

COMMISSION REGULATION OF SMALL WATER UTILITIES:  
OUTSIDE RESOURCES AND THEIR EFFECTIVE USES

Vivian Witkind Davis  
Senior Research Associate

J. Stephen Henderson  
Senior Institute Economist

Robert E. Burns  
Senior Research Associate

Peter A. Nagler  
Graduate Research Associate

THE NATIONAL REGULATORY RESEARCH INSTITUTE  
2130 Neil Avenue  
Columbus, Ohio 43210

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## EXECUTIVE SUMMARY

Small water utilities have many problems that make their regulation by public service commissions difficult. The utility commission in any state is only one among many organizations with an interest in the provision of drinking water. The NARUC Committee on Water asked the NRRI to identify other agency and private resources available and to suggest how they might be used to assist a commission in ensuring that small troubled water utilities provide adequate service at a reasonable cost to the ratepayer, while allowing a fair rate of return to the owner and stockholders. This report documents the programs and activities of state, federal, regional, and local agencies and private organizations concerned with supplying water to the ratepaying public and analyzes their impact on small water utilities.

The report identifies over forty organizations that provide or might provide money, information, training, education, technical assistance, regulation, research, or legislative liaison for the benefit of small water utilities. How those organizations affect problems of ownership, location, distribution, construction, finances, water treatment, management, operations, and maintenance of small water utilities is discussed, together with the use that commissions might make of their resources. A commission can choose to use another organization for referral, suggesting to a utility manager that he try the service. A commission might contact the organization to discuss mutual concerns and try to coordinate efforts to address them. Where new laws or programs seem desirable to a commission, commissioners and staff can advocate them, using commission influence to get a program started. In some cases, a commission may want to provide a service directly.

The inventory presented here is by no means comprehensive. Many organizations, particularly small ones, have been left out. Nor does this report claim to have produced a great deal of new analysis. Much of it relies on existing publications. It is hoped that through the list of organizations with specific expertise in small water systems, commissioners and staff will become more aware not only that rate regulation is a small part of the problems of small water utilities but that the commissions are only one of many organizations concerned with how well the small systems function. The inventory can provide a way to seek out and cooperate with other organizations in their states. Involvement of other groups could result in a more thorough, and therefore more effective, approach to resolving problems of small water utilities. Importantly, it could result in the use of fewer commission resources for regulation of this category of utility.





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## FOREWORD

This report explores in detail the potential for commissions to avail themselves of the resources of other agencies and organizations to aid in the effective regulation of small water utilities. The report, which builds on an earlier NRRI report reviewing general problems and solutions in this area, helps to meet The National Regulatory Research Institute (NRRI) purpose of addressing regulatory issues of national concern in a timely manner.

The report was prepared by the staff of the NRRI using state-provided funding received by the NRRI from participating member commissions of the National Association of Regulatory Utility Commissioners (NARUC). The views and opinions of the authors do not necessarily state or reflect the views, opinions, or policies of the NRRI, the NARUC, or NARUC member commissions.

Douglas N. Jones  
Director



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## CHAPTER 1

### INTRODUCTION

#### Purpose of This Report

Deficient capital, unskilled management, slipshod accounting and bookkeeping, unreliable operations and maintenance, substandard water quality, poor customer service, non-cost-based rates and ill-prepared rate case applications--a large proportion of the thousands of small water utilities in the United States may have some or all of these problems.

Many state regulatory commissions have attempted to deal with the difficulties of setting rates for small water utilities. They have simplified rate applications and procedures and even helped the utilities to make their way through the complexities of the ratemaking process. A few commissions have gone beyond the strictly construed regulatory process and attempted innovative ways of helping small water utilities to better serve the ratepayer.

The problems of small water utilities and the many commission efforts to deal with them are documented in a 1983 report.<sup>1</sup> The report looked at the stages leading up to an inadequate rate case filing by a troubled small water utility and the variety of alternatives open to commissions to attempt to improve the capabilities of the utilities. Yet, in regulating small water utilities, both the focus and the resources of the commissions are constrained. Commissions are there to

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<sup>1</sup>Raymond W. Lawton and Vivian Witkind Davis, Commission Regulation of Small Water Utilities: Some Issues and Solutions (Columbus, Ohio: National Regulatory Research Institute, 1983).

ensure that consumers pay fair prices for goods for which there is no easy substitute and that the providers of the goods receive a fair return on their investments. Their primary mission does not include assistance to a utility. Most of a commission's resources are devoted to regulation of the major telecommunications, electric, and gas utilities. Often there is relatively little manpower devoted to water utilities. Thus most commissions are not equipped to singlehandedly resolve the complex problems of small water utilities.

Yet the commission in any state is only one among many organizations with a concern for the provision of drinking water. The NARUC Committee on Water asked the NRRI to identify other agency and private resources and to suggest how they might be used to assist the commissions in ensuring that small water utilities provide adequate service at a reasonable cost to the ratepayer, while allowing a fair rate of return to the stockholder/owner. This report, accordingly, documents the programs and activities of many federal, state, regional, and local agencies, and private associations and firms, and analyzes their actual and potential ability to provide assistance to small water utilities in cooperation with commissions.

It is hoped that by identifying the agencies and organizations that have specific responsibilities and expertise to apply to the problems of small water utilities, staff at the commissions will become more aware of outside resources and will develop ways to use these resources to reduce their own burden and provide help to the small water utilities. Involvement of other groups could result in a more thorough, and presumably more effective, approach to eliminating the problems of small water utilities. Importantly, it could result in the use of fewer commission resources for regulation of this category of utility.

The inventory provided here may be looked at by some commissions as an invitation to take action. Other commissions may be satisfied with their existing programs. Commissions will vary in the effort they are willing and able to put into improving the situation of small water utilities. They will also vary in their ability to take advantage of

some of the programs discussed. Several of the programs listed in the inventory apply to publicly owned utilities only. Their direct applicability will be limited to the thirteen commissions that regulate publicly owned as well as investor-owned utilities. In some cases, a service is directly available in a state. In others, a program being carried out in one state is offered as an example that might be copied elsewhere. Even if a program is directly provided in a state, its availability for particular cases is not automatic. Taking advantage of financial or technical assistance takes time and effort at best, and an applicant may still be turned down.

The inventory can be used by commissions in a variety of ways. In order of increasing resource effort, the approaches a commission might wish to take are referral, coordination, advocacy, and direct service. For commissions with little time to spare, the inventory will serve primarily to suggest referrals, whether for financial aid, information, technical assistance, or training. Names and addresses are given for people at many agencies in various states who might be able to help a small water utility solve particular problems. For other commissions, the inventory may suggest ways to improve coordination with agencies the commissions are already working with intermittently or have not contacted before. Requiring still more commission resources would be an advocacy role where the commission would take on the burden of pushing for new programs, perhaps involving other agencies besides itself. Such programs could either be capable of initiation by administrative means or through legislation. Finally, a commission might wish to establish as its own a service discussed in the inventory. For example, it might want to fund its own circuit rider program, using the National Rural Water Association circuit rider program as a model.

In preparing the inventory the NRRI drew on existing sources. In particular, the American Water Works Association (AWWA) Handbook of State Management Practices in Aid of Small Water Systems served as a useful starting point for identifying problems and resources. The AWWA's Compliance Resources Guide has been used to compile a list of state documents that commissions might find useful for information,

either for themselves or the utilities, and to suggest program changes. Our report differs from other work done on problems of small water utilities in its explicit focus on the needs of the public utility commissions. It fulfills the NARUC Committee on Water's request to provide commissions with ideas about what other organizations can and are doing to improve the operation of small water utilities around the country.

The inventory is not all-inclusive. Undoubtedly there are organizations that could assist small water utilities but which are not named here. It is hoped, however, that major ones have been identified and enough organizations of all kinds listed so that a commissioner or staff person can get a good idea from the report of the range of assistance that might be drawn upon to improve the service provided to small water utilities.

The rest of this chapter is devoted to a description of the small, troubled water utility. Chapter 2 summarizes the inventory of resources available to aid those utilities and the role which could be played by state regulatory commissions in bringing these outside resources to bear on the problems of small water utilities. Chapters 3, 4, 5, and 6 are the inventory of the agencies and organizations which commissions might enlist to help in their states. These treat state, federal, local and regional, and private programs and activities. Chapter 7 is an overview of potential commission roles. Chapter 8 summarizes the report.

### The Troubled Small Water Utility

A water utility is supposed to provide a reliable supply of reasonably priced, potable water within its service area. Yet many small water utilities seem unable to fulfill this goal at the same level of quality and price as the large water utilities, or even to meet minimum standards established by the state. The source of much of the trouble is size. The utility's small size prevents it from acquiring the resources necessary to carry out its goals. Public accountability, location, physical plant, treatment capabilities,

finances, and management and operation of the utility may, in turn, be deficient.

### Diagnostic Characteristics

In general, the smaller a water utility the more likely it is to have difficulty generating and using resources to supply potable water to its customers. Like other public utilities, water companies benefit from economics of scale. But a minimum size must be achieved before they can begin to reap those benefits.

Experts in water service differ in their definitions of how small is "small." Definitions may be based on number of customers, number of service connections, gross revenues, capital investment, or gallons per day. Estimates by experts interviewed by the NRRI of the number of customers a water utility can have and be called "small" varied from a minimum of twenty-five to a maximum of two thousand service connections.

From the discussions it appears that there are "small" water utilities and "very small" ones. The critical distinction is not in any of the criteria cited, but in staffing. A "small" water utility is able to support at least one full-time staff person. A "very small" one is run by a part-timer. In this report, when "small" water utilities are discussed, the reference is both to small and very small ones. The distinction may be important in considering alternative means of dealing with troubled water utilities. A very small water utility may be difficult to help at all.

Small water utilities are likely to serve rural or suburban residential areas. The very small ones tend to serve mobile home parks or institutions. In a survey by SMC Martin of small water systems in Pennsylvania conducted for the state's Department of Environmental Resources, where small systems were defined as those serving 25 to 1,000 people, the actual average population served was 230.<sup>2</sup> Mobile home parks and institutions served an average of 147 people, less than half the

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<sup>2</sup>Pennsylvania Department of Environmental Resources, Impact of the Federal Safe Drinking Water Act on Small Community Water Supplies in Pennsylvania, prepared by SMC-Martin, Inc. (Harrisburg, PA: 1981).

average of 339 served by other systems. Over two-thirds of the systems in the Pennsylvania study had operators who spent less than 5 hours a week on that job.

### Ownership

Both publicly owned and privately owned small water utilities may be too small to be economically efficient. The privately owned utilities are of more concern to commission regulation, however, since only thirteen commissions regulate municipal water utilities. Private ownership, particularly of very small water utilities, is frequently accompanied by special problems. These can include a lack of a sense of responsibility to the ratepayer by the owners of small water utilities, absentee ownership, and problems related to the abandonment of small water systems by their owners.

The problem of the perceived lack of a sense of ratepayer responsibility takes several forms. The owners of small water utilities often have very small staffs, if any. They are often completely occupied by the day-to-day operation of their utilities. They have little time to perform services which one might expect of larger water utilities. Indeed, if the small water utility is providing water to its customers and if the meters are read and billings are sent out regularly, the owner of a small water utility might feel that he has fulfilled his responsibility. Yet, owners of small water systems have additional responsibilities, including to the state water supply agency and state public utility commission.

Another set of problems that is often faced by state agencies when dealing with small, privately owned water utilities is related to absentee ownership. It is not uncommon for a developer to build and own a small water system as a part of a housing development. After the developer has sold all or most of the housing units in the development, he sometimes "walks away" from the small water utility or sells the small water system to a third party, absentee owner. When operation or maintenance problems later develop in the small water utility, the owner cannot easily be found.

A final set of ownership problems faced by state agencies is similiar to but more extreme than the ones related to absenteeism. These problems arise when a small water system is abandoned, the operation of the small water system ceases, and the state agencies have no owner to contact.

### Location and Distribution

The location of a small water utility is dependent on the availability of an adequate safe water supply. For most small water utilities this means groundwater. The Pennsylvania study found that 87 percent of the small systems relied on groundwater. An average system had from two to nine wells. Springs or surface water are also used. The water source must supply yields sufficient to meet demand. The natural physical, chemical, biological, and radiological factors that can affect the color, taste, or odor of the water or be inimical to human health must be recognized and dealt with. A small water utility may have difficulty both with the reliability of yields and water quality.

Creation of small water systems and the developments they serve has happened with little planning and little control at the state or any other level. The result is the proliferation of small systems throughout the United States. The U.S. EPA has estimated that there are approximately 39,000 community water systems in the country serving from 25 to 500 people. Another 14,000 systems serve between 501 and 3,300 people. The total of 53,000 systems comprises 90 percent of the water systems in the United States.<sup>3</sup> The systems are installed using estimates of demand that are not always accurate. The result is some systems that are overbuilt for the population they serve and others that turn out to be undersized. A regional system may seem called for, but physical interconnection may be uneconomical and regionalization may be viewed with disfavor by the systems' managers. In the

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<sup>3</sup>U.S. Environmental Protection Agency, Office of Drinking Water, Regionalization Options for Small Water Systems, prepared by SMC Martin, Inc. (Washington, D.C.: 1983).

Pennsylvania study, 81 percent of the respondents from the small utilities said they were not considering a regional system. Over two-thirds said they would not consider one.<sup>4</sup>

### Construction and Maintenance of Physical Plant

Wells are the central physical component of most small water utilities. The Pennsylvania study found that small water utilities had an average of from two to nine wells.<sup>5</sup> Pumping equipment, distribution lines and storage facilities comprise the rest of the physical system. A consulting engineer is ordinarily hired to design a water system. All system components must be adequately designed to prevent contamination. For small water utilities, storage pumps and distribution systems may be incorrectly sized, primarily because of difficulties in predicting actual growth.

Once the plant is built, the water utility must continue to monitor activity in the watershed that could affect the quality and quantity of water supply. For the distribution system, continued attention needs to be paid to pressure control, quality changes, and breakages.

Maintenance of plant is often a serious problem for small water utilities. The system is likely to be old and in need of even the simplest repairs. It also may be technically outmoded. There may be considerable leakage, but leak detection and correction are at a minimum. Cross connections and backflow may exist. There is little planning for replacement of system components.

### Water Treatment

Raw water is likely to need treatment and conditioning before it is acceptable for human use. Disinfection, ordinarily with chlorine, is the most common chemical treatment for domestic water. The

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<sup>4</sup>Pennsylvania Department of Environmental Resources, Impact of the SDWA, p. 11.

<sup>5</sup>Ibid.



effectiveness of chlorine depends on a number of variables, thus requiring skill on the part of the water treatment operator. Adequate control requires maintaining good records of the chlorination process. Other standard treatment techniques remove suspended solids from the water, remove iron and manganese, controlling corrosion, and softening the water. All the small systems in the Pennsylvania study disinfected their water. Ordinarily this was the only treatment provided by the mobile home parks. The other systems often added filtration to remove solids and ion exchange for softening.

The quality of finished water for drinking is regulated through the Safe Drinking Water Act of 1974 (SDWA). The Act requires small water systems to stay within a "maximum contaminant level" for physical, chemical, biological, and radiological substances. The utility must regularly sample and analyze its water, notify the public of unsafe drinking water, and meet record-keeping and reporting requirements. Either a laboratory or the water utility operator may do the sampling.

Small water utilities may fail to monitor water quality or to have their water samples tested through a certified laboratory. The U.S. EPA study reported that in 1980 alone more than 900 small water supply systems were persistent violators of national limits on levels of bacteriological contamination. Another 1,560 systems were intermittent violators.<sup>6</sup> (Persistent violators are in violation more than 3 months of the year; intermittent violators, 3 months or less.) Twenty-four percent of the water systems in the Pennsylvania study reported violations of one or more EPA standard in 1979. Of these, 47 percent exceeded a maximum contaminant level and 39 percent failed to report monitoring data. Small water utilities may also have difficulty meeting the public notification requirements of the SDWA.

### Finances

Small water utilities are typically undercapitalized to begin with and lack funds to make needed improvements. Borrowing is difficult and

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<sup>6</sup>U.S. Environmental Protection Agency, Regionalization Options.

frequently involves personal guarantees. The Pennsylvania study concluded that "as is true through most of the United States, the majority of the systems surveyed are operating at a net loss."

The report goes on to say that most systems have sufficient revenues to cover operating and maintenance expenses but generally lack any revenues above that needed to cover interest payments on loans. The primary consequence of this is an inadequate reserve for future capital expansion. In addition, a number of systems (about 18 percent) reported revenues which were inadequate to cover debt service. This circumstance normally means that such an enterprise is technically bankrupt. The report found that in such a case, about 8 percent of the systems would make up the deficit by further borrowing, about 8 percent would rely on payments by customers (either from surpluses collected in prior years or by special assessments), 34 percent would use other, undisclosed methods, and 50 percent did not respond. Significantly, no system actually filed for bankruptcy as a solution for such deficits, indicating that the deficits are successfully financed in some manner.

Financial problems are the problem of small water utilities most familiar to the commissions. These include inadequate capital, inadequate reserves, and inadequate rates. Small water utilities sometimes do not set rates so as to cover all expenses and contingencies. Rate structures are likely to lack conservation and seasonal use features.

Another problem, as far as the commissions are concerned, is "contributed capital." The regulator believes that the water customers, in effect, contributed the capital in the water plant when these customers purchased homes in a newly developed area. The regulator is reluctant to allow the developer or water utility operator to sell the water utility plant and then allow the purchase price to be included in the new rate base, since, in the regulator's view, the customers have already paid for that rate base. The developer, on the other hand, believes that the plant belongs to him and tries to include it when selling it or in a rate case application.

## Management and Operations<sup>7</sup>

As with any organization, a small water utility needs good management to operate efficiently. But managers or operators of small water utilities often lack the skills or the time to undertake consistently such functions as management planning, personnel management, bookkeeping, meter reading, and customer service.

Planning for a small water utility should address the needs of the organization, objectives, priorities, and means to meet the objectives in an orderly way. A thorough plan would look at water supply sources, treatment systems, distribution and fire service systems, financial administration, personnel systems, public relations, consulting services, and operations and maintenance systems. Small water utility management is likely to live from day to day, with only a general idea of what the system will look like in the future.

Personnel management includes development of policies, keeping employee records, recruitment, hiring and firing, setting salaries and wages, and promotion and development of employees. To the extent that small water utilities have a staff, personnel practices may not be well established.

Financial management requires establishing control of cash flows, budgets, purchasing, accounting, billing, and collection. Most small water systems probably operate strictly by cash flow, planning expenditures through the year to match receipt of revenues. Little thought may be given to establishing capital reserves to cover emergencies, expansion needs, or depreciation.

Danger areas in preparation of a budget for small water utilities include overestimating revenues, failing to budget for debt service or loans, neglecting to review insurance coverage, failing to include all costs, failing to provide for capital improvements, and failing to face up to the need for a rate increase.<sup>8</sup>

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<sup>7</sup>Much of this section is based on U.S. Environmental Protection Agency, Fiscal Operations and Management for the Small Water Utility, prepared by Municipal Management Services (Washington, D.C.: 1983).

<sup>8</sup>Ibid.

Although a complicated purchasing system is not needed for a small water system, the utility must ensure that materials and services are ordered only by authorized personnel, orders are actually received before payment is authorized, and monies are encumbered for orders that have been made but not received. These basic procedures may not have been established by the troubled small water utility.

Water system accounting includes balance sheets of assets and liabilities, income accounts, and operating and maintenance accounts. Good accounting records and practices aid fiscal planning for the water system and tell responsible authorities, including the public service commissions, the financial status of the water company. For many small water companies, accounts are incomplete, unstandardized, and internally inconsistent.

Water is normally priced according to a flat fee for a certain number of gallons, plus a usage fee for gallons above that level. Meters are used to determine actual use. Meter reading is thus an important part of a small water utility's billings and collection management. Meters are not used by many small companies, and where there are meters, meter reading may be erratic.

Inexpensive computer software is available for water system billing and collection, but many small companies have not availed themselves of it. Customer complaints about bills may not be handled promptly. Collection procedures may also be inadequate.

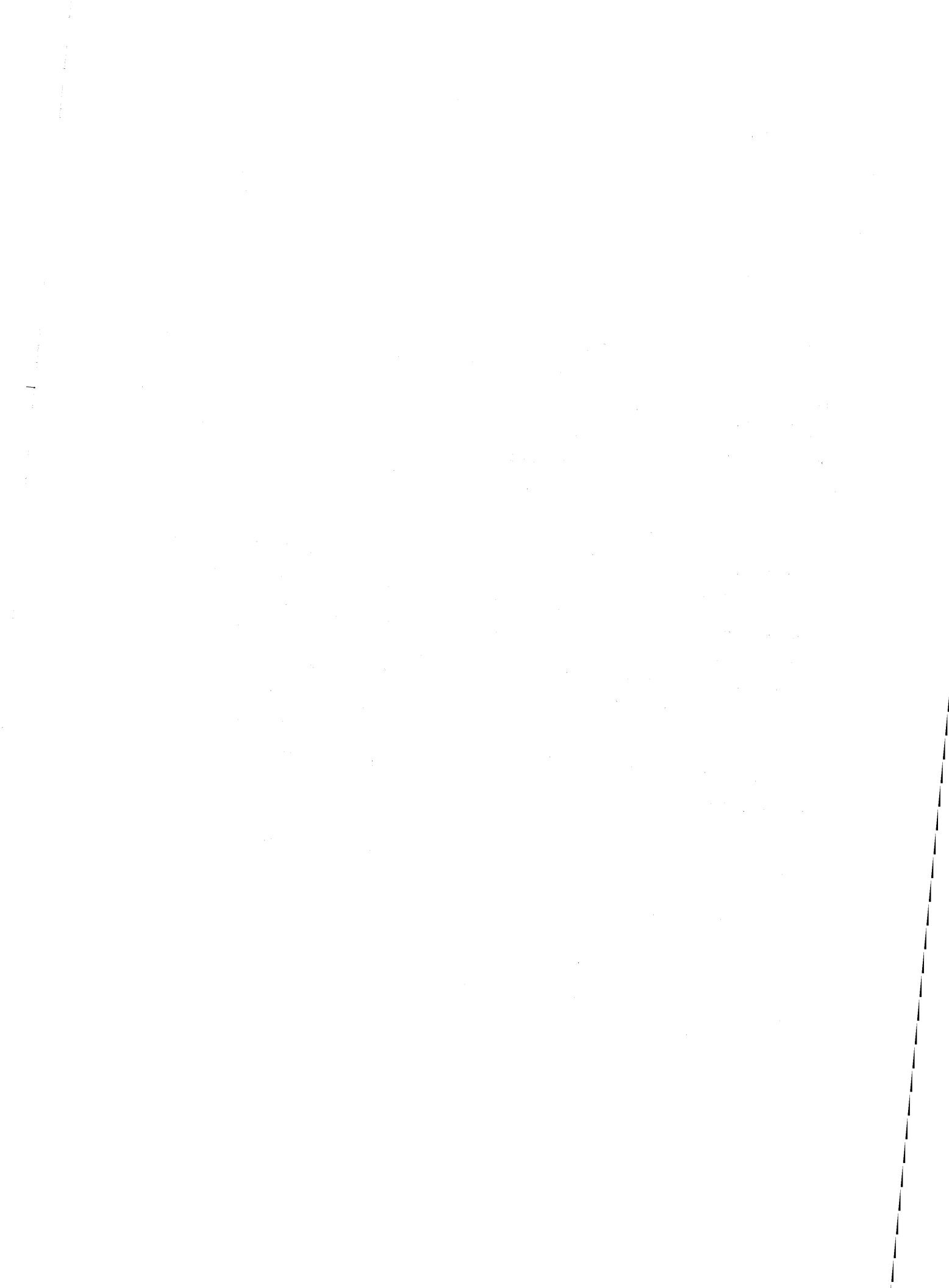
Some recordkeeping needs have already been touched on in discussing financial management. Managers of small water systems, particularly municipal ones, must maintain a variety of other general records, records for reports to state and federal agencies, and records of internal operations and procedures. Internal records include legal documents such as permits and rights of way, and engineering documents like plans for facilities and specifications for materials and equipment. All records should be arranged, located, and cross-referenced systematically, but a small water utility may neglect to do so.

Management of operations and maintenance involves the organization of work to be done, using such aids as the management plan and work schedules. Small water utilities may lack a coherent operations and maintenance program.

When and how to make the best use of consulting services is another management problem faced by small water utilities. Engineering, legal, and water testing services are the consulting services they most frequently require. The water company manager needs to be able to review consultants' qualifications, select a qualified individual or firm, agree on the scope of work, and set a timetable, fee, and payment method. The engineering consultant, in addition to aiding in plans for construction, can provide assistance in watershed management, protection of groundwater sources, water treatment, distribution, water inventory, and purchasing. Attorneys may provide consultation on rights of way, acquisitions, financial transactions, and SDWA requirements, as well as, of course, preparation of rate cases.

The final area of management problems, and the most salient to the commissions, is rate setting. The water system's management is responsible for setting rates that will bring in sufficient revenues to cover expenses, taxes, and cost of capital. Actual costs of service are used to distribute costs. If management has not developed and adhered to an adequate management plan, a detailed record keeping system, and a systematic billing system, it will be extremely difficult to meet the requirements of correct rate setting. The commission, presented with rates proposed by a badly managed company, is facing one outcome of poor management.

All small (and very small) water utilities are not, of course, troubled. Indeed, some are as well operated as large water utilities. Those that are well run tend to meet the operating goals cited in this section. Other resources exist to aid commissions in resolving many of the problems listed here. The next four chapters summarize how other agencies and organizations may assist.



## CHAPTER 2

### OVERVIEW OF RESOURCES AND APPROACHES

Money, information, technical assistance, training, research, legislative liaison, and takeover of ownership are all available from organizations other than the commissions to help small water utilities improve their operations. Laws and regulations administered by other agencies also assist towards providing sufficient public service. This chapter briefly reviews the organizational resources that will be identified in this report. In the inventory itself, for each state, federal, regional or local, and private agency, association, or firm there will be a brief description of services, a discussion of how a commission might take action to see that those services are applied to utilities under its jurisdiction, and at least one person at the organization to contact for further information. In some cases the organization listed is only an example of a type that might be available in many states. Commission staff, if they so desire, can find the comparable organizations in their state. Some of the programs apply directly only to the states where the commissions regulate publicly owned water utilities.

Depending on its own resources and particular concerns, a commission can choose to use the inventory in several ways. The simplest is for referral. If, for example, a company was having difficulty following standard accounting practices, a commission might refer the manager to someone who could help him find a management consultant. The state American Water Works Association (AWWA) or National Association of Water Companies (NAWC) chapters listed in this inventory might be sources of such service. If the commission wanted to do more, it could choose coordination with another organization as the type of action. In this case it might work with the state water supply agency to impress upon the company the necessity of more accurate accounting. Some commissions may wish to promote changes in

laws or programs affecting small water utilities. An advocacy position in the case of the company with accounting problems could involve promoting changes in state operator certification requirements that would make mandatory a certain level of accounting competency for all operators. Alternatively, a commission might decide on direct provision of accounting services through its own staff, who would sit down with staff of the utility and set up accounting practices that would satisfy commission requirements.

Table 2-1 shows the organizations listed in this report, the aspect of utility structure and functions to which their programs apply, the activities or programs they are providing or might provide to small water utilities, and likely types of actions a commission could take to make use of the organizations' capabilities. Where a program is available in only one state, the potential role for other commissions is, first of all, advocacy for their own states.

State agency programs offer the most potential for replication and successful use elsewhere, although to adopt a program in a new state would often require the commission to take on a strong advocacy role. In almost all states, the other important agency that a commission deals with is the state water supply agency. Even in the few states that do not have primary enforcement responsibilities under the Safe Drinking Water Act (SDWA), the water supply agency is an important actor with concerns similar to the commissions'. Like the public service commission, the arm of government charged with ensuring that water systems in the state provide safe, potable water will be concerned that a utility has enough money and trained staff to do the job right. Where commissions have not established strong day-to-day relationships with state water supply agencies, a pooling of resources could reduce demands on the commissions, particularly at rate-setting time. Coordinated effort by the two types of regulatory agency can encourage improvements in distribution, management, and water quality of small water utilities. Missouri's cooperative arrangement between the commission and the state department of natural resources is an example of successful cooperation.



TABLE 2-1

ORGANIZATIONS, PROBLEMS ADDRESSED,  
TYPE OF ASSISTANCE, AND COMMISSION ROLE

Name of Agency	Problems Addressed	Type of Assistance	Possible Commission Role
<u>State Agencies</u>			
Washington State Department of Social and Health Services	Ownership Location & distribution Finances Management & operations Water quality	Regulation Financial Technical assistance Training	Advocacy
U.S. EPA, Region III, Water Works' Operators Association of Pennsylvania, Pennsylvania Department of Community Affairs, Training Division	Management & operations Water quality	Training	Advocacy Coordination
California Department of Health Services	Finances Water quality	Financial	Advocacy Referral
Pennsylvania Water Facilities Loan Board	Finances	Financial	Advocacy Referral
Missouri Department of Natural Resources, Missouri Public Service Commission	Management & operations Water quality Location & distribution	Information Regulation	Coordination
New Jersey Department of Environmental Protection, New Jersey Board of Public Utilities	Ownership Location & distribution Finances Management & operations Water quality	Financial Technical assistance	Advocacy
New Jersey Department of Environmental Protection	Location & distribution Finances Water quality	Financial	Advocacy Referral
Vermont Department of Water Resources and Environmental Engineering	Ownership Finances	Financial	Advocacy Coordination
Missouri Department of Natural Resources	Finances	Financial	Advocacy
Maryland Department of Mental health and Hygiene, Division of Water Supply	Finances Water quality	Financial	Advocacy Referral
West Virginia Governor's Office of Economic and Community Development	Finances Water quality	Financial	Advocacy Referral
South Dakota Department of Water and Natural Resources	Finances	Financial	Advocacy Referral
California State University at Sacramento	Management & operations	Training	Referral Advocacy

TABLE 2-1 Continued

Name of Agency	Problems Addressed	Type of Assistance	Possible Commission Role
<u>State Agencies, cont.</u>			
Kirkwood Community College, Cedar Rapids, Iowa	Management & operations	Training Technical assistance	Advocacy Coordination
Interstate Conference on Water Problems	General problems & policies	Information Legislative liaison	Advocacy
Council of State Governments	General problems & policies	Information Technical assistance	Referral Coordination
<u>Federal and National Agencies</u>			
Farmers Home Administration	Ownership Finances Location & distribution	Financial	Referral
Office of Community Planning and Development - HUD	Ownership Finances Location & distribution Water quality	Financial	Referral
Economic Development Administration	Ownership Finances Location & distribution	Financial	Referral Coordination
Small Business Administration	Finances Management & operations	Financial	Referral
Environmental Protection Agency	Water quality	Regulation Information Training Technical assistance	Referral
Rural Housing and Community Facilities Development	Management & operations	Technical assistance	Referral Coordination
National Rural Water Association	Management & operations	Technical assistance	Referral Coordination
U.S. Geological Survey	Location & distribution Water quality	Information Technical assistance	Referral
National Demonstration Water Project	Management & operations Water quality	Training Information Technical assistance Financial	Referral Coordination
State Water Resources Research Institutes	General problems & policies	Research Information	Coordination
National Water Alliance	General problems & policies	Legislative liaison	Advocacy

TABLE 2-1 Continued

Name of Agency	Problems Addressed	Type of Assistance	Possible Commission Role
<u>Regional/Local Agencies</u>			
River Basin Commissions	Location & distribution Finances	Regulation Technical assistance Information	Referral Coordination
Appalachian Regional Commission	Location & distribution Finances Ownership Water quality	Financial	Referral
Southeast Michigan Council of Governments	Location & distribution Water quality	Information Training	Referral Coordination
Morgantown Water Commission	Location & distribution Management & operations Water quality	Information Technical assistance	Referral Coordination
Pennsylvania Municipal Authorities Association	Management & operations Finances	Information Training	Referral
Connecticut Water Works Association	General problems & policies	Information Legislative liaison	Referral Coordination
<u>Private Organizations</u>			
American Water Works Association	General problems & policies	Information Legislative liaison	Referral Coordination
National Association of Water Companies	General problems & policies	Information Legislative liaison	Referral Coordination
National Society of Professional Engineers	Management & operations Location & distribution Water quality	Technical assistance	Referral Coordination Advocacy
American Consulting Engineers Council	Management & operations Location & distribution Water quality	Technical assistance	Referral Coordination Advocacy
American Water Works Service Co.	Ownership Management & operations	Training Takeover	Referral Coordination
General Water Works Management and Service Co.	Ownership Management & operations	Takeover	Coordination
PSC Water Services, Inc.	Management & operations	Technical assistance	Coordination

Source: Authors' construct

The state program with perhaps the broadest impact on problems of small water utilities is Washington's comprehensive planning and satellite systems program. Distribution, ownership, finances, management, and water quality--all five of the general problem areas identified in this report--are affected by the program. New Jersey's law allowing takeover of water utilities under certain circumstances is one with a broad impact on utility service for utilities that fail to provide adequate service, and presumably is an incentive for others to perform well so as not to be taken over.

Several of the other state programs are financial ones. The Pennsylvania and California loan programs are notable for being available to private as well as publicly owned companies. Interconnection loans in New Jersey have an impact on private companies in a service area. The Vermont, Missouri, Maryland, West Virginia, and South Dakota grant programs all apply only to publicly owned utilities.

Among other state programs, the Pennsylvania effort in management training, jointly sponsored by several agencies, has had an impact on both management and adequacy of water treatment. Of the two educational programs listed in the inventory, the community college may offer the best example of a program replicable in other states. The Sacramento correspondence courses are widely used but do not cover management. Finally, the Council of State Governments and the Interstate Conference on Water Problems may serve as good points of contact for general state problems on water utilities.

Many of the federal programs listed in the inventory are aimed at boosting the financial resources of small water utilities. Publicly owned, rural water systems serving low-income people are the primary target and the FmHA the largest grantor. Some of the federal programs, notably FmHA business and industrial loans and SBA loans, are available to privately owned systems. Financial assistance through these programs can assure a well-designed and built plant that delivers good quality water. For several of the programs the availability of federal funds has also been used as an incentive to improve location and

distribution of water systems. Where money is available only to a publicly owned system, it may tend to help discourage private ownership.

The U.S. EPA has a strong, but for the most part indirect, influence on the water quality of individual water treatment plants. For the most part the state water supply agencies have been given primary responsibility for carrying out the SDWA. U.S. EPA does offer some information, training, and technical assistance to water utilities, however. The U.S. Geological Survey also addresses the problem of water quality as well as availability of water. A USGS office is good source of information on where to locate a new water plant and the potability of water. With all these agencies, the primary commission role is probably referral, although a commission may want to coordinate with state offices of the agencies with the strongest potential for funding small water utilities under its jurisdiction.

The Rural Housing and Community Facilities Development Agencies and National Rural Water Association, both of which offer technical assistance to improve management and operations of small water utilities, may be agencies that the commissions want to contact to discuss cooperative efforts. Similarly, the National Demonstration Water Project may be an organization with which a commission could do business.

