Minnehaha County

Comprehensive Development Plan

December, 1998

Minnehaha County
Comprehensive Development Plan

County Commission

Thomas A. Dempster, Chairman

Robert Kolbe
Jerry Noonan
Carol Twedt
James Zweep

Planning Commission

Warren Oakland, Chairman

Deb Bunde
Kevin Crisp
Mike Cypher
Robert Kolbe
Don South
Tom Wolles
Walter Bones III (past contributing member)

Prepared by Minnehaha County
Planning Department

David K. Queal, Director
Phil Kappen, Assistant Director
Matt Cushing, GIS Coordinator

The Planning Commission conducted a public hearing on this plan on November 23, 1998 and voted to present the plan to the Board of County Commissioners with a recommendation for adoption. Following a public hearing, the plan was adopted by resolution of the Board of County Commissioners on December 15, 1998.

Table of Contents

Minnehaha County Comprehensive Development Plan

LIST OF MAPS

LIST OF FIGURES

LIST OF TABLES

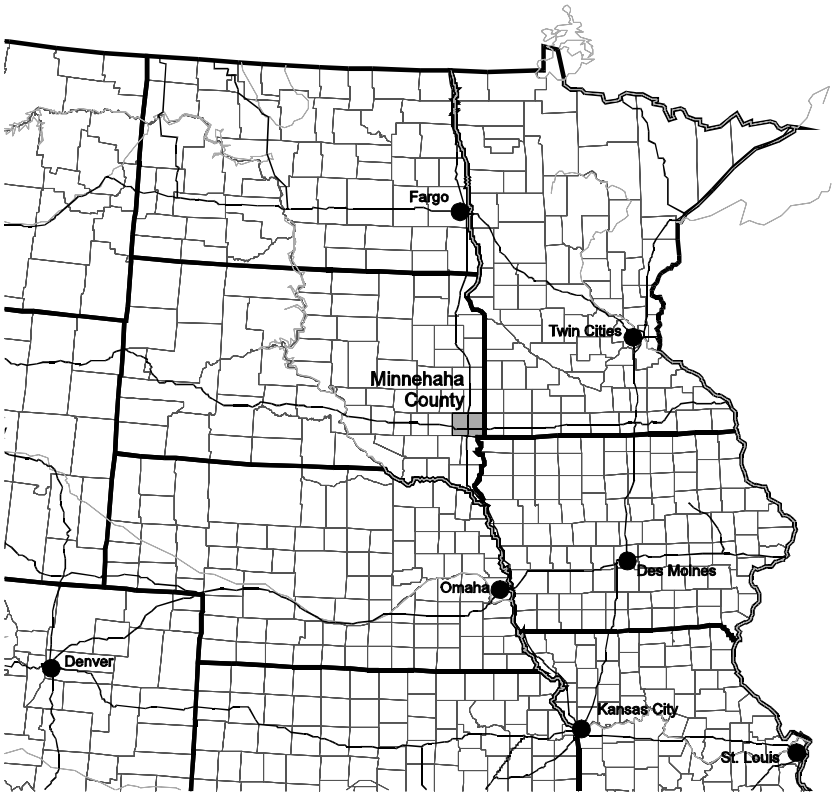
1. Introduction

Setting and Location

Minnehaha County is located in southeastern South Dakota, bounded on the east by Minnesota and the southeast by Iowa. The county is at the crossroads of Interstate Highways 29 and 90. Major cities in the region include Fargo, Minneapolis, Des Moines and Omaha.

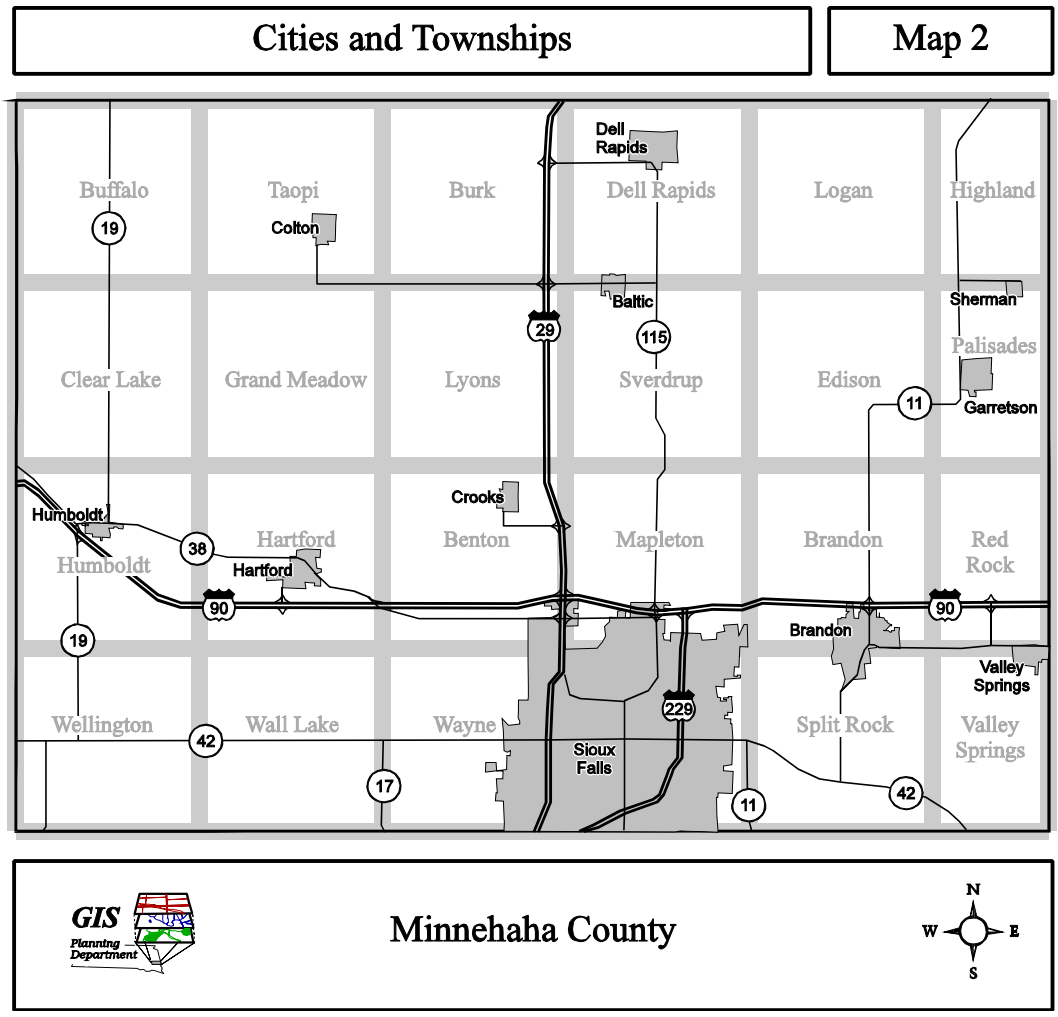
The county is comprised of 11 cities and 23 townships. The estimated 1997 population exceeded 143,000. Minnehaha County is bordered on the south by Lincoln County. Together the two counties comprise the Sioux Falls standard metropolitan area (SMA) with a labor force approaching 100,000. The central city of Sioux Falls straddles the Lincoln/Minnehaha county line.

Regional Area | Map 1



GIS Planning Department

N
W E
S



Growth And Change

With the approach of the new millennium, Minnehaha County will be expected to address quality of life and public expenditure issues resulting from a growing population and economic base. It is important, therefore, that a process be in place to ensure that proper and timely decisions are made in allocating the county's finite physical resources among competing land uses.

Growth presents many opportunities but with it comes the certainty of change. Rural water systems have been constructed, supplying safe and dependable water to farms and rural residences. In some instances, concentrations of faulty septic systems have been replaced by sanitary districts to eliminate groundwater contamination and health risks. Township supervisors are confronted with the complexities of urban type issues, including demands for improved roads and better maintenance. Building expansion is fueling the need for additional sources of construction aggregate. Municipal facilities such as well fields, sanitary landfills, and wastewater treatment operations have expanded into the rural area. The cumulative effect of these changes has had far reaching impacts on traditional agricultural areas.

Uncontrolled growth is generally accompanied by sprawl, scattered development, conflicting land uses, costly public services and improvements, and environmental damage. Significant strides have taken

place in the last 20 years to minimize the negative impacts associated with growth. This plan is intended to strengthen the county's planning efforts by providing information and direction to decision makers for managing anticipated growth and making change a positive experience for county residents.

The Challenge

Minnehaha County faces the challenge of managing its land resources in light of unprecedented population and economic growth. As nonfarm housing units increase in number across the countryside, impacts on the agricultural sector are being felt. Normal farming activities no longer go unnoticed by nonfarm residents. Farm consolidation and changes in agricultural operations and practices will undoubtedly lead to more intolerance by those not associated with farming. Similarly, new construction within the region is rapidly exhausting existing supplies of aggregate needed to support the building industry. Producers are finding that houses now occupy areas near potential new extraction sites and residents openly oppose the intrusion.

An explosion of residential development has occurred in the rural area over the last quarter century, ranging from scattered acreages to large subdivisions. Since 1990, over 900 housing units have been built outside municipal boundaries and a large supply of vacant parcels still exist for future residences. Yet the county has the opportunity to avoid sprawl development and the problems that plague other metropolitan areas.

Growth management efforts in the county were strengthened by the adoption of major zoning amendments in 1988. This plan seeks to build on the accomplishments of the past several years in accommodating the expected population and economic growth while maintaining the quality of life which residents presently enjoy.

The comprehensive plan establishes a broad framework for growth management by identifying goals and policies to assist in decisions on future development, striving to balance competing interests in the county's rural land base, and seeking to minimize conflicts between land uses. The policy statements will provide direction to the decision makers for dealing with future development issues. These policies form a common thread throughout the plan, stressing the critical importance of compact and contiguous growth, factors equally important to municipalities as they plan for the orderly and economical extension of public infrastructure. The plan emphasizes the importance of long term agricultural use by seeking to minimize interference with farming activities and discouraging premature development which leads to costly and inefficient public expenditures.

Fred Blair, nationally recognized in the planning profession, once said, *"If we bear firmly in mind that the end objective of planning is not the production of plans, but the production of informed, intelligent, well-organized action, we won't go far wrong."*

2. Background

Local Planning History

South Dakota Compiled Laws provide for the preparation and adoption of municipal and county comprehensive plans, zoning ordinances and subdivision regulations. The county's planning efforts began in 1966 with the appointment of a planning commission. Their task was to work with a consultant to prepare a comprehensive plan. This work culminated in 1968 with the completion and adoption of the Minnehaha County Comprehensive Plan. As required by South Dakota Codified Laws, the plan also included zoning and subdivision regulations.

