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Possibilities of Rural Zoning in South Dakota: A Study in Corson County

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Possibilities of
Rural Zoning in South Dakota

A Study in Corson County



Agricultural Experiment Station, South Dakota State College
Brookings, South Dakota
and Bureau of Agricultural Economics, United States Department
of Agriculture Cooperating

High Lights

1. Rural zoning is a legal mechanism by which local units of government can create districts and regulate the broad use of land and property for various purposes, including agriculture, forestry, recreation, and residence, in order to promote the general welfare of the community.

2. A state enabling act is necessary before a county can zone the rural land within its boundaries. An enabling act does not compel counties to use the zoning power; it merely permits them to do so. South Dakota does not have such an act at present.

3. If a county wishes to zone and an enabling act has been passed by the State legislature, the county may adopt an ordinance which establishes the districts or zones, together with the regulations for each. Methods of enforcement and administration also are included. Changes in the district boundaries or in the regulations may be made from time to time by amendments to the zoning ordinance.

4. Zoning applies only to future uses of land. Individuals using land contrary to ordinance at the time of its adoption, usually called "nonconforming users," are not affected unless they discontinue their activities for a period specified in the ordinance.

5. Zoning cannot be used ordinarily to regulate the use of public lands such as Indian land, Public Domain, or State land. Zoning does not directly affect the action of such public agencies as the Farm Security Administration, the Farm Credit Administration, and the Agricultural Adjustment Administration.

6. Zoning has a place in South Dakota where settlement can be directed into communities in order to increase the efficiency of public expenditures for roads, schools, bridges, and other services, and to facilitate the planning of these services.

7. Zoning to prevent cash-crop production does not appear feasible because of the interrelationship of crop and grazing land uses.

8. Control of cash-crop farming as a major enterprise would require restrictions on individual operating units which would involve difficult administrative problems.

9. Control of cash-crop farming can be accomplished in many areas of South Dakota by administration of publicly-owned lands. Approximately 95 percent of the land in the suggested restricted district of Corson County and about one third of the Northern Great Plains is now subject to this form of control.

10. Zoning would be of maximum effectiveness only when based upon a well-conceived county planning program in which a group of land policies is directed toward a common objective.

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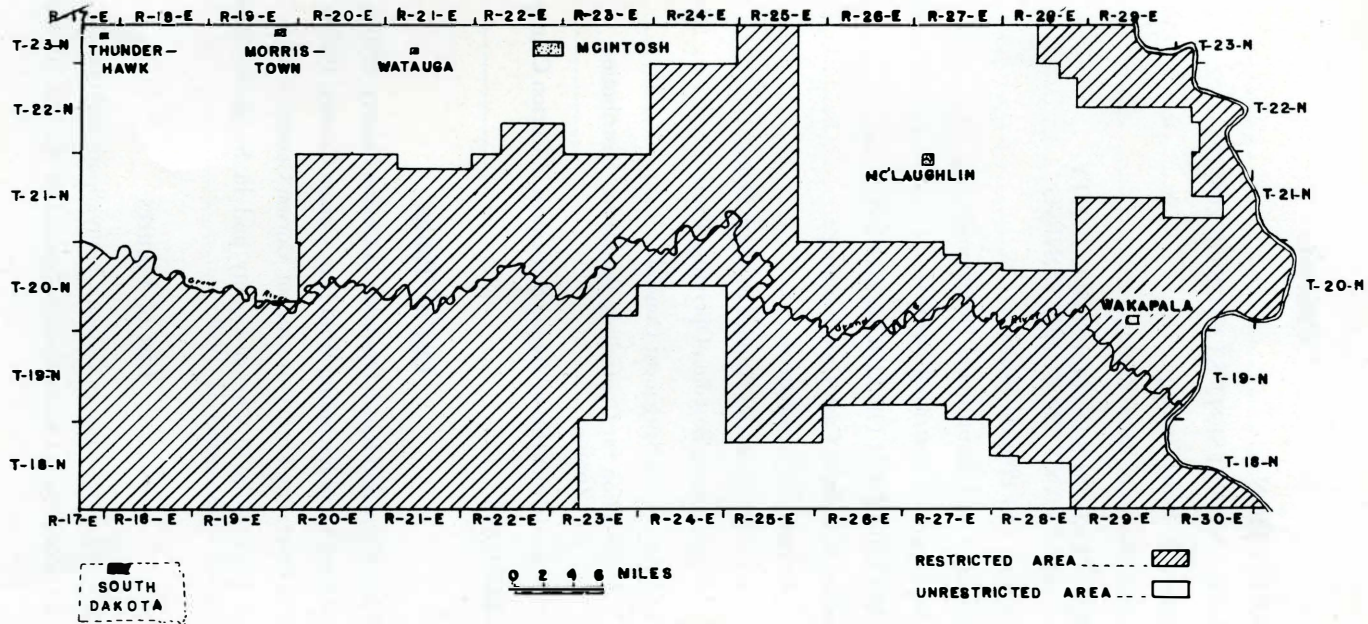
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Fig. 1—Suggested Zoning Areas, Corson County, South Dakota



Possibilities of Rural Zoning in South Dakota

By R. J. Penn, W. F. Musbach, and W. C. Clark¹

Introduction

A major change in land utilization, the transition from grazing to wheat production, took place in the western part of South Dakota between 1910 and 1930, particularly in the latter half of the period. With this shift from grass to wheat came an increase in population, which in turn increased demands for schools, roads, and other public services. During the "boom" period, many governmental units bonded themselves to provide these facilities. As a result of the drop in wheat prices following 1930 and the severe droughts of 1934 and 1936, the trend toward wheat production and population increase was reversed. Serious financial problems for local units of government arose during this period of economic distress.

The people and their local officials are now seeking to rebuild their economy on a sounder basis. Through the County Agricultural Planning Program, they are mapping their land and studying its alternative uses in order to recommend land programs which will rehabilitate their land and their local government. Corson County is one of the areas where farmers in the County Agricultural Planning Program have been debating the usefulness of rural zoning as an aid in helping them establish a permanent type of agriculture. These farmers feel that rural zoning, to be of value in this respect, must have some influence on two broad questions:

First, how can the return of cash-crop farming as a major farm enterprise be restricted in areas where this type of farming in the past has been unable to withstand adverse physical and economic conditions?

