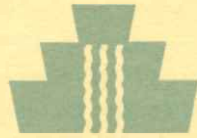


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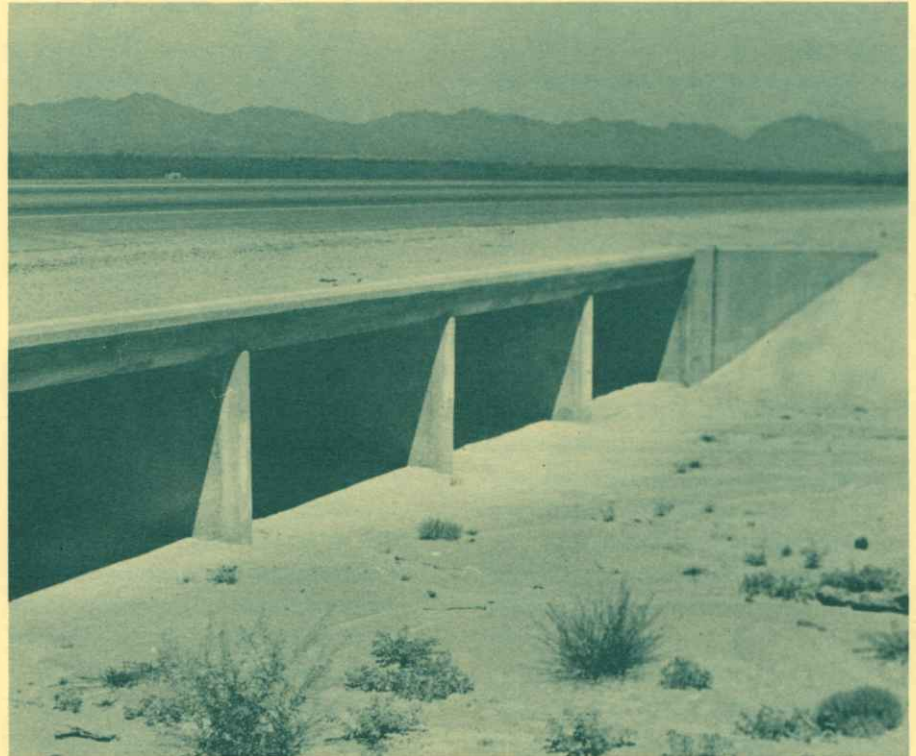


April 1991

Regional Water Supply Agency, a New Arizona Water Policy Concept

Efforts are currently underway to establish regional water supply agencies to serve two Arizona urban areas: Tucson and Phoenix. Already authorized by the state Legislature, the Tucson Active Management Area Water Augmentation Authority (TWAA) is in the final process of being formed. Meanwhile, the Arizona Legislature is currently considering legislation to authorize a Phoenix Groundwater Replenishment District (PGRD) to serve the Phoenix Active Management Area.

Such regional, water supply or augmentation agencies have been set up in different parts of the United States to serve the special needs of a region. In Arizona, however, the TWAA and the PGRD represent untested concepts. Proponents promise myriad and varied benefits. Meanwhile, some critics are wary of the organizations, with others more actively hostile to what they perceive the agencies to represent and their proposed courses of action.



A stark structure in a stark landscape, the CAP aqueduct in Tucson awaits Colorado River water. The sale and distribution of CAP water stimulated interest in regional water supply agencies. (Photo: Peggy Bommersbach)

Called variously an umbrella agency, a clearing house, broker, an insurance agency or, most grandiosely of all, a super agency, a regional water agency is meant to provide services and benefits to a range of water interests within an extended but defined area. With its broad regional focus, such an agency is expected to benefit various entities that by themselves would be unable to arrange certain opportunities. Divisive geographical, political and/or legal constraints are expected to be mitigated by the

regional authority. At the same time, a common good would be promoted among all participants.

Growing State Interest in Regional Agency

The prime reason for recent Arizona interest in regional water agencies is to quell developing anxieties about the Groundwater Management Act (GMA). More specifically, questions have arisen about whether certain GMA

strategies represent, in fact, the best means of achieving designated water policy objectives. Regional water agencies have been proposed to remedy perceived GMA limitations.