The Planning Commission worked several years without staff support until a planning department was formed in 1972 to advise both the Planning Commission and elected officials on planning related matters and to perform daily administrative work involving enforcement of the zoning and subdivision regulations. In 1974, the Uniform Building Code was adopted to regulate building construction in the rural area. Minnehaha County is one of only a few counties in South Dakota to enforce building code requirements.

The Greater Sioux Falls Regional Comprehensive Plan was adopted in 1969, marking the start of a joint planning and zoning process between the city and county. This plan covered the city and eight adjoining townships, six in Minnehaha and two in Lincoln County, and established the basis for the extraterritorial zoning jurisdiction encompassing land within three miles of the city limits. The plan was updated in 1979, establishing the Year 2000 municipal growth boundary, and again in 1996 when the 2015 urban growth area was developed.

Many of the small cities within the county have adopted comprehensive plans. The county also shares zoning authority with Dell Rapids in an area extending from one to three miles beyond the city limits.

Legal problems were encountered in 1973 when the county refused a request to rezone property. The applicant commenced court action to strike down the comprehensive plan and zoning regulations on the basis of improper adoption. The court ruled that the plan had been adopted as an emergency measure, limited by statue to a period of two years, and struck down the plan. In late 1973 the county took action to adopt a permanent plan, including zoning and subdivision regulations.

Planning Perspectives

This first comprehensive plan provided a historical perspective of the county's growth. The increase in population was largely attributed to the growth of Sioux Falls. Sioux Falls had developed as the central city and the outlying communities functioned as service centers for the surrounding farm area. The plan observed an emerging pattern of development characterized by a higher number of urban residents settling on the fringes of the city. It was noted that the rural area was no longer being used exclusively for farming.

The plan frequently mentioned that settlement patterns away from established communities would eventually necessitate utilities and urban level services. The following recommendations were made:

- In many cases, because of the scattered locations of land developments, extension of municipal utilities may not be a practical matter. It is, therefore, important that the various governing

jurisdictions encourage development of land parcels contiguous to existing developments in order to prevent the creation of large areas of by passed land.

- All extensive land development proposals should be guided by a plan for site development. Such plans would determine the optimum intensity of the use for land and identify corresponding densities of land occupancy so that proper precautions could be taken to assure adequate utilities.
- If agricultural lands are not protected through land use controls their optimum utilization will diminish in disproportion to the amount of area reverting to urban use. Thus, much of the remaining economic potential of the land, in terms of agricultural production, is lost.
- Proper use of land must be employed to protect valuable agricultural land as well as other amenities.

The plan also set forth objectives that provided direction to the Planning Commission and elected officials regarding future development. These objectives included the following:

- Future community growth should occur in areas contiguous to existing development to allow economical expansion of municipal facilities and services.
- New and more imaginative subdivision layout and site planning should be encouraged.
- Central business districts should be protected and should not be diluted by a scattered pattern of commercial uses developed at random throughout the county. Scattered commercial development should furthermore be prevented to maintain land use integrity in other districts.
- Commercial highway service uses should be generally confined to those areas where they presently exist rather than being allowed to expand in a strip configuration along the highway. Where significant additional uses of this nature are required by the motoring public, they should be located in a nucleated configuration.
- Future industrial land use areas should generally be established with due consideration to adequate highway and rail service.
- Natural drainage courses should be protected in their capacities to carry runoff water.

The land use pattern which began to emerge a few years later reflected concerns identified in the plan. By the mid-1970's significant growth was occurring in the rural area as houses spilled outside the cities onto agricultural land. While the plan warned of this phenomenon more than half a decade before, the zoning regulations failed to keep pace with development pressure.

The zoning ordinance established standard zoning districts for agricultural, residential, commercial and industrial uses, but the regulations were incapable of preserving the county's rural character. The regulations could best be characterized as large lot zoning under which a residence was allowed in the agricultural district provided the lot was at least one acre in size.

The land use pattern was characterized by multi-lot housing subdivisions and ribbons of residential development along major highway routes. Residential development was allowed as a permitted use in the agricultural district. Without a rezoning there was no opportunity for a review of development projects to determine land use compatibility, the potential impact on natural features such as groundwater and drainage systems, and the adequacy of services.

The plan established sound goals and objectives but the zoning regulations provided inadequate controls to deal with development. This situation allowed the proliferation of rural subdivisions and scattered acreages during the 1970's.

By 1978, elected officials recognized the need for change in order to more effectively manage residential densities in the rural area. Unfortunately, the public lacked an understanding of the issues and a new zoning ordinance failed to be sustained by the electorate in a referendum election.

In 1980, the zoning regulations were amended to require property to be rezoned for residential subdivisions. Prospective homeowners were also required to obtain a conditional use before building permits could be issued on isolated nonfarm residential acreages. This was the first time that the county was actually in a position to review and evaluate development proposals before construction occurred.

Even though these changes had a positive impact on growth management, the process was not without flaws. The ultimate density of an area could not be anticipated as part of the conditional use process. Each time the Planning Commission considered a conditional use they became apprehensive, fearing that approval would lead to similar requests. There was virtually no way to implement the plan's recommendations to “determine optimum intensity of use or identify corresponding densities to insure the availability of adequate utilities”.

In 1988, the county adopted zoning amendments which were directed at maintaining an acceptable density for residential uses in the rural area. This method is known as density zoning and is used to control the maximum number of dwellings in areas of the county zoned for agricultural use. This approach accommodates residential uses in predominately agricultural areas of the county but maintains control over the density in such a manner that urban development is less likely to occur.

3. Population and Employment

Population Trends

Settlement of the area now known as Minnehaha County began in 1856 when the Western Town Company of Dubuque, Iowa acquired 320 acres of land in what is now Sioux Falls. By 1860 the United States Census reported that Sioux Falls City in Dakota Territory had a population of 38 and that the area "on the Sioux River" in the territory had 34 residents. From this early period to the present, the county has experienced steady population growth except during the depression of 1890.

Population has historically been concentrated within Sioux Falls, comprising over one-half of the county population since 1920. By 1990 this share had increased to over 80 percent.

The combined population of the small cities remained fairly constant from 1920 to 1970 at approximately 5,000 persons. By 1980, the population of the small cities nearly doubled as two more areas incorporated. Today nearly 90 percent of the total county population resides within one of the municipalities.

Rural population trends have been influenced by several factors - - farm consolidation, city annexations and municipal incorporation. Even with a dramatic increase in housing construction within the rural sector, population actually decreased due to annexation of fringe developments around Sioux Falls and the incorporation of Crooks and Brandon. After reaching a high of over 17,600 residents in 1980, the rural population declined to just under 13,000 by 1990. The estimated 1997 rural population was 15,100 persons.

Recent county growth trends have been impressive, reaching an estimated population of 143,000 persons in 1997, 15.5 percent above the 1990 Census figure of 123,809. As expected, Sioux Falls contributed significantly to the population increase. The 1997 estimated Sioux Falls population was 113,600. An additional 3,900 city residents lived in Lincoln County, pushing the total Sioux Falls population to 117,500. Nearly 80 percent of the 1997 county population lived in Sioux Falls.

FIGURE 1

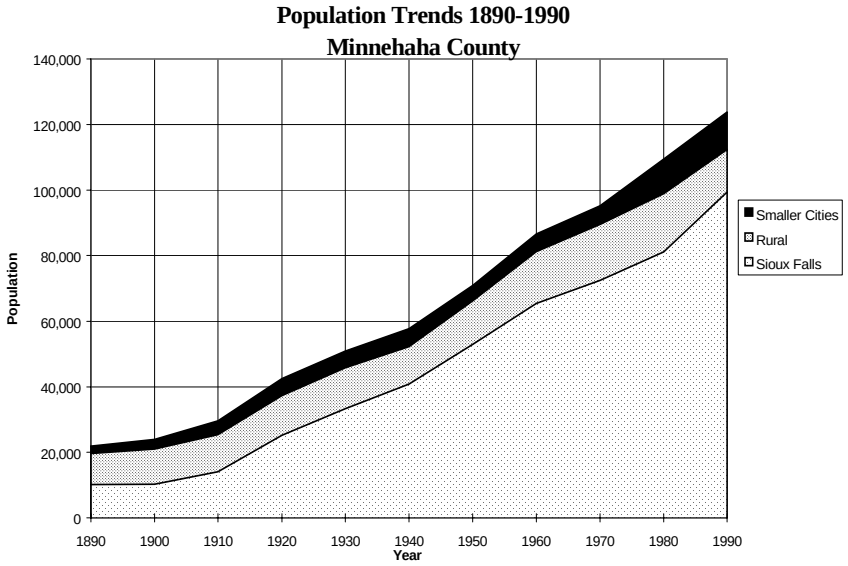


TABLE 1

Population and Housing Data - 1990
Minnnehaha County

	Housing Units			Population		
Townships	Total	Occupied	% Vacant	Total	Group Quarters	Persons per Occupied Unit
Benton	200	193	3.5	630	49	3.01
Brandon	217	206	5.1	612		2.97
Buffalo	86	80	7.0	238		2.98
Burk	102	99	3.0	306		3.09
Clear Lake	68	60	11.8	175		2.92
Dell Rapids	117	115	1.7	338		2.94
Edison	122	114	6.6	346		3.04
Grand Meadow	94	90	4.2	268		2.98
Hartford	173	164	5.2	542		3.30
Highland	64	61	4.7	164		2.69
Humboldt	105	101	3.8	318		3.15
Logan	98	92	6.1	277		3.01
Lyons	210	191	9.0	559		2.93
Mapleton	630	614	2.5	1,686		2.75
Palisade	95	89	6.3	276		3.10
Red Rock	113	109	3.5	342		3.14
Split Rock	715	699	2.2	2,137		3.06
Sverdrup	218	209	4.1	614		2.94
Taopi	115	111	3.5	347		3.13
Valley Springs	112	102	8.9	275		2.70
Wall Lake	305	280	8.2	863		3.08
Wayne	435	423	2.8	1,307		3.09
Wellington	101	97	4.0	304		3.13
Township Total	**4,495**	**4,299**	**4.4**	**12,924**	**49**	**2.99**
Municipalities						
Baltic	249	231	7.2	666		2.88
Brandon	1,143	1,120	2.0	3,543		3.16
Colton	284	269	5.3	657		2.44
Crooks	215	207	3.7	671		3.24
Dell Rapids	955	918	3.9	2,484	118	2.58
Garretson	380	361	5.0	924	77	2.35
Hartford	465	450	3.2	1,262		2.80
Humboldt	188	179	4.8	468		2.61
Sherman	29	27	6.9	66		2.44
Sioux Falls	41,095	39,354	4.2	99,405	4,161	2.42
Valley Springs	282	266	5.7	739		2.78
Municipal Total	**45,285**	**43,382**	**4.7**	**110,885**	**4,356**	**2.46**
County Total	**49,780**	**47,681**	**4.2**	**123,809**	**4,405**	**2.50**

