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Problems of Small Privately Operated Water Companies in Utah

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PROBLEMS OF SMALL PRIVATELY OPERATED WATER COMPANIES IN UTAH

State Law Lacking on Small Water Firms

Summit proposes new water district

Summit County Commissioners are discussing the formation of a new water improvement district for the western part of the county because of what one official called "a serious problem" with a number of water systems.

Lack of Capital, Management Expertise And Regulation Cited as Key Problems

Cameron, many of the small water companies that spring up to serve new subdivisions and recreation developments are sometimes charge rates that are "high."

rates a water company which must stand on its own financially and seek certification as a utility. Oftentimes the equipment is old.

Foothills Water seeks hearing

The Foothills Water Co. is seeking a hearing on its rates.

Canyon Residents Still Enduring Effects of Winter

where water is limited, houses are far apart and some fire hydrants are inoperable.

Water Controls on Target

Water controls on target districts, which are run by elected officers, and homeowner-operated systems, could be exempt from this.

Residents Have Protested Large Rate Hikes

into rates, they would be astronomical," Mr. Hanson said. "And it brings the question should we discourage the use of these rates by ev-

Effects of Winter

where water is limited, houses are far apart and some fire hydrants are inoperable.

Developer's Debt May Leave Homeowners Waterless

subdivision, located at 7370 W. 13300 South.

PSC Prepares Bills to Regulate Small Water Firms

Small water companies also tend to hire maintenance people who do not have the expertise nor the time to maintain and operate a water system of the small size of

Water Firm Seeks Huge Rate Boost

Both Bagley and Co. and the Hi-Country Estates Homeowners Association claim ownership to the water system, and the homeowners have filed a lawsuit in 3rd District Court against the company and other defendants.

PSC hearing to determine new rates for Hi Country Estates

With only a few days remaining before UP&L cuts off service, Thomas G. Bagley, vice president of Bagley & Co., said, "I really don't know what we're going to do."

Measures Meant to Boost Consumer Representation at PSC

the water they are being charged for. "It's just a bunch of wealthy people," Farnell said.

Waterless

Bagley & Co. owes nearly \$10,000 in back electric bills, and Rodney Dansie, who has a contract to operate and maintain the well and pumping system, has filed liens against Bagley.

PSC ok's Mountain Sewer bid

After almost a year's wait, the Mountain Sewer Corp. has been given the go-ahead to provide sanitary sewer service to a real estate development being built on the shore of Pineview Reservoir in Weber County.

Bills Would Dismantle Utilities Division

about the lack of citizens' representation, they are talking special-interest groups.

Waterless

Bagley & Co. owes nearly \$10,000 in back electric bills, and Rodney Dansie, who has a contract to operate and maintain the well and pumping system, has filed liens against Bagley.

Water Company Seeks PSC Approval for Rate Hike

In making the decision, Grundfosson noted that no formal protests were made against the Mountain Sewer application during the hearing on June 22, 1984.

Water Company Seeks PSC Approval for Rate Hike

How to define a "reasonable" amount of water is one of the primary problems in the dispute.

Waterless

Bagley & Co. owes nearly \$10,000 in back electric bills, and Rodney Dansie, who has a contract to operate and maintain the well and pumping system, has filed liens against Bagley.

Water Company Seeks PSC Approval for Rate Hike

The following notice was recently delivered to homeowners in a housing development:

Waterless

Bagley & Co. owes nearly \$10,000 in back electric bills, and Rodney Dansie, who has a contract to operate and maintain the well and pumping system, has filed liens against Bagley.

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Utah Water Research Laboratory
College of Engineering
Utah State University
Logan, Utah 84322-8200

WATER RESOURCES PLANNING SERIES
UWRL/P-85/02

September 1985

PROBLEMS OF SMALL PRIVATELY OPERATED
WATER COMPANIES IN UTAH

by

Jay M. Bagley
and
Frank W. Haws

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Logan, UT 84322-8200

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ABSTRACT

Although one in seven domestic water supply systems in Utah are privately owned and operated, they are characteristically small with 94 percent serving populations of less than 1,000. Per capita costs of service vary greatly but become relatively high for locations that are remote, where terrain and climate are extreme, where scale economies are absent, and where materials and skills for system repair and replacement are not locally available. Statistics indicate that the incidence of water quality violations relate strongly to system size. Yet corrections are often more difficult to achieve because well trained and full time operators cannot be justified.

Private water purveyors in Utah operate as 1) customer (mutually) owned nonprofit systems, and 2) investor owned companies selling domestic water for profit and thus regulated by the Public Service Commission (PSC) as private utilities. Kinds of problems experienced bear a relation to company origin and demographic dynamics. Many of the older private systems are appendages to, or outgrowths of, mutually owned irrigation companies. Their problems generally relate to urbanization and annexation processes. Newer systems are commonly creatures of land development activities that have taken place in more remote areas with appealing natural landscapes and/or recreational attractions. Their problems relate largely to upfront decisions and disclosure about plans for perpetual operation and unrealistic budgeting and financing to provide quality service.

Private water companies are confronted with some discouragements and disadvantages not experienced by their public counterparts in Utah. 1) The justification required to get approval for rate increases through the PSC is tedious and costly. The process is geared to regulation of large electrical, gas, oil, and telephone utilities. 2) Private systems are ineligible for the government grants and low interest loan programs that are commonly available to public water systems. Thus, they experience higher costs for capital improvements. 3) Private water companies are subjected to more stringent proof-of-use requirements in obtaining and maintaining their water rights. The State Engineer is less liberal in granting private entities the acquisition and maintenance of water rights to provide for future needs. 4) Private systems are subject to property and income taxes. The property taxes can be substantial because domestic water systems are capital intensive. 5) There is a prevailing perception among the Utah populace that least cost service is better assured through public ownership and management. Taken together, these factors tend to discourage the operation of private systems and hasten their conversion (or sale) to public entities.

In view of the small number of investor owned water companies operating in Utah and their characteristically small size, PSC needs to streamline its regulatory procedures or let the needed consumer protections be provided within the framework of county government.

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INTRODUCTION

Problem Statement

Publicly owned and operated systems dominate the domestic water industry in Utah. Only 142 out of a total of 943 water systems operate under private ownership. These private water companies are scattered throughout the state and tend to be small in size. Some serve transient populations such as users of campgrounds and parks. Others serve subdivisions in unincorporated areas. Together they serve only about 4 percent of Utah's population. It is common knowledge that small water purveyors (regardless of ownership) are experiencing a highly disproportionate number of problems in striving to maintain quality service. This study was undertaken to identify key problems or operational inadequacies that constrain privately owned water companies from providing safe, dependable, and reasonably priced service.

Private water purveyors in Utah operate as 1) customer (mutually) owned nonprofit systems, and 2) investor owned companies selling domestic water for profit. About 87 percent of Utah's private water companies are mutually owned and about 13 percent are investor owned. Only about 6 percent of Utah's privately owned systems serve populations of more than 1000 people. Holladay Water Company, serving a population of about 13,000, is the largest mutually owned private water system in the state. White City Water Company, also in Salt Lake County serves about 10,000 people and is the largest domestic water system operating as an investor owned water utility. Although private water companies in Utah are generally small and independent, there are no statutory, organizational, or functional factors that set limits to size. Large private water companies are common in other parts of the country. In fact, some investor owned water companies have grown into conglomerates with water utility subsidiaries serving many cities in several states. There are also increasing instances of large municipalities investigating the merit of turning their municipally operated systems over to private entrepreneurs.

Judging from the highly disproportionate presence of public water purveyors in Utah, a logical conclusion is that private drinking water service has not been favored over its public counterpart. When domestic needs are generated, the availability of service from a publicly owned system is a first consideration. However, prevailing circumstances at the time the domestic need arises, may result in the adoption of a private kind of service even if viewed as a temporary arrangement.

Study Procedure

The study approach was tailored to, and tempered by, available time and money resources. Personal visits and interviews with all of the 142 private domestic water companies scattered throughout the state were impossible. It was recognized that information not only from owners and managers of the water companies was needed to identify and analyze key problems, but that information and perspectives would have to be

obtained from regulatory agency personnel, water customers, lending agencies, interacting water organizations, and planners as well. In consultation with personnel from the state Bureau of Public Water Supplies, Department of Health, and the Division of Public Utilities, Department of Business Regulation, a set of companies were identified which represents the range of major problems being experienced. Systems serving trailer courts, resorts or parks, government complexes, etc., were not included because the user-purveyor relation is not typical of the more common community setting. Individuals interviewed with respect to the companies selected, along with those from other entities, are listed in the appendix.

Personal interviews were conducted to obtain specific information related to cost of providing service, institutional/organizational impediments or aids, financial and debt circumstances, problems of meeting regulatory requirements, consumer attitudes and satisfaction, operational problems, and problems related to growth or urbanization. This report summarizes findings from these interviews and offers recommendations for overcoming or alleviating problems identified.

Both the profit-making and non-profit kinds of private water companies were considered in this study. However, particular emphasis is placed on the investor owned or profit making companies under a logic that more singular and in-depth analysis of mutually owned nonprofit companies may become the subject of a follow-on study.

