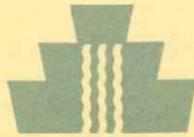
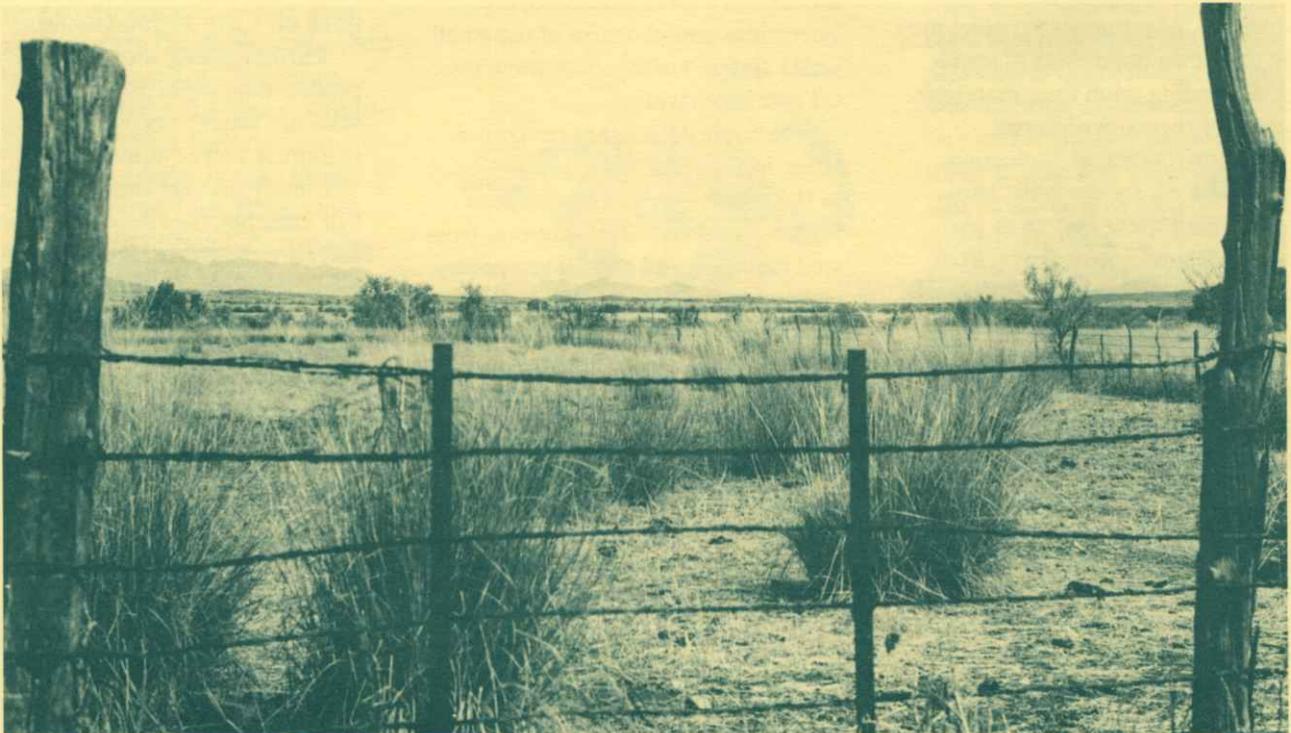


ARROYO

Vol. 5 No. 3



October 1991



Rural areas of the state are often served by small water systems. (Photo: Special Collections, UA Library)

Arizona's Small Water Systems Confront Questions, Uncertainties

by Joe Gelt

Because Arizona's small water systems are of lesser size than major water companies, they should not therefore be viewed as relatively simple, uncomplicated operations. Despite a smaller scale—or rather because of it—such systems confront complex situations. These can be extremely difficult to

resolve at times, complicating operations and even threatening the existence of some small water systems in the state.

How a small water system is classified—the numbers served and the amount of water delivered and whether investor or public owned—is important, for these classifications

determine how a water system is regulated. Much of the current interest in small water systems has to do with the application of various types of regulations and the system's ability—or lack of ability—to respond to them.

