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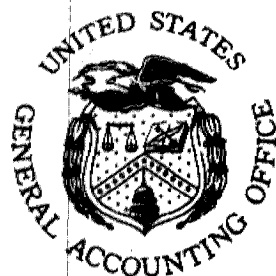
Rural Water Problems: An Overview

The Nation's rural areas are having problems getting enough water to meet essential needs, treating and distributing available water, and obtaining financing to develop, repair, or improve water supply systems. While both Federal and State governments provide some financial aid, the needs appear greater than the funds available.

No nationwide data exists on the extent of rural America's water problems. This study presents the water problems GAO found in 28 rural communities in 10 States. To help focus more assessment efforts on rural water needs, GAO raises a number of questions needing the attention of Federal and State agencies. Two Federal studies now underway are expected to be completed in the fall of 1980.



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FOREWORD

A safe, convenient, and economical water supply is not available to many rural residents, but no one really knows how many people are affected because their water needs have not been fully measured. National data is incomplete and very few States have developed such data.

This staff study on rural water development is part of our overall effort to identify existing problems and emerging issues relating to the Nation's present and future water needs. In this study of rural water problems, we did not evaluate the effectiveness of existing Federal and State programs. Rather, we wanted to determine what the water development problems were in rural America and what was being done to resolve them. The information is presented to focus more attention on matters requiring further study by Federal, State, and local governments. The study presents several questions needing consideration by Federal and State agencies in the planning and administration of rural water development.

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D I G E S T

Residents of rural areas obtain drinking water from central water systems, individual wells, and in some instances by buying and hauling water. In many cases, individual wells provide a safe, dependable supply of water. In other cases, particularly where residents obtain water from shallow wells or buy and haul it, access to a central system may be the only way to obtain a satisfactory water supply; however, obtaining an adequate central water system can be a problem for many rural communities. This study presents an overview of the difficulties faced by 28 rural communities in 10 States. Some of these communities had central water systems and some were attempting to develop them.

Many existing central water systems have deteriorated and need to be repaired or replaced altogether. Other systems need to be expanded; in some places additional systems need to be developed. While water shortages have prevented the development or expansion of some central systems, the most important factor inhibiting the development, expansion, repair, and replacement of central systems is lack of money. Although both Federal and State governments provide financial aid for rural central water systems, the needs of rural America are greater than the funds available.

WATER SYSTEMS HAVE DETERIORATED

Many systems' distribution lines and storage and treatment facilities need repair or replacement. Lack of revenue has contributed to this situation. Water rates charged to users do not provide sufficient revenue to hire trained operators and maintain and operate systems properly.

Often system operators are local residents who work part-time, sometimes doing no more than throwing a bucket of chlorine into the water once or twice a day. Generally speaking, these operators have had no formal training in how to operate and maintain a water system. (See pp. 8 to 12.)

WATER SUPPLY PROBLEMS

Although the United States has an ample supply of water nationally, regional and local shortages exist. Shortages occur because of intensive use and competition, lack of developed water supply facilities, financial difficulties, water scarcity, and other reasons.

One problem created by intensive use and competition for water is ground water overdraft. According to the U.S. Water Resources Council, extensive ground overdraft occurs in 8 subregions of the country, and moderate overdraft is occurring in an additional 30 subregions. Two States in GAO's study, Arizona and Kansas, considered ground water overdraft to be a significant water development problem. (See pp. 13 to 15.)

Communities have difficulty obtaining water because of a lack of developed supply facilities. (See pp. 15 to 20.) One rural water district included in GAO's study has been trying to find a dependable water supply since 1968. Area residents presently obtain water from shallow wells or buy and haul it, storing it in cisterns. (See p. 16.)

SYSTEMS LACK ADEQUATE FINANCING

Financing is a critical problem for many rural water systems--often they cannot raise the needed funds locally and cannot afford the high cost of commercial loans. Publicly owned systems are eligible for Federal and State aid, but privately owned systems generally are not.

Federal and State financing assistance

Many States give financial aid to rural water systems, but the primary help comes from the Federal Government through the Department of Agriculture's Farmers Home Administration (FmHA) and the Department of Housing and Urban Development (HUD). Since 1965 FmHA has provided over \$5 billion in loans and grants for rural water facilities. On a smaller scale, HUD has also contributed to the development of rural water facilities under its Small Cities Block Grant Program. (See p. 23.) Demand for financial aid exceeds funds available from both programs. (See pp. 20 to 26.)

FEDERAL PROGRAMS TO IMPROVE RURAL WATER SYSTEMS

No one really knows the full extent of rural water development problems or the cost of solving them. Three Federal efforts are currently being made to improve water management programs.

An FmHA study expected to be completed in November 1980 will be the first attempt to make a State-by-State assessment of rural facilities. Water supply is one of 12 facility areas being assessed. Objectives of the study include estimating

- the number and types of communities needing new or improved facilities,
- the cost of bringing the facilities up to minimum performance standards, and
- the relative priority of these needs in light of national objectives and other community priorities. (See p. 30.)

The Environmental Protection Agency is making an assessment--expected to be completed in October 1980--of rural water supplies for quality, quantity, availability, and affordability. (See p. 30.)

The administration, principally through the Environmental Protection Agency, FmHA, and the Department of Labor, has initiated efforts that include

- making Federal programs more accessible and better suited to rural communities,
- improving coordination of the various Federal programs, and
- further stretching limited budgets.
(See pp. 31 to 33.)

In light of these Federal studies and initiatives, it would be premature to suggest any restructuring or significant changes to existing Federal programs. GAO, however, raises a number of questions needing consideration by Federal and State agencies in the planning and administration of rural water development.

1. Should the Federal Government take a more active role in rural water management? For example, should FmHA undertake an educational program and provide technical help to rural water systems on management, operation and maintenance, and rate structures in order to prevent premature system deterioration?
2. Should FmHA revise its loan program? For example, would lowering the loan interest rate for the more economically needy applicants increase loan eligibility and thereby lessen the demand for limited grant funds?
3. Should the Federal Government require greater State participation in financing rural water systems? For example, should eligibility criteria for FmHA and HUD grants require that States fund a given percentage of total project costs?
4. Should Federal rural water developmental efforts and programs be consolidated under one agency? If so, what would be the advantages and disadvantages and what agency should be responsible?

5. What additional role, if any, can the Federal Government play in developing water supply facilities, particularly in water-short areas?

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ABBREVIATIONS

CSA	Community Services Administration
DOL	Department of Labor
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FmHA	Farmers Home Administration
HUD	Department of Housing and Urban Development
NDWP	National Demonstration Water Project
NRWA	National Rural Water Association
SCS	Soil Conservation Service
WRC	Water Resources Council

CHAPTER 1

INTRODUCTION

A safe, convenient, and economical water supply is not available to many rural 1/ residents. No one really knows how many people are affected because their water needs have not been fully measured. National data is incomplete, and very few States have developed such data.

Rural residents obtain their drinking and household water in a variety of ways, including individual wells, connection to a central water system, and in some instances by buying and hauling their water. This study focuses on the problems faced by rural residents being served by central systems 2/ and by residents attempting to develop a central system. It should be recognized that not every resident outside the service area of a central water system should or could be provided access to a central system. In many cases, particularly where residents are widely dispersed, an individual well may offer enough economical water. Even where access to a central system is available, an individual well may be the resident's preferred water supply. However, for those residents who obtain water from low-volume, shallow wells, or who must buy and haul their water, access to a central system may be the only means to obtain a safe, dependable supply.

Although no comprehensive national study on rural water facilities has ever been completed, scattered studies have been made. For example, a 1975 Soil Conservation Service (SCS) study estimated that 36.4 million people, or 17 percent of the Nation's population, were served by a noncentral water

1/In this study, "rural" includes scattered individual households in the open countryside, small unincorporated communities, and incorporated communities of up to 10,000 in population. This definition closely follows the one used by Farmers Home Administration in its Water and Wastewater Loan and Grant Program.

