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New Role for Extension: Serving the Rural Community Water Districts

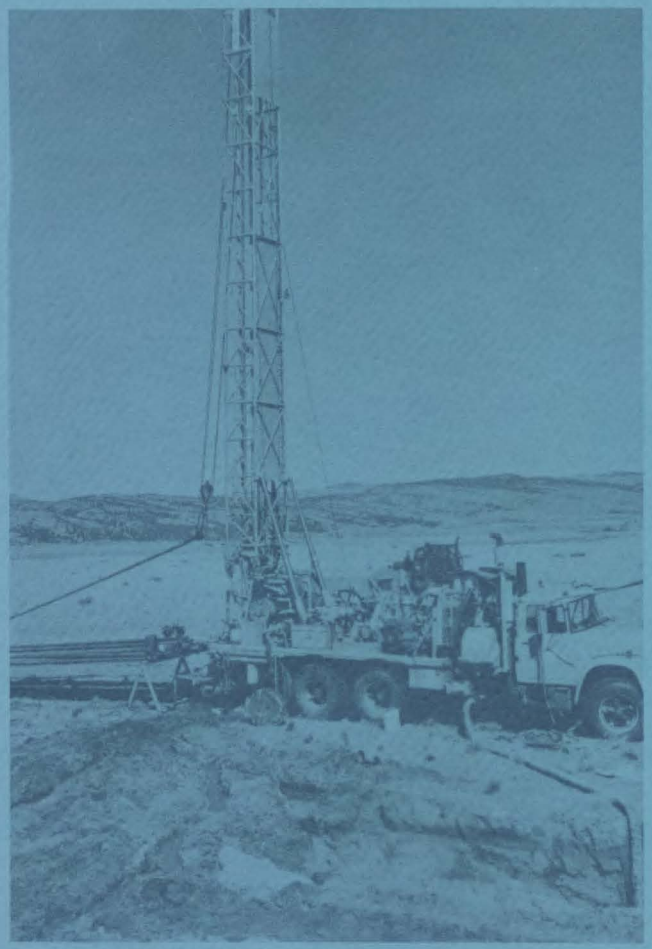
Cooperative Extension Service
South Dakota State University

New Role for Extension

serving
the Rural
Community
Water Districts

SOUTH DAKOTA COOPERATIVE EXTENSION SERVICE ESS 19a

It is in the lifetime of many of us that electricity came to the South Dakota countryside in the form of shining wires and public cooperation. Now again we see the same spirit of cooperation and miles of underground pipeline going down. Extension—your county agents and the specialists located at SDSU, individual farmers and community leaders, and various other government agencies are cooperating in this venture. The result: dependable water, good health, increased land values and bolstered economy, and quality living in South Dakota.