Source: U. S. Bureau of Census

Population History 1890-1990
Minnehaha County

Census Year	Sioux Falls	Rural	Smaller Cities	Total County	Incorporated Since Previous Census	Dissolved Since Previous Census
1890	10,177	9,483	2,219	21,879		
1900	10,266	10,748	2,912	23,926	Hartford, South Sioux Falls	Rowena
1910	14,094	11,300	4,237	29,631	Baltic, Colton , Sherman	
1920	25,202	12,104	5,184	42,490	Humboldt	East Sioux Falls
1930	33,362	12,404	5,106	50,872		
1940	40,832	11,399	5,466	57,697		
1950	52,969	13,219	4,722	70,910		
1960	65,466	15,803	5,306	86,575		South Sioux Falls
1970	72,488	17,059	5,662	95,209		
1980	81,182	17,687	10,566	109,435	Brandon, Crooks	
1990	99,405	12,924	11,480	123,809		

The "smaller cities" population for 1890 included Dell Rapids, East Sioux Falls, Garretson, Rowena and Valley Springs.

The "smaller cities" population for 1990 included Baltic, Brandon, Colton, Crooks, Dell Rapids, Garretson, Hartford, Humboldt, Sherman and Valley Springs.

Age Distribution

The overall age of Minnehaha County residents is on the rise. The median age has increased from 27.1 years in 1960 to 31.4 years in 1990, a trend that is expected to continue as the "Baby Boomer" generation ages. This age group comprised 34 percent of the 1990 county population, the largest percentage of any age group.

The over 65 year age group will begin to grow around the year 2010 as the early baby boomers reach retirement age. The excellent health care facilities available in the Sioux Falls area will not only lessen the out-migration of elderly residents but also attract persons in this age group to the area because of the availability of medical services.

TABLE 3

Age Breakdown (in percent)
Minnehaha County

	1960	1970	1980	1990
under 5	12.84	8.48	7.97	7.93
5 thru 14	21.26	22.11	15.19	15.28
15 thru 24	13.29	18.27	20.61	14.44
25 thru 34	12.78	11.59	17.55	19.07
35 thru 44	12.66	10.83	10.29	15.05
45 thru 54	9.86	10.65	9.21	8.95
55 thru 64	8.14	8.04	8.59	7.67
65 thru 74	6.12	5.9	5.84	6.44
75 and over	3.05	4.14	4.76	5.18

Denotes Baby Boom Generation

TABLE 4

Residential Construction
1990-1997
Minnehaha County

Townships	# of Units	Units Added								Total
	1990 Census	90-91	1992	1993	1994	1995	1996	1997	Total Added	
Benton	200	7	10	9	8	6	2	8	50	250
Brandon	217	10	5	5	2	2	8	7	39	256
Buffalo	86	0	0	0	0	1	0	2	3	89
Burk	102	2	4	2	3	1	2	4	18	120
Clear Lake	68	1	0	2	1	0	1	1	6	74
Dell Rapids	117	7	4	2	7	4	3	6	33	150
Edison	122	3	2	1	8	2	6	3	25	147
Grand Meadow	94	2	2	2	2	1	3	1	13	107
Hartford	173	12	4	4	4	6	9	3	42	215
Highland	64	2	1	0	1	2	1	1	8	72
Humboldt	105	2	3	3	2	4	2	1	17	122
Logan	98	0	0	1	0	0	2	1	4	102
Lyons	210	4	2	2	4	1	2	5	20	230
Mapleton	630	22	18	21	17	8	20	13	119	749
Palisade	95	3	1	2	2	3	3	4	18	113
Red Rock	113	2	3	3	2	3	4	1	18	131
Split Rock	715	37	25	45	52	34	33	25	251	966
Sverdrup	218	8	10	3	3	4	6	4	38	256
Taopi	115	2	2	3	0	4	1	0	12	127
Valley Springs	112	9	2	3	1	2	1	2	20	132
Wall Lake	305	12	5	13	6	8	13	10	67	372
Wayne	435	6	13	13	15	10	8	8	73	508
Wellington	101	3	2	3	1	2	3	1	15	116
Township Total	**4,495**	**156**	**118**	**142**	**141**	**108**	**133**	**111**	**909**	**5,404**
Municipalities										
Baltic	249	4	6	9	5	2	3	14	43	292
Brandon	1,143	135	46	47	69	79	97	137	610	1,753
Colton	284	5	2	0	1	0	6	0	14	298
Crooks	215	14	14	9	6	7	5	10	65	280
Dell Rapids	955	37	27	74	27	26	24	28	243	1,198
Garretson	380	6	3	8	4	19	12	8	60	440
Hartford	465	20	19	21	50	27	38	16	191	656
Humboldt	188	1	6	7	1	11	0	1	27	215
Sherman	29	0	0	0	0	0	0	0	0	29
Sioux Falls*	41,095	1,325	905	1,190	1,175	915	895	889	7,294	48,389
Valley Springs	282	1	1	2	2	3	0	3	12	294
Municipal Total	**45,285**	**1,548**	**1,029**	**1,367**	**1,340**	**1,089**	**1,080**	**1,106**	**8,559**	**53,844**
Smaller cities	**4,190**	**223**	**124**	**177**	**165**	**174**	**185**	**217**	**1,265**	**5,455**
County Total	**49,780**	**1,704**	**1,147**	**1,509**	**1,481**	**1,197**	**1,213**	**1,217**	**9,468**	**59,248**

*Minnehaha portion only

Housing Trends

The number of housing units in Minnehaha County totaled nearly 50,000 in 1990. Sioux Falls accounted for 82.5 percent of this total while the remainder of the units were split almost equally between the rural area and small cities.

Residential construction for the period 1990-1997 surpassed 9,400 units, increasing the county's housing stock to 59,000 dwelling units. Although Sioux Falls accounted for most of this construction activity, significant residential development did occur elsewhere in the county. Over 900 units were built in the rural area during this period while the small cities grew by 1,265 dwellings. The cities of Brandon, Dell Rapids and Hartford accounted for 82 percent of new residential construction in the smaller cities. The three townships adjacent to Sioux Falls - Mapleton, Split Rock and Wayne - accounted for almost one-half of all new rural housing units constructed during the period.

A significant change in the composition of rural housing has occurred over the past several decades. Where farm dwellings once dominated the housing supply, the composition has swung heavily toward nonfarm dwellings. A 1994 land use inventory showed that only 17.3 percent of all rural dwellings were inhabited by persons involved in farming activities.

The 1990 vacancy rate for rural housing units was 4.4 percent. Although current figures are not available, the vacancy rate has probably remained constant or declined further as employment opportunities continue to expand.

The rural housing stock is comprised almost entirely of single-family residences. Public infrastructure such as central sewer facilities is generally not available to support multi-family residential development. New residential construction has also been predominately site built with manufactured and mobile homes accounting for only a small portion of the new housing market.

TABLE 5

Residential Building Permits
by Type
Rural Minnehaha County

	1990	1991	1992	1993	1994	1995	1996	1997
Single-family								
Site built	49	74	99	114	120	84	122	95
Moved to site	6	4	10	20	4	8	6	4
Manufactured home	2	3	1	6	13	9	4	4
Mobile home	15	7	7	7	4	7	1	7
TOTAL	**72**	**88**	**117**	**147**	**141**	**108**	**133**	**110**

Manufactured homes which are not located in a mobile home park or within a farmstead as part of an agricultural operation must be placed on a permanent foundation. These structures are generally located on rural acreages, and in one case, within an approved manufactured housing subdivision. A few mobile home parks are also located in the rural area.

Household size has undergone significant changes with the aging of the "baby boomer" generation. In 1980, the household size among occupied units in Minnehaha County was 2.63 persons, a sharp decline from the 3.17 persons recorded in 1970. The household size continued to drop, although not as abruptly, to 2.5 persons in 1990. The household size was significantly higher in the rural area, totaling 3.01 persons in 1990. Overall, the small cities recorded a household size of 2.85 persons. The difference in household size among the three sectors can be attributed to the higher proportion of multi-family units in Sioux Falls compared to the small cities and the almost total absence of such units within the rural area. Multi-family units are customarily occupied by single persons, young married couples with no children and elderly residents.

Employment Trends

Employment statistics for the Sioux Falls Metropolitan Statistical Area (MSA), which includes both Lincoln and Minnehaha Counties, point to a strong economy with Sioux Falls serving as the major employment center. Persons not only commute to work from the outlying areas of the two counties but the city attracts workers from other parts of southeastern South Dakota as well as southwestern Minnesota and northwestern Iowa.

TABLE 6

Commuter Data - 1990 Census
Workers Age 16 and Over

Place	Worked in place of res.		Worked outside of place of res.		Total
Brandon	445	23%	1,449	77%	1,894
Valley Springs	92	24%	294	76%	386
Hartford	135	20%	536	80%	671
Humboldt	45	23%	147	77%	192
Baltic	62	20%	252	80%	314
Dell Rapids	509	46%	595	54%	1,104
Garretson	181	45%	219	55%	400
Harrisburg	72	18%	328	82%	400
Canton	750	56%	585	44%	1,335
Lennox	325	40%	492	60%	817
Tea	46	11%	388	89%	434
Worthing	25	13%	166	87%	191
TOTAL	2,687	33%	5,451	67%	8,138

Nonfarm employment increased by 38.6 percent during the 1980's. This was followed by a sharp increase of over 17,000 employees during the next five years. By 1995, the unemployment rate had dropped to 2.7 percent. At the same time, employment opportunities became much more diversified.

The finance sector has grown the fastest since 1980, recording an increase of 182 percent. The largest employment sector is in services which doubled in size to 27,600 and comprised over 28 percent of total employment. Although employment in retail and wholesale trade increased 53.1 percent and was the second largest employer, the percentage of total employment in this sector declined from 29.8 to 26.9 percent. Manufacturing employment also showed a sound gain but also decreased as a percentage of total employment. The transportation and government sectors had the smallest increases and also lost ground when compared to total employment.