It should be borne in mind that problems identified and discussed in this report are generalized from several specific examinations or case histories. Every water system is unique in physical setting, historical evolution, hydrologic and hydraulic design, financial and debt structure, etc. The concern here is not to critique individual system operations, but to consider them in a comparative or composite sense so that those dealing with problems of small private water systems might more realistically tailor regulatory programs; and so that individual system managers and operators might have general standards of reference from which they may contemplate modifications to improve the efficiency and effectiveness of their own operation.

STATUTORY AND REGULATORY FRAMEWORK
UNDER WHICH PRIVATE WATER COMPANIES OPERATE

Health Department

Private domestic water systems which meet the statutory definition of a "public" water system are regulated by the Utah Department of Health (see UAC 1953, Section 26). Systems which have 15 or more service connections, or serve an average of at least 25 people daily for at least 60 days out of the year, are governed by rules and regulations administered by the Bureau of Public Water Supplies and its Safe Drinking Water Committee. The safe drinking water regulations set maximum allowable levels for particular contaminants, prescribe how water quality is to be monitored through periodic sampling and testing, and specify actions and corrective measures should standards or procedures be violated. To support the regulatory function, the Bureau of Public Water Supplies reviews plans and designs for project construction, certifies operators of public water systems, and administers a loan program to finance system improvements.

State Engineer

The State Engineer, as administrator of the Division of Water Rights, Department of Natural Resources, has the general responsibility for the administration and regulation of water rights (see UAC 1953, Section 73). All applications to appropriate, as well as applications to change existing rights, must be initiated through, and be approved by, the State Engineer. In Utah, water uses for any purpose (domestic, industrial, agricultural, etc.) must be obtained through appropriation or transfer of ownership. The protection of third party interests to any water appropriation or water rights transactions is a central consideration of the State Engineer. He is also concerned that applicants show due diligence in putting water to the use intended and requires proof that quantities claimed are in line with needful requirements.

Public Service Commission (PSC)

Private water companies that choose to operate as a profit making investment are subject to control and supervision by one more agency, the Public Service Commission. The PSC is charged by law to regulate all public utilities of the state including water utilities (see UAC 1953, Section 54). The PSC sets and controls the rates charged for the water service of investor owned water companies. In so doing it may investigate upon its own motion and conduct hearings to which the utility must respond. If the Commission finds the proposed rate charges to be unreasonable, discriminatory, preferential, insufficient, or in violation of the law, it has authority to order adjustments.

The PSC is empowered to supervise all business of the utility, fix the accounting system used, and require annual reports. It requires the company to maintain a depreciation account. It must approve all

contracts of the utility to construct or purchase. Although the PSC is described in the statutes as "purely an administrative body," its mode of operation resembles that of a judicial court. The Commission makes decisions that are binding upon public utilities on a case by case basis. The only appeal beyond the PSC is to the Supreme Court on certiorari. The PSC can and does impose fines against utilities for failure to comply with a Commission order.

To assist the Public Service Commission in its decisions, it draws on staff of the Utah Division of Public Utilities, Department of Business Regulation. The staff of this division is trained in the laws governing regulation of utilities as well as in utility financial management and accounting. Staff findings and recommendations are considered by the PSC in arriving at decisions.

Publicly owned water systems and mutual non-profit privately owned water systems are not subject to the regulatory authority of the PSC. Cities, towns, water conservancy districts, special service districts, and non-profit corporations and cooperatives have been excluded from the control of the PSC (see Logan City vs Public Utilities Commission, 1928, and Garkane Power Assn. vs Public Utilities Commission, 1940). In a 1977 proceeding, Salt Lake County petitioned the PSC to discover and determine if Bell Canyon Irrigation Co., Draper Irrigation Co., Herriman Pipeline Co., Holladay Water Co., and Spring Creek Irrigation Co. were doing business in the county as water companies subject to PSC regulation. After hearing arguments, reviewing memorandum of law, and citing conclusions of a PSC study, the case was dismissed.

The legislative intent is that funds needed by the PSC for carrying out its functions should be provided by the public utilities themselves. The utilities, therefore, pay for the cost of regulation through a regulation fee based on gross operating revenue as determined and administered by the Department of Business Regulation.

Origin and Operating Mode of Private Water Companies

Private water systems presently operating in Utah are listed in Table 1. The groupings provide a feeling for the different kinds of ownership and operating characteristics that distinguish them.

The character of private water companies in Utah bears a relation to their origin. Older companies serving unincorporated communities are generally mutually owned. Some mutual irrigation companies include the domestic supply function within their management structure; others draw on the mutual irrigation company organizational model but restrict service to the domestic need of communities or subdivisions. Irrigation companies that have incorporated the domestic supply function have generally had to adjust operating policies to accommodate changing proportions of irrigation and domestic service over time. A few of these companies, that were in the path of urban expansion, eventually converted to domestic service. For example, the Union-Jordan Irrigation Company had its irrigation uses

Table 1. Privately owned water companies in Utah with population served.

<u>Trailer Courts & Parks</u>					
American Mobile Home Park	350	Greenwich	70	Escalante Valley	70
Capital Reef	41	Grouse Creek	50	Goaslind Spring	35
Coleman Mobile Home	75	Gunlock	100	Gargoza Mutual	916
Don West Trailer Court	40	Henifer	549	Harrisville Heights	130
Eagle Springs & Trailer Ct.	50	Herriman	900	Haycock Lane	150
Five C's Trailer Ct.	50	Hiawatha	249	High Creek	40
Hadfield Trailer Ct.	110	Holladay	13,500	Highland	25
Hot Springs Trailer Ct.	135	Kenilworth	500	Highland Water Co.	2,800
Millstream Trailer Ct.	150	Leeds	240	Hoytsville	210
Pace Trailer Ct.	125	Liberty	375	Interlaken Est.	35
Royal Coachman Trailer Ct.	235	Manderfield	75	Kanab Creek Ranchos	100
S&W Trailer Ct.	200	Manila Water Co.	2,400	Lincoln	350
Total	1,561	Marion	100	Lower Boundary Spr.	120
		Montezuma	100	McDonald Condos	64
		Neola	350	Mid Valley Estates	45
		New Castle	150	Monte Verde	140
		North Emery	1,001	Monte Vista	75
		Ophir	80	Monte Vista #2	75
		Peoa	150	Mountain Green	75
		Peterson	200	Mtn. Meadow Park	80
		Pine Valley Irr. Co.	520	North Dry Creek	160
		Pleasant View	3,997	North Spring	125
		Riverside	600	Park West	50
		Rockville	130	Richville	110
		Snowville	237	Riverside Cul. Wtr. Co.	90
		South Monroe	25	Shuler Water Co.	25
		South Price	400	Silver Fork Pipeline	570
		South Willard	225	Silver Lake	640
		Spring Creek Irr. Co.	2,400	South Cove	50
		Thatcher-Penrose	340	South Littleton	28
		West Corrinne	600	So. Robison Spr.	27
		Woodland	150	Spring Glen	545
		Total	32,035	Spring Glen Wat. Co.	35
				Spring Lake	300
				Spring Dell Plat A	70
				Summit Water Dist.	1,000
				Sunset Water Co.	35
				Ticaboo	260
				Timberline	65
				Twin Cities	1,009
				Ukon Water Co.	725
				Veyo Cul. Water Co.	500
				Vivian Park	275
				Webb Well Water Users	75
				West Enterprise	45
				Westside	125
				Westwood	260
				White Hills Sub.	33
				Willow Creek	450
				Wolf Cr. Country Club	100
				Total	21,912
<u>Regulated Utilities</u>					
Bridgerland	45	North Emery	1,001	Monte Vista	75
Dammeron Valley	55	Ophir	80	Monte Vista #2	75
Ence Water Co.	150	Peoa	150	Mountain Green	75
Flaming Gorge	125	Peterson	200	Mtn. Meadow Park	80
Golden Gardens	150	Pine Valley Irr. Co.	520	North Dry Creek	160
Hi-Country Estates	220	Pleasant View	3,997	North Spring	125
High Valley	250	Riverside	600	Park West	50
Highland Subdivision	400	Rockville	130	Richville	110
Lakeview	115	Snowville	237	Riverside Cul. Wtr. Co.	90
New Sherwood Shores	320	South Monroe	25	Shuler Water Co.	25
Nordic Valley	450	South Price	400	Silver Fork Pipeline	570
Silver Springs Water Co.	630	South Willard	225	Silver Lake	640
Storm Haven	100	Spring Creek Irr. Co.	2,400	South Cove	50
Summit Park	650	Thatcher-Penrose	340	South Littleton	28
Timberlake	est. 600	West Corrinne	600	So. Robison Spr.	27
Wanship	150	Woodland	150	Spring Glen	545
White City	10,000	Total	32,035	Spring Glen Wat. Co.	35
Wilkinson	250			Spring Lake	300
Total	14,660			Spring Dell Plat A	70
<u>Older Communities</u>					
Bluff	180	Acme Water Co.	540	Sunset Water Co.	35
Bothwell	270	Bell Canyon	1,200	Ticaboo	260
Boulder	110	Brooklyn Tap Line	130	Timberline	65
Burrville	37	Canyon Country	60	Twin Cities	1,009
Carbonville	100	Cedar Ridge Sub.	50	Ukon Water Co.	725
Cluff Ward	150	Center Creek Cul. Water	280	Veyo Cul. Water Co.	500
Croyden	50	Covered Bridge	120	Vivian Park	275
Draper Water Co.	4,400	Daniel Domestic	320	Webb Well Water Users	75
Dutch John	185	Daniel-Bethers W.C.	50	West Enterprise	45
East Carbonville	25	East Price Water Co.	200	Westside	125
Eden	650	Eastland	100	Westwood	260
Elberta	70	Echo Mutual	70	White Hills Sub.	33
Eskdale	45	El Paso Nat. Gas.	200	Willow Creek	450
Fairfield	60	Emery Star Rt.	120	Wolf Cr. Country Club	100
		Enterprise Water Assn.	60	Total	21,912
		Erda Acres Water Co.	35		
<u>More Recent Subdivisions</u>					