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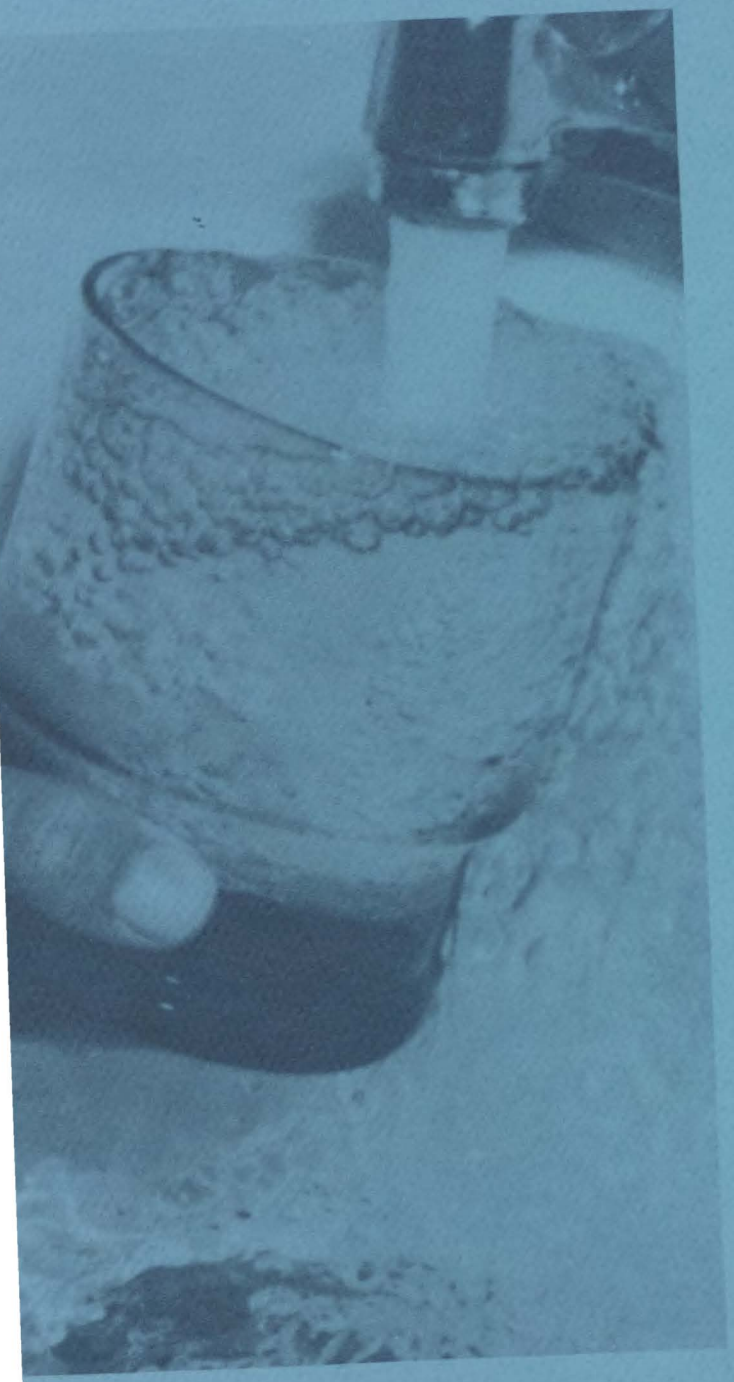

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New Role for Extension

serving
the Rural Community Water Districts

Interest in the subject of community-wide rural water systems has mushroomed in South Dakota during the last two years. While several communities have undertaken such projects in the past, there appears to be a new and emerging community development role for the Cooperative Extension Service. This is one of the first states where Extension agents have joined Farmers Home Administration personnel to provide significant educational leadership for this type of project.

South Dakota has more than enough good water to take care of its human and livestock needs several times over, but it also has more than enough of the kind of water that can sicken a child or freeze up a water pump in a fraction of its intended operating life.

The problem is to get good quality water to where it's needed at a price people can afford in a state of only 666,000 persons.

While many city residents take safe water for granted, many small towns and rural residents are acutely aware of poor quality drinking water. Some cisterns have high enough nitrate nitrogen levels to cause "blue baby" (methemoglobinemia) in infants.

The State Department of Health indicates that more than 255,000 persons in South Dakota use cisterns or wells as their drinking water source. Of this amount, over 75,000 persons must have their water hauled.

The full extent of the water delivery problem became better known in recent years when farmers and rural residents began organizing rural community water districts in order to get FHA loans for water purification, storage and delivery systems. Most of them are using the same neighborhood cooperative approach applied by REA to get electricity on the farm.

Showcase District

Though other community water systems appeared earlier, the showcase water district for South Dakota is probably the Lincoln County Rural Water District, which was provided funds in 1971. It is costing $1,-000,000 (including a $200,000 federal FHA grant) and is serving 400 farmsteads and rural homes.

Lincoln County Rural Community Water System Inc. was organized at a time when it had everything going for it. Poly vinyl chloride plastic pipe that won't corrode or collapse underground had been developed. Engineers had found more economical pipe laying techniques. Comprehensive water and sewer plans, required for FHA grants, had only recently been developed by many counties. The 1970 state legislature had removed the ad valorem taxes on assets for non-profit corporations, and long-term, low-cost loans were available from FHA. Since the Lincoln County project was funded, FHA grant money was impounded by the Office of Management and Budget; however, many South Dakota water groups plan to go ahead with applications for loans.

