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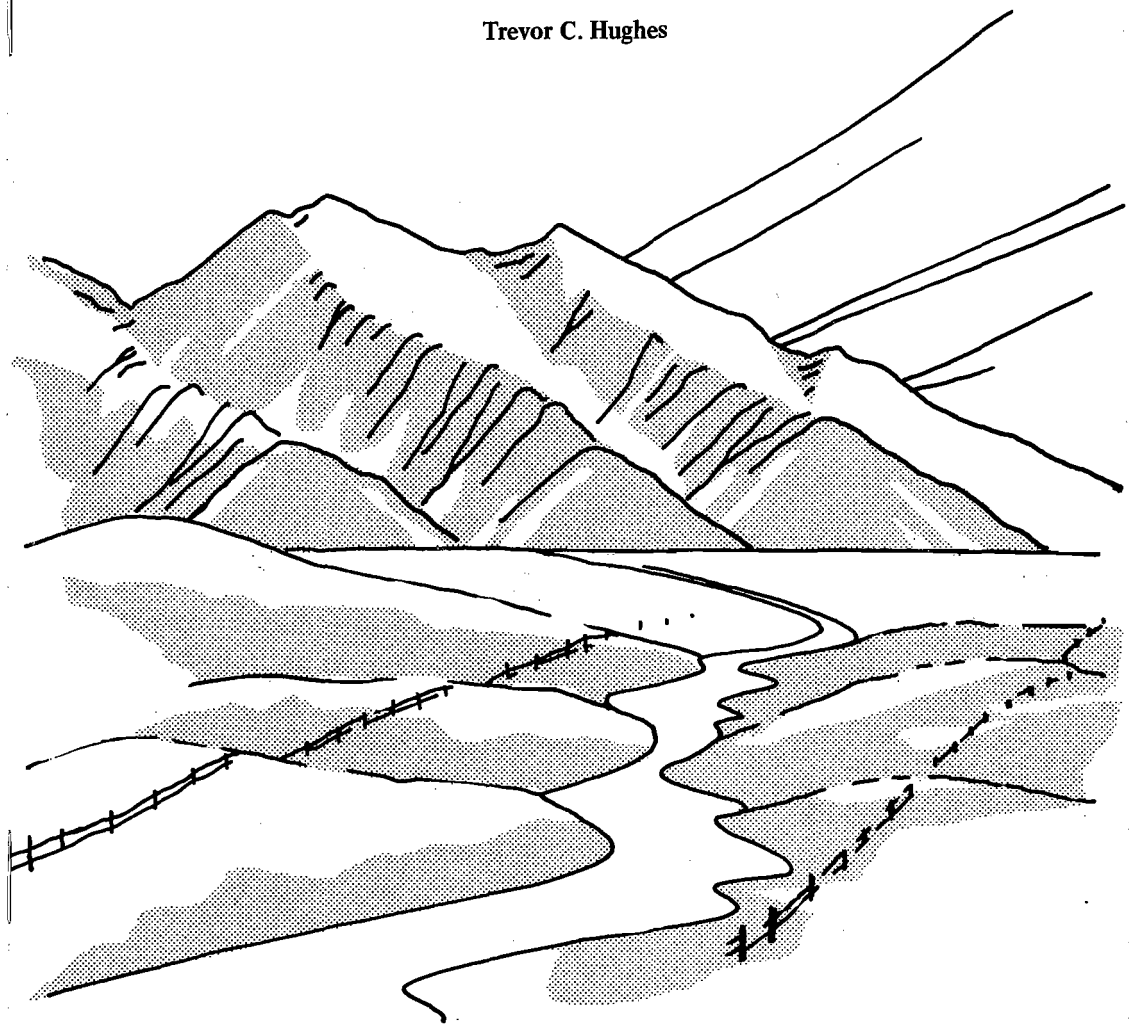
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Management of Rural Domestic Water Systems in Utah

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GENERAL SERIES
UWRL/G-80/01

**MANAGEMENT OF RURAL DOMESTIC WATER
SYSTEMS IN UTAH**

by

Trevor C. Hughes

**Project Completion Report
(WA-57)**

**GENERAL SERIES
UWRL/G-80/01**

**Utah Water Research Laboratory
Utah State University
Logan, Utah 84322**

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INTRODUCTION

Nature of the Problem

There are now more than 400 community type public drinking water systems in Utah. Considerable state and federal assistance is available for construction or renovation of such systems, but once the system is constructed and the consulting engineer leaves, the managers of the smaller systems find themselves quite isolated from sources of professional assistance. The larger systems have a revenue base which can provide on-going services of a consultant or salaried engineer and well trained operators. The smaller systems, particularly low density rural systems where the length of pipeline per user is very high, usually find themselves barely able to pay loan service and operating costs despite user fees which are extremely high relative to urban systems.

Typically, after construction of a new rural system, a part time operator with little or no training is hired at a very low wage and is supervised by community leaders who receive almost no pay and whose experience in managing domestic water systems often matches their salary. Such system officers are usually very dedicated community minded people who spend countless hours at their assignment and do surprisingly well at keeping system costs to a minimum, but who often get replaced at frequent elections, just as they are gaining experience in their positions. Perhaps even more importantly, operators have a high turnover rate due to the low pay and high level of responsibility.