so overshadowed by domestic uses that the company eventually obtained a certificate of necessity and convenience to operate as a private water utility. After several years of operating in this mode, the company was purchased by Sandy City and is now a part of that municipal system. Other companies have retained their irrigation company identity and still provide both irrigation and domestic water, with the latter steadily becoming more predominant as the former declines. Draper Irrigation Company is a good example of this kind of operation.

Old line companies separately organized to provide domestic water service have continued over the years making incremental expansions and improvements as demands developed. The Manila Water Company in Utah County is a good example of this kind of private company. Although variations may exist in the way mutual companies define membership and issue stock, the customers are "share holders" in the operation and must meet all expenses.

Problems of the older companies have centered around the adjustments to meet changing and growing patterns of demand and the jurisdictional problems related to annexation. Problems of more recently organized water companies seem to be more closely related to cost and dependability of service and financial management. The circumstance that has given rise to new private water companies in Utah has been the development of new communities and subdivisions quite separated from existing cities and towns. These more isolated developments, often capitalizing on appealing natural landscapes and/or recreational attractions, lack immediate access to existing public water supplies. Since water is essential to the marketing of building lots, water rights are acquired and service provided under one of the two previously mentioned forms of private ownership.

Although new investor owned private companies come into existence periodically, the number operating at any one time shows little change over time. This means that there is a steady transition or conversion from regulated private to unregulated private or to public forms of management. Mutually owned companies also occasionally convert to public forms of ownership and operation. The transition from private to public seems to be irreversible in Utah. No example of converting from a public to a private operation is known.

PROBLEMS GROWING OUT OF THE REGULATORY PROCESS

Meeting Safe Drinking Water Standards

Small water companies are experiencing a disproportionate number of problems in meeting the safe drinking water standards. With the exception of Holladay Water Company (mutually owned) and White City Water Company (investor owned) all of the private water companies in Utah serve fewer than 10,000 population. It is logical to expect, then, that private water companies would experience problems that are characteristic of smaller water supply operations. Table 2 compares the size distribution of public and private water companies for systems serving populations of 10,000 or less.

The preponderance of systems in the small population categories is well illustrated in Table 2. The particularly high proportion of privately owned systems in the lowest (less than 1,000 people served) category is a significant distinction.

Compliance Problems

An analysis of the bacteriologic sampling record of privately and publicly owned water systems in the less than 10,000 population class confirms the perception that water quality problems relate quite strongly to system size. Based on a 12 month period ending January 31, 1985, Table 3 summarizes violations in terms of the number of required samples not submitted and Table 4 shows the number of times maximum allowable bacterial levels were exceeded in the samples analyzed.

Table 2. Population size distribution for privately and publicly owned water systems serving less than 10,000 people.

Population	Publicly Owned			Privately Owned		
	No.	Percent	Accum. Percent	No.	Percent	Accum. Percent
0 - 1000	122	56	56	132	94	94
1001 - 2000	55	25	81	5	4	98
2001 - 3000	10	5	86	1	1	99
3001 - 4000	5	2	88	1	1	99
4001 - 5000	7	3	91	1	0	100
5001 - 6000	6	3	94	0	0	100
6001 - 7000	5	2	96	0	0	100
7001 - 8000	1	1	97	0	0	100
8001 - 9000	5	2	99	0	0	100
9001-10,000	1	1	100	0	0	100
Totals	217	100		140	100	

Table 3. Missing samples by system size categories.

Population	Publicly Owned			Privately Owned		
	No.	Percent	Accum. Percent	No.	Percent	Accum. Percent
0 - 1000	166	69	69	171	97	97
1001 - 2000	37	15	84	6	3	100
2001 - 3000	6	2	86	0	0	100
3001 - 4000	5	2	88	0	0	100
4001 - 5000	6	2	90	0	0	100
5001 - 6000	8	4	94	0	0	100
6001 - 7000	3	1	95	0	0	100
7001 - 8000	0	0	95	0	0	100
8001 - 9000	10	5	100	0	0	100
9001-10,000	1	0	100	0	0	100
Totals	242	100		177	100	

Table 4. Unsatisfactory results by system size categories.

Population	Publicly Owned			Privately Owned		
	No.	Percent	Accum. Percent	No.	Percent	Accum. Percent
0 - 1000	135	71	71	172	100	100
1001 - 2000	39	21	92	0	0	100
2001 - 3000	4	2	94	0	0	100
3001 - 4000	0	0	94	0	0	100
4001 - 5000	4	2	96	0	0	100
5001 - 6000	0	0	96	0	0	100
6001 - 7000	2	1	97	0	0	100
7001 - 8000	0	0	97	0	0	100
8001 - 9000	4	2	99	0	0	100
9001-10,000	2	1	100	0	0	100
Totals	190	100		172	100	

From this single year comparison of bacteriological sampling it appears that practically all of the water quality problems in privately owned systems occur in systems serving less than 1,000 people. Of those serving less than 10,000 population in the publicly owned category, about two-thirds of the violations occur in the category of less than 1,000 people. On a per system basis, the number of both "insufficient"

samples and "unsatisfactory" samples are slightly higher for the private systems but this is quite likely related to the size rather than the ownership factor.

Operator Problems

Obviously, the Bureau of Public Water Supplies and the Safe Drinking Water Committee to which it is coupled, face difficult problems in upgrading and maintaining small drinking water systems to levels dictated by water quality standards. Small systems cannot afford full time specially trained operators. Recognizing that small system violations are often related to faulty operation or human mistakes with systems that are physically capable of producing good quality water, much emphasis has been focused on training of water system managers/operators.

A significant but little publicized reinforcement to the educational thrust of the state Bureau of Public Water Supplies has been provided by the Rural Water Association. This organization of rather recent origin, and whose membership is made up of people responsible for water service in rural regions of the state, is a non-profit corporation whose primary function is to train operators and assist communities in the solution of problems by site visits. Operating with contract funding from three governmental agencies, but with administrative ties to none, a three-man staff provides a "circuit rider" program that offers on-site assistance and advice for problem systems. The Rural Water Association also sponsors frequent workshops and training seminars, and conducts them at various locations throughout the state to minimize travel and per diem costs to small system operators. Since most small system managers and operators are part time and many are unpaid, bringing the programs closer to them is a significant factor in their participation. Although the RWA has been in operation for several years, only a few of the private system owners and managers interviewed in this study were aware of its existence. Those who were acquainted gave enthusiastic endorsement to its efforts. A factor in a congenial working relation with a small system operator is that RWA staff have no regulatory authority and do not report observed shortcomings or even violations of standards to the regulatory agencies.

Several private owners and operators commented that state authorities are less tolerant of their problems and therefore less helpful than they believe they could be. While a company may feel that regulatory agency positions are oftentimes inflexible and unsympathetic, the assertion of authority mandated in the statutes may leave little room for discretion on the basis of site circumstances. Most owners and operators interviewed indicated that they had come to feel much more comfortable with safe drinking water requirements than formerly. As they have become more familiar with requirements and have incorporated the sampling and testing routine into their operation, their apprehension about "unfeeling" regulators has subsided. On the whole, private operators better appreciate the preventative goals of the safe drinking water program. They "point with pride" to any physical improvements made and are pleased to report a history of "good" samples and any recognition for maintaining an "approved" water supply. As a general conclusion, however, small privately owned water systems, dependent on part-time non-professional managers/operators, and particularly where treatment or disinfection is necessary,

characteristically experience more problems in maintaining prescribed standards of quality than do the large systems that can justify more highly trained and full-time operators.

Recent legislation, requiring operator certification with the aim of reducing the proportion of violations that result from operator error or neglect, will have minimal affect on private water companies. For practical reasons, the mandatory training requirement of the legislation applies to systems serving populations of 800 or more. As has been noted previously, 94 percent of Utah's private drinking water systems serve populations of 1,000 persons or less. Certification of operators will undoubtedly do much to assure a safely maintained water supply for the vast majority of the state's population affected by the requirement. Perhaps encouragement for those systems serving populations under 800 to cooperate in use of certified operators would be helpful in lessening problems of quality maintenance.