Second, how can the efficiency of public services be increased and the recurrence of the high cost public services of the late 1920's be prevented?

On the basis of their preliminary study, the people of Corson County concluded that zoning might be of value in their program, and they induced their legislative representatives to introduce an enabling act in the South Dakota Legislature in 1939. This proposal was not enacted, however, because there was inadequate understanding of the measure itself and its potential

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value to the State. As a result of this lack of action by the legislature, the Corson County Agricultural Planning Committee sought aid from State and Federal agencies in diagnosing the potential usefulness of rural zoning. In answer to this request, the South Dakota Experiment Station and the Bureau of Agricultural Economics cooperated in making this study. Since Corson County conditions are similar to those of many other counties in the Great Plains, it is hoped that this report will be of value in judging the applicability of zoning in other parts of the region.

This study was developed in four phases. First, considerable basic information relative to land ownership, tax status of land, and public service costs was assembled for Corson County to facilitate the selection of areas in which zoning restrictions might apply and to aid in the analysis of the benefits which might result if such restrictions were established. Second, the Corson County Planning Committee outlined an area in which they felt some restrictions on cash crop farming and settlement were needed. This area was drawn only tentatively, and considerable revision probably would be required should zoning be adopted. During the course of this report, this area will be referred to as the "suggested restricted district" in Corson County. Third, an analysis was made to determine the potential value of rural zoning in western South Dakota using Corson County as a sample. Experience of other states with zoning was freely utilized in making this analysis, and zoning techniques in use were studied to determine whether they could be adapted to South Dakota conditions. Finally, the development of alternative procedures for the region which might accomplish the objectives of zoning were considered.

Nature and Present Status of Zoning

Nature of Rural Zoning. Rural zoning involves the classification of an area into districts in order to regulate the broad use of land for various purposes, including agriculture, forestry, recreation, and residence.

Rural zoning as defined here excludes "suburban zoning" in which regulations are designed to promote the orderly development of cities into outlying areas.

Although the regulations may differ in the various districts, they must be uniform within each district. The authority to zone is found in what is called the "police power" of the State, and this power must be properly delegated to the unit of government which is to do the actual zoning. This delegation of power is usually made in the form of a "State enabling act" which specifies the particular unit of government which has the right to zone, the type of regulations which may be enforced, and the procedure to be followed in the adoption of a zoning ordinance. In rural zoning, this power is usually delegated to the county which is empowered to enact what is known as a "zoning ordinance." This ordinance describes the various districts, the regulations on land use and settlement in each, and the provisions for enforcement of the ordinance, such as injunction proceedings. Regulations in ordinances now in use in other states are confined largely to the prohibition of farming and year-round residence in certain specified districts. In all zoning to date, a provision has been made for the continuance of "nonconforming uses;" that is, uses not

in conformity with the ordinance. Thus, a farmer or rancher can legally continue his operations where they are contrary to the ordinance; and in addition, he may sell his land and the buyer may continue this nonconforming use. However, ordinances may provide that if the nonconforming use should be discontinued for a specified number of years, usually two years, any future use must be in harmony with the law.

Even though an enabling act has been passed, the county is subject to the same limitations in adopting zoning regulations that limit any exercise of the police power. The limits on the use of this power, which depend largely on judicial interpretation of the "due process" and other similar clauses of state constitutions, have been subject to varying interpretations by the courts; but in recent years, the trend is toward a more liberal construction than formerly. In general, the courts will accept regulations designed to accomplish certain broad social objectives in promoting the general welfare, such as the protection of the public health, safety, and morals.

The "general welfare" is a broad social concept. The efficiency of local governmental functions is one phase of the concept which has been recognized by the courts.

It is necessary, however, that the regulations be clearly related to the particular objectives and that they be "reasonable" in their effect on property. In cities, for example, where the constitutionality of zoning has been upheld by the courts, zoning has been used to prevent the location of factories in residential areas since the industrial use may create health hazards, may require more expensive streets and additional police protection, and may detract from the desirability of the area for homes.²

Rural zoning has not yet been tested in the courts, but it appears reasonable that rural regulations for similar objectives—namely the promotion of efficiency of public expenditures and the improvement of living conditions—would be acceptable to the courts, provided that the means for achieving these goals are substantially related to the ends and are reasonable. Any regulation of private property under the police power must not be discriminatory or arbitrary and must not prevent all economic uses of the property, since this would be considered by the courts as confiscation.

Present Status of Rural Zoning. Enabling acts authorizing rural zoning by counties have been adopted in Wisconsin, Michigan, Minnesota, Virginia, Washington, Pennsylvania, California, Colorado, Georgia, Tennessee, Florida, Illinois and Indiana. Some of these acts, such as those in Minnesota and Tennessee, apply only to selected counties while others authorize any counties to adopt ordinances. Some acts, including those of Illinois and Indiana, have exceptions or qualifications which raise doubts as to the scope of the zoning power.

The first of these laws, that of Wisconsin, was enacted in 1929, but the first zoning ordinance in Wisconsin was not adopted until 1933. Since then, 24 counties in northern Wisconsin and four in the southern part of the State

2. South Dakota has a municipal zoning enabling act.

have adopted ordinances. Four additional counties are in the process of adopting zoning ordinances. Encouraged by progress in Wisconsin, Michigan has since adopted ordinances in two counties and is considering the adoption of ordinances in two others. From the Great Lakes States, it is necessary to go to King County in the State of Washington to find another ordinance now in effect. Minnesota is considering the measure in a number of counties, and ordinances are in the process of enactment in two. While interest in zoning is widespread in many other states, ordinances have not yet been enacted outside Wisconsin, Michigan, and Washington.³

In considering the applicability of zoning to western South Dakota, it may be of value to consider briefly the objectives of zoning in these three states and the type of ordinance used to obtain them. A primary problem which was most influential in bringing about the passage of ordinances has been the excessive cost for public services in sparsely settled regions. Local government in the cutover areas of the Lakes States and the Pacific Northwest has been hard pressed to provide necessary public services to scattered families living at a distance from neighbors, schools, and market centers. A second problem has arisen from attempts to farm land that is poorly adapted to farming. Often individuals have lost their accumulated savings in endeavoring to build up a farm on land of this type, and later have abandoned their investment only to have the same process repeated by another family. Relief rolls have been swelled as a part of the process. A third type of problem has arisen from the interference between land uses, as in the case of farming in a recreational area. Rural zoning ordinances now in effect have been based largely upon these three problems, with that of scattered settlement and public services being the most important. Land-use regulations in the "forestry" district of Wisconsin and Michigan provide that both year-round residence and farming are prohibited. In the recreational districts of these States, farming is prohibited; but year-round residence is permitted so that summer homes may be protected by caretakers.