For example, some officials have expressed concern about the GMA safe-yield goal. Quite simply, safe yield is a condition wherein long-term groundwater withdrawals no longer exceed recharge of the aquifer. Safe yield is what the GMA is all about, its achievement the measure of the act's success.

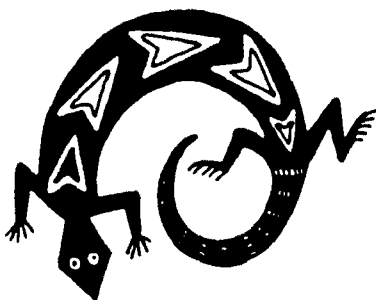
Some observers believe that the GMA is confronting a dilemma or quandary. They view the achievement of safe yield in the face of increased population as unlikely, if not undoable. It is argued that the safe-yield goal would be more attainable if, along with more efficient water use or conservation, an effort is made to better allocate supplies regionally. By providing the legal and physical means of moving water throughout an area, a regional water agency is expected to accomplish this allocation and thereby advance safe yield.

Assured water supply is another GMA component to attract concern. It is one of three strategies designated by the GMA to contribute to safe yield, the other two being conservation and augmentation. Basically there are two aspects to assured water supply, and it is important to be clear about each. Lack of an understanding of the dual prerequisites of assured water supply has caused confusion about certain proposed regional agency benefits.

The GMA requires developers, before building subdivisions within an AMA, to demonstrate an assured water supply. One prerequisite to be met has to do with consumer protection. A developer has to show that sufficient water of suitable quality is available for proposed uses for 100 years. Such a rule was in force even before the passage of the GMA. Passed in 1973, it intended to protect

against land fraud.

Cities and municipal areas that have contracted for Central Arizona Project (CAP) water are presumed to have the required 100 years of assured water supply. The 100-year as-



Mimbres pottery design of lizard

sured water supply deemed to cities and towns with CAP contracts, however, is valid only through the year 2000. After that time, the Arizona Department of Water Resources (DWR) may review a municipality's assured water supply to determine whether it is sufficient to justify further growth.

Developers outside municipal service areas do not benefit from this provision. Located beyond the pale of CAP, such developers must demonstrate a 100-year supply with other types of water resources. If a developer is considering a project located in a rural area on the fringe of a city, groundwater is obviously an important source for establishing safe yield.

Along with a 100-year, physically available water supply, another prerequisite must be met to demonstrate an assured water supply. Developers must also ensure that their proposed water uses are consistent with the AMA's management plan and goal. Since Phoenix and Tucson are safe-

yield active management areas, consistency with management plans, in effect, means long-term groundwater withdrawals are not to exceed aquifer recharge.

The DWR further defined the GMA assured water supply concept with proposed rules issued in November 1988. In brief, the proposed rules severely limited the amount of groundwater a developer could apply toward a 100-year water supply.

Such rules were obviously to the disadvantage of developers in outlying areas and those who benefit from development activities. They claimed that the proposed rules would make it impractical and unprofitable to develop certain types of land. As a result, they vigorously protested the proposed DWR rules. The rules were subsequently withdrawn for further study.

Thus, concern about the GMA assured water supply requirement heightened. If restrictive regulations prevailed, developers feared they would be in a bind. They, therefore, looked to various strategies to meet assured water supply rules. They emphasized that this was done to gain flexibility in meeting obligations, not to dodge them. A regional water agency was seen to provide the desired flexibility.

A regional water agency could indeed ease achieving assured water supply requirements. By operating within a broad field, both geographically and institutionally, the agency is well positioned to match available water supplies to various needs within an AMA, especially those of developers in remote areas. The use of CAP water is an example. Some officials perceive a disparity between the benefits CAP provides to municipal areas as opposed to the situation of rural areas on the fringe of cities or outside incorporated areas. The latter do not have access to the CAP canal. A regional water agency would provide the means to redis-

tribute CAP water supplies.