Historical Setting

The initial task of a discussion of rural water supply systems is to attempt a definition of the word "rural." This report will subsequently describe a rural water association of Utah which will solicit the membership of any system (municipal or unincorporated) which serves a population of 10,000 or less. Such systems may be in a truly rural setting or may include suburbs of metropolitan areas. However, the focus of this report will be upon the truly rural, often low density systems, which serve from 30 to about 700 families. No distinction will be made between rural water districts and municipally owned systems since the types of problems experienced and sources of assistance for both are almost indistinguishable.

There have been relatively few Utah public rural water supply systems constructed totally with private capital. The large majority of such systems have received either grants, or low/no interest loans or both from the following sources:

1. Public Works Administration Program: During the 1930s the Public Works Administration constructed or expanded a large number of small water systems. Data on the total number of systems are difficult to find, but the order of magnitude is suggested by a report of the Civil Works Administration of Utah (1934) that water supply system projects were completed in 17 of the 29 Utah counties during 1933 alone. Most of these consisted of distribution systems of small diameter galvanized steel pipe (mostly 2 inch diameter) fed from an open settling pond, filled by raw water from a nearby canal. The only treatment was typically a chlorinator which soon became inoperative (and was usually not repaired because rural residents almost always complain about the taste of the chlorine residual).

2. Farmers Home Administration Program: Most of the Utah rural water supply projects constructed since World War II have been financed by low interest loans and grants from a federal agency, the Farmers Home Administration (FmHA). The initial FmHA financed project in Utah (the Austin Waterworks Company) was constructed in 1948. A summary of the FmHA water and sewer program in Utah during the last 30 years is given in Table 1. The total loan and grant program for 121 water systems (some systems received both a loan and grant while some grants went to systems where loans were made from other sources) amounts to about \$30 million or about \$250,000 per system. These loans and grants serve 31,655 families (plus growth since construction). These quantities indicate the magnitude of the management problem represented by the FmHA financed portion of the rural water program. In an urban setting 30,000 families could be served readily by a single utility which, due to economies of scale, would have sufficient revenue to keep user costs very low and still provide excellent management, including in-house training for a few well paid employees. In the rural setting, we have instead, 121 separate systems which serve an average of 260 families (50 systems serve 100 or fewer families) and which generally find it necessary to charge user costs several times higher than the urban system and which have no full-time employees, no in-house training capability, and usually perceive themselves as being unable to afford transportation and per diem costs to send their operator to some distant training program.

3. Utah Cities Loan Program: A more recent source of financing for small Utah systems is the State Cities Loan program. This is a revolving fund program which was begun in 1974 to provide construction loans at no interest (and therefore, relatively short amortization). Although the program title suggests a "city" orientation, quite the opposite is true. The operative concept is that the larger cities can handle their own financing and therefore the money is loaned to smaller municipalities and unincorporated districts which have insufficient bonding capacity to produce private financing. It is in reality a rural water supply construction program. From 1974 to 1980 this state program has provided loans totalling \$13,656,000 (about \$160,000 per system) for construction or renovation of 86 small systems.

As a result of these ongoing federal and state programs there are now more than 240 public water supply systems in Utah which serve more than 30 but less than 700 families. These small systems produce a very large percentage of the drinking water quality violations reported by the State Division of Health. Reasons for this frequent inability to meet state standards are many but they seem to relate to one consistent facet of both state and federal policy (absence of policy?). Considerable financial assistance is available for constructing rural projects, but essentially none is available for management and operation of the systems.

Table 1. Summary of FmHA Community Water and Sewer Program Activities in Utah from Beginning of Program through September 1979.

Type of Program	Loans			Grants		
	Number	Amount	Connections	Number	Amount	Connections
Water	110	\$21,748,400	29,962	59	\$ 7,752,800	15,710 (1693 + users with loans)
Sewer	38	8,477,523	11,407	15	2,454,600	4,261
Combination Water & Sewer	2	86,500	131	2	73,000	131
TOTAL	150	\$30,312,423	41,500	76	\$10,280,400	20,102

Operator Training

The availability of operator training in many states has improved substantially in recent years due to the efforts of training coordinating committees. In Utah, this effort is described as a case study in an EPA publication (1980) on developing state joint training coordinating committees as follows:

In late 1975, a group of individuals who had been working in various aspects of operator training recognized the need to upgrade and expand the training approach, began discussions related to establishment of a mechanism by which it would be possible to integrate, coordinate, upgrade and extend the impact of training in Utah. Although most of the past training activities involved water and wastewater personnel, the group felt the mechanism should include all environmental disciplines. In early 1976, the Utah Environmental Systems Operations Training Program (UESOTP) was conceived. A formal organizational framework and basic guidelines for implementing the program were developed. Letters of support were solicited from participating organizations in order to establish some official recognition and justification for the concept.

The purpose of UESOTP is to improve the competency and qualifications of water, wastewater, solid waste, air pollution and other environmental operations personnel in the operation, maintenance and management of their facilities and systems through the promotion, development, coordination, and scheduling of appropriate training activities. A related purpose is to promote support and complement the objectives of the Utah Voluntary Certification Program for Water and Wastewater Works operators.

* * *

Participation in UESOTP is on a voluntary basis, and the program and its Coordinating Committee have no direct powers or controls over training activity in Utah. The basic premise of UESOTP is that by providing leadership in the development and coordination of meaningful training programs, all related training activities proposed will voluntarily utilize the UESOTP framework, its resources, and standards of training quality control....

Since 1976, the UESOTP has coordinated 133 training activities with 2,485 participants: 695 attended 64 wastewater training activities; 1,079 attended 43 water training activities; 542 attended 18 solid waste training activities and 169 attended 8 air pollution training activities.

