either a portion or all of DWR's administrative costs be recovered. In addition, exemptions for small domestic or stock water users could be considered if additional fees were deemed to be unfair or a financial burden.

RECOMMENDATIONS

1. The Legislature should consider enacting statutory provisions to permit additional assessments of claimants for all or a portion of DWR's administrative costs for adjudications.

2. DWR should undertake additional analysis of future anticipated costs, including the potential cost of masters, to aid in the development of equitable fee levels.

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(1) It is interesting to note that recent legislation supported by DWR went in a contrary direction by limiting future assessments of claimants. Prior to enactment of Senate Bill 1245 in 1988, fee revenues collected could be applied first to DWR's service and process costs. All remaining funds would be available to pay for the cost of hearing officers under the provisions of A.R.S. §45-255.B. If funds were insufficient, the court could impose an additional assessment at its discretion to cover the cost of the hearing officers. In supporting SB 1245, DWR, in effect, delayed and limited recovery of its own administrative costs since, as noted earlier, funds will first go to pay for the court's masters.

August 24, 1989

ARIZONA
DEPARTMENT
OF WATER
RESOURCES

Rose Mofford, Governor
N. V. Plummer
Director

15 South 15th Avenue
Phoenix, Arizona 85007

Mr. Douglas R. Norton
Auditor General
2700 North Central Avenue, Suite 700
Phoenix, AZ 85004

Dear Mr. Norton:

The Department of Water Resources has completed its review of the draft report of performance audit which your agency has completed as part of the Sunset Review required by statute. This letter, along with the responses on particular findings in the report (Attachment One), constitutes the Department's comments to the report.

The Department generally agrees with the draft report of performance audit. The report finds that the Department has effectively performed its responsibilities in implementing the Groundwater Code and performing its other water management and public health and safety functions. In the two areas where the Department's effectiveness could be improved, the draft report concludes that additional funding is required. The Department will seek additional funding for the two areas, (1) stronger enforcement of the Groundwater Code's conservation and allocation requirements and (2) additional effort on capping hazardous open wells.

In assessing the Groundwater Code, the draft report concludes that the Code is needed and has provided better water management in Arizona. Terminating the Department, and by implication the Groundwater Code, could cause significant harm to the public's health, safety, and welfare.

As the draft report states, the Department has consistently sought legislation to address deficiencies in the enabling statutes under which it operates. The Department utilizes both an annual omnibus groundwater bill supported by the water community and individually sponsored bills which may not have universal support.

The Department disagrees with the draft report only as to Findings One and Five. Finding One is that a Groundwater Code study commission should be convened by the Legislature to address perceived problems with the Code. As stated in the attached response to Finding One, the Department believes that the goal of safe yield, the assured water supply provisions, and the per capita measure of municipal conservation measures require little

or no change at this time. To the extent that some amendment of the per capita measurement is desirable, and in regard to the other statutory changes identified as desirable in the preliminary report, the existing mechanisms now utilized by the Department are adequate. A study commission along the lines of the 1977 Groundwater Study Commission is unnecessary at this time and could generate divisive attempts to alter the basic structure of the Code which, the draft report finds, has served Arizona so well.

Finding Five is that increased fees should be assessed to claimants in the general adjudication of water rights. As set forth in the attached response to Finding Five, the Department believes that the adjudications provide a benefit to all residents of Arizona and claimant fees should not be increased.

In conclusion, I want to express my appreciation for the fine professional work done by your staff of auditors. Their thoughtful and intensive study of the Department of Water Resources and its statutory mandates will further the goal of effective and efficient state government.

Sincerely,

N. W. Plummer
Director of Water Resources

NWP:ea

Enclosure -
Attachment One

ATTACHMENT ONE

ARIZONA DEPARTMENT OF WATER RESOURCES

Responses to Auditor General's Findings
Sunset Review
Draft Report of Performance Audit

Finding I: To Help Ensure More Effective Water Management, The Legislature Should Address Several Problems That Have Surfaced Since The Groundwater Code's Inception in 1980.

A. Groundwater Code Is Needed and Has Provided Better Water Management

The Department agrees with this finding. In this desert state, only focused water management and a dedicated commitment to water conservation will assure the continued availability of the water needed for current uses and future development. The Department is committed to fair and effective implementation of its statutory responsibilities.

B. Several Code Provisions May Not Provide for Effective Water Management: Safe Yield.

It would be a fundamental mistake to eliminate all references to a management goal from the Groundwater Code. The current levels of groundwater overdraft in the Active Management Areas (AMAs) will ultimately lead to a disastrous long term result. It is imperative to create a strong regulatory incentive which makes the purchase and use of Central Arizona Project water as a replacement for mined groundwater a necessity. This can only be accomplished by establishing a goal which limits the future access to groundwater as a basic supply source. This is especially true for municipal water use, where the demands for water are likely to more than double over the next 40 years. The goal as it affects the ability to demonstrate an assured water supply is a critical water management tool and therefore must be retained.

The existence of large quantities of groundwater in storage does not mean that a safe yield goal is unnecessary. Although the Phoenix AMA now has 160 million acre feet in storage, it had 240 million acre feet in storage before modern development began. That 33% reduction in the amount stored within just a few decades emphasizes the need for a safe yield goal. Projections that the amount remaining in storage will last for several hundred years are valid only if CAP water is fully utilized and the Groundwater Code, with its safe yield goal, is fully implemented.

In spite of the overriding goal, most of the Code's provisions are not based on resource based considerations. The amount of water allocated to a farm through the water duty calculation or to municipalities and industries is based entirely upon the volume needed to achieve beneficial use, assuming water conservation measures. These volumes are in fact a license to overdraft groundwater. If the safe yield goal were really the determining factor in the water management scheme, then water allocations would have been based on a decreasing pro rata reduction in groundwater until the safe yield level is reached. However, abandoning the goal of safe yield by 2025 because we may not succeed in reaching it would be like abandoning a fire prevention goal because not all fires could be avoided.