Small Water Systems in Arizona

To establish a definition of a small water system is no easy task. This is because what is small can be relatively defined depending upon particular circumstances. For example, the National Association of Water Companies considers water systems with 1,000 customers or less as small. Meanwhile, government agencies may have their own definitions of smallness depending upon their mandates or areas of regulatory interest.

The Environmental Protection Agency (EPA), for example, considers a small water system as one serving 3,300 people or fewer. State agencies may view matters differently. The Arizona Department of Water Resources (DWR), within its management plans, defines a small water system as serving 500 people or fewer and annually delivering 100 acre feet or less of water. The Arizona Department of Environmental Quality (DEQ) recognizes various categories of water providers, with 1,000 customers generally a figure of demarcation between large and small.

DEQ statistics provide a general measure of the number of small water systems in the state. The department's main regulatory concern is with public water systems, a category that includes systems that serve at least 15 service connections or 25 people daily. In 1991 there were 1,788 active public water systems in the state. Of this number, 1,570 or 88 percent serve 1,000 people or fewer.

Small water systems can be further defined depending upon how they are controlled, more specifically whether they are investor owned, which includes corporations, partnerships, co-ops, and homeowners associations, or public owned, which includes systems operated by municipalities and water districts. The Arizona Corporation

Commission (ACC), which regulates the investor owned companies, reports that of the approximately 428 systems it regulates, 381 serve fewer than 1,000 customers.

Small Water Systems Share Concerns

Because statistics indicate that many small water systems exist in the state, and their viability and role are often discussed, the operations and concerns of the small water system are topics of some interest and importance.

The topic defies easy generalizations. Many small water systems exist in the state, representing many different situations and conditions, from well managed and efficient to poorly run and financially troubled. Although small water systems in Arizona make up a varied lot, with a range of characteristics, most share some common operational concerns, although to varying degrees.

For example, compared to large municipal systems, with their cadre of professional managers and engineers, many small water systems lack the specialized expertise to manage the increasingly complex details of running a water system. The smaller systems may have volunteers or part-time operators. Even those small operations that are able to hire a professional manager must compete with larger water utilities that have more to offer a capable and ambitious applicant.

The above situation presents many problems. For example, lacking professional training and experience, small system water managers may be confused, even intimidated by expanding regulations. With regulations as an issue looming larger on the horizon, their volume and complexity only expecting to increase, specialized attention is necessary, and will be more critical in the future to ensure appropriate compliance.

That small systems often lack adequate financial management expertise compounds the problem. Without personnel capable of advanced financial analysis, a system might operate unaware of the best cost-effective procedures to follow, a basic managerial tool. It may be unfamiliar with interpreting interests rates, as well as being uninformed about potential federal program support, a funding source available only to public owned water systems. Purchasing is often done on a pay-as-you-go basis.

Further, along with a lack of professional expertise, small water systems are likely to be without certain resources and equipment needed to efficiently manage their operations. For example, they may lack computer software capable of collecting and interpreting certain types of data to aid in the monitoring of water use trends. As a result, a basic operation such as establishing a water conservation program is not readily achieved.

Small Water Companies' Financial Problems

And saving the most critical problem for last, financing is a major concern of most small water systems. It is the root of many of their problems, from providing suitable maintenance and operations to complying with various regulations. For example, financial reserves are likely to be maintained at inadequate levels. Hence, emergencies such as pump, generator, or tank failure could threaten a small system's existence.

Borrowing money is often not a viable option for the small water system. Banks and other lending institutions are generally disinclined to lend to systems servicing few customers. Also, small water systems have a limited credit base and limited market recognition, further narrowing their investment appeal. In other words, the conditions that characterize small

water systems as financially needy are the same ones that undermine their efforts to attract additional funding. As a result, capital is obtained only with the added burden of higher interest costs.

Deprived of accessible reserves of capital, some private operators have taken out second mortgages on their homes or other businesses to finance needed maintenance on their facilities.