Also, a regional water agency could also redistribute other water sources besides CAP, such as effluent and leased Indian water rights. The benefits of such sources could be made available in various areas of an AMA where they are most needed. Between supply and demand may be institutional barriers, as well as the lack of facilities to treat and deliver water supplies. A regional water agency could help confront such obstacles.

Although most critical, the potential support in meeting GMA requirements is not the only benefit claimed for Arizona's regional water agencies. Proponents expect that by encouraging better regional water planning, such agencies will also contribute to other water policy areas in the state.

The Tucson AMA Water Augmentation Authority

The 1990 Legislature authorized the establishment of augmentation authorities in certain AMAs. To qualify, an AMA must meet three requirements: the pursuit of a safe-yield management goal; the inclusion of areas from at least three counties; and the AMA is not to include any cities exceeding a population of 750,000. Meeting the three criteria, the Tucson AMA was thus authorized to form the Tucson AMA Water Augmentation Authority (TWAA).

The agency is to be established with the vote of four entities: Pima County, Santa Cruz or Pinal County, the City of Tucson, and the Cortaro-Marana Irrigation District. A seven-member initial board is to govern the TWAA. The initial board of directors is to be appointed by the governor, from a list of candidates representing various interested parties, including city and county governments, agricultural interests with more than 2,000 acres, water companies with more than 2,000 service connections, mining interests, and a private citizen who

resides in the Tucson AMA.

The initial board is charged with adopting an operating plan within 30 months. If, however, interest is lacking in the agency, the board can vote to dissolve it. If the agency is to continue, a permanent board of directors is appointed to decide policy and direct the authority. The initial board is to propose representation on the permanent board which is to have nine members.

Financial support for the agency comes from various sources. The groundwater augmentation withdrawal fee or pump tax that is currently paid to DWR by all AMA groundwater users would be transferred to TWAA to support its basic operating costs. Financial resources also derive from the agency's power to issue tax-free, municipal bonds to support its various projects, with repayment by fees for delivery of developed water. Also, the agency will receive payments from clients for contracted services and may qualify for grants and other sources of revenue.

Involvement with the TWAA is strictly voluntary, with clients served on a contractual basis. In fact, the success of the TWAA will be determined to a great extent by various entities — cities and towns, water companies, developers, etc. — perceiving a value to its various services and contracting for them.

TWAA Activities

Some people argue that "augmentation agency" is somewhat of a misnomer. The TWAA, in fact, is expected to do more than augment or increase the water supply in the Tucson AMA. It is authorized to plan conservation efforts and build and operate treatment, storage, and delivery projects. The agency could also be involved in stormwater management, water quality treatment, and conflict resolution. It can acquire water, al-

though statute prescribes the types of water the authority may acquire. For example, it cannot acquire non-renewable water outside its AMA, an exclusion that limits its involvement in water farming. The agency, however, could actively acquire CAP water.

In fact, of prime importance to its establishment, the agency is expected to enable the Tucson AMA to better claim its full allocation of CAP water. About 25,000 allocated acre feet could be lost if contracts for its use are not signed. Various parties within the Tucson AMA have not signed contracts for their CAP allocations because of financial or water delivery concerns. For example, Nogales has not finalized a contract because the city is unable to take delivery of CAP water which will not flow much beyond Tucson.

The augmentation agency provides the means to resolve such a problem. Through indirect recharge, a process by which water recharged in an area could earn credit in another area equal to the amount recharged, the TWAA could allow Nogales to benefit from its CAP allocation. For example, Nogales could contract with TWAA to take possession of its share of CAP waters. TWAA could then recharge the water in the Tucson area, possibly in Avra Valley. Nogales would earn credit equal to the amount recharged, and would therefore be able to pump additional groundwater in areas nearby the city.

Nogales would thus benefit from its CAP allocations without actually taking delivery of the water. The TWAA could be contracted for the same service by small water companies or other parties that face obstacles to claiming their CAP allocations.