The need for water conservation and better water management is not synonymous with the need to achieve the particular goal of safe yield. While the Code establishes a safe yield goal for the three metropolitan AMAs, most of the water management provisions in the Code are actually independent of having such a goal. The Groundwater Code generally utilizes the approach of an equitable allocation of groundwater resources. It is important to note that the basic operating tenets of the Code are identical in the Pinal AMA, which does not have a safe yield goal, to those in the safe yield AMAs. Regardless of the goal, grandfathered rights are established; service area rights are determined; allocations based on conservation requirements are set forth in the management plans; and all well construction rules and regulations are accomplished in a consistent fashion. These provisions are the substance of the Groundwater Code. In fact, the management goal has very few applications in the day to day administration of the Code.

The establishment of safe yield as the goal has three major policy implications. First, it sets the level and degree to which augmentation may be needed. The need for new projects or for water importation is dependent upon the goal. Second, the goal has a major effect on how much groundwater is allowed for demonstration of assured water supplies for municipal development purposes. Third, the goal determines the ultimate need for the purchase and retirement of grandfathered rights after the year 2005.

The real issue which needs to be addressed is whether or not the strict goal of safe yield by 2025 is appropriate. As the Auditor General's report states, the AMAs are not yet at safe yield, and may not succeed in reaching that goal by 2025. Therefore, this state can expect to see declining groundwater tables until at least 2025. At that time, if it appears that additional declines in the groundwater table are economically and politically acceptable, perhaps a different management goal should be set. That goal might be safe yield by a date later than 2025, or safe yield at a particular depth to water (the Department now

allows new developments which are projected to cause the groundwater table to drop to 1200 feet).

Whichever management goal is selected, however, no one should lose sight of the overriding conclusion of the Auditor General that "[t]he groundwater code is needed because it has provided better water management in Arizona."

C. Assured Water Supply Provisions Can Work Against Safe Yield.

The report indicates that the assured water supply provisions could work against the safe yield goal and therefore should be re-examined. Because the Department has taken an approach of phasing in the reduction of groundwater in the assured supply test in order to minimize economic impacts, the result described in the report has occurred to date. Minimizing economic impacts is certainly within the spirit of the Groundwater Code, which was adopted to protect and stabilize the general economy and welfare of this state and its citizens. However, the conclusion that allocation of groundwater for an assured supply demonstration works against the safe yield goal is correct.

The Department disagrees with this finding of the draft report, because correction of this impact on safe yield does not require review of the assured water supply statute. A change in the policy by the Department in how it implements this provision is all that is needed. One interpretation of the statutory language is that all new assured supplies must be consistent with achievement of the management goal, and therefore no volume of mined groundwater component may be included. In other words, the Department could solve this problem administratively by adopting much more restrictive policies and rules for use of groundwater in the demonstration of an assured water supply. The Department is currently in the process of formulating rules to address this issue.

D. Problems with the Code's Municipal Conservation Measure.

While there may be some problems with the use of gallons per capita per day as a measurement tool for level of conservation, this system is the most commonly used measure in the water industry. Clearly, the City of Tucson dramatically reduced its average gallons per person per day rate when it undertook a major water conservation effort in the 1970's. Although a per capita requirement may not fully reflect efficient water use, to date no one has yet developed a clearly superior alternative to the present system. However, the Department is in the process of developing an amendment to the per capita provision which may provide an alternate measure of groundwater conservation for municipal uses. Therefore, the Department agrees that the per capita conservation requirement in the Code should be reviewed.

The Department disagrees with this finding on the questions of improper application of the existing statute and whether the statute works against the safe yield goal. In fact, the Department has properly interpreted the statutory requirement for reasonable reductions in groundwater use per capita in adopting the management plans. Arizona's desert environment is subject to great fluctuations in available surface water supplies, including CAP supplies. Groundwater tends to be available on a more consistent basis, even when surface water or other renewable supplies are severely curtailed. In determining what constitutes a reasonable reduction in groundwater use, the Department has had to consider that, in practice, the amounts of groundwater used each year will vary unpredictably over a ten-year management period, depending on what renewable supplies are available. Therefore, the Department has adopted a per capita measurement for groundwater reductions by setting a reasonable level of total water use.

In drought years, when renewable supplies are not available, the entire amount of water served by a municipal provider may be groundwater. In wet years, when renewable supplies are relatively abundant, the Department effectively subtracts the renewable supplies used from the goal of the total water use rate. The remainder is the amount of groundwater that may be used based on reasonable reductions in use.

Only the groundwater portion of the total water used is subject to the strictures of the management plans. However, the Department cannot ignore other water used in determining whether the groundwater use was reasonable.

An example will illustrate how the per capita rate requirements work. A municipal provider may have served 300 gallons per capita of water per day (GPCD) to its residents in 1980, with one-third of its supply surface water (100 GPCD) and two-thirds of its supply groundwater (200 GPCD). Its goal for total water use for 1987 might be 280 GPCD, without regard to whether the groundwater portion of the supply remains at 200 GPCD, increases, or decreases. The municipal provider would be in compliance with its goals in 1987 if it used 280 GPCD or less, including all sources of water. Thus, the provider would not have been penalized if 1987 was a drought year, the surface water portion of its supply was reduced to 50 GPCD, and groundwater use was increased to 230 GPCD to make up the difference. On the other hand, if 1987 happened to be a wet year so that 200 GPCD of surface water was used, the municipal provider would not be in compliance if it also served 180 GPCD of groundwater, for a total water use of 380 GPCD. In that case, even though the groundwater portion of the GPCD was reduced by 20 GPCD, the reduction would not be reasonable because it would be without regard to increases in other water used.

The Department's interpretation of the municipal water per capita requirements of the Groundwater Code is the only ra-

tional way to deal with a variable water supply. While the Department enforces only against use of groundwater in excess of a GPCD goal, the Department must consider groundwater use against a background of other water use.

The Department's policy of taking surface water into account in determining what groundwater use reductions are reasonable does not work contrary to the Code's safe yield goal. A city or other municipal provider is never penalized for increasing the percentage of its surface water use. However, a provider is not rewarded for increasing its use of surface water if the provider also wastes groundwater. By requiring that all groundwater use be based on a conservation standard, the Department is moving in the direction of the safe yield goal.

E. Other Findings.

The Department generally agrees with the other findings of the need for more comprehensive water management, regulatory authority over effluent, incentives for the increased use of non-groundwater, and the benefits of a metropolitan, regional or state-wide water district. The Department is working now to develop legislative initiatives on these matters.