State water resources research institutes offer the opportunity to the commissions to do state-specific research on the problems of small water utilities. A commission might want to contact its institute to see what the prospects would be for such a project.

The National Water Alliance is a potential contact for the commission that wants to influence development of water policy on the national level.

Regional and local organizations may cover as much as several states or only a small part of a state. They can strongly influence location and distribution of small water utilities within their boundaries or be paper tigers without much authority. Among the river

basin commissions the two compact commissions have substantial regulatory powers. The others are likely to be most useful for information on hydrological and other matters. The Appalachian Regional Commission, like other federally sponsored agencies, has funds for grants to water systems servicing low income areas. Its aegis is limited to a thirteen-state area. Regional planning agencies and councils of government are legion. Their effectiveness varies considerably. To determine the regional agencies in its state that have an impact on small water utilities, a commission staff member may consult the state department or agency dealing with water resources management or the agency dealing with water quality. The Pennsylvania and Connecticut associations, and Morgantown Water Commission are examples of organizations giving service to small water utilities in their areas. Commissions may be able to seek out similar groups and encourage them to supply similar services to small water utilities in their states.

Private associations like the AWWA, the NSPE, the ACEC, and NAWC are potentially excellent contacts for the commission in attempting to address problems of small water utilities. They can be used to find experienced consultants specializing in small water utilities. They can help develop programs of education and training for water utility managers and operators. The associations can be key allies in an attempt to pass legislation, such as a loan program, aimed at small water utilities.

The large water utilities included in the inventory may be able to take over ownership of a small company that has the potential to be profitable. They have some ability to improve management and operations of small companies through technical assistance. A commission may want to contact the subsidiary of a large company operating in its state to determine its interest and ability to help in particular cases. Otherwise, small companies are probably better served by small consulting firms, whether legal, engineering, accounting, or management firms.

This chapter has introduced the organizations that will be reviewed in detail in the next four. After the separate description and evaluation of the state, federal, regional, local, and private agencies, associations, and firms in the next four chapters, we will undertake a general appraisal of the impact that commissions and these entities can have together on the problems of small water utilities.





## CHAPTER 3

### STATE PROGRAMS

As far as the commissions are concerned, the most usable, transferable, and effective methods of helping small water utilities are likely to be those managed by state agencies, rather than in the private sector or at another level of government. State agencies throughout the United States are engaged in activities, both routine and innovative, that affect the functioning of small water utilities.

Several of the innovative programs are described here. In Washington, a state law encourages better planning for small water utilities. Pennsylvania has done considerable work in training of operators of small water treatment plants. New Jersey has a law authorizing takeover of small water utilities that violate state requirements. Pennsylvania, New Jersey, Missouri, West Virginia, Maryland, and South Dakota have financing programs that affect small water utilities.

The chapter also includes a description of the Council of State Governments, which has information and consulting resources a state may want to take advantage of in developing policies for improving regulation of small water utilities. The Interstate Conference on Water Problems is another organization composed of state agencies that a commission might wish to be aware of. Finally, two academic programs are described here. One is California State University's Sacramento campus' correspondence course for water treatment operators. The other is the operator training program at Kirkwood Community College in Iowa.

Besides considering establishing a program like one of those described in detail here, a commission can look to its backyard and evaluate the potential for cooperation with agencies in its own state. To begin to do so, a commission would first want to ascertain the location of lead responsibility for the various water programs in the state. State programs are for the most part fragmented. The Council of State Governments' State Administrative Officials Classified by Function<sup>1</sup> lists separately agencies with responsibility for water quality protection; agencies responsible for water conservation, development, use and planning; and agencies responsible for public drinking water supplies. The Council lists of the three types of agency are reproduced in this report. In nine states all three programs are handled within the same agency: Florida, Georgia, Iowa, Kentucky, Missouri, Nevada, Pennsylvania, and South Dakota. Water quality and water supply are administered by the same agency in eighteen states; water quality and water resources, in thirteen states. New Jersey is the only state where water resources and water supply are administered by the same agency. At least three agencies administer the three types of public services in nine states.

Of the three general types of water agencies, the one that commissions deal with most frequently manages water supply programs. These are the agencies ordinarily charged with administering the Safe Drinking Water Act (SDWA). All but Indiana, Oregon, Pennsylvania, Wyoming, and the District of Columbia had primary responsibility for enforcing the SDWA as of January 1984. The agencies charged with administering the SDWA have many of the same concerns as the commissions, since they find that small water utilities do not have the capital or the expertise to meet water treatment standards. A number of commissions are working regularly with state water supply agencies on cases of mutual concern. When a water supply agency orders a small water utility to upgrade treatment, the agency often testifies to the need for the expense in a rate case before the commission. Likewise,

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<sup>1</sup>The Council of State Governments, State Administrative Officials Classified by Function 1983-84 (Lexington, Kentucky: Council of State Governments, 1984), pp. 244-249.

when a commission is faced with complaints about water quality for a jurisdictional utility, staff may consult with their peers at the water supply agency. The relationship of the Missouri Public Service Commission and the Missouri Department of Natural Resources is an example of how such coordination works and is discussed here.

A commission will need to contact the other types of state water agencies if it wants to ascertain the boundaries, authority, and capabilities of regional planning agencies in the state. It will also need to make contact if it is taking on an advocacy role for changes in state law that will affect the responsibilities of those agencies. For example, if the commission wishes to promote a comprehensive planning act like the state of Washington's, commissioners and staff would want to contact the water quality and water management agencies. The commission may also want to contact the water management agency to discuss aid that might be available for planning for droughts, floods and other emergencies.

Another group of state agencies not listed here, but that could be consulted is the community development agencies. They would also be interested parties in a broadscale attempt to revise state planning law. They also might be able to give advice on water supply problems for particular areas of the state and refer the commission to appropriate multi-purpose planning agencies in an area of concern.

The state agency with responsibility for certification of water treatment operators is another type the commission could work with more closely; for example, to upgrade requirements for managerial skills in water treatment operators.

Many states have publications on issues affecting small water utilities. A list of publications, rearranged from an American Water Works Association compendium, is supplied in appendix A. A commission may want to acquire some of the publications for its own information, for distribution to small water utilities, or for adoption in its own state.

Sixteen state programs are reviewed in the following pages.

Washington State Department of Social and Health Services

Program/activity: Public Water System Coordination, Satellite Support Systems, and Municipal Water Supply Funding Program

Washington's Public Water System Coordination Act of 1977 established a step-by-step process for water system planning. Satellite system management, whereby a large or central utility assists small ones, is one means of accomplishing the coordination envisioned by the Act. Grant funds are available for planning for satellite systems and water system coordination.

The coordination process has six steps:

(1) Preliminary assessment: The Department of Social and Health Services, appropriate planning agencies, and water purveyors study geographical areas suspected of having unreliable water service, drinking water quality problems, or lack of coordinated planning.

(2) Designation of critical water supply service area: Based upon results of the preliminary assessment, the department or a county may identify a general area to deal with water system concerns through coordinated planning.

(3) Appointment of coordinating committee: The department or county establishes the local team whose primary tasks are to propose external boundaries and direct development of the coordinated water system plan.

(4) Establishment of external boundaries: The local committee recommends to the county the study area boundaries. The county establishes the boundaries based upon the committee action and the results of public hearings.

(5) Development of a coordinated water system plan: The committee oversees preparation of the coordinated plan, which has two parts. The first is an individual water plan; the second, a regional supplement that deals with areawide issues such as service area agreements, design standards, a method for establishing new water systems, and provisions for sharing necessary facilities.

(6) Review of the coordinated plan: The county reviews the plan for consistency with existing ones affecting land use within the study area. The plan is also reviewed by the department to ensure that all topics have been covered and proposed facilities are adequately designed.

The satellite support system is one possible outcome of the coordination effort. In a satellite system, ownership, operation, and maintenance responsibilities of an outlying small water system are transferred to a publicly or privately owned utility capable of providing needed services. Several levels of service are possible. Ownership might be transferred to the central utility, which would then assume responsibility for administration, operation, and maintenance. The small system might contract with the large utility for services such as repairs, system operation and maintenance, monitoring and reporting, administration and billing, or wholesale water supply. Support service is another possibility. This would include operator training and purchase of equipment and supplies on a cooperative basis.

The department notes that any of these options has a number of advantages. They may mean improved service and operation, reduced maintenance costs, improved water quality, and employment of more qualified personnel. For the system as a whole, the revenue base will expand. It may be easier to qualify for federal and state funds for needed improvements. For a geographical area, the satellite system can improve water quality management and increase the opportunity for long-range, comprehensive land use planning.

Several Washington counties are engaged in satellite management. In a study of three of them, the department has found that both the physical water system and water quality have improved under satellite management.

Washington's municipal water supply funding program has helped to provide incentives for coordinated water system planning and satellite system management. Up to 50 percent of the costs may be paid by the state for satellite system and public water coordination planning. Municipalities may also borrow 100 percent of the costs of engineering

reports and plans. The loans are available for three years at 6 percent interest. Grants of up to 40 percent of eligible construction costs are also available to municipalities.

Applicability: The State of Washington's program of coordinated planning and encouragement of regional systems is a means of addressing problems of small water utilities on a broad scale. A commission that wished to consider taking on an advocacy role for implementation of such a program would have to consider a number of factors. Among them would be the severity of the problem of proliferation of small systems in the state, the adequacy of existing planning, and the support or opposition that such a proposal would meet. Development of a proposal for a program similar to Washington's could be accomplished in close cooperation with the state water supply agency.

Contact: Eric Stagle  
Water Supply and Waste Section  
Washington Department of Social  
and Health Services  
Olympia, WA 98504  
(206) 753-5954

U.S. Environmental Protection Agency, Region III; Water Works'  
Operators Association of Pennsylvania; Pennsylvania Department of  
Community Affairs, Training Division

Program/activity: Training in Management and Operations

Several organizations have worked together to train water operators and managers in Pennsylvania. Region III of the U.S. EPA joined with the state water works operators association to put on a series of workshops around the state to aid compliance with the SDWA. The workshops were one component of Region III's direct implementation of the SDWA in Pennsylvania. In addition, the U.S. EPA has funded regular seminars for operators and managers of small water utilities through the Pennsylvania Department of Community Affairs.

The workshops were undertaken in response to the SMC Martin study on the Impact of the Federal Safe Drinking Water Act on Small Community Water Supplies in Pennsylvania. Training was aimed at solving specific problems for small water utilities without regard to type of ownership. To locate all Pennsylvania water systems, the EPA initially used a grant from the U.S. Office of Aging to hire senior citizens to match telephone directory listings and state records. Workshops were held in areas with concentrations of small water utilities. With the help of the Water Works Operators Association, invitations were sent on utility letter heads. The AWWA and NAWC chapters also helped to spread the news about the workshops. The workshops were conducted as evening sessions of about three hours each. Somewhere between 10 and 20 percent of those invited actually attended the workshops. A Small Water Utility Workshop Guide assisted workshop leaders in conducting the training. The guide included suggestions on how to encourage people to attend a workshop, arrange for facilities, and keep participants' attention. Subjects covered included regulations of the SDWA and the Pennsylvania Department of Environmental Resources, sources of supply, treatment, distribution, operations, and management.

Since the initial series of workshops, the EPA has funded the Training Division of the Department of Community Affairs to conduct

seminars around the state. Regular seminars have been conducted on management, financing, and rates for water utilities with fewer than ten thousand customers. An average of twenty people have attended each of the five or six seminars held.

Fiscal Operations and Management for the Small Water Utility was prepared in conjunction with this program. The book covers organizational processes, with separate sections on planning, personnel management, financial management, public relations, record keeping, operations and maintenance, consulting services, water rates, and regulatory agencies. Included are a sample schedule of accounts, a sample program of educational assistance for employees, samples of forms, an article on setting up a filing system, steps for conducting an annual water and sewer rate review, and rate filing information.

Although EPA funding of training in Pennsylvania is scheduled to end, the state Training Division plans to continue holding seminars for small water utility managers and operators.

With the expiration of training programs funded by the U.S. EPA, the Water Works Operators Association is planning to have its own training program. The association has fifteen hundred members. It serves both public and private utilities through conferences, meetings, and publications. Small water utilities make up one-fourth of the membership. Charges for the workshops and seminars planned by the association will only cover costs. Rate making will not be included in the subject matter. The spokesman for the association said he did not believe similar organizations exist in other states.

Applicability: For a commission interested in developing a training program for operators of small water utilities, the Pennsylvania experience offers some lessons. Inter-organizational cooperation and de-emphasis of regulatory aspects of the program are features that could be imitated elsewhere. The unfortunate lesson that emerges from the Pennsylvania program is that even with the most thorough and carefully planned effort, attendance at workshops is still likely to be poor. The low participation rate for training in Pennsylvania suggests that workshops need to be supplemented with on-site technical assistance.



Contacts: Anthony J. Zegment  
Municipal Training Division  
Bureau of Local Government Services  
Pennsylvania Department of Community Affairs  
Harrisburg, PA 17120  
(717) 787-5177

A. Thomas Merski  
Project Manager  
Water Supply Branch  
U.S. EPA, Region III  
Philadelphia, PA 19106  
(215) 597-0609

Joseph Dinkel  
President  
Water Works Operators' Association  
of Pennsylvania  
762 Lancaster Ave.  
Bryn Mawr, PA 19010  
(412) 331-4723

California Department of Health Services

Program/activity: Loans and Grants

Under the California Safe Drinking Water Bond Law of 1976, loans are available to both public and private water systems and grants are available to help publicly owned systems meet safe drinking water standards.

Loans: Issuance of up to \$175 million in state bonds was authorized for the construction, improvement, or rehabilitation of domestic water systems. "Domestic water systems" have at least fifteen service connections or supply water to at least twenty-five individuals. The bond program applies to public and private suppliers of water. The Department may enter into contracts with suppliers for loans to enable meeting safe drinking water standards. First priority is given to suppliers with the most critical public health problems. Priority is also given to suppliers with a "lesser capability to reasonably finance system improvements." Applicants must apply for and make reasonable efforts to secure federal assistance for the projects. The maximum period for repayment is fifty years. An administrative fee of not more than 3 percent is charged. Interest is charged at a rate equal to the average of the net interest cost to the state on the sale of the bonds.

The Department of Health Services analyzes needs and sets loan priorities. The Department of Water Resources is the lending agency and fiscal administrator. The Department of Health Services notifies water suppliers that might be eligible for the loans. The California Public Utilities Commission furnishes comments at the request of the department concerning the ability of suppliers subject to commission jurisdiction to finance projects and repay loans.

Commission approval is required before a loan can be granted to a utility under its jurisdiction. The commission approves rates to cover repayment of the loan. To review loan requests, the public utilities commission holds a hearing before a hearing officer. A court reporter is present. The Department of Health Services usually does not

participate in that hearing. A public meeting presided over by both the commission and department is held in the service territory of the utility. A commission spokesman said they approve between five and ten loan applications a year.

Grants: Bond proceeds in the California Safe Drinking Water Fund may be used for grants to public agencies which run or operate domestic water systems. Grants are available when it is determined that agencies are otherwise unable to meet minimum safe drinking water standards. First priority is given to projects in areas with immediate health problems. Up to \$15 million was allocated for the grant program.

Applicability: California's loan program could be imitated in other states to help solve small water utilities' financial problems that affect water quality and other health aspects of service. A commission that wanted to explore such a program would begin by discussing it with staff at the state water supply agency. To get a bond program through the state legislature a commission would need to mobilize support among other interested organizations.

Contacts: John Gaston  
Chief, Sanitary Engineering Branch  
California Department of  
Health Services  
714 P Street  
Sacramento, CA 95814  
(415) 540-2154

Wes Franklin  
California Public Utilities Commission  
California State Building  
350 McAllister Street  
San Francisco, CA 94102  
(415) 557-1863

New Jersey Department of Environmental Protection and Board of Public Utilities

Program/activity: Takeover of Small Water Companies

New Jersey's Small Water Company Takeover Act is intended to be a major enforcement tool to bring companies into compliance with statutory and regulatory requirements. The Act defines a small water company as a non-governmental entity providing water to less than one thousand customer connections. The Department and the Board may jointly order the acquisition of any small water company not in compliance with statutory and regulatory standards concerning quality, pressure, or volume of water. Acquisition is to be by the most suitable public or private entity. The Department initiates takeover action and the Board approves or disapproves it.

Proposed regulations implementing the Act would provide for three types of public hearings. The first would be a departmental hearing to determine compliance with a Departmental order by a small company. A joint public hearing would then provide a vehicle for public input and a quasi-judicial, adversarial hearing would determine the expenditures required to assure compliance with standards. The hearings would provide the record by which the Department and Board would jointly determine actions, including acquisition where appropriate. The joint order would include an action by the Board ordering the immediate inclusion in the rates of the acquiring entity of the anticipated cost of necessary improvements and approved tariffs.

The Board would extend or transfer the franchise area of the acquiring public or private entity to the extent necessary to cover the service area of the non-complying small water company. Acquisition costs would be determined by agreement of the parties and approved by the Board. If there were no agreement, compensation would be determined through eminent domain procedures. The Act allows the Board to permit the acquiring entity to charge a differential rate for customers of the non-complying small company for the use or service of the acquiring company's water supply system or facilities.

Applicability: This is an example of a cooperative effort by a state regulatory commission and state water supply agency to change ownership of small water utilities that are unable to provide acceptable service, either under the standards of economic regulation required by the commissions or under the Safe Drinking Water Act. A commission interested in promoting ownership changes and consolidation as a means of helping faltering small water utilities might work to initiate similar legislation.

Contacts: Joseph N. Schmidt, Jr., Esq.  
Office of Regulatory Services  
Department of Environmental Protection  
CN 402  
Trenton, NJ 08625  
(609) 984-2605

Douglas Ziemba  
Chief, Bureau of Service Evaluation  
New Jersey Board of Public Utilities  
1100 Raymond Blvd.  
Newark, NJ 07102  
(201) 648-2203

New Jersey Department of Environmental Protection

Program/activity: Loan Programs

The New Jersey Department of Environmental Protection administers three loan programs for the state's water utilities. The Department is the lead agency in the programs, with frequent input from the New Jersey Board of Public Utilities.

Interconnection Loans: Loans are available to publicly owned water supply systems to finance interconnection with privately as well as publicly owned water supply systems. Funds are used for construction of new water supply system interconnections and testing/rehabilitation of antiquated, damaged, or inadequate water supply interconnections. The construction or rehabilitation is to provide a reliable water supply in the event of system failure and raise at least one of the systems interconnected closer to "Condition A" or "Condition B." Under Condition A, a system is able to maintain its water supply at 75 percent of average demand and burden no single adjacent system with more than 25 percent of average demand. Under Condition B, a system must have enough interconnection capacity from adjacent systems to maintain its water supply at 50 percent of average demand while relying on no single system for more than 35 percent of average demand.

Maximum loans are \$150,000 for systems serving 10,000 residents or less; \$300,000 for 10,001 to 50,000 residents; and \$600,000 for greater than 50,000 residents. The interest rate from January 1, 1984 to June 30, 1984, was specified at 5 percent for the entire maturity period. Loans are made based on the percentage of the average water supply which the interconnections can provide, the number of new interconnections and interconnections to be rehabilitated that are included in the project, and administrative orders, directives, or recommendations issued by the Department applicable to the proposed interconnection project. Priority rankings are made within the system size categories.

Rehabilitation Loans: Publicly owned water supply systems are eligible for loans for rehabilitation, repair, reconstruction, or replacement of antiquated, obsolete, damaged, leaky, or inadequately operating water supply transmission facilities. Maximum loans are \$500,000 for a system serving 10,000 residents or less; \$1 million, 10,001-50,000 residents; and \$3 million, greater than 50,000. The interest rate for January 1, 1984, to June 30, 1984, was specified at 5 percent per annum for the entire loan maturity period.

Contaminated Wellfield Loans: Where no other funding source is available to remedy a situation where a wellfield is contaminated, loans of up to \$3 million may be made to owners of individual or public wells. Eligible projects include deeper wells, system extension, new wells and distribution systems, or modification of existing treatment facilities or individual treatment facilities.

Applicability: The interconnection loan program encourages consolidation of water systems that are not economically efficient. This program, applied in New Jersey to interconnection of private water systems as well as public ones, is one a commission may wish to emulate in cooperation with the state water supply agency. A rehabilitation loan program or contaminated wellfield program may also be an appropriate avenue for upgrading water supply systems. The latter program might be considered for areas with severe groundwater pollution problems. To initiate any of the loan programs, a commission would need to take on a strong advocacy role.

Contacts: Robert Oberthaler, Program Manager  
Division of Water Resources  
Water Supply and Watershed Management  
Administration  
P.O. Box CN-029  
Trenton, NJ 08625  
(609) 292-5550

John Stanziola  
Supervising Rate Analyst  
Division of Utility Finance, Accounts,  
and Audits  
New Jersey Board of Public Utilities  
1100 Raymond Blvd.  
Newark, NJ 07102  
(201) 648-2438

Pennsylvania Water Facilities Loan Board

Program/activity: Loans to Community Water Systems

The Water Facilities Loan Board within the Pennsylvania Department of Environmental Resources (DER) manages a \$220 million loan program for publicly and privately owned water systems. The Public Utility Commission chairman is one member of the eleven-person board that oversees the program. The DER secretary is chairman and DER processes the loans.

The community water systems eligible for loans under the Pennsylvania law include facilities for collection, treatment, or distribution of water from dams, reservoirs, and other sources where there are at least fifteen service connections. Loans may be made for repair, construction, reconstruction, rehabilitation, extension, and improvement. The Commonwealth loan program can pay for 100 percent of costs for water projects requiring "\$500,000 or less"; up to \$500,000 for projects that cost between "\$500,000 and \$1,000,000"; and 50 percent, but no more than \$5 million, for projects that cost over \$1 million. The loan program is funded through state-issued bonds.

In reviewing applicants for eligibility to receive a loan, the Board considers whether the project will improve public health, safety and well-being; cost effectiveness; consistency with state and regional water and economic development plans; the applicant's credit worthiness; availability of other funding sources; and whether the proposed project will lead to an effective or complete solution to the problems it is intended to solve. Priority for loans to community water systems is based on public health benefits, benefits to public safety, improvement of compliance with federal and state statutes, improvement in adequacy or efficiency of the system, cost effectiveness, and the contribution to and impact of the project on economic, social, and environmental values.

The Pennsylvania water bond law provides for expedited approval of rate relief for regulated utilities to ensure repayment of principal and interest on the loans. The commission approves "necessary and appropriate" security issues, affiliated interest agreements, and rate increase requests under the bond program. The law requires the



Commission to establish procedures to expedite repayment, but states that this obligation must not be construed as requiring approval of rate increases greater than that necessary to accomplish repayment of loans.

Applicability: The Pennsylvania loan program appears to be an effective way of meeting the capital needs of water utilities of all sizes. Pennsylvania's loan program is more broadly focused than California's, which applies solely to water treatment needs. A commission in a state with widespread, publicly felt needs to upgrade its water supply infrastructure can consider advocating a loan program similar to Pennsylvania's. To do so could require coordination with other state agencies interested in water and private organizations like the NAWC and AWWA.

Contact: Fred Marrocco  
Pennsylvania Department of  
Environmental Resources  
Harrisburg, PA 17120  
(717) 783-3795

Missouri Department of Natural Resources (DNR) and  
Missouri Public Service Commission (PSC)

Program/activity: Cooperative Enforcement

The Missouri DNR and PSC have a written, though informal, agreement on cooperation on enforcement of regulations on sewage treatment. A similar agreement is in effect for water systems, but is not written down. The agreement says that when there is a proposal for new sewage treatment, the PSC staff will be given the opportunity to discuss the impact with staff of the DNR. Prior to enforcement action by either commission, the other commission is to be notified. Staff from either commission may appear in a conference to discuss possible enforcement action by the other. If PSC staff knows of a service disconnection by a certified utility, they are to notify DNR. If DNR staff learns of the formation of a sewage treatment system likely to be certifiable by the PSC, they are to notify PSC staff. Finally, when a pollution or non-compliance problem is discovered, the two staffs have agreed to work together to solve it.

Missouri DNR and PSC staff work together closely in the field on day-to-day problems. They also cooperate in efforts to prevent proliferation of small water utilities by encouraging regionalization options.

Applicability: The agreement in Missouri is an example of how one commission works with the regulatory agency, complementing its authority over small water utilities. Other commissions may not want to have written agreements with their state water supply or water quality agencies. However, they may want to review their relationships with other agencies concerned with water problems to see what opportunities exist for better pooling of resources and better cooperation.

Contact: Bill Sankpill  
Director, Water and Sewer Department  
Missouri Public Service Commission  
P.O. Box 360  
Jefferson State Office Building  
Jefferson City, MO 65101  
(314) 751-4743

Vermont Department of Water Resources and Environmental Engineering

Program/activity: Construction Grants

Through the sale of state bonds, Vermont funds between \$1 million and \$2 million annually in construction of municipal water supply systems. Grants of up to 35 percent of eligible project costs are available. Grants have averaged \$300,000 per project, with the smallest about \$80,000. Federal funds may be used to supplement the state grants. Most of the grants have gone to systems with less than a thousand customers. The smallest system had twenty customers.

Grant priorities are developed jointly by the Department of Water Resources and the Department of Health.

Each year one or two privately owned small water utilities in Vermont become "fire districts" in order to take advantage of grants. Fire districts in Vermont are local units of government eligible for federal or state funds. The Vermont Public Service Board and Department of Water Resources work together closely on these cases.

A Department of Public Service spokesman commented that formation of a fire district is an easy process that usually reduces individual water costs by about \$100 per year per family because of their new eligibility for governmental financing for needed improvements. He says the move to public ownership has been particularly helpful for companies with absentee owners.

Applicability: The Vermont grant program is an example of a funding program for publicly owned water systems that is being used as an incentive for changes in ownership. Interested commissioners and staff could advocate a similar program for their own state.

Contacts: Ben Sargent  
Chief Water Supply Engineer  
Department of Water Resources  
and Environmental Engineering  
Heritage One Building  
Montpelier, VT 05602  
(802) 828-3345

John Anderson  
Special Counsel  
Vermont Department of Public Service  
120 State Street  
Montpelier, VT  
(802) 828-2324

Missouri Department of Natural Resources

Program/activity: Supplemental Financial Assistance

The Missouri DNR administers a small grant program intended to put small water and sewer systems "over the top" on financial assistance for construction projects. The program allows \$600 per service connection or not more than 50 percent of total project cost for grants, which must go to local political subdivisions. The grantee must have a primary source of assistance, whether bond, grant, or loan.

Applicability: The thirteen commissions with jurisdiction over publicly owned water utilities may be interested in advocating a program similar to Missouri's. By focusing dollars on projects that already have some backing the state may be able to promote the most worthy projects relatively inexpensively.

Contact: Bill Ford, Director  
Public Drinking Water Program  
Missouri Department of Natural Resources  
1103 (rear) Southwest Blvd.  
Jefferson City, MO 65102  
(314) 751-3241

Maryland Department of Health and Mental Hygiene, Division of Water  
Supply

Program/activity: Grants and Loans

Maryland's financial assistance to government-owned water utilities is aimed at helping them meet SDWA requirements. Grants cover up to 87.5 percent of the costs of local water system projects and 100 percent of state agency projects. Loans are made at 9 percent interest. A total of \$5 million is available to fund both programs.

Applicability: Maryland's program is an example of a state financial assistance program to improve water quality. A commission with jurisdiction over publicly owned water systems might want to consider advocating such a program in its own state in cooperation with the state water supply agency.

Contact: William Parrish, Chief  
Division of Water Supply  
Maryland Department of Health  
and Mental Hygiene  
201 W. Preston St.  
Baltimore, MD 21201  
(301) 383-4249

West Virginia Governor's Office of Economic and Community Development

Program/activity: Emergency Water and Sewer Grant Program

Water and sewer utilities with less than \$200,000 a year in revenues can receive up to \$25,000 in a year under this program. Existing outages to customers, a pending emergency, or an imminent health threat are reasons for a grant. The program is geared towards West Virginia's public service districts. Private, for-profit companies are not eligible. Facilities belonging to a public service district with a private source of water can receive grants.

Applicability: Although unavailable to private systems, this grant program could be worth imitating by states with jurisdiction over publicly owned utilities subject to supply and quality emergencies. A commission would want to work with the state water supply agency to develop a proposal for such a program, then play an advocacy role to encourage passage by the state legislature.

Contact: Doug Schmidt  
Community Development Representative  
Community Development Division  
Governor's Office of Economic and  
Community Development  
State Capitol  
Charleston, WV 25305  
(304) 348-4010

South Dakota Department of Water and Natural Resources

Program: Financial Assistance

South Dakota gives grants to nonprofit, rural water systems according to a priority system that relies on a number of elements. Priority points are given for financing by member contributions, potential customers signed up, farm users, exceeding primary and secondary drinking water standards, low amount of grant funds, and livestock in the service area.

Applicability: Although the South Dakota Public Utilities Commission does not regulate water utilities, the South Dakota program is an example of financial assistance that might be used by a commission with jurisdiction over publicly owned water utilities. Such a commission might advocate a grant program, in cooperation with the state water supply agency.

Contact: Fred Baatz  
South Dakota Department  
of Water and Natural Resources  
Joe Foss Building  
Pierre, SD 57501  
(605) 773-4854

California State University at Sacramento

Program/activity: Correspondence Courses in Water Plant Operation

Self study for operators of utilities as small as ten to twenty connections is offered through the Office of Water Programs at California State University at Sacramento. Successful completion of a correspondence program meets at least some of the educational requirements for operator certification in most states, according to the program director, and the program is recognized as preparation for certification by almost every state.

The self-study course requires 50 to 150 hours of work for each of 3 courses. Two are on water treatment plant operation; the third, on water supply systems. Operations, maintenance, and administration are covered. The courses are \$70 each--\$30 for the course manual and \$40 for test corrections and explanations. Examinations are taken on the honor system.

Applicability: A commission or the NARUC Water Committee might want to consider developing with California State, Sacramento, a unit on ratemaking and other administrative matters of concern to commissions that could be required of water treatment operators in the states. The Sacramento courses currently include no module on management, including rate making. However, the program director told the NRRI that the idea of such a course had come up before, is "something that needs to be done," and that he would be glad to explore the possibility further.

Alternatively, a commission might wish to investigate availability and use of correspondence courses in its own state. A commission could encourage operators of small water utilities under its jurisdiction to take correspondence courses. One advantage, of course, is that this method of adding to operator skills does not require the time and expense of travel and thus might be more acceptable to operators than other types of training opportunities.

Contact: Kenneth D. Kerri  
Program Director  
Water Programs  
School of Engineering  
California State University, Sacramento  
6000 J Street  
Sacramento, CA 95819-2694  
(916) 454-6142



Kirkwood Community College, Cedar Rapids, Iowa

Program/activity: Training for Water Treatment Operators

The training program for water and wastewater treatment operators at Kirkwood Community College is unusual in its breadth. There are four programs, three of which are available to water as well as wastewater treatment operators and operators of private as well as publicly owned utilities.

The first is an entry level, one-year training program for prospective plant operators. Graduates are awarded a diploma and take the Iowa state certification examination for plant operators.

For operators already in the field, Kirkwood gives regional workshops around the state. Since the state requires in-service training for certified operators, and the workshops are given for continuing education credits, attendance is good. Workshop credits can be used to upgrade certification licenses and towards renewal of licenses. The workshops are subject specific. Recent topics have included energy management, hydraulics and pumps, and water treatment troubleshooting. There has not been much demand for workshops on management problems, so workshops have not focused on this area.

The third program available through Kirkwood is self-study. Commercially available texts, such as those prepared by California State University at Sacramento, are used. Examinations are given under supervision.

Kirkwood is also carrying out a program of technical assistance to wastewater treatment operators. Unlike the other programs, which are fully funded by tuition, this one is supported by the U.S. EPA. Nor is it available to private companies. Two instructors are employed to travel throughout the state advising on operations, maintenance, and management. They spend some time on water systems that are under the same authority as the wastewater systems.

Applicability: A commission may be interested in finding out what training facilities are available in the state and in seeking improvements. To do so, commission staff should contact the state

agency responsible for operator certification and discuss existing training requirements and resources. The commission may wish to cooperate with that agency to upgrade requirements for training related to rate setting and management. At the same time, the commission may want to promote expansion of training services within the state, perhaps using the Kirkwood program as a model.

Contact: Douglas A. Feil  
Kirkwood Community College  
6301 Kirkwood Blvd., SW  
Cedar Rapids, IA 52403  
(319) 398-5678

Interstate Conference on Water Problems

Program/activity: Information Exchange

The Interstate Conference on Water Problems is a nonprofit corporation composed of state, multistate, interstate, and intrastate agencies and associations concerned with the conservation, development, and administration of water and land-related resources. The ICWP disseminates information and expresses points of view on issues related to water. Recent publications have included a 1983 White Paper on Groundwater and Water Resources Development and Project Selection, Financing, and Cost Sharing: a Selective History and Proposal (February 1984). The ICWP has proposed establishment of a National Water Financing Authority. Such a federal water bank would make capital investment funds more easily accessible to water systems. The ICWP supports state groundwater management programs. State water resources agencies are heavily represented on the board of directors.

Applicability: Although ICWP policies have been directed at federal programs, without particular attention paid to small water utilities, awareness of this group might aid an activist commission interested in influencing national water policy. For example, ICWP might be a vehicle for promoting a national program of loans to private water utilities on the model of California's safe drinking water loan program or a national program of satellite water systems modeled after the state of Washington's. A commission might want to contact the ICWP to find out who the ICWP members are from its state and then discuss the ICWP agenda with those members.

Contact: Gail J. Robinson  
Executive Assistant  
21 Dupont Circle NW  
Suite 600  
Washington, D.C. 20036  
(202) 466-7287

## Council of State Governments

### Program/activity: Information, Cooperation, and Research

The Council of State Governments (CSG) is a nonprofit, state-supported and directed service organization of all fifty states and the U.S. territories and jurisdictions. The Council collects and distributes information, promotes interstate cooperation, and works to improve state administration and management. The Council provides staff and secretarial services for seven affiliated organizations: the National Conference of State Legislators; the Conference of Chief Justices; the National Conference of Lieutenant Governors; the National Association of State Purchasing Officials; the Conference of State Court Administrators; the National Association of State Auditors, Comptrollers, and Treasurers; and the National Association of Attorneys General. NARUC is one of twenty-eight "cooperating organizations." Cooperating status can include information sharing, administrative services, and staff assistance. For NARUC, the relationship is primarily one of information sharing.

Council programs include the States Information Center, the Innovations Transfer Program, and the Interstate Consulting Service. The States Information Center is a personal, direct-access inquiry service that fields questions from state officials. Commissioners or staff can ask CSG staff to locate statistics, borrow documents, and identify subject-area experts in response to inquiries. The interstate loan library in the headquarters office in Lexington, Kentucky, contains 17,000 documents. The Innovations Transfer Program reports on state programs presenting innovative solutions to specific state problems. Since 1975 over 50 programs have been selected for study. The Interstate Consulting Service offers quick, low cost, expert assistance from other states on management and program problems.