The lack of ready access to commercial loans is more of a disadvantage to the investor owned water company than to the public controlled and nonprofit systems. The latter might look to federal sources of funding for relief. These include Community Development Block Grants (CDBG) from the U. S. Department of Housing and Urban Development and Farmers Home Administration (FMHA) loans and grants.

Since both are federal sources, certain processes and procedures are involved — they are less kindly described as red tape — that sometimes work against the interests of small public water systems however. For example, the typical FMHA loan takes about two years to finalize. If the money was requested to meet an impending regulation, a water system is likely to be seriously out of compliance before the funds are received and expended. The CDBG program, which provides relatively small amounts of funding, presents an almost opposite situation. Funds must be requested and spent along a specified time line, a schedule that restricts flexible programming.

The rates charged for water use are another and obvious source of revenue for a water system. With a rate increase, additional revenue would be generated that could then be expended to solve critical problems. The determining and approval of rates, however, is a complex task, with a water system having limited and qualified control over its rates. Rates are set by a water system's governing board and for in-

vestor owned water companies, the Arizona Corporation Commission (ACC).

A concern that is usually raised before a rate increase is approved is that it not be excessive. Customers inflicted with a large rate increase are said to suffer "rate shock". Some water systems, however, confront severe financial straits that only a steep rate increase can relieve, sometimes as much as 200 or 300 percent.



Mimbres pottery design

Nevertheless, that a sharply increased rate might result in rate shock is sometimes used to justify disallowing that increase, despite a water system's extreme financial need.

Part of the problem when small water systems seek rate increases is that such systems do not have large pools of customers to share the burden. A rate increase in Tucson is shared by many water users, while in Bowie, with 210 connections and about 700 people, far fewer customers would be collectively contributing to cover rising costs. They would therefore more likely experience rate shock.

Because of the above problems, small systems often have difficulties in meeting regulatory requirements. For example, DEQ reports that of the 1,540 public water systems in the state that served 1,000 people or fewer in 1990, 826 or 54 percent were in non-

compliance, with some sort of major violation. And, although the small water systems' noncompliance rate with water conservation standards is no worse than some larger utilities, their limited resources and other circumstances handicap their ability to respond to these standards, a situation expected to worsen as conservation requirements tighten.

In sum, outside the mainstream and relying on limited resources, many of Arizona's small water systems are insufficiently prepared to cope with increasing operational complexities. Many of these complexities arise because of expanded and more involved regulatory requirements, for water quality and water conservation, and, in the case of investor owned water companies, revenue. An understanding of the regulatory agencies involved and their regulations is necessary to explain their effect on small water systems in the state.

The Arizona Department of Environmental Quality

The Arizona Department of Environmental Quality (DEQ) recognizes several classifications of water systems. A basic distinction is made between public and semi-public water systems. The agency's regulatory authority is mainly concerned with public systems, defined as systems that serve at least 15 service connections or 25 people daily. Significantly smaller, semipublic water systems are not generally regulated by DEQ. Public water systems are further classified as community and non-community.

Mention of the various classifications is relevant because they determine the water quality requirements to be met. All systems must monitor for physical, chemical, and microbiological contaminants, but the monitoring schedule and the standards to be met vary depending upon the classification of the water system.

Already confusing, the situation is expected to become further complicated because of federal legislative activity.

In 1986 Congress amended the Safe Drinking Water Act (SDWA). The new amendments directed the Environmental Protection Agency (EPA) to adopt Maximum Contaminant Levels (MCL) for 83 contaminants. With 20 MCLs in place at the time, EPA's task therefore was to set another 63. At present EPA has established a total of 45, with work still continuing.

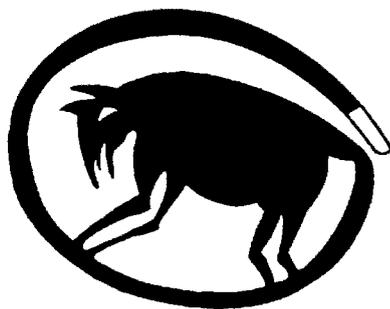
Many small water systems are already stressed meeting current water quality standards. That additional standards await such systems, to be adopted, implemented and enforced, promises to further strain their limited resources. If improved water quality offers a public health boon—and some question whether planned improvements in water quality justify such a grandiose expectation—it is to come at a very high cost. All water systems will be affected, but small water systems, those who can least afford it, will be the most seriously strained.