An obvious and important use of credits gained through indirect recharge is to apply them toward an assured water supply. Groundwater exchanges could be arranged, with developers gaining groundwater

pumping rights in remote areas in exchange for water recharged in another AMA area. Withdrawals from one area are therefore balanced with recharge in another area of the same basin. Thus, the GMA safe-yield goal is maintained basin-wide, although not within each area of the AMA.

Indirect recharge, however, will not guarantee that the assured water supply requirement is fully satisfied. Other GMA requirements related to assured water supply would still have to be met. For example, a developer would still need to prove the physical availability of an adequate water supply for the intended use and that sufficient financial resources are available to deliver the water.

As a regional agency involved in various water management activities, the TWAA is well positioned to perform other valuable services. Along with arranging indirect recharge projects, the agency could construct and operate storage and delivery projects to provide actual water resources to remote locations. Such projects might involve negotiating for water resources among willing sellers for sale to willing buyers, and arranging the legal and physical means for delivering the water.

For example, the TWAA is expected to contribute to a more efficient regional use of effluent. The agency could purchase surplus effluent to be transported to area farms via a TWAA-constructed delivery system. The delivered effluent could be exchanged for groundwater pumping rights (in-lieu recharge credits) to be sold to municipal providers in need of establishing an assured water supply. Thus, agricultural and municipal interests would be served.

The TWAA is also expected to work out options for the Tohono O'Odham Tribe to enable it to better benefit from the Southern Arizona Water Rights Settlement Act, a legislated agreement between the tribe

and the City of Tucson. Part of the settlement involves the tribe receiving 28,200 acre feet of effluent. Through negotiations with the Secretary of the Interior and the Tohono O'Odham, the TWAA could arrange for the tribe to receive an alternative source of water. This could be done by exchanging tribal effluent with area farmers for groundwater pumping rights.

Concerns About TWAA

Faulting various aspects of the TWAA and its operations, some critics consider it a questionable contribution to state water policy and are wary of its role.

Critics have questioned whether such an agency is even needed. Acknowledging that basin-wide water resources management is laudable, such critics believe that the job could be done by an existing operation, Tucson's AMA office. According to these critics, rather than creating a new agency and a new level of bureaucracy, a preferable course of action would be to direct or empower the AMA to accomplish the needed tasks.

Critics also complain that the agency is not properly structured to ensure public participation and accountability. They are uncomfortable with an unelected board, with membership appointed by interest groups and government. They are further concerned that the permanent board does not include a slot for a private citizen. To demonstrate the agency's insensitivity to public involvement, critics point out that no member of the Tohono O'Odham tribe has been nominated to the initial TWAA board, despite the agency's possible role in the settlement of the Southern Arizona Water Resources Settlement Act.

Some critics are further disheartened by what they perceive to be an insensitivity toward environmental is-

sues. They claim this insensitivity has been apparent from the beginning, as environmental protection was not incorporated when legislation was drafted. As a result, critics fear that certain TWAA activities may take place to the detriment of the environment. For example, by allowing recharge in one location to justify pumping in another, riparian areas may be adversely affected at the latter location. Further, critics are concerned that TWAA is not specifically prohibited from engaging in projects of dubious environmental value, such as weather modification and vegetation management. Also, environmental representation is not required on the final board.

Also bothering critics is the lack of a clearly defined TWAA plan of operation. They are not completely comfortable with the idea that the initial board is to work out a plan of operation within 30 months. This procedure is viewed as leaving many important issues open-ended.

Further some critics believe a consideration of the agency as a viable option distracts attention from some important issues that need to be faced in the Tucson area. Such issues include consideration of the long-term carrying capacity of the basin, the extended environmental future of the area, and the extent and kind of growth to be encouraged. They claim by providing options to comply with the assured water supply requirement, the agency is, in fact, supporting growth, even urban sprawl.

Finally, some complain that the augmentation agency represents the classic supply side solution to water problems. Such critics believe that the agency favors water development and augmentation over conservation.