The Council has published extensively in areas of interest to state officials, including regulatory functions. Periodicals include State Government, a quarterly journal of state affairs; State Government News, a monthly report on happenings in the states; and State Government Research Checklist, a bi-monthly list of reports by legislative research agencies, other study committees and commissions in the states, and

independent organizations that have published material of interest to state agencies.

The midwestern office of the Council currently has a task force on utility regulation. The priorities for the task force in its first year of operation are telephone regulation, acid rain, and state utility regulatory bodies. Priorities for the task force are set by state legislators who are members of the Council.

Applicability: The Council could be tapped as a resource to facilitate the exchange of information on state water programs. A commission could also contract with the Council for technical assistance to develop state policy or programs in water utility regulation. Since the Council deals with all kinds of state agencies, it could be a good organization to work with where broad-based changes were contemplated. For example, if one state wished to emulate a program of regionalization like the state of Washington's, a project which would require enlisting the support of other state agencies besides the commissions, it is perhaps possible to arrange the provision of technical service to implement such a program through a contract with the Council. A commission could also work with a state legislator to establish small water utility assistance as a priority.

The following pages give contacts at CSG and CSG lists of contacts at three types of state agency that deal with water.

Contacts: Headquarters Office  
Iron Works Pike  
P.O. Box 11910  
Lexington, KY 40578  
(606) 252-2291

Washington Office  
Hall of the States  
444 North Capitol Street  
Washington, D.C. 20001  
(202) 624-5450

Eastern Office

Serving Maine, New Hampshire, Vermont, Massachusetts,  
Connecticut, Rhode Island, New York, Pennsylvania,  
New Jersey, and Delaware

1500 Broadway, 18th Floor  
New York, NY 10036  
(212) 221-3630

Midwestern Office

Serving Ohio, Michigan, Indiana, Illinois, Wisconsin,  
Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota,  
and North Dakota

203 N. Wabash Avenue  
Chicago, IL 60601  
(312) 236-4011

Southern Office

Serving Texas, Oklahoma, Arkansas, Louisiana, Mississippi,  
Alabama, Georgia, Florida, Tennessee, South Carolina, North  
Carolina, Kentucky, West Virginia, Virginia, and Maryland

3384 Peachtree Road, N.E.  
Atlanta, GA 30326  
(404) 266-1271

Western Office

Serving Alaska, Washington, Oregon, California, Nevada,  
Idaho, Montana, Wyoming, Utah, Colorado, Arizona, New Mexico,  
and Hawaii

720 Sacramento Street, 3rd Floor  
San Francisco, CA 94108  
(415) 986-3760

This is the first of three lists of contacts at state agencies concerned with some aspect of water. State water resource agencies and state water quality agencies are also listed.

Contacts at State Water Supply Agencies<sup>2</sup>

These agencies are responsible for provision of safe drinking water.

Alabama

Joe Alan Power, Director  
Water Supply Program  
Environmental Management  
Department  
434 Monroe Street  
Montgomery, AL 36130  
(205) 832-3170

Alaska

Randy Bayliss, Chief  
Water Quality & Environmental  
Sanitation  
Department of Environmental Quality  
Pouch O  
Juneau, AK 99811  
(907) 465-2653

Arizona

Ronald Miller, Bureau Chief  
Water Quality Control Division  
Department of Health Services  
1740 W. Adams  
Phoenix, AZ 85007  
(602) 255-1252

Arkansas

Bruno Kirsch, Director  
Engineering Division  
Department of Health  
4815 W. Markham Street  
Little Rock, AR 72201  
(501) 661-2623

California

John Gaston, Chief  
Sanitary Engineering Branch  
Department of Health Services  
714 P Street, Rm. 600  
Sacramento, CA 95814  
(916) 323-6111

Colorado

Gary Broetzman, Director  
Water Quality Control  
Department of Health  
4210 E. 11th Avenue  
Denver, CO 80220  
(303) 320-8333

Connecticut

Douglas S. Lloyd, Commissioner  
Dept. of Health Services  
79 Elm Street  
Hartford, CT 06106  
(203) 566-2279

Delaware

Michael A. Apgar, Supervisor  
Bureau of Water Supply  
Tatnall Building  
Dover, DE 19901  
(302) 736-4793

Florida

Al Bishop, Chief  
Environmental Programs-Water  
Management  
Environmental Regulations  
2600 Blair Stone Road  
Tallahassee, FL 32301  
(904) 488-9560

Georgia

Gene Welsh, Branch Chief  
Water Protection Branch  
Department of Natural Resources  
270 Washington Street, SW  
Atlanta, GA 30334  
(404) 656-6593

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<sup>2</sup>This list is taken from the Council of State Governments, State Administrative Officials Classified by Function 1983-1984, pp. 248-249.

Hawaii

Tsutomu Kubota, Branch Chief  
Sanitation Branch  
Department of Health  
1250 Punchbowl Street  
Honolulu, HI 96813  
(808) 548-6478

Idaho

Alfred E. Murray, Chief  
Bureau of Water Quality  
Department of Health & Welfare  
450 W. State Street  
Boise, ID 83720  
(208) 334-4250

Illinois

William L. Kempiners, Director  
Department of Public Health  
535 W. Jefferson Street  
Springfield, IL 62706  
(217) 782-4977

Indiana

C. Neil Ott, Director  
Public Water Supply Division  
State Board of Health  
1330 W. Michigan Street, Room 327  
Indianapolis, IN 46206  
(317) 633-0787

Iowa

William W. Crews, Director  
Governor's MO River Coordination  
Water, Air and Waste Management  
Wallace State Office Building  
Des Moines, IA 50319  
(515) 281-8308

Kansas

Allan S. Abramson, Director  
Div. of Environment  
Dept. of Health & Envir.  
Forbes Field  
Pauline, KS 66620  
(913) 862-9360

Kentucky

Richard Shogren, Director  
Div. of Water Quality  
Natural Resources & Environmental  
Protection  
18 Reilly Road  
Frankfort, KY 40601  
(502) 564-3410

Louisiana

Sarah Breaux, Asst. Secretary  
Health & Environmental Services  
Department of Health & Human  
Resources  
325 Loyola Ave.  
New Orleans, LA 70112  
(504) 568-5052

Maine

Donald C. Hoxie, Director  
Division of Health Engineering  
Department of Human Services  
State House, Station #28  
Augusta, ME 04333

Maryland

Richard Sellars  
Water Management Administration  
Health & Mental Hygiene  
Department  
201 W. Preston Street, 5th Fl.  
Baltimore, MD 21201  
(301) 383-2737

Massachusetts

Ilyas Bhatti, Director  
Environmental Quality Engineering  
One Winter Street  
Boston, MA 02108  
(617) 727-2658

Michigan

William Kelley, Chief  
Water Supply Service Division  
Department of Public Health  
P.O. Box 30035  
Lansing, MI 48909  
(517) 373-1376



Minnesota

Raymond Throne  
Environmental Health Division  
Department of Health  
717 Delaware Street, SE  
St. Paul, MN 55440  
(612) 296-5320

Mississippi

Jim McDonald, Director  
Division of Public Water Supply  
Department of Health  
2423 N. State Street  
Jackson, MS 39216  
(601) 354-6616

Missouri

Bill Ford, Director  
Public Drinking Water Program  
Department of Natural Resources  
1103 (Rear) Southwest Blvd.  
Jefferson City, MO 65102  
(314) 751-3241

Montana

Steven L. Pilcher, Chief  
Water Quality Bureau  
Department of Health &  
Environmental Services  
Capitol Station  
Helena, MT 59620  
(406) 449-2406

Nebraska

Clifford Summers, Division Director  
Environmental Engineering Division  
Department of Health  
P.O. Box 95007  
Lincoln, NE 68509-5007  
(402) 471-2674

Nevada

Peter G. Morros, State Engineer  
Water Resources Division  
Department of Conservation &  
Natural Resources  
201 S. Fall Street  
Carson City, NV 89710  
(702) 885-4380

New Hampshire

William A. Nealy, Executive  
Director  
Water Supply & Pollution Control  
Hazen Drive  
Concord, NH 03301  
(603) 271-3503

New Jersey

Raymond Barge, Chief  
Bureau of Potable Water  
Department of Environmental  
Protection  
CN-029  
Trenton, NJ 08625  
(609) 292-5550

New Mexico

John Thompson, Bureau Chief  
Community Support Service Bureau  
Health & Environmental  
Department  
P.O. Box 968  
Santa Fe, NM 87503  
(505) 984-0020

New York

David Axelrod, Commissioner  
Department of Health  
Empire State Plaza-Tower Building  
Albany, NY 12237  
(518) 474-2011

North Carolina

Charles Rundgren, Head  
Water Supply Branch  
Department of Human Resources  
306 N. Wilmington Street  
Raleigh, NC 27611  
(919) 733-2321

North Dakota

Francis Schwindt, Director  
Water Supply & Pollution Control  
Department of Health  
1200 Missouri Avenue  
Bismarck, ND 58505  
(701) 224-2354

Ohio

Robert S. McEwen, Chief  
Office of Public Water Safety  
Environmental Protection Agency  
361 E. Broad Street  
Columbus, OH 43215  
(614) 466-8307

Pennsylvania

Therold E. Krammes, Director  
Community Environmental Control  
Bureau  
Department of Environmental  
Resources  
P.O. Box 2357  
Harrisburg, PA 17120  
(717) 787-9035

Rhode Island

John V. Hagopian, Chief  
Water Supply  
Department of Health  
75 Davis Street  
Providence, RI 02908  
(401) 277-6867

South Carolina

Manoj K. Batavia, Director  
Division of Water Supply  
Health & Environmental Control  
2600 Bull Street  
Columbia, SC 29201  
(803) 758-5544

South Dakota

Mark Steichen, Office  
Administrator  
Office of Drinking Water  
Department of Water & Natural  
Resources  
Foss Building, 4th Fl.  
Pierre, SD 57501  
(605) 773-3151

Tennessee

Elmo Lunn, Director  
Division of Water Quality  
Control  
Department of Public Health  
Cordell Hull Building  
Nashville, TN 37219  
(615) 741-2275

Texas

Thomas B. Tiner, Director  
Water Resources  
Department of Health  
1100 W. 49th Street  
Austin, TX 78756  
(512) 458-7111

Utah

Gayle J. Smith, Director  
Bureau of Public Water Supplies  
Department of Health  
150 W. N. Temple, Rm. 435  
Salt Lake City, UT 84103  
(801) 533-4207

Vermont

Kenneth M. Stone, Engineer  
Department of Health  
Agency of Human Services  
60 Main Street  
Burlington, VT 05401  
(802) 863-7220

Virginia

Eric H. Bartsch, Director  
Division of Water Programs  
Department of Health  
109 Governor Street  
Richmond, VA 23219  
(804) 786-1760

Washington

Kenneth J. Merry, Acting Chief  
Environmental Health Programs  
Department of Social &  
Health Services  
Office Building #2  
Olympia, WA 98504  
(206) 753-5955

West Virginia

Robert Wheeler, Director  
Environmental Health Services  
Department of Health  
1800 E. Washington Street  
Charleston, WV 25305  
(304) 348-2970

Wisconsin

Robert M. Krill, Director  
Bureau of Water Supply  
Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707  
(608) 267-7651

Wyoming

Robert Coffman, Manager  
Health & Medical Services  
Health & Social Services  
Hathaway Building  
Cheyenne, WY 82002  
(307) 777-7957

### Contacts at State Water Quality Agencies<sup>3</sup>

Responsible for water quality protection programs.

#### Alabama

James W. Warr, Director  
Water Quality  
Environmental Management  
State Capitol  
Montgomery, AL 36130  
(205) 277-3630

#### Alaska

Randy Bayliss, Chief  
Water Quality & Environmental  
Sanitation  
Department of Environmental Quality  
Pouch O  
Juneau, AK 99811  
(907) 465-2653

#### Arizona

Ronald Miller, Bureau Chief  
Water Quality Control Division  
Department of Health Services  
1740 W. Adams  
Phoenix, AZ 85007  
(602) 255-1252

#### Arkansas

Jim Shell, Chief  
Water Pollution Control  
Pollution Control & Ecology  
8001 National Drive  
Little Rock, AR 72219  
(501) 562-7444

#### California

Michael S. Sloss, Chief  
Division of Water Quality  
Water Resources Control Board  
901 P Street  
Sacramento, CA 95814  
(916) 445-7971

#### Colorado

Gary Broetzman, Director  
Water Quality Control  
Department of Health  
4210 E. 11th Avenue  
Denver, CO 80220  
(303) 320-8333

#### Connecticut

Robert B. Moore, Director  
Water Compliance Unit  
Department of Environmental  
Protection  
165 Capitol Avenue  
Hartford, CT 06106  
(203) 566-3245

#### Delaware

Robert J. Touhey, Manager  
Bureau of Water Quality  
Tatnall Building  
Dover, DE 19901  
(302) 736-4761

#### Florida

Lawrence Lukin, Director  
Environmental Programs  
Twin Towers  
2600 Blair Stone Road  
Tallahassee, FL 32303  
(904) 487-1855

#### Georgia

Gene Welsh, Branch Chief  
Water Protection Branch  
Department of Natural Resources  
270 Washington Street, SW  
Atlanta, GA 30334  
(404) 656-6593

#### Hawaii

Melvin K. Koizumi, Deputy  
Director  
Environmental Protection and  
Health Service  
Department of Health  
1250 Punchbowl Street  
Honolulu, HI 96813  
(808) 548-4139

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<sup>3</sup>This list is taken from the Council of State Governments, State Administrative Officials, pp. 244-245.

Idaho

Alfred E. Murray, Chief  
Bureau of Water Quality  
Department of Health & Welfare  
450 W. State Street  
Boise, ID 83720  
(208) 334-4250

Illinois

Richard J. Carlson, Director  
Environmental Protection Agency  
2200 Churchill Road  
Springfield, IL 62706  
(217) 782-3397

Indiana

John L. Winters, Jr., Branch  
Chief  
Water Quality Branch  
State Board of Health  
1330 W. Michigan Street, Rm. 388  
Indianapolis, IN 46202  
(317) 633-0719

Iowa

Steve Ballou, Executive Director  
Water, Air, & Waste Management  
Commission  
Wallace State Office Building  
Des Moines, IA 50319  
(515) 281-8690

Kansas

Allan S. Abramson, Director  
Division of Environment  
Department of Health &  
Environment  
Forbes Field  
Pauline, KS 66620  
(913) 862-9360

Kentucky

Richard Shogren, Director  
Division of Water Quality  
Natural Resources and  
Environmental Protection  
18 Reilly Road  
Frankfort, KY 40601  
(502) 564-3410

Louisiana

B. Jim Porter, Asst. Secretary  
Office of Environmental Affairs  
Department of Natural Resources  
P.O. Box 44275  
Baton Rouge, LA 70804  
(504) 342-1265

Maine

Henry E. Warren, Commissioner  
Environmental Protection  
Department  
State House, Station #17  
Augusta, ME 04333  
(207) 289-2811

Maryland

Richard Sellars  
Water Management Administration  
Health & Mental Hygiene  
Department  
201 W. Preston Street, 5th Fl.  
Baltimore, MD 21201  
(301) 383-2737

Massachusetts

Thomas McMahon, Director  
Water Pollution  
Environmental Quality  
Engineering  
1 Winter Street  
Boston, MA 02108  
(617) 292-5500

Michigan

Robert Courchaine, Chief  
Water Quality Division  
Department of Natural Resources  
P.O. Box 30028  
Lansing, MI 48909  
(517) 373-7914

Minnesota

Barry Shade, Director  
Division of Water Quality  
Pollution Control Agency  
1935 W. Country Road, B-2  
Roseville, MN 55113  
(612) 296-7301

Mississippi

Charles Chisolm, Director  
Pollution Control Bureau  
Department of Natural Resources  
Southport Mall  
Jackson, MS 39209  
(601) 961-5171

Missouri

Charles Stieffermann, Staff  
Director  
Water Pollution Control Program  
Department of Natural Resources  
P.O. Box 1368  
Jefferson City, MO 65102  
(314) 751-3241

Montana

Steven L. Pilcher, Chief  
Water Quality Bureau  
Department of Health &  
Environmental Services  
Capitol Station  
Helena, MT 59620  
(406) 449-2406

Nebraska

Clifford Summers, Division Director  
Environmental Engineering Division  
Department of Health  
P.O. Box 95007  
Lincoln, NE 68509-5007  
(402) 471-2674

Robert Wall, Division Chief  
Water & Waste Management Division  
Department of Environmental Control  
P.O. Box 94877  
Lincoln, NE 68509-4877  
(402) 471-2186

Nevada

Lewis Dodgion, Administrator  
Division of Environmental Protection  
Department of Conservation & Natural  
Resources  
201 S. Fall Street  
Carson City, NV 89710  
(702) 885-4670

New Hampshire

William A. Healy, Executive  
Director  
Water Supply-Pollution Control  
Hazen Drive  
Concord, NH 03301  
(603) 271-3503

New Jersey

John W. Gaston, Jr., Director  
Division of Water Resources  
Department of Environmental  
Protection  
CN-029  
Trenton, NJ 08625  
(609) 292-1637

New Mexico

Charles L. Nylender, Chief  
Water Pollution Control Bureau  
Health & Environmental  
Department  
P.O. Box 968  
Santa Fe, NM 87504-0968  
(505) 984-0020

New York

Henry Williams, Commissioner  
Department of Environmental  
Conservation  
50 Wolf Road  
Albany, NY 12205  
(518) 457-3446

North Carolina

Robert Helms, Director  
Environmental Management  
Natural Resources & Community  
Development  
512 N. Salisbury Street  
Raleigh, NC 27611  
(919) 733-7015

North Dakota  
Francis Schwindt, Director  
Water Supply & Pollution Control  
Department of Health  
1200 Missouri Avenue  
Bismarck, ND 58505  
(701) 224-2354

Ohio  
Ernest Rotering, Chief  
Wastewater Pollution Control  
Environmental Protection Agency  
361 E. Broad Street  
Columbus, OH 43215  
(614) 466-7427

Oklahoma  
James R. Barnett, Executive  
Director  
Water Resources Board  
10th & Stonewall  
Oklahoma City, OK 73117  
(405) 271-2541

Oregon  
Harold L. Sawyer, Administrator  
Water Quality Division  
522 SW Fifth Avenue  
Portland, OR 97204  
(503) 229-5324

Pennsylvania  
Louis Bercheni, Director  
Bureau of Water Quality Management  
Department of Environmental  
Resources  
Fulton Building, 11th Fl.  
Harrisburg, PA 17120  
(717) 787-2666

Rhode Island  
James Fester, Chief  
Division of Water Resources  
Department of Environmental  
Management  
83 Park Street  
Providence, RI 02908  
(401) 277-2234

South Carolina  
John E. Jenkins, Deputy  
Commissioner  
Environmental Quality Control  
Health & Environmental Control  
2600 Bull Street  
Columbia, SC 29201  
(803) 758-5450

South Dakota  
Jim Nelson, Director  
Division of Environmental Health  
Department of Water & Natural  
Resources Management  
Foss Building  
Pierre, SD 57501  
(605) 773-3151

Tennessee  
Elmo Lunn, Director  
Division of Water Quality  
Control  
Department of Public Health  
Cordell Hull Building  
Nashville, TN 37219  
(615) 741-2275

Texas  
Charles E. Nemir, Executive  
Director  
Department of Water Resources  
Capitol Station  
P.O. Box 13087  
Austin, TX 78711  
(512) 475-3187

Utah  
Gayle J. Smith, Director  
Bureau of Public Water Supplies  
Department of Health  
150 W. N. Temple, Rm. 435  
Salt Lake City, UT 84103  
(801) 533-4207

Calvin K. Sudweeks, Director  
Water Pollution Control  
Department of Health  
150 W. N. Temple, Rm. 410  
Salt Lake City, UT 84103  
(801) 533-6146

Vermont

David L. Clough, Director  
Department of Water Resources  
79 River Street  
Montpelier, VT 05602  
(802) 828-2761

Virginia

Richard N. Burton, Director  
State Water Control Board  
2111 N. Hamilton Street  
Richmond, VA 23230  
(804) 257-6384

Washington

Glen H. Fiedler, Assistant  
Director  
Office of Water Programs  
Department of Ecology  
Mail Stop PV-11  
Olympia, WA 98504  
(206) 459-6055

West Virginia

Donald A. Kuntz, Chief  
Drinking Water Division  
State Health Department  
1800 E. Washington Street  
Charleston, WV 25305  
(304) 348-2981

Wisconsin

Bruce Baker, Director  
Bureau of Water Resources  
Management  
Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707  
(608) 266-8631

Wyoming

William Garland, Administrator  
Water Quality Division  
Environmental Quality  
1111 E. Lincoln Way  
Cheyenne, WY 82002  
(307) 777-7781



Contacts at State Water Resources Agencies<sup>4</sup>

Responsible for water conservation, development, use, and planning.

Alabama

James Plaster, Secretary  
Soil & Water Conservation  
1445 Federal Drive  
P.O. Box 3336  
Montgomery, AL 36109  
(205) 832-3727

Alaska

Thomas J. Hawkis, Director  
Division of Land & Water Management  
Department of Natural Resources  
555 Cordova Street  
Olympic Building  
Anchorage, AK 99501  
(907) 276-2653

Arizona

Wesley E. Steiner, Director  
Department of Water Resources  
99 E. Virginia  
Phoenix, AZ 85004  
(602) 258-1540

Arkansas

John P. Saxton, Director  
Soil & Water Conservation  
1818 W. Capitol 'A'  
Little Rock, AR 72202  
(501) 371-1611

California

Howard Easton, Acting Director  
Department of Water Resources  
1416 Ninth Street  
Sacramento, CA 95814  
(916) 445-6582

Colorado

J. William McDonald, Director  
Water Conservation Board  
Department of Natural Resources  
1313 Sherman, Rm. 615  
Denver, CO 80203  
(303) 866-3441

Connecticut

Benjamin Warner, Director  
Water Resources Unit  
Department of Environmental  
Protection  
165 Capitol Avenue  
Hartford, CT 06106  
(203) 566-7220

Delaware

Laurence R. Irelan, Director  
Div. of Soil & Water Conservation  
Tatnall Building  
Dover, DE 19901  
(302) 736-4411

Florida

John Wehle, Special Assistant  
Water Management Districts  
Department of Environmental  
Regulations  
2600 Blair Stone Road  
Tallahassee, FL 32301  
(904) 488-4805

Georgia

Chris White, Branch Chief  
Water Resources Management Branch  
Department of Natural Resources  
270 Washington Street, SW  
Atlanta, GA 30334  
(404) 656-3094

Hawaii

Robert T. Chuck,  
Manager/Chief Engineer  
Water & Land Development Division  
Department of Land & Natural  
Resources  
1151 Punchbowl Street  
Honolulu, HI 96813  
(808) 548-7539

---

<sup>4</sup>This list is taken from the Council of State Governments, State Administrative Officials, pp. 246-247.

Idaho

A. Kenneth Dunn, Director  
Department of Water Resources  
450 W. State Street  
Boise, ID 83720  
(208) 334-4437

Illinois

John D. Kramer, Secretary  
Department of Transportation  
Administration Building  
Room 300  
Springfield, IL 62764  
(217) 782-5597

Indiana

Robert F. Jackson, Director  
Water Division  
Department of Natural Resources  
605 State Office Building  
Indianapolis, IN 46204  
(317) 232-4160

Iowa

William W. Crews, Director  
Governor's MO River Coordination  
Water, Air and Waste Management  
Wallace State Office Building  
Des Moines, IA 50319  
(515) 281-8308

Kansas

Joseph Harkins, Director  
Kansas Water Office  
503 Kansas Avenue, #303  
Topeka, KS 66603  
(913) 296-3185

Kentucky

Richard Shogren, Director  
Division of Water Quality  
Natural Resources & Environmental  
Protection  
18 Reilly Road  
Frankfort, KY 40601  
(502) 564-3410

Louisiana

B. Jim Porter, Asst. Secretary  
Office of Environmental Affairs  
Department of Natural Resources  
P.O. Box 44275  
Baton Rouge, LA 70804  
(504) 342-1265

Maine

Frank W. Ricker, Executive  
Director  
Soil & Water Conservation  
Agriculture, Food & Rural  
Resources Department  
State House Station #28  
Augusta, ME 04333  
(207) 289-2666

Maryland

Thomas C. Andrews, Director  
Water Resources Administration  
Department of Natural  
Resources  
Tawes State Office Building  
Annapolis, MD 21401  
(301) 269-3846

Massachusetts

Charles F. Kennedy, Director  
Division of Water Resources  
Office of Environmental Affairs  
100 Cambridge Street, Rm. 1900  
Boston, MA 02202  
(617) 727-3267

Michigan

Robert Courchaine, Chief  
Water Quality Division  
Department of Natural Resources  
P.O. Box 30028  
Lansing, MI 48909  
(517) 373-7914

Minnesota

Melvin Sinn, Acting Executive  
Director  
Water Resources Board  
555 Wabasha Street, Rm. 206  
St. Paul, MN 55102  
(612) 296-2840

Mississippi

Charles Branch, Director  
Bureau of Land and Water Resources  
Department of Natural Resources  
Southport Mall  
Jackson, MS 39209  
(601) 961-5099

Missouri

Robert L. Dunkeson, Program  
Director  
Water Resources Planning Program  
Department of Natural Resources  
P.O. Box 1368  
Jefferson City, MO 65102  
(314) 751-3241

Montana

Gary Fritz, Administrator  
Water Resources Division  
Department of Natural Resources  
& Conservation  
32 S. Ewing  
Helena, MT 59601  
(406) 449-2872

Nebraska

J. Michael Jess, Director  
Department of Water Resources  
P.O. Box 94676  
301 Centennial Mall S.  
Lincoln, NE 68509-4676  
(402) 471-2363

Dayle Williamson, Director  
Natural Resources Commission  
301 Centennial Mall S.  
P.O. Box 94876  
Lincoln, NE 68509-4876  
(402) 471-2081

Nevada

Peter G. Morros, State Engineer  
Water Resources Division  
Department of Conservation &  
Natural Resources  
201 S. Fall Street  
Carson City, NV 89710  
(702) 885-4380

New Hampshire

Delbert F. Downing, Chairman  
Water Resources Board  
37 Pleasant Street  
Concord, NH 03301  
(603) 271-3406

New Jersey

John W. Gaston, Jr., Director  
Division of Water Resources  
Department of Environmental  
Protection  
CN-029  
Trenton, NJ 08625  
(609) 292-1637

New Mexico

D. E. Gray, Director  
Water Rights Division  
State Engineer's Office  
Bataan Memorial Building  
Santa Fe, NM 87503  
(505) 827-6120

New York

Henry Williams, Commissioner  
Department of Environmental  
Conservation  
50 Wolf Road  
Albany, NY 12205  
(518) 457-3446

North Carolina

John Morris, Director  
Office of Water Resources  
Natural Resources & Community  
Development  
512 N. Salisbury Street  
Raleigh, NC 27611  
(919) 733-4064

North Dakota  
Vern Fahy, State Engineer  
Water Commission  
State Office Building  
900 East Blvd.  
Bismarck, ND 58505  
(701) 224-4940

Ohio  
John H. Cousins, Administrator  
Division of Water  
Department of Natural Resources  
Fountain Square, Bldg. E  
Columbus, OH 43224  
(614) 265-6717

Oklahoma  
James R. Barnett, Executive  
Director  
Water Resources Board  
10th & Stonewall  
Oklahoma City, OK 73117  
(405) 271-2541

Oregon  
Daniel Kennedy, Administrator  
Water Resources Department  
555 13th Street, NE  
Salem, OR 97310  
(503) 378-3741

Pennsylvania  
John E. McSparran, Director  
Bureau of Water Resources Management  
Department of Environmental  
Resources  
P.O. Box 1467  
Harrisburg, PA 17120  
(717) 787-6750

Rhode Island  
James Fester, Chief  
Division of Water Resources  
Department of Environmental  
Management  
83 Park Street  
Providence, RI 02908  
(401) 277-2234

South Carolina  
Alfred H. Vang, Executive  
Director  
Water Resources Commission  
1001 Harden Street, #250  
Columbia, SC 29205  
(803) 758-2514

South Dakota  
Warren Neufeld, Secretary  
Department of Water & Natural  
Resources  
Foss Building, 2nd Fl.  
Pierre, SD 57501  
(605) 773-3151

Tennessee  
Robert Hunt, Director  
Division of Water Resources  
Department of Conservation  
150 9th Avenue N.  
Nashville, TN 37203  
(615) 741-0633

Texas  
Charles E. Nemir, Executive  
Director  
Department of Water Resources  
Capitol Station  
P.O. Box 13087  
Austin, TX 78711  
(512) 475-3187

Utah  
Daniel F. Lawrence, Director  
Division of Water Resources  
Department of Natural Resources  
& Energy  
1636 W. North Temple, Room 310  
Salt Lake City, UT 84116  
(801) 533-5401

Vermont

John Ponsetto, Commissioner  
Department of Water Resources  
Agency of Environmental  
Conservation  
State Office Building  
Montpelier, VT 05602  
(802) 828-3361

Virginia

Robert N. Burton, Director  
State Water Control Board  
2111 N. Hamilton Street  
Richmond, VA 23230  
(804) 257-6384

Washington

Glen H. Fiedler, Assistant  
Director  
Office of Water Programs  
Department of Ecology  
Mail Stop PV-11  
Olympia, WA 98504  
(206) 459-6055

West Virginia

David W. Robinson, Chief  
Water Resources Division  
Department of Natural Resources  
1800 E. Washington Street  
Charleston, WV 25305  
(304) 348-2107

Wisconsin

Bruce Baker, Director  
Bureau of Water Resources  
Management  
Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707  
(608) 266-8631

Wyoming

Michael Reese, Administrator  
Water Development Commission  
Barrett Building  
Cheyenne, WY 82002  
(307) 777-7262



## CHAPTER 4

### FEDERAL AND NATIONAL PROGRAMS

The Federal Government funds a number of programs that benefit small water utilities either through financial aid or technical assistance. These programs are discussed here, along with a national organization that seems likely to play a role in the development of national water policy.

Financing for construction or expansion of small water utilities is available through the Farmers Home Administration, the Economic Development Administration, the Department of Health and Human Services, and the Department of Housing and Urban Development. For the most part funds under federal programs are aimed at rural, economically depressed areas. Although the potential for financing existing private firms through federal grants or loans is limited, the programs can help those commissions that regulate only private firms by providing an incentive to start small water systems out under public ownership. They also provide an incentive to establish small water utilities as part of a regional system, thus avoiding proliferation of stand-alone utilities. Even where funds are restricted to publicly owned water systems, the federal financing programs are of direct benefit to regulated utilities in thirteen states.

The Small Business Administration (SBA) may also be a source of needed funds for small water utilities. Here the restrictions on type of ownership do not apply. Commissions may want to encourage jurisdictional water utilities to seek out loans through SBA offices in their areas.

Technical assistance to small water utilities is available in varying degrees through the U.S. Environmental Protection Agency,

regional Rural Housing and Communities Facilities Development agencies, the National Rural Water Association, the National Demonstration Water Project, and the U.S. Geological Survey. Contact with these agencies, particularly the first two, could be very useful in getting a commission started on a coordinated effort to improve the building and operating of small water utilities.

State Water Resources Research Institutes, funded through the U.S. Geological Survey, are included in the inventory. Institute projects have been relevant to issues affecting small water utilities. A commission might be able to promote projects on water utility regulation to be conducted by its own state institute.

The National Water Alliance is a new national organization that a commission might want to contact.

Ten agencies, many administering more than one program, are discussed in this chapter.



The Farmers Home Administration (FmHA)  
of the U.S. Department of Agriculture

Program/activity: Loan and Grant Programs

FmHA loans and grants are the most important outside source of capital for small water utilities throughout the United States. The FmHA manages several programs that aid small water utilities. The workhorse programs are Water and Waste Disposal Grants, and Community Facility Loans. In fiscal 1982, FmHA made 928 loans totalling \$375 million; 444 grants totalled \$133.8 million. These programs benefit only nonprofit entities. Investor-owned water utilities are benefitted by the FmHA's business and industry loan guarantee program.

Water and Waste Disposal Grants: This is a program of grants for municipalities, counties, Indian tribes, special purpose districts, and nonprofit corporations. Funds can be used only in rural areas and towns of up to 10,000 inhabitants. A priority of this program is aiding public entities located in areas with a population of less than 5,500 and which need either to restore a declining water supply or improve or enlarge a water or waste treatment facility. Preferential treatment is given to projects serving low-income communities and mergers of small facilities.

Borrowers of these funds must be unable to secure loans from other sources at reasonable rates and terms. They must be able to borrow and repay loans, to pledge security for loans, and to operate the facilities. Applicants must also be financially sound. Grants may be used to cover up to 75 percent of facility costs. FmHA grant money may be used in conjunction with other financial assistance which the project may have obtained.

The FmHA will assist those seeking funds in assembling information on the engineering feasibility, economic soundness, financing, and other aspects of the project. The agency will also supervise the progress of any funded projects, as necessary, to insure that plans are followed and funds spent for approved purposes.

Community Facility Loans: Development of facilities in rural areas and towns of up to twenty thousand people is the aim of this loan program. For water facilities, the population limit is ten thousand. In addition to water facilities, projects may include fire stations, libraries, hospitals, traffic control, or other facilities providing "essential service" to rural residents. Projects may not be mainly for recreational purposes. Eligible borrowers are the same as in the water and waste disposal grants programs: municipalities, counties, special purpose districts, and nonprofit corporations.

The requirements that borrowers must meet are similar to those for the water and waste treatment facility grants. Water project priorities are similar to those of the previous program. In particular, projects designed to restore a community's declining water system or enlarge an inadequate waste disposal system are given the highest priority. Projects designed to enlarge existing facilities to serve additional residents and projects involving the merger of smaller facilities to provide more efficient service are also eligible. As with water and waste treatment grants programs, the FmHA will assist in determining the feasibility and soundness of a project and will monitor project progress through reports submitted by the applicant and through inspections.

Business and Industry Loan Guarantee Program: This is a program of guaranteeing loans from banks, savings and loans associations, building and loan associations, and other eligible institutions (including mortgage companies if they are part of a bank holding company, and insurance companies, if regulated by the National Association of Insurance Commissioners) to private businesses in order to create or retain jobs. The amount of the loan which the FmHA will guarantee may be as high as \$10,000,000 although the agency will give preference to loans of \$5,000,000 and less. Ineligible purposes and/or uses of the loans include agricultural production, charitable and educational institutions, churches, hotels and motels, and recreation businesses. Businesses must be located in incorporated communities of less than 50,000 people or non-urbanized areas to qualify for a loan guarantee. Priority will be given to businesses located in communities

with less than 25,000 people.

The business borrower must have a start-up, tangible book equity of 20 to 25 percent although a larger amount may sometimes be required. The borrower must also provide an evaluation of its management capabilities. This evaluation must document the ability of the firm's leadership to guarantee the success of the venture.

For existing businesses, past record and future prospects must suggest the ability to repay the loan. For new businesses, a feasibility study by independent consultants is usually submitted to the FmHA. The lending institution must submit an application to the FmHA for the loan guarantee.