In brief, zoning has been used in two ways: (1) to prohibit farming in areas not adapted to agriculture or in areas in which this use would interfere with recreational development; and (2) to guide population into communities of relatively compact settlements in order to prevent future problems of providing public services to isolated settlers.

Characteristics of Corson County Relevant to Rural Zoning

In order to appraise the possibilities of zoning in this region, it is necessary first to examine the pertinent physical and economic factors which bear upon the measure, with Corson County as the specific area of study (fig. 1). The topographic, soils, and drainage features are of interest here because of their effect on the location, number, and type of roads and bridges, and their influence on the location of ranch headquarters and crop farms. In addition, the present land use pattern and institutional development, as well as the problems arising from them, have been influenced greatly by economic conditions and public policies prevailing at the time of settlement.

3. Suburban ordinances are excepted.

Location and Physical Resources. This county, located in the northwestern part of South Dakota, lies just west of the Missouri River along the North Dakota line. The county is divided in the center by the Grand River which flows eastward into the Missouri River, and numerous small creeks from the north and south complete the drainage pattern. Associated with the drainage system is a hilly, rough and broken landscape. There are, however, occasional relatively level areas interspersed among the rough lands, occurring either as table lands or bottom lands. The areas near the North Dakota boundary and those adjacent to the southern boundary of the county are of gently rolling character.

The various soils types of the county are closely associated with the topography. The rougher land, composed largely of shallow, sandy soils with occasional clay, has not been cropped to any considerable extent. Overgrazing, however, has led to some erosion on this land. The combination of natural protection for wintering stock and the presence of water in these hilly or rough areas makes them well adapted to livestock ranching. The soils best suited to cultivation are the loams, found mainly in the level areas. Although care in management is required to prevent erosion, these soils are of relatively high productivity when moisture conditions are favorable. In these areas are found the more intensive type of farming and the most compact settlement.

Rainfall is the most important factor affecting crop production, and the amounts and monthly distribution vary widely from year to year. While the long-time average is 15 inches, or about the minimum for successful crop production, fluctuations of more than 25 percent above and below this average are common; and since 1930 the amount of precipitation has been inadequate most of the time. These fluctuations in rainfall are of primary importance in shaping the present economy and in determining the nature of adjustments to a more stable type of land utilization.

Economic and Institutional Development. The western part of the county was opened for homesteading in 1906, while the eastern section, which included much allotted Indian land, was not settled to any considerable extent until 1914. The first homesteads were of 160 acres; but with the passage of the Enlarged Homestead Act in 1909, it became possible to secure homesteads of 320 acres. High wheat prices and favorable climatic conditions during the early years of the homestead period led to a rapid transfer of the Public Domain to private ownership, although much of the land was not actually occupied nor was an appreciable part of it ever plowed by the homesteaders. From 1920 to 1935, the number of resident operators remained fairly stable; but during the last five years many farmers and ranchers have left the county in an attempt to better their condition elsewhere (table 1).

The major increase in crop production took place between 1920 and 1930 (table 2). The total crop land in Corson County during this period increased 302,070 acres. Much of the land plowed during this period, however, has been abandoned during the past few years. From 1929 to 1934, crop land decreased 116,041 acres or about 30 percent.

The rapid shifts in the type of farming in the past has had an effect upon the stability of population and farm income which in turn has had serious repercussions on local government. The system of local government, set up in a

Table 1. Resident Farm and Ranch Operators in Corson County, 1910 to 1939¹

Year	No of Operators
1910	374
1920	1,021
1925	1,394
1930	1,208
1935	1,191
1939 ²	700

1. United States Census of Agriculture.

2. Estimate made from 1939 AAA records.

period of expansion and premised on a continuation of this trend, now faces financial distress. Roads, bridges, schools, and other public facilities were built, often with borrowed money, with the expectation that population would at least remain stable if it did not actually increase. It was also believed that the foundation of public revenues, the taxable valuation, would increase. In a relatively few years, however, the economy and population of the area changed in the opposite direction; and county government, like the remaining operators, is being forced to readjust its functions to these new conditions. The county and its subdivisions have incurred a total net indebtedness of \$807,526 including bonds and outstanding warrants. Of this total, the county is responsible for \$611,785; the school districts, \$144,040; and cities and towns, \$51,700. Expenditures for bridges, roads, and schools, many of which were built in areas now abandoned, account for a large share of this debt. The assessed valuation of taxable property in Corson County, the income from which must bear this debt, has declined materially in the last decade. The assessed valuation of real property has decreased from \$5,903,685 in 1929 to \$2,213,970 in 1939. The assessed valuation of personal property decreased from \$2,253,183 in 1929 to \$618,040 in 1939. The assessed valuation of the railroads has decreased from \$4,048,512 in 1929 to \$1,558,222 in 1939. There has been a reduction in the total assessed valuation of the county from \$12,983,509 in 1929 to \$4,947,084 in 1939.

The cost of local government has been cut to a minimum in an attempt to adjust to changed conditions. Even though operating expenses have been drastically reduced, the burden of interest and principal payments on the existing indebtedness has made it difficult for the county to meet its obligations. The cost of operating the various units of local government in Corson

Table 2. Total Crop Land Excluding Wild Hay, Corson County, 1919 to 1934¹

Year	Acres
1919	87,934
1924	192,754
1929	390,004
1934	273,963

1. Estimated from United States Census figures. Includes harvested, failure and idle acreage.

County during 1939 was \$262,593.57 (table 3). Evidence indicates that much of this problem of local government has arisen because of conditions in the suggested restricted district.

The Suggested Restricted District. The suggested restricted district is located in the central part of the county and includes approximately 900,000 acres which represents about 55 percent of the area of the county. Of this acreage, a little over one fourth, or 260,000 acres, was in operating units in 1939 and was controlled by 163 operators, exclusive of Indians. Since very little of the area is unadapted to some form of agricultural use, either for grazing or for crops, it is likely that a much larger acreage will be included within operating units in the future. As explained earlier, the broken topography, adequate water, and interspersed tracts of level land adapted to feed crop production all make this part of the county well suited for livestock production.