2/In defining a central water system, we have used the Environmental Protection Agency's definition of a community water system: a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

system. 1/ The vast majority of these people live in rural areas.

RURAL CENTRAL WATER SUPPLY FACILITIES

A central water delivery system involves moving water from its source to residential users. Whether supplied from surface or ground water, it is usually treated 2/ and stored in tanks or reservoirs for distribution to users through a network of pipes. Systems are usually owned by local entities such as municipalities, counties, townships, districts, non-private associations, or private companies. In this study, local entities are referred to as communities.

The United States has about 61,000 central water systems. Significantly, 95 percent of these systems (58,000), serving 15 percent of the Nation's population, are relatively small, each serving fewer than 10,000 people.

Over the years, billions of public dollars have gone into ensuring the health and economic well-being of our rural communities. The Congress has recognized and confirmed a commitment to basic water services through the enactment of the Water Supply Act of 1958 (Public Law 85-500) and the Rural Development Act of 1972 (Public Law 92-419).

FEDERAL FINANCIAL AID PROGRAMS FOR RURAL WATER DEVELOPMENT

The primary Federal agencies providing financial aid for rural water development are the Department of Agriculture's Farmers Home Administration (FmHA) and the Department of Housing and Urban Development (HUD). The Economic Development Administration (EDA) and the various multi-State Regional Commissions also provide some financial assistance for rural water development; however, FmHA is the only agency whose program is directed exclusively to rural needs. The HUD program is available to communities of up to 50,000 people, while EDA and Regional Commission programs are tied to economic growth objectives.

1/SCS defines a noncentral system as one that services five or fewer households from an individual well, spring, river, lake, or other source.

2/The objective of water treatment is to produce water acceptable for human consumption. Treatment usually consists of chlorination and some form of filtration.

Federal financial aid is not available to owners of individual systems nor is it generally available to privately owned central systems.

Farmers Home Administration

FmHA has been providing financial aid for rural water development since 1937. The initial program made loans to improve farm water facilities in 17 Western States. Through a series of statutory changes, the program was expanded to serve ranchers, farm tenants, farm laborers, and other rural residents besides farmers. In 1965, amendments to the Consolidated Farmers Home Administration Act (Public Law 89-240) provided a loan and grant program for water and waste disposal systems, raised the maximum population of rural communities served to 5,500, and raised the maximum financing per project to \$4 million. The passage of the 1972 Rural Development Act (Public Law 92-419) increased the population limit of eligible communities to 10,000 and removed the \$4 million loan and grant limitation. This act also increased the appropriation limit of grants to \$300 million and required that priority be given to public bodies, cities, and towns of less than 5,500 people. Most recently, the 1978 Agricultural Credit Act (Public Law 95-334) increased the appropriation limit on grants to \$500 million and provided for grants of 75 percent of eligible project costs. The program is presently authorized under section 306(a) of the Consolidated Farm and Rural Development Act, as amended (7 U.S.C. 1926).

Under the present program, FmHA is authorized to provide loans and grants to develop public water and waste disposal systems in rural areas and communities of up to 10,000 people. Eligible applicants include municipalities, counties, districts, authorities, and other political subdivisions of a State, and nonprofit corporations. Any such applicant that can finance a proposed project from its own resources or through commercial credit at reasonable rates and terms is not eligible for FmHA financing. The maximum term on loans is 40 years, and the current interest rate is 5 percent of the unpaid balance.

In determining the grant amount, FmHA considers (1) rates charged in other communities with systems constructed at similar costs and (2) median family income in the community where the proposed project will be located. Grants may not exceed 75 percent of eligible project costs and are to be used for projects serving the most financially needy communities to reduce user costs to a reasonable level.

Under the loan and grant program, FmHA regulations require establishing an accounting system, submitting management and financial reports, and performing independent audits if gross annual income exceeds \$100,000. Monitoring of the financed system is based on observations of the system operation and review of periodic financial reports. These requirements provide FmHA with reasonable assurance that sufficient revenue is generated to provide for adequate management, operation and maintenance, debt payment, and emergencies.

Department of Housing and Urban Development

HUD administers the Small Cities Block Grant Program established by the Housing and Community Development Act of 1977 (Public Law 95-128). The program provides grants to communities to meet their housing and community development needs; in general, cities with fewer than 50,000 people are eligible for assistance.

Because the program is competitive and the demand for grants far exceeds available funds, HUD developed a national rating system for awarding grants. Grants are awarded to communities having the greatest needs as evidenced by poverty and substandard housing and whose applications most adequately address the locally determined needs of low- and moderate-income persons, consistent with one or more of the following purposes:

- Support realistic and attainable strategies for expanding low- and moderate-income housing opportunities.
- Promote deconcentration of lower income housing.
- Promote more national land use.
- Increase economic opportunities for low- and moderate-income persons.
- Correct deficiencies in public facilities which affect the public health or safety, especially of low- and moderate-income persons.

The construction and rehabilitation of water facilities is one of 13 eligible needs that can be funded under the program. Water projects are eligible for aid when the project is necessary to correct deficiencies in public facilities which affect the public health or safety of low- and moderate-income persons.

OTHER ASSISTANCE FOR
RURAL WATER DEVELOPMENT

The National Rural Water Association (NRWA) and the National Demonstration Water Project (NDWP) provide technical and training assistance to rural water systems.

National Rural Water Association

NRWA was formed in March 1976 from eight independent rural water associations. At the present time there are 26 member-State associations whose membership is made up of local water districts.

NRWA is primarily federally funded and views itself as a grassroots organization. It provides, through its member-State associations, comprehensive technical and training assistance directly to water system managers, operators, and staff. From June 1, 1978, through September 30, 1979, NRWA conducted 280 workshops and provided training to rural water officials and operators from 5,647 systems serving about 15 million people. The association also provided technical aid to 5,553 systems.

National Demonstration Water Project

NDWP is a federally funded nonprofit corporation that conducts a national program designed to improve water delivery systems and wastewater disposal services to rural residents, particularly low-income families. The program is conducted primarily through community-based organizations throughout the country. The organizations include community action agencies, rural electric cooperatives, small-town assistance groups, neighborhood health centers, housing development groups, and others.

NDWP states that its philosophy is to reform national rural water-wastewater delivery systems through both service and advocacy activities. Service activities include:

- Development assistance to local communities attempting to obtain new or improved water supply and wastewater disposal facilities (technical advice, seed money for startup activities, etc.).

--Technical assistance through engineering review services to field projects and help in supervising facilities construction and operations and maintenance plans.

--Communication services like newsletters, promotional brochures, and other written or audiovisual materials designed to call the work of NDWP to the attention of policymakers and the public.

NDWP's advocacy role involves pressing for local, State, and Federal policy changes that are perceived as needed. With leadership from the national staff, NDWP identifies problems encountered in its service activities and translates them into reform issues. The objective is to bring about permanent changes on a national scale for the benefit of all rural residents.

SCOPE OF STUDY

This study is based primarily on discussions with Federal, State, and local government officials and existing reports of other government and private agencies.

We visited and talked with the people involved in delivering water services to rural residents in Alabama, Arizona, Colorado, Kansas, Kentucky, Maine, Missouri, Oregon, South Dakota, and West Virginia. Appendix I lists the total number of central water systems in the States reviewed and the number serving a population of 10,000 or less.

We interviewed officials of 28 communities that either had existing water services or were without a central water system. Appendix II lists the communities and local water suppliers we visited.