Future operator training is expected to be concentrated at the Utah Technical College in Provo. A training center (Clean Water Act, Section 109 type facility) has been funded and is scheduled for construction during 1981. Despite these recent and anticipated future improvements in operator training programs and facilities, little progress is being achieved in relation to training of small rural water system operators. The rather impressive number of training activities quoted above has been attended almost exclusively (more than 90 percent) by personnel from the larger urban type systems along the Wasatch front. The difficulty in getting participation by rural system operators is primarily financial but also related to attitudes of small system managers. Officers of small systems which pay a part time operator only \$100 to \$300 per month, and who must charge their customers three to five times the rate which users in urban areas typically pay, usually find themselves unable or unwilling to pay travel and per diem costs to send their operators to some remote training center (even if the training itself is provided at no charge).

Project Objectives and Scope

The general objective was to create a forum through which individuals with an interest in the problems related to management of small domestic water systems can be brought together to develop a plan of action for addressing these problems in Utah. In order to accomplish this, the following tasks were performed.

Task 1: Gather data on the number, size, current operation and management practices and problems experienced by rural domestic water utilities in Utah. The approach used to gather this information was a telephone survey of rural systems.

Task 2: Organize a series of regional workshops where officers and manager/operators of rural water utilities can discuss common problems and possible methods of improvement. Principal topics of discussion included:

- 1) Results of the Utah rural water utility survey described in Task 1.
- 2) The experience of other water utilities in regard to sharing professional management and revenue collection services.
- 3) The possible benefits which could result from organizing a Rural Water Association in Utah similar to those in many mid-western states and the resulting opportunity to be represented in the National Rural Water Association.
- 4) Problems related to the Safe Drinking Water Act.

Task 3: Provide assistance in organizing a state association if the response from the workshops is favorable to this concept.

MANAGEMENT SURVEY OF UTAH RURAL WATER SYSTEMS

Survey Method

It is difficult to obtain survey information from managers and operators of rural water systems because of the same reasons that generate management problems for these systems. That is, these overworked, underpaid individuals find it so difficult finding time to perform their required duties that they generally try to ignore external requests such as completing mailed questionnaires. A decision was made, therefore, to gather information through telephone interviews. This approach suffers from some of the same difficulties (many refused to cooperate); however, by making most calls to residences during evening hours, interviews were obtained with a sample of 25 system representatives. The population from which this sample was selected included 240 rural Utah systems each of which serve more than 25 and less than 600 families.

Discussion

A listing of questions and summary of responses from the survey are given in Table 2. Several interesting conclusions are apparent from the table.

Size of Systems: The average number of families served (114) gives some insight into why rural domestic water is expensive. If \$10/month were collected from the average collection, this would generate only \$1140/month. Those systems which operate a deep well pump can easily incur over \$1,000 per month for electricity costs alone. Therefore, even if all capital costs were paid by public grants (which they never are), the operating costs alone usually require monthly bills to average two or three times the \$10 level.

Meters: The fact that 96 percent of services are metered despite the high cost of meters (both initially and in terms of labor for meter reading) would seem to imply that rural system managers are very concerned with both the equity and conservation capabilities that metering provides.

Pricing Policy: It is very difficult to characterize pricing policy since almost every system has different characteristics. The monthly minimum charge (before meter readings take effect) varies greatly (0 to \$33). The number of thousand gallons (K gal) allowed before exceeding this minimum also varies greatly (from 0 to 80 K gal). Unit cost blocks for use above these minimums are also highly variable. Twelve percent have decreasing block rates (lower unit costs as use increases). Most have constant unit costs (76 percent) and 12 percent have increasing block rates (indicating a definite policy of attempting to reduce water use (at least during peak season)).

Table 2. Interview Summary (25 Respondents).

Questions	Answers
I. Description of System	
1. Existing Facilities	
(a) Number of families served	114 average (Range = 25 to 350)
(b) Any extremely large users (commercial, industrial)?	almost none
(c) What % of services are metered?	96% (only one system unmetered)
(d) How often are meters read?	5/yr average (Range = 2 to 12 times/yr)
(e) Master meters on supply lines?	52% yes (13 of 25)
(f) Are master meters working?	11 yes; 2 no
(g) Retail price of water	Min. charge (avg.) = \$10 (Range = 0 to \$33 min.) 1st Block over Min. = \$1.20/K gal (avg) Min. volume = 20 K gal avg. (range = 0 to 80 K gal)
(h) Sources of water	Surface 7% Groundwater 17% Springs 51% Purchase from Wholesaler 25% Treatment Plant 4% Deep Well Pumps 32% Booster Pumps 16% Covered Reservoirs 92%
(i) Do you have your own:	
2. Operating costs	
Is your major operating cost:	
Meter Reading & Billing	12%
Pumping Cost	28%
Repairs	60%
Water Quality Tests	0
Other	—
II. Safe Drinking Water Act	
Is the new law causing you significant increased costs or other problems?	
(a) Labor costs for testing	4% (1 system)
(b) Test equipment costs	0
(c) Outside laboratory charges	56% (mostly state health lab charges)
(d) Public notification costs	16%
III. Personnel Information	
1. Elected Officials	
(a) Contact Person	Names and addresses
(b) Salaries of Officers	\$76/mo. average (range = 0 to \$500/mo)
(c) Time required	Unable or unwilling to estimate
2. System manager (superintendent, water master or operators)	
(a) Contact person	Only 40% have managers (5 are also officers)
(b) Salary and hours worked	\$140/month average (Range = \$25 to \$325/mo. (1 ea. by hour @ \$3.00/hr.)
(c) Duties of managers	Maintenance 100% Meter reading 30% Treatment Plant Operation 4%
(d) Any formal training for job?	Operator School 4%
If not how was experience acquired?	On Job Training 96%

Table 2. Continued.