The program is expected to cost the water industry about \$13 billion for new construction, with another \$117 million annually for monitoring. Water rates will rise about \$800 million per year. The small water systems are expected to be at a special disadvantage in complying with the requirements of the new amendments. EPA projects that of the 60,000 small water systems within the United States, as many as 45,000 will be unable to meet the new SDWA standards, unless facilities and equipment are improved.

Further, systems that serve fewer than 10,000 people may be hit with more than 70 percent of the projected national costs of roughly \$2.5 billion annually to comply with the new regulations. Some estimates project that monthly water bills may increase by \$70 per household in areas served

by small water systems. Various factors explain these soaring costs.

For example, additional monitoring will result in increased costs to the water systems. In the past a monthly bacteriological sampling could cost between \$10 and \$20. The inorganic chemical sampling might cost between \$120 to \$150, although required only every three years for most systems.



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New rules are raising sampling costs significantly. A total sampling package could now cost between \$700 to \$2,000 per sample set per well per quarter, although some systems may qualify for a reduced monitoring program. A small to medium sized system could have three or four wells.

If improved and increased sampling identifies a contaminant, then a treatment process must be designed and constructed. This represents a further cost to be met. EPA is currently considering rules to require all water systems to disinfect. The implementation of such rules would be a costly proposition.

Along with more burdensome regulatory costs, small water systems are more likely to be adversely affected by another aspect of water quality regulation. If, as has happened in Tucson, Phoenix, and Glendale, a water source or well is identified as contaminated, it may need to be taken off-line. In large metropolitan areas

backup sources are available. A contaminated source in a small system, which may only have two or three wells, is far more disruptive to operations.

The Arizona Department of Water Resources

Along with meeting current and emerging water quality standards, many Arizona water providers are also expected to comply with water conservation regulations. Arizona is the only state that enforces such standards, which, depending on one's perspective, are variously viewed as unnecessarily prohibitive and disruptive of growth and development or as an incentive to wise water management. Nevertheless, implementing legally mandated water conservation measures represents an additional burden to some small water systems in the state.

The extent and nature of DWR's involvement with the state's small water systems depend to a great extent on their locations, whether situated within or outside an Active Management Area (AMA) and their size. Water providers within AMAs, which are areas of severe groundwater overdraft, are expected to meet water conservation goals outlined in a series of management plans. These management plans are mandated by the state's Groundwater Management Act.

The management plans outline conservation measures to be met by all water providers within an AMA. An exception however is made for very small water providers, those serving 500 people or fewer and annually delivering 100 acre-feet of water or less. Such systems confront more general, less specific conservation directives. Other small water providers who rank above these minimal qualifications remain obligated to meet established conservation goals.

If a water provider fails to meet

conservation goals, which are designated as gallons per capita per day (GPCD), DWR has two options to consider. The department could fine the utility or negotiate with it a suitable water conservation strategy. Negotiations involve DWR and a water provider identifying achievable conservation measures that are appropriate to that service area.

Different conservation programs would be worked out to meet the special conditions of various noncompliant water utilities. A strategy might involve a utility in adopting certain water conservation activities or measures, such as conducting educational projects, implementing a retrofit program, or performing an audit to determine water use.

Once an agreement is reached, DWR and the utility sign a stipulation and consent order. This document states that DWR will waive the fine if the utility implements the agreed upon conservation measures. Obviously some conservation measures may not be taken without incurring certain costs. Already financially strapped, some small water systems find conservation costs to be an additional burden.

The regulatory routes of water conservation and water quality thus lead to the same point; i.e., established standards are to be met, but at a cost to be borne by those meeting such standards.