Minnehaha County is characteristic of national trends in agriculture which has resulted in fewer farms and declining employment. There were 1,876 farms in the county in 1964 but farm consolidation reduced this number to 1,262 by 1992. The obvious effect of this trend can be seen in agricultural employment which declined to 1,547 employees in 1990 from 1,766 in 1980.

TABLE 7

Nonfarm Employment
Sioux Falls MSA

	1980	1985	1990	1995	% increase 1980-1995
Manufacturing	8,241	8,373	9,700	12,900	56.5
Construction and Mining	2,677	2,718	3,800	4,700	75.6
Transportation	4,898	4,720	5,000	6,100	24.5
Trade (retail and wholesale)	17,051	17,666	22,100	25,700	50.7
Finance	3,433	6,040	8,200	9,700	182.6
Services	13,550	17,258	22,000	27,500	102.9
Government	7,361	7,919	8,500	9,400	27.7
TOTAL EMPLOYMENT	**57,211**	**64,694**	**79,300**	**96,000**	**67.8**

Civilian Labor Force and Unemployment
Sioux Falls MSA

	1980	1985	1990	1995
Total Unemployment	2,899	3,139	2,103	1,927
Unemployment Rate	4.6%	4.6%	2.8%	2.2%
Labor Force	63,142	67,971	74,228	89,097

TABLE 8

Population Projections
Minnehaha County

	1990	1995	2015
Sioux Falls *	99,405	109,000	140,000
Smaller Cities	11,480	13,200	19,500
Baltic	666	725	900
Brandon	3,543	4,400	7,500
Colton	657	660	750
Crooks	671	760	1,250
Dell Rapids	2,484	2,900	4,000
Garretson	924	950	1,100
Hartford	1,262	1,500	2,500
Humboldt	468	500	610
Sherman	66	65	40
Valley Springs	739	740	850
Rural	12,924	14,300	17,500
TOTAL	**123,809**	**136,500**	**177,000**

* Sioux Falls residents residing in Lincoln County not included.

TABLE 9

Housing Projections
Minnehaha County

	1990	1995	2015
Housing Units			
Rural	4,495	5,043	6,165
Smaller Cities	4,190	4,888	7,135
Sioux Falls	41,095	45,500	58,200
TOTAL	**49,780**	**55,431**	**71,500**

Future Population and Housing

Expansion in employment opportunities during the planning period will fuel an increase in the county's population base. By the year 2015 the population of Minnehaha County is projected to grow to 177,000, nearly 30 percent greater than in 1995.

Sioux Falls will contribute substantially to the county's future population base. Three-fourths of the projected 40,500 new county residents are expected to live in Sioux Falls. Projected growth on the southern border of Sioux Falls will also increase the city's population within Lincoln County. According to the City Planning Department, 16,000 city residents will reside in Lincoln County by 2015. The total population of Sioux Falls is expected to be 156,000 by the year 2015, an increase of 44,000 persons from 1995.

The number of persons residing in the smaller cities of Minnehaha County will also increase. Expansion of Brandon's industrial park and the community's close proximity to Sioux Falls is expected to push the population to 7,500 by 2015, a two-thirds increase over the current population. Hartford's population is projected to increase by more than 50 percent as the city capitalizes on its interstate highway location and industrial development potential. Dell Rapids and Crooks should also experience strong growth. It is expected that the combined population of the small cities will surpass that of the rural area during the planning period.

The farm population is expected to further decline due to farm consolidation although not as sharply as in the past. It is also unlikely that the unincorporated areas of Ellis, Lyons, Renner, and Rowena will account for any significant growth due to the lack of urban services. Corson's industrial development potential will likely lead to annexation into Brandon during the planning period.

The rural nonfarm residential sector will continue to increase in population. Approximately 120 new dwelling units are expected to be added to the rural area annually for the next several years. After the year 2000, housing construction is expected to decline gradually to an annual level of about 80 units by the end of the planning period. This decrease is anticipated as existing subdivisions are filled and density zoning standards exert a greater influence on development patterns.

TABLE 10

Projected Housing Construction
Rural Minnehaha County

5-year Period	New Units
1996-2000	600
2001-2005	500
2006-2010	425
2011-2015	400
TOTAL	**1925**

Future residential

construction will be influenced by regional economic conditions, mortgage interest rates and any departure from established development policies. Therefore, annual construction statistics should be monitored to determine the accuracy of these projections and adjustments made accordingly.

Although over 1900 dwelling units are projected to be built in the rural area by the year 2015, the net increase in rural housing units will be far less due to the annexation of several rural subdivisions located in the Sioux Falls 2015 projected growth area. Many of these subdivisions are located east of Sioux Falls in Split Rock Township and include Pine Lake Hills, Mystic Meadows, and Split Rock Heights. The Meadow View area north of Sioux Falls in Mapleton Township and Prairie Meadows at 41st Street and Ellis Road are also expected to become part of the city during this time. The impact of these annexations will be seen in the rural population projections after the year 2005.

County residents will still be able to choose either an urban, small town or rural lifestyle. The level of growth outside Sioux Falls is obviously dependent on the economic climate of the city itself. Future transportation costs, commuting times and rural density standards will all play a role in the distribution of the year 2015 population. Although more detailed studies will follow the completion of this plan, it appears new residential construction during the planning period can be accommodated within the framework of the county's density zoning standards.

Future Employment

Expansion of employment opportunities should continue during the planning period based on several factors. South Dakota offers a favorable tax climate which prospective employers will find attractive. The area will continue to offer a high quality of life and sound work ethic. As the population both expands and ages, the demands upon the service sector will grow. The community’s position as a regional health care center will also contribute to expansion of service related employment. Regional air and highway transportation systems will support further economic development.

The percentage of the population which comprises the work force has steadily increased from 36.34% in 1970 to 49.62% in 1980 and 64.06% in 1990. The increase in two income families, baby boomers moving into the work force, and more high school students with jobs all contributed to this trend. The percentage of the population in the work force can be expected to slow and may even begin to decline, especially after 2010 as the baby boomers begin to retire.

Employment in the service industry should continue to show the most rapid gains. Historically, the wholesale and retail industry has served as the largest employer. However, the rapid increase in service jobs should make this sector the top employer in the region.

4. Land Use Analysis

Development Trends

Land use changes in Minnehaha County have been largely influenced by the economic and population trends of Sioux Falls. The city's geographic location within the county has concentrated population along the southern border and adjoining townships while the outlying portions of the county have maintained a more rural identity.

Sioux Falls exhibits a development pattern typical of many growing metropolitan areas. Major transportation routes serving the city pulled development from the central core to the urban fringes, sometimes leapfrogging beyond the corporate borders. These strip type configurations were further encouraged by the construction of the interstate highway system. In many cases residential, commercial and industrial development skipped over vacant land and located in areas which lacked municipal services, particularly sanitary sewer.

Sioux Falls embarked on an aggressive annexation program in 1979 as urban expansion caught up with fringe developments. During the next several years, major annexations occurred along West 12th Street, North Cliff Avenue, South Sycamore Avenue and on the city's southeast side.

Significant development has occurred in other areas of the county as well. The growth of Brandon and Crooks led both of these communities to organize as municipal governments during the 1970's so public facility and service improvements could be provided to support development needs. The small town lifestyle and short commuting distance to work places in Sioux Falls have attracted residents to many of the outlying communities.

Brandon, located three miles east of Sioux Falls, incorporated as a municipality in 1974 and by 1980 had become the county's second largest city. It is estimated that Brandon's 1995 population totaled 4,400 persons. City leaders understood the consequences of developing as a bedroom community, attracting only residential uses with no economic base to support needed municipal infrastructure improvements. The city's geographic location along Interstate Highway 90 and access to a major rail line enabled the local development group to create an industrial park. The availability of municipal sanitary sewer, water, street and storm water facilities attracted businesses which helped create a viable employment center for the city. Growth in retail and service related uses has further broadened the city's economic base and reduced Brandon’s image as a bedroom community.

Dell Rapids, located 15 miles north of Sioux Falls, is not as closely identified with the metropolitan area. The 2,900 residents make Dell Rapids the third largest city in Minnehaha County. The Big Sioux River and Dells of the Sioux provide an attractive setting to both residents and visitors while the quartzite structures along main street add historical significance to the community. The city also has an established commercial area and an employment base supported by local businesses and industry. Challenges in promoting industrial development confront the city, however. Interstate Highway 29 is nearly three miles west while physical constraints imposed by river crossings and rock outcroppings severely limit industrial development options.

More workers appear willing to commute to Sioux Falls from outlying areas which is quite probably contributing to the recent surge in new housing construction in Dell Rapids. The increased popularity of commuting can also be attributed to the reconstruction of State Highway 115 between the two cities. The EROS Data Center located 10 miles southeast of the city is also within reasonable commuting distance.

The quarrying of quartzite rock is a major part of Dell Rapids' economy. A large quarry straddles the city's eastern border and plans include the opening of an abandoned quarry on the city's southwest edge.

Crooks and Hartford have also experienced growing pains. Crooks is within easy commuting distance of Sioux Falls and has the image of a bedroom community. The city will have difficulty in competing for commercial and industrial development because of the close proximity to Sioux Falls. However, the availability of rail service could enhance Crooks' competitive advantage along with improvements to the regional transportation network.

Hartford has attracted retail and service related businesses to the community in recent years and the close proximity of Interstate 90 should enable the city to expand its industrial base, an important factor in broadening the city's tax base.

The outlying communities of Colton, Humboldt, Baltic, Garretson and Valley Springs have experienced only limited growth, although Baltic recently annexed 61 acres for residential and commercial development.