F. Study Commission Recommendation.

A study commission to address changes to the Code is unnecessary and undesirable. The Department regularly convenes an ad hoc "rump group" to develop consensus on changes needed to the Code. To the extent that complete consensus is not possible, the Department has worked with members of the water community to develop legislative changes in the public interest. This process, generally led by the Department, has resulted in changes such as the recharge project law and the restrictions on artificial lakes.

The Code was the result of numerous negotiated compromises and agreements. Opening up the process to review may lead to requests for basic structural changes to the Code which could threaten the accomplishments of the Code to date. The Code should not be exposed to the dangers of opening it up to the ripple effects of people all wanting their pet problems solved at the same time. Overall the Code has been effective. It has only been in effect for nine years. To decide to make major changes at this point may be premature.

Finding II: A Stronger Enforcement Program May be Needed.

The Department agrees that a stronger enforcement program may be needed. Through review of available reports and documents, follow-up on reported complaints about possible violations, and use of satellite photography generated by other entities, the Department has developed an enforcement program which

fully utilizes the time of its staff. The compliance and enforcement program has been successful in resolving hundreds of suspected cases of violations each year since 1985. Moreover, this program has been successful in establishing determinations and resolutions of violations without resort to the court appellate process in all but a handful of instances.

Despite this success, there are indications that additional enforcement activities are desirable. Random field inspections and record audits would further insure widespread compliance with the Groundwater Code. However, the Department now lacks the staff to do these random checks at all, much less in statistically significant numbers. Therefore, the Department has requested additional funds for the operations and compliance (enforcement) effort.

Finding III: More Effort Is Needed To Protect The Public From Hazardous Open Wells

The Department agrees that more effort is needed to ensure that open wells are capped. While the Department has identified hundreds of open wells and has adopted an emergency rule to require owners to cap open wells, the Department lacks the staff to enforce timely and complete compliance.

The Department would not support funding the additional effort either from the enforcement fund or from a self-supporting open well fund. The groundwater enforcement fund now supports a full-time enforcement attorney. Penalties would have to be raised to a publicly unacceptable level to finance additional personnel from that fund, or from a self-supporting open well fund. The Department has requested additional funds to staff the effort which is needed. Finally, the Department agrees that it would be desirable to require reports of open wells when water rights are conveyed, and will work to implement that recommendation.

Finding IV: Groundwater Withdrawal Fees.

The increase in the groundwater withdrawal fee to cover half of the Department's administrative costs is one way to increase taxes in light of tight budgets. Such an increase would also provide an incentive for uses of alternative supplies of water.

Finding V: Water Rights Claimants Should Support a Greater Share of the Adjudication Costs

The Department disagrees that claimants will benefit more than the general public from water rights adjudications. Because the two general adjudications encompass almost all water uses in Arizona except those supplied by the Colorado River, nearly all of the general public is represented. Everybody uses water, and individuals who did not file their own claims are

nevertheless generally represented by the claims made by their water provider. For example, the City of Phoenix filed claims on behalf of all those it serves. In fact the largest entities, who represent the interests of many individual water users, are the most active in the adjudications and have an acute interest in bringing certainty to their rights in order to facilitate planning for increasing future needs.

The draft report implies that the only purpose for the adjudications is to settle Indian claims. While that may have been the primary motivation behind the petitions for adjudication, there are many instances of uncertain water rights and conflicts among non-Indian water users which have needed resolution for many years. The fundamental benefit of the adjudications is certainty of water rights for both Indian and non-Indian water users. Benefits accrue not only to the individual water user, but also to the state as a whole because the determinations made by the adjudications will be necessary in order to proceed with meaningful water resources planning and management in Arizona.

It is also stated in the draft report that the Department's cost for administering the adjudications has increased greatly in recent years. The costs have increased greatly since 1983 because that is the year that the U.S. Supreme Court's ruling first made it certain that the adjudications would take place. The Department has been spending a significant percentage of its budgetary authority in building the Adjudications Division to an adequate level since then, and, as the finding correctly points out, the necessary staff level has not yet been attained. The Department has always been aware of the relative magnitude of the effort that the adjudications would impose on the agency. What could not be anticipated were the specific requirements which the courts have established for the Department's technical assistance. These have been reached as a result of litigation by the claimants.

Under the section "Precedents for 'User' Fees," there is discussion relative to the Texas programs for collecting fees to support a water master agency. That program and our current program of adjudicating rights are not comparable. The current Arizona statutes provide that the Director of the Department will administer and enforce the final decree after the adjudication. This effort, which may involve water masters, is several years in the future. A fee to be assessed to water right holders for administration, as determined in the decree, would make sense, but it is premature to develop that type of program at this time.

The Snake River adjudication is cited as an example of precedent for user fees. The primary impetus behind that adjudication is to determine the rights of utilities to use water for hydroelectric power generation. A large percentage of the total fees collected were from those utilities. In the Snake River system, hydroelectric power generation revenues are substantial

and payment of large fees to determine their relative water rights is feasible and justifiable. The Idaho fee schedule was only slightly higher than Arizona's and was also a one-time assessment. Idaho has a substantial amount of water and therefore collected a large amount of money. The Department is not aware of any state that continues to collect fees from claimants in the adjudication to support the litigation.

The United States, on behalf of its various agencies, has paid approximately $318,000.00 in filing fees for both adjudications. These fees, however, were paid under protest and it is the intention of the United States, as noted in each of their claims, to seek recovery of all fees paid in Arizona at some point during or after the proceedings. In the Snake River adjudication the United States has refused to pay the filing fee under the argument that federal law prohibits judgments for costs to be entered against the United States in a general adjudication. If this issue is resolved in the United States' favor, it could further erode the potential to collect additional fees in Arizona.

As a further complication to assessing additional fees, the Gila adjudication court entered a comprehensive order in July, 1989 which establishes the manner in which it will issue its water right decrees. As the court concludes hearings for each watershed, the court will enter an order establishing the rights of all claimants within that area. Many, if not most, of the claims that have been filed were filed by well owners as a precaution in case their water use was eventually found by the court to be appropriable water under state or federal law. As the court enters these "watershed decrees" it will make the determination of which claimants are excused from the adjudication proceeding. There will, however, be an interval of about ten years between the first and last of these decrees. If additional fees are imposed on claimants, then those in the later watersheds to be completed could be assessed a greater total amount than those located in the earliest areas completed. Many of these claimants may ultimately be found to be inappropriate participants in the proceeding. It would seem inequitable to any claimant, but particularly to a small claimant whose claim was found to be unnecessary, to have to pay substantially more to be adjudicated only for the reason that the area where the claim is located is adjudicated last.