Questions	Answers
3. Other employees (meter readers, office help, equipment operators, laborers, etc.)	
(a) Rate of pay	\$15/month average (range = \$6 to \$37/month)
(b) Any use of computer in billing or accounting?	4% yes (1 system)
IV. <u>Construction Equipment</u>	
1. Backhoes, trucks, jackhammer, etc.	
(a) Is such equipment owned?	4%
(b) Leased or rented	4%
(c) Work contracted on a per job basis	92%
2. Water quality tests	
(a) What equipment is owned?	4% chlorinator tester
(b) What testing done by State Lab?	92%
(c) What testing is done by Private Lab?	0
V. <u>Miscellaneous</u>	
1. Would you or other system personnel be interested in attending meetings in your region of the state to discuss problems you may have in common with other domestic water utilities?	48% yes
2. Would you be interested in the formation of a Utah Rural Domestic Water Association as a mechanism for such communication and for representing your interests to state and federal regulatory and other agencies?	40% yes

Types of Facilities: Few small Utah systems (4 percent) operate treatment plants. Many (51 percent) have access to springs from which high quality water can be obtained inexpensively; but as growth occurs, more systems are constructing deep wells (28 percent at present).

Operating Costs: A surprising 60 percent reported repairs as their major O&M cost. As energy costs spiral simultaneously with the trend toward more use of pumped wells, the 28 percent indicating electricity as their major cost can be expected to increase.

Safe Drinking Water Act Costs: Much concern has been expressed about the expected major impact upon operating costs of small systems due to the SDWA of 1975. This survey indicates a "significant" increase in testing costs since the law was enacted but no one expressed major concerns. This is likely due to the fact that perhaps the most difficult test to pass for many systems is the daily turbidity tests; however, this is required only for surface water which is used very little in rural Utah systems. The most common problem in Utah is bacteriological contamination, but this is not a new test introduced by the Safe Drinking Water Act.

Labor Costs: Perhaps the most revealing results of the survey results were salary and wage data. The common expectation is for the elected officials responsible for small systems to operate in an almost volunteer mode and indeed, the \$76/month average salary supports this. However, the fact that system managers and operators are only being paid \$140/month average for a job which daily entails a major public health responsibility should generate considerable concern. It is not surprising that operators are unable to obtain approval to attend a 2 or 3 day training school when the travel cost could easily exceed 2 or 3 months of their normal wage. The wages for other personnel are even more discouraging. At an average monthly wage of \$15 for meter reading and bookkeeping, it should not be surprising that water demand and revenue collection data are often either missing or contain strange anomalies.

Equipment: The survey revealed that almost no construction and repair equipment or water quality testing equipment is owned by small systems.

Management Improvement: About half of the managers expressed an interest in attending future regional workshops for rural system officials; and 40 percent expressed interest in joining a Rural Water Association in Utah. These items will be discussed in a separate section of the report.

Water Quality Violations

In Utah, by far the most common reason for community water systems being on the Division of Health's "not approved" list is bacteriological contamination (based upon presence of coliform bacteria). In July 1980, the agency's "not approved list due to bacteriological contamination" included 62 systems, only one of which exceeded 600 connections. There is a very strong correlation between size of system and ability to consistently pass water quality tests. This relationship can likely be traced to reasons related to both training of operators and revenue base available to correct source related problems. Because they don't have these resources, the small rural systems produce almost all of the violations.

REGIONAL WORKSHOPS AND MAILED QUESTIONNAIRE

It is very difficult for someone from a state agency to organize a workshop in a rural area (on any subject) and succeed in getting participation from the local people with whom he is not acquainted. In order to overcome this problem, the writer communicated with several other organizations with rural water related programs concerning the objectives of the project (some of whom maintain offices in each county and therefore can obtain attendance at local meetings). Such organizations as the Farmers Home Administration and the Utah Divisions of Health, Water Resources and Water Rights, were invited to co-sponsor regional workshops for the purpose of discussing concepts for improved management of rural water systems. Both the Divisions of Health and Water Rights had current programs which they were planning to present in rural areas and so a joint effort among the three organizations was developed.

The Division of Health was already planning a series of meetings to discuss major revisions in the state standards for water systems which had recently been approved by the Safe Drinking Water Committee. The Division of Water Rights was also attempting to explain their program for improving the collection of water use data. The UWRL project interfaced well with both of these programs and therefore half-day workshop agendas were developed to include all three.

The initial joint workshop presentation was made on April 2, 1980, at Provo, Utah. It was attended by representatives of 26 domestic water utilities, 18 of which are rural systems. During the UWRL portion of the workshop, the rural system survey results were presented, and some concepts for improving management of rural utilities were discussed. These included: 1) Regional Management Service Organizations and 2) A statewide Rural Water Association. Following the UWRL portion of the agenda a short questionnaire was given to each rural utility representative. The information requested was an indication of interest in forming a Rural Water Association (RWA). Four of these were returned during the workshop—all of which indicated an interest in joining an RWA. Three of these also agreed to help form such an organization. The other participants indicated they could not commit their utility prior to a discussion with their other officers. These individuals were encouraged to return the questionnaire after such a discussion (but few did).