Table 3. Cost of Operating Local Government, Corson County, 1939¹

Taxing unit	Amount
	Dollars
School districts ²	149,632.00
Organized townships	13,877.49
County ³	99,084.08
Total	262,593.57

1. Compiled from county records.

2. Figures for 1938-39 school year.

3. Includes expenditures from interest and sinking fund.

The Agricultural Conservation Program records indicate that in 1939 there were approximately 45,000 acres of land classified as crop land, of which about half were idle. Only one third of the operators had 20 percent or more of their units in crop land in 1939. About half of the land actually planted was in wheat, the remainder being in feed crops. The majority of the units within the area might be classified as mixed livestock and cash-grain enterprises, with wheat of limited importance for the most part. One third of the operators had 80 acres or less in wheat in 1939, and only one tenth had more than 160 acres. Many of the ranchers in this area plant wheat with the intention of using it as a feed crop if the grain does not mature satisfactorily. The total acreage planted to wheat has decreased materially in recent years. During 1939 approximately 16,000 acres of crop land were placed under the restoration program of the Agricultural Conservation Program.

Many farmers who formerly devoted their efforts entirely to raising wheat have abandoned their land and moved out of the area, while most of those remaining have attempted to shift to a more stable ranching system. The Corson County Planning Committee has recommended that this shift to ranching be encouraged and that some means be used to prevent a recurrence of the unstable cash grain system of farming which in the past has proven ill-adapted to this area. If ranchers are to build up satisfactory operating units, however, competition of cash wheat for strategic tracts of land must be prevented. The cash crop farmer has often been favored in this competition because of certain factors of short-time influence. In determining the value of this land, the

rancher is influenced by the desire for a stable and permanent source of income, while a farmer is inclined to be influenced by the desire for a higher income even though it be temporary. Since much of the necessary adjustment in population and land use has already taken place, there is an opportunity now to stabilize the area and to prevent a repetition of previous mistakes.

Movement of people out of the county in recent years has resulted in less efficient use of public services and made apparent the need for redistribution of these services. However, since current expenditures have been cut to a minimum and since the number of families in the area has been drastically reduced in the last decade, the most urgent need appears to be the direction of future settlement so that existing public facilities can be fully utilized before additional facilities are demanded.

At the present time, school services are the most important factor in causing high costs of local government in the suggested restricted district. The decline in population from 1930 to 1939 made it possible to abandon 18 schools, but 17 rural schools and one city grade and high school are still in operation. Because of the construction of many schools not used at present and the inadequacy of tax revenues, indebtedness of the school districts wholly or partially in the suggested restricted district amounted to \$127,728 in 1939, or about 88 percent of the total school indebtedness in the county. It is apparent that some means should be devised to prevent the repetition of this temporary demand for public services which are not needed after the abandonment of these enterprises.

Although a few children traveled a considerable distance to school, the sparse population results in a small daily attendance in most of these schools and high costs per pupil. In the more sparsely settled areas during the school year 1938-39, units with eight students or less spent \$122 per pupil, while schools in the settled communities with an attendance of from 9 to 16 pupils cost only \$63 per pupil. The most expensive school had only four students and cost \$180 per pupil, while the other extreme, a 19-pupil school, cost only \$36 per student.

Although sufficient roads exist in this part of the county to service remaining families without unusually high maintenance expenses, there has arisen a problem of constructing and maintaining numerous bridges. In 1937 there were 161 in the suggested restricted district, including five over the Grand River. In recent years "flash" floods have destroyed many of these bridges. During one severe storm in 1937, 33 bridges in the suggested restricted district were destroyed, 14 of which have been rebuilt.

This part of the county has had a particular difficulty in supporting local public services because of the large amount of nontaxable land in public ownership.⁴ (table 4.)

About half of the area in the suggested restricted district is owned by the Standing Rock Indian Reservation. Land which formerly was in private ownership has been rapidly reverting to public agencies through relinquishment

4. A small amount of state aid is provided for school districts containing a high proportion of either school endowment or Indian land.

Table 4. Land Ownership in Corson County and in the Suggested Restricted District as of December 31, 1939¹

Type of Ownership	Corson County		Suggested Restricted District	
	Acres	Pct.	Acres	Pct.
Individual	513,678	31.8	195,478	21.7
Rural Credit	63,110	3.9	36,230	4.0
Federal Land Bank	58,190	3.6	28,462	3.2
Other corporations	46,260	2.9	16,757	1.9
Total taxable ²	681,238	42.2	276,927	30.8
County ³	103,924	6.4	59,091	6.6
State school	78,169	4.8	41,520	4.6
Indian	680,068	42.0	464,348	51.6
Land Utilization Project ⁴	16,640	1.0	12,000	1.3
Other Federal	55,076	3.4	45,751	5.1
Other non-taxable	2,738	.2	320	---
Total non-taxable	936,615	57.8	623,030	69.2
Total land	1,617,853	100.0	899,957	100.0

1. Compiled from county and Indian Service records.

2. Of the total taxable land in the county, 264,948 acres are four years delinquent and subject to tax deed. There are an additional 86,906 acres delinquent one to three years, and 61,078 acres on which the contract for delinquent taxes has not been maintained.

3. Includes land acquired by tax deed and school loan mortgage foreclosures.

4. Federal.

of homesteads to the Indian Service, through county tax deed proceedings, and through foreclosure of school fund mortgages. An appreciable amount of land has also been taken over by the State Rural Credit Board through mortgage foreclosures, but this land still pays a partial tax levy. By 1939 only about 50,000 acres, or 5 percent of the area, could be considered taxable land if the acreage subject to tax reversion is included along with the various types of public ownership. The privately-owned land is found interspersed throughout the district among the various types of land in public ownership (fig. 2). The limited amount and the scattered distribution of privately-owned land is pertinent to the zoning problem since this is the only acreage which cannot be placed under some form of control by public ownership. Institutions now exist for the regulation of 95 percent of the suggested restricted district. This condition is of particular significance in determining the type of zoning control necessary, either for regulation of land use, of settlement, or of both.