Other Portions of the Draft

The third paragraph of the Summary, on the first unnumbered page, should state that Arizona state government first became administratively involved in water management when Arizona's surface water code was enacted in 1919.

ARIZONA LEGISLATIVE COUNCIL

MEMO

May 8, 1989

TO: Douglas R. Norton, Auditor General

FROM: Arizona Legislative Council

RE: Request for Research and Statutory Interpretation (O-89-1)

This is in response to a request submitted on your behalf by William Thomson in a memorandum dated April 19, 1989.

FACT SITUATION A:

Arizona Revised Statutes (A.R.S.) section 45-561, paragraph 7 provides a definition of safe-yield stating that:

> 7. "Safe-yield" means a groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial groundwater recharge in the active management area.

Arizona Revised Statutes section 45-562, subsection A provides management goals for initial active management areas stating that:

> A. The management goal of the Tucson, Phoenix and Prescott active management areas is safe-yield by January 1, 2025, or such earlier date as may be determined by the director.

Arizona Revised Statutes section 45-563 provides for management plans in initial active management areas and management periods:

> The director shall develop a management plan for each initial active management area for each of five management periods pursuant to the guidelines prescribed in sections 45-564 through 45-568 and shall adopt the plans only after public hearings pursuant to sections 45-570 and 45-571. The plans shall include a continuing mandatory conservation program for all persons withdrawing, distributing or receiving groundwater designed to achieve reductions in withdrawals of groundwater.

Arizona Revised Statutes sections 45-564 through 45-568 provide guidelines for development of management plans for the initial active management areas. The

guidelines provide the director of water resources with the authority to establish irrigation water duties, conservation requirements, augmentation programs and other measures. However, the guidelines do not appear to include any requirements that the director structure management plan components to ensure that safe-yield is indeed achieved.

QUESTIONS PRESENTED:

1. Is the safe-yield management goal a mandatory requirement to achieve and maintain a long-term balance between groundwater withdrawal and recharge? Or, is the goal fulfilled if the department of water resources (DWR) makes a reasonable attempt even if a long-term balance between withdrawal and recharge is not achieved?

2. Does A.R.S. section 45-562, subsection A require that safe-yield be achieved on or before January 1, 2025 within the Tucson, Phoenix and Prescott active management areas?

3. Is the DWR director required to include mandatory provisions within the management plans for the Tucson, Phoenix and Prescott active management areas to ensure that safe-yield is achieved on or before January 1, 2025?

4. If DWR must plan to achieve safe-yield, does it have to take enforcement action if plan provisions are not met? Conversely, if DWR does not have to include mandatory safe-yield provisions in the plans, are groundwater users exempt from DWR enforcement actions if they also made a good faith effort to comply?

5. Are there any statutory consequences to DWR if the DWR director or the water users within the Tucson, Phoenix and Prescott active management areas fail to achieve safe-yield?

DISCUSSION:

1. In enacting the 1980 groundwater management act the legislature found that active groundwater management is necessary in many areas of the state where the rate of groundwater withdrawal exceeds the rate of replenishment of the aquifer. Without management the groundwater overdraft would eventually deplete the aquifer causing economic and social damage and displacement to those persons dependent on the groundwater. As part of the comprehensive system of management, four active management areas (AMA's) were established corresponding to the areas of greatest demand and overdraft in the state. Each AMA was assigned a management goal and the director of the new DWR was charged with developing five successive management plans for each AMA. The management plans are to be developed according to the economic, social and physical requirements

of the AMA's and technologies available for conserving, reusing and augmenting the groundwater supplies, all within broad statutory requirements and guidelines. Classes of groundwater users, such as agricultural, municipal and industrial, are identified for particular treatment under the management plans. The groundwater code contemplates flexibility in formulating the management plans to respond to the extreme variety of circumstances the director must address.

The management goal of each initial AMA was prescribed by statute. (The director must select and assign the management goal for any subsequent AMA. A.R.S. section 45-569.) The goal for the Phoenix, Prescott and Tucson AMA's is "safe-yield" on or before January 1, 2025. The goal of the Pinal AMA is a variant of "planned depletion" which allows continued, managed overdraft to sustain the agricultural economy while preserving a residual amount of groundwater for nonagricultural uses.

The role of a goal in groundwater management is suggested by the dictionary definition. A goal is "the end toward which effort is directed; a condition or state to be brought about through a course of action." Webster's Third New International Dictionary, 1976. A goal is the target of an attempt.

"Safe-yield" is defined by statute as "a groundwater management goal which attempts to achieve and thereafter maintain . . . ." A.R.S. section 45-561, paragraph 6 (emphasis added), cf. Arizona Groundwater Management Study Commission, Final Report June 1980, p. III-9.

The purpose of the management goals must be seen as the target toward which management efforts are aimed. Statutes require the management plans to be structured toward the management goals employing progressively more stringent measures. A.R.S. sections 45-563 through 45-568. Other statutes require the management goals to be factored into various other management decisions of the director. A.R.S. sections 45-132 (withdrawal of poor quality groundwater for use in an artificial lake), 45-515 (issuance of a general industrial use groundwater withdrawal permit), 45-576 (determination of an assured water supply) and 45-807 (recovery of underground stored water by a city, town or private water company).

Given the pervasive presence of the management goal, it must not, however, be inferred that achievement of the goal is mandatory in a legal sense. Achievement of the goal in the Phoenix, Prescott and Tucson AMA's cannot be known or measured until the year 2025. Even assuming technological advancements, actual safe-yield will probably not be measurable with the degree of precision and reliability to impose legal sanctions for failure to achieve it. Moreover, there are uncontrollable and unforeseeable circumstances, such as climatological and geological events, that could intervene to frustrate even the best efforts.

The sports analogy is compelling. An athletic team doesn't win unless it achieves the goal (scores). However, if it fails to score, it is not penalized, it simply loses. In managing groundwater in a safe-yield AMA the goal is defined and the rules require an effort, or an "attempt" (A.R.S. section 45-561, paragraph 6) to achieve and thereafter maintain the goal, but there is no penalty for failure. The state simply loses the security and stability provided by a sound resource base.