Applicability: FmHA loans and grants are a major tool for assuring that small water utilities are financially viable from the beginning of their existence. Since funds are directed at low-income areas where utilities might have particular difficulty raising capital, the availability of an FmHA grant or loan may easily mean the difference between a utility that is financially healthy and one that is not. A Pennsylvania study of small water systems found that those that had received an FmHA loan were more likely than others to be financially successful.<sup>1</sup> Of course, those that sought out the FmHA and were able to meet FmHA requirements might have been more likely to be successful in the first place.

The FmHA programs provide incentives to prevent establishment of poorly conceived water systems and encourage regional ones. FmHA assistance in determining the feasibility of a project enhances the likelihood that it is well planned and engineered. Such assistance may result in a project being redesigned to provide better service at more reasonable rates. FmHA officials also promote consolidation of small water utilities in an area by proposing regional arrangements and making the availability of funds contingent on negotiation of cooperative agreements.

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<sup>1</sup>Pennsylvania Department of Environmental Resources, Impact of the SDWA, p. 4.

The requirement in many FmHA programs that FmHA funds aid only public organizations can serve as an incentive to promote a cooperative, nonprofit form of ownership when a utility begins service. Where an association or other form of publicly owned and managed entity can be created, many of the problems of utility ownership discussed in chapter 1 may be avoided.

The loan guarantee program for business can improve the financial picture for water utilities under commission jurisdiction. One limitation pointed out by an FmHA official is collateral. He said a guarantee for a small gas utility in Texas was turned down for lack of property that could be sold if the business failed.

Finally, FmHA funds may aid the management and operations of a small water utility. The Pennsylvania study noted "the discipline instilled by the annual financial and operation reporting requirements" associated with an FmHA loan was a positive influence on small water utility operations.<sup>2</sup> The improvement in the financial situation of the utilities would also help to improve operations.

Community Facility Loan funds may be used to pay interest on loans until a project is self supporting. The length of time for this type of assistance is three years. This use of funds could improve the operation of an existing facility by removing a major burden from the small water utility.

A commission that wishes to take advantage of FmHA programs can refer utilities applying for certificates of convenience and necessity to serve rural areas to the appropriate FmHA office. The commission could make it a condition of such an application that the potential for an FmHA loan or grant be investigated. Commissions that do not have working relationships with their state FmHA offices may wish to establish contact and discuss cooperative efforts. The outcome for the commissions could be fewer economically weak water utilities to regulate. For existing utilities, a commission could also make referrals and establish regular contact with state and local FmHA offices.

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<sup>2</sup>Ibid.

Contacts: The FmHA operates over three hundred district offices, close to two thousand county offices, and forty-six offices serving the states. The state offices are listed here.

Alabama

Room 717 Aronov Bldg.  
474 South Court Street  
Montgomery, AL 36104  
(205) 832-7077

Alaska

P.O. Box 1289  
Palmer, AK 99645  
(907) 745-2176

Arizona

Room 3433 Federal Bldg.  
230 North First Avenue  
Phoenix, AZ 85025  
(602) 261-6701

Arkansas

5529 Federal Office Bldg.  
700 West Capitol  
Little Rock, AR 72203  
(501) 378-6281

California

459 Cleveland Street  
Woodland, CA 95695  
(916) 666-3382

Colorado

Room 231, 1 Diamond Plaza  
2490 West 26th Avenue  
Denver, CO 80211  
(303) 837-4347

Connecticut

451 West Street  
South Amherst, MA 01002  
(413) 253-3471

Delaware

Robscott Bldg.  
151 E. Chestnut Hill Road  
Suite 2  
Newark, DE 19713  
(302) 573-6694

District of Columbia

Robscott Bldg.  
151 E. Chestnut Hill Road  
Suite 2  
Newark, DE 19713  
(302) 572-6694

Florida

Room 214 Federal Bldg.  
401 S.E. 1st Avenue  
Gainesville, FL 32602  
(904) 376-3218

Georgia

355 E. Hancock Avenue  
Stephens Federal Bldg.  
Athens, GA 30601  
(404) 546-2162

Hawaii, Guam, American Samoa,  
Pacific Trust Territories

345 Kekuanaoa Street  
Hilo, HI 96720  
(808) 961-4781

Idaho

Room 429 Federal Bldg.  
304 N. Eighth Street  
Boise, ID 83702  
(208) 334-1301

Illinois

2106 W. Springfield Avenue  
Champaign, IL 61820  
(217) 398-5235

Indiana

Suite 1700  
5610 Crawfordsville Road  
Indianapolis, IN 46224  
(317) 248-4440

Iowa

Room 873 Federal Bldg.  
210 Walnut  
Des Moines, IA 50309  
(515) 284-4663

Kansas

444 SE Quincy Street  
Topeka, KS 66683  
(913) 295-2870

Kentucky

333 Waller Avenue  
Lexington, KY 40504  
(606) 233-2733

Louisiana

3727 Government Street  
Alexandria, LA 71301  
(318) 473-7920

Maine

USDA Office Bldg.  
Orono, ME 04473  
(207) 866-4929

Maryland

Robscott Bldg..  
151 E. Chestnut Hill Road  
Suite 2  
Newark, DE 19713  
(302) 573-6694

Massachusetts

451 West Street  
S. Amherst, MA 01002  
(413) 253-3471

Michigan

Room 209  
1405 South Harrison Road  
East Lansing, MI 48823  
(517) 337-6631

Minnesota

252 Federal Office Bldg.  
& U.S. Courthouse  
St. Paul, MN 55101  
(612) 725-5842

Mississippi

Room 831 Federal Bldg.  
Jackson, MS 39201  
(601) 960-4318

Missouri

555 Vandiver Drive  
Columbia, MO 65201  
(314) 442-2271

Montana

Federal Bldg.  
P.O. Box 850  
Bozeman, MT 59715  
(406) 587-5271

Nebraska

Room 308 Federal Bldg.  
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Office of Community Planning and Development of the  
U.S. Department of Housing and Urban Development (HUD)

Programs/activities: Grants to Urban Areas

Community Development Block Grants (CDBG) are available for cities of at least 50,000 people and urban counties of at least 200,000 residents, and through the small cities block grant program to cities smaller than 50,000 people. Counties have also received assistance. Water and sewer projects are eligible for funding, and the number of very small cities (under 1,000 people) receiving grants has been increasing. Appropriations for CDBG totaled \$3.5 billion in fiscal 1984.

Block grant funds, whether for large or small cities, may be used for a variety of purposes including urban renewal projects, water and sewer projects, neighborhood development, urban beautification, historic preservation, and housing rehabilitation. HUD has found that cities usually spend the largest single share of their funds on property rehabilitation projects, while urban counties spend a large share of funds on public facilities and improvements. Project priorities are set by grantees although the law does require those receiving funds to provide adequate housing, a good living environment, and job opportunities for low and moderate income residents.

The portion of the program devoted to smaller cities was administered solely by HUD until the Housing and Community Development Act of 1981 gave states the choice of either administering the small cities program themselves or allowing HUD to continue running it. All but three states (New York, Maryland, and Hawaii) have chosen the first option. As a result, HUD has found that more local governments have applied for funds and the states have modified program priorities by emphasizing public facilities (which include water and sewer service) and economic development instead of housing. HUD has found the pattern of distribution of funds to be similar in states administering the small cities block grant program and states where HUD continues to run the program.



The type of state agency operating the small cities program varies. In many states, departments of community affairs are involved. In others, it is the department of economic and community development. State planning agencies, the governor's office, and economic and industrial development agencies operate the program in some states. Those agencies have often aided localities in applying for and administering the grants.

Applicability: The CDBG program has been a good source of funding for small water projects in rural areas as well as on urban fringes. Since only public entities are eligible for grants, this program, like the FmHA loan and grant programs, offers an opportunity to discourage private ownership of small water utilities. Where grants are approved, the initial financial viability of a utility will, of course, be increased. Commissions will want to be aware of CDBG grant programs in their states and refer potential applicants to the appropriate state agency or HUD field office to discuss possible funding. A commission may also want to contact the administrators of the HUD programs to coordinate efforts to improve small water utility finances.

Contact: Steve Oliver  
Office of Community Planning and  
Development  
U.S. Department of Housing and  
Urban Development  
Washington, D.C. 20410  
(202) 755-6182

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Economic Development Administration (EDA)  
of the U.S. Department of Commerce

Program/activity: Grants for Planning, Technical Assistance, and Public Works

The EDA administers a number of programs to aid areas with high unemployment and low per capita income. Water supply development is included among the public works for which grants may be made, and much of the funding under EDA programs has gone to rural areas. But assistance must directly encourage growth in employment in an area. Thus, grants can be made only to benefit industries and industrial parks. Rural residential water supplies have not benefitted under the grant program.

Planning Grants: Grants are available to cover administrative expenses incurred by the economic development planning for economic development districts, redevelopment areas, and Indian tribes under section 301(b) of the Public Works and Economic Development Act of 1965. Category A grants are those for Economic Development Districts and Redevelopment Areas and may cover up to 75 percent of project costs. Category B grants are for Indian tribes and may cover all project costs. Grants in both categories may last for up to one year.

Selection of a project for funding will depend upon the extent to which the proposal complies with program regulations (See 13 CFR 307.22), the economic condition of the area served, and past performance of the applicant (for those currently funded).

A total of \$19 million in grant funds (\$16 million in Category A grants and \$3 million in Category B) is available under this program. Grants are also available for urban planning activities under section 302(a) of the Public Works and Economic Development Act of 1965. The main objective of this program is to strengthen the planning capacity of cities and urban counties so that available resources will be used more effectively to cope with the economic problems of the area, especially high unemployment and low income. Grants may cover up to 75 percent of the costs of a project and may last up to twelve months. A total of \$5 million in grant funds is available for fiscal 1984.

Because of this rather low amount, applications from currently funded grantees receive priority.

Other planning grants are available to states under the Public Works and Economic Development Act. The objective of these grants is to enhance the economic planning capabilities of states (and other eligible entities) so that resources can be more effectively utilized to cope with economic problems. Grants may cover up to 75 percent of the costs of a project. A grant may last up to twelve months. Three million dollars were available to the states for this program in fiscal 1984.

Technical Assistance Grants: Grants for technical assistance are available to university centers established to aid government, private, and nonprofit organizations to mobilize resources for economic development in an area. Grants may cover up to 75 percent of the costs of proposed activities. A total of \$3 million in grants is available for fiscal 1984. Priority is given to the thirty-eight centers currently in the program with grants to a center varying depending on its program requirements. Grants may last up to twelve months.

National and Local Technical Assistance Projects: Funds for this program are to be used to aid in the operation of programs and projects designed to alleviate the economic distress of an area. Private firms are eligible for this technical assistance.

There are two categories of grants: Local Technical Assistance (Category A) for state and local economic development projects, and National Technical Assistance (Category B) which is designed to address economic development issues and topics of broader concern. Priority is given to projects that stimulate in the short term the creation and retention of private sector jobs, and to projects that encourage the formation of private and non-federal public capital and investment for economic development. Projects that encourage economic development along with working toward other Department of Commerce goals such as export promotion, productivity enhancement, technology development, and minority business development also receive preference. A total of \$5 million in grant funds is available for fiscal 1984. Grants may cover up to 75 percent of project costs and may last up to twelve months.

Research and Evaluation Projects: This program awards grants to private individuals, firms, corporations, universities, or other institutions. Funds may be used to study the causes of economic distress in an area, to help formulate and implement programs at the local, state, or federal level to alleviate economic problems, and to evaluate the effectiveness of programs designed to attack economic problems. A total of \$2 million in grant funds is available for fiscal 1984.

Grants for Public Works and Development Facilities: This program provides grants to states, localities, Indian tribes, and to nonprofit organizations representing redevelopment areas (as designated by the EDA). The objective is to aid such grantees by funding public works and facilities that create or retain jobs and help to alleviate unemployment.

Available grant funds totalled \$170 million in fiscal 1984. Of this amount \$40 million was already allocated to projects which had applied unsuccessfully for funding in fiscal 1983.

Grants for Economic Adjustment Assistance: This program is designed to assist areas undergoing long-term economic deterioration (LTED) and areas faced with sudden and severe economic dislocation (SSED). The LTED program's aim is to aid applicants in their efforts to halt and reverse the long-term decline that they are experiencing. Revolving Loan Funds (RLF) are available under this program. The SSED program is designed to aid applicants to either prevent a sudden, major job loss or to reestablish job opportunities in the wake of such a loss.

Eligible applicants include EDA-designated redevelopment areas or a nonprofit organization representing such an area, an Economic Development District, a state, a city, other political subdivisions of the state, or a group representing such subdivisions, an Indian tribe, or a Community Development Corporation (as defined by the Community Economic Development Act of 1981). A total of \$33 million in grant funds is available for fiscal 1984.

Applicability: For states with economically distressed areas, EDA programs may provide a useful tool for encouraging well-planned, soundly financed water utilities. A firm industrial base in an area may in turn encourage establishment of viable residential systems. Although EDA grant programs are potentially less useful than other federal programs to aid small water utilities, commissions should be aware of their existence to be able to refer potential grantees to regional EDA officials. A Commission may also wish to contact EDA staff to discuss the potential for use of EDA grants for water system development in their state.

Contacts:

Washington Office  
Bill Oliver  
Economic Development  
Administration  
U.S. Department of Commerce  
Washington, D.C. 20230  
(202) 377-3027

Beverly L. Milkman  
Director, Office of Planning,  
Technical Assistance,  
Research and Evaluation  
Economic Development Administration  
Room 7866  
U.S. Department of Commerce  
Washington, D.C. 20230

Scot Rutherford  
Economic Development Administration  
U.S. Department of Commerce  
Washington, D.C. 20230  
(202) 377-2812

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Director, Philadelphia Regional  
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Economic Development  
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1700 Westlake Avenue, North  
Seattle, WA 98109  
(206) 442-0596

## The U.S. Small Business Administration (SBA)

### Program/activity: Business Loan Programs

The SBA assists small businesses through loans, management counseling, and training. Loan funds may be used as working capital, for the purchase of equipment and supplies, or for construction. Applicants must be unable to obtain funds from private lenders at reasonable terms. Businesses must be independently owned, operated to make a profit, and not dominant in their fields.

There are two types of regular business loans available from the Small Business Administration. The first type consists of loans which are made by private lenders and are guaranteed by the SBA. The majority of SBA loans are bank guaranteed loans. The maximum amount of a bank loan is \$500,000.

The second type of regular loan includes those made directly by the SBA to the small business. To be eligible the applicant must have failed to secure an SBA guaranteed loan and failed to secure funds from private sources. The maximum amount of a direct loan is \$150,000.

The SBA also administers special loan programs. One of these is the local development company loan program which provides assistance to local groups trying to improve the economy of an area. With an SBA loan, the local development company can help small businesses in that area acquire land or equipment. A maximum of \$500,000 may be borrowed by a local development company.

The SBA provides assistance to small businesses in operating pollution control facilities. This assistance is in the form of guaranteed loans from private lenders. The maximum amount of this type of loan is \$5 million per small business with the SBA providing a 100 percent guarantee. The SBA offers a variety of types of managerial assistance such as small business institutes at local colleges and universities, and business management courses cosponsored with educational institutions and Chambers of Commerce.



Applicability: This program would seem to present some good opportunities for small utilities to obtain financial and managerial assistance. An important advantage of SBA programs is that loans can be made to private firms seeking to make profits. Most small water utilities regulated by the commissions fall into this category. They could thus apply for aid themselves instead of seeking a third party, such as a state or local governmental agency, to do so. A commission could refer a small water utility to the local SBA office to apply for financial assistance.

The special loan programs administered by SBA also have advantages for small water utilities. A utility may be able to obtain assistance from a local development company if that utility's operation or expansion can be linked to the economic improvement of the area. A utility may also be able to obtain funds for any necessary waste treatment facilities under the pollution control facilities loan program.

Finally, commissions may want to check into the availability of management assistance and training through the SBA in their states and encourage small water utility operators to take advantage of them to the fullest extent possible.

Contact: U.S. Small Business  
Administration  
Washington, D.C. 20416

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Birmingham, AL 35256  
(205) 254-1344

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(907) 271-4022

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San Jose, CA 95113  
(408) 275-7584

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Denver, CO 80202  
(303) 837-2607

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(203) 244-4041

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Lockbox 16  
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(302) 573-6294

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Washington, D.C. 20036  
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(813) 228-2594

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West Palm Beach, FL 33407  
(305) 689-2223

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Atlanta, GA 30309  
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(312) 353-4528

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(217) 492-4416

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(219) 236-8361

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(317) 269-7278

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210 Walnut St.  
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(515) 284-4567

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(319) 399-2571

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(301) 962-4392

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(609) 757-5183

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(201) 645-3683

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5000 Marble Ave., N.E.  
Albuquerque, NM 87110  
(505) 766-3430

New York

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Albany, NY 12210  
(518) 472-6300

111 W. Huron St., Room 1311  
Buffalo, NY 14202  
(716) 846-4301

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(516) 454-0764

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(716) 263-6700

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Syracuse, NY 13260  
(315) 423-5382

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North Dakota

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(615) 251-5881

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1611 10th St., Suite 200  
Lubbock, TX 79401  
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100 South Washington St.  
Room G-12  
Marshall, TX 75670  
(214) 935-5257

727 E. Durango St., Room A-513  
Federal Bldg.  
San Antonio, TX 78206  
(512) 229-6270

Utah

125 S. State St., Room 2237  
Salt Lake City, UT 84138  
(801) 524-5800

Vermont  
87 State St., Room 204  
Montpelier, VT 05602  
(802) 229-0538

Virginia  
400 N. 8th St., Room 3015  
P.O. Box 10126  
Richmond, VA 23240  
(804) 771-2617

Washington  
915 Second Ave., Room 1744  
Seattle, WA 98174  
(206) 442-5534

651 U.S. Courthouse  
P.O. Box 2167  
Spokane, WA 99210  
(509) 456-3781

West Virginia  
109 N. 3rd St., Room 301  
Clarksburg, WV 26301  
(304) 623-5631

Charleston National Plaza, Suite 628  
Charleston, WV 25301  
(304) 343-6181

Wisconsin  
500 S. Barstow St., Room 89AA  
Eau Claire, WI 54701  
(715) 834-9012

212 E. Washington Ave., Room 213  
Madison, WI 53703  
(608) 264-5205

310 W. Wisconsin Ave., Room 420  
Milwaukee, WI 53202  
(414) 291-3941

Wyoming  
P.O. Box 2839  
Casper, WY 82602  
(307) 261-5761

U.S. Environmental Protection Agency (EPA)

Program/activity: Technical Assistance, Laboratory Certification, and Training

The EPA is responsible for protection of the nation's drinking water under the Safe Drinking Water Act (SDWA) of 1974 (PL 93-523). In the process of carrying out this charge, the agency has issued the National Interim Primary Drinking Water Regulations (NIPDWR) that specify the maximum levels of various substances that will be allowed in drinking water. The regulations also impose various other requirements on water systems, including reporting to the state the results of any tests that are conducted on the water supply, public notification, and record maintenance.

The NIPDWR apply to public water systems, which are defined in the regulations as any system "for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least sixty days out of the year."<sup>3</sup>

While the EPA issued the NIPDWR, the states may assume the responsibility for enforcing these or their own regulations. State regulations must be at least as stringent as the NIPDWR. This process of state enforcement of the drinking water regulations is referred to as primary enforcement responsibility, or primacy. As of January 1984, all of the states except Indiana, Oregon, Pennsylvania, Wyoming, and the District of Columbia had assumed primacy. In states not assuming primary enforcement responsibility the EPA enforces the regulations. Pennsylvania was expected to assume primacy shortly.

Once a state assumes primacy, the EPA monitors its performance to ensure both that the state continues to meet the requirements for primary enforcement responsibility and that the water systems in the state satisfy the drinking water regulations. Each state must report annually to the EPA on its enforcement program.

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<sup>3</sup>See 40 CFR 141.2 (1983).

States with primary enforcement responsibility may be able to obtain financial assistance from the EPA to assist them in their efforts. The federal agency does make some grant money available to the states for such purposes. A state must apply to the appropriate EPA regional office for a grant. Approximately \$27.5 million has been budgeted for grants.

In addition to the mandatory NIPDWR standards, which may be enforced by either the EPA or the states, the EPA has issued a second set of regulations, the National Secondary Drinking Water Regulations (NSDWR). These regulations establish secondary maximum contaminant levels for various substances in drinking water which may affect the aesthetic qualities of the water. Unlike the primary drinking water regulations, these secondary regulations are to be enforced solely by the states.<sup>4</sup> The SDWA regulations, particularly the primary drinking water regulations, may impose significant costs on a small water utility. These costs will be reflected in rate requests.

Certification of laboratories as eligible to perform required drinking water analyses is another EPA activity. For states with primary enforcement responsibility, the EPA certifies one laboratory in each state. That laboratory will then certify others in the state as able to perform required tests. The EPA does certify all labs in states which have not assumed primacy. In states with primacy, the state enforcing agency normally tells water suppliers who can do the necessary laboratory work for them. In non-primacy states, the EPA regional office can furnish such information.

The EPA provides fellowships for state employees to obtain training in order to improve the capabilities of state agencies. The

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<sup>4</sup>The regulations discussed in this section can be found in Title 40 of the Code of Federal Regulations. See 40 CFR 141 (1983) for the National Interim Primary Drinking Water Regulations. See 40 CFR 142 (1983) for the implementation of those regulations, including primacy. See 40 CFR 143 (1983) for the National Secondary Drinking Water Regulations.



EPA has also funded instructional materials and seminars for utility operators, although there is no established training program. Each regional office sets its own priorities and provides as much instruction as funding will permit. Topics have included regulatory requirements and technical subjects such as cross connection control.

Instruction has been given a lower priority in more recent years however. An EPA official contacted by the NRRI estimated that the agency currently has budgeted only 10 percent to 20 percent of what it had allocated for training five years previously.

Applicability: Where a state has assumed primacy under the SDWA, the U.S. EPA role is highly limited. The EPA can provide assistance or information on an ad hoc basis to utilities which contact it. But a commission would usually be better off referring a water utility to the state water supply agency. A commission may also want to obtain a list of certified laboratories for its state, which could again be done as easily through the state agency as the federal one. EPA funds might be taken advantage of for training needed to upgrade state employees' or utility operators' training. The commission could work with the state water supply agency to tap these funds for joint training ventures. In the few remaining states that do not have primacy, the U.S. EPA regional office could be an important agency for regulating and providing incentives to small water utilities. The Region III office, in particular, has been active in attempting to improve water quality for Pennsylvania's small water utilities (see chapter 3 for a discussion of this program).

Contact: Nancy Wentworth  
Office of Drinking Water  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, D.C. 20460  
(202) 382-5551

U.S. EPA Regional Offices

Region I

Serving Connecticut, Maine,  
Massachusetts, New Hampshire,  
Rhode Island, and Vermont

John F. Kennedy Federal Bldg.,  
Room 2203  
Boston, MA 02203  
(617) 223-7210

Region II

Serving New Jersey, New York,  
Puerto Rico, and the Virgin Islands

26 Federal Plaza, Room 900  
New York, NY 10278  
(212) 264-2525

Region III

Serving Delaware, District of  
Columbia, Maryland, Pennsylvania,  
Virginia, and West Virginia

Curtis Bldg.  
Sixth and Walnut Streets  
Philadelphia, PA 19106  
(215) 597-9814

Region IV

Serving Alabama, Florida,  
Georgia, Kentucky, Mississippi,  
North Carolina, South Carolina,  
and Tennessee

345 Courtland St., N.E.  
Atlanta, GA 30365  
(404) 881-4727

Region V

Serving Illinois, Indiana,  
Michigan, Minnesota, Ohio,  
and Wisconsin

230 S. Dearborn St.  
Chicago, IL 60604  
(312) 353-2000

Region VI

Serving Arkansas, Louisiana, New  
Mexico, Oklahoma, and Texas

First International Bldg.  
1201 Elm Street  
Dallas, TX 75270  
(214) 767-2600

Region VII

Serving Iowa, Kansas, Missouri,  
and Nebraska

324 E. 11th Street  
Kansas City, MO 64106  
(816) 374-5493

Region VIII

Serving Colorado, Montana, North  
Dakota, South Dakota, Utah, and  
Wyoming

1860 Lincoln Street  
Denver, CO 80295  
(303) 837-3895

Region IX

Serving Arizona, California, Hawaii,  
Nevada, American Samoa, Trust  
Territories of the Pacific, Guam,  
and the Northern Marianas

215 Fremont Street  
San Francisco, CA 94105  
(415) 974-8153

Region X

Serving Alaska, Idaho, Oregon, and  
Washington

1200 Sixth Avenue  
Seattle, WA 98101  
(206) 442-5810

Rural Housing and Community Facilities Development Agencies

Program/Activity: Technical Assistance

Although the major portion of federal Community Services Block Grant (CSBG) funds, distributed by the U.S. Department of Health and Human Services (HHS), is not directed towards water projects, a small but significant amount is targeted at technical assistance for small water systems. CSBG grants go to states and to nonprofit private organizations administering community antipoverty programs. In applying for grants, states and organizations must agree to use funds to provide services and activities which would have a major impact on poverty in an area. A state receiving CSBG money must expend at least 90 percent of its allotment by making grants to localities within the state or to nonprofit private organizations. States design their own programs for meeting the goals of the CSBG legislation. Capital improvements and construction are not among these goals. Any state wishing to use funds for such purposes (including improvement or construction of water systems) would have to apply to the Department of Health and Human Services for a waiver from program requirements. An HHS official contacted by the NRRI said that such a waiver would probably not be accepted by the Department due to the low funding level of the program (about \$308 million for fiscal 1984).

The Community Services Block Grant legislation allows up to 9 percent of funds allocated to the program to be used at the discretion of the Secretary of Health and Human Services. The Secretary may use the funds to provide for training related to the block grant program, for programs to create employment and business opportunities for low income individuals, rural development loans, community development credit union programs, assistance for migrants and seasonal farm-workers, recreation for low-income youth, or "technical assistance and training programs in rural housing and community facilities development."

Funds for the last named purpose--community facilities development--have, in practice, been divided among six regional

agencies. Rural water and wastewater treatment facilities have been major beneficiaries of the program. The programs are restricted to rural, low-income areas. Although little has been done for private facilities, assistance to them is allowed.

Project proposals under the community facilities development program are developed separately by the six agencies, which then meet to agree on a package of proposals. The package is submitted for review to the Office of Community Services in the federal Health and Human Services Department. Among the criteria for choosing projects is the degree to which it represents a public-private partnership. The fiscal 1984 budget for the program was \$4.4 million.

All six of the regional agencies have on tap considerable expertise in water and wastewater management. Each agency covers about half a dozen states. Collectively, they cover forty-four states. Each manages the program somewhat differently and will be discussed separately.

Great Lakes Rural Network, Inc. (GLRN; Fremont, Ohio):

Groundwater supply and management, water system development, and funding possibilities for public works programs have been typical subjects of recent GLRN training. In the area of financial management assistance, GLRN has worked with the National Demonstration Water Project (NDWP) as a cosponsor of the Comptrain project. (See the discussion of the National Demonstration Water Project in this chapter.)

In a project that might be imitated elsewhere, GLRN put together a public/private partnership to construct a water main extension and individual hometaps in Big Branch, Ohio. The Ironton-Lawrence Community Action Organization, the Ohio American Water Company, and residents of Big Branch cooperated to use Ohio American Investment, resident fees, and Community Services Block Grant funds for tap/hook assistance.

Midwest Assistance Program (MAP; New Prague, Minnesota): MAP works with forty to sixty communities at a time using an in-house staff of seven and a network of consultants. "Water audits" have been included among recent projects. MAP has worked with communities on

meter testing, pump efficiency, and problems of unaccounted-for water. MAP has developed a non-technical "water audit" videocassette showing how a community might recognize and respond to a problem of unaccounted-for water. Recently MAP has been studying the problem of "cluster wells," attempting to determine whether there is a way to organize county-wide or multi-county management of them through rural water districts or associations.

MAP has worked with one private water utility, a development in Iowa where too many lots were sold for the size of the water system. MAP is helping homeowners to buy out and upgrade the system. A homeowners' association or rural water district will be created in the process, making the system eligible for FmHA funding.

Rural Housing Improvement (Winchendon, Massachusetts): Rural Housing Improvement provides from its central office or through a network of consultants training and technical assistance on water and wastewater. Financial operations, selection of an engineer, and review of engineering plans have been dealt with in recent projects. An agency spokesman said the agency would be glad to try to help out a privately owned water system or put it in contact with someone who could.

Virginia Water Project/Southeast Rural Community Assistance Project (SE/R-CAP; Roanoke, Virginia): The Virginia Water Project now serves only public projects in Virginia, with funding provided through the Virginia Division of Housing. SE/R-CAP is a spin-off of the Virginia Water Project and provides technical assistance and training throughout the southeastern states.

The Virginia Water Project works with rural communities from identification of a water problem through a solution. Technical assistance is available for training, financing (including applying for federal funds), choosing and working with engineers, identifying project areas, conservation, procedures for emergencies, and cost effectiveness. The agency can make seed fund grants for preliminary

engineering studies, feasibility studies, test wells, and percolation/soil tests to help communities gather data needed to obtain public or private funds to develop water or wastewater facilities. Also available through the Virginia Water Project are grants to help pay connection fees and hook-on costs for water or wastewater services for qualified low-income families; grants of up to \$400 for water and sanitation emergencies, such as broken water pumps or frozen water lines; and grants to help construct community wells.

Since 1979, SE/R-CAP has developed a network of community-based organizations, local government bodies, and community action agencies in its 7-state service region. As a result 35 communities have begun development of water and wastewater projects. The projects will result in 12,000 new connections benefitting 27,000 rural residents. The agency's efforts are complemented by staffs of over 175 community organizations through the southeast. Services provided include on-site technical assistance; training (including needs assessment, financing, and engineer and consultant selection); operation, maintenance and management assistance (including billing and accounting procedures, rate structure analysis, and creation of reserve funds); information dissemination (on such matters as financing, operation and maintenance, and alternative technologies); public/private partnership formation to involve the total community in water and wastewater development efforts; and engineering review services.

Rural Community Assistance/Nine West, Inc. (Sacramento, California): Within the last year, Rural Community Assistance (RCA) has formed Nine West, a subsidiary to sell services to organizations that do not qualify as nonprofit. The corporation will use the same people as RCA and sell engineering, site assessment, and training services at fees competitive with similar consulting services.

Unlike the other five community assistance agencies, RCA passes money through to local agencies to pay for staff time. The funds have been passed through to two to five agencies in each of the nine states covered by RCA. Some four hundred communities have been served in the

five or six years of RCA operation. RCA does direct training and technical assistance. Agency staff may also advise utility personnel to attend local universities for operator training or to take courses in operator training by mail from California State University in Sacramento (see chapter 3).

Community Resources (Springdale, Arkansas): Community Resources has been providing the same sorts of services as the other five agencies in its five-state service area. It is now working actively with sixty communities in six states. The agency operates through a staff member in the field in each state. Community Resources is currently shifting its efforts from development and construction to operations and maintenance services. The agency is just beginning an even more aggressive program of management services for water and wastewater utilities. The agency is now working with a consultant to develop six particular service packages. They will then be field tested. The services are (1) rate structure analysis, (2) fiscal planning and expansion, (3) drinking water standards, (4) computer billing, (5) standardized preventive maintenance programs, and (6) a system for dealing with emergencies.

Community Resources is also investigating the potential for providing turnkey management of water utilities through a utility services center of some kind. The service would be provided to a county or several counties through a central manager, and, says an agency spokesman, would be an alternative to "part-time, sometime management."

Among the agency's current services are income surveys to justify reductions in the interest rate for FmHA loans. In Alabama, Community Resources is currently working towards consolidation of a regional system that will serve two thousand people. The FmHA had been preparing to foreclose a loan on the existing system. The agency has marshalled EDA, FmHA, and CDBG funds totalling \$2 million. A county-wide authority has been formed to manage the consolidated water system.

The agency would like to move towards a fee for service system for its management services, thus broadening its funding base to include federal and local funds.

A Community Resources spokesman noted that there is nothing to prohibit the agency from providing services to investor-owned utilities. The spokesman said his staff would be glad to work with the public service commissions in its region.

Applicability: Particularly because of the absence of restrictions on serving private entities, the community facilities agencies have great potential to aid regulated small water utilities. The agencies have done and could do work in problems of ownership, location, management, operations, and maintenance. A commission might want to contact the agency serving its state to find out what projects the agency has and might be undertaking there and what resources are available for use in the state. Although funds are naturally limited, a commission might be able to tap into this program to boost a training program, circuit rider program, or to find solutions to specific problems. At a minimum, the commission is likely to find good referrals to give to small water utilities that need consulting assistance.

Contact: Mae Brooks  
Office of Community Services  
U.S. Department of Health and  
Human Services  
1200 19th Street, N.W.  
Washington, D.C. 20506  
(202) 254-5444

Great Lakes Rural Network Serving Michigan, Illinois,  
Indiana, Wisconsin, Ohio, Kentucky, and West Virginia

Beth Ytell, Program Developer  
Great Lakes Rural Network, Inc.  
W.S.O.S. Community Action Commission, Inc.  
P.O. Box 568  
Fremont, OH 43420  
(419) 334-8911



Midwest Assistance Program  
Serving Montana, North Dakota,  
Minnesota, Iowa, Missouri, Kansas,  
and Nebraska

Ken Bruzelius  
Executive Director  
Midwest Assistance Program  
P.O. Box 81  
New Prague, MN 56071

Rural Housing Improvement  
Serving Connecticut, Massachusetts,  
Rhode Island, Vermont, New  
Hampshire, Maine, New York, and  
New Jersey

Laura Paradise  
Director, Rural Community Assistance  
Program  
Rural Housing Improvement, Inc.  
218 Central St.  
Winchendon, MA 01475  
(617) 297-1376

Virginia Water Project  
Serving Virginia

Elaine Stinson  
Virginia Water and Wastewater  
Project Manager  
Virginia Water Project, Inc.  
702 Shenandoah Avenue, N.W.  
P.O. Box 2868  
Roanoke, VA 24001  
(703) 345-6781

Southeast Rural Community Assistance  
Project

Serving Delaware, Virginia, Florida,  
Maryland, North Carolina, South  
Carolina, and Georgia

702 Shenandoah Avenue  
P.O. Box 2868  
Roanoke, VA 24001

Community Resources

Serving Alabama, Mississippi,  
Tennessee, Arkansas, Louisiana,  
and Texas

John Squires  
Director  
Water and Wastewater Division  
Community Resources  
2705 Chapman Rd.  
Springdale, AR 72764  
(501) 756-2900

Rural Community  
Assistance/Nine West

Serving Washington, Oregon,  
California, Idaho, New Mexico,  
Arizona, Utah, Colorado, and  
Nevada<sup>5</sup>

William French  
Executive Director  
Rural Community Assistance  
Corp./Nine West, Inc.  
1900 F St.  
Suite 202  
Sacramento, CA 95814  
(916) 447-2854

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<sup>5</sup>Nevada is not participating in the program at this time.