The Phoenix Groundwater Replenishment District

The Legislature is presently considering a bill that would estab-

lish the Phoenix Groundwater Replenishment District (PGRD), that area's counterpart to Tucson's augmentation authority. To be set up within the Phoenix AMA, the PGRD is mainly intended to provide flexibility to non-agricultural water users in meeting GMA requirements. The PGRD includes a more extensive work plan than does the TWAA, with more GMA options proffered.

Agriculture is not included in the plan since its participation would very much complicate any effort to establish a replenishment district. Although politically necessary, this exclusion of agriculture has resulted in problems that may undermine passage of PGRD legislation.

With legislation pending of benefit to certain water users, agriculture, an interested but excluded party, seeks to gain its own advantages. As a result, agricultural interests have been lobbying to attach an amendment to replenishment legislation that would relieve agriculture of certain GMA conservation requirements. The rationale is that since the replenishment district would allow municipalities options to GMA conservation standards, agricultural conservation goals should also be reconsidered. This bothers some PGRD supporters.

They claim that whereas the municipal conservation options allowed by the PGRD are intended to maintain strict standards, the amendment is an attempt by agriculture to evade its GMA conservation responsibilities. DWR's conservation requirement for agriculture is to achieve 85 percent efficiency by 1995. The amendment would allow a 70 percent efficiency standard instead, a significant modification to the Second Management Plan.

This amendment threatens passage of replenishment legislation. If defeated this year, however, similar legislation can be expected next year. With redistricting, urban influence will increase, along with the ability to

overcome agricultural pressures. Meanwhile, this controversy, which is presently being played out, will greatly determine the fate of the PGRD during this legislative session.

Organization of PGRD

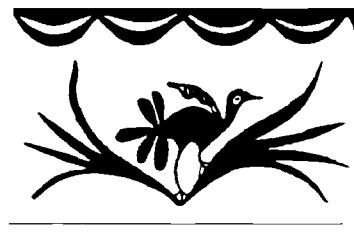
Membership in the PGRD would be mandatory, with all who have rights to withdraw groundwater for non-irrigation uses in the Phoenix AMA required to participate. Exempt entities include feedlots and dairies. Because of mandatory membership, the PGRD is expected to be a more broad-based operation than the TWAA. Endowed with greater financial resources, the Phoenix agency will also exert more power and influence throughout its AMA.

The PGRD also differs from the Tucson agency in the size of its board and its method of selecting members. A nine-member board would govern the PGRD, with each member serving a four-year term. Six members, representing district geographic divisions, would be popularly elected, reflecting the preferences of registered voters within the AMA. The remaining three members are to be elected at large by members of the replenishment district, numbering about 700. Voting is to be weighted, with district members' voting power depending upon the amount of groundwater pumped—the more groundwater pumped, the greater the voting power.

The PGRD would be funded by various sources. Included among these sources is a portion of the groundwater augmentation withdrawal fee or pump tax. This fee is paid to DWR by all Phoenix AMA groundwater users. Eighty percent would be set aside to support the PGRD.

Also, an anticipated source of funding would be a tax that is to replace the current 4 cent tax imposed by the Central Arizona Water

Conservation District (CAWCD). The CAWCD tax, which funds underground storage and recovery projects, terminates in 1996. It is to be replaced by a 2 cent ad valorem tax not to ex-



Cloud, plant, and bird motifs on San Ildefonso pottery.

ceed 2 cents per \$100 of assessed valuation of property in the Phoenix AMA. This new tax is to be used for district support. Also, revenue from the sale of water stored by CAWCD is to contribute support to the district. The district also has the authority to issue bonds.

PGRD Activities

As mentioned, the recent Arizona interest in regional water supply agencies—an interest manifested by TWAA and PGRD—mainly derives from a concern about compliance with GMA requirements. Whereas the TWAA mainly focuses its efforts at facilitating the achievement of an assured water supply, the PGRD would require more changes to the GMA. A case in point is the safe-yield requirement.