The Arizona Corporation Commission

Along with other types of utilities, the Arizona Corporation Commission (ACC) regulates water systems. The commission is empowered to regulate privately owned water systems but not those that are publicly owned.

The ACC is made up of three elected commissioners who serve staggered six-year terms. Within the ACC is the Utilities Division, a component

responsible for reviewing utility company finances. The division recommends to the ACC revenue requirements and rates and charges to be collected by individual utilities.

ACC's approval is required before systems undertake certain actions. For example, the commission is authorized to issue or deny certificates of public convenience and necessity prior to the construction of a utility, to approve or disapprove the issuance of securities and long-term indebtedness, and to approve or disapprove the sale of utility assets and transfers of certificates.

Further, the commission has watchdog responsibilities, regularly reviewing the operations of the systems and acting if public interest is slighted. To ensure fulfillment of these obligations, the ACC is empowered to establish rates, as well as control accounting practices, evaluations, and service standards. The commission audits the books and records of systems to determine appropriate rates.

In brief, the ACC has extensive regulatory and review power over the finances of private water systems, from determining whether sufficient capital is available to allow their operations to approving water rates.

ACC rate setting has special implications for DEQ and DWR regulatory efforts. For example, an ACC-regulated water utility may need to take action to comply with DWR or DEQ regulations. It might need to implement a residential retrofit program to conserve water or build a treatment facility to improve water quality. Obviously these actions require the expenditure of funds, and naturally a utility would want to recover such costs through a rate increase.

The ACC would need to approve any such rate increase. Desiring to maintain relatively low rates, the commission requires any requests for increases to be thoroughly demonstrated and justified. For ex-

ample, it may question whether DWR-required conservation expenditures are in fact needed and are being made from a least cost perspective. Complicating the proceedings is a basic differences in the missions of ACC and DWR. ACC requires that water systems provide water on demand, and DWR is dedicated to conserving water.

Also, of special concern to DEQ and DWR, rate increases are approved by ACC only after an expenditure is made, not for down-the-line expenses. Therefore to implement the retrofit program or construct the treatment facility, the water system must first go into debt to pay for these projects. Later, if approved, a rate increase would reimburse the system for expenditures.

Herein lies a quandary. Pressured by DWR and DEQ to comply with regulatory requirements, while at the same time accountable to the ACC, the small privately owned water systems often view themselves as between the proverbial rock and hard place. And, as gatekeeper of the rate increase, ACC is in a controversial position. DEQ and DWR at times view the ACC as unsupportive of their missions of imposing water quality and water conservation standards, because of the commission's cautious attitude toward rate increases.

Meanwhile, the regulated water companies at times view ACC's regulations as unwelcomed interference, and, for that matter, they may also not take kindly to DEQ and DWR requirements. Hence consternation exists between regulators and regulated as well as between regulators and regulators.

Controversy Arises

The ACC is a regulatory power that stands between the water system and the consumer. A water system has a right to earn a fair

and reasonable return on its investment. And the customer has an obvious interest in reliable service and reasonably affordable water, allowing that the small scale of operations of many small water companies preclude rates as low as municipal rates. The ACC is there to balance the two positions, ensuring profits, without undue inconvenience to the customer. Difficulties might be expected when this mission is pursued.

For example, some state officials believe that ACC should give priority consideration to water quality and conservation regulations when setting rates. They argue that the ACC is too inflexible and strict in its interpretation of its role of consumer protector. Although ACC claims to be merely following its constitutional mandate, these officials say that the commission is also legally required to comply with the various provisions and rules of the state, such as those that establish water quality and conservation standards.

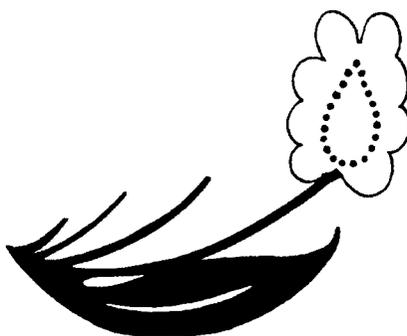
Critics also claim that the ACC, by emphasizing immediate consumer advantages; i.e. lower water rates, is overlooking the long-term public advantages gained by promoting water quality and conservation. They argue that the ACC does not advance these consumer benefits as vigorously as it does lower rates, a more up-front and immediately appealing advantage.