## National Rural Water Association (NRWA)

### Program/Activity: Circuit Riders

Under a contract with the FmHA, the National Rural Water Association maintains in thirty-three states experts on the operations of small water systems. These circuit riders provide on-site technical assistance to rural and small town water utilities. The help is available only to publicly owned and operated systems. However, considerable leeway is allowed the circuit riders in the field. If a small investor-owned water utility asked for help from a circuit rider and he had the time, he could help a privately owned system at his discretion. There is one circuit rider in each of the thirty-three states, except for Texas, which has two. Problems the circuit riders are prepared to deal with include bookkeeping, management and operational procedures, bill collection, water loss, securing funds, locating new sources of water supply, finding professional help for water systems planning and construction, inadequate water pressure, water outages, system hydraulics, Safe Drinking Water Act requirements, and operation and treatment techniques.

The costs of maintaining a circuit rider are about \$40,000 a year including travel. Since NRWA offices are used, this amount does not include full overhead.

Circuit riders may frequently have an advantage over the commission and other regulatory agencies. "Because he is a water system person himself, doors are often open to circuit riders that are closed to state and federal officials," says an NRWA document discussing the program. Circuit riders are recruited only from the ranks of experienced operators. No degree is necessary, just a "bachelor's degree in leak repair and shovel work," says an NRWA spokesman. He says there has been some difficulty recruiting enough qualified people who are willing and able to travel as much as the job requires.

Applicability: States not served by circuit riders include several, such as California, Pennsylvania and New Jersey, where commissions

regulate numerous small water utilities. But for many others, the circuit rider program may be a significant untapped source of expertise for the commissions. Commission contact with the state circuit rider could lead to a fruitful relationship whereby commissions could refer small water utilities to circuit riders for help on problems of management, operations, maintenance, construction, and water quality. A commission might even want to consider setting up its own circuit rider program, perhaps in cooperation with the state water supply agency. Commission staff could contact a representative of the NRWA circuit rider program to find out more about how such a program could be implemented.

Contact: Dave Roberson  
National Circuit Rider  
National Rural Water Association  
1503 Bois D'Arc  
Duncan, OK 73533  
(O)(405) 252-0629  
(H)(405) 622-6561

Alabama Rural Water Association

A. B. Williams  
1300 Pinedale Drive  
Opelika, AL 36801  
(O)(205)284-1489  
(H)(205)749-1598

Georgia Rural Water Association

Earl Cunningham  
P.O. Box 37  
Dallas, GA 30132  
(O)(404)358-0221  
(H)(404)445-3047

Arkansas Rural Water Association

Gene Casey  
R. 3  
Deer, AR 72628  
(O)(501)568-5252  
(H)(501)428-5571

Illinois Water Association

Shirley (Hip) Hipple  
310 S. Bone Drive  
Normal, IL 61761  
(O)(217)824-3213  
(H)(309)452-7273

Colorado Rural Water Association

Jerry Dixel  
Box 386  
Dolores, CO 81323  
(O)(303)651-6287  
(H)(303)882-4293

Indiana Water Association

Ken Burke  
537 Inglis Street  
Madison, IN 47250  
(O)(812)246-4148  
(H)(812)273-2297

Florida Rural Water Association

Curtis Lloyd  
Rt. 1, Box 331-A  
Hawthorne, FL 32640  
(O)(904)386-4146  
(H)(904)546-2384

Iowa Rural Water Association  
Vacancy

Kansas Rural Water Association

Bob Ewan  
612 Poor Street  
Olathe, KS 66061  
(O)(913)849-3360  
(H)(913)782-4865

Kentucky Rural Water Association

Barry Back  
Rt. 3, Box 240  
Jamestown, KY 42629  
(O)(502)843-2291  
(H)(502)343-4957

Louisiana Rural Water Association

Robert Chamberlain  
P.O. Box 225  
Oakdale, LA 71463  
(O)(318)442-3189  
(H)(318)335-2891

Maine Rural Water Association

James (Jim) Russell  
16 Penobscot Avenue  
Brewer, ME 04412  
(O)(207)729-6569  
(H)(207)989-6832

Minnesota Rural Water Association

Chuck Anderson  
811 E. Division Street  
Elbow Lake, MN 56531  
(O)(218)685-5197  
(H)(218)685-5235

Mississippi Rural Water Association

Jack Fulkerson  
Rt. 4  
Mendenhall, MS 39114  
(O)(601)366-3423  
(H)(601)849-2285

Missouri Rural Water Association

Tom Warren  
28 Sappington Acres Drive  
St. Louis, MO 63126  
(O)(314)893-2928  
(H)(314)843-6136

Montana Rural Water Systems

Henry Johnson  
Box 36  
Pablo, MT 59855  
(O)(406)454-1151  
(H)(406)675-2221

Nebraska Rural Water Association

Gilbert Frey  
Cedar Bluffs, NB 68015  
(O)(402)862-3140  
(H)(402)628-5415

New Mexico Rural Water Users

Don Childers  
P.O. Box 1407  
Farmington, NM 87499  
(O)(505)326-7212  
(H)(505)325-6800

New York State Rural Water Association

George Flummer  
Rt. 1  
Hamilton, NY 13346  
(O)(518)439-4401  
(H)(315)824-3659

North Carolina Rural Water Association

Samuel Boyette  
P.O. Box 92  
Four Oaks, NC 27524  
(O)(704)731-6963  
(H)(919)963-2493

North Dakota Rural Water Association

Patrick Denne  
414 10th Ave. S. Apt. 3  
Fargo, ND 58103  
(O)(701)852-1530  
(H)(701)293-7588

Ohio Association of Rural Water Systems

Brian Baker  
730 Mill Street  
Liberty, OH 43532  
(O)(614)436-9988  
(H)(419)533-6713

Oklahoma Rural Water Association

Ambrose (Tiny) Hammond  
Box 235  
Byron, OK 73723  
(O)(405)252-0615  
(H)(405)474-2547

Roving Circuit Rider

Joe Keller  
Rt. 3, Box 298  
Macon, MO 63552  
(O)(405)252-0629  
(H)(816)385-6046

Oregon Association of Water Utilities

Bob Richardson  
Box 1480  
Umatilla, OR 97882  
(O)(503)364-8269  
(H)(503)922-4912

South Carolina Water Association

Don Jackson  
Rt. 1, Box 33 BB  
Ware Shoals, SC 29692  
(O)(803)499-3351  
(H)(803)861-3490

South Dakota Association of Rural Water

Don Pospishil  
1505 Burleigh  
Yankton, SD 57078  
(O)(605)336-7219  
(H)(605)665-1870

Tennessee Association of  
Utility Districts

Everett Severs  
Rt. 1, Green Hill Subdivision  
Andersonville, TN 37705  
(O)(615)255-4752  
(H)(615)494-0027

Texas Rural Water Association

James Thompson  
P.O. Box 1349  
Trinity, TX 75862  
(O)(512)835-2300  
(H)(409)594-2209

David Sneed  
3802 Cottonwood  
Marble Falls, TX 78654

Texas #2 Circuit Rider

Mike Sadler  
Rte. 3  
Box 855  
Spicewood, TX 78669  
(O)(409)594-2209  
(H)(512)264-1415

Rural Water Association of Utah

Charles (Chuck) Jeffs  
Box 51  
Castle Dale, UT 84513  
(O)(801)259-6027  
(H)(801)381-5377

Northeast Rural Water Association  
Serving Massachusetts,

New Hampshire and Vermont

Duane Knapp  
100 Stark Street  
Bennington, VT 05201  
(O)(802)878-3276  
(H)(802)442-3353

Wyoming Rural Water Association

2108 E. 12th  
Cheyenne, WY 82001  
(O)(307)686-5045  
(H)(307)632-6263

The U.S. Geological Survey (USGS) of the  
U.S. Department of the Interior

Program/activity: Research, Data Collection, and Field Investigations

USGS, together with other agencies, conducts a national program of hydrologic research and data collection. Funding is shared half and half between the USGS and the other cooperating agencies. The non-federal share is in the form of payment to the USGS for services rendered or credit given to the cooperating agency for work performed by it. In fiscal year 1983, over eight hundred state, local, and regional agencies participated in the program. Funding from all sources totaled approximately \$92 million.

The overall objective of this program is to guarantee optimal use and management of the nation's water resources. Problems are identified and research and data collection priorities are formulated at the local level through discussions among state, local, and federal officials and the public.

Major areas of study for this program have included water quality, ground water supplies, water use, movement of contaminants in ground water, aquifer characteristics, municipal and domestic wastes, industrial wastes, and lakes and reservoirs. Primary uses of research results have been in such areas as water supply planning and development, conservation, pollution control, bridge and highway design, flood control, waste disposal, water rights, irrigation, and land management. Project proposal costs have in recent years exceeded by several million dollars the amount of federal matching funds available through the program.

Besides research, USGS provides services in specific cases. A new water utility, whether large or small, can take advantage of USGS maps to look for the best places to generate new sources of water. USGS will also send a geologist to a proposed location for a new water supply to verify existing mapping and alert prospective utility managers to any problems of quantity or quality.

Applicability: USGS data is of use in determining the feasibility of a water utility locating in a particular area, or for forecasting water supply problems for small water utilities. The potential for use of an inadequate source of water can be reduced through consultation with USGS staff. A commission may wish to alert water utility operators to the availability of USGS data. The commission may wish to contact staff at the state water supply agency or agencies participating in the water resources program to discuss the applicability of existing research to utility location and water use problems of small water utilities. The commission may also want to propose new research projects for particular areas or promote particular existing proposals that would address the water use and management problems of small water utilities. Finally, if a commission were to advocate and help develop a systematic plan for use of water resources in its state, USGS and its affiliates would be one of the agencies it might wish to include in the planning process.

Contact: Thomas Buchanan  
U.S. Geological Survey  
441 National Center  
12201 Sunrise Valley Drive  
Reston, VA 22092  
(703) 860-6801

U.S. Geological Survey State Offices

Alabama  
P.O. Box V  
Oil & Gas Board Bldg.  
University, AL 35486

Alaska  
733 W. 4th Ave., Suite 400  
Anchorage, AK 99501

Arizona  
Federal Building  
301 W. Congress St., FB-44  
Tucson, AZ 85701

Arkansas  
Federal Office Bldg., Room 2301  
700 W. Capitol Ave.  
Little Rock, AR 72201

California  
855 Oak Grove Ave.  
Menlo Park, CA 94025

Colorado  
Box 25046, Mail Stop 415  
Denver Federal Center, Bldg. 53  
Lakewood, CO 80225

Connecticut  
135 High St., Room 235  
Hartford, CT 06103

Delaware  
Carroll Bldg., Room 208  
8600 LaSalle Road  
Towson, MD 21204

District of Columbia  
Carroll Bldg., Room 208  
8600 LaSalle Road  
Towson, MD 21204

Florida  
325 John Knox Rd., Suite F-240  
Tallahassee, FL 32303

Georgia  
6481 Peachtree Industrial Blvd.  
Suite B  
Doraville, GA 30360

Hawaii  
P.O. Box 50166  
300 Ala Moana Blvd., Room 6610  
Honolulu, HI 96850

Idaho  
Room 365, 550 W. Fort St.  
Boise, ID 83724

Illinois  
Champaign City Bank Plaza  
102 E. Main St., 4th Floor  
Champaign, IL 61801

Indiana  
1819 N. Meridian St.  
Indianapolis, IN 46202

Iowa  
P.O. Box 1230, Federal Bldg.  
Room 269, 400 S. Clinton St.  
Iowa City, IA 52244

Kansas  
1950 Avenue A - Campus West  
University of Kansas  
Lawrence, KS 66045

Kentucky  
Federal Building, Room 572  
600 Federal Place  
Louisville, KY 40202

Louisiana  
P.O. Box 66492, 6554 Florida Blvd.  
Baton Rouge, LA 70896

Maine  
150 Causeway St., Suite 1001  
Boston, MA 02114

Maryland  
Carroll Bldg., Room 208  
8600 LaSalle Road  
Towson, MD 21204

Massachusetts  
150 Causeway St., Suite 1001  
Boston, MA 02114

Michigan  
6520 Mercantile Way, Suite 5  
Lansing, MI 48910

Minnesota  
Post Office Bldg., Room 702  
St. Paul, MN 55101

Mississippi  
Fed. Office Bldg., Suite 710  
100 W. Capitol St.  
Jackson, MS 39201

Missouri  
1400 Independence Road  
Mail Stop 200  
Rolla, MO 65401

Montana  
Drawer 10076  
Helena, MT 59626

Nebraska  
Federal Bldg. & U.S. Courthouse  
Room 406, 100 Centennial Mall N.  
Lincoln, NE 68508

Nevada  
Federal Building, Room 229  
705 North Plaza Street  
Carson City, NV 89701

New Hampshire  
150 Causeway St., Suite 1001  
Boston, MA 02114



New Jersey  
430 Federal Building  
402 E. State Street  
Trenton, NJ 08608

New Mexico  
P.O. Box 26659  
Western Bank Bldg.  
505 Marquette, NW  
Albuquerque, NM 87125

New York  
P.O. Box 1350, 236 U.S. Post  
Office & Courthouse Bldg.  
Albany, NY 12201

North Carolina  
P.O. Box 2857, Century Sta.  
Post Office Bldg., Room 436  
Raleigh, NC 27602

North Dakota  
821 East Interstate Ave.  
Bismarck, ND 58501

Ohio  
975 W. Third Ave.  
Columbus, OH 43212

Oklahoma  
215 Dean A. McGee St.,  
Room 521  
Oklahoma City, OK 73102

Oregon  
P.O. Box 3202  
830 Northeast Holladay St.  
Portland, OR 97208

Pennsylvania  
P.O. Box 1107, Federal Bldg.  
4th Floor, 228 Walnut St.  
Harrisburg, PA 17108

Puerto Rico  
G.P.O. Box 4424, Building 652  
Ft. Buchanan  
San Juan, PR 00936

Rhode Island  
150 Causeway St., Suite 1001  
Boston, MA 02114

South Carolina  
Strom Thurmond Fed. Bldg.,  
Suite 658  
1835 Assembly Street  
Columbia, SC 29201

South Dakota  
200 Fourth Street, SW  
Federal Bldg., 317  
Huron, SD 57350

Tennessee  
Federal Bldg. & U.S. Courthouse  
Room A-413  
Nashville, TN 37203

Texas  
Federal Bldg., Room 649  
300 East Eighth Street  
Austin, TX 78701

Utah  
Administrative Bldg., Room 1016  
1745 West 1700 South  
Salt Lake City, UT 84109

Vermont  
150 Causeway St., Suite 1001  
Boston, MA 02114

Virginia  
200 West Grace St., Room 304  
Richmond, VA 23220

Washington  
1201 Pacific Ave., Suite 600  
Tacoma, WA 98402

West Virginia  
Federal Bldg., & U.S. Courthouse  
Rm. 3017, 500 Quarrier St., E.  
Charleston, WV 25301

Wisconsin  
1815 University Ave.  
Madison, WI 53706

Wyoming

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345 Middlefield Rd.  
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## National Demonstration Water Project

Program/activity: Technical Assistance

National Demonstration Water Project (NDWP) is a nonprofit corporation with headquarters in Washington, D.C., and field offices and affiliates throughout the United States. It was established in 1972 to find ways to improve the delivery of water supply and wastewater disposal services to small towns and rural areas. NDWP is funded primarily by federal grants and contracts. To date, these have totaled \$17 million. Sources of federal money have included the Office of Economic Opportunity Community Services Administration, EPA, EDA, FmHA, and HUD.

NDWP activities include demonstration projects to test innovative approaches to water and wastewater service delivery, publications, and policy analysis and recommendations at the state and federal levels.

Circuit-Riding: The Regional Support Company as a Vehicle for Rural Water-Wastewater Service Delivery presents an excellent discussion of circuit rider programs as a means of serving small, rural utilities.

NDWP has a core staff of about fifty and contracts with other organizations for the services of at least that many more professionals. NDWP uses a nationwide system of affiliates to demonstrate workable techniques for delivery of water and sewer services. Through the six regional community assistance programs, it covers all fifty states. Water and/or sewer systems that become a part of the NDWP national program agree to develop local facilities according to NDWP guidelines. NDWP, in return, agrees to provide technical assistance and part of the funds for development and operation. The NDWP does not itself take over a program or provide water or sewer services on a sustained basis.

A 1982 to 1984 NDWP project called "Comptrain" is field testing a method for bringing small (under three million gallons per day) water and wastewater treatment plants into compliance with federal and state performance standards. Private water utilities are not involved in the training, only small municipalities. The method is intensive, on-site, plant-specific training in equipment operation, process control, and financial management. Comptrain, intended to bring systems into

compliance through training, is funded by the U.S. EPA and the Appalachian Regional Commission. Plant operators and municipal officials in Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and West Virginia have been provided training in financing and management of water and wastewater treatment plants under the project. The financial management component, which includes rate setting, was expanded in 1984.

Comptrain uses the circuit rider approach to training. Workload per trainer is about ten plants. The trainer might spend as much as a week in one plant before going on to the next.

Comptrain in its present form will probably not be continued another year. The financial management component offers the best possibility for expansion, according to a spokesman.

Applicability: Although NDWP could not serve private water utilities under its EPA grant, a spokesman said it might be willing and able to do so under another funding arrangement. Its affiliates might also be able to take on technical assistance projects without working through NDWP. A commission that wanted to develop a training or technical assistance program to aid small private, as well as small municipal, water utilities could contact NDWP to explore the potential for such a project. The commission might want to proceed in cooperation with neighboring states or NARUC. NDWP might be invited to discuss Comptrain and its results at one of the NARUC water rates seminars, thus giving commission water staff a chance to learn how such a project could be executed.

Contact: Mark W. Jeffries  
Director of Engineering and Technical  
Services  
National Demonstration Water Project  
1725 De Sales St., NW  
Suite 402  
Washington, D.C. 20036  
(202)659-0661

## State Water Resources Research Institutes

### Program/activity: Research in Issues Related to Water

Water Resources Research Institutes are located at a major university in each of the fifty states, plus the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. The centers are funded through the U.S. Geological Survey. Funds are divided evenly among the centers. In fiscal 1984 each had a budget of \$115,000. The immediate outlook for continuation of this program is uncertain. President Reagan this year vetoed legislation to authorize water resources research. Congress overrode the veto. The legislation does change the proportions of federal and state funding for the institutes. Now set at \$1 state to every \$2 of federal funds, by 1989 the funding is scheduled to be \$2 state to every \$1 federal. The Administration did not propose an appropriation for the institutes and may be planning to move the responsibility for the program elsewhere in the Interior Department than the Geological Survey.

Project ideas are initiated by the institutes. They meet and set regional priorities. Each institute then submits a list of projects to the Geological Survey for review. In fiscal 1984, there were an average of five projects per institute (at an average cost of \$17,000). About 70 percent of the projects involve technical issues in hydrology, engineering, and biology. The other 30 percent look at institutional issues, including economics and water resources management.

Examples of recent studies suggest the range of projects that might be undertaken by an institute.

Institutional Framework for Rural Water Supply in North Carolina, South Carolina, and Virginia: The report covers organizational arrangements for provision of water supply, programs for technical and financial assistance from federal and state governments, and regulatory mechanisms (including rate setting through the public service commissions) directed towards water supply operations.

Water Policy in Tennessee: Issues and Alternatives: The report reviews alternatives and makes recommendations on a broad range of water policy issues. Topics covered are water allocation; shortages; construction grants; financial support for the water quality control regulatory program; flood damage control; areawide water quality management planning; river transportation; groundwater development, enhancement, and protection; erosion and sedimentation control; and administrative reorganization.

Financing Urban Water: Efficiency and Equity of Major Alternatives: The report provides a comprehensive examination of the efficiency and equity implications of alternative methods of financing the incremental costs of developing additional high-cost water supplies. Alternatives to consider include raising various taxes, raising availability-of-service charges, increasing commodity charges, or raising marginal rates for high volume users.

Incentives for Industrial Conversion to Surface Water: The report examines alternative incentives to induce firms in Mississippi to use surface water, thus reducing groundwater overdraft problems.

Applicability of Microcomputers for Managing Water Use in Small River Basins: The research was aimed at developing tools for analyzing the effects of water allocation decisions on future availability. The tools were to be used at the local level of administration.

Applicability: The Water Resources Research Institutes are a potential source of help to the commissions in assessing the problems of small water utilities in their states and developing state-specific solutions. Research projects conducted through the institutes have been relevant to small water utilities. Commission representatives, perhaps together with other concerned public and private organizations in their states, could contact the state institute to determine the potential for a research project focusing on a particular aspect of small water utility problems, such as regionalization. Or the commission might propose that the institute comment on the applicability to the state of the inventory presented in this report, tailoring the recommendations to particular state laws, water supply problems, population distribution, and other relevant variables.

Assuming the institutes continue to be funded, they are a potential means of developing or altering regulations and services aimed at small water utilities with a minimal use of commission resources.

Contacts:

Alabama

Prof. James C. Warman  
Director, Water Resources  
Research Institute  
202 Hargis Hall  
Auburn University, AL 36849  
(205) 826-5075

Alaska

Dr. Thomas D. Roberts  
Director, Institute of  
Water Resources  
University of Alaska  
Fairbanks, AK 99701  
(907) 474-7775

Arizona

Dr. L. G. Wilson  
Acting Director, Water Resources  
Research Center  
University of Arizona  
Tucson, AZ 85721  
(602) 621-1172

Arkansas

Dr. Leslie E. Mack  
Director, Arkansas Water Resources  
Research Center  
University of Arkansas  
223 Ozark Hall  
Fayetteville, AR 72701  
(501) 575-4403

California

Dr. J. Herbert Snyder  
Director, Water Resources Center  
2102 Wickson Hall  
University of California  
Davis, CA 95616  
(916) 752-1544

Colorado

Dr. Norman A. Evans  
Director, Colorado Water  
Resources Research Institute  
326 Aylesworth Hall  
Colorado State University  
Fort Collins, CO 80523  
(303) 491-6308

Connecticut

Dr. Carroll N. Burke  
Director, Institute of Water  
Resources  
The University of Connecticut  
Storrs, CT 06268  
(203) 486-4523

Delaware

Dr. Robert D. Varrin  
Director, Water Resources Center  
University of Delaware  
Newark, DE 19711  
(302) 738-2191

District of Columbia

Dr. Mamadou H. Watt  
Director, Water Resources  
Research Center  
Bldg. 39, Room 202-70  
4200 Connecticut Avenue, N.W.  
Washington, D.C. 20008  
(202) 282-7333/4

Florida

Dr. James P. Heaney  
Director, Water Resources  
Research Center  
424 Black Hall  
University of Florida  
Gainesville, FL 32611  
(904) 392-0840

Georgia

Dr. Bernd Kahn  
Director, Environmental  
Resources Center  
Georgia Institute of Technology  
205 Old Civil Engineering Bldg.  
Atlanta, GA 30332  
(404) 894-3776

Hawaii

Dr. L. Stephen Lau  
Director, Water Resources  
Research Center  
University of Hawaii  
Holmes Hall 283, 2540 Dole Street  
Honolulu, HI 96822  
(808) 948-7847

Idaho

Dr. John R. Busch  
Director, Idaho Water & Energy  
Resources Research Institute  
University of Idaho  
Janssen Engineering Building (JEB)  
226  
Moscow, ID 83843  
(208) 885-6429

Illinois

Dr. Glenn E. Stout  
Director, Water Resources Center  
University of Illinois  
208 N. Romine Street  
Urbana, IL 61801  
(217) 333-0536

Indiana

Prof. John H. Cushman  
Acting Director, Water Resources  
Research Center  
Purdue University, Lilly Hall  
West Lafayette, IN 47907  
(317) 494-8041 (317) 494-2172

Iowa

Dr. T. Al Austin  
Director, Iowa State Water  
Resources Research Institute  
355 Town Engineering Building  
Iowa State University  
Ames, IA 50011  
(515) 294-8921 (FTS: 8/865-8921)

Kansas

Dr. Floyd W. Smith  
Director, Kansas Water Resources  
Research Institute  
Kansas State University  
Waters Hall 14  
Manhattan, KS 66506  
(913) 532-5729

Kentucky

Dr. David Kao  
Director, Kentucky Water Resources  
Research Institute  
University of Kentucky  
165 Anderson Hall  
Lexington, KY 40506  
(606) 257-8013 or 257-1832 (Huffsey)

Louisiana

Director, Louisiana Water  
Resources Research Institute  
Louisiana State University  
3418 CEBA Building  
Baton Rouge, LA 70803  
(504) 388-8508

Maine

Dr. Paul D. Uttormark  
Director, Land & Water Resources Center  
University of Maine at Orono  
11 Coburn Hall  
Orono, ME 04469  
(207) 581-1492 or 1490

Maryland

Dr. Robert E. Menzer  
Director, Water Resources Research  
Center  
University of Maryland  
0313 Symons Hall  
College Park, MD 20742  
(301) 454-6406

Massachusetts

Dr. Paul J. Godfrey  
Director, Water Resources  
Research Center  
University of Massachusetts  
Blaisdell House  
Amherst, MA 01003  
(413) 545-2842



Michigan

Dr. Jon Bartholic  
Acting Director, Institute of  
Water Research  
Michigan State University  
East Lansing, MI 48824  
(517) 353-3742

Minnesota

Dr. George R. Blake  
Director, Water Resources  
Research Center  
University of Minnesota  
866 Biological Sciences Center  
1445 Gortner Avenue  
St. Paul, MN 55108  
(612) 376-5668

Mississippi

Dr. Marvin T. Bond  
Executive Director, Water  
Resources Research Institute  
Mississippi State University  
P.O. Drawer AD  
Mississippi State, MS 39762  
(601) 325-3620

Missouri

Dr. Thomas E. Clevenger  
Director, Water Resources  
Research Center  
University of Missouri  
Sinclair Road - Route 3  
Columbia, MO 65201  
(314) 445-8008

Montana

Dr. Howard S. Peavy  
Acting Director, Montana Water  
Resources Research Center  
Montana State University  
Bozeman, MT 59717  
(406) 994-5552

Nebraska

Dr. William L. Powers  
Director, Nebraska Water  
Resources Center  
University of Nebraska  
310 Ag Hall - East Campus  
Lincoln, NE 68583  
(402) 472-3305

Nevada

Dr. Paul R. Fenske  
Executive Director,  
Water Resources Center  
Desert Research Institute  
University of Nevada System  
P.O. Box 60220  
Reno, NV 89506  
(702) 673-7361

New Hampshire

Professor Gordon L. Byers  
Chairman, Water Resources  
Research Center  
University of New Hampshire  
108 Pettee Hall  
Durham, NH 03824  
(603) 862-2144

New Jersey

Dr. Alan W. McIntosh  
Director, Division of Water Resources  
Center for Coastal & Environmental  
Studies  
Rutgers-The State University  
Doolittle Hall, Busch Campus  
New Brunswick, NJ 08903  
(201) 932-3596 or 3738

New Mexico

Dr. Thomas G. Bahr  
Director, Water Resources  
Research Institute  
New Mexico State University  
P.O. Box 3167  
Las Cruces, NM 88003  
(505) 646-4337

New York

Professor Neil Orloff  
Director, Center for Environmental  
Research  
Cornell University, 468 Hollister Hall  
Ithaca, NY 14853  
(607) 256-7535

North Carolina

Dr. David H. Moreau  
Director, Water Resources Research  
Institute of the University of N.C.  
North Carolina State University  
225 Page Hall, Box 7912  
Raleigh, NC 27695-7912  
(919) 737-2815 or 2816

North Dakota

Dr. Robert D. Koob  
Director, Water Resources Research  
Institute  
201 Stevens Hall  
North Dakota State University  
Fargo, ND 58105  
(701) 237-7411 or 8833

Ohio

Dr. Robert C. Stiefel  
Director, Water Resources Center  
The Ohio State University  
1719 Neil Avenue  
Columbus, OH 43210  
(614) 422-2334

Oklahoma

Dr. Norman N. Durham  
Director, Oklahoma Water Research  
Institute  
Oklahoma State University  
203 Whitehurst Hall  
Stillwater, OK 74078  
(405) 624-6368 or 7336

Oregon

Dr. Peter C. Klingeman  
Director, Water Resources Research  
Institute  
114 Covell Hall  
Oregon State University  
Corvallis, OR 97331  
(503) 754-4022

Pennsylvania

Dr. Archie J. McDonnell  
Director, Institute for Research  
on Land & Water Resources  
The Pennsylvania State University  
103 Land & Water Research Building  
University Park, PA 16802  
(814) 863-0291

Rhode Island

Dr. Calvin P. C. Poon  
Director, Water Resources Center  
Room 310 Bliss Hall  
University of Rhode Island  
Kingston, RI 02881  
(401) 792-2297

South Carolina

Dr. Paul Zielinski  
Director, Water Resources  
Research Institute  
310 Lowry Hall, Clemson  
University  
Clemson, SC 29631  
(803) 656-3271

South Dakota

Dr. Charles H. Ullery  
Director, Water Resources  
Institute  
South Dakota State University  
P.O. Box 2120  
Brookings, SD 57007  
(605) 688-4910

Tennessee

Mr. William F. Brandes  
Director, Water Resources  
Research Center  
The University of Tennessee  
The White Avenue Building  
Knoxville, TN 37916  
(615) 974-2151

Texas

Dr. Wayne R. Jordan  
Director, Texas Water  
Resources Institute  
Texas A&M University  
College Station, TX 77843  
(409) 845-1851

Utah

Dr. L. Douglas James  
Director, Center for Water  
Resources Research  
Utah State University  
Logan, UT 84332  
(801) 750-3157

Vermont

Dr. E. Alan Cassell  
Director, Water Resources  
Research Center  
The University of Vermont  
Aiken Center  
Burlington, VT 05405  
(802) 656-4280

Virginia

Dr. William R. Walker  
Director, Virginia Water  
Resources Research Center  
Virginia Polytechnic Institute  
and State University  
617 North Main Street  
Blacksburg, VA 24060  
(703) 961-5624

Washington

Dr. William H. Funk  
Director, State of Washington  
Water Research Center  
Washington State University  
Albrook Lab 202B  
Pullman, WA 99164-3002  
(509) 335-5531

West Virginia

Professor Chester L. Dodson  
Director, Water Research Institute  
West Virginia University  
P.O. Box 6031  
Morgantown, WV 26506-6031  
(304) 293-2757

Wisconsin

Dr. Gordon Chesters  
Director, Water Resources  
Center  
The University of Wisconsin  
1975 Willow Drive - 2nd Floor  
Madison, WI 53706  
(608) 262-3577

Wyoming

Dr. Robert W. Brocksen  
Director, Wyoming Water  
Research Center  
The University of Wyoming  
P.O. Box 3067  
University Station  
Laramie, WY 82071  
(307) 766-2143

## National Water Alliance

Program/activity: Coordination, Legislative Liaison, Information Exchange

The National Water Alliance was organized in 1983 by six members of Congress to develop a national water policy through a bipartisan coalition of public, private, and academic leaders. The Alliance is incorporated as a nonprofit, bipartisan educational institution. Its goals are to (1) develop a national water policy, (2) establish a clearinghouse to disseminate information on water, (3) establish a framework for a multi-disciplinary water research program, (4) organize symposia and conferences, (5) become a third party intervenor in regional or national water disputes, and (6) create a national program of public information and education on water. The Alliance has begun a series of symposia to provide public input for a 1984 congressional study on establishment of a national center for water resources research and a national water information clearinghouse.

The founding members of the Alliance comprise the executive committee. They are Sen. Dennis DeConcini (D AZ), Chairman; Sen. Dave Durenberger (R MN), Cochairman; Sen. Robert Dole (R KS); Rep. Robert Roe (D NJ); Rep. Thomas Foley (D WA); and Rep. John Paul Hammerschmidt (R AK). Other members of the board of directors are selected from the private and public sector, with more than half from the private sector. An executive advisory committee of members of Congress includes: Sen. James Abdnor (R SD), Rep. Silvio O. Conte (R MA), Rep. Edwin B. Forsythe (R NJ), Sen. John Heinz (R PA), Sen. J. Bennett Johnston (D LA), Rep. Walter B. Jones (D NC), Rep. Arlan I. Strangeland (R MN), Rep. Morris K. Udall (D AZ), Rep. Jamie L. Whitten (D MS), and Rep. James C. Wright, Jr. (D TX).

Applicability: Although the National Water Alliance does not have immediate potential for solving the problems of small water utilities, a description is included here because it is a new, interesting organization that may be making proposals that will eventually affect aspects of water supply of concern to the commissions. A commission may

wish to contact the NWA, or a congressman from the state who is on the executive or advisory committee, to express concerns over the proliferation of small water utilities, trends in water rates, and other matters. By encouraging the NWA to take into account the problems of regulated water utilities, a commission may be taking a small step towards amelioration of such problems through more broad-based solutions than one or all commissions could ever have the resources to apply.

Contact: Margo Warren  
Director of Communications  
National Water Alliance  
50 E Street, SE  
Washington, D.C. 20003  
(202) 646-0917



## CHAPTER 5

### REGIONAL AND LOCAL PROGRAMS AND ACTIVITIES

Regional organizations that deal with one aspect or another of water resources are legion. Local organizations, too, afford opportunities for dealing with problems of small water utilities in some areas. This chapter gives a few examples of types of regional and local organizations that commissions could contact.

River basin commissions and the Appalachian Regional Commission (ARC) serve multi-state areas. The two basin commissions that were established by compact (the Delaware and Susquehanna Commissions) have substantial regulatory powers in their areas. The other commissions command information and skills that may help in preventing the unplanned spread of development in their basins. The ARC provides financial aid for water utilities associated with economic development projects.

Regional planning agencies within the states differ widely in responsibilities and effectiveness. To find out which agencies in their states are likely to have an influence on the proliferation of small utilities serving few people, a commission should contact the state agencies that deal with water resource management and water quality to discuss areas covered by regional planning agencies, their authority, and their programs. Conservancy districts, flood districts, soil conservation districts, and, in some states, mosquito districts, are some names of agencies that would have a special concern with water. "Umbrella multi-jurisdictional agencies" act as coordinating authorities and provide broad coordination and planning for various needs including water in a region. "A-95 review agencies," "regional planning and development organizations" (RPDOs), and "Councils of Government" (COGs) are some of the names for these multi-jurisdictional agencies. This inventory includes as an example one such organization: the Southeast Michigan Council of Governments.

On the local level, perhaps the strongest influence on the location and adequate operation of small water utilities is the county or local health department. An example is not included here, but a commission working with a particular utility may wish to contact the local sanitary engineer to coordinate efforts to ensure good services to ratepayers. Some municipal water systems may be able and willing to make technical services available to water systems in outlying areas. The example of the Morgantown Water Commission given in this chapter may suggest to commissions areas in a state where small companies can take advantage of the expertise of larger ones.

A commission may also wish to ascertain whether associations such as Pennsylvania's municipal authorities and Connecticut's water works association exist in their states and can be encouraged to work with and on behalf of small water utilities.

The six organizations and types of organization listed here are suggestive of the variety of resources that might be available on the regional and local level.