The PGRD basically divides Phoenix AMA water use into two categories or sectors, each with a different safe-yield requirement. Irrigation along with dairies and feedlots make up one sector, with municipal and industrial (M&I) users forming the other. Uninvolved in the replenishment district, agricultural users remain obliged to achieving safe yield

by 2025, the date originally mandated by the GMA. Upon implementation of the PGRD bill, however, the municipal and industrial sector would be bound to achieve safe yield by 2010. The PGRD is to provide the means of attaining this early safe-yield goal.

PGRD would advance this goal by acquiring water to be replenished or recharged, equal to the amount of non-exempt groundwater pumped by its members, in excess of incidental M&I recharge. Probable sources of replenishment water include surplus CAP water, leased Indian water rights, reclaimed effluent, and whatever groundwater farms are allowed by pending or future water transfer legislation. Recharging such waters would compensate for groundwater overdrafts and result in safe yield.

Achievement of the municipal and industrial safe-yield goal is to be phased in gradually, over 15 years. Each year the district would replenish a greater percentage of the overdraft occurring within its AMA. At the conclusion of 15 years, the district would be recharging an amount equal to the total overdraft. Safe yield would thus be achieved.

As is true of the Tucson agency, an important PGRD strategy is indirect recharge. This will allow groundwater to be pumped throughout the AMA, even in areas where recharge is infeasible, as long as groundwater is recharged within an area of the AMA where it would still be useful. The goal is basin-wide safe yield, rather than safe yield in every area of the AMA.

The district is required to submit water replenishment plans to DWR for review and approval. The district plans would record progress toward achieving safe yield and would include information about all district members. The DWR will conduct a public hearing as part of the review process. If DWR approves the plans, the district would be designated "con-

sistent with the achievement of the management goal." This is one of the statutory conditions of an assured water supply. Once the district achieves this designation, all district members are in compliance with it.

This does not mean, however, that all district members would then have an assured water supply. Although the entire district may be declared to be consistent with the management plan criteria, individual developers must still prove a sufficient physical water supply and the necessary financial resources. Only then would a developer be granted an assured water supply.

The PGRD also provides flexibility in the meeting of GMA conservation requirements, since various options would become available to municipalities. Presently, municipal conservation efforts are determined by gallons-per-capita-per-day (gpcd) use. With the establishment of the PGRD, DWR would be required to offer alternative, user-specific conservation measures. A municipality would have to apply for such an option, demonstrating that true conservation would be achieved with a non-gpcd criteria. If a municipality's application is rejected by DWR, the gpcd standard would continue to be applied.

The proposed availability of optional conservation standards reflects municipal concerns about current gpcd requirements. Concerns have been expressed that a gpcd measure is of limited use as a regulatory standard, and that it has appeal mainly because it is readily understood by the public. Municipalities have complained that it is in fact somewhat arbitrary and has variable effects depending upon the type of development occurring. Whether development consists of single family housing with large lots or multi-family housing, a hospital or an industrial plant, such situations variably affect the gpcd measure. Depending upon such

variables, a municipality's conservation efforts may reflect favorably or unfavorably, regardless of real conservation gains.

Concerns About PGRD

To many critics an obvious and prime concern is that the PGRD does not include agriculture. As a result, the problem of the severe agricultural groundwater overdraft within the Phoenix AMA is conveniently avoided. The agricultural overdraft is more significant than the M&I overdraft and significantly more difficult to contain. With its emphasis on the M&I situation, the PGRD therefore attempts only a partial solution to the Phoenix AMA groundwater overdraft problem.

Another major criticism of the PGRD is that it allows options to municipalities to the current gpcd conservation standard. Although lauded by some as providing flexibility in complying with the GMA, others view the option as a potential strategy to avoid strict conservation standards that are bothersome to meet. Since conservation is central to the GMA, this criticism, in effect, accuses the PGRD of undermining the intent of the groundwater code.

Further, some are concerned that, when new conservation standards are proposed to replace the gpcd, they need only the approval of the DWR director to take effect. Because of this, some critics fear that some rather lax standards might get by. Also, critics are concerned about how conservation standards will be enforced.