2. No. See above.

3. Yes.

The statutes outlining the requirements for the management plan in each management period contain mandatory requirements and prescribe mandatory compliance by water users.

In the first management period, 1980-1990, the director must establish (1) irrigation water duties for farms that assume the use of certain agricultural water conservation methods, (2) a conservation program for municipal uses requiring per capita reductions in water use, (3) a conservation program for industrial uses requiring the use of "the latest commercially available conservation technology consistent with reasonable economic return" and (4) conservation requirements for distribution systems. Compliance with these requirements, including any variances, is mandatory until the compliance date of the second management period. A.R.S. section 45-564.

In the second management period, 1990-2000, the director must (1) establish new irrigation water duties, assuming the maximum conservation practices, (2) establish additional conservation requirements for municipal uses, including additional per capita reductions and uses of other appropriate conservation measures, (3) update the conservation requirements for industrial users to incorporate new technology, (4) establish conservation requirements for small municipal providers (serving fewer than 500 people with less than 100 acre-feet of non-irrigation water per year), (5) establish additional economically reasonable conservation requirements for distribution systems, (6) incorporate a water supply augmentation program and (7) assess the groundwater quality in the AMA. Compliance with these programs, including any intermediate water duties, conservation requirements and variances, is mandatory until the compliance date of the third management period. A.R.S. section 45-565.

In the third management period, 2000-2010, the director must (1) establish new irrigation water duties, assuming the maximum conservation practices and, at his discretion, mathematically reducing the highest irrigation water duties to conform to the median water duties, (2) establish additional conservation requirements for municipal uses, including additional reductions in per capita use and other appropriate conservation measures for individual users, (3) update the conservation requirements for industrial users to incorporate new

technology, (4) update the conservation requirements for small municipal providers, (5) establish additional conservation requirements for distribution systems, (6) incorporate additional water supply augmentation programs, (7) reassess the quality of the groundwater in the AMA and (8) consider, and may include, a program to purchase and retire grandfathered rights beginning in 2006. Compliance with these programs, including any intermediate water duties, conservation requirements and variances, is mandatory until the compliance date of the fourth management period. A.R.S. section 45-566.

In the fourth management period, 2010-2020, the director must build on the requirements of the third management period, including new irrigation water duties and additional conservation requirements, additional water supply augmentation, groundwater quality assessment and purchase and retirement of grandfathered rights. Compliance, again, is mandatory until the compliance date for the fifth management period. A.R.S. section 45-567.

For the fifth management period, 2020-2025, the director is again required to update the previous management plan for each AMA, adding to the conservation requirements as necessary in an effort to meet the management goal by the end of this management period. Compliance with these provisions is mandatory. A.R.S. section 45-568.

4. Title 45, chapter 2, article 12, Arizona Revised Statutes, (sections 45-631 through 45-637) contains the enforcement provisions applicable to the groundwater code. The code treats enforcement as a management tool in addition to its punitive effect. If the director discovers violations of the code, he may choose a particular enforcement action depending on the nature of the violation. The enforcement options include audits, inspections, investigations, temporary and permanent cease and desist orders and court actions including injunctions and civil and criminal penalties. Although these statutes each use the word "may", implying that the director has the option to enforce or not enforce the code, a reasonable interpretation, taking the code as a whole and the enforcement provisions in particular, would be that the director may choose at his discretion which enforcement action to take, but that he must take some enforcement action against violations of the code. Although normally the word "may" indicates a discretionary power, when the context of the usage requires a different interpretation, coupled with a public or third party interest in the exercise of the power, then the exercise of the power becomes imperative. Anthony A. Bianco, Inc. v. Hess, 86 Ariz. 14 (1959); Frye v. South Phoenix Volunteer Fire Co., 71 Ariz. 163 (1950); State v. Mileham, 1 Ariz. App. 67 (1965). The groundwater code establishes a comprehensive plan of groundwater management for the benefit of the public. The safe-yield goal for three AMA's indicates a legislative expectation that the groundwater overdraft will be managed and reduced. The public has a legitimate expectation of secure water supplies for the future. In this context enforcement is mandatory, with the director selecting the appropriate action from the menu of actions available to him.

5. No. See discussion under question #1 above.

FACT SITUATION B:

Arizona Revised Statutes section 45-402 provides a definition of a farm unit:

> 10. "Farm unit" means one or more farms which are irrigated with groundwater and which are contiguous or in proximity to each other with similar soil conditions, crops and cropping patterns.

Arizona Revised Statutes section 45-561 provides definitions of industrial and municipal use:

> 2. "Industrial use" means a non-irrigation use of water not supplied by a city, town or private water company, including animal industry use and expanded animal industry use.
>
> * * *
>
> 6. "Municipal use" means all non-irrigation uses of water supplied by a city, town, private water company or irrigation district.

Arizona Revised Statutes section 45-563 requires the DWR director to include in management plans a mandatory conservation program for all persons withdrawing, distributing or receiving groundwater. Arizona Revised Statutes sections 45-564 through 45-568 require that the director establish irrigation water duties for each farm unit in the active management area, a conservation program for all non-irrigation uses of groundwater including both municipal and industrial uses and conservation requirements for groundwater distribution. Arizona Revised Statutes section 45-564, subsection B requires the director to notify users of either farm unit water duties or conservation requirements and appears to specify that the requirements relate to groundwater users.

QUESTIONS PRESENTED:

1. Does "water" in A.R.S. sections 45-561, paragraphs 2 and 5 mean groundwater or all water?

2. Are farm unit, municipal and industrial entities exempt from management plan requirements if no groundwater is used?

3. Are farm unit, municipal and industrial entities bound to management plan requirements only for the amount of groundwater used?