In selecting States and communities to visit, we gave primary consideration to selecting at least one State in each major geographical area of the country. Some States within the various geographical areas were selected because of the high number of applications for financing on hand at the FmHA State office. In selecting communities and water districts to visit, we were primarily interested in visiting a community or water district that either had experienced or was currently experiencing problems in expanding, improving, or replacing an existing central system or in developing a new one. Our selection was based on a review of records at the various FmHA State offices and the recommendations of Federal and State officials.

We also contacted officials of NRWA and several of its member-State associations, the NDWP, the American Water Works Association, and the Council of State Governments.

We interviewed agency officials and reviewed available records at FmHA, EDA, HUD, EPA, and the U.S. Water Resources Council. Our study included an examination of Federal legislation, regulations, policies, procedures, and practices pertaining to rural water development, as well as reviews of published literature and studies on rural water supply.

Our study of available financial aid to rural areas focused primarily on the extent of Federal aid. We did not attempt to identify the total extent of private, State, and local government financing used in rural water development, but we did note when such financing was used by the communities we visited. We also examined published literature on State water programs and reviewed available programs for those States included in our study.

CHAPTER 2

RURAL WATER PROBLEMS

Adequate water facilities are important to health, housing, economic development, and land use, yet these needs are not being fully met in many rural communities. Historically, central water systems with treatment facilities have predominated in urban areas, and while these central systems generally provide safe, potable drinking water to much of our Nation's population, a large rural segment is not so well protected. Rural residents face a variety of problems in attempting to develop, improve, or expand water systems.

Many existing central water systems are in a deteriorated condition. Distribution lines and storage and treatment facilities need to be repaired or replaced. The major obstacle to solving the problems faced by these systems is obtaining a source of financing. Rural communities' borrowing capacity often is not strong enough to obtain private financing. Federal and State financial aid programs are limited, and the demand for assistance exceeds available funds.

In some areas of the country, water shortages, coupled with a lack of financing, have hindered the development or expansion of central systems.

SYSTEM DETERIORATION

Many existing rural central water systems are old and have not been properly maintained. The water rates charged by these systems are often not high enough to provide for fully trained operators and day-to-day maintenance. Consequently, over the years, the systems have deteriorated. The following are typical of comments received from Federal, State, and local officials in several States included in our study.

Colorado

--Most operators are unable to spend as much time as necessary to operate and maintain the water system. As a result, many systems in Colorado need new treatment facilities, distribution systems, and other major repairs. In many cases, water is priced at a flat rate per month, and

even where it has been metered, the rates charged are inadequate to maintain the existing system.

--Estimates of failing water systems due to inadequate maintenance run as high as one-third of the State's 1,203 systems.

Maine

--While some major water utilities are well aware of the conditions and adequacies of their systems, most small and some moderate-sized communities have few, if any, records and little knowledge of the systems' supply capacities, flow capacities, storage adequacies, or reliability deficiencies. In many cases, operating valves have been lost, buried, and inoperative for years.

--Many communities need to completely replace their distribution systems. Most problems are caused by lack of maintenance, which most of the smaller systems cannot afford.

Missouri

--Communities are often not large enough to support the operation and management of their water systems. The people in charge of the systems do not understand what it costs to run the systems and do not know at what level water rates should be set. The rates are often set on the basis of what they thought Grandma could pay.

Oregon

--Rural systems generally do not have certified operators. ^{1/} In fact, the operator is often a person who is asked to dump chlorine into the system once or twice a day. When operators do become certified, they move to larger systems which pay more, leaving the small systems again without a certified operator.

^{1/}Certification generally requires a combination of experience, education, and the passing of a State examination. As of 1975, 38 States required certification of all operators of public or investor-owned water systems serving the public.

- Many cities with populations of less than 10,000 have outdated systems. Either the collection, distribution, or storage systems need to be repaired or replaced.

West Virginia

- Small water systems cannot set rates high enough to generate sufficient income to hire competent operators to run the system. Deterioration of water systems starts at this point.
- Approximately two-thirds of West Virginia's community water systems serve fewer than 200 customers and do not generate enough revenue for adequate operation and maintenance.

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Federal and State officials in Arizona, Alabama, and Kentucky also indicated that rural water systems in their States faced similar problems, and an August 1979 EPA study 1/ indicates that the problem is national in scope. The report states that capital improvement needs, inadequate operation and maintenance budget, inadequate operator skills, and inadequate management and planning skills are believed to be very serious problems for most small systems. For example, in terms of just water treatment facility needs, EPA estimates that 11,300 systems do not meet Federal drinking water standards and need to upgrade their treatment facilities. Approximately two-thirds of these systems are very small and, according to EPA, are the systems which often fail to provide adequate operation and maintenance.

Water rates do not cover costs

Ideally, any system's water rate ought to cover all costs, such as a qualified operator, debt service, reserves for equipment replacement, and all operation and maintenance costs necessary to deliver enough water of adequate quality. However, in past years many rural water systems have not charged users enough to cover these costs. This lack of sufficient revenue has been a major cause of the present serious deterioration of many small rural water systems.

1/"Water Supply-Wastewater Treatment Coordination Study," Report to the Congress, Public Comment and Review Draft, August 1979.

The cost to repair or replace the system can be expensive and generally requires a rate increase. In order to obtain FmHA financing, the primary funding source for such systems, the community must establish water rates sufficient to provide for adequate management, operation and maintenance, debt payment, and emergencies.

The following examples describe the problems and the financial help needed to upgrade the systems.

Danforth, Maine

Danforth, population 843, is served by a water district which supplies water to approximately half the town. The original water system was built in 1906 and today, according to the district's consulting engineers, is in fragile condition. During 1979 the system was an off-and-on-again situation that forced schools and businesses to close. On occasion, users have been ordered to boil the water before consuming it. The system has experienced frozen water mains, pump failures, a depleted reservoir due to major leaks, water main breaks, and constant doubts about water quality due to use of an open reservoir. The major water supply problems currently facing Danforth are (1) poor water quality, (2) a deteriorating distribution system, (3) inoperable fire hydrants, and (4) extremely limited financial capability.

In a November 1978 assessment of Danforth's water system, the Maine Public Utilities Commission stated that not enough revenue was available to run the district.

In March 1979 Danforth applied to HUD for an emergency grant to repair its water system, but the grant was not approved. According to a HUD field official, Danforth was not eligible for the grant because its water system problems were due not to an emergency but to many years of inadequate maintenance. HUD suggested that the town apply for FmHA assistance.

On August 10, 1979, FmHA approved a \$206,200 loan and a \$218,800 grant to repair and improve the water system. As a result of the improvements, water rates will now average \$99 per user annually. Without the FmHA grant, water rates would average \$208 per year.

Silt, Colorado

Silt is a farming and mining community in western Colorado with about 1,100 people. Due to area oil shale

development, the town's population has doubled since 1970.

Silt's water is pumped from the Colorado River into a well, chlorinated, and pumped into the distribution system for use and storage. According to the State Department of Health, all phases of the system are antiquated, inadequate, and in various stages of disintegration. Many of the distribution lines are at least 25 years old, and the main line from the Colorado River is more than 25 years old and has 29 known leaks.

Before January 1979, water was sold at the flat rate of \$6 per month. According to Silt's mayor, this rate did not provide enough revenue to maintain or improve the system.

Silt will be able to replace and expand its existing water system through a \$1.6 million grant from the State of Colorado. (See p. 28 for discussion of State financial aid programs.) One of the requirements of the grant was that Silt raise its water rates, effective January 1979, to a flat rate of \$13 per month. Another requirement is that Silt install meters on the new system and develop a rate structure that will provide enough revenue for adequate management, operation and maintenance, and emergency repairs.