Water Rights Problems

The kinds of problems experienced by private domestic water companies as they relate to interaction with the State Engineer have mostly to do with appropriation or change of use, falling generally into such categories as: converting a seasonal irrigation right to a year round domestic use, return flow adjustments as points of diversion are changed, converting direct flow rights to storage rights, granting of individual well permits within a water franchise area, interpreting water entitlements from the language of judicial decrees, and providing justifications of need and proof of actual use. Although the merits of each individual criticism or complaint could not be evaluated, it can be noted that situations of the kind listed above are assessed routinely by the State Engineer and his decisions on these matters are rarely reversed in court challenges. It is doubtful that discrimination because of the private nature of the organization could be readily shown in such instances. However, one area of complaint, and voiced by a large majority of owners/managers interviewed, does seem to be prejudicial and deserves some thoughtful consideration.

Private purveyors of domestic water generally believe they are subjected to a different standard of proving and quantifying beneficial needs and uses than is required of their public counterparts. They also believe the State Engineer takes a much more restrictive stance in allowing acquisitions of water in accordance with projected demands associated with growing populations. They assert that public entities can distribute water to a variety of uses at their own discretion under their "corporate" right while private companies must provide greater definition and more detailed proof in justification of each kind of use. Private companies maintain that public entities are given substantial latitude in acquiring and holding water rights in expectation of future needs. They complain that their own water planning horizons are limited to real and immediate needs justified on a case by case basis and with strict consideration of geographic bounds. Some managers of private companies say they actually have been advised by the State Engineer that

it would be easier to obtain and maintain needed water supplies operating as a municipality or a special purpose district.

Discussion with personnel of the Office of the State Engineer indicates that operating criteria followed in administering the water rights of private companies engaged in domestic water service is similar to rules and policies that have traditionally been applied to private irrigation companies. A statutory basis for applying different standards to public and private entities is also postulated. Sections 73-1-4 and 73-3-12 which relate to holding a water right or an approved application without making actual use are cited as guides. Both sections provide for such holding "by any municipality, metropolitan water district, or other public agency to meet reasonable future requirements of the public." The interpretation seems to be that these sections relate specifically to those publics being served by public agencies. A more rational interpretation may be that "any municipality" refers to "any municipal water supplier" (since this is the kind of water under discussion in the statute). There is no reason to believe that meeting the future water requirements of publics living in Holladay, White City, or Highland Hills is any different than meeting the future requirements of residents in Murray, Sandy, or Pleasant Grove insofar as water rights administration is concerned.

In justification of a different standard of proof of beneficial use as between public and private entities, the State Engineer cites Section 73-3-16. That section, spelling out the requirements for proof of completion of works and actual application of the water to a beneficial use, has a proviso that "for federal projects constructed by the Bureau of Reclamation for the use and benefit of the state, any of its agencies, its political subdivisions, public and quasi-municipal corporations, or water users associations of which the state, its agencies, political subdivisions or public and quasi-municipal corporations are stockholders, the proof need show no more than..." (Projects built by the state under programs of the Water Resources Board have been added to this proviso also.) There is logic in accepting maps, drawings, documents, measurements, and materials prepared in the construction of large projects by reputable agencies since they contain the substance, detail, and accuracy required. It does not make sense to duplicate this information nor to insist that it be cast in specific form or format to meet some standard proof requirement. However, in allowing the federal Bureau of Reclamation and the state Division of Water Resources some variances from a standard proof submitting process, it does not necessarily follow that entities named in a prepositional phrase illustrating to whom the benefits of the named agency projects might accrue should be interpreted as a mandate to make them objects of the proviso also. Both Bureau and Division projects are for the use and benefit of both public and private organizations and both are parties to project repayment or repurchase contracts. Why communities such as Holladay, White City, and Highland Hills should be subjected to more stringent standards of proof of use than should communities such as Murray, Sandy, or Pleasant Grove is not very clear. Section 73-3-16 also has a paragraph stating that "the state engineer may waive the filing of maps, profiles, and drawings if in his opinion the written proof adequately describes the works and the nature and extent of

beneficial use." This discretionary authority may be the most clear statutory basis for differentiation in proof requirements for justifiable reason. In any event, a more rational basis for establishing different levels of surveillance and operating controls would be on the basis of different use categories and not whether a given use is managed under a public or private organizational structure.

Perhaps influenced by feelings of discrimination in the instance described above, some private companies believe they are at a disadvantage with the State Engineer in the arbitration of a water right controversy involving a private and a public entity.

Public Service Commission Problems

Domestic water is an essential commodity that can be most economically and efficiently provided on a community basis by a single supplier. It is impractical to provide duplicate facilities from which customers can choose service on a competitive basis. Under such circumstances, the owner has a natural monopoly and, if left unregulated, may be inclined to exploit customers. Thus, the state exercises regulatory responsibility over investor owned water utilities to oversee their operation and protect rate payers from unreasonable charges and/or inadequate service. This is accomplished through the Public Service Commission.

Limited Clientele

As previously noted (see Table 1) there are presently 18 investor owned private water utilities being regulated by the PSC. Only one (White City Water Company) serves a population of more than 650 people. The total population served by investor owned companies, and thus regulated by PSC, is 14,660 which amounts to approximately 1 percent of Utah's total population. Obviously, water matters can justify but a very small proportion of the effort devoted by PSC and the Division of Public Utilities to regulation of utilities in general. Yet, water utility matters are constantly before the commission and consume time and money in far greater amounts than could be justified by the proportion of the public affected. Even though staff and commission time expended on water utility matters is relatively small, the income from assessments collected to underwrite costs of regulation fall way short of covering costs of efforts devoted to water. Despite its minor position in the utility hierarchy, media attention to a hearing involving a small water company problem may be greater than that given to a gas, electric, or telephone hearing in which the number of people affected and the financial stakes may be dramatically higher.

Lack of Water Specialists

Because of the limited involvement with water utility matters, the Division of Public Utilities cannot justify the full time staff specialists for water as is appropriate in the instance of the major utilities. Although elements of system design, installation, operation,

and maintenance may bear significant relationship to reliability and costs of service, personnel with expertise in these areas are not found in the division. This lack of specialization, coupled with limited staff time available for water matters within the context of time demands for the weighty regulation problems of the major utilities, sets limits to how thoroughly a particular issue may be evaluated.

Partly because of the realities described above and as a practical matter, the Public Utilities Division commonly encourages applicants for a certificate of necessity and convenience to explore possibilities of service through connection to a municipal or political subdivision or to consider operating as a mutually owned corporation. Such recommendations may reflect a belief that for the typical small water company the costs of regulation may not be justified by the benefit received.

Rate Determination Process

The primary interaction between the Public Service Commission and an investor owned water utility is in the establishment of rates for the water service provided. The cluster of problems identified by both water companies and the commission relates to the rate determination process and the ground rules, policies, and procedures connected to it.

From the point of view of the water utility owner, processing an application through the commission apparatus is costly in terms of both time and money. Small system owners say that familiarizing themselves with procedures, obtaining and organizing information in prescribed formats, securing the services of accountants and attorneys, and devoting the time for discussions with all concerned as well as participation in the hearing itself, surely add up to more expense than a small operation can justify. Of course, this generalization does not apply equally to all small water systems. However, only the manager of the largest water utility interviewed failed to find fault with the rate determination process.

Staff of the division indicates that water company evaluations are often slowed because essential records and information are poor and incomplete. Much discussion and delay occur as staff work with water system owners to assemble the kind of documentation needed and in the format desired to support a request to the PSC.

Some small system owners felt that the rate setting process generated an adversarial attitude on the part of the Division staff who seemed to feel their role was to find reasons why the rate increase sought should not be granted. On the other hand, several consumers interviewed agreed with the polarizing result but criticized the Division and the Commission for not adequately defending the consumer interest.

In reviewing some of the Commission files it was apparent that the interval between company petitions for rate increases was characteristically long and the increase sought was relatively large. Obviously, a large increase in rates arouses a correspondingly large outcry from rate

payers. In every case examined which fit this pattern, the Commission granted interim rate increases below the requested amount and scheduled final rate hearings for a later date. Owners were questioned as to why they did not try to shorten the interval between rate adjustments to keep them better attuned to steadily increasing costs and make them more palatable to rate payers. Their uniform response was that the costs associated with rate hearing were so high that any gain from a small rate increase could be largely offset by the cost of obtaining it. Both interim and final hearings added to the expense problem. Thus, they were on the horns of a dilemma; infrequent petitions minimized the costs associated with the rate determination process, but the magnitude of the infrequent rate increase became very difficult to explain to customers thus creating more ill will and distrust among them.

The Commission utilizes the judicial process in its approach to rate determination. This format is to allow all the arguments both for and against a particular petition to be fairly presented before an administrative law judge. The judge weighs all the evidence and makes a ruling. The hearing process is very formal and follows essentially the same ground rules as used in adversarial proceedings of a trial court. In fact, the hearing room is a copy of a trial court with "plaintiff" and council seated at tables on one side of the room and the "defendant" and council seated on the other. The methodical procedure of calling and swearing witnesses, obtaining their testimony through direct questioning, introducing evidence, cross examination, redirect questioning, etc., is calculated to be completely fair to owner and customer and to expose all the relevant facts so that a just decision can be rendered. However, two small system owners said that for a small businessman, inexperienced in court trials, the process can be demeaning and demoralizing.