TABLE 11

Land Use Inventory - 1997
Rural Minnehaha County

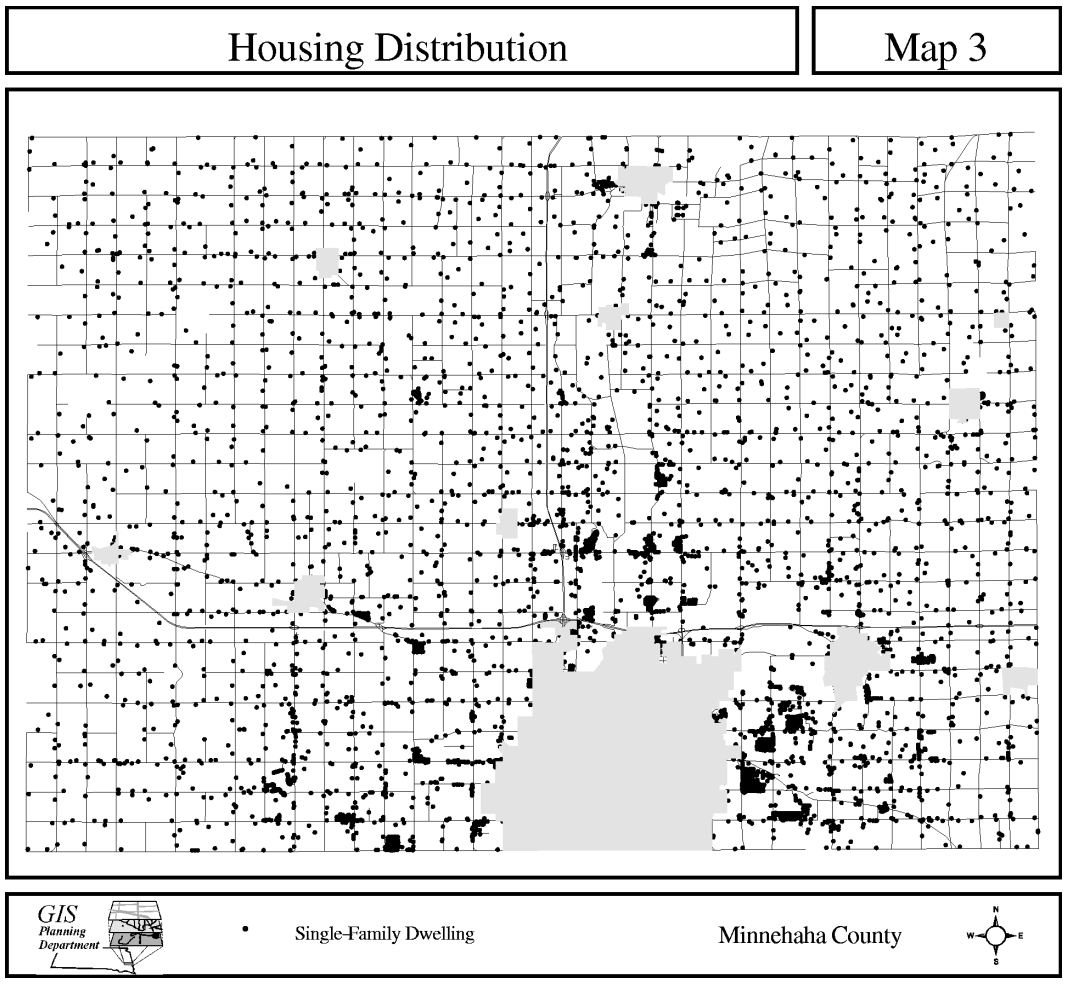
	Parcels		Acres	
Type	#	%	#	%
Residential				
single-family (parcels under 10 acres)	2896	26.7%	7160	1.5%
single-family (parcels 10 to 40 acres)	614	5.7%	11654	2.5%
multi-family	12	0.1%	3	0.0%
mobile home	95	0.9%	429	0.1%
mobile home park	7	0.1%	78	0.0%
vacant		0.0%		0.0%
buildable (parcels under 10 acres)	1556	14.4%	2923	0.6%
buildable (parcels 10 to 40 acres)	644	5.9%	16862	3.6%
unbuildable	115	1.1%	71	0.0%
Manufacturing	110	1.0%	354	0.1%
Transportation, Communication and Utilities	167	1.5%	931	0.2%
Commercial	99	0.9%	277	0.1%
Office and Institutional	29	0.3%	36	0.0%
Cultural, Entertainment and Recreation	175	1.6%	3134	0.7%
Agricultural	4198	38.8%	419135	90.2%
Mining and Quarrying	30	0.3%	1648	0.4%
Church and Cemetery	41	0.4%	55	0.0%
Miscellaneous	45	0.4%	121	0.0%
Total	**10833**	**100.0%**	**464871**	**100.0%**

Rural Land Use Patterns

At the end of 1997, rural properties in Minnehaha County surpassed 10,800 parcels as indicated in Table 11. These parcels totaled 465,000 acres (727 square miles) and supported a variety of land uses from agricultural to residential, commercial and industrial activities. The dominate land use is agriculture, comprising 90 percent of the total rural land base.

While the rural area is primarily in agricultural use, the division of parcels among the various land uses illustrates some significant trends. Almost 40 percent of all rural parcels are less than 10 acres in size and devoted to or intended for residential use. Another 12 percent are parcels 10 to 40 acres in size, many of which are residential acreages and hobby farms. Most parcels of this size are not capable of supporting a bonafide farming operation.

A noteworthy statistic from the land use inventory is the 1,556 parcels less than 10 acres in size that are vacant and most probably qualify for residential use. These potential building sites along with those allowed by density zoning (i.e. one per quarter-quarter section) are factors which will undoubtedly result in a more heavily populated rural area during the planning period.



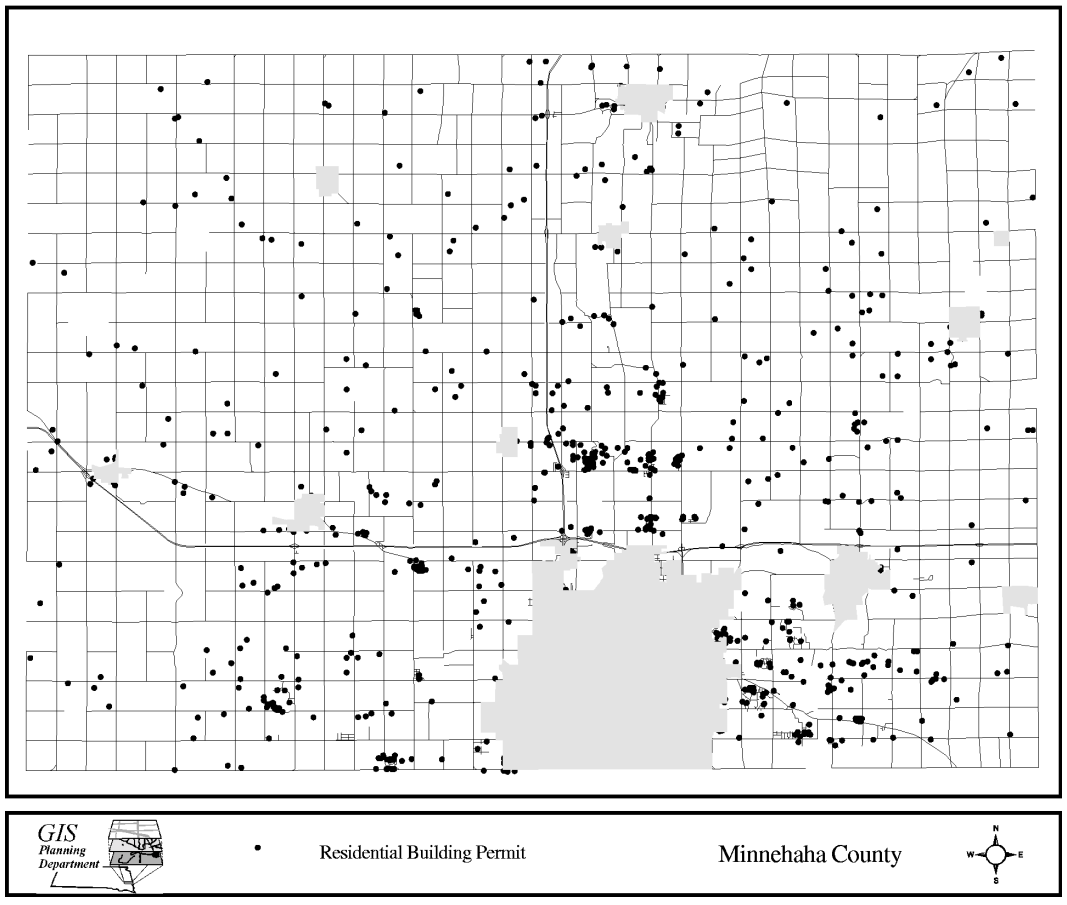
Residential Land Use

The total number of housing units in Minnehaha County exceeded 59,000 in 1997. Over 5,400 housing units were located in the rural area. The distribution of rural single-family dwellings is shown on Map 3.

Municipalities collectively added 8,500 units to the county's housing supply between 1990 and 1997. Although 77 percent of these new units were constructed in Sioux Falls, building activity in the smaller cities accounted for 1,265 new units during the period.

While most residential construction occurred within municipal service areas, over 900 housing units were built in the unincorporated area where urban services do not exist. Almost half of the units were built in the townships bordering Sioux Falls - Split Rock, Mapleton and Wayne. Map 4 displays the location of single-family residential building permits for the period 1990-1997.

Residential Building Activity 1990 –1997 | Map 4



Split Rock Township, located east of Sioux Falls, is the fastest growing and most heavily

populated township in the county. The rolling hills and scenic beauty of the Big Sioux River valley and the short driving distance to work places in Sioux Falls have enticed residents to move into the township. Developers capitalized on this market and created several large rural subdivisions during the 1970's. Scattered acreages are also prevalent throughout the township. Since 1990, 251 houses have been built in Split Rock Township, raising the total number of units to 966.

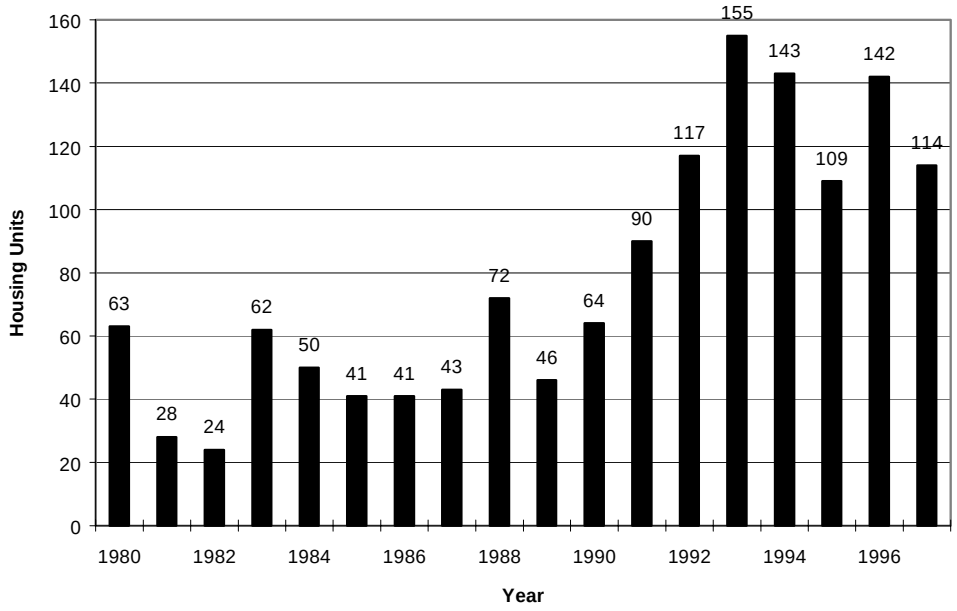
The townships of Mapleton and Wayne, located north and west respectively of Sioux Falls, together added 192 new housing units during this same period. In contrast to Split Rock, fringe developments which occurred in these two townships during the 1970's have been annexed into Sioux Falls. A majority of the 749 housing units in Mapleton Township are concentrated along the State Highway 115 (Cliff Avenue) corridor between Sioux Falls and Renner. A few large subdivisions have developed in Wayne Township but overall the 500 total housing units are more dispersed than in the other two townships.