WATER SUPPLY PROBLEMS

According to the U.S. Water Resources Council (WRC), nationally, the United States has an ample supply of water from both surface and underground sources; however, there are regional and local water shortages. The shortages occur for several reasons, including intensive use and competition, lack of developed water supply facilities, financial difficulties, and water scarcity.

Intensive use and competition

In its December 1978 national water assessment, WRC stated that intensive use and competition for water to satisfy a wide variety of purposes have created a number of problems. Among 10 critical problems cited were (1) localized inadequate surface water supply in all 21 water resource regions with 17 subregions 1/ having or projected

1/There are 21 water resource regions and 106 subregions.

to have serious problems by the year 2000 and (2) extensive ground water overdrafting in 8 subregions and moderate overdrafting in an additional 30 subregions.

Two States included in our study, Arizona and Kansas, had problems involving ground water overdrafts.

Arizona

Phase I of the Arizona State Water Plan, issued in July 1975, identified the drawdown of ground water supply as the State's principal water problem. The phase II report, issued in February 1977, stated that comparison of total water depletions with projected water supplies shows that substantial overdrafting of ground water will continue unless usage is severely reduced or the supplies available to the State are augmented by large amounts of imported water.

Most of Arizona's 2,222 central water systems serve a population of less than 10,000, and all but 64 use ground water as their source. In our discussion with Federal and State officials of significant present and future rural water development problems, the following comments were made.

- According to the chief of Community Programs, FmHA Arizona State office, the biggest problem facing Arizona in the future will be the drawdown of the underground water supply. Not only is there a danger of running out of water, but more energy is needed to draw the water from the ground, which will aggravate an already serious energy shortage.
- The chief of the Bureau of Water Quality Control Services, Arizona Department of Health, stated that the drawdown of ground water not only will cause a water quantity problem but, as wells go deeper in the future to obtain water, the water quality will also decrease.
- The Coordinator of Field Activities, Four Corners Regional Commission, believes that the most significant problem affecting rural water development is the lack of a statewide water use policy. The State needs a policy regarding the optimum use of existing or future water resources for agricultural versus municipal and industrial uses. Arizona will have enough municipal and industrial water in future years if water is diverted from agricultural uses.

--According to the executive director of the Arizona Water Commission, Arizona will be able to meet future rural growth by converting agricultural water to municipal and industrial uses.

Kansas

There are 947 central water systems in Kansas, of which 916 serve a population of less than 10,000; 842 of the systems serve a population of less than 2,500.

The 1978 final report of the Governor's Task Force on Water Resources states:

"Kansas, indeed, has major water problems, and a crisis is on the horizon. The declining underground water supply of the western third of Kansas threatens the agricultural economy of the entire State."

The principal aquifer in western Kansas and the major water source for its residents is the Ogallala. This unconsolidated sand and gravel aquifer extends from South Dakota to Texas and supports one of the largest agricultural irrigation developments in the world. The Ogallala is recharged primarily by direct infiltration of precipitation falling on the overlying soils.

According to the task force, withdrawals from the Ogallala aquifer are estimated to average 14 times the recharge rate. In some areas, the ground water table declined more than 100 feet from 1950 to 1975. A recent economic study conducted by the Kansas Water Resources Board and the Kansas Geological Survey indicated that if the estimated 1975 withdrawal rate for one western Kansas region continues to the year 2000, only about 800,000 acre-feet of ground water would remain in storage compared to almost 10 million acre-feet in 1977.

Kansas passed legislation in 1972 authorizing the formation of Ground Water Management Districts. The legislation's purpose was to let local people decide how to manage their ground water problems and then carry out the program decided upon. Three of the five districts organized to date overlie the Ogallala aquifer. The management options being considered by these three districts fall into two categories: (1) increasing available water supplies through such methods as importation, construction of physical works to increase recharge, and weather modification and (2) reducing water use through such measures as switching to crops that require

less water, optimizing water usage and yields by scheduling irrigation so that the right amount of water is provided at the right time, and developing ways to reduce evaporation.

Lack of developed water supply facilities, water scarcity, and financial difficulties

Three communities included in our study were attempting to develop a central water system but could not afford to develop their own water supply; they were having problems obtaining water because of a lack of developed supply facilities. One community, which has an existing central system, experienced a severe water shortage and faces the problem of obtaining a dependable water supply.

Allen County Rural Water District #11, Kansas

In March 1974 a group of Allen County residents attempted to develop a central water system to serve about 300 people. Deposits were collected from interested users, and an application for financing was submitted to FmHA. The development was terminated, however, because no source of water could be found.

Ground water in the area is generally inadequate. Nearby towns obtain their water from lakes, and established rural water districts buy water from the towns. Residents not served by a central system get water from shallow wells that produce only 1-5 gallons per minute. Some residents buy and haul their water at a cost of about \$7 per thousand gallons. A few residents in the northern part of the area have deep wells which provide adequate water, but it is high in sulphur content and has a bad odor.

In July 1979 area residents again met to organize a rural water district and develop a central water system. The nearby town of Moran has proposed to build a lake and could provide water to the Allen County district. At the time of our study, the district was not yet incorporated but was in the process of signing up potential users and hiring an engineer to prepare a feasibility study. Whether or not the system will be developed depends upon the construction of the lake by Moran and the availability of FmHA financing.

Elk County Rural Water
District #1, Kansas

Elk County Rural Water District #1 was organized in 1968 and incorporated in 1973. The district covers 202 square miles and the planned system will serve 150-160 households.

Area ground water is generally inadequate. Rural residents to be served by the district obtain water from shallow wells or buy and haul it, using cisterns for storage. The shallow wells are subject to contamination and generally produce low-volume quantities of water. Some wells in the area produce water too salty to be used.

In 1969 the district requested FmHA financing to develop a central water system. FmHA advised the district in 1969 that it could not fund the project. In 1972 several district residents wrote letters to the President, their Senators, and other Federal officials pointing out the critical need for the system and requesting help in developing it. The following is excerpted from one letter written to a U.S. Senator from Kansas.

"Have you experienced turning on the faucet and there was no water? This is practically an everyday occurrence (sic) at our house. Our drilled well is 115 ft. deep, any deeper and we would get salt water. We are lucky to even have hit a vein (sic). There just is no water here. Most of our neighbors find ourselves (sic) in the same situation."

In reply to the Senator's inquiry on the status of funding for Elk County Rural Water District #1, the FmHA Administrator stated:

"We have learned from our Kansas State Office that officials of the water district were recently notified that the application is scheduled for processing subject to required conditions and the availability of grant funds. However, a large amount of grant funds has been requested and all grant funds allocated to Kansas for this fiscal year have been reserved for other projects.

"Many applications for assistance to develop new central water and waste disposal systems or to make badly needed improvements to existing systems are received by the Kansas

State Director. However, the amount of money needed to meet these requests far exceeds the funds that are available. It is, therefore, necessary for the State Director to set priorities for the use of funds. To do this he must consider the extent to which each proposed project will contribute to the welfare of rural people, help eliminate emergency conditions, improve economic conditions and otherwise make major contribution to the well-being of the rural people and their communities.

"Please be assured that we will do everything possible within our authorizations to assist Rural Water District No. 1 when grant funds become available. If the project could be developed with loan funds only, it could probably be funded at a much earlier date."

In response to another letter to FmHA on the Elk County district, the Kansas State Director stated that:

"There is a long list of projects to be funded and many of these applications are ahead of the Elk County No. 1 Rural Water District. Some applications have been on file for six years and still are not funded."

Initially, the district planned to buy treated water from the nearby town of Longton, but in 1976 Longton decided that it could not supply water to the district. The district then tried to get water from Howard, another nearby town, but Howard also decided it could not supply any water. The only other solution available to the district is to obtain water from the town of Moline; however, because Moline's water system is barely adequate for its own needs, an additional water source would have to be found, and treatment facilities would have to be upgraded.