PROBLEMS RELATED TO URBANIZATION

Annexation Pressures

An inescapable consequence of urbanization is the annexation process which results in a simultaneous swelling of some institutional jurisdictions and a shrinking of others. These changing jurisdictional boundaries require new considerations about responsibility and authority for providing services. Consequently, not only must the small private water company respond to increasing demands caused by internal growth, but must consider and react to situations resulting from the juxtaposition of neighboring cities or communities whose boundaries may be crowding ever closer and whose demands for water service are also growing.

Under such circumstances, the investor owned utility, operating under a certificate of necessity and convenience, and with a geographic franchise for exclusive service, has fewer problems than the mutually owned counterpart. If the private utility is providing safe dependable service at costs comparable to neighboring entities, and if this can be accomplished with a reasonable rate of return to owners/investors, there is little problem. In instances where the quality of service is inferior to that provided by a nearby supplier, and/or if rates are appreciably above those levied by neighboring systems, customers will surely complain and perhaps wish they could be served by the neighboring entity. Should the owners of the private company conclude that they cannot profitably provide the required standard of service, their recourse is to sell out. This scenario has been quite commonly experienced with investor owned water utilities in Utah. Potential buyers of the system are the residents, who may convert to a customer owned non-profit operation, or a neighboring entity, usually a municipality or water conservancy district, which then incorporates the physical works into their own operating system. Since these shifts have been unidirectional the inescapable conclusion is that water utility rates of return are insufficient to attract investors. There are no instances in Utah where a company has been purchased by another investor.

The mutually owned and operated private water companies experience the same problems as described above. However, the fact that service boundaries are not protected by a county franchise sometimes leads to greater problems related to annexation or the interference that may develop from independently conceived plans to extend service. A subdivision may spring up within the normal service area of a private water company such that existing lines or simple extensions of them might readily accommodate the water supply need. Yet, if in proximity to a city or town that offers a full range of services, residents of the subdivision may see attractions in annexation. Annexation may result in city pipelines paralleling/crossing the private company lines in order to provide water service to the annexed area. The consequence is that higher than necessary capital investment for water service is incurred. Several companies reported problems of this kind. In one instance

where a private system and an adjacent public system were trying to share some facilities so as to avoid duplication costs, occasional problems were cited in which independent actions with respect to the jointly used facilities had led to friction.

Acquisition and Merger

The sale or transfer of a small customer owned water company seems to be much more complex than its investor owned counterpart. Some mutual irrigation companies have issued different classes of stock. This seems to be in recognition of the fact that "secondary" (domestic) uses need to be fitted into the structure of mutual ownership but "the tail shouldn't wag the dog." Thus, stock issued for domestic use only has usually been non-voting. Unlike a municipality or a conservancy district, that conveys no equity interest to individual users, a mutual water company normally conveys ownership to members in the form of stock certificates representing proportionate shares of the water rights owned by the company. These can be bought, sold, or bartered as private property. To a residential water user, who may own non-voting stock, or who in any case would own a token amount of stock, considerations of a transfer in company ownership is not a big "pocket book" issue. If the new entity provides as good or better service at equal or less cost, the residential user sees no great problem in the transfer. However, those with voting stock (parent stock), held in larger amounts and representing mostly non-residential use, have much greater concern for considerations of a company takeover. They view their stock as an asset not just an entitlement to service. They are interested in capturing all asset values associated with their share of stock ownership. This may include both physical works and water rights, with water rights valued for the higher valued use rather than the current use value. It may also include the value of assets that become valueless without water. Some companies that have actually made exploratory negotiations with a potential buyer have discovered considerable diversity among stockholders with regard to the evaluation of the worth of their stock. The fact that there is a ready market for individual stock (unless the company imposes restrictions) may also influence the ease with which a "collective" sale could be made. Many of the larger cities and districts have standing policies of purchasing irrigation company stock as available. It is quite common also for cities and towns to require subdividers to provide the city with water stock as a condition of approving new subdivisions. Under such policy, municipalities and districts have acquired stock in private mutually owned water companies from individual shareholders. These acquisitions are worrisome to some company officials and boards of directors. They see in this a loss of viability and a possible throttling of their own potentials for continuing service. Especially those private systems who feel they are keeping ahead of their distribution and water quality problems, and whose rates are substantially below their neighbors, feel threatened by certain decisions and actions of their "big brother" counterparts.

Small private companies facing these situations agonize about their future. There is a certain pride and attachment to the ownership and operation of the company especially among those who have "grown up" with

the system and have sacrificed much to secure and maintain it. With some, the system has almost become personified to the extent that to part with it or greatly alter its existing style of operation "would be like losing a family member." Yet most of these prominent managers or board members express a "handwriting on the wall" feeling that these small systems will eventually be merged with a larger public entity. Some even express a certain logic in such mergers.

PROBLEMS RELATED TO FINANCING AND COST FACTORS

Private water companies in Utah raise funds for capital financing and for paying operating costs in a variety of ways. While it might be expected that capital would normally be raised through issuance of bonds or sale of additional stock, these means are rarely used. While certain financing and revenue sources available to public water entities are not available to private companies (i.e. taxes, government grants), there are certain flexibilities in the choice and use of financial options that some private companies believe to be advantageous.

Discriminatory Lending Policies

Local banks have been a common source of credit for many private water companies. The money is generally spent on specific capital improvements, and repayment periods are generally short but flexible. Although investor owned water companies are generally not eligible for governmental loans and grants, mutually owned companies serving rural communities have qualified for and received financing from the federal Farmers Home Administration and the state Division of Water Resources. In more recent years, interest rates charged by the FmHA have been substantially increased and none of the company officers interviewed seemed to favor this source of financing. While there are no statutory restrictions on lending to private companies under the Division of Water Resources program, the Water Resources Board has consistently shied from such support unless there were health related justifications. The Water Resources Board is wary of supporting companies that provide "exclusive" service or that can discriminate as to who receives water service. If a proposed water improvement project of a mutually owned company exceeds \$250,000, the Board normally requires that a public district be organized to own and manage the water service. The stated basis for this policy is that 1) a public organization has more ways to raise revenues to guarantee loan repayment, and 2) there is less likelihood of discrimination in clientele served. Perhaps an even more appropriate criterion would be concern for whether capital or interest subsidies result in excessive gain to a clientele which is not the target of the subsidy.

It might be observed that the only additional revenue producing option of a public over a mutually owned corporation is the ad valorem tax. While the ostensible justification for desiring taxing authority is the added way of raising revenue, oftentimes the result is a redistribution of costs not in proportion to the water benefit received. The concern about discrimination in who bears the cost burden may be more significant than the expressed concern for discrimination a purveyor may exercise in providing the water service. According to owners and managers of the private companies interviewed, the concern expressed by the Water Resources Board about possibility of discriminatory service is more conjectural than real. Private companies operating under certificates of necessity and convenience must provide service to those within their franchise area who wish to subscribe. Mutual non-profit companies requiring "membership" or "stock purchase" as a condition of water service

could restrict the issuance on a discriminatory basis if such a policy were adopted. However, none of the companies interviewed were placing any arbitrary restrictions on service to those willing to assume the prevailing fees for membership, connection, rate structure, etc.

Although the Utah Department of Health and the Community Impact Board have financial assistance programs for improving domestic water systems, by statute they assist only political subdivisions. Private water companies are ineligible for loans from these programs. Thus, if water treatment improvements are required under the safe drinking water programs a greater financial burden must be shouldered by private water customers over many of their fellow taxpayers being served from publicly owned systems. Discrimination between community water systems on the basis of whether or not characterized as a "political subdivision" may not be commensurate with priorities based on greatest health benefit or improved compliance with standards.

The attractiveness of governmental granting and subsidized lending programs has been a significant factor in the transition of some private water systems to public ownership and operation. The Flaming Gorge Water Company in Daggett County and the Consumers Water Company in Kane County are typical of such conversion to special service districts which have then obtained needed financial help from state governmental lending programs. The taxing authority of such political subdivisions is presumed to be an advantage in terms of operating revenues and security of repayment. However, local concerns for inequitable application of the ad valorem tax has led to the drawing of district boundaries in ways that remove some of the best revenue producing properties. The town of Manila, for example, has chosen to be excluded from the newly proposed special service district that is purchasing the Flaming Gorge Water Company. In the Church Wells Special Service District (successor to the Consumers Water Company), it appears that county land appraisals aimed at placing most of the tax burden on platted but unsold lots will simply result in the lots reverting to county ownership through non-payment of taxes. Thus, the advantages some water users envisioned in the use of taxing authority may not materialize.