The Application of Rural Zoning

Two major problems are suggested by the Corson County Planning Committee as the subject of study to determine the application of zoning: (1) the land utilization problem of cash-crop farming in areas not adapted to this use; and (2) the problem of providing public services in areas of sparse settlement where violent fluctuations in population have created an unstable base for planning these services. If the future development of this region is to be placed upon a stable basis, the adjustment toward a more extensive form of land use, a trend now well under way, should be encouraged.

These two objectives are discussed: (1) from the standpoint of how zoning can be used to prevent the return of cash-crop farming to areas not suited to this type of agriculture; and (2) from the standpoint of how zoning can guide settlement in order to prevent the rapid expansion and contraction of demands for public services and to promote the maximum efficiency of existing services.

Zoning to Restrict Cash Crop Farming—Reasons for Restrictions. Rural zoning has been used in other states to prevent certain agricultural uses. In Corson County, as in other areas of the Great Plains, local people wish to know how effective rural zoning would be in preventing the return of intensive cash-crop farming in areas not adapted to this use. Prohibiting this system of agriculture in certain areas of Corson County appears desirable for three reasons: (1) the prevention of erosion, (2) the reduction of future relief requirements, and (3) the elimination of interference with the operation of ranching units.

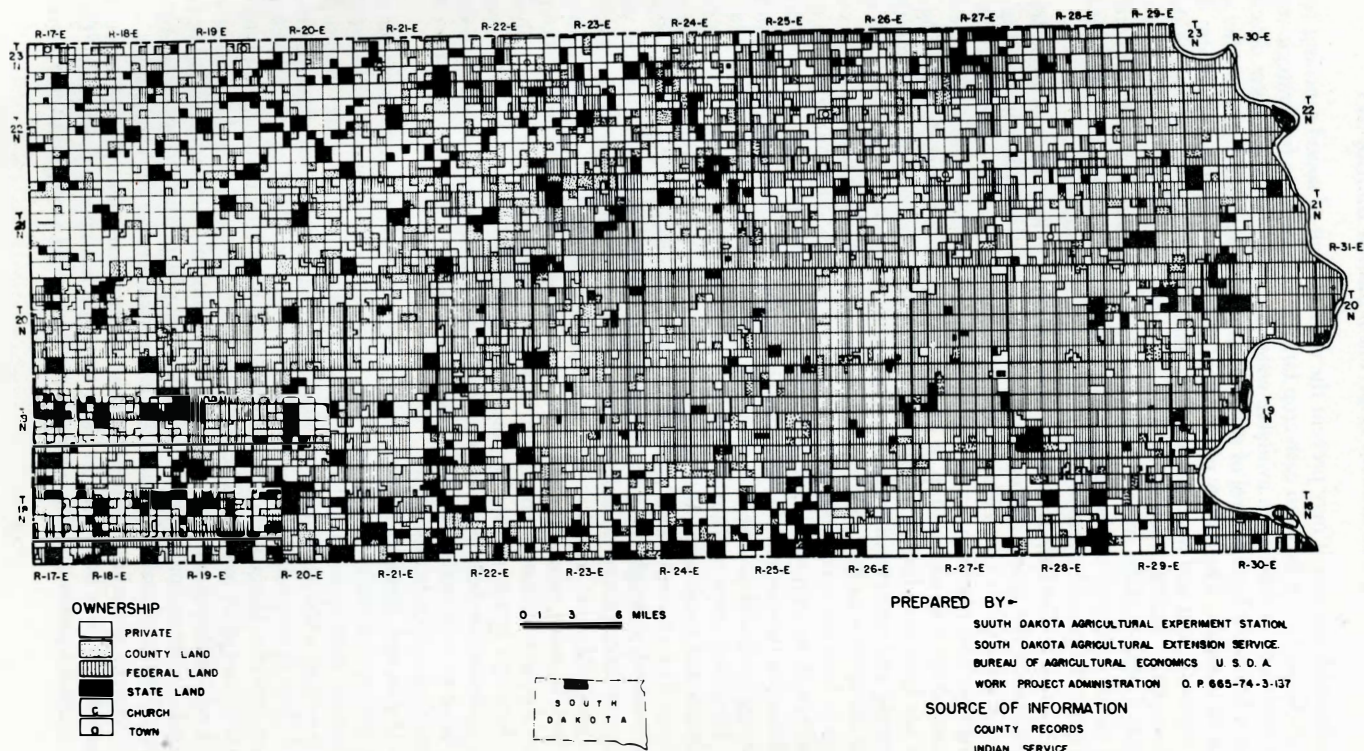
Erosion has reached serious proportions in the restricted district of Corson County. According to the reconnaissance erosion survey made by the Soil Conservation Service in 1936, a large part of the district is subject to serious wind erosion; and there is ample evidence to indicate that this soil wastage has largely resulted from attempts at cultivation. From the research investigations of the various Experiment Stations in the Great Plains, it has been found that cropping has greatly increased soil losses over those occurring when the native sod was left undisturbed. Often this erosion has seriously damaged adjoining property, either grazing or crop land. Obviously, this condition is one in which the social interest is directly involved since much land is rendered unfit for cultivation or for grazing. Often the damage is so complete that it will be many years before the land can be productive again, and there is but small possibility that the land will contribute revenues to the county in the meantime, either from leasing or from taxes.

Although there is no question as to the damage from erosion in the district, there is some difference of opinion as to the extent to which changes in tillage practices and crop rotations may reduce the injury. Zoning should be considered carefully for this objective in order that crop uses will not be prohibited in areas where the problem can be solved by using certain management practices, such as strip cropping or proper tillage operations.

The relationship between wheat farming in this area and the need for public relief is not readily apparent at present, in part because many of the operators who have failed in wheat production have moved from the locality. It is evident, however, that the public interest is involved in areas where wheat production is not a permanently profitable type of farming, whether the people are forced to depend on relief within the area or whether they must move to other regions. Zoning the use of land against cash-crop farming would, therefore, be justified where it could be shown that attempts to farm certain types of soil would result in a heavy relief burden. Restrictions of this type would prevent the influx of small farmers dependent entirely on the income from cash crops and would reduce the need for relief in years of adverse climatic conditions.