Outlying townships have maintained more of a rural character due in part to greater commuting distances into Sioux Falls and the adoption of stronger zoning controls prior to development pressures. Farmers in these areas also appear to be more committed to the preservation of agricultural land and are not as likely to sell property for nonfarm use. Fourteen of the 23 townships in Minnehaha County have less than 200 housing units each and nonfarm dwellings are generally located on isolated acreages rather than in subdivision developments. Farm consolidations have resulted in the conversion of farmsteads for nonfarm residential use.

Minnehaha County amended its zoning ordinance in 1988 to limit residential density on agriculturally zoned property to one dwelling per quarter quarter section of land. A review of permit statistics (Figure 2) would imply that the density standard has not curtailed but rather led to

FIGURE 2

Residential Building Permits
1980-1997
Rural Minnehaha County



increased residential

construction. While there has been a steady increase in building activity since 1988, other factors have played a significant role in lessening the immediate impact of density controls.

Density zoning recognizes previously recorded property descriptions and as such allows building eligibility based on legal descriptions which existed at the time of the ordinance change. A substantial amount of agricultural land was split into subdivisions and acreages in the 1970's, but the supply of lots far exceeded demand and the land remained undeveloped. As the regional economy expanded, gasoline prices stabilized and mortgage interest rates dropped, the rural housing market strengthened. Some of this demand was absorbed by previously vacant rural properties unaffected by density zoning standards. It is expected that density zoning will have a greater impact over the long term as existing parcels are developed.

Commercial/Industrial Land Use

During the county's early development, cities functioned as centers for commercial and industrial development. Unincorporated communities such as Rowena, Corson, Renner, Ellis and Lyons also developed at strategic points along the railroad network, providing services to the agricultural sector. A common landmark in each of these communities was the grain elevator. Other development generally included service related businesses such as a gasoline station, cafe, and in some instances, a bank. These areas did not offer municipal services such as central sewer and water and only limited residential development occurred, the exceptions being Crooks and Brandon which eventually incorporated as municipalities to serve the population growth.

Commercial development was also drawn to major transportation routes, particularly in the Sioux Falls area. Strip commercial development commonly formed along the primary access routes into the city. Highway services also settled along the major transportation network but many of these businesses closed after traffic shifted to the interstate highways.

Minnehaha County is at the crossroads of two interstate highways. I-90 moves traffic east and west across the county along the northern border of Sioux Falls. I-29 intersects with I-90 on the northwest edge of Sioux Falls and moves traffic north and south through the center of the county. Commercial and industrial development has occurred to varying degrees at the 10 rural interstate exits. As can be expected, the most significant development has occurred at the interchanges nearest Sioux Falls. The Crook/Renner interchange on I-29 has attracted primarily industrial uses. The EROS interchange on I-90 near the northeast edge of Sioux Falls has capitalized on the tourist trade and include fireworks outlets and a large campground.

The Brandon interchange is a mix of urban industrial uses on the south side of I-90 and agri-business uses on the north. Further growth is expected at this interchange due to rail access and the close proximity to municipal services. The Hartford interchange also has a similar development potential. Industrial uses have recently located at this interchange and the close proximity to municipal services will provide future growth opportunities.

The Earth Resources Observation Systems (EROS) Data Center is the largest single employer in the rural area. Located in the northeastern part of the county, the center employs over 350 persons and offers services and research in photographic and satellite imagery. A major addition to the facility was completed in 1996.

A large outdoor amusement park has developed four miles west of Sioux Falls. The facility offers several water activities including slides and a lazy river, go cart racing and a trap shooting area.

Several salvage yards were in operation when the first zoning ordinance was adopted. Most have remained in business either as nonconforming uses or been granted industrial zoning status. Some nonconforming commercial and industrial uses exist in residences and out buildings on isolated rural acreages.

The rural area will continue to experience pressure to provide locations for both commercial and industrial development. Rail access, large contiguous undeveloped land parcels, increased traffic volume, rural population growth and lower land costs will influence future commercial and industrial land use patterns.

Agricultural Land Use

Agriculture is by far the largest land use category in the county and is a vital part of the regional economy. The industry has experienced significant changes over the past few decades, resulting in the consolidation of land into larger farming units. In 1964, 1,876 farms were operating in the county. By 1992, this figure had dropped to 1,262 farms. Yet this trend has not diminished the economic importance of agriculture.

The character and identity of the rural area has been lost or dramatically altered with the influx of nonfarm uses. Agricultural land in close proximity to the Sioux Falls metropolitan area has experienced pressure for conversion to residential, commercial, industrial and recreational uses. Recent trends suggest that nonfarm development is pushing even further into traditional rural areas because of an expanding regional population and the willingness of workers to commute greater distances. Another contributing factor is that people are searching for more isolated sites where scattered nonfarm development has not occurred. They are also seeking some assurance or "peace of mind" that this rural identity will not be jeopardized by others who want to move to the country. The county's density zoning requirements will assist in preserving the rural character to the mutual benefit of the residents, farmers and local governments.

This rural development phenomenon has also made it more challenging for farmers to continue operating on the remaining land. Farmers must deal with complaints from their nonfarm neighbors ranging from livestock odors and the application of animal waste to dust from farm fields and the late night operation of equipment. As farmers implement new agricultural technologies and adjust to market conditions, conflicts with neighbors are likely to increase.

The growing nonfarm population will make it increasingly difficult for farmers to improve the efficiency and effectiveness of agricultural operations. Farming does not need a high level of public services. But such services are demanded by other residents, especially road improvements, better maintenance and repair, and faster snow removal. These services must be financed by an increase in property taxes, most notably at the township level. This has a negative impact on farmers because they are not capable of increasing income to offset the added cost of doing business.

When farm land is converted to other uses, the land is generally assessed at a higher level which tends to artificially inflate the value of surrounding agricultural land, translating into higher property taxes. The lower the profitability of farming, the greater the potential for land conversion. The immediate cash profit resulting from higher urban land values also has a powerful influence over a farmer's decision whether to maintain the land in agricultural use.

There are some areas of the county where farming is no longer a long term option. Contributing to this trend are land use conflicts, parcels too small to support farming, constraints on implementation of new technology and economies of scale, and artificially inflated land values and urban service costs

leading to higher property taxes.

Public/Semi Public Land Use

Park and recreational facilities, churches, schools, and government land and buildings are classified as public and semi public uses. These uses cover a wide range of activities and vary greatly as to their impact on other land uses.

Park and recreational lands are under the jurisdiction of either Minnehaha County, the State of South Dakota or the federal government, and together comprise the largest number of acres within this sector. County owned properties include Wall Lake Park and beach area in western Minnehaha County, and McHardy Park on the southeastern edge of Brandon. Palisades State Park, the Big Sioux Recreation Area and Beaver Creek Nature Center are state facilities. Several state and federal land parcels provide public access for hunting and fishing. Not only do these lands provide outdoor recreational opportunities, they also protect and preserve unique and scenic natural resources and environmentally sensitive areas.

Municipally owned land is prevalent in the rural area due to the needs which must be met by cities in providing public services and the necessity for some uses to be located on sites separated from populated areas. Municipal sanitary landfills were once commonplace throughout the county, usually located just outside city limits. Federal and state environmental requirements forced the closing of all but the Sioux Falls landfill, which now serves as a regional site for the disposal of solid waste. The site is located on 160 acres with an adjoining quarter section reserved for future expansion. Several cities also operate wastewater treatment lagoons beyond their municipal boundaries.

Municipal wells are located on several rural sites owned by the city of Sioux Falls. It has become increasingly common for the city to acquire sufficient land around new well sites to buffer the water supply from potential sources of contamination and reserve land for future well field expansion. These areas are located primarily above the Big Sioux aquifer north of Sioux Falls. The city has also expanded into the Middle Skunk Creek aquifer near Lyons. The Minnehaha Community Water Corporation’s well field and treatment plant are located over the Big Sioux aquifer south of Dell Rapids.

The impact of public and semi public uses may be negligible but in other cases they require a higher level of support services than is normally needed in the rural area. The greatest impact generally results from excess traffic generated by users of a facility, such as visitors to a park or garbage trucks hauling to a landfill, impacting residents who live along access routes. These uses may also create objectionable characteristics such as noise, odor or unsightly appearance.

Most public and semi public uses have tax exempt status, removing the land from the tax role at a time when public service costs generally increase to support these uses.

Construction Aggregate Land Use

The mining of natural resource materials has been singled out for discussion due to its present and future impact on the rural area. Rock, sand and gravel extraction sites are scattered across the county and function mainly as a source of aggregate for the construction industry.

In the late 1800's, the East Sioux Falls Quarry Company began surface mining a pink stone known as Sioux quartzite. A 1904 company brochure stated that this stone was confined to a very limited area along the Big Sioux River valley and its tributaries surrounding Sioux Falls. The heaviest outcroppings were located along the bluffs and in the bed of the river in Sioux Falls and at the company's quarry in

East Sioux Falls.

By the late 1800's, East Sioux Falls had developed into a thriving community located along the Illinois Central Railroad six miles east of downtown Sioux Falls. Stone cutters supplied building and paving stone to many construction projects in Sioux Falls. This period of history is recorded in the many distinctive quartzite structures located throughout the county.

