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Rural Water Systems in South Dakota

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Many South Dakota rural and small town residents experience problems in providing an adequate supply of good quality water for themselves and their livestock. Even if the supply appears adequate, the water is often of poor quality or is located far from the point of use. Some households use the poor quality water which is available regardless of the deleterious effects on their own health or loss of livestock productivity. Other households haul water to their homes or farms, often for long distances at great expense. Some rural residents in other regions of the United States have approached their water problems by constructing central water systems similar to those used in most municipalities.

In South Dakota the early development of rural water systems was slow, even after the Farmers Home Administration (FmHA), beginning in 1961, made low-cost loans available for constructing the systems. The first rural water systems, usually serving a small number of households in a limited geographic area, were relatively inexpensive to construct and had little impact outside of their immediate area. Many of the earlier systems were privately financed.

Development of rural water systems in S. Dak. has accelerated greatly in the last decade. In 1970, nine systems were in operation, whereas in 1981 thirty systems are in operation and twenty additional systems are under development or are proposed. Most early systems had twenty-five or less hook-ups. Those constructed in S. Dak. in the past five years typically are much larger, with many having one thousand or more hook-ups. Most serve one or more counties, are governed by Boards of Directors elected by members, have capital equipment valued at several million dollars, and employ from two to eight full or part-time persons. These new systems generally have a considerably higher capital cost per user and higher total capital costs than earlier systems. With increasing size, rural water systems have the potential to impact larger areas.

Large loans and grants are needed to construct the new rural water systems. The FmHA, an agency of the U.S. Department of Agriculture, has provided the bulk of the loans for rural water systems in S. Dak. Government agencies, including the FmHA, have made grants to systems to keep loan size small enough to maintain monthly rates within bounds set by the FmHA. Through their initial hook-up fees and monthly bills, members are expected to pay operating and maintenance costs and a major share of the capital costs of the systems. However, taxpayers through government agencies are subsidizing the systems through grants and low-interest loans. The general public, therefore, has an interest and stake in the development and impacts of the state's rural water systems.

From the beginning, the benefits of the rural water systems for their members have been recognized. More recently, the possible adverse effects of rural water system development on land use and public sector expenditures have received attention. The scenario goes something like this. The availability of an adequate supply of good quality water encourages nonfarm families to move to the country which causes conversion of agricultural land to nonagricultural uses. As more people move into a
region, the demand for local government services increases. Because rural home- steads are dispersed, the costs of providing public services to them are greater than for comparable numbers of urban households. On the other hand, increases in the number and value of rural residences and land enlarges the rural tax-revenue base. Whether the added costs of providing rural services are more than offset by added rural tax-revenues depends on localized conditions--particularly population density and the rate of economic growth.

A study of the impacts on local government units---three counties, two townships, one municipality, and four school districts---of the recently introduced Brookings-Deuel Rural Water System (BDRWS) was undertaken. The study involved an analysis of 1) whether the move of new residents to the region had been influenced by the presence of the rural water system and 2) the added construction, remodeling, and increases in property values attributable to the system.

The data obtained from surveys of members, non-members, realtors, and public officials were used in simulation models to estimate public sector revenue and expenditure impacts of the BDRWS. Additional revenues include added property taxes, miscellaneous taxes, sales taxes, and receipts as well as the gross receipts tax paid by the rural water system. Additional expenditures consist entirely of the cost of providing public services to new residents.

The simulation showed all government units except Grant County to realize positive net gains from their rural water system. Deuel County and Clear Lake School District experienced the highest positive net gains. The size of the area contained within the unit and the prevailing mill levy affected the size of the gain. Considerably more land acreage is included in the Deuel County and Clear Lake School District models because all of Deuel County except Havanna Township is served by the system. Only a small area of Grant County is served by the system and that region experienced relatively high immigration attributable to the rural water system.

Two important points should be kept in mind. First, these are simulated impacts. The gains will only be realized if and when assessors include increased property values in their assessments. Second, the results apply only to the region served by the BDRWS. A region experiencing a different configuration of in-migration and changes in property values would experience a different set of net gains. The methodology developed in the BDRWS study is adaptable to other regions in which public-sector impacts of rural water systems are of interest.