Lincoln County also was the project where South Dakota Cooperative Extension personnel "cut their teeth" in providing information to communities seeking water delivery systems. By this time they had accumulated information from the more populous southern states that had put in systems and were able to apply that experience to the Lincoln County project. The Lincoln County project has also provided a practical field laboratory for other South Dakota communities to view and for engineers to determine the kinds of soil and technical problems they might encounter in future projects.

Why South Dakota Is Unique

South Dakota is unique in two areas of water development. One is that Extension agents and specialists have taken the initiative for the educational role

which usually has been done by FHA. Another is that Extension agents working on the surveys have asked local interviewers to include livestock feasibility questions in the total cost-benefit picture. Evidence is that these systems may also significantly boost livestock production potential.

How Much Is Water Worth?

The real problem in South Dakota is that it really isn't known just how much people are willing to pay each month for good quality water from a dependable source.

In other states with rural community water systems, monthly bills average between $8 and $12 a month. But South Dakota has more livestock and less people per mile of pipeline. There are some systems in this state that serve as few as five or seven water meters.

"We have been listening to these people in rural South Dakota communities and are trying to make up our minds just whether we dare gamble on some of these requests for what we feel would be excessively high water rates," says Robert Swartout, Huron, chief of Community Programs for FHA in South Dakota. "We are coming around more and more to the thinking that probably they are not too excessive."

He added, "It is our thinking now that if rural water systems in Kansas find $14 to $15 monthly average charges acceptable for just domestic water for people that work in town and live in the country, we probably can live with $20 to $25 monthly charges where we are not only serving domestic needs of the farm, but at the same time also are taking care of their livestock water problems."

FHA tries to keep construction costs down to between $3,000 and $4,000 per user, to be paid over a 40-year period. There may be other than economic factors that FHA will consider in justifying a loan. For example, one factor that may have some effect on the cost-benefit acceptance is the finding by the State Department of Health that between 38 and 39 percent of the water samples sent to the water testing laboratory in Pierre from users of private wells and cisterns is unfit for human consumption.

First Funded Projects

The very first FHA loan for a large community water system in South Dakota was $490,500 to build the urban-rural Rapid Valley System near the Rapid City Airport in 1962. It now delivers chlorinated water through 640 meters.

The first really large completely rural community water system, however, was funded by FHA in the fall of 1967. It was the Butte-Meade Sanitary Water District, serving farmers irrigating croplands from Orman Dam near Newell. The loan was for $1,599,000. Users had been filling stock tanks and small farm ponds with irrigation water during the last discharge of the season in order to keep sheep flocks over the winter.

Scope of Activity

If all of the communities wanting water delivery systems were lumped together, the price tag would run about $46 million. This estimate is based on the communities making their preliminary surveys, those applying for loans and on communities that have had new systems built in recent years.

Many of the contenders for new systems will likely have to reduce per user costs before their federal loan applications get past the examiner's desk, so a conservative estimate of $35 million might be more reasonable.

The list includes at least 24 projects, 11 of which have been completed and three which just recently received FHA loan approval. Projects funded and completed in the last 10 years are now providing good water to 6,756 residents at an estimated investment of $4,726,261. They range from a handful of small systems with five to seven metered outlets to those like the Lincoln County Rural Water System with about 200 miles of line.

The really big projects are yet to come, however. Minnehaha County Water System, which expects to have from 1,800 to 2,000 taps providing for a rural population of between 6,100 to 6,800 persons, in June received approval for a $5.4 million loan. This water system, which will be the largest in South Dakota and one of the largest in the United States serving a rural area, will have a 690-mile network of water pipeline. Trail City and Glencross, with 86 rural subscribers near Timber Lake in Dewey County, also recently received loan approval for $311,000. The Sioux Rural Water System, Inc. (including portions of Codington, Hamlin, Clark, Deuel and Kingsbury counties) with 700 subscribers or the potential to provide water for

2,200 persons, also was given the green light for loan funds.