Plans were underway at the time of our review for Moline to obtain the additional needed water from a lake planned to be built by the Soil Conservation Service. SCS will pay all costs associated with constructing the lake, but the land acquisition cost must be paid locally and SCS will build the lake only if Moline can pay for the land. Moline has no funds to pay for the land but has applied for FmHA financing.

In July 1979 the district's consulting engineer provided the following cost estimates for the project:

<u>Project element</u>	<u>Estimated cost</u>
Local share of SCS lake	\$ 401,925
Cost of connection to intake at lake, pipeline to city, and Moline water system modifications	235,500
Elk County Water District's distribution system	<u>1,650,000</u>
Total	<u>\$2,287,425</u>

In addition to the cost of its distribution system (\$1,650,000), Elk County Water District #1 will pay half the cost of the land acquisition, the pipeline to Moline from the lake, and the improvements to Moline's treatment plant. The water district's total cost will be about \$1,970,000; the district has applied for FmHA financing.

In August 1979 an FmHA State office official said that he did not know if the project was feasible. According to this official, even with a 75 percent grant, the district may not be able to meet the debt service on a 25 percent loan because of the high cost and small number of users.

Scotland County Public Water Supply District #2, Missouri

Scotland County District #2 was formed in 1972, and its members have since been attempting to develop a central water system. The planned system will serve approximately 450 households.

Scotland County is located in the northeastern part of Missouri and surrounds the principal town of Memphis, which has a population of 2,115. Ground water is generally inadequate throughout the county. Some wells yield only 1-10 gallons per minute. Many residents buy and haul water at a cost of \$15 to \$16 per thousand gallons. Other residents get water from shallow wells or collect water in cisterns. The shallow wells produce low volumes of water, and both the wells and cisterns are subject to contamination.

The principal problem facing the district since 1972 has been finding an adequate water source at reasonable

cost. The district cannot afford to build its own reservoir, treatment plant, and storage facility and has been trying to find a water district or town from which it can buy treated water. District officials said that they have been negotiating to buy water from the nearby town of Memphis since the district was formed in 1972; however, the Memphis system is not adequate to serve the district and its own customers. Memphis is now planning to upgrade its water facilities at a cost of about \$800,000 and in April 1979 agreed to furnish the district with treated water for 35 years after the improvements are completed. The district will have to pay Memphis a \$89,600 connection fee and construct a distribution system estimated to cost about \$810,000.

District officials have applied for an FmHA loan of \$300,000 and a grant of \$500,000 and anticipate receiving a grant of \$100,000 from the Missouri Department of Natural Resources. In June 1979 a Missouri FmHA State official said that FmHA is tentatively committed to fund the district project in fiscal year 1980, provided that Memphis can supply the water.

Bourbon County Rural Water
District #4, Kansas

Bourbon County Rural Water District #4 was incorporated in 1973. The water system was constructed in 1976 and was financed with a \$160,000 State grant and a \$418,000 FmHA loan. In 1978 the system was expanded with a \$302,800 FmHA loan and grant and currently serves about 750 people.

The district buys treated water from the nearby towns of Bronson and Blue Mound. The contract with Bronson is for 14.2 million gallons per year. The contract with Blue Mound is for 450,000 gallons per month, but Blue Mound has never been able to supply that amount.

From December 1978 through April 1979, the district experienced a severe water shortage. A continued period of virtually no runoff and below-freezing temperatures caused the Bronson reservoir to dry up. The district, with the help of the Kansas National Guard and the U.S. Army, was able to obtain some water by setting up mobile water treatment and pumping facilities at an abandoned rock quarry and later at a nearby creek. The reservoir water level increased sufficiently by April 1979 to permit Bronson to resume supplying the district. However, district officials are concerned that water shortages will be a recurring problem and are trying to find a more dependable supply of water.

The district considered the following three alternatives for developing a new water source.

1. Constructing its own reservoir and treatment facility.
2. Buying water from a nearby town that plans to expand its water supply source.
3. Buying water from a nearby rural water district.

According to the district chairman, the district favors the first alternative because it would eliminate the possibility of having the water shut off if the supplier again ran short. On January 12, 1979, the district applied to FmHA for a \$1,125,000 grant and a \$312,500 loan to finance construction of a reservoir and treatment plant. FmHA advised the district in March 1979 that it considered the project the least desirable of the three alternatives. The FmHA State Director said that the project is too expensive for the district and its request for grant funds is excessive.

The district had made no further decision on the other available alternatives by the completion of our study.

FINANCING FOR SYSTEM DEVELOPMENT,
IMPROVEMENT, OR EXPANSION IS CRITICAL

Obtaining financing for system development, improvement, or expansion is cited by EPA ^{1/} as a critical problem for many rural water systems. Publicly owned systems obtain financing from Federal, State, and local government sources and from commercial sources; however, many systems cannot raise the needed financing at the local level and cannot afford the high cost of commercial loans. These systems must rely on Federal and State aid. Privately owned systems are generally not eligible for Federal and State financial aid. The following discussion is limited to publicly owned systems and the principal sources of available Federal and State financing.

^{1/}"Water Supply - Wastewater Treatment Coordination Study," Report to the Congress, Public Comment and Review Draft, August 1979.

Federal funds are the principal source of financing

Of 28 communities and areas we visited that were attempting to develop a publicly owned central water system or to replace, repair, or expand an existing one, none used or planned to use commercial loans to finance all or part of its project. One community that had a Federal commitment for over \$3 million in loan and grant funds also planned on using a small private grant. Combined local government and Federal financing was being used by only one community. Sources of financing used or planned to be used by the 28 communities and areas are shown below.

<u>Sources of financing</u>	<u>Number of systems</u>
Complete Federal funding	20
Combination of Federal and State funding	4
Federal and some local government funding	1
Federal and some private funding	1
Complete State funding	1
No decision has been made	<u>1</u>
	<u>28</u>

Federal financial aid is limited

As discussed on page 2, the principal sources of Federal aid are FmHA and HUD. Through its Water and Wastewater Loan and Grant Program, FmHA has made a significant contribution to rural water development over a span of many years. On a smaller scale, HUD has also contributed to the growth of rural water facilities under its Small Cities Block Grant Program. Under both programs, however, demand for financial aid exceeds available funds. Also, Federal revenue sharing funds are provided to all States and could be made available for financing rural water systems if the States chose to do so.

FmHA Water and Wastewater
Loan and Grant Program

Under the existing loan and grant program, funds are not appropriated and allocated separately for water supply and wastewater disposal systems. FmHA has the discretion to fund either or both types of eligible projects. Since the grant program began in 1965, FmHA has given priority to financing water projects.

Grant obligations for fiscal years 1966-1979 totaled \$1.6 billion, of which \$1.1 billion, or about 69 percent, was obligated for water projects. During the same period, loan obligations totaled \$5.6 billion, of which \$3.8 billion, or about 68 percent, was obligated for water projects.

From the inception of the loan program in 1937 and of the grant program in 1965 through September 30, 1979, FmHA has made 15,931 loans totaling \$3.9 billion and 7,223 grants totaling \$1.1 billion for rural water facilities--a significant contribution.

Loan and grant applications exceed available funds-- Even though FmHA has loaned and granted a total of over \$5 billion for rural water facilities, applications for financial aid exceed available funds. At the end of fiscal year 1979, FmHA had on hand 1,779 loan and grant applications for water supply projects totaling \$911 million. Available loan and grant funds in fiscal year 1980 for both water supply and wastewater systems total \$1 billion.

As shown by the following tables, FmHA has consistently had a backlog of applications for water project financing even though funding levels over the past years have been substantial.