The second joint regional workshop was held on April 16, 1980, in Richfield. The agenda was almost identical and the participants represented 15 domestic water utilities, 14 of which were rural systems. Interest was again expressed in the RWA concept, but the written questionnaires were almost all held for discussions with other utility officials.

A third workshop was planned during July at Cedar City, but was cancelled due to schedule conflicts for some of the workshop leaders.

Rather than making followup requests to particular workshop participants to return the initial questionnaire, it was decided to make a statewide mailing of the questionnaire accompanied by a letter which explained the RWA concept. This had the advantage of expanding the number of contacts beyond the list of workshop participants and also better explaining the RWA concept. This letter (Appendix A) was sent to 240 small Utah water systems (serving between 30 and 700 families). About 10 percent of the addresses were undeliverable and probably many more were delivered to individuals who had completed their term as a utility official (the mailing list was 4 years old). The latter group may or may not have forwarded the information to current utility officials.

A total of 25 questionnaires were returned. This amounts to about 12 percent of the approximate number delivered. The results follow:

<u>Question</u>	<u>Municipalities</u>		<u>Nonprofit Corporations or Districts</u>	
	(14 Each)		(11 Each)	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
2. System Ownership				
4(a). Would you join a RWA?	64%	36%	55%	45%
4(b). Would you help organize RWA?	43%	50%	45%	45%
5. Would the RWA Manager be of help to you?	57%	21%	55%	36%

*Unanswered questions make up balance of 100%.

About two-thirds of the municipalities and over half the systems serving unincorporated areas indicated an interest in joining a Utah RWA; and most of the joiners would also be willing to help organize the Association. It is probable that those systems which did not return the form would represent some, but certainly not all, no answers. Many of the smaller systems may have reacted negatively to the \$100 suggested annual membership fee. Such systems may show interest in the future because the RWA directors are now proposing a much smaller fee.

INSTITUTIONAL RELATED MANAGEMENT CONCEPTS

Regional Management Organizations

Regionalization of water utilities has been discussed extensively in recent literature; for example, several papers on the subject were presented in a recent issue of the AWWA Journal (1979). The AWWA management and operations committee describes several ways in which regionalization can be defined as follows (1979):

The term regionalization can refer to a single management organization that has sole responsibility for the management and operation of a water supply system over a large area, or it can be a coordinated approach between several independently owned and managed organizations providing service to a regional area. Regionalization can also mean the coordination of several services or functions of government under a single policymaking board to serve independent water systems.

In rural areas there are sometimes opportunities for sharing physical facilities, particularly transmission pipelines from mountain springs (whether local politics will allow such concepts is a separate question). It is more probable, however, that in low density environments, widely dispersed systems do not lend themselves to such joint use of physical facilities.

In contrast, the use of common management services is a form of regionalization which does appear to be viable in the rural setting. Commonly, small communities or rural district organizations have long since obtained water rights to all local high quality, low cost water sources. The almost irrational and certainly emotional nature of the special value which such water rights enjoy in the minds of long time residents does not encourage physical interconnection of several rural systems. Such interconnections could result in "those bad guys in the next town stealing our water." However, if the systems remain physically separate, provincial emotions notwithstanding, it should be possible to have a single operator or team of operators manage several systems in a region.

A good example in Utah of this approach is the Castle Valley Special Service District. This management organization is now operating seven water systems in Emery County (including revenue collection). The domestic water problems in Emery County have been particularly difficult since most of the groundwater is brackish and therefore several small towns have constructed complete treatment plants for use of surface water. Most of these plants were experiencing serious operational problems particularly since recent rapid population growth due to the location in the energy corridor. The Special Service District was created by use of "energy impacted area" financing. The full time, well-trained staff improved the quality of water delivered in the initial three communities sufficiently that four other (initially uninterested) communities soon joined the organization.

It is not known whether other similar management organizations could succeed in Utah without the initial federal financing provided in the Castle Valley area via energy impact sources. If such front-end financing difficulties can be overcome, the regional management concept appears to be a very good solution to rural system operational problems.

Rural Water Association of Utah

While regional management organizations may be the best long term concept for solving Utah's rural domestic water problems, the actual organization of such institutions is clearly beyond the scope of this project. A concept which may be considered a preliminary step in helping form such organizations, however, is a statewide association of rural water utilities. The potential advantages of such an association seemed so important that a major portion of the project effort was devoted to creating such an organization.

Description of the RWA Concept: The first RWA in the U.S. was organized in Oklahoma in 1970. This was a grass roots effort by managers of several rural water districts with encouragement (but no financial assistance) from the Farmers Home Administration. During the last decade, 26 states have formed RWAs. In 1976 these state RWAs organized the National Rural Water Association with headquarters in Duncan, Oklahoma.

The stated objectives of the various state associations may vary slightly but generally parallel those given in the Articles of Incorporation of the National Association which follow:

- (1) To establish and operate a National Rural Water Association composed of State Associations of water districts, non-profit corporations, public trusts, cooperative associations, municipalities and other similar organizations having a common interest in the betterment of the economy of the Nation, and each of its fifty States, through the development, transportation, and distribution of water in the rural areas of the Nation at the lowest cost; and the protection of the health and welfare of the Nation's citizens through the provision of adequate sewage treatment and disposal facilities in the Nation's rural areas; and for development of all other types of community facilities in rural areas; and
- (2) To engage in the compilation and dissemination of information and data with respect to efficient construction, operation, and management of rural water, sewer, and other community facilities, and to that end, to sponsor and conduct training programs and meetings of the members for the mutual benefit of the membership of the National Rural Water Association and for the Nation as a whole; and
- (3) To do and perform any and all acts necessary and incidental to the accomplishment of the aforesaid objectives.