Others in the waiting lineup for funds, feasibility studies, and loan applications include Big Sioux Community Water System with 630 subscribers or 2,150 persons, and the Brookings-Deuel County System with 750 subscribers or 2,850 persons. The projects will involve laying several hundred miles of pipeline.

Nine other communities are actively surveying residents on the desirability of a rural water system or have collected $10 to $35 subscription fees for engineering studies. These projects, if built, would probably cost a total of about $30 million. They could serve a population of over 14,000 persons.

Not even included are additional proposals for piping water to storage facilities in 43 small towns adjacent to these proposed projects. This added twist might enhance the cost-benefit ratios and mean updated or new water delivery systems for more than 16,000 small-town residents, mostly in eastern South Dakota. The combined town-rural total could run to about 30,000 persons.

Communities running surveys and setting the machinery in motion for new loan applications presently include: Wagner District with an anticipated 500 subscribers at an estimated cost of $2 million; Randall District with an anticipated 900 subscribers at an estimated cost of $4 million (Wagner and Randall systems may be joined and would include about 70 per cent of the farm homes in the area); Aurora-Brule Rural Water District with an anticipated 858 subscribers; Cheyenne Water System with an anticipated 80 subscribers; Lyman-Jones County System with an anticipated 478 subscribers; Cheyenne River Indian Reservation with an estimated 530 persons to be served (HUD and EDA funds with $400,000 loan from FHA); and Tripp County with at least 300 subscribers indicating interest. Gettysburg also has a proposal for a 10-mile pipeline to deliver water from the Missouri River to their town of 1915 persons. It will cost an estimated $750,000.

What Good Water Can Do

Harold Bleeker, a farmer in eastern Hamlin County who has never had enough water on his farm, is always afraid of a dry year. It's not because of his crops. It's the drinking water supply for his family and his livestock.

Harold and Ruth Bleeker show Harold Campbell, center, Hamlin County Extension agent, what ground water in their area does to water heater elements. The Bleekers have high hopes set on the recently funded Sioux Rural Water System Inc.

Bleeker would put in a water softener for his milk line. His water heater and pumps wouldn't have to be replaced every six months or so as they are now, since his present water supply is 114 grains hard.

Bleeker, who needs water to run his dairy farm and steer feeding operation, pays $2,000 to $6,000 every time he sinks a new well.

Rural community water systems, set up like rural electric districts to provide water and pipe it to farmers subscribing to the service, may change things for a lot of rural South Dakotans like Bleeker.

Two returning Vietnam veterans in the Castlewood-Kranzburg area indicated to Harold Campbell, Extension agent from Hamlin County who conducted winter educational meetings on organizing rural water systems that they would like to farm with their fathers.

But it was a question of adequate water. Both men had all the land they needed, but were limited in livestock numbers by an inadequate supply of water. Unless they were assured that the water system would be constructed, they intended to seek employment elsewhere.

The Sioux Rural Water System Inc. which was recently funded in this area, will cover portions of 27 townships in Codington, Deuel, Clark, Hamlin and Kingsbury counties. The area system would carry water to some 700 farms. There are about 6,000 dairy cows on these farms.

"With a good water supply, our surveys indicate the number could easily be increased to 7,000," according to Campbell. He estimates beef cow numbers could be increased by 20,000 to a total 54,000.

What Happens in New Systems

Richard Lohmen, chairman of the Lincoln County Rural Water System which was partially in service in the fall of 1972, finds dairy people have an easier time washing utensils because of the better quality water.

"One man saved enough money on his cleaning compound bill in two weeks to pay for his monthly bill. He was happy with a $60 per month water bill," says Lohman. The average bill, however, runs $18.50 per month in the Lincoln County Rural Water District. The water is now only 17 grains hard. Before, it was 150.