Cash-crop farming in an area best adapted to grazing has been considered

Fig. 2—Land Ownership in Corson County, South Dakota, Dec. 31, 1939



undesirable because it may prevent the development of sound ranching practices. Competition between cash-crop farmers and ranchers for strategic tracts of land such as those with available water or suitable sites for water development limits the legal control of surrounding grass land which the rancher can afford to secure. The history of land control in the Great Plains indicates that a rancher's land and water costs consist mainly of leasing or purchasing these strategically located tracts of land. In this way, the rancher has paid for the control and use of the surrounding grass. In recent years, however, the control of all the land used by the rancher has been considered important as a means of conserving and improving the grass and land resources.

Land-Use Controls Applied to South Dakota. There appears to be some justification for group action to prevent the return of cash-crop farming in certain areas of the Great Plains. Rural zoning, as it has been used elsewhere, however, does not seem a practical means of accomplishing this objective because of the interrelationship of land uses peculiar to this region. Zoning so far has been used largely to prevent conflicts in forestry areas by prohibiting farming and year-round residence. This restriction does not interfere with the full use of the area for forest production. In the Great Plains, the primary conflicts in land use occur between two agricultural uses, crops and grazing, and distinguishing between them in drawing up a zoning ordinance would be difficult for two reasons: (1) the complementary relationship of crop land and grazing land, and (2) the ease of transition between grass land and crop land.

Both feed crops and cash crops in combination are necessary for the full utilization of range areas and, hence, should not be restricted by zoning regulations. The efficient use of grass land requires sufficient crop land to carry the livestock through the months when grass is not available. Climatic and price conditions are so variable that a crop planted as a feed crop might develop as a profitable cash crop. Likewise crops planted for cash grain might be used as feed. In many cases, production of some cash crop supplements the income from the major livestock enterprise. It is quite generally agreed that the above relationships between cropping and grazing should be encouraged in areas where cash-grain farming alone is uneconomic. The Corson County Planning Committee indicated that any zoning restrictions on land use would have to permit cultivation to this extent.

The second difficulty in prohibiting cropping in certain areas arises out of the extreme variation in climatic and economic conditions and the ease of transition from grass land to crop land. In periods of favorable conditions there will be a strong demand to violate a zoning ordinance by plowing grass land. This is especially true in the Great Plains where land can be plowed at a very low cost. Large areas of the Great Plains have been plowed and planted at a total cost of \$4 per acre. The desire to shift uses may defeat the purpose of a zoning ordinance, either through the abandonment of its enforcement or by a change in the ordinance and these changes may be predicated on a short-time gain to the individual rather than a stable agriculture for the community.

From the preceding discussion, rural zoning restrictions preventing cultivation which have been used in other states do not appear practicable. This restriction in preventing the return of predominately cash-grain units would

also interfere with the development of cooperating units which can best utilize the grazing areas of the Great Plains.

The Corson County Planning Committee suggested that districts be established in which cash-crop production be restricted and feed-crop production permitted. However, expansion of cash-crop production may be a desirable and profitable supplement to the livestock enterprise. In addition, crops can be disposed of either for cash or as feed, which necessitates restrictions based on intent of disposition at planting time. Hence, restrictions on cash-crop production and no restrictions on feed crops do not appear desirable or feasible.

Rural Zoning Based on Operating Units. The control of cash-crop farming in a grazing area which would not prohibit the feed-crop production and the expansion and contraction of cash-crop production within sound livestock units cannot be accomplished by rural zoning unless the restrictions are based on operating units, which is a relatively drastic use of the police power. This type of ordinance has not been used in rural zoning, and there is some question as to practical usefulness. It is considered here mainly to indicate the method of control necessary to prevent cash-crop farming in the Great Plains and the limitations on the use of these operating-unit restrictions whether by a zoning ordinance or other techniques for using the police power.

A rural zoning ordinance of this type would have to place certain restrictions on operating units within the suggested restricted district to prevent the cash-crop enterprise from becoming a major one. These restrictions might be stated in terms of the maximum percentage of the operating unit which could be in crop land. For example, such an ordinance could restrict the acres in crop land to 20 percent of the acreage of the unit. The determination of the percentage of the total unit permitted in crop should be based on ranch management investigations within the area under consideration. The percentage should, however, be great enough to allow considerable expansion of crop land within the livestock unit in periods of favorable conditions. In the suggested restricted district of Corson County, there are 163 operators of which 114 have less than 20 percent of their unit in crops. Such an ordinance would make possible the most efficient ranching operations, but at the same time would prevent cash-crop production from becoming the sole source of each operator's income.

There are many difficulties, mainly administrative, to be expected from operating-unit zoning which are different from those involved in the zoning ordinances of other states. First, operating units in western South Dakota are not constant in size nor do they always include the same land from year to year. To determine conformity with the ordinance in this situation, it would be necessary to secure the description of the land in each operating unit each year and calculate the amount of crop land permitted. Second, an individual living within the suggested restricted district should calculate the crop permitted on the basis of the total size of his unit even though some of the land operated might be outside the district. Thus an arbitrary regulation would be placed on land in an unrestricted area just because it was operated from headquarters within the suggested restricted district. Establishing district boundaries around operating units to alleviate this problem would not appear feasible because the units are flexible and do not always consist of contiguous

tracts of land. Third, the constitutionality of rural zoning has not yet been tested in the courts, but it is likely that an ordinance placing restrictions on operating-unit organization would be less acceptable to the courts than one limiting settlement.

The problems involved in operating-unit zoning are sufficient to preclude its use until the possibilities of other programs in controlling cash-crop farming have been exhausted and the problem remaining justifies the means.

Rural Zoning for Settlement Control. Rural zoning has been used effectively in Wisconsin and Michigan as a means of guiding population into communities where public services can be furnished more efficiently. Although the settlement problem in western South Dakota is similar to that of these states, several distinctive characteristics of the region affect the application of zoning for settlement control. First, the degree of isolation is much greater here than in the Lake States because of the larger land area necessary for an operating unit. Thus, a settlement pattern which might be considered compact and one in which services could be provided relatively efficiently in this region is much more sparse in character than a compact community in the cut-over region. Another difference is the relationship of residence location to the optimum utilization of the natural resources. In the Lake States there is no need generally for year-round residence in the unsettled areas. There is an adequate amount of unused agricultural land in or near existing communities so that farming in the sparsely settled districts is not necessary. The various non-agricultural land uses, such as recreation or forestry, are usually associated with temporary or seasonal residence. Efficient ranching operation in the Great Plains, however, generally requires the establishment of ranch headquarters and permanent residences in areas offering natural advantages, such as winter protection for cattle, water supplies, and feed bases. Such areas often occur in narrow strips along rivers or creeks in the hilly and broken sections or are scattered intermittently over a large territory. Often grazing land cannot be used efficiently except in conjunction with the natural advantages offered by the ranch headquarters.