Number and Amount of Applications
for Water Projects on Hand at the
End of Fiscal Years 1975-1979

<u>Fiscal year</u>	<u>Loans</u>		<u>Grants</u>	
	<u>Number</u>	<u>Amount</u>	<u>Number</u>	<u>Amount</u>
		(millions)		(millions)
1975	1,459	\$736	707	\$190
1976	1,420	758	600	173
Transition quarter	1,518	795	723	206
1977	1,608	786	1,026	290
1978	1,857	996	1,065	396
1979	1,077	584	702	327

Number and Amount of Water Projects
Funded in Fiscal Years 1975-1979

<u>Fiscal year</u>	<u>Loans</u>		<u>Grants</u>	
	<u>Number</u>	<u>Amount</u>	<u>Number</u>	<u>Amount</u>
		(millions)		(millions)
1975	1,086	\$301	671	\$102
1976	899	268	516	100
Transition quarter	321	98	220	49
1977	1,675	540	1,194	264
1978	1,272	448	1,198	229
1979	1,334	545	813	204

HUD Small Cities
Discretionary Grant Program

Water project funding is restricted under the Small Cities Program. Under the national rating system established for determining grant awards, housing rehabilitation

and neighborhood renewal projects generally score higher because water systems generally benefit all community residents and not just low- and moderate-income persons.

HUD's accounting system and published information do not separately identify funding for water and wastewater projects nor do they identify community size; therefore, we could not determine the extent of funding for rural water development. The following table shows the total funds provided for the Small Cities Program and the amount used to finance water and wastewater projects in fiscal years 1977-1979.

<u>Fiscal year</u>	<u>Total program funding</u>	<u>Amount used to finance water and wastewater projects</u>	<u>Percent used to finance water and wastewater projects</u>
	(millions)	(millions)	
1977	\$434	\$96	22
1978	613	74	12
1979	815	98	12

Some community financing problems

The following examples demonstrate the difficulties that rural communities face in obtaining financing to develop, improve, or expand central water systems.

Artesian, South Dakota--Artesian is the second largest town in Sanborn County with a population of 218. Over 70 percent of the population is over 65 and retired.

Residents obtain water from individual or shared shallow wells. On the average, about eight households share one well. Many of the wells are old and deteriorated. In addition, during peak periods of water use, the wells shared by several households do not provide sufficient pressure and quantities of water. The town's fire protection is inadequate because of a lack of water. The entire business district was destroyed by a fire in 1970.

According to town officials, the wells have not been tested for water quality; however, they said that the water is high in iron, which causes corrosion in the plumbing and stains clothes. Replacement of the wells is estimated to cost from \$1,500 to \$3,000 or more, and many residents cannot afford the cost.

Town officials said that they have attempted to obtain HUD grants over the past years to finance construction of a central water system but have not been successful. The latest HUD application was submitted in January 1979 and requested a \$375,000 grant to rehabilitate 18 housing units and to install a central water system. About \$305,000 was earmarked for constructing the central water system. The town did not receive the grant because HUD had only enough grant funds to finance the five highest priorities. Artesian's application was 34th on HUD's priority list.

According to town officials, they have not requested FmHA financing because they cannot afford any loan financing.

Blue Creek, West Virginia--Blue Creek, population 190, is located in Kanawha County 20 miles southeast of Charleston. Most of Blue Creek's residents are retirees living on fixed incomes. They obtain water from individual wells and a few cisterns. According to the director of the Charleston/Kanawha County Regional Development Authority and the Kanawha County engineer, water quality is poor and many wells have problems with bacterial growth. Other wells have high concentrations of salt.

In 1975 Blue Creek and the surrounding area formed a Public Service District to develop a central water system. An engineering firm was hired and designed a system estimated to cost about \$950,000. With the help of the Kanawha County Regional Development Authority, Blue Creek tried to get financing from HUD, FmHA, Appalachian Regional Commission, and the State of West Virginia. As of August 1979 the district had not been successful in obtaining financing. According to the director of the County Regional Development Authority, Blue Creek was turned down for financing because the agencies either did not have grant funds available or considered the project impractical because of its small size and district residents' low incomes. The director now feels that it is unlikely that the system will ever be developed.

Columbia, South Dakota--Columbia, population about 240, is located 20 miles northeast of Aberdeen. About half the people are retired. They get water from wells and, according to a town official, it is of acceptable quality. However, many of the wells are 40-50 years old and are reaching the point of being beyond repair. Most wells serve 2 or 3 households; a few serve more than 3, and one provides water for 24 households. The wells serving several households frequently do not provide sufficient water pressure.

Columbia, with the help of the South Dakota Fourth Planning District, has been trying unsuccessfully for several years to finance the development of a central water system estimated to cost about \$310,000. In its latest attempt in December 1978, Columbia applied to FmHA for a \$95,000 loan and a \$215,000 grant. The application was not approved.

According to FmHA, the average median family income of Columbia residents is too low to qualify for a \$95,000 loan. The FmHA official said that the town needs to scale down the proposed project's size so that the loan portion of the project cost will not exceed the town's debt service capability.

Larkspur, Colorado--Larkspur, population about 200, is located 35 miles south of Denver. Over half the residents are on fixed incomes. They get untreated water from individual shallow wells, which in many instances are very close to, and are contaminated by, septic tanks. The Colorado Department of Health tested 22 wells for water quality in 1978 and 1979, and 11 were found to be unsafe.

In late 1977 the Larkspur Homeowners Association was formed and a preliminary engineering study for new central water and wastewater systems was made in 1978. The study was financed by a \$5,000 grant from the Colorado Department of Local Affairs. The estimated cost of the two systems at that time was about \$776,000--\$500,000 for the water system and \$276,000 for the wastewater system.

The Homeowners Association applied to FmHA for help in October 1978. The application requested a \$194,000 loan and a \$582,000 grant. FmHA said that it could not accept an application from a homeowners association and advised Larkspur to incorporate in order to be eligible for FmHA financing.

The Colorado State Clearinghouse initially recommended that project approval be withheld because of the possibility that Larkspur could merge into an adjacent system. Larkspur officials said that this alternative was not practical because of the high cost and the fact that the adjacent district would agree to furnish water for only 5 years. The

Colorado State Clearinghouse subsequently recommended approval of the Homeowners Association proposed project, and the Colorado Conservation Board voted to ask the State legislature to fund part of the system with a 40-year, 3 percent interest loan of \$200,000.

Although Larkspur incorporated in November 1979, FmHA advised us that town officials decided to develop only the wastewater system at this time because the cost of both systems is more than could presently be funded. The wastewater system will cost \$243,000, and Larkspur was able to obtain financing from FmHA and the State of Colorado.

How local officials view the
Federal role in rural water development

Although we received varied opinions from local officials (mayors, councilmen, town administrators, water district managers and operators, members of NRWA, and others), several consistent opinions were expressed.

Many officials felt that too many Federal agencies (FmHA, HUD, and EPA) were involved to one extent or another in financing rural water development. They also felt that there was a lack of coordination between the agencies and that it took too long to process applications. Many officials wanted to see one Federal agency responsible for financing rural water systems.

A few officials said that they were generally against Federal involvement in local affairs such as water supply development, but most said that Federal financing was vital to rural water development and wanted to see an increase in the funding level. The need for more grant funds was a frequent opinion expressed.

The Executive Secretary of NRWA said that a meaningful Federal program for the orderly development of water systems in rural areas no longer exists. NRWA is particularly concerned with the administration of the FmHA loan and grant program. According to NRWA, if the present program priority continues, it will become less of a national program and more of a low-income, specialized assistance program. NRWA stated that, for the most part, the more economically able areas of rural America have developed public water supplies but that a need continues to exist in many rural areas where it is more difficult financially to develop water supply systems. Although many countryside areas are not impoverished, grant funds are still needed because of the low number of users per mile. Chances of these areas obtaining a grant, according to NRWA, are ever diminishing.