About a fourth of the members of the Lincoln system are people who have rural homes but work in nearby Sioux Falls. The water system has increased property values—in some cases doubled the per acre value. In other counties, even the prospect of water development seems to increase land values, according to sources close to the scene.

FHA approved the loan on another water system this year which will mean the end of hauling water to Trail City and Glencross. It also will allow farm families to "background calves," according to Herb Lippert, Dewey County Extension agent.

Lippert adds, "There's no well in town that has water that's drinkable. Even the livestock won't drink it. Because of the costs of hauling water and because of the poor quality of well water, calves could not be kept over winter."

Fifty-six farm homes, eight pasture outlets and 22 users in the two villages will be served by an 80-mile pipeline delivery system costing $380,000. It has been four years since the first planning meeting.

Land Values Increase

The rural community water concept already has played an important role in developing the economies and stabilizing populations in such states as Oklahoma, Kansas, Texas, Mississippi and Missouri where many of the systems were built in the 1950's and 1960's. Development began in South Dakota, Nebraska and Iowa in the late 1960s. The systems usually include pipelines, storage facilities and purification plants, virtually eliminating the possibility of contamination of the water supply.

Because most of the systems remain to be built in South Dakota, it is too early to measure the full economic impact, but several county-wide surveys indicate that a good dependable source of pure water from a community system may provide the incentive for many residents to remain in farming, to retire to homes in the country instead of moving out of the state, to choose "country living" while working in nearby towns and expand livestock enterprises.

In Kansas, where there are 162 rural community water systems involving 21,000 families (or about 70,000 rural residents), researchers in 1969 examined the economic impact on a rural water system of 97 metered outlets. The Kansas Cooperative Extension Service economists who made the study found that land values increased an average of $26.47 per acre for 93 per cent of the people in the district. They also found that there were fewer sales of land served by the rural water district than in the other areas of the county.

The land that was sold in the water district brought an average of $43.50 per acre more than the land sold in the area that was not served by the district.

The total estimated economic impact on this Kansas community amounted to 191 percent for a system that cost $125,000. In addition, as a result of the rural water district, families served had purchased clothes washers and dryers, dishwashers, garbage disposals, humidifiers, water heaters, built one and two bathrooms, installed laundry facilities and developed sewage disposal systems. The estimated purchase cost of these items was $135,000.

Loren Gantvoort, steering committee member for the Sioux Water District Cooperative in Hamlin County, will receive only marginal benefit from a water system in his area because he is lucky enough to have good water on his farm. Gantvoort is involved because he figures, "The water project won't change my operation a bit, but it's a real good project for the community. If you can guarantee water when you sell

the farm, it's worth $25 to $35 more per acre. There are some places around here where you don't dare water your garden or you'll kill it."

Poor Water Holds Economy Back

Poor quality water may have caused economic retardation in many parts of South Dakota, according to Loren Paulsen, Ward, chairman of the steering committee of the newly formed South Dakota Association of Rural Water Systems.

"These rural water systems will do a lot to improve the quality of life in rural communities. They may provide an alternative to a declining tax base. In my community there are mostly older people. Who will pick up the tax tab and build when they are gone? Maybe eliminating contaminated water or poor quality water will change things. Safe and dependable water is a big plus in drawing people to rural areas."

Is Your Water Safe to Drink?

Most towns and cities in South Dakota have good tasting drinking water, but those that don't really don't! Especially hard-hit by low quality water are rural residents or people living in smaller towns. Ground water supplies are often brackish, and iron and hardness concentrations are among the highest in the United States.

One Third of Samples Unfit

Approximately 255,000 persons (37.5 per cent of the state's population) are served by water tank haulers or by private wells. There are an estimated 68,000 private water supplies. About 75,000 persons depend on drinking water hauled to their own storage systems by 200 water haulers. Some of the water is hauled from private wells under unsatisfactory conditions, says John Hatch, chief of the Water Hygiene Program of the State Health Department in Pierre.

What alarms sanitary engineers is that between 38 and 39 percent of the water samples submitted to their Pierre laboratory from private well supplies for coliform bacteria testing have been found "unsafe for human consumption." These were from people concerned about the purity of their water supplies.