The East Sioux Falls quarry along with two other quarry sites east of the Big Sioux River closed shortly after the turn of the century. Three quarries currently operate in the county. The quarries in Sioux Falls and Dell Rapids have been in operation for many years. A third quarry was opened in 1984 one mile west of Rowena. Numerous rock outcroppings in the southeastern part of the county combined with increased competition among area construction companies led to other attempts to open quarries. Such efforts failed in part because of opposition from nearby landowners.

Negative impacts associated with quarrying include dust, noise, blasting, groundwater depletion, truck hauling and unsightly appearance. Companies naturally seek to mine sites where the rock is at or near the surface. Ironically, some of the residential construction which is fueling the need for aggregate has located in areas which will conflict with present and future extraction operations.

Much more prevalent are the sand and gravel pits dispersed across the county which supply aggregate to road construction and building projects. Extraction sites have also concentrated along Skunk Creek west of Sioux Falls. A large sand extraction operation opened in 1994 one mile northeast of Corson. Smaller isolated pits are scattered throughout the county and generally supply local needs such as gravel for township roads and an occasional project involving nearby highway construction. Many of these pits experience only limited usage while others remain inactive for several years at a time. The level of activity is generally dictated by the number of road or other construction projects in the general vicinity of these pits. Residents who have recently built in the country are usually surprised and upset when an unexpected flurry of activity occurs in previously inactive or seldom used pits.

Special Purpose Districts

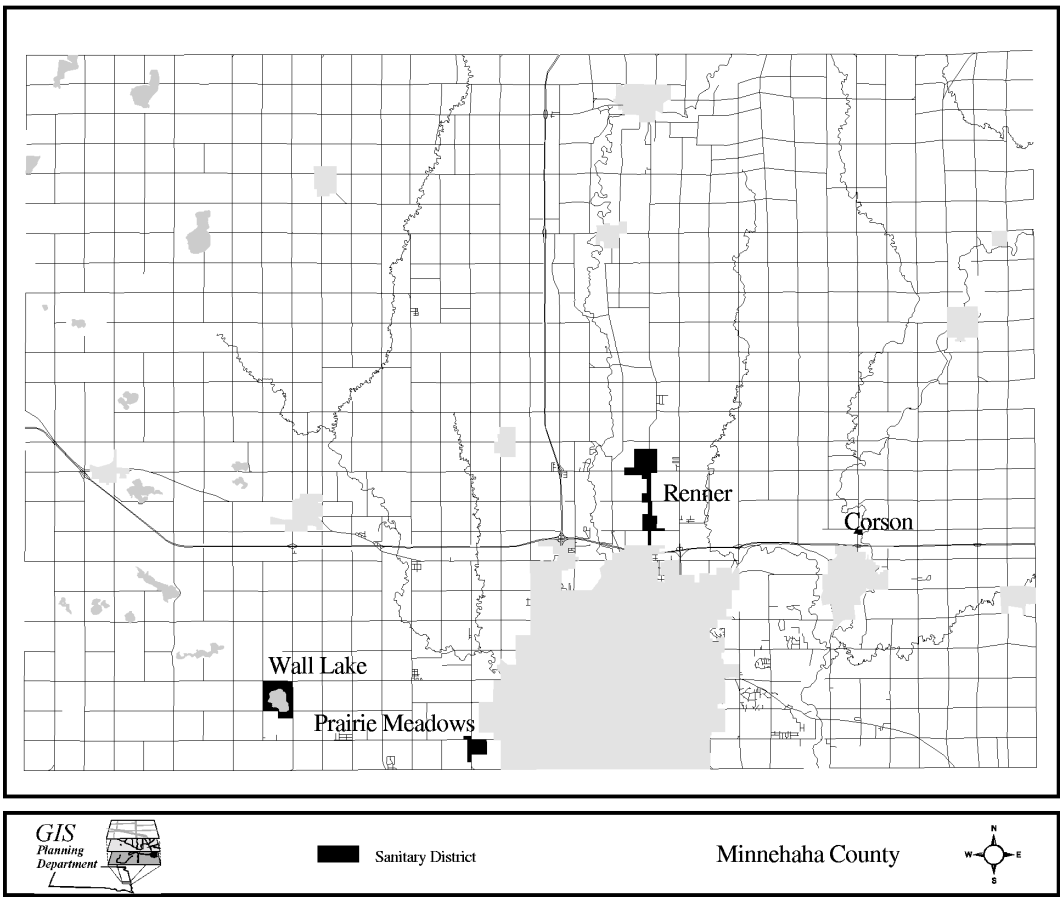
Public services such as street maintenance and repair, snow removal, police and fire protection, parks, and sewer and water utilities are the responsibility of municipal government. Residents who live in the rural area derive these services in a variety of ways. Some services are the responsibility of the individual homeowner such as water supply (well) or wastewater treatment (septic system). Other services are provided by various governmental and quasi-governmental entities and even voluntary organizations. These service providers are outlined in the following sections.

Wastewater Treatment

Rural residences and businesses depend almost exclusively on individual on-site wastewater treatment systems. As these systems became more concentrated, sanitary districts were organized to address health and environmental concerns.

Eight sanitary districts have been formed in Minnehaha County. Four of these districts no longer exist due to municipal incorporation or annexation. The Brandon and Crooks sanitary districts dissolved when the service areas were incorporated as municipalities. The Norton-Froehlich and Hayward

Sanitary Districts | Map 5



Districts were annexed into Sioux Falls. Two other districts, Renner and Prairie Meadow, provide collection systems which transport the wastewater to Sioux Falls for treatment. The locations of these districts are shown on Map 5.

Wall Lake Sanitary District was formed to provide a central collection and treatment system to lake front residences. A lagoon located one-half mile south of the lake stores and treats the wastewater. The unincorporated community of Corson also functions under a sanitary district. A somewhat unique system is employed, where the septic tanks are connected to a central collection system which transports the liquid effluent to a lagoon. All solids remain in the individual septic tanks to be pumped as needed.

Sanitary districts are created and operated pursuant to state statutes. Boundaries are established and a majority vote of the residents is required to create the district. An elected board of trustees governs district operations. A district has the power to borrow money, construct and maintain facilities, levy taxes and special assessments, and issue bonds.

Water Supply

Two rural water systems serve the county. The Minnehaha Community Water Corporation service area covers most of the county. The corporation's well field and treatment plant are located above the Big Sioux aquifer midway between Dell Rapids and Baltic. The system serves over 3,000 individual

rural users in addition to the cities of Baltic, Crooks, Dell Rapids, Hartford, Humboldt and Sherman.

The North Lincoln Rural Water system extends into areas along the southern border of Minnehaha County. In some isolated cases, the lines of these two systems pass through the same area. The North Lincoln system purchases treated water from Sioux Falls. Rural water systems are governed by state statute and have powers similar to sanitary districts.

Roads

The roadway system in rural Minnehaha County consists of federal and state highways maintained by the state of South Dakota, the county highway system regulated by the County Commission, and section line roads under township jurisdiction. Federal and state highways and all but a few miles of the county highway system are hard surfaced. Township roads normally have a gravel driving surface.

The platting of rural subdivisions created roads as either public rights-of-way or private roads and easements. Townships generally refused to accept responsibility for subdivision roads and developers made no provision on the plat for maintenance, repair and snow removal.

The responsibility for subdivision roads has been a disputed issue between township boards of supervisors and residents. Many boards will not extend their authority beyond section line roads. A few townships have accepted subdivision roads after they are constructed to adopted standards but most provide little or no assistance.

In some cases the developer created a homeowner's association when a subdivision was platted. This provided a mechanism for residents, through the association, to assess properties an annual fee to pay for the cost of road maintenance and snow removal. Where no formal association exists, subdivision residents depend on the voluntary cooperation of neighbors to finance and perform maintenance and repair work.

People who move into rural subdivisions expect roads to be maintained as they were accustomed to as city residents. Residents who do not receive township assistance on their roads cite the fact that they are paying township property taxes and should receive the same services that are provided to other township residents.

State statutes provide the mechanism to form a road district for constructing and maintaining roads. The district is governed by an elected board of trustees and granted powers similar to a sanitary district. There are currently no road districts in Minnehaha County.

Special District Impacts

In most instances a special purpose district is created to provide a service which is not available from a governmental entity. Oftentimes a special district is necessary to alleviate a problem or satisfy public demand. However, fragmentation in the delivery of services acts as a deterrent to orderly and efficient growth patterns because there is no coordination among the various service providers.

The Renner Sanitary District was created to eliminate the use of septic systems above the Big Sioux aquifer, thus reducing the potential for contamination of the Sioux Falls municipal water supply. In return for accepting the district's sewage, the city limited hook-ups to a maximum of 400 users. This figure was based on the number of existing residences plus undeveloped lots.

A significant amount of undeveloped land within the Renner Sanitary District could be served by

the sewer system if hook-up restrictions did not exist. Additional development could potentially increase revenue and reduce monthly user fees but such growth would be premature without other urban infrastructure.

In the case of the Prairie Meadows Sanitary District, immediate action was required to abate a health hazard caused by septic systems constructed in an area with a high water table. Operation and maintenance costs proved to be costly to the district due to poor installation, excessive flows from the discharge of sump pumps into floor drains, and a slowdown in new residential construction within the district which produced lower revenues than initially projected to retire the construction bonds. These factors forced the board of trustees to substantially increase monthly user fees. It is unlikely that these problems, or at least the severity of problems, would have occurred if proper growth management practices had been in place.

Special purpose districts can impact growth patterns by encouraging development where a particular service is available. This is illustrated quite vividly in the case of the rural water system. Farmers were to be the main recipients but to qualify for federal financing and reduce unit costs, landowners were encouraged to buy additional hook-ups to service future building sites and bulk user permits were offered to future rural subdivision developments.

This is one of several factors that contributed to the explosion of nonfarm residences during the 1970's. The county was ill prepared to handle the increased growth pressure under zoning regulations in effect at the time. Today many rural water hook-ups go unused because demand has shifted or developmental problems exist in subdivisions where rural water is available.

Special purpose districts provide a unique and invaluable service. But some districts could have been avoided through proper planning. The county must move toward a growth management system which addresses the complexities and conflicts from development promoted by single purpose districts.

Future Development Considerations

An ill-conceived plan results in actions which are reactive, requiring elected officials to solve immediate problems rather than basing decisions on a desired course of action.

The previous discussion has identified several factors which will interact and impact the formulation of this plan, underscoring the complexity of the various factors which relate to the decision making process and future development patterns. The following discussion summarizes these major factors and how they relate to the future development of Minnehaha County.