NRWA feels that during the past 2 years, FMHA funding priorities have been directed toward low-income rural towns and impoverished areas and that the needs of farmers and other "plain Jane" rural residents are being overlooked. These residents are characterized by NRWA as being overlooked with no particular ethnic group and adhering to a work ethic that maintains a level above the poverty line. NRWA believes that a partial solution to this problem could be achieved if FMHA funds were appropriated separately for rural towns and unincorporated rural areas.

State financial aid

About 25 States have funding programs for water facilities, including rural water systems; however, most of the programs are not designed specifically to benefit rural areas. Rural areas generally compete with cities and highly populated counties for available State financing. In many States the financial aid programs are used to supplement other financing, which is generally Federal.

Of the 10 States included in our study, 6 had financial aid programs. The following table shows the types of programs available and total funding since program inception:

<u>State</u>	<u>Type of program</u>	<u>Total funding since program inception (note a)</u> (millions)
Alabama	Grant	\$ 8.4
Colorado	Loan and grant	9.5
Kansas	Grant	5.2
Missouri	Grant	11.9
South Dakota	Grant	2.9
West Virginia	Loan and grant	3.8

a/Colorado, Kansas, and Missouri data is through fiscal year 1978. Alabama, South Dakota, and West Virginia data is through fiscal year 1979.

CHAPTER 3

FEDERAL EFFORTS TO IMPROVE

THE MANAGEMENT OF RURAL WATER PROGRAMS

No comprehensive national study to identify and evaluate rural water problems has ever been made, and very few States have developed such data. When we discussed this situation with officials from EPA, FmHA, and the Council of State Governments, the following were typical of the comments received.

According to EPA officials, no one has reliable data on the nature or extent of rural water supply problems. At present, nobody knows what the water conditions are for rural residents.

FmHA stated that neither FmHA nor the States really know which rural water systems need the most help.

According to officials of the Council of State Governments, no clearcut policy for rural water development has yet been established, and most State rural water development policies have been either neglected or fragmented. Some of the problems are that

- rural water development initiative has resided with the Federal sector, and the States therefore have not formulated rural water policy objectives;
- Federal water programs are not coordinated; and
- a lack of coordination exists between the States and the Federal sector in determining where assistance should be directed within each State.

The problems have been recognized at the Federal level. Three efforts are currently underway to identify and assess rural water problems and to improve coordination among Federal agencies and between Federal agencies and the States.

CURRENT FEDERAL EFFORTS

Both FmHA and EPA have ongoing assessments of rural water. The FmHA assessment is oriented toward water facilities while the EPA effort is oriented toward water supply conditions. The White House has initiated a program directed primarily at improving coordination among Federal agencies and, to a lesser degree, between the States and the Federal sector.

FmHA assessment

Water supply is one of 12 facility areas now being assessed by FmHA's "National Rural Community Facilities Assessment Study." The study will be the first attempt to make a State-by-State assessment of rural facilities and to identify the types and extent of investment needed to ensure an adequate flow of services to rural America.

The specific objectives of the study are to make statistically valid estimates of the

- status and characteristics of existing rural facilities,
- number and types of communities that need new or improved public facilities,
- cost of bringing each type of facility up to minimum performance standards, and
- relative priority of those needs in light of national objectives and other community priorities.

The study will also test the feasibility and begin development of an ongoing Federal-State data collection system. FmHA anticipates that the study will be completed by October or November 1980.

EPA assessment

The EPA study entitled "The National Statistical Assessment of Rural Water Conditions" is a cross-sectional survey of about 3,000 U.S. rural households. The survey data will be used to estimate characteristics of rural water supplies for quality, quantity, availability, and affordability. EPA anticipates that the study will be completed by October 1980.

White House initiatives

During 1978, administration officials met with public officials from small towns and rural counties; rural and public interest groups in Washington, D.C.; Members of Congress; and others to seek help in defining a specific action agenda for the administration in dealing with those concerns most on the minds of rural Americans. Rural water and sewer programs were identified as one of five areas requiring the most immediate attention.

The White House convened a water and sewer working group in June 1978. The group was composed of representatives from EPA, FmHA, HUD, EDA, the Department of Labor (DOL), the Council on Environmental Quality, and the Community Services Administration (CSA). It was given the mission of

- making Federal programs more accessible and better suited to rural communities, which frequently lack staff with "grantsmanship" skills and the technical and managerial capacity to implement water and sewer systems;
- improving the coordination of programs administered in different agencies;
- eliminating unnecessary paperwork, administrative duplication, and other federally imposed administrative burdens; and
- making limited budgets stretch further through improved program efficiency.

The agreements reached and the initiatives developed by these agencies were published in a December 1978 report on the White House Rural Development Initiatives entitled "Making Water and Sewer Programs Work." Coordination and service delivery, job training, and funding for the National Demonstration Water Project were three areas agreed upon by the working group as needing new initiatives. The following are brief descriptions of the initiatives developed.

1. Coordination and service delivery: EPA, FmHA, EDA, HUD, and CSA agreed to coordinate and improve the delivery of Federal water and sewer programs. The major initiatives in this area include:

- Emphasizing alternative and innovative technologies in rural areas.
- Requiring only a single determination of compliance with Federal laws.
- Establishing coordination procedures for facility plan reviews.
- Establishing common criteria for identifying high-user-cost projects.
- Establishing a joint agency data base for needs assessments.
- Establishing a demonstration project to simplify and reform administrative procedures.
- Establishing periodic regional meetings of agencies administering water and wastewater programs.
- Preparing a manual on available assistance and how to apply.
- Establishing joint training seminars for Federal field personnel, State agencies, and other organizations involved in the delivery of water and wastewater services.

2. Job training: EPA and DOL agreed to conduct a pilot program to train 1,000 new workers in water and wastewater treatment occupations and to upgrade the skills of approximately 750 other workers presently employed in the field.

3. Funding for the National Demonstration Water Project: EPA, EDA, HUD, and FmHA agreed to provide funds for NDWP, which uses the money to field test the various initiatives agreed to by the involved agencies.

Anticipated results

The White House report predicts that these new initiatives will:

- Assure that water and sewer facilities are well suited to local community needs. In some cases this assurance will mean using low-cost technologies appropriately scaled for sparse populations; in others it will mean facilities

which are adequate to meet long-term residential, commercial, and industrial needs; in all cases it will mean a greater Federal responsiveness to local circumstances and local initiatives.

- Save millions of dollars per year in reduced paperwork and administrative burden for small-town and rural county applicants and recipients of Federal aid. For example, only one set of compliance requirements accepted by all funding agencies (rather than one set for each agency) will be imposed for the National Environmental Protection Act, the Clean Air Act, the Safe Drinking Water Act, the Endangered Species Act, Davis-Bacon, and 11 other Federal laws.
- Save millions of dollars per year by eliminating administrative duplication among Federal agencies. For example, it is estimated that FmHA alone can save \$1 million a year just by using EPA's needs survey data.
- Speed up the processing time for applications and the time between applications and the completion of construction.
- Train 1,750 workers in the water and wastewater treatment field to meet critical rural shortages in this rapidly expanding job market.

The second semiannual progress report on the White House initiatives, dated June 23, 1980, stated that a good degree of success was being achieved but that additional effort is needed to achieve full potential of the initiatives. CSA has published and distributed a manual describing the programs available to rural communities and how to apply for assistance. For the most part, the other initiatives are still being developed or are partially implemented. For example, the Office of Management and Budget plans to have a uniform compliance regulation draft developed by December 1980.

CHAPTER 4

OBSERVATIONS

Although no one really knows the full extent of rural America's water needs or how much providing the necessary facilities will cost, it is evident that obtaining a safe, dependable water supply continues to be a problem for many rural Americans.