The typical state RWA mode of operation is to hire a full time association manager, a receptionist/typist, and to maintain a small office. The manager must have both administrative and technical (water supply system related) skills. He or she spends considerable time traveling in order to assist and advise individual member system managers/operators on operational techniques and problems and also to plan and conduct training workshops.

The National Association has been selected by congress as the disbursing institution for money appropriated specifically for rural domestic water systems in connection with the Safe Drinking Water Act. At the state level this now amounts to \$52,800 annually

for each state RWA. States without RWA receive none of this money. The RWAs collect a nominal membership fee from each water system which chooses to join, but the majority of RWA annual budget in most states now comes from Congress via the National RWA.

An additional NRWA sponsored program called the "circuit rider" has been proposed and is being operated on a trial basis in at least one state. This would allow an RWA to hire as a "circuit rider" a very skilled water system technician who would spend full time in the field helping member system operators. This would allow the RWA manager to concentrate more on organizing workshops and other administrative duties (possibly helping to form regional management organizations). Acceptance of this concept by Congress will result in increasing the annual federal appropriation for each RWA by about \$30,000.

Progress Toward Forming the RWA of Utah: Following the mailed questionnaire related to forming an RWA in Utah (which was previously described) several RWA planning meetings were held during July and August 1980. These were attended by representatives of the following organizations:

Utah Water Research Laboratory
USU Extension Service
Utah Division of Health
Utah Division of Water Rights
Utah Division of Water Resources
Farmers Home Administration
Utah Water Users Association
Safe Drinking Water Committee
Weber Basin Water Conservancy District
Castle Valley Special Service District

Model Articles of Incorporation and By-laws were obtained from the National RWA and were discussed at these preliminary meetings, one of which (July 29) was also attended by the Executive Secretary of the National Association, Mr. R. K. Johnson. Mr. Johnson expressed the opinion that if a Utah Association (RWAU) was organized by October 1980, the initial federal funds could be made available during this calendar year. He also answered many questions about how the RWAU program could interface with existing programs such as the Joint Training Committee's operator training program and the Utah Water Users Association. The latter Association represents the interests of some municipal water utilities (principally large urban utilities) but mostly deals with irrigation water interests.

The opinions expressed at these preliminary meetings were unanimously favorable to the idea of proceeding with the creation of a Utah Association. Therefore, on August 11, 1980, the Rural Water Association of Utah was officially incorporated. The Articles of Incorporation, which include the list of incorporators, are in Appendix B.

Recommended Goals for the Rural Water Association of Utah

The present federal funding level for Rural Water Associations provides an annual budget which allows only two full time salaried employees: a receptionist/bookkeeper

and the association manager. This limits its program scope to a relatively modest level considering the large number of rural systems needing its services. Some of the suggested goals which follow may appear to be overly ambitious in view of this initial constraint but they should be viewed as long term objectives which will require: 1) A policy of seeking expanded sources of funding from non-federal sources; 2) A board of directors who aggressively lead the Association's program; and 3) An association manager who is well qualified in several areas, including: communication with rural water personnel; technical aspects of water system operation; and administration.

The RWAU Articles of Incorporation (Appendix B) outline in general terms two principal purposes for the Association. These relate to 1) encouraging the development of rural systems themselves in a manner that balances cost and protection of the public health; and 2) compilation and dissemination of information relating to improved operation of these systems. A more detailed and specific list of suggested RWAU goals follows:

1. Urge rural water system operators to participate in training courses and workshops. Few operators are able to attend such courses, particularly when significant travel costs are required. One of the priority objectives of the RWAU should be to encourage and assist (financially if possible) such training as that to be offered at the new training facility in Provo.

2. Encourage and assist development of Regional Management Organizations.

3. Provide for an exchange of information between rural water systems. Often the solution to a system manager's problem is only as far away as the next system, but no mechanism has previously existed for encouraging discussions between system personnel within a region.

4. Develop and conduct periodic regional workshops where professional advice can be disseminated and discussed by managers and operators.

5. Perform regular visits by the Program Manager and eventually the "circuit rider" to each region of the state. The goal should be to contact every member system's manager at whatever frequency is practical. In a large group setting, system operators may hesitate to ask the very questions which are most troubling to them if they perceive the question as revealing ignorance of some concept or calculation which they should understand. A one to one discussion of individual problems should be the ideal way to deal with this.

6. Conduct a very active lobby effort on behalf of legislation affecting rural water systems. This should be done on both a state and national level and through participation at annual meetings and on committees of the National RWA.

7. Maintain close liason with other organizations such as the State Divisions of Health, Water Rights, and Water Resources, FmHA, and the Utah Water Users Association. This will provide benefits from their programs and expertise and avoid duplication of effort.

8. Provide a general program of disseminating information to system operators which could improve quality of service and/or decrease operating costs. In particular, since energy costs are becoming so important, a special program should be directed to measuring and improving pump efficiency and identifying unnecessary energy uses such as improperly set or unnecessary back pressure valves.

9. Develop situation specific recommendations for water price schedules. Examples would be decreasing block rates for utilities with ample supplies and facility capacities and increasing block rates for utilities operating at or near their capacity.