## River Basin Commissions

Program/activity: Water Resource Planning and Management

River basin commissions were established to oversee the development of water resources common to more than one state and to make comprehensive plans for such development. There are two main types of river basin commission. One is the federal-state compact commission, established specifically by legislation in the form of a compact between the federal government and signatory states. The two compact commissions are the Delaware River Basin Commission, parties to which are the federal government, Delaware, New Jersey, New York, and Pennsylvania; and the Susquehanna River Basin Commission in which the federal government, Maryland, Pennsylvania, and New York participate.

The other type of river basin commission was established under Title II of the Water Resources Planning Act of 1965. Membership included the states in the region, interested federal agencies, and any other relevant interstate or international agencies. Six commissions were established encompassing all or part of thirty-two states. In 1981 the Reagan administration withdrew federal membership. The commissions have since been reorganized by the states in a variety of forms including nonprofit organizations, associations, and adjuncts to existing multi-state organizations. These reorganized bodies serve as focuses of cooperation among the states although they do not possess the power to implement or enforce policy. Any federal interaction with a commission is now informal.<sup>1</sup>

One commission, the Interstate Commission of the Potomac River Basin, will be conducting rate studies in the coming fiscal year for some small water utilities in a low-income, rural, coal mining county

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<sup>1</sup>See the discussion by Anne Stubbs and Leslie Cole, "Environmental Management" in The Book of the States, 1982-83 (Lexington, Kentucky: Council of State Governments, 1982), pp. 591-592; see also U.S. Water Resources Council, State of the States: Water Resources Planning and Management (Washington, D.C.: U.S. Water Resources Council, 1980), pp. A-3, A-6, A-7.

of West Virginia. The commission was asked to perform this task by a regional planner who wanted to help make the utilities more viable. The aim of the study will be to help the utilities apply to the West Virginia Public Utility Commission for rate increases.

The compact commissions possess substantial regulatory powers. Both the Delaware and Susquehanna commissions review and must approve projects which could influence their comprehensive plans for the development of the water resources of their basins. In addition, the Susquehanna River Basin Commission must approve a project if it diverts water from or into that river basin; or, if the project is in one signatory state with impact on another signatory state or crosses the boundary between two states. Projects withdrawing 100,000 gallons per day or less from ground water sources and projects withdrawing 1,000 gallons per day or less from a surface stream are exempt from such review, so this authority does not extend to the smallest water utilities.

The Delaware River Basin Commission has outlined a policy of regionalization in its water code for the Basin. Components of the policy include encouraging the use of existing water systems by new water users, encouraging the interconnection of established systems, discouraging the proliferation of systems that are too small to maintain adequate service and that are situated so as to hamper regionalization, and planning new water systems with the goal of eventual interconnection with other systems.

In addition to regulation and planning, the river basin commissions conduct studies of the water resources and problems of their basins. For example, the Susquehanna River Basin Commission recently published two studies: Water Use Inventory in New York and Water Distribution System Infrastructure Study: City of Norwich, N.Y. Applicability: Planning and coordination by a river basin commission might help state public utility commissions formulate broad solutions for the problem of proliferation of small water utilities. Data on water supply compiled by a basin commission may also be helpful. Other basin commissions may be encouraged to emulate the Potomac basin commission and conduct rate studies or otherwise offer services to small water utilities.

The Delaware and Susquehanna commissions in particular may play a role in preventing proliferation of small water systems and promoting regionalization. Where a basin commission serves its state, a public utility commission representative may want to contact the director and discuss the basin commission's interests and capabilities in ensuring that water systems of any size are able to deliver adequate service in that river basin.

Contacts:

Delaware River Basin Commission  
Serving Delaware, New Jersey, New York, and Pennsylvania

Dawes Thompson  
Public Information Officer  
Delaware River Basin Commission  
P.O. Box 7360  
West Trenton, NJ 08628  
(609) 883-9500

Susquehanna River Basin Commission  
Serving Maryland, Pennsylvania, and New York

1721 N. Front Street  
Harrisburg, PA 17102  
(717) 238-0422

Potomac River Basin Commission  
Serving Pennsylvania, Maryland, West Virginia, and the District of Columbia

Roland Steiner  
Interstate Commission on the Potomac River Basin  
Suite 300  
6110 Executive Blvd.  
Rockville, MD 20852-3903  
(301) 984-1908

New England Governors' Conference, Inc.

Serving Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York

76 Summer Street  
Boston, MA 02110  
(617) 423-6900

Ohio River Basin Commission

Serving Ohio, Illinois, Pennsylvania, Indiana, Kentucky, Tennessee, Virginia, West Virginia, Maryland, and North Carolina

Larry Feazell  
P.O. Box 11910  
Lexington, KY 40578  
(606) 252-2291

Great Lakes Commission

Serving Michigan, Illinois, Indiana, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin

Mike Donahue  
2200 Bonisteel Blvd.  
Ann Arbor, MI 48109  
(313) 665-9135

Upper Mississippi River Basin  
Association  
Serving Illinois, Iowa, Minnesota,  
and Missouri

415 Hamm Bldg.  
408 St. Peter Street  
St. Paul, MN 55102  
(612) 224-2880

Missouri Basin States Association  
Nebraska, Colorado, Iowa,  
Kansas, Missouri, Minnesota,  
Montana, North Dakota, South  
Dakota, and Wyoming

10834 Old Mill Road, Suite 1  
Omaha, NE 68154  
(402) 330-5714

## Appalachian Regional Commission (ARC)

### Program/activity: Area Development Programs.

The Appalachian Regional Commission provides federal funds for highway and economic development projects in Appalachia under the authority of the Appalachian Regional Development Act of 1965. Appalachia includes all of West Virginia and parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. Project priorities are determined by the individual states. Projects may receive state, local, and private funds as well as federal assistance. The fiscal 1984 budget for the ARC totals \$153 million, including \$100 million for road construction and \$53 million for community development. As with many of the federal programs reviewed in this report, financial support for water utilities through the ARC is linked to promotion of economic development.

Relevant area development programs include a jobs and private investment program intended to promote the creation and retention of private sector jobs and increased private investment in the region. Projects must be supported by the private sector in order to secure federal funds. Such involvement may be in the form of private funds, donation of equipment, or planning and implementation of the project. Water facilities are eligible for funding under this program.

Another program helps residents of the most economically depressed areas of the region. Sixty-seven counties were selected to participate on the basis of per capita income, unemployment, poverty level, and infant mortality rate. The provision of safe drinking water and waste disposal facilities is the major objective.

In both programs, water utilities must be publicly owned to qualify for assistance. Private utilities organized on a nonprofit basis with a state charter may also be eligible although they have to demonstrate that they are serving all of the public in an area.

Applicability: The ARC may offer commissions in the thirteen affected states another source of aid to small water utilities. Commissions may want to contact ARC to find out which "local development districts," organizations funded by ARC, are active in their states. They may wish to refer developers of small water utilities to ARC to discuss funding possibilities. The potential for ARC funding may encourage a change in ownership to public from private for small utilities being planned and designed.

Contact: John Demchalk  
Appalachian Regional Commission  
1666 Connecticut Avenue, N.W.  
Washington, D.C. 20235  
(202) 673-7845

## Southeast Michigan Council of Governments

### Program/activity: Areawide Planning and Coordination

The Southeast Michigan Council of Governments (SMCG) is one example of a local planning agency called a Council of Governments or a "COG." A strong COG may be active in planning development in its area and may be a vehicle for promoting regional arrangements for community services. The SMCG is of particular interest for its program of groundwater protection planning. The program, funded in part by an EPA grant, provides the smaller cities, villages and townships of southwestern Michigan with information and training in areas which affect the quality of ground water. Areas of particular concern include the planning of septic systems, handling businesses that produce toxic wastes, zoning, special administrative arrangements, and the identification of any special problem, which, if not addressed, could lead to a degradation of ground water quality.

The SMCG meets with the appropriate members of small municipal water utilities to disseminate information. The SMCG also provides information statewide to small utilities on ground water protection. Much of the information provided by the SMCG concerns the identification of special problems.

Applicability: The simplest way for a commission to begin to find the active councils of government in its state would be to contact the state department of economic and community development. Ordinarily this is the state agency that deals with the state's COGs. The development department would also be able to advise commission staff on the existence of other active regional planning agencies in the state. The COG's may be of help in preventing uncontrolled growth and promoting regional water service in an area, and may have undertaken or be interested in starting programs similar to the SMCG's.

Contact: James Rogers  
Senior Environmental Planner  
Southeast Michigan Council of Governments  
800 Book Building  
1249 Washington Blvd.  
Detroit, MI 48226

## Morgantown Water Commission

Program/activity: Services to Neighboring Small Water Utilities

The Morgantown Water Commission (MWC) provides services for a fee to neighboring small water utilities. The MWC's current activities with neighboring small water utilities are quite diverse, and involve (1) construction, (2) leak inspections, (3) service operation advice, and (4) system design. The Morgantown Water Commission also sells its water to satellite water systems along with meter reading and billing. Fees for these services are based on costs.

The commission's activities allow neighboring small water utilities to take advantage of the experienced management of a larger municipal utility. While the services provided by the Morgantown Water Commission are for a fee, since the fee charged presumably is based on the costs to the MWC, the operation and construction design services would cost less than those available from management or engineering consultants. A representative of the Morgantown Water Commission also stated that the MWC would provide additional services to neighboring water utilities, if so requested.

Applicability: Similar programs could be set up with other medium to large municipalities. They could be advantageous to both the municipality and the neighboring small water utility. The larger municipal utility would gain a source of revenues, while the small neighboring utility would gain expert advice at cost. This solution would not appear to be available in rural areas with no nearby municipality, but might represent the first step in regional planning for an area with a municipal utility surrounded by smaller water utilities. A commission interested in exploring the potential for emulating Morgantown might contact the larger municipalities in its state to ascertain the potential for selling services like Morgantown's at cost to neighboring utilities. For particular small water utilities, the commission may refer the utility to a larger neighbor to discuss provision of needed services.

Contact: Tom Urquhart  
Engineering Manager  
Morgantown Water Commission  
P.O. Box 852  
Morgantown, WV 26507  
(304) 292-8443



Pennsylvania Municipal Authorities Association

Program/activity: Information and Training for Municipal Water Utilities

The Pennsylvania Municipal Authorities Association (PMAA) provides information and training to municipal governments in the state. The PMAA serves approximately 450 of Pennsylvania's 2,300 municipal authorities. The municipal water utilities associated with the PMAA vary greatly in size; the smallest has a staff of 5, while the largest has a staff of about 150.

The association holds workshops, conferences, and panels on a variety of subjects, such as billing, metering, engineering, and accounting. Some operator training is provided. In addition, the PMAA holds workshops on preparing rate cases and provides some training in emergency planning.

The PMAA is equipped to handle inquiries from the municipal water utilities on billing, metering, legal problems, engineering, and computerized accounting. Finally, the PMAA provides advice on financing through its bond counsel.

Applicability: Similar programs to assist small municipal water utilities might be useful in other states; however, the program does not address the needs of small rural or investor-owned water utilities. A commission that regulates municipal water utilities may wish to see if a comparable association exists in its state and, if it does, to refer small municipal systems to the association for help. In such a state the commission may also contact the association to discuss the availability of aid in preparing rate cases and encourage that service.

Contact: Eric Jenkins  
Assistant to the Executive Director  
Pennsylvania Municipal Authorities Association  
2941 North Front Street  
Harrisburg, PA 17110  
(717) 233-7696

## Connecticut Water Works Association

Program/activity: Information Dissemination and Legislative Liaison

The Connecticut Water Works Association (CWWA) is involved principally in lobbying on behalf of water utilities before the state legislature and the Public Utilities Control Authority. Because the small water utilities have special problems, the CWWA has formed a small water utilities committee.

The committee also provides the authority with feedback on how the regulatory process affects small water utilities. The committee has argued before the state authority that rate case preparation, forms, and procedures are too complicated, and that small utilities cannot afford to have expert witnesses testify at their cases. The CWWA's committee has requested that the authority develop a short form, rate increase filing, and also support legislation allowing for the automatic pass-through of purchased energy and purchased water costs, as well as any increases in property taxes. Because it is difficult to have ongoing, in-person contact with the staffs of small water utilities, the small water committee communicates with its clientele by mail.

Applicability: Given the size of their staffs, small water utilities have no time to get involved in lobbying or any other form of long-range regulatory planning. The CWWA's small water utility committee may fulfill this role for Connecticut. A commission may wish to encourage creation of a committee addressing the needs of small water utilities through whatever water associations exist in its state.

Contact: Marshall T. Chiaraluce  
South Central Connecticut Regional  
Water Authority  
90 Sergeant Drive  
New Haven, CT 06511  
(203) 624-6671

## CHAPTER 6

### PRIVATE SECTOR ACTIVITIES

It is clearly impossible to give a comprehensive view of the many services available to small water utilities by private associations and entrepreneurs. Private consultants, whether for engineering, laboratory services, legal help, or management and accounting problems are available to small water utilities in many areas. The individual firms are not usually large enough to be of help much beyond their existing service area, however, so that identification here of individual firms would be of limited use to the commissions.

Although locally available small firms and experienced individuals may be the best means of solving many small company problems, the utility managers may not be aware of local resources or may feel they are unable to afford them. To identify consultants in a state, a commission might contact the state chapters of the American Bar Association, the National Society of Professional Engineers (NSPE) or the American Consulting Engineers Council (ACEC). American Water Works Association (AWWA) and National Association of Water Companies (NAWC) chapters can also be called for referrals. A commission might also consider putting out a "request for qualifications" (RFQ) to reach consultants with expertise in small water utility functions. The RFQ could be placed in newspapers around the state and result in a bidders' list of firms willing to consult in specific problem areas.

As to cost, companies could talk to commission staff to ascertain whether costs of a consultant would be allowed as an expense. A commission might want to develop its own cost estimates for various services, perhaps in conjunction with the state AWWA chapter. Then commissioners or staff would be able to find and ask about deviations from expected expenses.

Management firms as well as individual consultants may be available. In Missouri, for example, there are two firms that manage small water utilities, along with apartments, mobile homes, and restaurants. They handle billing, operations, customer relations, and other aspects of running the small company. The Missouri Public Service Commission refers small water companies to the management firms and tells the water utilities they will allow their expenses. The usual charge, which the PSC considers reasonable, is 10 percent over regular operating and maintenance costs. A PSC spokesman said that in some cases companies have not had to raise rates to cover costs of the management firm because the management company can reduce costs. If a developer had been subsidizing the company, however, rates will go up despite the new economies of scale.

Where management firms exist they can be a useful tool for achieving better utility functioning at lower cost. A commission can follow the Missouri commission's example and encourage their use. Where such firms have not surfaced a commission may want to try to encourage their creation. The lists developed through the RFQ seeking consulting firms would help to identify candidate firms.

The inventory in this chapter of private sector organizations concerned with small water utilities is limited to four major national associations and three large water companies. The AWWA, NAWC, NSPE and ACEC are important agents of information dissemination in the industry. The national organizations and the chapters are also potentially valuable allies to commissions attempting to deal with problems of small water utilities, whether it is merely referring a utility operator to an organization that can, in turn, refer him to a reliable consultant or developing legislation adjusting the state role in assuring that its citizens have clean water.

The three large water companies were contacted to see whether their expertise might be applied to the problems faced by troubled, small water utilities. The results suggest that very little of their capabilities could be applied directly to small water utilities. Large companies might be willing to take over an ailing small company

with the potential to be profitable. In some cases they may be willing to provide consulting services, but the small utilities might not be willing or able to pay for them. In any case, for routine consulting, the small companies may be best off with small consulting firms that deal exclusively with the problems of other companies like themselves. Here, as in the circuit rider program, there is potential for economies of scale. The major difference is in how the services are paid for.

## American Water Works Association

Program/Activity: Research, Information Dissemination, and Legislative Liaison

The American Water Works Association (AWWA) is a tax-exempt, scientific and educational organization whose membership includes individuals as well as organizations. The association has about 69 staff members and 34,000 members composed of water utility managers, superintendents, engineers, chemists, bacteriologists, government officials, consultants, and other individuals interested in public water supply; municipal and investor-owned water utilities, boards of health, and manufacturers of waterworks equipment are also members.

The AWWA develops standards and supports research programs in waterworks design, construction, operation, and management. It also conducts training seminars and prepares manuals on water works operations. The association has a technical library and information center on the water utilities industry. It publishes a monthly journal (AWWA Journal), a monthly member newsletter (Mainstream), a monthly magazine (Opflow), and a monthly Washington Report. The AWWA has forty regional sections, some in Canada, some covering several states, each of which holds its own annual meeting. The AWWA is financially supported by membership dues, advertising in its journal, sales of its publications, journal subscriptions, and registration fees at its annual convention.

The association has recently added an online index service that is available world wide through Dialog Information Services. It draws upon AWWA's data base, called WATERNET, which covers all AWWA literature since 1967 plus many other journals, conference proceedings, and technical reports. There are 15,000 citations in the data base, with about 7,000 additional ones being added annually.

The AWWA, in conjunction with the Office of Drinking Water, U.S. Environmental Protection Agency, has conducted two workshops dealing with the problems faced by small water systems and ways that state

agencies can assist such systems. The first of these workshops has been summarized in the document Handbook of State Management Practices in Aid of Small Water Systems (January 1983), which is available from the EPA. Documentation on the second workshop was expected in the summer of 1984.

The participants at the workshops were the drinking water program managers of ten state agencies responsible for water quality standards as well as representatives of the water supply industry, the EPA, and the AWWA Research Foundation.

The Handbook of State Management Practices is an important resource document that state public utility commissions may wish to obtain. It contains a wealth of information about the problems encountered by small water systems as well as helpful suggestions on how state agencies might deal with them. The suggestions are frequently based upon ideas and practices actually used in particular states. The document does not deal primarily with economic regulation. Instead, it focuses on the problems of measuring and monitoring water quality. Even so, the authors of the handbook recognize at the outset that the "root cause of most small system problems is economics; small communities simply do not provide the financial base necessary to support the operations, treatment processes, and staff required to ensure a reliable supply of safe drinking water."<sup>1</sup> Hence, the handbook discusses a variety of water quality compliance problems, system design problems, government regulation burdens, and technical assistance issues.

Applicability: The Handbook of State Management Practices covers a large variety of problems encountered by small water utilities. The Handbook might help to open up a dialogue between economic regulators and water supply regulators in the states. Commission staff

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<sup>1</sup>Office of Drinking Water, U.S. Environmental Protection Agency, Handbook of State Management Practices in Aid of Small Water Systems (Washington, D.C.: January 1983) p. 5.

might contact water supply staff to discuss the applicability to their states of proposed solutions in the Handbook and in this NRRI report.

The AWWA can also be a useful source of aid for small water utilities through its chapters. The chapters may be able to help in such areas as training, referral to consultants (whether engineering, legal, accounting, or laboratories), and, of course, the dissemination of information on technological advances and other matters of interest to water treatment plant operators.

Contacts: David B. Preston  
Executive Director  
American Water Works Association  
6666 W. Quincy Avenue  
Denver, CO 80235  
(303) 794-7711

James F. Manwaring  
Executive Director  
AWWA Research Foundation  
6666 W. Quincy Avenue  
Denver, CO 80235  
(303) 794-7711

Chairmen of Regional Sections of  
the American Water Works Association  
(as of December 15, 1983)

Alabama-Mississippi  
George Godwin, Jr.  
Decatur Utilities  
P.O. Box 2232  
Decatur, AL 35602

Arizona  
Mr. Karl F. Kohloff  
15155 E. Elliot  
Gilbert, AZ 85234

California-Nevada  
Larry Sears  
Water Engineering Division  
303 W. Commonwealth Avenue  
Fullerton, CA 92632

Chesapeake  
Thomas McKewen  
159 Downing Drive  
Saverna Park, MD 21146



Connecticut

Richard P. McHugh  
Regional Water Authority  
90 Sargent Drive  
New Haven, CT 06511

Florida

James S. Taylor  
University of Central Florida  
P.O. Box 25000  
Orlando, FL 32816

Hawaii

Melvin K. Koizumi  
State Department of Health  
P.O. Box 3378  
Honolulu, HI 96819

Illinois

Mr. Allen F. Panek  
175 W. Jackson Avenue  
Naperville, IL 60566

Indiana

Gene J. Liegibel  
7212 Forest Park Drive  
Indianapolis, IN 46217

Intermountain

Merril L. Bingham  
Thurgood and Associates  
P.O. Box 418  
Provo, UT 84603

Iowa

Dennis J. Alt  
3316 S.E. 8th Street  
Des Moines, IA 50315

Kansas

Beau K. Kansteiner  
Leavenworth Water Department  
601 Delaware Street  
Leavenworth, KS 66048

Kentucky-Tennessee

Alan Gill  
Hallsdale Powell Utilities  
P.O. Box 5199  
Knoxville, TN 37918

Michigan

Ronald H. Bowen  
Traverse City Water Plant  
P.O. Box 592  
Traverse City, MI 49684

Missouri

Kenneth C. Mueller  
St. Louis County Water Co.  
8390 Delmar Blvd.  
St. Louis, MO 63124

Montana

Robert B. Millons  
P.O. Box 4626  
Helena, MT 59601

Nebraska

Carl Bodensteiner  
Olsson and Associates  
NBC Center, Suite 611  
Lincoln, NE 68508

New England

Peter C. Karalekas, Jr.  
35 Old Coach Circle  
Ludlow, MA 01056

New Jersey

Thomas J. Cawley  
Elizabethtown Water Co.  
1341 North Avenue  
Plainfield, NJ 07062

New York

Jeremiah R. Dineen  
Westchester County Water Agency  
Dept. of Environmental Fac.  
400 County Office Bldg.  
White Plains, NY 10601

North Carolina  
Donald E. Francisco  
333 Bayberry Drive  
Chapel Hill, NC 27514

North Central  
Duane Prew  
Toltz, King, Duvall, Anderson,  
and Associates  
2500 American National Bank Bldg.  
St. Paul, MN 55101

Ohio  
Thomas A. Saygers  
Montgomery County Admin. Bldg.  
P.O. Box 972  
Dayton, OH 45422

Pacific Northwest  
Gene A. Seibel  
P.O. Box 745  
Beaverton, OR 97005

Pennsylvania  
James L. Long  
Gannett, Fleming, Inc.  
P.O. Box 1963  
Harrisburg, PA 17105

Rocky Mountain  
Tom Turney  
Turney & Sayre Engineers  
312 W. Montezuma Avenue  
Santa Fe, NM 87501

South Dakota  
Mr. Ertis Osterberg  
City Water Department  
224 West 9th Street  
Sioux Falls, SD 57201

Southeastern  
Billy G. Turner  
Jordan, Hones, & Goulding  
2000 Clearview Avenue  
Suite 200  
Atlanta, GA 30340

Southwest  
Gerald S. Allen  
6 Warwick Road  
Little Rock, AR 72205

Texas  
Tom Tiner  
Route 1, Box 21K  
Spicewood, TX 78669

Virginia  
William H. Payne  
Blacksburg, Christiansburg,  
VPI Water Authority  
P.O. Box 923  
Blacksburg, VA 24060

West Virginia  
James L. Green  
Morgantown Water Commission  
P.O. Box 852  
Morgantown, WV 26505

Wisconsin  
LaVern Nelson  
110 South Paterson  
Madison, WI 53703

## National Association of Water Companies

Program/activity: Information Dissemination and Legislative Liaison

The National Association of Water Companies (NAWC) is a not-for-profit corporation that represents the investor-owned water utilities on national, state, and local issues. NAWC promotes the exchange of ideas among member and non-member companies, provides educational programs for industry personnel, provides information through publications on industry research and issues, and organizes industry conferences and seminars. NAWC has 280 active members and 250 associate members. The active members are investor-owned, state-regulated, water utilities. The associate members are concerned with the technology, science, or business of the industry. The organization is financed by membership dues. The Washington office has 6 professional staff.

NAWC's publications include a quarterly magazine, annual financial and operating data, and a publication tracking financial facts of selected companies. The "Regulatory Relations Report," "Government Relations Report," and "Executive Director's Report" are monthly newsletters.

The eleven state and regional chapters of NAWC deal with the same issues on the state level as the national office. The fifteen standing committees each meet at least once a year. The committees include one on regulatory relations, the purpose of which is to serve as a liaison with NARUC and its member commissions. There is a "Small Companies Committee" to deal with that segment of NAWC membership and develop suggestions for association assistance to the small companies.

Applicability: The NAWC can assist small water utilities through its conferences and meetings, its publications, its chapters, and the Small Companies Committee. The conferences, meetings, and publications help to inform small companies of the technology, available services, and

issues which may affect them. The chapters might be tapped, as in Pennsylvania, to aid in training for small water utility operators. The Small Companies Committee serves as an advocate for the small water utilities who are members of NAWC. The difficulty here is that many small water utilities--very likely the ones who need help the most--are not NAWC members.

Commission staff can urge small water companies to contact NAWC for referrals and other information. They can contact the local NAWC chapter to discuss particular problems or to coordinate approaches to solving general problems facing small water utilities. A commission attempting to initiate broadscale state reform of state water utility regulation could include NAWC in development of legislative proposals.

Contacts:

C. Robert Morris  
Secretary and Executive Director  
National Association of Water  
Companies  
1725 K St. NW--Suite 1212  
Washington, D.C. 20006  
(202) 833-8383

Frederick N. Allen  
Treasurer  
National Association of Water  
Companies  
1725 K St., NW--Suite 1212  
Washington, D.C. 20006  
(202) 833-8383

NAWC Chapters

California Water Association

Sharon B. Carlson  
12510 Fallcreek Lane  
Cerritos, CA 90701  
(213) 404-1993

Carolina

B. B. McCormick  
Piedmont Construction & Water Co.  
P.O. Box 6  
Stony Point, NC 28678  
(704) 585-2223

Delaware

Rodney Short  
Sussex Shores Water Company  
P.O. Box 126  
Bethany Beach, DE 19930  
(302) 539-7611

Florida

J. Nolan Reed  
Seacoast Utilities, Inc.  
1001 Park Avenue  
Lake Park, FL 33403

Indiana

Charles O'Brien  
Gary - Hobart Water Company  
650 Madison Street  
Gary, IN 46401  
(219) 886-3770

Illinois-Missouri

Glen W. Thornburg  
American Water Works Service Co.  
P.O. Box S  
Belleville, IL 62221  
(618) 235-3600

New England

Robert Amman  
Bristol County Water Company  
49 Bradford Street  
P.O. Box 569  
Bristol, RI 02809  
(401) 253-5210

New Jersey

Paul D. Schumann  
Garden State Water Company  
3B Marlen Drive  
P.O. Box 175  
Robbinsville, NJ 08691  
(609) 587-5406

New York

Peter J. Hertel  
New York Water Service Corp.  
54 East 64th Street  
New York, NY 10021  
(212) 751-6633

Ohio

Wallace E. DeArment  
Ohio Water Service Company  
P.O. Box 5230  
Poland, OH 44515  
(216) 726-8151

Pennsylvania

William T. Morris  
The York Water Company  
130 East Market Street  
York, PA 17405  
(717) 845-3601

Regulatory Relations Committee

Chairman/Executive Liaison

Michael Zihal  
Long Island Water Corporation  
733 Sunrise Highway  
Lynbrook, NY 11563  
(516) 593-1000

Arizona

Lawrence M. Stewart  
Consolidated Water Utilities, Ltd.  
P.O. Box 35515  
Phoenix, AZ 85069  
(602) 869-8150

California

Ralph D. Lindberg  
California Water Service Company  
P.O. Box 1150  
San Jose, CA 95108  
(408) 298-1414

Connecticut

Donald B. Burnell  
General Waterworks Corporation  
25 Commerce Road  
Newtown, CT 06470  
(203) 426-5889

Indiana

J. James Barr  
American Water Works Service Co.  
1710 Sylvan Nook Drive  
Richmond, IN 47374  
(317) 962-3511

Dale B. Luther

Indianapolis Water Company  
1220 Waterway Boulevard  
Indianapolis, IN 46204  
(317) 639-1501

Maine

John van C. Parker  
Consumers Water Company  
Four Canal Plaza  
Portland, ME 04112  
(207) 773-6438

New Jersey

Robert A. Gerber  
Hackensack Water Company  
200 Old Hook Road  
Harrington Park, NJ 07640

James V. LaFrankie

American Water Works Service Co.  
525 Grove Street  
Haddon Heights, NJ 08035  
(609) 547-3211

Chester A. Ring, III  
Elizabethtown Water Company  
One Elizabethtown Plaza  
Elizabeth, NJ 07207  
(201) 354-4444

Pennsylvania

David R. Wilson  
Philadelphia Suburban Water Company  
762 Lancaster Avenue  
Bryn Mawr, PA 19010  
(215) 525-1400

Small Companies Committee

Thomas G. Keyes  
Chairman  
Great Valley Water Co.  
455 Lancaster Pike  
Malvern, PA 19355  
(215) 644-3595

William E. Grantmyre  
Vice Chairman  
Heater Utilities, Inc.  
P.O. Box 250  
Cary, NC 27511  
(919) 467-7854

Lawrence M. Stewart  
Executive Committee Liaison  
Consolidated Water Utilities, Ltd.  
P.O. Box 35515  
Phoenix, AZ 85069  
(602) 869-8150

Alaska

Robert B. Smith  
Central Alaska Utilities, Inc.  
1301 East 80th Avenue  
Anchorage, AK 99502  
(907) 349-6444

Connecticut

Sherwood Lovejoy  
Litchfield County Water Company  
835 Main Street  
Bridgeport, CT 06609  
(203) 367-6621

Charles W. Horsfall  
Litchfield County Water Company  
835 Main Street  
Bridgeport, CT 06609  
(203) 367-6621

Delaware

Rodney Short  
Sussex Shores Water Company  
P.O. Box 126  
Bethany Beach, DE 19930  
(302) 539-7611

Florida

Charles Sweat  
Southern States Utilities, Inc.  
1450 N. E. 123rd Street, Suite 111  
North Miami, FL 33161  
(305) 891-0680

Illinois

Keith R. Cardey  
Will County Water Company  
2 North Riverside Plaza  
Chicago, IL 60606  
(312) 332-3524

Patrick O'Brien  
Water Service Corporation  
2335 Sanders Road  
Northbrook, IL 60062  
(312) 498-6440

Massachusetts

Robert T. Symonds  
Milford Water Company  
230 Main Street  
Milford, MA 01757  
(617) 473-5110

Stuart B. Avery, Jr.  
Chatham Water Company  
2400 Massachusetts Avenue  
Cambridge, MA 02140  
(617) 864-9605

George Wadsworth  
Barnstable Water Company  
P.O. Box 326  
47 Old Yarmouth Road  
Hyannis, MA 02601  
(617) 775-0063

New Jersey

Chris J. Cerullo  
Pequest Water Company  
Box 252, Route 517  
Allamuchy, NJ 07820  
(201) 852-6356

New Mexico

James Williams  
New Mexico Utilities, Inc.  
10001-A Coors Road, N.W.  
Albuquerque, NM 87114  
(505) 898-2661

New York

Donald H. Glass  
Kingsvale Water Company, Inc.  
R. D. #1, Box 20  
Kingston, NY 12401  
(914) 336-8281

Pennsylvania

Robert Eckelbarger  
Emlenton Water Company  
Drawer "F"  
Emlenton, PA 16373  
(412) 867-2207

Gary Shambaugh  
Weber, Fick & Wilson  
P.O. Box 1120  
Harrisburg, PA 17108  
(717) 238-9638

Sanuel Taylor  
Brownsville Water Company  
P.O. Box 102  
Brownsville, PA 15417  
(412) 785-5871

David P. Walsh  
General Waterworks Corporation  
Pennsylvania District  
500 N. Progress Street  
Harrisburg, PA 17109  
(717) 657-2147

William H. McCormick  
Newtown Artesian Water Company  
Lincoln Ave. & Jefferson St.  
Newtown, PA 18940  
(215) 968-6781

Texas

Jesse W. Graham  
Tarrant Utility Company  
P.O. Box 2383  
Fort Worth, TX 76101  
(817) 338-0533

National Society of Professional Engineers (NSPE)

Program/activity: Referral to Consulting Engineers

The National Society of Professional Engineers is a professional association with members from all branches of engineering. The Society has 54 state branches, located usually in the state capital, plus 525 local chapters. It publishes a national directory of consulting engineers which includes names and addresses plus a breakdown by state and by specialization.

NSPE referral of utilities to engineers would be based on the national directory, although an official with the Society's national office said that not all state chapters will have a copy. More important might be personnel at the Society's state and local branches who would be able to direct a utility to an engineer.

Applicability: Commission referral of small water utilities to the NSPE could aid the utilities to find competent help in both traditional and more recent engineering problems. The NSPE could also help coordinate and participate in new programs for small water utilities, such as education or training, and would be an important ally in advocacy of new laws.

Contact: Jean Robertson  
National Society of Professional Engineers  
2029 K Street, N.W.  
Washington, D.C. 20006  
(202) 463-2300



American Consulting Engineers Council (ACEC)

Program/activity: Referral to Consulting Engineers

The American Consulting Engineers Council is a federation of state organizations and consulting engineering firms. There are fifty state chapters, located generally in the states' major cities. The sizes of the member engineering firms vary from one person to two thousand.

Each state organization maintains a list of the consulting engineers in the state. In addition, the ACEC has a national directory listing firms by activities and capabilities such as water treatment or water distribution. The ACEC can do a search of its membership and refer utilities to consulting firms based on its classification of those firms by capabilities. Each state organization may also be able to refer utilities to consulting firms.

Applicability: As with the National Society of Professional Engineers, commission referral of small water utilities to the ACEC could help the utilities to tap into a network of competent, experienced engineers. The council could also be a source of support for new or expanded programs or regulations.

Contact: Larry Bory  
American Consulting Engineers Council  
Suite 802  
1015 15th Street, N.W.  
Washington, D.C. 20005  
(202) 347-7474

American Water Works Service Company, Inc.

Program/Activity: Management and Technical Services

The American Water Works Service Company, Inc. is the management and financial center for the operating companies of American Water Works Co., Inc. The operating companies range in size from 68 customers to 250,000 customers. The holding company had \$328 million of operating revenues in 1982 on \$1.1 billion of assets. It has 41 companies with service areas in 20 states: Maryland, Virginia, West Virginia, Indiana, Kentucky, Ohio, Tennessee, Georgia, Illinois, Iowa, Missouri, Arizona, California, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, New Hampshire, and Rhode Island.

In the view of representatives of the service company, its role is to provide two kinds of leverage on behalf of its operating entities: capital and talent. That is, the service company takes advantage of economies of scale in raising capital and in assembling competent people to manage the overall organization. The company's philosophy is that overall control and ownership is needed, not just management services. In this way, the company can make investment decisions, not simply recommend them, and be responsible for the long-run consequences. Contracts for management service, on the other hand, may expose the company to the risk of appearing to be responsible for poor performance, when in reality the system's owners may have previously refused to adopt management's suggestions.

Consequently, the service company typically does not consult outside of the American Water Works system. For their own companies, centrally provided services include engineering, water quality testing, mass purchasing, system-wide inventory, employee training, and customer billing.

Applicability: The American Water Works Service Company has potential for offering services to small water utilities if they are able to pay for them.

The service company has considered the possibility of some outside consulting, although little has been done to date. For example, their water quality testing laboratory could provide profitable outside services, in all likelihood. The lab might be converted to a commercial operation, for example. If so, the company would need to know how such an operation would be regulated: above or below the line.