There doesn't seem to be any change from year to year, either. Last year, 859 samples out of 2,225 submitted for bacteriological testing from rural private supplies were "unsafe." That's about the same percentage it has been for the last three years, according to Hatch, who has been keeping records during this time. Only spot checks were taken on water haulers, so their record is incomplete.

The State Department of Health also checked 1,766 private water samples for nitrate nitrogen in 1972 and found 207 samples or 11.7 per cent "unsatisfactory for infants." Nitrate nitrogen was at a high enough level (above 10 mg. per liter) so that there was a danger that the source could cause "blue baby" or methemoglobinemia. Many other water sources may be safe to drink but are loaded with minerals.

The high level of unsafe samples from farms and rural communities without municipal water systems isn't due entirely to hauled water. Much of the problem can be blamed on people using rain water off their roofs (during dry periods water is hauled).

"We've never had a safe sample of rain water for drinking in our laboratory. Rains wash dirt, bird excrement and other impurities from the roof into the cistern," reports Hatch.

In January, 1973, the state adopted regulations for bulk haulers. A lot of water is being hauled for drinking purposes and household use throughout the state. As a sample, Health Service records show that about 1,200,00 gallons of water were hauled from the city of Yankton to surrounding rural areas in August, 1971, and about the same the following year (August is the peak hauling month). Some 750,000 gallons were hauled from Chamberlain in August of 1971 and 1972.

Hatch declared, "I think rural community water systems would be the answer to providing both safe bacteriological water and adequate quantities of chemically satisfactory water."

Livestock Are Choosy, Too

Most of the poor water found in livestock sources can be traced to improperly constructed wells, according to SDSU engineers. These are often wells farmers put in themselves, and surface waters drain into them. As for the problem of highly mineralized water—neither humans or livestock like the taste. Rather than drinking bad tasting water, livestock often will drink runoff or contaminated waters.

A big share of the water in rural areas is now contaminated or in the process of becoming contaminated, perhaps due to increased numbers of livestock, increased fertilizer use or because of intensive farming practices.

In the Wagner and Platte areas, for example, many wells are now 60 to 80 years old and are giving out. The water source for the city of Delmont a few years ago contained only .17 parts per million of iron. Last year it was something like 7.5 parts per million.

Wells drilled outside of the major outwash of the Big Sioux River and its major tributaries are big question marks. Nobody knows where the local stratified sand lenses (soil areas most likely to produce good water) are outside of the creek beds. Iron, manganese and sulfate material in the surrounding surfaces influence water quality.

Though South Dakota has water problems, so far the pollution problems probably aren't as extensive as in other areas. For this reason and because of its sparse population, the state is probably in a better position than most to fend off industrially-related water problems. There are about 12,000 different toxic chemical compounds in industrial use today and more than 500 new chemicals are developed each year. More and more wastes from these chemicals are entering our water supplies. South Dakota's Cheyenne River was just recently found to have mercury problems.

Among the polluting materials are such metals, chemicals and compounds as nickel, tin, vanadium, lithium, berylium, cadmium, chromium, lead, mercury, arsensic, selenium, silver, zinc, sodium, nitrate, asbestos, solvents, nitriloacetic acid (the NTA in detergents) and polychlorinated biphenyls. Also of concern are the hormones, antibiotics, pesticides and radioactive materials.

Should We Take the Plunge?

Before farmers and other rural residents take the plunge for a community water system, they ought to determine the true cost of water being produced by their present systems. It's a simple calculation, if water is being bought in tank lots and delivered to the user's cistern. Hidden costs enter the picture, however, if the private water source in question is a well. Extension Fact Sheet 468, entitled, "Costs of Rural Community Water and Sewer Systems, Compared to Private Systems," contains tables and forms helpful in figuring these costs.