Meanwhile, the two water regulatory agencies, DEQ and DWR, and ACC are trying to work around their differences. To accommodate DEQ's concern that adequate rates are set to cover water quality requirements, ACC generally notifies DEQ when it is determining a rate for a water system. If DEQ has a concern about that system, the department might either respond in writing or attend the hearing, with the intent of urging ACC to address water quality concerns when setting the water rate.

A weakness with the present arrangement is that DEQ sometimes

does not receive an announcement of a rate hearing, and, if it does, it does not always respond to it. Also, nothing obliges ACC to include the DEQ concern in its rate decision.

DWR and ACC staff have also met to attempt to coordinate their activities. They have agreed that when a stipulation and consent order is signed between DWR and a water system, the system will use the document to support a request for a rate increase to cover conservation costs. The ACC therefore will understand exactly what conservation measures were negotiated and the reasons for them. No guarantee exists however that the ACC will agree to the rate increases for the conservation measures.



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To help resolve problems among the regulatory agencies a Private Water Company Advisory Committee was set up, with representatives from private water companies, DEQ, DWR, and ACC staff. The intent of the committee was to work out a strategy to expedite the recovery of costs incurred by private water companies in meeting DEQ water quality and DWR water conservation regulations. The effort proved unsuccessful, and the committee has not met for over a year.

Another effort to encourage communication and coordination among the various agencies is the Water Systems Coordinating Council. Included

within the council are representatives of DEQ, DWR, ACC, the state Real Estate Department, large and small water systems, investor owned systems and water improvement districts. The council's effectiveness is disputed and sometimes denied.

With the above efforts demonstrating a notable lack of progress, some officials believe that conflict between the agencies is expected to continue until more definitive action is taken. What such action should be is debated. Some argue that the ACC is not fulfilling its responsibilities under the constitution, and a change of policy is called for. Others claim that a more fundamental action is in order. They argue that a constitutional amendment might be needed to ensure that ACC recognizes the appropriate costs of meeting water quality standards and water conservation requirements.

Along with DEQ and DWR, the ACC-regulated water companies are also critical of certain ACC policies. Complaints have been raised that ACC actions limit the ability of a water system, not just to meet regulations, but also to charge rates that are just and reasonable.

For example, the ACC is to allow a rate structure that will cover ongoing expenses and provide a reasonable return on investment. Basic to the rate computation therefore is a determination of the amount of investment, including the value of the pipes in the ground, meters, tanks, service trucks, and other such equipment and properties. Obviously such determination involves a certain degree of interpretation. Companies have complained that their investments are not necessarily computed fairly.

Also, some private water companies question ACC's concern with rate shock, a condition likely to afflict consumers who experience sharply increased water rates. They argue that because the ACC process for requesting rate relief is complex and involves

expense, many small water companies avoid it. When finally filed, their request, now long overdue, will likely be for large increases to compensate for the low rates of previous years.

If these rates are just and reasonable, water company operators argue the ACC is required to approve them, regardless of the rate of increase. They say rate shock is simply not an issue. ACC is further faulted for not ordering such companies to appear earlier for a rate review, at a time when their annual reports indicated the need for rate relief. Rates could then have gradually increased.

At the same time, however, the ACC provides water systems various benefits that are of special value to the small water system in need of professional expertise. For example, when considering a rate increase, the ACC reviews the financial status of a system, a procedure that can result in financial council and advice. An engineer is also available to examine the system and recommend improvements. Also, several water systems, although eligible to opt out from ACC regulations, decided not to, since the commission provides backup authority to enforce their decisions on such matters as rate increases.

Restructuring as a Solution

Various strategies are put forth to salvage the more financially troubled small water systems.