Another possible outside service could be in the area of employee training. The company's training seminars are attended by a few outside managers. Their representation might be enlarged in the future.

The company provides customer billing services to outside agencies in a few instances. The typical example is a sewer company which bases its bill on the company's water meter readings. It is efficient for American Water Works to prepare the sewer bill directly, since all the necessary information is collected as a byproduct of the water bill. This type of joint billing program would not help any small water utility directly. Nonetheless, billing is an example of a service which might be economically provided to groups of small water companies.

The American Water Works system uses quite sophisticated leak detection surveillance equipment. It is possible that this equipment might be shared outside of the company, although it is currently used only within the system. Small water utilities with severe leak problems could possibly benefit from such a service. Most such small systems, however, are likely to cover only a small area. So the need for advanced surveillance methods may be mitigated somewhat when compared to the problem of detecting leaks in a geographically dispersed service area.

Overall, the view of the service company was that even if the services mentioned here were made available outside of the American Water Works system, the user would not typically be a small water

utility. The problem of the truly small system, they felt, is that rates do not cover the cost of service. The cost of plant is high when spread over a small customer base. Since these utilities can just afford their own plant, it is unlikely that they could afford outside consultants. In the view of the American Water Works Service Company, a possible solution to this problem might be single-area tariffs, which in effect averages the cost of service over a wider area. The result is, perhaps obviously, that water users in dense population areas subsidize those in outlying regions. The fairness of such an arrangement seems questionable. It is, however, a type of solution that public utility commissions may wish to consider. Commissions in states with American Water Works operating companies may want to contact the company to discuss services that might be made available to less well supported companies.

Contact: Tom McKittrick  
American Water Works Service Company, Inc.  
525 Grove Street  
Haddon Heights, NJ 08035  
(609) 547-3211

## General Waterworks Management and Service Company

### Program/Activity: Management and Technical Services

The General Waterworks Management and Service Company is associated with the General Waterworks Corporation, a utility holding company with 50 operating subsidiaries in 14 states. These operating companies range in size from 38,000 customers to small utilities with only 200 customers. The holding company has about \$246 million of assets with operating revenues of about \$70 million. It owns and operates water utilities in Maine, Rhode Island, Connecticut, New Jersey, New York, Pennsylvania, Delaware, Florida, Indiana, Missouri, Arkansas, Illinois, Idaho, and Washington. The service company works primarily for the affiliated operating companies.

The service company offers most of its management, financial, and accounting services to its own operating companies. It offers very little engineering assistance, however. This is provided by the operating companies or by field offices of the parent company. The service company has a contract for one utility with the Philadelphia Suburban Water Company for its own customer billing. The General Waterworks Service Company does provide its own operating companies with such services as administration, public relations, employee relations, accounting, management consulting, purchasing, financial services, and rate design.

The service company typically does not try to help troubled small water utilities by offering management services. Instead, it has in the past simply purchased such companies when acquisition seemed profitable. Spokesmen say it will continue this practice when conditions are favorable. The company does not use or promote single tariffs because, in the view of company managers, such tariffs violate economic principles and create false financial signals.

In the view of the service company, state regulators sometimes take away the incentive for large holding companies, such as General Waterworks, to take over small water utilities. Since state regulators frequently would encourage such takeovers, it is interesting that regulatory policy can sometimes thwart the transaction. The most frequently mentioned policy that obstructs such deals is the regulatory treatment of the purchase price. This is the so-called contributed capital issue. General Waterworks representatives claim that they purchased a small utility on one occasion with the understanding that the purchase price would be included in the rate base, only to have the PUC change its mind. In their view, such uncertainty in policy reduces the attractiveness of takeovers even when the regulatory commission promises rate base treatment.

Applicability: As with American Water Works, commissions in states with General Waterworks operating companies may want to contact the companies to discuss services that might be offered to small companies.

Contact: George B. Flegal  
Vice President for Operations  
General Waterworks Management and Service Co.  
950 Haverford Road  
Bryn Mawr, PA 19010  
(215) 527-6600

PSC Water Services, Inc.

Program/Activity: Management and Technical Services

PSC Water Services, Inc. is the service company for Philadelphia Suburban Corporation, which operates Philadelphia Suburban Water Company, one of the largest private water utilities in the United States. The water company serves about 216,000 customers in the suburbs of Philadelphia. The corporation, including all subsidiaries, earned about \$54 million of revenues in 1982 on about \$194 million of assets.

PSC is quite active in consulting. PSC subsidiaries include an engineering consulting firm, Terragua Resources Corporation; a utility data processing services company, Utility Management Service, Inc.; and a management consulting firm, Worden & Risberg. PSC expects its involvement with comprehensive management contracts to increase in the next few years. This process of converting a municipal water utility into a privately managed utility is called privatization. Approximately 42 percent of French water utilities are privately managed in this fashion. PSC engages in these comprehensive management contracts both in the this country and others.

Because of the management philosophy at PSC, the company is very interested in pursuing opportunities to expand its consulting activities. Its laboratory services are for sale, as an example. In this case, the difficulty appears to be the physical transportation of the water samples in a timely way.

PSC is particularly interested in marketing its meter reading and billing services. It provides a computer software package that increases the efficiency of the billing process by reducing time lags between reading and billing, improving the customer accounting system, and facilitating cash flow management. The company has instituted a system of hand-held computers for its meter readers which provides a

variety of productivity advances. For example, the information in the computer can be quickly transferred to the billing computer at the end of the day. The hand-held computer stores each customer's typical usage so that when the reader enters the current reading, the computer can ask for a verification if the reading seems abnormal. This type of prompting reduces recording errors. In addition, the computer contains an internal clock and records the time when each customer's reading was entered. This allows the company to monitor the productivity of the readers themselves. Apparently, there was very little resentment among the meter readers when the company adopted this innovation. An even more sophisticated method of reading meters via two-way automatic communications over telephone or cable TV lines is under consideration.

PSC is also actively selling its management information system, which it considers to be quite advanced. A municipality could use the PSC system to keep track of several services (sewer, trash collection, and property taxes, for example) besides water billing. Management, engineering, and operations services are also available from PSC on a consulting basis. Reports prepared for the New Jersey Department of Environmental Protection, for example, reviewed the operations of two water utilities in New Jersey. One of the utilities was private, the other municipal. Analysis and recommendations were made on the companies' management, administration, finance and accounting, physical plant and operation, treatment and quality control, mechanical and electrical system, and distribution system.

The difficulty facing small water utilities is that they typically cannot afford help as sophisticated as that available from PSC. Consequently, customers of PSC consulting enterprises are usually larger municipal systems. According to PSC representatives, it is usual for small water systems to be unable to afford the expenses of filing rate case with PUC's. Even with short form filing, these spokesmen offered the opinion that any subsequent rate increase can be absorbed mostly by the legal fees. Hand-held computers for meter reading clearly are out of the question for such a utility because of their expense.



Applicability: Even when assistance is freely available, PSC executives noted that the small water operators do not usually take advantage of it. Given this fact and the interest of PSC in finding innovative solutions to problems of all kinds in the water supply industry, it might better behoove a commission to contact PSC or any large water utility about general problems of small utilities rather than the troubles of particular ones.

Contacts: Earl Graham  
President  
Philadelphia Suburban Water Co.  
762 Lancaster Avenue  
Bryn Mawr, PA 19010  
(215) 527-8000

E. A. Joering, Ph.D., P.E.  
Vice President  
PSC Water Services, Inc.  
Oakhill Plaza at Valley Forge  
200 N. Warner Rd., Suite 300  
King of Prussia, PA 19406  
(215) 337-3060



## CHAPTER 7

### OVERVIEW OF POTENTIAL COMMISSION ROLES

The extent to which a commission will choose to draw on other organizations to help solve problems of small water utilities depends on the fit of those alternative resources with commission authority, responsibility, and limitations in a particular problem area. In earlier chapters organizational resources have been discussed separately. In this chapter we suggest how a commission can combine resources to meet its own objectives.

#### Ownership

The problem of ownership of small water utilities is one area where commissions can have a substantial direct influence at relatively little cost. Commissions can seek out the help of other organizations for changes in types of ownership, rather than in dealing with absentee owners and abandoned systems.

#### Responsibility to Ratepayers

One approach to increase responsibility to the ratepayer is for the state public service commission, where appropriate, either to encourage or require the small water utility to convert itself into a publicly owned water utility. Public ownership of a small water utility could take one of two forms. The small water utility could be owned indirectly by ratepayers through their township, village, or other government unit; or the small water utility could be owned directly by the ratepayers, through a cooperative arrangement. If a

small water utility is publicly owned, then many of the underlying reasons for regulation could cease to apply. Presumably, a publicly owned utility will act in the interests of its owners/ratepayers, and will fulfill its obligation to provide service at the lowest possible costs. This argument is more persuasive in the case of a cooperative. A utility owned by a municipality or other local government entity might be used to serve other interests and goals of the governmental officials.

Public ownership of a small water utility does not guarantee it will be any better managed. Rather, it increases the incentives to the ratepayers/owners to provide themselves with the desired level of service at the desired price. Operator training and other financing mechanisms may still be required. The principal advantage of public ownership is that it allows the commission to step away from the situation. Other state and local agencies would remain to safeguard other aspects of the public interest.

Should the state public service commission choose to encourage a change to public ownership, the commission staff might point out that numerous federal loan and grant programs are available to publicly owned water utilities that are unavailable to privately owned utilities. These programs include a variety of grant and loan programs from the Farmer's Home Administration; the Community Development Block Grants and Small Cities Block Grant programs, administered by the U.S. Department of Housing and Urban Development (HUD); and the Rural Community Facilities Program administered by the Health and Human Services Department (HHS). These programs were discussed in greater detail in chapter 4. State grant programs in Vermont, Maryland, Missouri, California, West Virginia, and South Dakota are also limited to publicly owned water systems (see chapter 3). A commission may wish to advocate such state-administered grant programs for their states. The availability of grants would in turn become an incentive to change to public ownership.

A state commission might go beyond merely providing a small water utility with information on why it might wish to change its status. The state commission might find it advantageous to provide legal and

accounting assistance to the small, privately owned water utility so that it can smoothly make the appropriate changes in its articles of incorporation and/or accounting procedures. At least two state public service commissions are now actively encouraging small water utilities to change from private to public ownership. The Florida Public Service Commission encourages the formation of cooperative and homeowners' associations at the time that the commission reviews an application for certification as a public utility. The Illinois Commerce Commission also encourages the developer to explore three public ownership alternatives--municipal ownership, ownership by political subdivision, and cooperative ownership (often in the form of mutual companies).<sup>1</sup> Staffs of other commissions might wish to contact the states of the Florida Public Service Commission and the Illinois Commerce Commission for details on their activities.

A public service commission might also try to avoid the problem of dealing with small, privately owned water utilities from the start by refusing to certify the water utility as a public utility if the small water utility does not either possess the training to manage the utility or the economies of scale necessary to provide reliable, low-cost water to its customers.

Deregulation is one alternative means of dealing with ownership problems that a commission may wish to consider. Encouragement of cooperative takeovers of small investor-owned water companies has the same effect as deregulation in most states, of course, but even when a not-for-profit ownership structure is impossible, it may make sense for a commission to give up regulation of the smallest water utilities. Deregulation might be accomplished by the commission by a regulation, or by amendment of the state statute by the legislature. Deregulation may be especially worth considering for the very small utilities (less than 250 customers). These utilities have the most difficulty with commission regulation and their ratepayers (because of the utility size) have the most opportunity for negotiation with and influence on the owner.

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<sup>1</sup>See Raymond W. Lawton and Vivian Witkind Davis, Commission Regulation, p.74.

As this report has shown, the state influence would still be felt by the smallest water utilities in the absence of rate regulation by the commission. The state agency that enforces drinking water standards would still be in business. Since that agency shares many of the commission's concerns, to a large degree the interest of the commissions in assuring good service to water customers would be served. The only area where this might not be true would be in approval of water treatment facilities. There the water supply agency might be inclined toward "gold-plating." Perhaps in these cases the commission could retain the authority to sign off on the need for the facilities, while dropping all other ratemaking responsibilities.

### Absentee Ownership

Many of the possible solutions to absentee ownership problems are under the direct control of the commissions, although the aid of the state water supply agency may be enlisted as well. For example, a state agency might require the absentee owner to designate an agent possessing the owner's power of attorney. The state water supply agency could require this designation as a condition for receiving an operating permit or the state public service commission might make such designation a requirement for being certified as a public utility.

Another alternative would be for the state water supply agency or state public service commission to require an owner to post a performance or capital improvement bond before granting the owner an operating license or before certifying the small water utility as a public utility. The posting of a performance bond would provide an incentive for the owner to take a more active role in the operation and maintenance of the small water utility than he or she otherwise might.

A third alternative would be for a state agency to require notification and approval before there is any change in ownership. Those state public service commissions with the power to regulate the finances of a public utility are probably empowered to require notification and approval of a sale of ownership. By requiring approval of a sale of ownership, a public service commission might lessen the likelihood that a

developer will leave after selling the last unit in the development.

A state agency might also be empowered to direct an absentee owner to divest the small water system, should the owner fail to maintain and operate the system properly. Caution, however, should be exercised before using this option; unless fair compensation is guaranteed to the owner, a forced divestiture might violate the owner's constitutional due process rights.

A final alternative for dealing with absentee owners, when all else fails, is for the state public service commission to petition to place the small water utility into receivership. At least one state, Connecticut, has a statute which allows the state public service commission, after notice and hearing, to petition a state court to place the assets of a failing water company into receivership, after the commission has determined that the water company is not providing adequate service to its customers. Once the company is placed under the control of a court-appointed receiver, he or she is to operate the company so as to preserve its assets and to serve the best interests of its consumers. One might wonder how this solution would work better than other solutions in improving the quality of service, except, perhaps, in the case of a recalcitrant or absentee owner who simply refuses to serve his customers. Other alternatives previously suggested might produce the same end without the legal expenses of a judicial proceeding to be borne by the commission and the water utility. Nor is there any guarantee that the court-appointed receiver will operate the company better than the absentee owner.

The alternative solutions to the problems related to system abandonment include requiring the owner to post an operating bond as a condition for operating the system and forcing the small water utility into receivership. Note, though, that the operating performance bond described earlier would be forfeited if the owner abandoned the small water system. The bond would thus provide funds for the small water system to operate for a time after it was abandoned. Admittedly this is, at best, a temporary solution.

Another alternative would be for the state or some political subdivision to assume control of the abandoned water utility and

operate it on behalf of its customers. This would require that statutory authority to assume control of the water utility be given to some state agency or subdivision. Once control is exercised, the governmental unit must train and manage its personnel to operate the water utility competently. In addition, unless the taxpayers are to subsidize the water utility's customers, the governmental unit must correctly price its water. Before considering implementing this alternative, one should keep in mind that governmental agencies often have goals other than economic efficiency, so that cross-subsidies between taxpayers and consumers would likely result.

A final alternative would be for the state agency to encourage homeowners and other customers to form a cooperative and to take over the responsibility for their small water system. A cooperative structure would place the responsibility for adequate and reliable service on the customers, thus creating a unity of interests.

#### Location, Construction, and Distribution

Perhaps the most fruitful approach a commission can take in dealing with small water utilities is prevention or elimination of financially unviable, stand-alone small water utilities by using its certification authority, or, on the other hand, by the encouragement of regionalization. This is a problem area where the commission can probably be most effective if it works in coordination with other agencies. In encouraging regionalization and consolidation of water utilities, a commission can seek out numerous existing agencies with similar interests. It can also consider adoption of a new program in its state on the order of Washington's comprehensive planning program.

A commission's own certification powers can be used to attempt to ensure that a new water utility will be able to provide adequate service. The California PSC policy of requiring that a new water utility show it will be financially viable<sup>2</sup> could be copied by other states. At the same time, the commission would want to assure that rates are set high enough to begin with to cover the real costs of

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<sup>2</sup>Ibid.



providing water. In pursuing such policies the commission should coordinate with the appropriate state agencies to review the proposed source for potability and adequacy for meeting both immediate and long range demand. The commission may also want to cooperate with those agencies in developing uniform design standards for the construction of small water utilities, an area of need identified by the AWWA workshop.<sup>3</sup>

Since a major reason small water utilities are less economically efficient than large ones is the absence of scale economies, regionalization or consolidation of resources is an important means of reducing their costs. The U.S. EPA has identified a number of "nonstructural" and "structural" alternative forms of regionalization. Nonstructural forms of regionalization include informal agreements, basic service contracts, joint service contracts, or regional councils of local elected officials.<sup>4</sup> Structural options for regionalization require creation of a new entity responsible for water supply. As a rule they are more difficult to implement than nonstructural ones. New associations, local special purpose districts, areawide special districts or authorities, or existing publicly owned water systems extending their service areas through annexation are the structural forms identified in the U.S. EPA report.

In considering which form of regionalization is appropriate for a particular area, the SMC Martin report to the U.S. EPA suggests considering four factors: (1) economic efficiency--the ability to provide water at the lowest possible cost, (2) fiscal equity--distribution of the costs equally among beneficiaries of the service, (3) political accountability--citizen participation in the decision making process and management responsibility to the customers, and (4) administrative effectiveness--adequate authority and ability to carry out the water supply service function. For private water utilities

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<sup>3</sup>AWWA Research Foundation, Handbook of State Management Practices in Aid of Small Water Systems, prepared for the U.S. Environmental Protection Agency, Office of Drinking Water (Denver: 1983).

<sup>4</sup>U.S. Environmental Protection Agency, Office of Drinking Water, Regionalization Options for Small Water Systems, prepared by SMC Martin, Inc. (Washington, D.C.: 1983).

political accountability is, of course, not a factor. The obligation to serve is watched over by the state water supply agency and the state commission.

The commission that wants to promote regionalization can adopt a "non-proliferation" policy in cooperation with the state water supply agency to encourage the integration of water systems. Where there is a large utility in an area, the potential owner of a proposed water company could be encouraged to contact the utility about consolidation. Consolidation should also be encouraged if there is an existing water district or municipal water system into which the new water utility might be folded. Such efforts would be informal, like the non-proliferation policy of the Missouri Department of Natural Resources and the Missouri PSC. In dealing with particular cases the commission will also want to seek out regional and local planning agencies in the state, using state water management, quality and supply agencies to identify and make contact with them.

To encourage consolidation a commission might routinely order small water utilities applying for rate increases to study the potential for creating agreements, whether formal or informal, in their areas. The commission might also seek out water systems and service areas where there are already agreements in effect. The local AWWA chapter could be a source of such information, which could then be used to provide examples to water systems interested in similar arrangements.

The commission that wishes to go further in increasing state influence over location and operation of small water utilities may decide to advocate a program like the state of Washington's. Washington's Public Water System Coordination Act provides for an orderly water supply planning process and encourages consolidation of water systems. Of particular interest is the "satellite support system" approach encouraged by the state, under which a single water utility or governmental entity assumes the responsibility for operation and maintenance of one or more small water systems. The arrangement does not necessarily involve a transfer of ownership. To implement such a program a commission could contact other interested agencies and groups, such as the other state agencies concerned, the AWWA, and the

NAWC; enlist their support; and encourage introduction and passage of the required state legislation.

### Finances

In discussing the financial problems of small water utilities, it is helpful initially to divide them into those of an on-going nature and those associated with initial construction or meeting higher standards imposed by the Safe Drinking Water Act (SDWA). The former type of financial difficulties would be encountered even in the absence of the SDWA. These include normal replacement or repair of equipment, maintaining, but perhaps not improving, water quality. A commission, in order to protect the interests of ratepayers, normally has primary responsibility among all government entities for overseeing the on-going finances of small water utilities. The latter type of difficulties refers to financing a new plant or upgrading a water system to quality standards not envisioned in the initial engineering design. Such an unexpected increase in cost can cause difficulties for any size system, and it is not surprising that small systems in particular may be able to meet such standards only with extraordinary effort or extraordinary outside help. Here a number of federal and state programs outside the commissions have been identified that might be either used or imitated.

### Ongoing Financial Difficulties

Problems in the first category--on-going financial difficulties--require special consideration by commissions. The problems take several forms. Managers of small water systems typically have only a rudimentary knowledge of utility financial management and accounting. Most systems were installed in response to a current need, with relatively little planning for growth, replacement, or improvements. Most system owners are content with the status quo in which revenues cover operation and maintenance expenses but not capital replacement reserves. Such systems are not prepared to respond to emergencies or loss of supply in case of a drought. Most cannot afford well-trained,

full-time operators. In such circumstances, most small water systems do not have a set of accounts suitable for rate applications to the commission. The time and expense of filing for a rate increase frequently may exhaust the additional revenues obtained.

One answer to these problems is to require small water systems to maintain a set of books suitable for use in public utility regulatory proceedings. Such books might include, for example, capital replacement reserves. A commission considering such an action, however, may wish to also consider the alternative--the status quo. That is, there may be good reasons for not imposing the administrative cost of improved bookkeeping on a small water system.

Aside from the obvious fact that the bookkeeping cost would be very burdensome to a small operation, the more fundamental question is whether it is needed at all. Pay-as-you-go financing is not without virtue. Most, if not all, individuals are able to muddle through a lifetime of successive automobile purchases, for example, without perceiving a need to establish a car replacement reserve to be collected in advance of the next purchase. It is undoubtedly true, under such circumstances, that a consumer who purchased a car for \$5,000 in 1974 and made four years of car payments at a borrowing cost of 8 percent, is shocked by the monthly payment needed to buy the same or slightly better car for \$10,000 in 1984 when financed for 4 years at 12 percent. Despite the shocking nature of such an experience, and despite most consumers' understanding that their current difficulties can be traced to not contributing to their "car replacement fund" during 1978 to 1983 (after the previous loan was paid off), it would be surprising to learn that any consumer had been shocked into revising his habits to include a capital replacement reserve.

The tongue-in-cheek nature of the preceding example should not obscure the fundamental point that pay-as-you-go financing is adequate for personal decision making. Many small water systems are much closer to this type of personal decision making than they are to the large public utility model of financial accounting. Imposing stringent accounting standards on a small, 200 to 500 customer, water system operating two wells and 10 miles of pipelines may create more problems than it solves.

An example of the complications avoided by pay-as-you-go financing for a small system is the moral hazard created by the possibility of embezzlement of funds collected in advance for capital replacement. Of course this may be remedied by requiring a bonding of the person holding such money. Another approach is for an association to collect such monies as a special assessment at the time the equipment is purchased, thus avoiding the potential theft problem.

Special assessments at the time of equipment replacement have the additional virtue of providing what may be quite close to correct economic pricing signals. Essentially, a policy of recovering operation and maintenance costs through water usage rates and recovering capital costs through an annual or possibly nonrecurring membership fee called a special assessment, corresponds to short run marginal cost pricing, in economic terms. Such a policy is usually thought to be the best example of economically efficient prices. It is not used for major utilities for several reasons. It tends to result in rates that change abruptly, particularly in a growing system when demand growth eventually necessitates an expansion of capacity. Also, it may not fairly allocate capital costs over an asset's lifetime when the local population is mobile.

The commission having difficulty reconciling the conventional method of public utility regulation with the operation of a small water utility may be able to streamline rate case applications. Many commissions have already adopted short form filing procedures. Another possibility is that the commission might establish annual allowable increases in operation and maintenance expenses without a formal rate case for all small water companies. The manager of the small system would then have the option of accepting this rate increase or filing for a complete rate case. If most such systems in fact use pay-as-you-go financing, an indexed increase in the recovery of operations and maintenance expenses may satisfy most financial requirements. The commission may wish to acknowledge the small water utility's adoption of pay-as-you-go financing with the understanding, made explicit to the customers, that such a method naturally involves infrequent, sudden rate changes. Special assessments levied on a

one-time basis, or a rate increase to pay the debt service needed to replace equipment or upgrade treatment facilities are examples.

To summarize this discussion of on-going financial problems of small water utilities, the commission may wish to acknowledge and be prepared to accept either of two alternative financial management models: conventional public utility accounting standards including capital replacement reserves, or pay-as-you-go financing. Very small systems might be allowed an option. Larger, but still small systems might be encouraged to adopt the conventional model, with the encouragement becoming a requirement beyond some threshold. The commission may wish to make certain that communities that use the pay-as-you-go method understand that it provides for no surplus for contingencies, no reserve for future capital replacement, and no funds for meeting new SDWA standards. The method may also assess capital costs inequitably if the community's population of families turns over. It is, however, simpler and may provide approximately correct price signals, particularly if capital costs are recovered with hook-up fees or special assessments, both of which are analogous to the membership fees in a club and are unrelated to usage.

#### Construction and Upgrading Treatment

Like any water company, a small water utility must raise capital to build a plant in the first place. A small company also faces serious financial problems in meeting new water quality standards. These are likely to be particularly severe for very small systems. Their pay-as-you-go financing has created no surplus, and, perhaps more importantly, has prevented the development of a good credit record. Consequently, borrowing the funds from private sources may be difficult. This is the area of financing where a commission may wish to look to the many programs of financial assistance that have been identified in this report. Aside from private lenders, the principal agency for public water supply funding in rural areas is the Farmer's Home Administration (FmHA). Small Business Administration loans may be available for investor-owned systems. Some states have instituted financing programs

for water supply systems through state-backed bond issues, which can lower the cost of capital to small systems. A few have grant programs, particularly for economically depressed rural areas.

One often-ignored source of low-cost financing available to small private water utility systems is the industrial bonding authority of each state. Pursuant to section 103(b) of the Internal Revenue Code, each state may issue tax-exempt bonds to be used in private business. While there are certain activities which are not permitted to be financed by industrial development bonds, section 103(b)(4) specifically allows tax-free industrial development bonds to be used for (1) water pollution control facilities, and (2) facilities for furnishing water for any purpose so long as the water is made available to all members of the public and the facilities are either operated by a governmental agency or the rates for the sale of the water are regulated by a governmental agency.<sup>5</sup>

To be treated as a tax-exempt obligation, an industrial development bond must receive public approval by the appropriate state governmental authority within their state, usually the state legislature and/or the state governor. State agencies concerned with the financial well being of small private water utilities might take the first steps in applying for the public approval of industrial development bonds for the small water utilities.

Each state is limited in the amount of industrial development bonds that can be issued each year. Recently, Congress enacted the Deficit Reduction Act of 1984. One of the provisions of the act is to further limit the use of industrial development bonds to finance private projects. The new act, effective January 1, 1985, sets a state-by-state limit on industrial bond issues at \$150 per capita for each state or \$200 million, whichever is greater. In other words, if a state had 10,000,000 residents, \$1.5 billion in industrial development bonds (IDB) could be issued in that state. If a share of the available tax-exempt IDBs went to small, private water utilities, the lower cost of financing could provide for improvements at a substantial savings.

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<sup>5</sup>Internal Revenue Code of 1954, Section 103(b)(4) (E), (F), and (G).

## Water Treatment

In the areas of telecommunications, electricity, and gas, state regulatory commissions are highly concerned with quality of service issues. It is a peculiarity of water utility regulation that responsibility for the quality of the product itself is ordinarily in the hands of another state agency. Although other aspects of service remain a direct concern of the commission, where water quality is concerned the primary role of the commission is referral to the state agency charged with carrying out the Safe Drinking Water Act (SDWA). Yet the commission does have an interest in the potability of water sold by the utilities. First of all, its general statutory authority includes quality of utility service. Second, expenses for pollution control equipment must be justified in rate cases.

Thus there is a need for cooperation between the commission and the water supply agency. In many states such cooperation is routine. Where it is not, a commission may want to initiate contact with the water supply agency to exchange information regularly on water utilities with problems meeting SDWA standards. Then when a company comes before the commission requesting a rate change, the commission can make sure that rates are set to cover costs of reducing contaminant levels and adequately monitoring water quality. Testimony of the water supply agency might be solicited in these cases to document the extent of necessary expenditures.

It may also happen that customers complain about water quality in the course of a rate hearing. A commission may in that context order the water utility to correct the problem, using its general statutory authority. In such circumstances the commission would want to use the water supply agency to verify the problem and define and carry out its own enforcement responsibilities. In the case of aesthetic rather than health considerations, however, (such as complaints of hard water) the commission may end up taking the lead on encouraging improvements.

Many agencies and organizations dealing with water treatment are identified in this report's inventory of services to small water utilities. In spite of the fact that leadership in this area devolves



on the state water supply agencies, a commission may wish to review with that agency the use of other organizations to assist in meeting water quality needs. The U.S. Geological Survey may have data on water supply and quality that can aid the understanding of water quality problems of regulated utilities. The rural community facilities program of the U.S. Department of Health and Human Services may be tapped for specific water quality projects. The National Demonstration Water Project has conducted training on compliance with SDWA standards in the southeastern states that might be replicated elsewhere. The state Water Resources Research Institute is available for investigation of water supply problems that might be of special concern to the commissions in their regulation of water utilities. One way of making a coordinated effort to solve water quality problems of small utilities would be training efforts such as those attempted in Pennsylvania. The commission role in such an effort would be to relate water quality problems to water rates.

One water quality area where the commission may wish to make direct referrals, without going through the state water supply agency, is laboratory services. Average yearly testing costs to meet SDWA requirements vary depending on water source, number of samples, and laboratory costs in the area. Costs for a system of between twenty-five and one thousand customers are approximately \$175-\$200 a year for groundwater and \$400-\$500 per year for surface water.<sup>6</sup> To many small water utilities this seems like a large expense. A commission may wish to have on hand a list of laboratories approved by U.S. EPA and available from the appropriate U.S. EPA regional office or state water supply agency. Commission staff may also want to talk to local AWWA or NAWC chapters about laboratory services available to small water utilities in the area.

Where meeting water quality standards is a major expense for small water utilities, a commission may wish to become involved in advocating

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<sup>6</sup>Pennsylvania Department of Community Affairs, Bureau of Local Government Services, Fiscal Operations & Management for the Small Water Utility, prepared by Municipal Management Services (Harrisburg, Pa: 1983).

a loan or grant program to aid meeting the standards. California's program of grants and loans can serve as a model for such an effort, especially since the loan program is open to investor-owned as well as publicly owned water suppliers. Other innovative programs in this area are New Jersey's loans for contaminated well fields and West Virginia's program of emergency grants, although these programs are open only to publicly owned utilities.

### Management, Operations, and Maintenance

Some commissions may want to do more to improve the day-to-day functioning of small water utilities than they already are. Others may be looking for ways to do less. Commissions that in the past have taken a "hands off" stance may also be interested in investing some time and money to improve the management, operations, and maintenance of small water utilities. A number of commissions are formally or informally providing what amounts to free management consulting services to small water utilities. Some of them may wish to spread the burden to other groups or agencies, an option that this report has shown is likely to be available in many states if a commission wants to invest in the coordination and cooperation that would be needed to make use of them.

The outcome would, at the least be higher quality rate applications. Ultimately, lower real costs to ratepayers would result. Rules on operator certification, individual technical assistance, training programs, and regional consolidation all offer potential for improving the functioning of the small water utility.

Most states have operator certification requirements, although they are not mandatory in all cases. A commission may want to review certification rules and requirements to see that they are consistent with the skills needed to run a water system. For one-man operations, required skills should include those related to management as well as to physical operation of the plant. Basic familiarity with budgeting, recordkeeping, purchasing, accounting and, of course, rate case preparation should be required as well as the appropriate rudiments of

mathematics, chemistry, and engineering. To accomplish this sort of change, the commission would need to enlist the help of such groups as the state water quality agency and the state AWWA section. A commission may also want to promote a correspondence course in water utility management, perhaps through the existing program at the California State University at Sacramento.

In-service training is another means of improving water system operations. Training efforts in Pennsylvania suggest some options for providing such a service. The Pennsylvania Department of Community Affairs has conducted regular seminars on management for small water utilities. The Pennsylvania Commission participates in those seminars, which include rate setting in their coverage.

The Department also participated along with U.S. EPA Region III in preparation of Fiscal Operations and Management for the Small Water Utility.<sup>7</sup> Commission publication of a similar publication would be a useful tool in the context of a training program or by itself as a source of information to distribute to small water utilities. The publication discusses organizational processes in useful detail and provides numerous sample forms. Also in Pennsylvania, U.S. EPA Region III and the Water Works Operators Association of Pennsylvania conducted workshops in training operators and managers of small water utilities to deal with the SDWA. Operations and management were included in the training sessions, although rate setting and financial management were not. A commission interested in starting a similar training program might wish to obtain a copy of the Small Water Utility Workshop Guide<sup>8</sup> to help plan a similar training program in its own state. To initiate a training program or series of seminars aimed at covering a broader range of topics than ratemaking, a commission would want to consider a cooperative venture involving the state water supply agency and the AWWA and/or NAWC sections in the state.

Individualized technical assistance is another route that commissions can encourage to aid management and operations for small

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<sup>7</sup>Ibid.

<sup>8</sup>David A. Long, "Small Water Utility Workshop Guide," prepared for the Water Works Operators' Association of Pennsylvania, February 1981.

water utilities. Many kinds of help will be available fairly close by for the water utility manager. Local attorneys will probably be available to advise on zoning, utility rights of way, regulatory problems, and other legal issues. Local banks should be able to give advice on loans, capital reserves, cash flow and, perhaps, rates. Consulting engineers may be hired for help on management and operations as well as strictly engineering issues. Where the utility must pay a retainer, the commission can assure that the reasonable expense of consultation will be recognized in a rate case. Commissions may want to suggest to small water utilities the possibility of using a management firm, where such a service is available, again assuring that the expense will be covered in rates.

The difficulty with hiring professional help is that small water utilities often feel they cannot afford it. Expenses seem high already, and they do not want to add to them. In such cases they may be able to acquire free assistance elsewhere than the commissions. A municipal solicitor or municipal accounting department may be able to assist with legal or accounting issues. Other water utilities may be able to help on particular problems. NRW circuit riders may have the time and inclination to help a small investor-owned water system in their state. Manufacturers should be able to help with maintenance problems.

In the area of individual technical assistance to water utilities, commissions may want to undertake referrals. Lists of engineering firms are available from associations of professional engineers. A commission might contact the state AWWA and NAWC chapter, the state bar association, and the state accounting association to see if those organizations know of qualified professionals specializing in small water utility problems. The commission can then advise a water utility to call those organizations for recommendations. A commission may also want to contact the NRW circuit rider and Rural Housing and Community Facilities Development Agency serving the state to see what sorts of cooperative efforts might be arranged. A commission may want to distribute its own information on the availability and use of technical

assistance. "How to Hire an Engineer," put out by the state of Washington, is an example of a publication a commission might want to imitate.<sup>9</sup>

One approach that commissions might want to take is establishment of their own circuit riders program. This would be particularly true in states where there is no NRWA circuit rider or the NRWA circuit rider is unable to aid the utilities that concern the commission. Since state water supply agencies also have an interest in small water utilities, it might be possible to share the costs of the circuit rider with that agency. The difficulty with such a program is that the companies might be wary of assistance from regulatory agencies and perceive it as coercion.

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<sup>9</sup>Washington State Department of Social and Health Services, Water Supply and Waste Section, Guide for the Small Public Water System: How to Hire an Engineer (Olympia, Wa: 1984).