The Public Service Commission requires that private water companies under its supervision maintain reserves for replacement of depreciated assets. Mutually owned private companies, partly because of their own corporate bylaws and partly because of their understanding of Internal Revenue Service requirements related to their non-profit status, generally do not maintain such reserves. In all companies visited, a "connection fee" is utilized, not only as an equitable means of distributing costs to customers over time, but also to provide a modest reserve for financing periodic system improvements. Some companies assess a "development fee" for financing specific system improvements. Others simply adjust annual assessments or monthly rate charges for a predetermined time period calculated to pay for an approved capital improvement within that period. Rates are then reduced as appropriate.

The Highlands Water Company, a mutually owned system, in Utah County, has steadily moved away from outside sources of funding and is following

policies that will minimize or eliminate this need altogether. This is of interest in that the company is expecting rather phenomenal growth within its service boundaries. This company has paid off ahead of schedule both bank loans and state government loans. It has adopted a policy of placing a substantial part of each connection fee into a capital improvement and replacement account. It also sets water rates in accordance with specific system improvements contemplated. Highlands Water Company indicates that its reserves for replacement and improvement have not been questioned by IRS because they are reasonable and cannot be distributed back to shareholders as profit. A major reason given by Highlands Water Company for avoiding government loans is that freedom from restrictions and mandates of government lenders results in a better selection of contractors and better control over materials and equipment utilized. Management feels that a better quality and more cost effective construction is possible if decisions are not tempered or controlled by the requirements of governmental lenders. While this may be true for companies large enough or fortunate enough to have knowledgeable and experienced management, the requirements a lender might impose may actually provide some safeguards to unsound initiatives of those managers less aware of design and operating hazards and vulnerabilities.

Incremental System Construction

The financing and cost factors experienced by private water companies created to serve new subdivision developments are often quite different from those experienced by older companies. Some of the smaller subdivisions grow out of the active interest of a property owner to capture the profits from converting raw or agricultural land to residential uses. Such owners are not professional or career land developers but have interest in a one-time development opportunity. Recognizing that water is essential to the sale of lots the owner may make use of a convenient water source and begin servicing lots as they are sold and occupied. Water utilities are capital intensive. Rather than build initially the water system to serve some ultimate land development, the subdivider often chooses to extend and improve the water system in increments that more closely parallel the actual sale of lots. Thus, there is a periodic problem of integrating old and new parts of a water system. Operating efficiencies may be lower than those obtainable if the system were planned to best serve the ultimate development. However, the logic of incremental system construction in terms of minimizing investment risks that increase with longer range projections of supply need cannot be denied. Some companies growing out of this owner involved pattern have experienced substantial customer dissatisfaction with quality of service and costs which seem unusually high. Mediocre system design and operation is undoubtedly a factor in many instances. Violation of safe drinking water standards is more common among these small property owner designed and operated systems.

Cash Flow and Budgeting Problems

On the other hand, cost and budgeting problems have also been common with larger subdivisions planned and developed by those in the business

of land development. Recognizing the obvious advantages in terms of labor, materials, and installation costs as well as the elimination of future disruption damage and inconvenience associated with incremental installation, utilities for an entire subdivision are designed and installed in a cost effective sequence prior to the offering of lots for sale. Examples of such development are Bloomington in Washington County, and Summit Park in Summit County. The income stream from the large capital investment required to build a residential water system may fall far short of the costs to service the initial debt because returns from lot sales may extend over many years. As lot owners subscribe to water service, they presumably begin to pay a pro rata share of the costs associated with providing the service. However, the developer must absorb the pro rata share of the water system expense associated with unsold lots. This may become a very substantial financial burden. If lot sales are slower than expected, income generated from water service is also less than expected. Thus, the scale economies and operating efficiencies planned for are unrealized when customers are slow in coming on line, and cash flow problems start to develop.

Operating Cost Problems

In recent years prominent land development activities have taken place in more remote areas with appealing mountain landscapes and/or recreational attractions. Often, the terrain presents special problems in design, installation, and maintenance. Quite commonly, lot sizes are larger and subdivision configurations are elongated or less compact. A substantial portion of the lot owners occupy their homes seasonally. All of these factors lead to higher costs in providing water service. Developers fear that high water charges may discourage lot sales. Therefore, until lots are sold, the developer characteristically provides the water service at a cost well below actual. Apparently, as income from lot sales tapers off, cash flow problems develop and/or financial resources may become less readily available such that it becomes desirable to capture the full cost of providing the water service. Characteristically, the gap to be made up between the subsidized and actual cost can be very large and may provoke customers into strong resistance. The magnitude of the increase, with no visible changes in capital or operating costs to account for it, make residents wonder if the owners are seeking unreasonable profit.

In its recent application to the Public Service Commission for a certificate of necessity and convenience as a water utility, developers of Hi-Country Estates subdivision requested approval of a rate of \$890.63 per year, said to be based on operational cost experience the previous year. The previous year the developer had encountered substantial resistance to a proposed rate hike to \$400 per year from the \$100 per year charge that had been in effect through earlier years as lots were being acquired and occupied. Similarly, Summit Park Water Co. served customers in the Summit Park subdivision for many years for a minimum monthly charge of less than \$14.00 per month. Up to 1980 when about 97 percent of the available lots were sold, this rate was still in effect. In a 1985 rate hearing the developer presented justification in support of a requested rate increase to \$82.90 per month.

These examples are quite typical of the policy pattern followed by developers providing their own water service to areas being subdivided. Such dramatic rate increases following a rather extended period of uniformly low charges for water service are not readily explainable to customers. Although some customers are willing to accept the fact that past water service has been undervalued, most have the impression that charges have not been greatly out of line with actual costs to provide the service. Consequently, they surmise that the developer is now attempting to capture profits from the water service that are exorbitant. An amicable resolution of such problems, once set in motion, is difficult. Homeowners interviewed in three different subdivisions, having gone through this experience, expressed considerable skepticism about the owners justification for increases sought. Acting through their homeowners association, they have generally sought legal council to advise them in opposing the requested rate increase before the Public Service Commission. They also seek information and advice about purchase of the system and operation as a mutually owned private company or as a public entity such as special service district. Some homeowners assert that the dramatic rate increases are specifically planned to provoke homeowners to buy out the developers interest. Developers insist that there comes a time when subsidization must stop and that they simply must charge rates commensurate with real costs. Unless the PSC has a way of monitoring these situations it cannot encourage water supply companies to adjust rates as needed on a more frequent basis.

Problems of operating and maintaining the physical system vary from company to company. Some of the older companies have experienced an almost total phase out of farm irrigation water supply. Others still have a rather large demand for irrigation water deliveries along with growing demands for domestic service within their service boundaries. Although the large majority of private water companies depend on wells and springs as primary sources of supply, there is considerable variation in costs associated with pumping. A reasonable generalization, judging from comments of those interviewed, is that power costs are more burdensome to small companies than to large ones. Larger companies complain less about pumping costs while some smaller companies referred to them as "killing." Although not confirmed by detailed study, there is a distinct impression from owner/operator comment that much of the high cost stems from inadequate planning and design in the sizing and operation of pumps and storage tanks. In several instances the acquisition of pumps and storage tanks was more by happenstance availability and initial cost consideration rather than selection and operation so as to minimize overall initial and operating costs over some reasonable life cycle. Electrical demand charges seem to constitute an unreasonably large part of the costs for electric power. Some companies are very forward looking in exploring options for meeting future water supply needs. They were aware of irrigation wells that might be purchased and were negotiating, or had acquired connections to, a nearby pipeline or aqueduct owned by others. Some companies were being moved in particular directions for backup and alternate supplies in order to reduce the risk of delivering unsafe drinking water.

Property and Income Taxes

The fact that private companies are not exempt from property taxes as are their public counterparts is another cost factor that some companies note as significant. For example, the reported property taxes on the water distribution system serving the Hi-Country Estates subdivision in southwestern Salt Lake County is about \$3500 per year. At present there are only 57 connections being serviced by that system. This represents a rather high additional cost to the consumer.

Both private companies and municipally owned utilities own water rights in Bell Canyon in southeast Salt Lake County. Ownership includes watershed property that must be managed to prevent pollution or degradation of the water source. Draper Irrigation Company, which provides the domestic water supply for the City of Draper, owns a major portion of this property and pays a property tax on its share. Riverton City also owns a share of the property but pays no property tax. Private companies are also subject to payment of income taxes but none of the owners interviewed expressed any significant concern for this as a cost factor nor for the complications of reporting to the Internal Revenue Service.

PROBLEMS IN OWNER-CUSTOMER RELATIONS

Indefinite Plan for Perpetual Operation

The clearance and permitting processes that precede the actual development of a new subdivision may be the germ from which some problems between owners and customers grow. County planning and zoning authorities and state permitting agencies require assurances of an adequate and safe water supply for the area to be subdivided. However, if water is to be provided from water rights and water sources that are privately owned, the management and operating structure contemplated for perpetual water service may be indefinite and does not have to be declared. It is taken for granted that the developer will install and operate the water system during the developmental period as lot/home buyers begin to take up residence. Whether the ultimate intent is to turn the water system ownership and operation over to the homeowners themselves, or whether the plan is to continue its operation as a private investor owned utility may not be made clear in lot purchase agreements. This lack of clarity may present no problem during the development period but may create serious problems when the operating mode changes from expansion to perpetual service. This is especially true where the developer has provided an unrecognized subsidy in the provision of water service throughout the development and occupancy period, and then wishes to shift to a fully self-sustaining water service. As noted before, the abrupt change in rate structure becomes a contentious issue between developer and customer. Seldom does the developer communicate with the PSC prior to or during the development period to discuss operating and fiscal policies that must be adhered to in the event the owner chooses to operate under a certificate of need and convenience. Neither is there a viable homeowners association during this period and such an organization is generally ill-prepared to assume operation and management on short notice.