While ranching requires year-round residence in the headquarter sites which often occur in isolated locations, wheat farming in this region is not dependent upon permanent residence on the operating unit. Seasonal occupation during the spring and summer months is necessary, but the farmer and his family can live at some distance from the unit in a community or village during the remainder of the year. Thus, restriction of settlement is likely to have a more limited effect upon crop farming in the Great Plains than in the Lake States.

These differences in the settlement problem raise several questions as to the application of zoning for the control of settlement. For purposes of analyzing the possibilities of zoning the settlement pattern, three types of conditions can be distinguished: (1) areas adapted to summer grazing or wheat production in years of favorable precipitation, without natural advantages for ranch headquarters; (2) areas of rough broken land poorly adapted to wheat for the most part but suitable for ranch headquarters; and (3) a combination of the first two conditions. In areas where there are few if any natural

advantages for ranch headquarters, the direction of farmers to existing communities by zoning appears feasible. Thus sparsely settled areas adapted either to wheat or to summer grazing could be set aside in a restricted district with the provision that: "No building or structure shall be erected, occupied or used by any person or persons as a domicile, or with intent to establish a domicile therein in any restricted district. Buildings and structures in the process of construction on the effective date of this ordinance may be completed and occupied as domiciles, free from the foregoing restrictions."⁵

Such restrictions might be justified on the grounds that a policy providing for the gradual expansion of communities would allow a more stable and efficient system of public services. Since wheat farming or summer grazing can be carried on efficiently at some distance from a permanent residence, this type of restriction would allow the full use of the land resources, while assuring maximum efficiency in local government and its functions.

In counties composed largely of land with favorable ranch headquarter sites, zoning settlement does not appear practicable. If the assumption is correct that ranching requires year-round residence in the headquarters, any measure designed to direct population into communities is not likely to be effective under these conditions.

Where land of both types exists in the same county, there is some question as to whether the ranching areas with headquarter sites can be treated differently from the areas offering no special advantages for this use. The suggested restricted district of Corson County illustrates this type of problem. Part of the area is hilly and broken land with water facilities, while the remainder is relatively level. If zoning is to be used effectively here, some means must be found for allowing permanent residence in the ranching section while preventing it in the sparsely settled level areas where this type of residence is not necessary for the use of the land. Under such conditions, a zoning ordinance might specify that the sparsely settled range area, including the favorable sites for ranch headquarters, might be included in a restricted district where future settlement would be prohibited. Since a prohibition of future settlement would not affect ranchers now living within such a district, it would not affect the present operations. Amendments to the ordinance would be required if it became necessary to use undeveloped sites for ranch headquarters. If all new settlement in the sparsely settled grazing areas were prohibited, it would be necessary to consider the ranching nonconforming use as a legitimate type of residence.

An alternative method of setting up districts in the range areas would be to leave all the headquarter sites unrestricted while preventing settlement in similar isolated areas offering no natural advantages. However, it would be good practice generally to block together as solidly as possible both the area within restricted districts and the area within unrestricted districts. When the pattern of zone districts is checkered and the various uses intermingled, the opportunities for reducing costs of government are markedly less

5. This suggested provision is taken from a proposed Minnesota ordinance. See "Rural Zoning in Minnesota," by W. F. Musbach and M. C. Williams, *Journal of Land and Public Utility Economics*, March 1940, for a brief analysis of this type of restriction.

than when the restricted districts are large and solidly laid out. Ranch headquarters in small unrestricted districts will have to be provided with roads connecting them and a highway, and such roads cannot be closed even though they pass through areas in which settlement is prohibited. Likewise a school serving both a restricted and unrestricted district must continue to operate even though the residents of the restricted district are moved out. In general, the zoning ordinance in order to be effective should have rather large contiguous tracts of land in which settlement is restricted and in which present and future public expenditures can be reduced to a minimum.

An incidental benefit arising from the control of settlement by zoning might be the reduction of the relief burden resulting from resident-operated crop farms. In several sample townships within Corson County, some representing predominately grazing conditions and others predominately crop farming, the per-operator relief cost was considerably greater for the resident-operated crop farm. This was true even though the crop farms were on the better soils of the county. Hence, the restriction of these resident-operated-cash-crop farms on the poorer soils of the suggested restricted district might conceivably reduce the amount of relief necessary under adverse conditions.

The administration of this regulation does not appear to offer serious difficulties. A list of nonconforming users could be prepared readily since the only question to be determined is, "Where are people in the suggested restricted district making their permanent homes?" Violations could be discovered readily by noting the use of existing buildings or the construction of new ones where no one had lived at the time of the adoption of the ordinance. Discontinuance of legal nonconforming uses could be found by determining whether a family had moved into abandoned buildings within the time limit specified.

Justification for Controlling Population Distribution by Zoning. The previous discussion has pointed out that zoning offers some promise as a means of concentrating population into communities where public services can be provided efficiently. Differences in Great Plains conditions do not appear to prevent the use of this type of measure which has been found effective in the Lakes States in controlling settlement, and it does not appear that this control would be difficult to administer.

A question may still arise, however, "Why control year-round residence to prevent costly isolated settlement? Why not reduce the services such as schools and roads in these sparsely settled areas?" The answer to this is found in the constitution and the statutes of South Dakota which reflect public opinion as to the need for providing these services to every individual, no matter where he lives within the State. The legislature has made it mandatory upon either school district officials or the county commissioners to provide for the education of all children of school age, either by providing a school, by providing transportation to other schools, or by defraying the costs for room and board of students who may move near a school during the school year.⁶ The duty of parents to send their children to school is also specified by statute, and children

6. Art. VIII, Sec. 1 of the South Dakota Constitution. Sections 15.2302, 15.2328, 15.2901, 15.3401 and 15.3404 of the 1939 South Dakota code.

are not excused from school attendance because they live long distances from school.⁷ Education is thus a service which must be provided at public expense and one which must be accepted by people whether they live in communities or in sparsely-settled regions.