## CHAPTER 8

### SUMMARY

The inventory of government and private organizations shows that public service commissions are not alone in their concern for small water utilities, or in having the ability to improve their functioning. Over forty different organizations have been identified here. That does not include numerous consulting firms and law firms that work regularly with small water utilities. A commission in any state should be able to find supplemental resources and assistance from these organizations in dealing with problems of ownership, location, distribution, construction, finances, water treatment, management, operations, and maintenance of small water utilities.

How a commission wants to approach other organizations, if it wants to, and the extent to which it is able and willing to develop new relationships and programs will depend on the style and attitude of the particular commission. An increase in referrals to other agencies would seem to require relatively little effort on the part of the commission. Increased coordination would call for commitment of staff time. A full-scale advocacy effort for a new law, policy, or program could take substantial commission resources until the change was made. Direct provision of a service or a new regulation administered by the commission could require large resources over time, depending on its nature.

What have been referred to here as "ownership" problems include a lack of a sense of responsibility to the ratepayer, absenteeism, and system abandonment. Problems of ownership are ones where the commission can, for the most part, play a strong, direct role, although coordination with the state water supply agency may often be called for. The

most effective means of dealing with these problems is to encourage creation of publicly owned entities at the outset. A commission can do this directly, through its own certification powers. It can also use the incentive of federal and, where it exists, state grant money to encourage formation of a publicly owned or cooperative system. For existing systems, a commission might promote takeovers, either by public systems or private water companies. Where a commission wants to encourage absorption of a small water company into a larger municipal or private company, coordination with the prospective new owners will be required. Takeover authority can also be legislated, as in New Jersey. Implementation of such a program would require working with interested parties on the state level to secure passage of a similar law. It can encourage a sense of public responsibility through information given the utility operator/owner jointly by the commission and state water supply agency.

There are several ways of dealing with absentee ownership: requiring designation of an agent for an absent owner, requiring an owner performance bond, requiring commission approval of changes in ownership, and strengthened laws on receivership. All of these may be undertaken directly by the commission. Solutions to the problems of abandoned systems include strengthened receivership laws, and takeovers of abandoned systems by political subdivisions.

The most effective attack on problems of location and distribution is through regionalization of some kind. A commission can adopt, in concert with the state water supply agency, a "non-proliferation policy" and encourage utilities to look at formal and informal ways to pool their resources. A commission could advocate adoption in its state of a law on the order of Washington's comprehensive planning act, which includes encouragement of satellite support systems. The commission attempting to encourage regionalization can draw on the resources of federal funding agencies, regional and local planning agencies, and the state water supply agency.

In reviewing new construction, concerns that have been raised are the choice of a consulting engineer, adequacy of the water source, and design standards. A commission could prepare its own brochure on how to choose an engineer, modeling it on existing publications. It can



also encourage an incipient water company to seek out advice from the state chapters of the NSPE, ACEC, AWWA, and NAWC. On water source adequacy a commission can suggest calling on the local office of the U.S. Geological Survey as well as the state water resources agency. Through the AWWA and the state water supply agency, a commission could encourage development of uniform design standards applicable to small water systems in the state.

In the area of financial support, one alternative that has been suggested for ongoing problems is simply to allow a small utility to continue pay-as-you-go methods. It is argued that the finances of a small or very small water utility are much more like personal finances than like those of large utilities and that there are good reasons for a commission to accept that view or at least something in between pay-as-you-go and strict adherence to the uniform system of accounts. Special assessments at the time of equipment replacement or setting annual allowable increases in operations and maintenance costs are also suggested. Both of these recommendations are likely to be within the scope of the commission's regulatory authority.

For construction, replacement, or expansion of plant, federal and (where they exist) state programs can provide the needed boost. A commission that wants to encourage development of such a program in its own state could contact other interested parties (state agencies, AWWA and NAWC sections, legislators, and others) and develop a proposal, perhaps modeled on Pennsylvania's bond program. Industrial revenue bonds may be a significant untapped source of funds for small utilities.

The water supply agency takes lead responsibility for assuring adequate water treatment in almost all the states. The commission's role for the most part is referral to that agency of water quality problems and coordination where there is a question of rate increases for pollution control equipment. A commission may also wish to be able to make referrals on laboratory testing to meet SDWA requirements. It might explore the availability of inexpensive laboratory services with other concerned agencies and private organizations. Where installation of pollution control equipment is a major expense for small water utilities, a commission may want to advocate a loan program like

California's, which is aimed at bringing water systems into compliance with the SDWA.

Improvements in management, operations, and maintenance might be made by small water utilities using every category of agency or organization identified here. Technical assistance can first of all be performed in conjunction with similar efforts by the state water supply agency. Education and training programs can be undertaken with that agency, state chapters of private associations, local colleges, and other state agencies. On the federal level, the six regional rural housing and community facilities development agencies can be tapped for technical assistance in forty-four states. In thirty-three states circuit riders of the National Rural Water Association may be available for assistance. The National Demonstration Water Project might be contacted for further referrals on technical assistance, or, for the commission with the resources and inclination, to develop a training program for water treatment operators in the state. In planning its own training program, a commission would want to keep in mind the example of Pennsylvania, where workshops were held using the resources of both public and private organizations. Assistance with problems of water utility functioning was, as much as possible, done through people who were not regulators.

The many outside organizations that affect small water utilities can be used to increase the utilities' capabilities through education, training, technical assistance, or financial assistance; to pool their resources through regionalization or consolidation; or to allow them to be removed from commission jurisdiction through deregulation or a change in ownership. Coordinated use of available resources to improve water service by whatever means can augment a commission's own scarce time and funds. To do so is, in fact, better for the citizens of the state, since their taxes are used more effectively when programs are not fragmented. And, of course, a cooperative effort can increase the effectiveness of regulation and assistance as it affects the utility ratepayers.

## APPENDIX A

### STATE, FEDERAL, AND PRIVATE PUBLICATIONS

This appendix lists publications available from 33 states, three federal agencies, and four private organizations on issues relevant to small water utilities. The list is largely rearranged from an annotated compilation by the AWWA Research Foundation although a few additional publications, found by the NRRI in the course of its research for this project, have been inserted. The AWWA publication is entitled Compliance Resources Guide and was developed under a grant from the U.S. EPA's Office of Drinking Water. Titles are arranged here under the categories of water quality, operations and maintenance, design, financing, regionalization, water conservation, and emergencies and droughts. A separate, general category includes publications covering more than one of these or other topics. For each source, a contact is given for the commissioner or commission staff member who wants to order a publication.

## Water Quality

### Regulation of Drinking Water

1. Law and Regulations, North Dakota (North Dakota)
2. Non-Community Water Systems Survey Forms (North Dakota)
3. Options for Coping with the Safe Drinking Water Act (LBJ School of Public Affairs, University of Texas)
4. Setting National Safe Drinking Water Standards (LBJ School of Public Affairs, University of Texas)
5. Compliance Procedures in North Dakota (North Dakota)
6. The SDWA and You (Missouri)
7. Missouri Public Drinking Water Regulations (Missouri)
8. The Missouri Safe Drinking Water Act and The Missouri Public Drinking Water Regulations (Missouri)
9. Quality of Drinking Water in Maryland (Maryland)
10. Maryland Policy and Procedures (Maryland)
11. Small System Compliance Strategy (Maryland)
12. Rules and Regulations of the State Board of Health Regarding Public Water Systems 1982 (Washington)
13. The Safe Drinking Water Act (Washington)
14. Wisconsin Compliance Procedures (Wisconsin)
15. Water Well Standards: State of California (California)
16. Compliance Guideline Manual (California)
17. California Regulations (California)
18. State Primary Drinking Water Regulations (South Carolina)
19. Monitoring Strategy for FY 81 (South Carolina)
20. Safe Drinking Water Act Enforcement Procedures (South Carolina)
21. Vermont Enforcement Strategy (Vermont)
22. Small Water Systems in Pennsylvania (U.S. EPA, Region III)

23. Detailed System Evaluation (New York Bureau of Public Water Supply Program)
24. State Training Program (New York Bureau of Public Water Supply Program)
25. Water Supply Enforcement Priorities (New York Bureau of Public Water Supply Program)
26. New York Rules and Regulations for Drinking Water Supplies (New York Bureau of Public Water Supply Program)
27. State Sanitary Code Enforcement Procedures (New York Bureau of Public Water Supply Program)
28. Noncommunity Water Supply Program Guideline (New York Bureau of Public Water Supply Program)
29. New York State Reporting and Notification Guidelines for Community Water Systems (New York Bureau of Public Water Supply Program)
30. Your Drinking Water - A Guide to Safe Drinking Water Regulations in Oregon (U.S. EPA, Oregon Operations Office)
31. Water We Drink - An Oregon Report (U.S. EPA, Oregon Operations Office)
32. Sanitary Survey Forms for Evaluating Public Water Supplies (Pennsylvania)
33. Kentucky Public and Semipublic Water Supplies Regulations, 401 KAR 6:015 (Kentucky)
34. Community Water Purveyor Responsibilities (Arkansas)
35. Sanitation and Operation Survey Forms of Public Water Supply Systems (South Dakota)
36. Administrative Rules of South Dakota - Water Hygiene (South Dakota)
37. Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Supply Systems (Texas)
38. Rules and Regulations for Public Water Supplies (Texas)
39. Hearing Examiner's Handbook (Texas)
40. Utah Public Drinking Water Regulations (Utah)
41. Utah Safe Drinking Water Act (Utah)
42. Examples of Utah Bureau of Public Water Supplies Computer Reports (Utah)

43. Waterworks Regulations (Virginia Department of Health)
44. Non-Community Public Water Supplies - What is the Safe Drinking Water Act and How Will the Act Affect Your Water Supply? (West Virginia)
45. A Summary of the Safe Drinking Water Act and Its Impact on the State of West Virginia (West Virginia)
46. Minnesota Code of Agency Rules - Public Water Supplies (Minnesota)
47. Georgia Safe Drinking Water Act of 1977 (Georgia)
48. Rules for Safe Drinking Water (Georgia)
49. State of Delaware Regulations Governing Drinking Water Standards (Delaware)
50. Drinking Water Rules (Maine)
51. Water for Human Consumption (Maine)
52. A Variance and Exemption Handbook - New Mexico Regulations Governing Water Supplies (New Mexico)
53. Regulations Governing Water Supplies (New Mexico)
54. Compliance Manual - A Guide for the Enforcement of the Water Supply Regulations (New Mexico)
55. New Mexico Water Supply Supervision Program FY-83 Annual Report and Program Plan (New Mexico)
56. How to Conduct a Sanitary Survey - A Procedures Manual (New Mexico)
57. Indiana Environmental Management Act (Indiana)
58. State of Michigan Safe Drinking Water Act, Act 399 P.A. 1976 and Administrative Rules (Michigan)
59. Suggested Practice for Waterworks Design, Construction and Operation (Michigan)
60. Reference Document for Sole Source Program Operation (U.S. EPA, Region II)
61. New Jersey Enforcement Strategy (U.S. EPA, Region II)
62. State Administrative Procedures for Variances and Exemptions (U.S. EPA, Region III)

63. Methodology for Implementing the Water Supply Inventory in the Commonwealth of Pennsylvania (U.S. EPA, Region III)
64. Profiles of States in EPA Region VI - Public Water System Supervision Programs (U.S. EPA, Region VI)
65. Manual for Evaluating Public Drinking Water Supplies (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
66. Operation and Training Guidelines for Water Supply Programs (North Dakota)
67. The Public Water Supply Owner's or Official Custodian Reference Guide (Illinois)
68. The Certified Operator's Reference Guide (Illinois)
69. Noncommunity Public Water Supplies (Michigan)

#### Public Notification

1. What Information Should Be Included in a Public Notice? (Missouri)
2. Public Notification Guidance (Maryland)
3. Public Notification, South Carolina (South Carolina)
4. Public Notification for Owners and Operators of Public Water Supply Systems (Texas)
5. What the Heck is Public Notification? (West Virginia)
6. Handbook on Public Notification (Delaware)
7. Handbook on Public Notification (Tennessee)
8. Public Notification Materials (Montana)
9. Communication and the Safe Drinking Water Act (U.S. EPA, Region VI)
10. Handbook of Public Notification Requirements Under the Safe Drinking Water Act (U.S. EPA, Region VIII)

#### Sampling

1. Analyses of Public Water Systems in North Dakota (North Dakota)
2. Procedure for Collecting Water Samples (California)

3. Sample Collector's Handbook (Illinois)
4. Your Water Test Report - What Do the Numbers Mean? (Pennsylvania)
5. Kentucky Public and Semipublic Water Supplies Regulations, 401 KAR 6:060 (Kentucky)
6. The Whys and Hows of Water Sampling (Texas)
7. Chemical Content of Finished Water Samples from Selected Public Systems in Georgia (Georgia)
8. Understanding Your Drinking Water Sample Results (Michigan)
9. Chemical Quality of New Mexico Community Water Supplies - 1980 - A Compilation of Chemical and Physical Data (New Mexico)
10. Sampling Procedures for Drinking Water (U.S. EPA, Region IX)

Treatment and Monitoring for Specific Contaminants

1. Things You Should Know About the Microbiological Sampling of Public Water Supply Systems (North Dakota)
2. Nitrates in Your Water - What You Should Know (Oklahoma)
3. Quality of Water in New York (New York Bureau of Public Water Supply Program)
4. Arkansas Bacteriological Monitoring (Arkansas)
5. Organic Chemicals in Drinking Water from Surface Sources in South Dakota (South Dakota)
6. Bacteriological Sampling of Public Water Supplies (Virginia Department of Health)
7. Summary of the Report on the Investigation of Radon Removal by Different Techniques (Maine)
8. Nitrate in Drinking Water (Michigan)
9. Turbidity Exemption Policies (U.S. EPA, Region II)
10. Introduction to Organics in Drinking Water (U.S. EPA, Region VI)
11. THM Control (U.S. EPA, Region VI)
12. Why Test for Coliform? (U.S. EPA, Region VII)



13. School Water Supply Fluoridation (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
14. Rules Relating to Fluoridation of Public Water Systems (Maine)
15. Fluoridation Manuals (New York Bureau of Public Water Supply Program)
16. Controlled Fluoridation of Drinking Water Supplies (Arkansas)
17. Chlorination (Maine)
18. Gas Chlorination for the Small Water System (U.S. EPA, Region VI)
19. Chlorination Safety (U.S. EPA, Region VI)
20. Nitrate Removal for Small Public Water Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
21. Radionuclide Removal for Small Public Water Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
22. Turbidity Removal for Small Public Water Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
23. Microorganism Removal for Small Water Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
24. Removal of Excess Fluoride in Drinking Water (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
25. Fluoridation Engineering Manual (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
26. Water Chemistry (Texas)

Cross Connection and Backflow

1. Utah Cross Connection Control Strategy and Administrative Procedures (Utah)
2. Cross Connection Rules (Maine)
3. Cross Connections and the Small Water System (U.S. EPA, Region VI)
4. Cross Connections and Backflow Prevention (American Water Works Association, Data Processing Department)
5. Cross Connection Control (New York Bureau of Public Water Supply Program)

6. Cross Connection Rules Manual (Michigan)
7. Backflow...Causes and Prevention (U.S. EPA, Region VII)
8. Cross Connection Control (Missouri)
9. Why and How to Avoid Cross Connections (Washington)
10. Cross Connection Control Regulation in Washington State (Washington)
11. Policy of Cross Connection Control Device Approval as Required in WAC 248-54-500 (Washington)
12. Manual of Cross Connection Control (California)
13. Manual of Backflow Prevention and Cross Connection Control (Ohio)
14. Cross Connection Control Manual (Tennessee)
15. Cross Connection Control Manual (U.S. EPA, Office of Drinking Water - Drinking Water Branch)

#### General

1. Safe Water (Washington)
2. Oregon Drinking Water Quality Profile - A Status Report (U.S. EPA, Oregon Operations Office)
3. Is Your Drinking Water Safe? (Pennsylvania)
4. Impact of the Federal Safe Drinking Water Act on Small Community Water Supplies in Pennsylvania (Pennsylvania)
5. Looking at Water (Kentucky)
6. South Dakota Public Water Supply Chemical Data (South Dakota)
7. The Watershed - A Citizen's Guide to Maintaining and Improving Water Quality (Maine)
8. Watching Our Wastes - A Guide to Hazardous Waste in Northern New England (Maine)
9. Maine's Land and Water Resources: Drinking Water and Health (Maine)
10. Water is Life (New Mexico)
11. Public Water Supplies Quality Summary 1978 (New Hampshire)

12. Answers to Questions About the Safe Drinking Water Act (U.S. EPA, Region VI)
13. White Paper on Groundwater and Water Resources Development (Interstate Conference on Water Problems)

### Operations and Maintenance

#### Operator Certification and Training

1. Water Works Operator Training Manual (Missouri)
2. Manual for Water Supply Operators - Glossary, Sample Questions, and Work Formulas (Missouri)
3. Introductory Manual for Water Treatment Operators (California)
4. Math for Water Supply Operators (New York Health Education Service)
5. Training Manual for Water Plant Operators (New York Bureau of Public Water Supply Program)
6. Water Distribution Manual (New York Bureau of Public Water Supply Program)
7. New York Manual of Instruction for Water Treatment Plant Operators (New York Health Education Service)
8. Questions and Answers About Water Operator Certification and Subpart 5-4: State Sanitary Code (New York Bureau of Public Water Supply Program)
9. Health Effects of Contaminants in Drinking Water Supplies (New Mexico)
10. North Dakota Rules and Regulations for Certification of Water Plant Operators (North Dakota)
11. Water Treatment Plant Operator Certification Examination; Water Treatment Distribution Specialist and Water Distribution Manager Certification Examinations; 1982-83 Examination Schedule; Application for Mandatory Certification (Washington)
12. Handbook: Waterworks Operator Certification Program 1979 (Washington)
13. Illinois Water Supply Operator Certification Law (Illinois)
14. A Task Analysis of the Job Duties and Responsibilities of a Certified Public Water Supply Operator (Illinois)
15. Kentucky Water Treatment Plant/Water Distribution System Operators, 401 KAR 6:040 (Kentucky)

16. Operator Certification (Kentucky)
17. Training Manual for Water Plant Operation (Kentucky)
18. Basic Water Supply Operation Course (Arkansas)
19. Certification of Operators (South Dakota)
20. Mathematics for Water and Wastewater Treatment Plant Operators (South Dakota)
21. Advanced Water Operators Guide (South Dakota)
22. Required Certification Plan for Water Works Operators in the State of Utah (Utah)
23. Minnesota Code of Agency Rules - Water and Wastewater Operator Council of Certification (Minnesota)
24. Waterworks Operators Certification Study Guide (Minnesota)
25. Water Distribution Systems Operation and Maintenance (Minnesota)
26. Policies and Procedures with a Guide for Educational Preparation for Certification of Operators in Responsible Charge of Water and Wastewater Facilities - 1980 (Ohio)
27. Waterworks Operation Questions and Answers 1969 (Tennessee)
28. Water Works Operation, Basic and Advanced Courses (Massachusetts)
29. Basic Water Bacteriology and Chemistry for Water Treatment Plant Operators (Michigan)
30. Advanced Water Bacteriology and Chemistry for Water Treatment Plant Operators (Michigan)
31. Water Softening Short Course (Michigan)
32. Water Distribution System Short Course (Michigan)
33. Basic Math and Hydraulics Short Course 1982 (Michigan)
34. Water Supply Training Materials (Mr. Anthony Gaglierd, Environmental Health Training Coordinator, Allegheny County Health Department, 40th Street and Penn Avenue, Pittsburgh, PA 15224, (412) 578-8047)
35. Water Supply Management Seminar (Mr. Anthony Zegment, Municipal Training Division, Pennsylvania Department of Community Affairs, P.O. Box 155, Harrisburg, PA 17120, (717) 787-5177)

36. EPA Region IV Training Courses (U.S. EPA, Region IV)
37. Trouble Shooting a Noncompliant Small Water System (U.S. EPA, Region VI)
38. Water Supply Operations Training Course (American Water Works Association, Data Processing Department)
39. Reference Handbook: Basic Science Concepts and Applications (American Water Works Association, Data Processing Department)
40. Basic Management Principles for Small Water Systems (American Water Works Association, Data Processing Department)

#### Operator Manuals

1. Manual for Waterworks Operators (John R. Harris, Department of Civil Engineering, Louisiana State University, Baton Rouge, LA)
2. Environmental Data Sheets for Municipal Utilities (North Dakota)
3. Laboratory Manual for Waterworks Operators (Missouri)
4. Operations Program (Washington)
5. Guide for the Small Public Water System - How to Hire an Engineer (Washington)
6. Maintenance and Repair of Equipment (Oklahoma)
7. Small Water System O&M Manual (Oklahoma)
8. Water Supplier Booklet (New York Bureau of Public Water Supply Program)
9. Workings of a Chlorinator (South Dakota)
10. Suggested Equipment and Jar Test Procedures for the Operators of Complete Treatment Plants in Utah (Utah)
11. Water Treatment Plant Laboratory Manual for Chemical and Microbiological Analyses (Tennessee)
12. Filter Plant Operation (Tennessee)
13. Noncommunity Public Water Supply Manual (Michigan)
14. Water Distribution System Review Manual (Michigan)
15. Review Manual for Operators of Water Systems with Limited Chemical Treatment (Michigan)
16. Small Water Utility Workshop Guide (U.S. EPA, Region III)

17. Safe Water: A Fact Book on the Safe Drinking Water Act for Non-Community Water Systems (American Water Works Association, Data Processing Department)
18. Non-Community Water Supply (American Water Works Association, Data Processing Department)
19. Decision-Makers' Guide in Water Supply Management (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
20. The Safe Drinking Water Act -- Self Study Handbook, Community Water Systems (American Water Works Association, Data Processing Department)
21. Circuit-Riding: the Regional Support Company as a Vehicle for Rural Water-Wastewater Service Delivery (National Demonstration Water Project)

#### Design

1. Sanitary Requirements of Domestic Well Construction (North Dakota)
2. Rules and Regulations for Water Well Construction and Water Well Pump Installation (North Dakota)
3. Procedures for Community Water Systems Which Use Wells Not Meeting Construction Criteria (Missouri)
4. A Guide for the Design and Construction of Ground Water Supplies Storage and Distribution Facilities (Missouri)
5. A Guide for the Design of Treated Water Supplies Storage and Distribution Facilities (Missouri)
6. Seminar Proceedings from the New England Water Works Association (New England Water Works Association, 990 Washington Street, Dedham, MA 02026)
7. Well Development for Use as Sources of Public Drinking Water (Washington)
8. Design Standards for Public Water Supplies (Washington)
9. Minimum Standards for Construction and Maintenance of Water Wells (Washington)
10. Plan Content Guidelines (Washington)
11. Workbook - Small Ground Water System (Washington)
12. Class 4 Water System Design (Washington)
13. You and Your Well (Wisconsin)

14. Water Well Standards: State of California (California)
15. Reliability Standards for the Design and Operation of Water Supply Chlorination Facilities (California)
16. Guidelines for Elimination of Hazards from Low Head Water Mains in Domestic Water Supply Systems (California)
17. Requirements to Establish Feasibility of Proposed Housing Subdivisions (Utah)
18. Corrosion Inhibitors (New York Bureau of Public Water Supply Program)
19. Coagulant and Filter Aids (New York Bureau of Public Water Supply Program)
20. Construction Standards Individual Water Supplies (Pennsylvania)
21. Criteria for Design of Public Water Supply Facilities in South Dakota (South Dakota)
22. Individual Home Water Supplies (Texas)
23. Minnesota Code of Agency Rules - Water Well Construction Code (Minnesota)
24. Design Criteria for Public Water (Tennessee)
25. Guidelines for Design of Small Public Water Systems - 1980 (Ohio)
26. Your Water Supply (Colorado)
27. Design Criteria for Small Public Water Systems (New Hampshire)
28. Corrosion - Causes and Prevention in Public Water Supplies (U.S. EPA, Region VII)
29. Manual of Individual Water Supply Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
30. State of the Art of Small Water Treatment Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)

#### Financing

1. Maryland State Grant and Loan Program (Maryland)
2. Referendum 38 Municipal Water Supply Funding Program Guidelines (Washington)
3. SDWA Bond Law of 1976 (California)

4. Financial Assistance for Water Supplies (U.S. EPA, Region III)
5. Arkansas Water Development Fund Summary Report (Arkansas Soil and Water Conservation Commission, 1818 West Capitol, Building A, Little Rock, AR 72201)
6. Rural Water Supply Grants (South Dakota)
7. Loans for Construction of Water Resources Projects (South Dakota)
8. Loans for Study of Water Resources (South Dakota)
9. Vermont Safe Drinking Water Bond Law of 1976 (Vermont)
10. Fiscal Operations and Management for the Small Water Utility (U.S. EPA, Region III)
11. Financial Assistance for Safe Water Facilities: A Guide for Small Water Systems (U.S. EPA, Region VI)
12. Financial Assistance Guide for Public Water Supply Systems (U.S. EPA, Region VII)
13. Survey of Operating and Financial Characteristics of Community Water Systems (National Technical Information Service)
14. Water Rates (American Water Works Association, Data Processing Department)
15. Project Selection, Financing, and Cost Sharing: A Selective History and Proposal (Interstate Conference on Water Problems)

#### Regionalization

1. Satellite Support Systems (Washington)
2. Public Water System Coordination Act (Washington)
3. Public Water System Coordination Act Handbook (Washington)
4. Water System Plan of Operation (Washington)
5. A Guide to Cooperative Service Arrangements for Community Water Systems (U.S. EPA, Region VI)
6. Regionalization Options for Small Water Systems (U.S. EPA, Office of Drinking Water - Drinking Water Branch)

#### Water Conservation

1. Conserve Wisconsin Water (Wisconsin)



2. Water Conservation...Making Every Drop Count (Wisconsin)
3. Interim Report - Statewide Water Conservation, Part I - Municipal  
(Wisconsin)
4. Interim Report - Statewide Water Conservation, Part II -  
Agricultural and Industrial (Wisconsin)
5. Final Report - Statewide Water Conservation, Part III - Assessment  
(Wisconsin)
6. Water Saving Tips (Missouri)
7. Before the Well Runs Dry (United States Geological Survey)
8. Arkansas Water: Why Wait for the Crisis? (Arkansas)

#### Emergencies and Droughts

1. Emergency Planning Instructional Guide (Washington)
2. Emergency Planning Workbook (Washington)
3. Heat-Related Problems Affecting Public Water Supplies (Oklahoma)
4. Drinking Water Disinfection (Pennsylvania)
5. Emergency Tank Truck Water Hauling (Pennsylvania)
6. Emergency Water: Home Storage and Emergency Disinfection (Utah)
7. Drinking Water Supply Emergency Plan (Ohio)
8. Resource Handbook for Drinking Water Supply Emergency Planning  
(Ohio)
9. Emergency Disinfection of Drinking Water (Ohio)
10. Drought and the Individual Well Owner (Maine)
11. Recommended Guidance for Public Water Supplies During Emergency  
Drinking Water Conditions (Maine)
12. Comprehensive Emergency Response Plan for Drinking Water (Maine)
13. Emergency Chlorination of Water (Montana)
14. Maintaining Water Quality in Small Systems Under Drought Conditions  
(U.S. EPA, Region VI)
15. Hazardous Materials Spills Emergency Handbook (American Water Works  
Association, Data Processing Department)

16. Emergency Planning for Water Utility Management (American Water Works Association, Data Processing Department)

General

1. Correspondence from American Water Works Service Company (American Water Works Service Company)
2. Consumer Pamphlets from Missouri (Missouri)
3. Water and Wastewater Digest (Missouri)
4. Census of Missouri Public Water Supplies 1982 (Missouri)
5. Oklahoma Public Water Supply Needs Study (Oklahoma)
6. Municipal Water Supply Project Priority System (Vermont)
7. New York Brochures (New York Health Education Service)
8. Up-Date: Public Drinking Water in Virginia (Virginia Department of Health)
9. Delaware Water Resources Data Inventory (Delaware)
10. Private Water Supplies (Maine)
11. Groundwater...Maine's Hidden Resource (Maine)
12. Municipal Water Needs Policy Issue Study (Nebraska)
13. Public Water Supplies Facilities and Policy Summary 1981 (New Hampshire)
14. Michigan Water Works News (Michigan)
15. Michigan Water Rates Survey 1980 (Michigan)
16. Water is More Than H<sub>2</sub>O (U.S. EPA, Region II)
17. Small System Water Treatment Symposium (U.S. EPA, Office of Drinking Water - Drinking Water Branch)
18. Small Water Systems Seminar (U.S. EPA, Region III)
19. AWWA Seminar Proceedings: Small Water System Solutions (American Water Works Association, Data Processing Department)
20. Handbook of State Management Practices in Aid of Small Water Systems (American Water Works Association, Data Processing Department)

21. Institutional Framework for Rural Water Supply in North Carolina, South Carolina, and Virginia (Virginia Water Resources Research Center)
22. State of the States: Water Resources Planning and Management (U.S. Water Resources Council study available from the National Technical Information Service)

Addresses of Contacts for Publications

Arkansas

Arkansas Department of Health  
4815 W. Markham Street  
Little Rock, AR 72201

California

Sanitary Engineering Program  
California Department of Health  
2151 Berkeley Way  
Berkeley, CA 94704

Colorado

Colorado Department of Health  
4210 E. 11th Avenue  
Denver, CO 80220

Delaware

State of Delaware  
Department of Health and Social  
Services  
Division of Public Health  
Jesse S. Cooper Memorial Building  
Capital Square  
Dover, DE 19901

Georgia

Georgia Department of Natural  
Resources  
Environmental Protection Division  
270 Washington Street SW  
Atlanta, GA 30334

Illinois

Illinois Division of Public Water  
Supplies  
2200 Churchill Road  
Springfield, IL 62706

Indiana

Indiana State Board of Health  
1330 W. Michigan Street  
P.O. Box 1964  
Indianapolis, IN 46206

Kentucky

Commonwealth of Kentucky  
Natural Resources and Environmental  
Protection Cabinet  
Department of Environmental  
Protection  
Fort Boone Plaza  
18 Reilly Road  
Frankfort, KY 40601

Maine

State of Maine  
Department of Human Services  
Division of Health Engineering  
Drinking Water Program  
Augusta, ME 04333

Maryland

Maryland Department of Health and  
Mental Hygiene  
Water Supply Program  
201 W. Preston Street  
Baltimore, MD 21201

Massachusetts

Massachusetts Department of  
Environmental Engineering  
600 Washington Street  
Boston, MA 02111

Michigan  
Michigan Department of Public  
Health  
3500 N. Logan  
P.O. Box 30035  
Lansing, MI 48909

Minnesota  
Minnesota Department of Health  
717 SE Delaware Street  
P.O. Box 9441  
Minneapolis, MN 55440

Missouri  
Department of Natural Resources  
Division of Environmental Quality  
P.O. Box 1368  
Jefferson City, MO 65102

Montana  
Montana Department of Health and  
Environmental Sciences  
Water Quality Bureau  
Capitol Station  
Helena, MT 69501

Nebraska  
Nebraska State Department of Health  
301 Centennial Mall South  
P.O. Box 95007  
Lincoln, NE 68509

New Hampshire  
New Hampshire Water Supply and  
Pollution Control Commission  
P.O. Box 95  
Concord, NH 03301

New Mexico  
State of New Mexico  
Environmental Improvement Division  
P.O. 968  
Santa Fe, NM 87504-0968

New York  
Bureau of Public Water Supply Program  
New York State Department of Health  
Empire State Plaza  
Albany, NY 12237

Health Education Service  
P.O. Box 7126  
Albany, NY 12224

North Dakota  
North Dakota State Department  
of Health  
Division of Water Supply and  
Pollution Control  
1200 Missouri Avenue  
Bismark, ND 58501

Ohio  
Ohio Environmental Protection  
Agency  
Office of Public Water Supply  
361 E. Broad Street  
Columbus, OH 43216-1049

Oklahoma  
Water Quality Control Division  
State Department of Health  
NE 10th and Stonewall Streets  
Oklahoma City, OK 73152

Pennsylvania  
Pennsylvania Department of  
Environmental Resources  
P.O. Box 2357  
Harrisburg, PA 17120

South Carolina  
Division of Water Supply  
Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, SC 29201

South Dakota  
South Dakota Department of Water  
and Natural Resources  
Joe Foss Building  
523 F. Capitol  
Pierre, SD 57501

Tennessee  
Tennessee Department of Public  
Health  
Division of Water Quality Control  
621 Cordell Hull Building  
Nashville, TN 37219

Texas

Texas Department of Health  
Division of Water Hygiene  
1100 W. 49th Street  
Austin, TX 78756

LRJ School of Public Affairs  
University of Texas  
Austin, TX 78712

Utah

State of Utah  
Department of Health  
Division of Environmental Health  
150 W. North Temple  
P.O. Box 2500  
Salt Lake City, UT 84110-2500

Vermont

Division of Environmental Health  
Vermont Department of Health  
60 Main Street  
Burlington, VT 05401

Virginia

Virginia Department of Health  
Bureau of Water Supply Engineering  
924 Madison Building  
109 Governor Street  
Richmond, VA 23219

Virginia Water Resources Research  
Center  
Virginia Polytechnic Institute  
and State University  
617 North Main Street  
Blacksburg, VA 24060

Washington

Washington State Department of  
Social and Health Services  
Water Supply Section, LD-11  
Olympia, WA 98504

West Virginia

State of West Virginia  
Department of Health  
Office of Environmental Health  
Services  
1800 Washington Street East  
Charleston, WV 25305

Wisconsin

Wisconsin Department of Natural  
Resources  
Box 7921  
Madison, WI 53707

U.S. Environmental Protection  
Agency

Region II  
26 Federal Plaza, Room 900  
New York, NY 10278

Region III  
Curtis Bldg.  
Sixth and Walnut Streets  
Philadelphia, PA 19106

Region IV  
345 Courtland Street, N.E.  
Atlanta, GA 30365

Region VI  
First International Bldg.  
1201 Elm Street  
Dallas, TX 75270

Region VII  
324 E. 11th Street  
Kansas City, MO 64106

Region VIII  
1860 Lincoln Street  
Denver, CO 80295

Region IX  
215 Fremont Street  
San Francisco, CA 94105

Office of Drinking Water  
Drinking Water Branch  
Attn: Publications  
401 M Street, S.W.  
Washington, D.C. 20460

Oregon Operations Office  
522 SW 5th Avenue  
Yeon Building, Second Floor  
Portland, OR 97204

National Technical Information  
Service

U.S. Department of Commerce  
5285 Port Royal Road  
Springfield, VA 22161

United States Geological Survey  
Distribution Branch  
Test Products Section  
604 S. Pickett Street  
Alexandria, VA 22304

American Water Works Association  
American Water Works Association  
Data Processing Department  
6666 W. Quincy Avenue  
Denver, CO 80235

American Water Works Service Company  
Community Relations Director  
American Water Works Service Company  
500 Grove Street  
Haddon Heights, NJ 08035

Interstate Conference on Water Problems  
21 Dupont Circle, N.W.  
Suite 600  
Washington, D.C. 20036

National Demonstration Water Project  
1725 DeSales St., N.W.  
Suite 402  
Washington, D.C. 20036