DISCUSSION:

1. Throughout A.R.S. title 45 the distinction between the terms "surface water" and "groundwater" is scrupulously observed due to the divergent nature of the applicable rights and laws. In cases where the generic term "water" appears, it would indicate either (1) an intent that it apply to or include all types of water or (2) that the distinction between groundwater and surface water is irrelevant to the context. In the definitions of "industrial use" and

"municipal use" in A.R.S. section 45-561 it is unnecessary to make a distinction between surface water and groundwater because the statutes to which the definitions apply (A.R.S. sections 45-561 et seq.) clarify that the regulations apply to municipal and industrial uses of groundwater. For example, A.R.S. section 45-565, subsection A, paragraph 2 provides for additional conservation requirements for "all non-irrigation uses of groundwater" and goes on to specify conservation requirements for municipal uses and industrial uses. Thus the context in which the terms are used limits consideration to groundwater.

2. The primary effect of the management plans is on groundwater use. The statutes prescribing the management plan outlines indicate the effect of the features of each management plan. The features affecting farm units and municipal and industrial entities can be categorized as follows:

Irrigation water duties The irrigation water duty is used in quantifying irrigation grandfathered rights, A.R.S. section 45-465, in quantifying irrigation district withdrawal and delivery rights in AMA's, A.R.S. sections 45-494 and 45-495, and in establishing and maintaining farm operating flexibility accounts, A.R.S. section 45-467. These all relate to groundwater rights. Even though surface water rights and uses may be taken into account when using the water duty, the statutes are clear that the water duty applies only to groundwater, and that it cannot be used to affect surface water rights. A.R.S. section 45-466. Thus, if a farm uses no groundwater, it would have no irrigation water duty and would not be directly affected by the management plan requirements.

Conservation requirements for non-irrigation uses of groundwater These conservation requirements apply to both municipal and industrial uses, but if the municipal or industrial user could establish that it uses no groundwater, these conservation requirements would not affect it.

The remaining features of the management plans, such as conservation requirements for municipal distribution systems and augmentation plans, do not directly apply to farms or municipal or industrial users.

3. As discussed in #2 above, the features of the management plans that affect farms and municipal and industrial users are limited by their terms to application to groundwater. Changes in a farm's irrigation water duty affect only its groundwater rights. The conservation requirements for municipal and industrial users likewise apply only to groundwater. If such users also use surface water or some other water source that cannot be characterized as groundwater, only the groundwater component of their water use would be affected by the management plan.

SUMMARY

The Office of the Auditor General has conducted a performance audit of the Arizona Water Commission in response to a June 2, 1987, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

The Arizona Water Commission (AWC) serves primarily as an advisory body to the director of the Department of Water Resources (DWR) and also, to a lesser extent, to the Governor and the Legislature. The commission's statutory responsibilities include advising and making recommendations to the DWR director, reviewing State laws regarding water, and making recommendations to the Governor and the Legislature to improve water law. The commission is comprised of seven members appointed by the Governor. The Legislature does not appropriate any monies or staff to the commission. DWR provides staff support for the commission. Our analysis determined that the total cost of the commission for fiscal year 1987-88 was approximately $10,000.

The Arizona Water Commission Should Be Allowed to Terminate and Be Replaced with an Advisory Body Providing Citizen Input on Statewide Water Policy Issues (see pages 7 through 10)

The Legislature should consider allowing the Arizona Water Commission to terminate under the provisions of the Sunset Law and be replaced with an advisory council for statewide water matters. In eight years, the commission has been relatively inactive providing only six recommendations, three of which related to the water transfer issue. Commission meetings appear to have served mostly to inform the commission of DWR and other entities' activities. In addition, one-fourth of the commission meetings were held without a quorum. Commissioners, however, argue that although not readily apparent, the commission has provided beneficial review, discussion and recommendations on water matters.

Although the Groundwater Management Act of 1980 provided for citizen input in Active Management Areas (AMAs), the act did not specifically provide for input for non-AMA areas of the State or for a statewide

perspective. Although the commission might normally be expected to provide this input, in practice it has been relatively inactive and has had little impact in water matters.

Further, five of the seven current commission members reside within AMA boundaries. An advisory body with regional membership to the DWR director could provide beneficial input, particularly for water issues that transcend AMA boundaries and involve non-AMA portions of the State such as the water transfer issue.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Arizona Water Commission in response to a June 2, 1987, resolution of the Joint Legislative Oversight Committee. This performance audit was conducted as part of the Sunset Review set forth in Arizona Revised Statutes (A.R.S.) §§41-2351 through 41-2379.

Organization and Purpose of the Commission

The Arizona Water Commission (AWC) serves primarily as an advisory body to the director of the Department of Water Resources (DWR) and also, to a lesser extent, to the Governor and the Legislature. The commission is comprised of seven members appointed by the Governor. No more than four members may be of any one major political party. At least five members must be residents of different counties. To fulfill its responsibilities, the commission meets approximately six times per year. The commission's current role is described in A.R.S. §45-124 which states:

> " A. The commission may advise and make recommendations to the director on any matters and subjects under the director's jurisdiction.
>
> B. The commission shall review the effectiveness and adequacy of all state laws governing the control, supervision, appropriation and distribution of surface water and groundwater and shall, when appropriate, make recommendations to the governor and the legislature to improve the effectiveness and adequacy of such laws."

Evolution of Water Management in Arizona

State management of Arizona's water resources has become increasingly comprehensive over the years, beginning with the establishment of the Interstate Stream Commission in 1948. The Interstate Stream Commission's responsibilities include securing Arizona's rights to the Colorado River waters and statewide resources planning. In 1971, the Legislature established the Arizona Water Commission to replace the Interstate Stream Commission. Additional responsibilities given the commission include dam safety, watershed management, hydrologic data collection, and weather

modification projects. More responsibilities were added later including determining water supplies for new subdivisions, flood control, administration of water rights, and assisting the Superior Court in the adjudication of water rights.

In 1977, the Legislature established the Groundwater Management Study Commission to recommend a comprehensive groundwater code in response to a court decision limiting transportation of groundwater. The subsequent Groundwater Management Act of 1980 established the Department of Water Resources, transferred all previous Water Commission responsibilities to DWR, gave DWR increased authority to regulate groundwater, and limited the commission's role to that of an advisory body within DWR.

Budget and Personnel

The Legislature does not provide monies or staff for the commission. A.R.S. §45-125 requires DWR to provide assistance to the commission to the extent funds are available. DWR does provide clerical, technical, and legal support for the commission. Although the statutes allow each commissioner compensation up to $3,000 per year, commissioners generally receive $30 per meeting plus travel and per diem expenses. Our analysis determined that the total cost of the commission for fiscal year 1987-88, including DWR costs, was approximately $10,000.