Residents interviewed in three different developments expressed frustration about developer initiatives with respect to water service, raising questions about who owns what and who is responsible for what. They suggest that the long-term strategy for water service should be defined when the development is first approved. They further suggest that homeowners be issued shares of water stock with their purchase contract if the water is to be managed as a mutually owned company, or, that the PSC approved charge structure for water service be made known at the time of purchase. If an up front charge structure were publicized based on a requirement that determinations had to be made on the basis of a self-sufficient private utility, a potential trouble spot between developer and customer would be eliminated. In brief, the operating strategy should be decided and declared at the time authorizations are given the developer to proceed, and the details of this strategy as it affects homeowners should be openly and clearly exposed to them at the time of lot or home purchase. The PSC is preparing legislation for consideration by the 1986 Utah legislature to eliminate the recurrence of these kinds of problems.

System Cost Recovery

Controversy may arise over how or when the developer recoups his capital investment for installation of the water system. Most generally, the costs of providing basic utilities and services such as roads, curb and gutter, sewer, and water are factored into the selling price of the lots. The sale price is set to recover costs of installing these kinds of capital improvements. The PSC indicates, however, that it is not uncommon for a developer seeking to operate under a certificate of need and convenience to include the asset value of the water system as an investment for which a return is expected through monthly charges for water service. If the developer has already recovered his costs of capital expenditures for the water system through lot sales, and then claims these facilities as a part of the equity base on which a return is requested through continuing charges for water service, this constitutes a double charge to lot owners. The PSC is very conscious of this potential for "double dipping" and to the extent records and information permit, the Commission will ferret out this discrepancy and disallow it.

PSC Mediation Process

The fact that owner-customer dialog on matters of common concern must be conducted through the operating groundrules and format of the PSC may, by its very nature, tend to foster and sustain an antagonistic relation between owners and customers. The mediation process makes use of an adversarial setting resembling a trial court. It is the unequivocal conclusion of those owners and customers interviewed that participation in this process without specialized counsel is futile. Attorneys who are familiar with this kind of mediation process and who have the skills to achieve one-sided objectives within this framework become essential. Examination and cross examination of witnesses is purposely designed to discredit the credentials, statements, and conclusions of one another. Owners and customers say this can be an intimidating experience and one which leads to polarization. The PSC process engenders a "good guy-bad guy" feeling and a perspective that any gain achieved by one side is necessarily a loss to the other. Relying solely on this adversarial approach to every question that arises may not be the best way of working out solutions that are viewed as an acceptable compromise by both parties.

Establishing the Worth of Assets

In some instances, dissatisfaction with owner service and misgivings about charges imposed for such service have led customers to consider acquisition of the system and the assumption of its operation. Where the owner asserts that costs to install the system were not captured through lot sales, there is the problem of establishing the value or worth of the system and negotiating a purchase agreement. The common approach has been to have an independent appraiser consider the initial or replacement costs of physical works in place, apply appropriate depreciation factors, and arrive at a value indicative of the system worth. An alternative approach is based on the rate of return on investment. These two approaches might lead to quite different estimates of system "worth." A common problem is that system owners fail to keep records that allow a reliable

determination of either owner equity or rate of return. Lack of records makes it difficult to arrive at a fair selling price.

System Reliability and Dependability

Safe dependable service should be the objective of any water purveyor. However, there are several reasons why the same levels of safety and dependability are proportionately more difficult to achieve with a small system as opposed to a large one. In addition, if the company must operate in a remote area where terrain and climate present additional design and operating hazards, costs for water service can be substantially greater than one may be accustomed to in a long established city or town. The fact that costs in water service may be built into the location and physical features of a subdivision is generally not made known to residents at the time lots are purchased. If the small system includes fire protection capacity, the per capita costs of that protection may be far greater than its municipal counterpart. Factors of rugged terrain, greater climatic variations, isolation from service and parts centers, use of para-professionals and part-time operators, all contribute to proportionately higher water service costs for many of the small private systems coming into existence. Any system automation, equipment redundancies, auxiliary and standby potential provided in a small system are reflected in disproportionately higher per capita costs. While service interruptions might reasonably be expected to be more frequent and of longer duration for some of these small systems, customers are generally not conditioned to accept that fact. It is also apparent that owners often do not recognize the operating differences and underbudget for system operation. Meeting higher than expected costs to maintain an expected level of service when an owner is already financially stretched can be very stressful. A substantial rate hike is probably not the best way to explain these realities to customers.

A general impression gained from interviews and study of PSC files is that those water companies serving a mix of seasonal and full time residents, and where there remains a fair proportion of sold but unoccupied lots, experience greater difficulty in setting charges and collecting on billings.

Some customer-owner problems that grow out of service complaints seem to relate to owner underbudgeting for operating costs. This in turn may reflect a lack of appreciation or foresight about the level of funding required to meet operating costs, or it may be necessary belt tightening because the owner simply does not have the cash. When service problems develop and customers become disgruntled some begin withholding payment. Customer delinquencies in paying their bills add to the plight of the owner in making timely repairs and replacements. Although the nature of service related problems are quite specific to particular company situations there is a general impression that underbudgeting or financial predicaments are often predisposing causes of unsatisfactory system operation and maintenance.

Absentee Ownership

Operating problems are often compounded by the fact that the owner/developer is not a resident of the subdivision. When problems arise residents often find it difficult to contact those responsible for operation and maintenance. For small subdivisions, owners cannot afford to retain full time operators to maintain a small system. It is interesting but perhaps meaningful to note that when small system owners/operators were asked how many connections would be needed for an independently operated system to be profitable, answers varied substantially but always settled on a number of connections larger than their own system was currently serving. The two largest private water systems were exceptions to this response.

Change in Operating Organization

It is apparent that companies that experience continual difficulty in providing safe, dependable service at a satisfactory price are more susceptible to being acquired by others. Sometimes dissatisfied homeowners consider the option of purchasing the system and operating it as a mutually owned company. More generally, however, homeowners are inclined to simply have the water service shifted to another entity whom they have reason to believe would provide an improved service. An adjacent or nearby larger community or an existing conservancy district are the most favored possibilities. If neither of these options are practical, customers simply explore the pros and cons of creating either a private or public kind of operating organization on their own. In some subdivisions, individuals were beginning to drill their own wells to provide an independent source of supply.

SUMMARY AND CONCLUSIONS

1. The most conspicuous general characteristic of privately owned water systems in Utah is that they are small. Only two serve populations of 10,000 or more, and 94 percent serve less than 1,000 customers each. Although 1 in 7 domestic water systems are privately owned and operated, they provide service to only about 1 in 25 people in Utah. Investor owned companies subject to regulation by the Public Service Commission serve less than 1 percent of Utah's population. Per capita costs of service are generally much higher for small systems and costs are even more exaggerated when locations are remote, terrain is rugged, and climate is extreme.

2. Statistics indicate that the incidence of water quality violations relates quite strongly to system size. Yet, corrections may often be more difficult to achieve because well trained and full time operators cannot be justified. Costs of standby equipment, system repairs, and replacement represent high per capita costs for small water systems and are often factors in maintaining dependable and low cost service.

3. The focus and operating mode of the Rural Water Association seem well suited to aid small water companies in addressing site specific problems. An expansion of this kind of program, together with encouragement for small companies to share in the employment of qualified operators or to become a satellite operation to a larger water entrepreneur, may be ways of mitigating water quality maintenance problems that beset small companies.

4. Investor owned and mutually owned private water companies in Utah face discriminatory state agency operating policies with respect to financing programs and water rights administration.

Private water companies whether investor owned (for profit) or mutually owned (nonprofit) are excluded from the subsidized lending programs administered by the State Bureau of Public Water Supplies and from the subsidized loan and grant programs of the Community Impact Board. Policies followed by the Water Resources Board in making subsidized loans for domestic water service improvements are less discriminatory but favor public entities, also. Yet, there is little to distinguish a mutually owned community operation from its public counterpart in terms of eligibility criterion for receiving subsidies. Since both are nonprofit, governmental financing cannot result in private gain. The rationale for these preferential policies should be reexamined and then properly publicized and explained. If the objective of these programs is to assure greatest health benefit for the funding available and to reduce the problems of compliance generally, then eligibilities based on organizational type may be self-defeating.

Privately owned companies are subjected to a different standard of proving and quantifying beneficial needs and uses by the State Engineer

than is applied to their public counterparts. They are also more restricted in "holding" water to meet reasonable future domestic water requirements of their citizens. The rationale for this needs to be better substantiated and publicized or operating policies reconsidered.