Critics also question the effectiveness of actions to be taken if the district fails to achieve its replenishment obligations. If this situation prevails after four years, very severe penalties result indeed. District members would no longer be able to use AMA groundwater to demonstrate an assured water supply, and the PGRD

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would lose its designation. Critics view these penalties as being so harsh as to be politically infeasible to enforce.

Further, some critics fear the agency has the potential to expand beyond its proposed definition. Supported by ample funding, the agency could grow big and powerful, with relatively broad authority. Critics who are wary of centralized power, especially in an area of such basic importance as water policy, are therefore concerned.

Also, critics are concerned about what PGRD intends to do to acquire the vast amount of water resources needed to be replenished, if safe yield is to be achieved. Some people fear an aggressive pursuit of such resources, a strategy that could be a disadvantage to various interests. For example, such a commitment could lead to increased water farming activities. This would be an unwelcome development to some rural interests.

Finally some critics believe that the PGRD is unduly committed to replenishment, with very little consideration of conservation. Thus, they are wary of what they see as another supply side solution to a water resource problem.

TWAA and PGRD Compared

Although their underlying concept is the same, the TWAA and the PGRD employ somewhat different strategies to achieve their goals. Some say these strategies reflect different water resource philosophies. Others say that, despite their differences, the two agencies

and their strategies are really closely related, with PGRD viewed as second generation TWAA.

That the TWAA is of more limited scope than the replenishment district is readily acknowledged. For example, participation in TWAA is strictly voluntary, with services provided on contract. Representing only those who choose to be represented, TWAA power and influence is conditional. The PGRD, on the other hand, requires nearly all municipal and industrial groundwater pumpers in the Phoenix AMA to participate.

As a result, the PGRD is a more powerful agency, with more financial resources and broader authority. Its scope of operation is therefore more extensive. For example, the PGRD is to provide a strategy and fairly major support to assist the M&I sector achieve safe yield. Further, the law would allow options to the current gpcd conservation measure. These are seen as significant changes to the current situation.

Tucson's augmentation agency has less financial resources, and its plan of operation, which is to be worked out by its board, will be more limited than what is designated for Phoenix. That it has a less strenuous agenda to be devised by its board, and not specifically mandated by legislation, is seen as an advantage by some of its supporters. Because of this situation, they believe that the TWAA will be, in a sense, a kinder, gentler agency than its Phoenix counterpart. The Tucson agency will be better able to reflect and respond to community values and, as a result, be more

responsive to local needs.

On the other hand, if the underlining rationale of the two regional water agencies is to provide flexibility in meeting GMA requirements, the PGRD may represent a more thorough effort, with more options worked out. With the greater number of options, however, comes more criticism. Even some people who support the Tucson agency are wary of the PGRD. Basic to such anxieties is the concern that what is granted by the PGRD may be more than flexibility; that certain important GMA safeguards are possibly weakened.

Conclusion

Generally those who favor the regional water supply agencies believe that some sort of adjustment to the GMA is in order. They argue that, if the TWAA and the PGRD were not proposed, then more drastic actions may be taken later to alter and even weaken the GMA. Some supporters even say that the fate of the GMA is tied to the success of these agencies. Critics, on the other hand, tend to be skeptical of such GMA adjustments, fearful of compromising certain legislated ideals. Some critics even claim that the agencies are part of an evolving strategy to undermine the GMA.

Inspiring such widely different perspectives, regional water agencies will be watched carefully to ascertain where in this spectrum the most accurate evaluation is found. While attempting to justify the high expectations of proponents, the agencies will need to contend with the concerns of their critics. If such concerns prove in fact to be justified, the agencies will lose credibility.

Important to demonstrate, success must come in the face of a concern even agency supporters express. The concern is that both TWAA and PGRD have organizational limita-

tions that could interfere with their operations. For example, the TWAA must, in a sense, earn its keep. Much of its funding will come from selling its services which will limit its operations and possibly its effectiveness. The PGRD has a burdensome voting procedure that could hamper its ability to organize and act. Also, the Phoenix district confronts a demanding record-keeping task for its membership. Such bureaucratic responsibilities could limit the success of the agencies.

Only after being established and operating will the agencies be able to prove their worth.

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