Audit Scope and Purpose

Our audit of the Arizona Water Commission focused on whether the commission is still needed. The audit report presents a finding in this area and also contains information addressing the 12 factors that the Legislature should consider in determining whether the Arizona Water Commission should be continued or terminated.

This audit was conducted in accordance with generally accepted governmental auditing standards.

The Auditor General and staff express appreciation to the Arizona Water Commission members for their cooperation and assistance during the audit.

SUNSET FACTORS

In accordance with Arizona Revised Statutes (A.R.S.) §41-2354, the Legislature should consider the following 12 factors in determining whether the Arizona Water Commission should be continued or terminated.

1. **Objective and purpose in establishing the commission**

The commission was established in 1971 to succeed and assume the responsibilities of the Interstate Stream Commission. Through the 1970s the commission had primary responsibility for State water management and policy. With the passage of the Groundwater Management Act of 1980, the Department of Water Resources (DWR) was established and assumed all previous commission responsibilities plus additional duties relating to groundwater management. The act continued the commission within DWR but significantly limited its duties to that of advising and making recommendations to the DWR director, and reviewing water laws and making recommendations to the Governor and Legislature. Arizona Revised Statutes §45-124.A and B specify commission responsibilities.

> " A. The commission may advise and make recommendations to the director on any matters and subjects under the director's jurisdiction.
>
> B. The commission shall review the effectiveness and adequacy of all state laws governing the control, supervision, appropriation and distribution of surface water and groundwater and shall, when appropriate, make recommendations to the governor and the legislature to improve the effectiveness and adequacy of such laws."

2. **The effectiveness with which the commission has met its objective and purpose and the efficiency with which it has operated**

Since its role was limited in 1980, the Arizona Water Commission has not been very active and has had limited impact on Arizona water policy and management. Although its primary responsibilities are to make recommendations and review laws, only six recommendations have been made in the past eight years. Further, from fiscal years 1981

through 1988, the commission averaged only 6.5 meetings a year, with almost one-fourth of those meetings lacking a quorum.

3. **The extent to which the commission has operated within the public interest**

The commission has had a negligible effect because of its limited activities. The commission has held approximately six meetings per year in which DWR, legislation, and other water-related matters are discussed. Although very infrequent, the commission has made recommendations to the Governor and Legislature. In particular, the commission was active in the water transfer issue in 1987.

4. **The extent to which rules and regulations promulgated by the commission are consistent with legislative mandate**

This factor is not applicable since the commission does not have authority to promulgate rules and regulations.

5. **The extent to which the commission has encouraged input from the public before promulgating its rules and regulations and the extent to which it has informed the public as to its actions and their expected impact on the public**

This factor is not applicable since the commission does not have authority to promulgate rules and regulations.

6. **The extent to which the commission has been able to investigate and resolve complaints that are within its jurisdiction**

This factor is not applicable since the commission is not a regulatory agency.

7. **The extent to which the Attorney General or any other applicable agency of State government has the authority to prosecute actions under enabling legislation**

This factor is not applicable since the commission is not a regulatory agency.

8. **The extent to which the commission has addressed deficiencies in the enabling statutes which prevent it from fulfilling its statutory mandate**

The commission has not proposed any legislation since its role was redefined in 1980.

9. **The extent to which changes are necessary in the laws of the commission to adequately comply with the factors listed in the Sunset Law**

Based on our audit work, we recommend that the Arizona Water Commission be terminated and that an advisory council for the DWR director be established to provide input on statewide water matters.

10. **The extent to which the termination of the commission would significantly harm the public health, safety or welfare**

Terminating the Arizona Water Commission would not harm the public health, safety, or welfare. However, an advisory body with regional membership could provide beneficial input to the DWR director on non-AMA and statewide water matters. The commission was left with little responsibility after the passage of the Groundwater Management Act of 1980, which gave responsibility for all water management matters to the newly created Department of Water Resources. Since then, the commission has rarely formally exercised its own limited authority to make recommendations to DWR, the Governor, or the Legislature. Commissioners, however, argue that the commission has provided beneficial input on water matters.

Although the Groundwater Management Act of 1980 provided for citizen input in Active Management Areas (AMAs), the act did not specifically provide for input for non-AMA areas of the State or for a statewide perspective. Although the commission might normally be expected to provide this input, in practice it has been relatively inactive and has had little impact in water matters. Further, five of the seven current commission members reside within AMA boundaries. An advisory body to the DWR director could provide beneficial input, particularly for water issues that transcend AMA boundaries and involve non-AMA portions of the State such as the water transfer issue.

11. **The extent to which the level of regulation exercised by the commission is appropriate and whether less or more stringent levels of regulation would be appropriate**

This factor is not applicable since the commission is not a regulatory agency.

12. **The extent to which the commission has used private contractors in the performance of its duties and how effective use of private contractors could be accomplished**

The commission has not used the services of a private contractor. We found no apparent reason for the commission to use private contractors.

FINDING

THE ARIZONA WATER COMMISSION SHOULD BE ALLOWED TO TERMINATE AND BE REPLACED WITH AN ADVISORY BODY PROVIDING CITIZEN INPUT ON STATEWIDE WATER POLICY ISSUES

The Legislature should consider allowing the Arizona Water Commission to terminate under the provisions of the Sunset Law. As currently constituted, the commission appears to have been relatively inactive over the last several years. However, a more representative advisory body providing input on statewide water policy issues should be considered.

The Arizona Water Commission's role was changed in 1980 following enactment of the Groundwater Management Act. In addition to giving the Department of Water Resources management authority over groundwater, the legislation transferred AWC's responsibilities to DWR and limited AWC's role to that of an advisory group. Prior to this, the commission had been responsible for a broad range of water resource areas.

The statutes currently permit AWC to advise and make recommendations to the DWR director on any matters under the director's jurisdiction. Further, AWC is required by statute to review the "effectiveness and adequacy" of all State laws relating to surface and groundwater and make recommendations for improvement, as appropriate, to the Governor and the Legislature.