Generally, FHA determines a rural water system to be feasible if it serves about two customers per mile of pipeline installed, but recent design requirements indicate that under favorable conditions, a user density of a one user or less per mile of pipeline is workable. Another rule-of-thumb is that if at least 80 per cent of the potential users along the proposed pipeline indicate they are willing to join the system, it's probably a good project. Also, pipeline capacities in the past have been based on a flow of 3 gallons per minute per customer served, but projects on the drawing boards or under construction have designed flows of 1 or 2 gallons per minute. Water should be treated to remove iron and manganese and softened to no more than 15 to 17 grains hardness.

Indications that a rural community system is needed include: (1) When there isn't enough water on many farms in the area; (2) When water quality is poor; (3) When quantity and quality are satisfactory but cost of developing the water source is prohibitive unless the cost can be spread over a larger number of users; and (4) When users feel the convenience and sanitation features of a community system outweigh those of the private system.

How People Become Involved

A community rural water system has to be a "grass roots" community action program before Extension enters the picture. When the project is well under way and on its own, Extension also likes to leave the picture. One reason local initiative is needed is that such a

project is a lot of work. Besides, it won't work unless a water system is genuinely wanted.

Neither Area Extension agent, Leonard Nelson, nor Charles Mix Extension agent, Bob Hegdahl, were too encouraging when a group of about 12 farmers from the Wagner area dropped into their office in March of 1972, indicating they were interested in developing a rural community water system. "It was during the height of the busy calving season. We told them if they genuinely wanted a water district, they would have to contact every farmer to determine the interest," said Nelson. "If you get 20 people to make the survey, we will train them to do the survey work. The very next day, they had 20 people in our office ready to begin the survey work. We trained them and within 10 days they had contacted 500 farmers; 450 of them signed up. There was no question, the desire was there."

Logical Work Sequence

There is a logical sequence for setting up a community water system. The sequence includes:

(1) Determine Interest. Often a few people with water problems approach the county Extension agent for answers to their problem. This may prompt a public meeting, followed by a survey. Many resource people are available to help, including: Extension specialists and county Extension agents, FHA, ASCS, SCS, Rural Electric Cooperatives, private power companies, State Geological Survey, conservancy subdistrict engineers and county planning commissions.

A logical next step is to conduct a well-publicized survey to determine the extent of interest and initial feasibility. County Extension agents will train the survery team and offer educational material.

If the survey indicates considerable community interest, more public meetings should be held to expand public knowledge of the work involved and to determine whether to go ahead.

(2) Select a Steering Committee. If enough people express interest, a steering committee should be formed and officers elected.

(3) Determine Availability of Loan Funds. The first act of the steering committee should be to determine availability of loan funds. The Farmers Home Administration should be one of the sources investigated, although other sources should be considered, also.

(4) Collect "Good Intention" Money. The steering committee now needs three things that are going to cost money: (a) Engineering services for a feasibility study; (b) Legal services to form a legal body to run the affairs of the project; and (c) A plan for keeping people informed. All or part of this money is normally raised by donations that are sometimes called "good intention money," which does not obligate a contributor to join the system. The canvas is organized by the steering committee and the amount asked for during the personal contacts with each prospective user generally ranges from $10 to $20.

(5) Complete a Feasibility Study. This step involves contracting an engineering firm. Legal advice also may be needed at this point. The feasibility study is not a detailed engineering study—that comes later.

(6) Make final negotiations with a Lending Agency. If the project is feasible, the group at this point negotiates for a long-term loan or bond issue to pay for a detailed engineering study and construction costs.

(7) Form Legal Body. This step should take place before the signing of negotiations with a lending agency. About the same time a "scope of service" statement should be obtained from the engineering firm retained to make the detailed engineering study.

(8) Collect Hookup Fees. Before construction starts, the directors should collect a hookup fee from each user. The fee normally includes the price of the meter and sometimes is based on the footage of pipe needed to deliver the water to the farmstead from the main line. The amount is seldom less than $100.