The beginnings of any such strategy is to prevent unsound companies from starting so that later they do not end up financially troubled. Following this a restructuring of troubled water systems is proposed as a method to enable an operation to continue efficiently.

In the past, despite ACC review, some water systems were able to begin operations without a careful consideration of their resources and ability to adequately provide long-term services. Such systems often

founded and are now essentially problem cases, unable to comply with regulations or attract investors to help bail them out.

For example, many of the now troubled small water systems were begun by developers to serve areas targeted for development. The system was operated, not as a long term commitment, but as a feature to attract buyers. As a result, water rates were kept artificially low, even subsidized. Once the lots or houses were sold, some developers abandoned the facilities, turning them over to the land or home owners. Such systems are now often in a precarious position.

In response to this situation, ACC has established certain criteria that a system is to meet before it is granted a certificate of convenience and necessity authorizing it to provide service. For example, a creditable business plan must be filed to demonstrate operational capability. Further, an applicant must post a bond to cover several years of operations and maintain the bond for ten years. Because of such criteria, problem situations are identified in advance, and the questionable systems are not authorized to operate.

For troubled systems now operating, restructuring is suggested as a strategy to ensure continued and efficient water service. Generally this means a small system merges with or is acquired by a larger utility, thereby benefiting from the resulting economies of scale. A variation of restructuring, regionalization involves several water systems in an area banding together for mutual advantage. For example, they would be able to collectively hire an operator or manager to oversee all their systems.

Restructuring is a vigorously pursued strategy in Pennsylvania. That state requires that, if a solvent water utility is located near a financially troubled system, it must take over the troubled system. The state however

will provide support to enable the transaction to take place. This obviously is a very aggressive strategy, one not feasible in Arizona.

Some officials say that before restructuring can be a successful strategy, certain ACC policies need to be modified or changed. Presently, a larger utility might not be interested in purchasing a financially weak system. It would realize that the utility would need support for several years before any financial recovery can be expected from increased rates. It is argued that ACC policy needs to allow practices that would give some advantages to a purchasing utility, such as tap fees, an up-front user charge to cover emergency improvements.

Some operators of small water systems, especially investor owned water companies, are wary of policies to encourage restructuring. They argue that such systems or companies often represent efforts by small investors who have committed time and resources to establishing businesses that might now be undermined by restructuring. It is argued that liberalizing various regulations would be more supportive and fair to these companies than promoting some form of collective restructuring. Concerns are also raised about regionalization, specifically that it might result in individual operators losing important decision-making powers.

Conclusion

The future of small water systems in the state is problematic. One frustrated official believes that unless significant regulatory changes occur such systems will not be able to survive. He believes that the seriousness of the situation might not be generally recognized until a well managed small system files for bankruptcy under Chapter 11. The issue would then get a public hearing and bring to the open the regulatory dilemmas and financial burdens that

currently stymie small water system operators.

Hoping to avoid this type of crisis, a decision-makers seminar is scheduled for November 20. EPA provided funding to DEQ to sponsor the seminar, and it will include discussions about problems facing small water systems. For example, the viability of such systems will be addressed, including how to ensure that present water systems remain economically stable and what to do with those that are not, whether to nurture or eliminate them.

Participants in the seminar will include representatives of the governor's office, various regulatory agencies, water suppliers' associations, consumer and environmental groups, and legislators. With decision makers as the target audience, the seminar hopes to identify the pertinent issues and provide the spark for appropriate legislative action.

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The writer thanks the all the people who contributed information to this newsletter, especially the following: Frank Barrios, Kathy Jacobs, Mark Frank, Arizona Department of Water Resources; John Dahl, Bob Munari, Arizona Department of Environmental Quality; Mancelyn Howard, Consolidated Water Utilities Limited; Robert Kennedy,

Jon Poston, Arizona Corporation Commission; Michael Lytle, Arizona Small Utilities Association; Bob O'Leary, Water Utilities Association of Arizona; Mark Van Brunt, National Council of La Raza.

The ideas and opinions expressed in the newsletter do not necessarily reflect the views of any of the above people.

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