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Cooperative Extension South Dakota State University

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Domestic Water Development in South Dakota

A Review of Organization and Management

Cooperative Extension Service
South Dakota State University
U.S. Department of Agriculture



Domestic Water Development in South Dakota

A Review of Organization and Management

Charles E. Carl*

South Dakota has a good supply of high quality unallocated water, the bulk of which is being stored in Missouri River reservoirs. Many communities are not utilizing this water because of problems connected with moving the water from the points of supply to the points of use. Water use development depends on water distribution.

Technology exists for the design and use of such water transport systems, but the cost frequently prevents individuals and small governmental units from even considering construction of long distance transport systems. In most cases systems that will deliver main stem Missouri River water and high quality ground waters to points of need must be financed and supported by a legally constituted governmental unit. This unit must have both the authorization and risk capital for construction of such systems.

Representatives of South Dakota State University, funded under Title V, Rural Development Act of 1972, have been investigating a variety of organizations under a study entitled "Alternative Water Authorities to Enhance the Quality of Living in South Dakota."¹ The following is an overview of organization and management being used for domestic water development in South Dakota. This information should be useful to individuals and governmental units in South Dakota considering possibilities of long distance pipeline development.

Domestic Water Development in South Dakota

There are about 386 public water supply systems in the 310 cities and 67 counties of South Dakota. Another 72 systems provide water for major state, federal,

and Indian installations. Together these systems serve a resident population of about 420,000 people.

About 250,000 residents use private water systems and about 75,000 of these use cisterns. This water is supplied either by commercial water haulers or by rain water when there is sufficient moisture.

Rural Water Systems

As of June 1, 1976, there were 31 rural water systems completed, under construction, or proposed. These systems have developed under various South Dakota statutes. Most have secured the bulk of their financial backing from the Farmer's Home Administration (85-90%), with the state of South Dakota providing 5-10% and local funding providing 5-10%.

Construction costs of the 19 systems completed or under construction will total about \$48.5 million (excluding Rapid Valley and Whispering Pines). These serve about 10,400 rural customers (about 36,500 people) plus 40 municipalities and communities.

Statutory Authorities

There are numerous South Dakota laws authorizing units of state government to engage in water development activities. A partial tabulation of such statutes includes the following:

Townships

SDCL (South Dakota Compiled Laws) 8-2-8 (10) provides a township authority to construct and maintain all or part of a system of water works for an unincorporated town within its boundaries for industrial and domestic use.

Municipalities

SDCL 9-47 provides general municipal authority to construct and operate water systems.

Water User District

SDCL 46-16 provides for the organization and operation of a water user district after a district application is approved by the Department of Natural Resource Development.

Sanitary Districts Outside of Municipalities

SDCL 34-17 provides for the organization, operation, and management of a sanitary district. Essentially, a sanitary district has all of the water, sewer, and solid waste management powers of a first class municipality.

Non-profit Corporations

SDCL 47-22 provides for establishing a non-profit corporation.

South Dakota Conservancy District

SDCL 47-17-3 (6) authorizes the South Dakota Department of Natural Resource Development to participate in all water resource projects. This includes the development of facilities by which water is controlled, regulated, or made available for use. It includes the quality of the project, and it includes all studies, investigations, plans, construction, operation, or maintenance associated with such facilities.

South Dakota Water Resources Management

SDCL 46-17A provides for comprehensive state water management including but not limited to: (1) interdepartmental planning for water development, (2) legislative authorizations for construction of proposed water facilities, (3) grants to rural water systems and small water development projects implemented through Regulation Chapter 52:02:13, and (4) power to issue revenue bonds, implemented through Regulation Chapter 52:02:14.

Exercise of Governmental Powers

SDCL 1-24 provides that any governmental unit can cooperate with any other governmental unit within or without the state to do the same things that the units are empowered to do by themselves.

Pipeline Installations

Gettysburg

The city of Gettysburg, located in north-central South Dakota along Highway 212, about 12 miles east of the Missouri River Oahe Reservoir, replaced a

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¹Organization and management of South Dakota water authorities, Charles E. Carl, November 1977; and South Dakota aqueduct financing options, George Morse, July 1977.

deep well water source with a Missouri River reservoir source.

That system includes an intake structure, a lift station, treatment plant, pumping stations at the treatment plant and one enroute, plus 14 miles of 8-inch pipeline connecting the pumping station with other facilities.

The system was designed to pump 300 gallons per minute (gpm) (484 acre feet per year (A ft/yr)) and has been in operation about 2 years. Gettysburg has the statutory authority for such a project under SDCL 9-47.

Fox Ridge System

The Fox Ridge system constructed by the Tri-County Water Association, Inc. (Dewey, Ziebach and Meade counties) contracts for the sale of water to Eagle Butte and nearby ranches. The system has a capacity of 1300 gpm (2097 A ft/yr), and includes an Oahe Reservoir water intake, 22 miles of 14-inch pipe plus an intermediate pumping station located halfway between Eagle Butte and the reservoir. The pumping station includes a microstrainer and chlorination treatment facilities. The Tri-County Association is currently studying the possibility of expanding the treatment facilities and distribution system.

Pipeline Studies

Several pipeline investigations are underway in South Dakota. Most relate to the feasibility of transporting water east and west from the Missouri River reservoirs to serve municipal, rural, and industrial needs. A review of three such studies follows:

Chamberlain-Sioux Falls Pipeline Cooperative Community Development

This is known as the Upper Big Sioux River and eastern South Dakota water supply study. The U.S. Army Corps of Engineers has received congressional authorization (May 9, 1974) and funding to study water supply needs for the Big Sioux River area in eastern South Dakota. This includes the study of alternative arrangements for a Chamberlain-Sioux Falls pipeline.