The statutory provisions for road construction and repair are not as clear or as inclusive as those for education. While it is the duty of the county commissioners and the township supervisors to construct and maintain all secondary and township roads, these roads may be vacated under certain conditions. Township roads must be maintained, however, if it "shall appear by an affidavit filed by a patron of a United States mail route that a certain secondary road in any township is in urgent need of repairs."⁸ If school children are to be transported, roads must be kept passable, and this requires road maintenance. The general right of a new settler to demand a road or bridge is not clear, but two or more electors of a township may petition the board of supervisors to locate a highway within the township (Sec. 28.0410-28.0414), and if the board denies the petition, six or more electors may require a referendum to be called on the question, and if two thirds of the votes are cast in favor of the location of the road, their decision is final.⁹

Thus, as a practical matter, it does not appear feasible to reduce high costs for isolated settlement by restricting the services furnished the sparsely-settled area. If costs are to be reduced, the cause or origin of the problem must be prevented; and zoning can contribute greatly to this end. The analysis of the suggested restriction district in Corson County illustrates the possibilities for directing settlement to reduce governmental costs without impairing public services.

Potential Benefits of Zoning Settlement in Corson County. Since zoning affects only future settlement, no schools can be closed nor can any roads or bridges be abandoned by this measure unless it is supplemented by other programs. Reduction in existing high costs of local government can be achieved by gradually adjusting the distribution of the present population. Exchange of county-owned land under the County Land Administration Act of 1939 is one means of bringing about this adjustment in population. A greater number of children could be accommodated by the schools now operated; and if new settlers could be directed to areas now served by schools, educational costs would not be materially increased. Assuming that settlement increased to the point reached in the 1920's without guidance, the 18 schools now closed probably would have to be reopened; but if means can be found to prevent the use of these abandoned schools, expenditures of approximately \$12,000 per year could be saved. This estimate is based on the type of school organization and the isolated settlement prevailing in 1930. While there likely would be an increase in tax revenues if settlement took place to this extent, the fact remains that present costs would not be materially increased if only the schools now operating were used.

Any savings in future school expenses resulting from zoning would accrue

7. Sections 15.3201 through 15.3207 of the 1939 South Dakota code.

8. Sec. 28.0407 of the 1939 South Dakota code.

9. Sec. 28.0415 of the 1939 South Dakota code.

largely to the school districts and the county since state aids for education are limited. Thus the State government does not have the same interest in restricting settlement to prevent unnecessary school costs as does Wisconsin, Minnesota or other states which contribute a much larger share of educational aids. In 1936-37 Corson County received \$34,851 from the State, or less than 20 percent of the total expenditures for schools. The contributions to schools in the suggested restricted district are likewise a small proportion of the total school expenditures.

Another potential source of saving if settlement in the isolated sections could be prevented is that of bridge construction and maintenance. In the proposed restricted area there were 161 bridges in 1937, of which five were across the Grand River. As previously mentioned, 33 bridges were destroyed in one flood; and 14 of these have since been replaced. If the present requirements are not increased by isolated settlers, it is estimated that it will not be necessary to maintain more than about 100 of the 142 small bridges remaining in addition to the five across the Grand River. These small bridges cost approximately \$200 to construct. By prohibiting new settlement in the area, it is likely that no new bridges would be necessary. A reduction in the road mileage under maintenance would permit a higher expenditure per mile and would thus improve the quality of existing services.

Whether zoning is worth consideration in the county depends largely upon the future course of settlement. While no accurate forecast can be made, it appears likely that any resumption of favorable climatic conditions will bring farmers into the county with the hope of large profits from wheat. Although such favorable conditions may exist for a period of several years, the county may very well consider whether large outlays are justified for schools, roads, bridges, and other public facilities to service a scattered population when means are at hand to direct this settlement by zoning in such a way as to furnish these facilities economically.

Conclusions

This analysis of rural zoning in Corson County indicates that the measure has some application to the Great Plains region of South Dakota, particularly in guiding settlement into communities where the public services can be furnished efficiently. In addition, population control by this means might prevent some of the speculative construction of schoolhouses and roads in areas where fluctuations in climate cause unstable demands for public services. One of the important factors in the problem of local government in the region is the heavy bonded indebtedness resulting from the construction of these roads and educational improvements in areas from which farmers later were forced to migrate.

The regulation by current zoning methods of cash-crop farming does not appear feasible. The interrelationship of grazing and crop use makes it difficult, if not impossible, to set up districts in which cropping could be prohibited. Because of the nature of this interrelationship of land uses, control of cash-crop farming by the police power must be on the basis of operating units.

The administrative difficulties inherent in this type of regulation, whether by zoning or by other means, suggest that other devices than police power regulations should be utilized before control of operating units is attempted.

The nature of zoning makes it desirable to use the measure first in areas where the adjustment in population and land use has largely taken place. Although police power measures can compel changes in current farm practices under certain conditions, it is believed that zoning may be adapted to Great Plains conditions more rapidly and more effectively if emphasis is placed first on stabilizing areas now well on their way to a satisfactory adjustment.

Rural zoning is but one phase of a broad land policy necessary for the sound development of the region. With the rapid increase in public ownership as a result of tax reversion in recent years, a large part of the region is now subject to control and management by either county, State, or Federal authorities; and institutions for administering these lands are now being developed. Viewed in relation to public tenure, control of land use or types of operating units by the police power is not of primary importance in many parts of the region. In the restricted district of Corson County, for example, approximately 95 percent of the land is or could be under effective control by one or more public agencies.¹⁰

Approximately one third of the Northern Great Plains is now in some form of public ownership, and this proportion is increasing. Efforts, therefore, should be made first to secure and maintain control over land use through public ownership before attempting to use police power measures. Settlement control by zoning may be desirable, however, even in areas of high public ownership, since scattered tracts of privately-owned land may be occupied by families requiring expensive public services and may create additional problems in allocating grazing leases by the various public agencies.

If zoning is to be used effectively, the coordination of other programs including public tenure, land exchange or purchase, credit and relief is essential. Since there are many inherent difficulties in modifying existing land uses or occupancies directly by zoning, it is necessary to relate all other forms of action to bring about the desired adjustment. Land exchange or purchase of land from isolated settlers is an example of this coordination which would make settlement control by zoning more effective by eliminating high cost nonconforming users.

10. There is no evidence available that the lack of control over the remaining 5 percent would forestall development of the land now in public ownership.