This sequence is covered in Extension Fact Sheet 538. Other Extension fact sheets that should be helpful to rural communities include: FS 469, entitled, "A Cooperative Approach; Solving Domestic and Livestock Water Problems": FS 539, "Selecting a Legal Organization to Administer Affairs of a Community Sewer and/or Water System"; plus a series of fact sheets—572 through 575, which discuss contracting arrangements and how water resource planning may be implemented through a conservancy sub-district. In addition, mimeographed sheets and survey forms have been initiated by county Extension offices involved in survey work.

Crystal-balling: Water in the Future

If it were possible to look into a crystal ball and forecast the decade ahead for South Dakota, what would we likely see down the road in rural domestic water development? If experience in other states or feasibility studies and surveys in this state mean anything, it would probably be something like this:

Positive Aspects

- Several hundred farms with good quality water piped in that didn't have it before. They'd come to depend on it like electricity.
- Thousands more head of cattle on feed, plus more swine and dairy animals.
- New residential construction, both for farmers with several hundred acres and for non-farm families who want to live on five acres, but work in town.
- Water piped to lake cottages, especially at Lakes Cochrane, Madison and Poinsett.
- A way to service water to rural areas where there isn't enough population to justify a central system.
- A more stable population in rural areas.
- An improvement in quality of living (both from a better sanitation standpoint and from the purchase of more modern conveniences such as dishwashers and bathrooms).

Problems

On the problem side, we'd have some new things to cope with, too; but experience in other states may help us avoid them. These include:

- Water systems built too close to cities so that they become over-burdened by urban sprawl.
- Speculation and inflated land values, based on the promise of fresh water piped to new homes.
- Rumors that all the land will be mortgaged, well fields will dry up all the wells in the township and that taxes will soar.
- Possible conflict of water user interests.

The rumors and conflicts can be averted by long-range planning and a sound information program, say those who have been through it.

For example, individuals are in no way required to join a water district; it's strictly voluntary. They can be required, however, to join a sanitary sewer district.

Regarding adverse rumors, county agents involved in rural water projects say, "They have to be handled at once, but they can best be prevented by getting adequate information out in the first place."

It's true, in most states agriculture—especially irrigation — will be the major consumer of water for many years to come, but rural water systems in South Dakota probably won't use all that much water. For example, a town of about 4,000 persons in South Dakota used an average of 522,000 gallons of water per day, including water for lawns and tank truck hauling to farm cisterns. During a year's time this would represent about two feet of water pumped on a plot of 293 acres of irrigated land.

Advice from Others

As far as the other problems are concerned, here's what the people in Kansas with rural water system development experience say:

"You'll reduce your financial risk and get your development if you keep a buffer zone between densely-populated cities and your water system." The reason: As the city moves out, new residents demand fire protection for their tax dollar and the rural water systems aren't designed for that.

Some of the speculation problems may be minimized if the water system association retains the power to issue hookup rights. For example, hookup rights return to the system when land, owned by a hookup subscriber, is sold. The board of directors retains power to re-issue the hookup.

New Provisions Aid Development

The 1973 South Dakota Legislature passed legislation which should make it easier to develop rural community water systems in the future. One provision gives "domestic preference" to rural water systems, moving them from "commercial use" and placing them on equal footing with municipalities and rural residents with private wells. Another provision allows the State Geological Survey to expend time and money on locating a well or well field for the non-profit rural water systems.

Other Funding Sources

The primary funding source for rural water systems is the U. S. Department of Agriculture's Farmers Home Administration, but there are other ways, including private funding.

In other instances, some communities may qualify for Housing and Urban Development funding. Still another source of funds, especially in depressed areas, is the Economic Development Administration of the Department of Commerce.

Idea for Isolated Farms

There is still the problem of the really isolated rural South Dakota farm. "Cluster wells," retaining the central financing, management and maintenance concept of the central service association, may serve such families. Wells serving clusters of from 2 to 20 homes reduce the cost of rural water systems while adding the benefits of dependable water. Users share in payment of central management costs, which reduces the per user cost of this service. At the same time, cluster wells eliminate the expense of piping water long distances to isolated homes. In some instances, whole systems can be designed with the use of cluster wells where service from a single well would be prohibitive in cost for any group of prospective users.

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