10. Identify regional situations where construction, computer billing, and water quality testing equipment could be shared among two or more utilities. It is probably not feasible for a statewide association to operate an equipment pool because of the large distances involved and the short response periods often required for moving between systems. However, the Association should promote such cooperative agreements which could also include a pooled inventory of fittings, repair clamps, valves, etc.

CITED REFERENCES

Civil Works Administration of Utah Annual Report, 1934 (unpublished).

E.P.A. Joint Training Coordinating Committee. 1980. How to Develop a State Joint Training Coordinating Committee. Project Report of Office of Water Program Operations, E.P.A. Washington, D.C.

Management and Operation Committee. 1979. Regionalization of Water Utilities. Journal of AWWA. December.

APPENDIX A

LETTER AND QUESTIONNAIRE MAILED TO RURAL WATER SYSTEM MANAGERS

UTAH STATE UNIVERSITY · LOGAN, UTAH 84322

UTAH WATER RESEARCH LABORATORY
UMC 82

COLLEGE OF ENGINEERING

June 5, 1980

Water System Representative

Dear Sir:

The Utah Water Research Laboratory is currently conducting a study of ways to assist small rural domestic water supply systems in their management and operational responsibilities. One of the possibilities which has emerged is the organization of a Utah Rural Water Association. The purpose of this letter is to describe the possible benefits of such an association, how it would operate, and to determine if the water system you represent would be interested in helping to organize and/or join such an association.

Our study of rural domestic water systems in Utah has led us to the following observations:

- a) While there are several sources of low interest loans and grants for construction of rural systems (FmHA, Utah Communities Loan Fund, Four Corners, EDA) there is very little outside assistance for Management and Operation.
- b) Because of diseconomies of being small, rural systems experience much higher unit water costs than urban systems. This occurs in all phases of the water delivery process--pumping, treatment, storage, pipe length per connection, etc.).
- c) Because of high fixed costs and very limited sources of revenue, rural systems have a very difficult time locating, training, and keeping well qualified system operators. The combination of low pay and heavy responsibilities results in very high turnover rates for operators.
- d) Many of the operating problems are common to several systems within a region but little communication among these systems is occurring.

How would a State Association Operate?

Rural water associations have already been formed in 26 states, and the state associations have in turn formed a National Rural Water Association (NRWA) headquarters in Oklahoma. When congress passed the Safe Drinking Water Act, it included a separate program for assisting rural water systems in meeting the new standards and generally improving management of their system. Money appropriated each year for this purpose is being dispursed through the NRWA. Each state which has formed an association currently gets \$52,800/yr. Utah rural systems are now required to meet the standards but get none of this financial help because Utah systems have no association. The NRWA is not a bureacracy created by Congress to force new drinking water standards upon you. It was formed voluntarily by several state associations prior to the Safe Drinking Water Act.

Each state association operates an office with a secretary and a manager whose job is to travel the state helping individual system managers and operators solve their problems. The associations are financed principally by the annual federal grant (currently \$52,800) and most states supplement this by \$100 dues per year from each water system which chooses to join.

What are the Benefits to your system?

The Association Manager would be a specialist trained by the National Association personnel to help local systems with both immediate trouble shooting type problems and longer term management policies and procedures. He would:

(a) Organize regional workshops to help system operators communicate concerning common problems.

(b) He would visit each system regularly to discuss and assist with operational procedures such as pricing schedules, revenue collection, construction of new services, repairs, pump and reservoir controls, etc.

(c) Individual systems could contact the Association manager for advice on emergency or other nonscheduled type problems. There would be no extra charge for any of these services since the manager would be a salaried employee of your association. This would provide an alternative (or second opinion) to calling your Consulting Engineer for technical advice on small operational questions.

(d) With the cost of electricity for pumping becoming a dominant portion of the operating budget for many small systems, professional help in checking pump efficiency, avoiding excess energy losses at pressure valves, etc., could produce major savings.

How Could an Association be Formed?

All that is necessary is the organization of a nonprofit corporation. Representatives of various agencies such as the Utah Division of Health, Farmers Home Administration, and the Utah Water Research Laboratory would be willing to help plan an organizing meeting but would not seek positions as officers of the Association. Such an Association should be led strictly by persons who are active in the management of Utah rural water systems. The next step therefore is an indication from managers of such water systems as to whether sufficient interest exists to form a Utah Rural Water Association. Would you therefore complete and return the very short questionnaire which is enclosed.

Sincerely,



Trevor C. Hughes
Project Leader

Rural Water Association Questionnaire

1. What domestic water supply system do you represent? _____

2. Is your system owned by a municipality _____, nonprofit corporation _____,
private company _____ other _____
3. What is your position in water company: elected officer _____, operator _____,
other _____
4. If a Utah Rural Water Association could be organized - supported mainly with
Federal funding: (a) would your utility be interested in joining? _____
(\$52,800/yr Federal and \$100/system/yr local dues)
(b) Would you be willing to help organize the Association?
(Help plan an organizing meeting)? _____
5. Would a technically trained state Association Manager who divided his time
among various member systems, answering questions and advising on management
techniques be of value to you? _____
6. Do you have specific suggestions as to how such an association could best
benefit your water system?

Your name

Address

Phone

NOTE: Please complete and return this form as soon as possible by simply
folding so that address on reverse side is visible. No postage is
required.