The Water Commission Has Not Been Very Active and Appears to Have Had Little Impact on Arizona Water Policy

In recent years, with its role limited, the Arizona Water Commission has been relatively inactive and appears to have had little impact on Arizona water policy. The commission has rarely formally exercised its primary responsibility of advising and making recommendations to the DWR director, the Legislature, or the Governor. Former DWR directors and others in the water community indicated that the commission has not played a significant role in water matters and is not needed. Some commission members, however, stated that although not readily apparent, the commission has played a significant role in several areas.

Few formal recommendations made - Over the past eight years, the commission has rarely exercised its primary statutory responsibility of advising and making recommendations to the DWR director, the Legislature, and the Governor.

We reviewed the minutes of all AWC meetings held from fiscal year 1981 through fiscal year 1988. We found that commission meetings mostly consisted of reports by the DWR director and staff to the commission. Thus, while meetings served to inform the commissioners about the work done by DWR and other governmental entities, the commission itself provided few recommendations to DWR. During this eight-year period, the commission made a total of only six formal recommendations to either the director of DWR, the Governor, or the Legislature. Three of the six recommendations, moreover, related to the same issue: water transfers.

Perhaps as a result of this limited activity, attendance at many commission meetings in recent years has been poor. While the commission has met on average 6.5 times per year, it has not had a quorum at approximately one-fourth of its meetings. One commissioner stated that poor membership attendance has been a problem. He attributed this to the perception by the commissioners that they have little impact, and thus, have lost interest in attending meetings.

Impact on water matters appears to have been limited - Former DWR directors and others in the water community indicated that the commission has not provided significant input on water matters and is no longer needed.

The only issue the commission has actively addressed in the past few years has been water transfers. However, the commission's involvement has had little impact, and other groups are playing a more vital role in resolving the problem. The AWC recommended initially that the Legislature fund a study of water transfers, and then that public hearings be held on the issue. Finally, the commission issued a statement to both the Governor and the Legislature proposing legislation on water transfers. However, legislation was not enacted. Instead, a water transfer group composed of representatives from the water community was formed independently to specifically address the issue.

Several individuals indicated that the commission is no longer needed. We interviewed the four former directors of DWR and the current director. While all the former directors felt that the relationship between DWR and AWC has been a positive one, three of the four former directors indicated that the commission is no longer needed and recommended that it not continue. (The current director thinks the commission needs to be revamped to provide more input on statewide and non-AMA issues.) Two current commissioners we interviewed also said the commission's limited role is not needed and that the commission should be discontinued. Other commissioners, however, indicated that citizen input is needed in water matters. All former DWR directors agreed there would be little impact if the Legislature allowed the AWC to sunset.

Commissioners argue that role has been significant - Some water commission members argue that the commission's role has been significant, although at times not readily apparent. According to these commissioners, the commission or commissioners on an individual basis have provided input on implementation of the groundwater code, adjudication of water rights, the Central Arizona Project, the water transfer issue, and other matters. Two commissioners indicate that commission meeting minutes have not reflected all of the actions and discussions of the commission. In addition, these commissioners stated the commission did not adopt more formal recommendations because at times they were advised not to make formal recommendations unless acceptable to the Governor or DWR. Commissioners also stated that lack of resources from DWR has limited their ability to perform their duties.

A More Representative Advisory Body Is Needed

The Legislature should consider establishing a more representative advisory body to replace the commission. The Groundwater Management Act of 1980 provided the citizen input on water matters for Active Management Areas (AMAs). The act established Groundwater User Advisory Councils (GUACs) in each of the AMAs. Each GUAC is composed of five members knowledgeable of groundwater problems, appointed by the Governor, to

represent the groundwater users in the AMA. The GUACs are responsible for advising the AMA directors, making recommendations on AMA programs and policies, and commenting on draft management plans.

However, the act did not specifically provide for non-AMA or statewide citizen input on water matters. Although the commission may be viewed as a vehicle for this, its activity and input has been limited. Further, the commission's current membership does not significantly expand representation beyond the AMAs. Only two of the seven current commissioners reside outside the boundaries of an AMA. Currently, the statutes do not require regional membership to ensure that all areas of the State are represented.

The DWR director, water commissioners, and others in the water community have stated that a forum providing input on water matters outside of AMAs and on a statewide basis is needed. In our audit of the Department of Water Resources, we indicate the need for statewide planning to address issues such as those involving water transfers which affect both AMA and non-AMA sections of the State. An advisory body to the DWR director could provide beneficial input in the planning process. Replacing the commission with an advisory council has been proposed in recent legislation. The water transfer legislation that did not pass in the last legislative session included terminating the commission and establishing a statewide advisory body.

RECOMMENDATIONS

1. The Legislature should consider allowing the Arizona Water Commission to terminate under the Sunset Act provisions.

2. The Legislature should consider establishing a statewide advisory council with regional membership to provide input on water matters to the DWR director.

August 25, 1989

Mr. Douglas R. Norton
Auditor General
2700 North Central Avenue
Suite 700
Phoenix, Arizona 85004

Dear Mr. Norton:

The Arizona Water Commission has appreciated having had the opportunity to review the revised preliminary draft of the performance audit. This letter addresses your findings and recommendations.

We strongly believe your findings are generally limited to the negative reporting of Commission activities. The Commission has been closely involved in water issues and has contributed to the discussions and debate on legislation both before and after introduction in the Legislature. The Commission has advised the Department of Water Resources in the areas of adjudications, flood plain management, dam safety and groundwater. Although the Commission has rarely testified on bills before the Legislature, many contacts have been made with individual legislators to discuss these issues.

The Commission has provided valuable input to the Department with respect to the concerns of the public. These discussions, for the most part, are not reflected in the minutes of the meetings because until recently the minutes were prepared, if at all, in a very summary form and did not reflect the full discussion at the meeting.

In addition, we believe that a vote on a particular matter is not a critical factor in providing advice and counsel. The important issue is that discussions were held and input was provided.

We agree that the current membership does not adequately represent the non-AMA part of the state.

With reference to your recommendation, we agree with Recommendation #2 that a statewide advisory council with regional membership should be established. We will support the Department and the Legislature in any proposal to establish such a council. However, notwithstanding the lack of adequate representation from non-AMA areas of the state on the current Commission, it is imperative that the advice and counseling to the Department continue uninterrupted while the Legislature considers legislation to establish a more representative council.

Thank you for your consideration.

Sincerely

Pete Shumway
Chairman
Arizona Water Commission