5. If the PSC is to perform its regulatory function effectively with respect to small investor owned water companies, it must have the resources to monitor their operations to the extent that problems can be exposed in embryonic stage. Where problems are brought before the PSC in full conflagration, settlement without aftermath is difficult.

6. Better monitoring by PSC would not eliminate the kind of problems that get "carried in" with new applicants, however. Unresolved problems whose genesis and growth were products of operation during an unregulated status can be very vexing to the PSC.

Although statutes and ordinances require developers to disclose all facts pertaining to proposed services and utilities including water, developers commonly delay setting up the organizational structure under which the water service is to be perpetuated after development is complete. Obtaining a certificate of convenience and necessity from the PSC is usually deferred until the sale of lots is essentially completed. Water charges may be heavily subsidized during this period and totally unrelated to return on the equity base and actual system operating costs. Placing the system into a fully self supporting operating mode entails major rate increases that are upsetting to consumers. The details of the ultimate operating plan should be declared at the time authorizations and clearance are given for the proposed land development and then appropriate actions initiated to issue stock or membership certificates or to obtain a certificate of convenience and necessity as appropriate.

7. In Utah it has been rather common for an investor owned private water company to eventually convert to a mutually owned private company. It has also been rather common for either type of private company to ultimately be changed into, or absorbed by, public water entities. There have been a few instances of mutually owned private companies converting to investor owned private companies, but no known instances of publicly owned systems being transferred to private ownership or management. The most salient generic distinction between an investor owned private company and a mutually owned private company or a public entity is "profit." Since changes in ownership seem to be away from the profit making kind, it appears that rates of return on a water business are generally not attractive under Utah conditions.

8. The justification for state regulation of investor owned water utilities is that owners of natural monopolies have opportunity to exploit rate payers. However, because of the typically small size and operating circumstances associated with private water systems in Utah, the potential for monopoly abuse appears to be low. From both interviews and examination of commission files it appears that the opportunity for reaping large profits from a typical small private water company in Utah would be restricted. None of the smaller companies visited indicated they were

making or ever had made any profit. For small water companies factors related to size or number of connections served, site/location, availability and cost of capital, and expenses related to the regulatory process far outweigh the profit factor as determinants of the customer charges for water service. Practically all of the investor owned water utilities are currently operating under rate structures that provide lower rates of return than is characteristic of the major utilities such as gas, electric, and telephone. Private water companies in Utah are incapable of obtaining scale economies that are normal to the other natural monopolies and which are alleged to be advantageous to customers. The fact that customers can turn to individual wells, or annex to a special service district in many instances, tends to diminish the potential for an owner to profiteer. Instances of requests to the Commission for unusually large rate increases that have created much hue and cry from customers have their genesis in undercharging practices--not overcharging. Further, the cost of regulation is much more burdensome to small companies than to large ones. If a small water company cannot actually take advantage of its monopoly status to the detriment of its customers; if it cannot provide scale economies to its customers; if the costs of regulation approach or exceed the benefits from regulation to customers; and if adequate safeguards exist or can be established without the use of a regulatory commission, then regulation as a natural monopoly may be impractical.

9. In view of the small number of investor owned water utilities in Utah (18), their characteristic small size (only one serving a population of more than 650), the relatively small proportion of the state population served by them (approximately 1 percent, with those serving under 650 customers constituting only 0.3 percent), and the relatively high unit cost of regulation for the utility, the PSC, the rate payer, and the tax payer, it would seem appropriate and fruitful to consider some changes that might improve the aggregate social profitability of private utilities. The PSC must make it easier for small companies to pass through the rate determination process.

One possible change would be to establish a threshold population level below which smaller systems would be subjected to a much simpler set of regulatory policies. For the Utah situation, a reasonable size threshold would likely place a single system, White City, in the regulated category and all others in an unregulated or streamline regulated category. Streamlining potentials might include recognition of size, managerial structure, operating revenues, etc., in the paper work and hearing requirements. Stipulated proceedings in which division staff and utility owner meet and agree on certain data and facts prior to the formal hearing may be helpful. To the extent that regulatory procedures and required documentation could reduce or eliminate the company cost for hiring attorneys and accountants, significant rate payer and taxpayer savings would result.

10. Simply taking the PSC out of the business of regulating small water utilities is a solution which deserves to be considered. In contemplating the practicality of eliminating small private water companies

from regulation several factors weigh in favor. If investor owned companies were not subjected to PSC regulation, they would still be monitored by the State Engineer and the Public Health Department in matters of supply and quality. Federal and state land sales disclosure laws and city and county zoning and planning ordinances provide protections that with some minor modifications could eliminate entirely a major kind of problem PSC currently deals with. The individual system rate payer and the general taxpayer would benefit from the avoided costs borne by the PSC which both must now support as part of water rates or taxes. The number and size configuration of private water utilities in Utah makes the potential for any monopoly abuse low. Viewed in total, there seems to be more reasons for reducing PSC involvement than for increasing it.

11. Should small investor owned private water companies be exempted from regulation by the PSC, county government seems to be the logical place to provide needed consumer protections. Counties have "early on" contact with developers through permitting and licensing procedures. The County Commission would be the point of appeal with authority to revoke franchises or licenses after a fair hearing. The hearing process might be much more informal than under PSC rules.

Existing laws for business regulation (Sec. 17-5-27 UCA 1953) with possible modifications in the franchise law (Sec. 17-5-40 and 41, UCA 1953) to include water systems might constitute the statutory basis under which counties could regulate and supervise operation of private water companies. Counties could require that systems meet certain design and installation standards and could offer inspection and monitoring as with other county regulated infrastructure.

Were counties to require that the physical works be regarded as capital improvements the same as roads, sewers, and other utilities, then the problem of establishing the asset base upon which water rates are established and which constitute a potential for "double charging" would be eliminated. Neither would the appraised value become an issue should the developer wish to withdraw from operating the water service because the equity interest would rest with the homeowners.

Utah counties vary significantly in size and levels of governmental activity. Therefore, the general suitability to assume the regulatory responsibility over small private water utilities would have to be confirmed through more detailed assessment.

SELECTED BIBLIOGRAPHY

- Conference Proceedings. 1978. Non-federal financing of water resources development. Proceedings of Conference held Jan. 4, 1978, Portland International Airport, Oregon State University.
- The Council of State Governments. 1982. State water quality planning issues. Lexington, KY.
- Chicoine, David L., Margaret R. Grossman, and John A. Quinn. 1984. Rural water districts in Illinois. Research Report 185. Water Resources Center, University of Illinois, Urbana-Champaign, IL.
- Cox, W. E., and K. S. Patrizi. 1984. Institutional framework for rural water supply in North Carolina, South Carolina, and Virginia. Bull. 142, Virginia Water Resources Research Center, Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Francis, J., B. Brower, W. Graham, O. Larson, III, J. McCavil, and H. Vigorita. 1982. National statistical assessment of rural water conditions. Executive summary, U.S. Environmental Protection Agency, Washington, DC.
- Hoffman, R., A. Lundeen, and R. Green. 1983. Evaluation of economic returns from investment in domestic rural water development. Completion Report A-080-SDAK, Water Resources Institute, South Dakota State University, Brookings, SD.
- Hughes, Trevor C. 1980. Management of rural domestic water systems in Utah. UWRL/G-80/01. Utah Water Research Laboratory, Utah State University, Logan, UT.
- Lawton, R. W., and V. W. Davis. 1983. Commission regulation of small utilities: Some issues and solutions. The National Regulatory Research Institute, Columbus, OH.
- National Demonstration Water Project. 1980. Circuit riding: The regional support company as a vehicle for rural water-wastewater service delivery. Unpublished report. Washington, DC.
- New Jersey County and Municipal Government Study. 1970. Joint services - a local response to area-wide problems. Trenton, NJ.
- Palmquist, R. D. 1983. Developing a fair and equitable water rate structure. Center for Public Affairs and Administration, University of Utah, Salt Lake City, UT.
- Presidential Task Force II Final Report. Grants and loans for municipal water supply and wastewater treatment systems: Water conservation provisions.

- Smith, Robert G. 1964. Public authorities, special districts, and local government. National Association of Counties, Washington, DC.
- State of Utah, Department of Health. 1980. Drinking water regulations. Part I - Administrative rules, and Part II - Design and construction standards. Salt Lake City, UT.
- U.S. Environmental Protection Agency. 1976. Oregon water supply program evaluation. Report no. EPA-910/9-76-019. Drinking Water Programs Branch, U.S. Environmental Protection Agency.
- U.S. General Accounting Office. 1980a. EPA should help small communities cope with federal pollution control requirements. Report CED-80-92, U.S. Government Printing Office, Washington, DC.
- U.S. General Accounting Office. 1980b. Rural water problems: An overview. Report No. CED-80-120, U.S. Government Printing Office, Washington, DC.
- Utah Code Annotated. 1953. Section 26: Department of Health. Section 54: Public utilities. Section 57: Real estate. Section 73: Water law. Section 16: Corporations. Section 17: Powers of Counties.

APPENDIX

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