APPENDIX B

RWA OF UTAH ARTICLES OF INCORPORATION

ARTICLES OF INCORPORATION OF RURAL WATER ASSOCIATION OF UTAH

We, the undersigned, natural persons of the age of 21 years or more acting as incorporators of a nonprofit corporation under the Utah Non-Profit Corporation and Co-Operative Association Act adopt the following Articles of Incorporation for such non-profit corporation.

ARTICLE ONE Corporate Name

The name of the corporation is Rural Water Association of Utah.

ARTICLE TWO Duration

The period of its duration is 100 years.

ARTICLE THREE Purposes

The purposes for which this corporation is formed are:

(1) To establish and operate an association of water districts, nonprofit corporations, municipalities, and other organizations having a common interest in the enhancement of the economy of the State of Utah through the development, transportation, and sale of drinking water in rural areas of the State at the lowest cost consistent with the protection of the health and welfare of the citizens of the State of Utah through provision of adequate water and sewage facilities in the rural areas of the State.

(2) To engage in the compilation and dissemination of information and data with respect to rural community water and sewage systems and furnishing of other services to rural water and sewage organizations and others in connection with the coordination, advancement and development of rural community water and sewage systems throughout the State of Utah for the primary and mutual benefit of the membership of the Corporation.

ARTICLE FOUR Membership

The membership in this corporation shall be acquired through the purchase of a membership certificate of the corporation at prices and on terms and conditions to be established by the Board of Directors as may be provided by the Corporate By-Laws. Membership herein may be lost by failure to pay annual membership fees to the corporation. The membership certificate shall be issued to each member at the time such member purchases and pays for membership fees in the corporation.

ARTICLE FIVE Internal Affairs and By-Laws

The regulation of the internal affairs of the corporation shall be set forth in the Corporate By-Laws. The Board of Directors shall establish such By-Laws as may be needed for the regulation and management of the affairs of the corporation not inconsistent with law or these articles of incorporation. Said initial By-Laws may be amended or repealed by the members or the Board of Directors as provided by laws.

ARTICLE SIX
Board of Directors

The governing power of the corporation shall be in a Board of Directors consisting of not less than five members, each representing a region of the state as determined by the Board of Directors and provided for by the Corporate By-Laws.

The following individuals shall serve as Directors and Officers until the first annual membership meeting and until their successors are elected and qualified:

<u>Name</u>	<u>Address</u>
1. Robert Hilbert	Salt Lake City, Utah
2. Rolf A. Nelson	Bountiful, Utah
3. Wayne M. Winegar	Riverdale, Utah
4. Norm B. Jones	Logan, Utah
5. Darrel V. Leamaster	Huntington, Utah
6. E. Lee Hawkes	Centerville, Utah
7. Gayle J. Smith	Salt Lake City, Utah
8. Trevor C. Hughes	Logan, Utah

ARTICLE SEVEN
Incorporators

The names and post office address of the Incorporators are:

<u>Name</u>	<u>Address</u>
1. Robert Hilbert	4888 Andlor, Salt Lake City, Utah
2. Rolf R. Nelson	610 East 650 North, Bountiful, Utah 84010
3. Wayne M. Winegar	5633 So. 1200 West, Ogden, Utah 84403
4. Norman B. Jones	1630 Sunset Drive, Logan, Utah 84321
5. Darrel V. Leamaster	P.O. Box 1048, Huntington, Utah 84528
6. E. Lee Hawkes	265 E. 400 So., Centerville, Utah 84014
7. Gayle Smith	2829 E. 3220 So., Salt Lake City, Utah 84109
8. Trevor C. Hughes	1158 E. 100 So., Logan, Utah 84321

ARTICLE EIGHT
Principal Office

The location of the principal office of the corporation shall be at Logan City, Cache County, Utah and the post office address is 1630 Sunset Drive, Logan, Utah, or such other place as the Board of Directors may designate.

ARTICLE NINE
Dissolution

A. The Corporation is not organized for pecuniary profit nor shall it have any power to issue certificates of stock or declare dividends, and no part of its net earnings shall inure to the benefit of any member, director, trustee or individual. The balance, if any, of all money received by the corporation from its operations, after the payment in full of all debts and obligations of the corporation of whatsoever kind and nature, shall be used and distributed exclusively for carrying out only the purpose or purposes of the corporation particularly set forth in Article Three hereof.

B. In the event of the dissolution of this corporation, or in the event it shall cease to carry out the objects and purposes herein set forth, all the business, property and assets of the corporation shall go and be distributed to such nonprofit corporation of like purpose or purposes as set forth in Article Three, as the directors of this corporation may select and designate; and in no event shall any of the said assets or property, in the event of dissolution, thereof, go or be distributed to members, either for the reimbursement of any sum subscribed, donated or contributed by such members, or for any other such purpose.

Dated this 11th day of August, 1980.

(Signed by)

Robert Hilbert

Rolf A. Nelson

Wayne M. Winegar

Norman B. Jones

Darrel V. Leamaster

E. Lee Hawkes

Gayle J. Smith

Trevor C. Hughes

State of Utah

County of Salt Lake

SS:

I, Gerri Gelino a Notary Public hereby certify that on the 11th day of August, 1980 personally appeared before me the above eight persons, _____, _____, who being by me duly sworn declared that they are the persons who signed the foregoing document as incorporators and that statements therein contained are true.

In witness whereof, I have hereunto set my hand and seal this 11th day of August, 1980.

(Signed by) Gerri Gelino

Notary Public
Residing at SLC, Utah

My Commission Expires:

8/30/82