The study area includes the following counties: Sanborn, Miner, Buffalo, Jerauld, Lake, Brule, Aurora, Davison, Hanson, McCook, Minnehaha, Charles Mix, Douglas, Hutchinson, Turner, Lincoln, Bon Homme, Yankton, and Clay. The Corps submitted a report including several alternatives to the sponsors in February 1977.

Sioux Falls has withdrawn from the study plan. A separate city financed investigation is underway to determine alternate water sources for that city.

One proposal, for a pipeline from the Missouri River to Mitchell and on to Montrose, includes an intake on Lake

Francis Case at Chamberlain, two booster stations, a pipeline paralleling Interstate 90 with 36- to 20-inch pipe sizes, three storage reservoirs, no treatment, and an intake capacity of 9930 gpm (16,024 A ft/yr). Other alternatives are outlined in the February report. Local units of government have statutory authority to participate in such projects both individually and collectively under SDCL 1-24.

South Dakota-Wyoming Aqueduct

The Black Hills and West River conservancy sub-districts co-sponsored a conceptual study of a Missouri River-Wyoming Aqueduct to (1) identify water needs in western South Dakota that could be satisfied by an aqueduct, (2) evaluate physical management and financing alternatives, (3) identify restraints, and (4) develop a recommended plan of action.

Basically, the proposed system would consist of a 286-mile aqueduct, 72 to 66 inches in diameter, extending from the Oahe Reservoir west. It would deliver 25,000 A ft/yr to users in western South Dakota and 100,000 A ft/yr to industrial users in Wyoming.

It is proposed that a Missouri River Development Commission be created as a sub-unit of government under the Department of Natural Resources Development to manage the system.

Both conservancy sub-districts concerned reacted favorably to the conceptual report. They then initiated a reconnaissance study leading to a more conservative plan that would serve the immediate water needs of municipalities, rural water systems, and rural homes and ranches in western South Dakota.

Ownership and management of the proposed aqueduct would be by the South Dakota Conservancy District, as authorized by SDCL 47-17-3. The District contractor would wholesale untreated water from the pipeline to each city, rural water system or conservancy sub-district.

These districts would then develop and manage the necessary pumping and related storage facilities, and provide the distribution pipelines to the various contracting entities as cities, rural water systems or other users, including delivery at the Wyoming state boundary for out-of-state use.

Water rights for in-state use would be held as future use rights by the two conservancy sub-districts, and such rights would be transferred to the users as water is delivered from the wholesaler to the retailer. The Wyoming water user would apply for and retain its own water right permit.

The two conservancy sub-districts applied for and were granted water rights permits of 10,000 A ft/yr each. The Wyoming industrial user, Environmental Transport Systems, Inc. (ETSI) ap-

plied for a permit for 20,000 A ft/yr. Water rights of this magnitude require legislative approval.

Approval was granted by the 1977 legislature but the governor vetoed the measure (April 2, 1977). The legislature did not override the veto.

The 1977 legislature, through Senate Bill 285, directed the Board of Natural Resources Development to undertake a study, to provide for public input, to provide conditions for the possible issuance of bonds, and to provide for a policy of eminent domain, all relating to the West River Aqueduct. This measure passed, was signed by the governor, and planning is underway for funding such a study.

WEB Water Development Association

The WEB Water Development Association of Local Governments and Agencies started as a cooperative effort in Walworth, Edmunds and Brown counties. The organization was formed to consider the possibilities of delivering high quality water to area residents. Boards of county commissioners, city councils, and boards of rural water and sanitary districts cooperated under SDCL 1-24 to finance a feasibility study. As the study progressed, Day, Campbell and Spink counties also entered into the contractual arrangement.

A feasibility report was delivered March 1977. Several alternatives are outlined, but alternative A, the most ambitious plan, provides for utilizing 25 million gallons per day (mgd) or 1736 gpm from the Oahe Reservoir near Mobridge, a treatment plant, water delivery through a main pipeline of 36-inch diameter to Aberdeen, plus a 16-inch pipeline from Aberdeen east to Webster and from Aberdeen south to Redfield. This main pipeline would total about 200 miles. There would be another 220 miles of pipeline serving 43 communities in 9 rural water districts located north and south of the supply line. The WEB system would serve a population of 70,000 (1970 data).

The feasibility study report includes references to several alternative types of organizational structures which follow:

1. The Association is currently operating under the South Dakota Joint Powers Act, SDCL 1-24. The WEB Project could be constructed and operated under this act, provided that there are some modifications.

2. Water User District as provided in SDCL 46-16. Approval is necessary from the Department of Natural Resources Development, 5 to 13 directors are to be elected, the district board has the authority to issue bonds and to obtain loans, but the board can not levy taxes.

3. Sanitary Districts as provided in SDCL 34-17. Such districts would have to be organized within each county, and then consolidate because the WEB pro-

ject involves several counties. Sanitary district board (s) have the same financing authority as a first class municipality and can levy taxes.

4. South Dakota Water Development Authority. This is not yet established, but as envisioned would (a) have authority to construct water development projects, such as WEB, and is similar to the proposal in the West River Aqueduct Report; and (b) have authority to work with Federal agencies to obtain funds and to issue revenue bonds to finance projects. Each project would probably be responsible to the authority for repayment of its construction obligation and

for its fiscal management. They would, however, create their own organizational structure and provide their own management, operation, and maintenance services.

5. Specially benefited areas with a conservancy sub-district, as provided in SDCL 46-17A. Conservancy sub-districts now have authority to levy taxes and to construct and operate projects such as WEB. A suggested change would authorize sub-districts to levy taxes within a benefited area.

The WEB board has acquired future water rights. The board is currently conducting public interest meetings in the

project area to acquaint citizens with the content of the feasibility study report, and to ascertain interest in proceeding with the project.

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