Existing systems need to be improved, replaced, or expanded. New systems need to be developed. Many existing systems have deteriorated because they did not charge enough for the water to provide for day-to-day maintenance and equipment replacement. Other problems, such as water shortages, are generally beyond the control of rural communities.

Increasing the water rates in already deteriorated systems in order to improve the level of operation and maintenance would provide some help, but increased water rates will not provide the needed long-term capital financing necessary to repair or replace existing deteriorated systems. The borrowing capacity of many communities and water districts is not strong enough to obtain private financing, and State aid programs are limited. The only large-scale source of financing available to many systems is the Federal Government, principally through the FmHA loan and grant program. Over the years, this program has provided over \$5 billion in aid to rural water development, yet the demand for assistance continues to exceed the funds available.

Many systems require substantial grant assistance because they cannot afford a loan--even a low-cost FmHA loan. Hence, the competition for limited grant funds is particularly keen.

The problem of water shortages caused by ground water overdraft and a lack of developed water supply facilities will not be easily solved.

The Federal sector has recognized the need to more fully identify the problems that rural Americans face in developing adequate water supplies. The White House initiatives address some of the expressed concerns of local officials on the problems of excessive paperwork, administrative duplication, and lack of coordination in Federal programs. The FmHA and EPA ongoing assessments of rural water systems should help considerably in identifying the nature and extent of rural water problems. The results of the assessments could also provide a basis for establishing priorities to assure that Federal and State funds are used to meet the most essential needs.

In light of these ongoing Federal studies and initiatives, it would be premature to suggest any restructuring or significant change to the existing Federal program; however, several questions need consideration by Federal and State agencies in the planning and administration of rural water development.

1. Should the Federal Government take a more active role in rural water management? For example, should FmHA undertake an educational program and provide technical help to rural water systems on management, operation and maintenance, and rate structures in order to prevent premature system deterioration?
2. Should FmHA revise its loan program? For example, would lowering the loan interest rate for the more economically needy applicants increase loan eligibility and thereby lessen the demand for limited grant funds?
3. Should the Federal Government require greater State participation in financing rural water systems? For example, should eligibility for FmHA and HUD grants require that States fund a given percentage of total project costs?
4. Should Federal rural water developmental efforts and programs be consolidated under one agency? If so, what would be the advantages and disadvantages and what agency should be responsible?
5. What additional role, if any, can the Federal Government play in developing water supply facilities, particularly in water-short areas?

TOTAL NUMBER OF CENTRAL WATER
SYSTEMS IN THE STATES REVIEWED AND
NUMBER SERVING A POPULATION OF 10,000 OR LESS

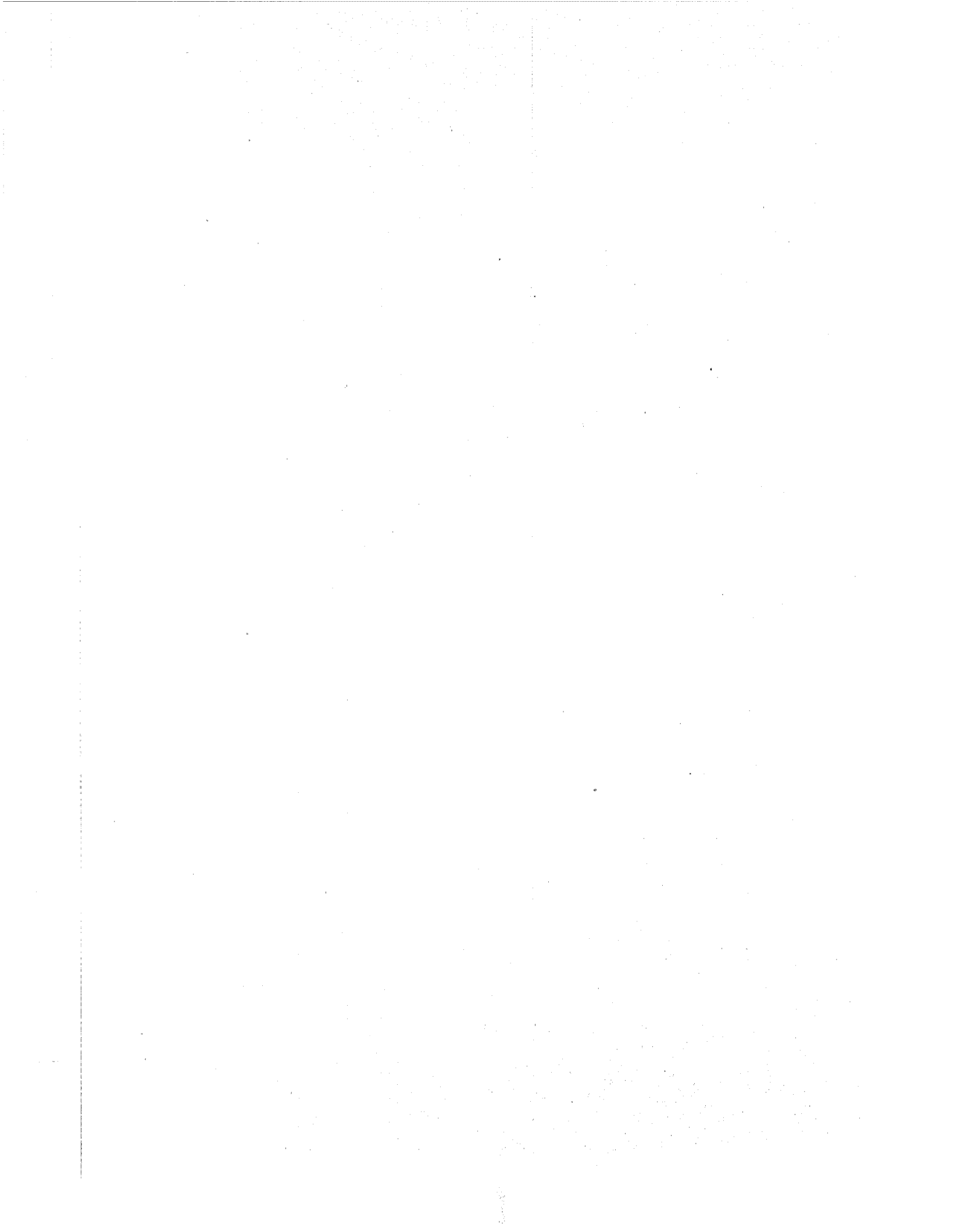
<u>State</u>	<u>Total number of central water systems</u>	<u>Number serving a population of 10,000 or less</u>
Alabama	745	695
Arizona	2,222	<u>a/2,197</u>
Colorado	1,544	1,513
Kansas	947	916
Kentucky	664	640
Maine	360	340
Missouri	1,271	1,227
Oregon	888	851
South Dakota	393	<u>b/385</u>
West Virginia	823	806

a/Some systems serve a population of 10,300 or less.

b/Includes one regional rural water system that serves a population of 10,400.

RURAL COMMUNITIES AND WATER DISTRICTS VISITED

<u>State</u>	<u>Community or water district</u>
Alabama	White Hall Estates
Arizona	Groom Creek
Colorado	Fruita Silt Poncha Springs Larkspur
Kansas	Russell Bourbon County Rural Water District #4 Elk County Rural Water District #1 Allen County Rural Water District #11
Kentucky	Salyersville Pembroke John's Creek Water District Christian County Water District
Maine	Danforth
Missouri	Clarence Rich Hill Scotland County Public Water Supply District #2 Johnson County Public Water Supply District #3
Oregon	Lincoln City
South Dakota	Selby Groton Artesian Columbia
West Virginia	Bancroft Whitesville Cabell Public Water District Blue Creek



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