Fragmentation of Public Services

The more fragmented the delivery of services becomes, the more difficult it will be to coordinate and manage growth. The county has been fortunate to have avoided a proliferation of governmental and quasi-governmental jurisdictions that are present in other metropolitan areas.

Urban fringe developments were annexed by existing municipalities rather than incorporated as separate cities. In some cases, however, special purpose districts have been created to address sewer and water needs in the rural area. These individual entities by their very nature each pursue their own self serving interests, regardless of the costs imposed on others. For example, excess capacity in a portion of the rural water system’s service area may encourage the company to promote further growth to capitalize on investment even though such growth could be detrimental to a sanitary district and necessitate costly

and inefficient improvements. Furthermore, the township may have to reconstruct roads to accommodate the extra traffic. Likewise, the water system may be negatively impacted by the actions of other entities. Communication and coordination among the various entities is usually nonexistent.

Unless sprawl type development patterns are curtailed, the need for more sewer districts, new road districts, and drainage districts will become a very real possibility. In formulating development policies, the county is in a position to avoid the further fragmentation of service delivery systems.

Cost of Services

Municipal decisions involving development projects are generally related to the cost of providing services to the growth areas. Location, timing and intensity of new developments enter into such decisions. Service costs can be adversely impacted if, for example, severe limitations exist for extending services or development precedes such services. Counties on the other hand have very little direct responsibility for providing services, limited primarily to roads and law enforcement, so development decisions are based to a lesser extent on public service costs.

Although sprawl development patterns have surfaced in some parts of the county, the ability to provide services has not yet been severely impacted. However, the potential for costly public expenditures related to sprawl development is just now being realized in addressing transportation issues at both the county and township level. As new housing tracts move deeper into agricultural areas, increased traffic on gravel township roads is necessitating a higher level of maintenance and in some cases public demands are being voiced for costly reconstruction and surface improvements.

Law enforcement can be expected to experience an increase in calls for assistance as the rural population grows. This will require additional personnel if emergency response times are to be maintained. The inherent inefficiencies of serving a more disperse population are evident.

The economic costs of sprawl have for the most part been hidden, ignored or quietly borne by a larger segment of the general population. This population base may include the township, county, state or even federal jurisdiction, but almost always extends beyond those individuals who directly benefit from the expenditures. A case in point is the construction of a central wastewater collection and treatment facility necessitated by the concentration, overuse, and malfunction of septic systems. In the past, federal and state grants and low interest loan programs have assisted sanitary districts in financing a substantial part of the construction cost. Construction costs involved in serving sprawl developments will undoubtedly be greater than for urban areas.

If the county does not avoid further concentrations of development in unserviced areas, the need for central collection and treatment facilities will increase, most probably without the assistance of outside funding sources. Federal and state funding assistance has been declining and could be reduced even further in the future. This could mean a shift in the financial burden from benefitted homeowners to county taxpayers as a whole. County involvement may not end with financing but actually extend into ownership and operation of the facilities depending on the magnitude of the problem and the capacity of those being served to operate an independent system.

Environmental problems have an urgency which oftentimes require emergency measures that cannot be ignored or delayed until adequate resources are available, unlike poor road conditions which may be inconvenient and frustrating to drivers but where improvements can be delayed without affecting public safety and welfare.

Agricultural Preservation

A common misconception is that agricultural land uses are temporary, to continue until such time as the land can be developed for some other purpose. Minnehaha County covers 816 square miles or 522,240 acres. Once the land area for municipalities, existing nonfarm land uses, public right-of-way and unbuildable areas such as flood plains is removed, approximately 680 square miles (435,000 acres) could be considered as developable. This available land supply is capable of supporting an additional population of over one million people situated on one acre lots. Developed at an urban scale, this same land area could accommodate a population in excess of three million, depending on the allowable residential density. Clearly, the vast majority of the county's agricultural land area will not be needed to support the population and economic development projections made by this plan.

Agricultural areas have an identity just as a city and its neighborhoods, an identity focused on open spaces free of competing uses. The rural setting is a high amenity area with wide open spaces and natural beauty, making it a desirable place to live. Farmers use the same area as a source of employment and income. As further rural development occurs, agricultural areas stand to lose their identity to these nonfarm uses. By preventing the over development of rural areas, agricultural identity can be preserved and community identity strengthened.

When sprawl development is allowed to occur, the cost of public services increases, productive farmland is consumed, and the rural lifestyle that attracted many people to the area in the first place is diminished. Sprawl destabilizes agriculture by creating the temptation to "sell out". The eventual sale to a developer reduces incentives for farmers to make long term capital investments. The primary purpose of rural areas is not to accommodate growth. This is a function most appropriate for urban areas. Average densities should be kept low to preserve the county's agricultural base and avoid inflating agricultural property values.

Land consumption is not easily quantifiable at the county level. Municipalities can determine the amount of land that will be needed to accommodate the projected population, designate future growth boundaries based on where utilities can be efficiently extended, and determine the timing for development. At the county level where abundant land is available for development, land use decisions must still be based on a systematic analysis of public infrastructure requirements and costs. It should also be recognized that the conversion of agricultural land to other more intense land uses is permanent and not likely to revert to past usage. Therefore, agricultural land should be viewed as a limited and nonrenewable resource that should be preserved and protected.

The county must guard against future growth patterns which produce sprawl development. The major question is how much of the future population can be placed in the rural area without creating the need for costly public investments and reducing the integrity of agricultural resources. The answer lies in the county's ability to channel the majority of the population into compact and efficient development patterns. This can best be accomplished through a continuation of density zoning standards already in place. Land use restrictions should not be viewed as a limit on growth but as being smart about how growth happens.

5. Future Development Plan

County land use decisions will have far reaching effects on future development patterns not only within the rural area but for the municipalities as well. These impacts will range from quality of life issues to public facility and service needs. Careful study and analysis of the location, density and timing of development is important to the future vitality and liveability of Minnehaha County.

Minnehaha County is not a large service provider in terms of supporting physical development. The provision of public services and facilities is generally limited to law enforcement, roads and recreation. Water supply and distribution, wastewater collection and disposal, storm water drainage, and fire protection are either municipal functions or the responsibility of special purpose districts which have been created to provide for a specific service. Townships will continue to be responsible for a substantial portion of the local rural road system. Whether these services can be provided in an economical and efficient manner will in part depend on the county's ability to manage future growth.

Minnehaha County has the role not only to promote orderly, compatible and efficient growth within the rural area but also to ensure that land use decisions are in the best interests of other governmental entities who will eventually be expected to provide services to development areas.

Projections to the year 2015 indicate that over 1,900 housing units will be constructed in the rural area and additional agricultural land will be converted to commercial and industrial uses, causing significant changes in the county's physical environment. This anticipated growth will present challenges to the Planning Commission and the Board of County Commissioners as well as to citizens of the county in dealing with substantially more population and economic development than exists today.

Goals

The identification of goals in the planning process is the initial step in charting a broad direction which the county intends to pursue. Goals are an end which may never be achieved but represent ideals or targets and should be used to guide and support decisions relating to future development. The general goals of the plan are:

- **To provide for orderly, efficient and economical development.**

- **To manage growth within the framework of the Development Plan and municipal comprehensive plans.**

- **To enhance communication and cooperation among the several governmental and quasi-governmental entities who have the potential to impact and influence development patterns.**

- **To maintain a viable agricultural economy and preserve the rural quality of life.**

- **To maintain a distinction between rural areas and the cities and to preserve and enhance community identity.**

- **To provide a choice of living environments for county residents.**

- **To achieve the maximum efficiency in the provision of public services and facilities.**

- **To support and encourage growth of the county's economic base and promote the expansion of job opportunities.**

- **To promote aesthetically attractive development in the rural area.**

- **To preserve environmental, historical, and cultural resources.**

- **To provide a transportation system that promotes the safe and efficient movement of people, goods and services.**

Planning Areas and Policies

To assist in meeting the stated goals, the Future Development Plan shown on Map 6 (pocket insert) divides the county into four planning areas. Policies have been identified to provide specific direction and intent regarding the future growth of each planning area.

Existing Municipal Areas

These areas are defined by the current boundaries of the incorporated cities. Although cities control their own planning and zoning activities, county land use decisions will have a very real impact upon future municipal development patterns and the ability of each community to efficiently provide for future public services and facilities. The following policies apply to municipal planning areas:

Policies

- Concentrate future nonfarm growth in or contiguous to municipalities where public infrastructure can be economically provided. Maximize the utilization and efficiency of existing public facilities and services.

- Discourage premature development in municipal fringe areas.

- Seek the input of municipal officials in the review of development proposals which could potentially impact future municipal expansion and public infrastructure projects.

- Encourage annexation of potential development sites within municipal fringe areas before development plans are approved.

- Promote cooperative efforts with the municipalities in dealing with growth issues. Municipal requests for extraterritorial zoning jurisdiction should be guided by the procedures outlined in the Plan Implementation chapter.

- Insure that future rural development does not detract from the implementation of municipal comprehensive plans. Recognize municipal growth plans when considering future development proposals.

- Preserve the identity of existing communities by discouraging sprawl and leapfrog development.

- Encourage a pattern of development in transition areas which can be integrated into municipal planning areas without the need for costly and inefficient public infrastructure expenditures.

Transition Areas

Transition areas are characterized by a mix of land uses. Farming activities are expected to continue operating among rural residential subdivisions and scattered residential acreages. Transition areas are further characterized by vacant parcels too small to support long term agricultural use. It is recognized that this will create development pressure for conversion of land to alternative uses. Transition areas are generally located adjacent or in close proximity to the metropolitan area and the other freestanding communities. A portion of the land within transition areas will be annexed during the planning period and provided with public infrastructure while other land will remain outside municipal boundaries and lack public services. Transition areas are not projected to support long term agricultural uses nor will intensive farming activities such as concentrated animal feeding operations be appropriate uses.

The physical boundaries of most cities will expand during the planning period, with growth occurring within the transition areas delineated on the Future Development Plan. Regional and national economic conditions, and the ability of the municipalities to meet public infrastructure demands, will determine the timing and extent of urban expansion. The intent is to maintain clearly defined urban areas within the county.

A broad transition area is designated around Sioux Falls, extending east to Brandon, but the two cities are not expected to grow together during the planning period. Sioux Falls' year 2015 growth boundary is delineated on the Future Development Plan, and Brandon's urban border is expected to extend only to the Big Sioux River, with the intervening land supporting several large lot rural subdivisions. Transition areas around the other cities should more closely reflect future municipal boundaries.

Policies

. Promote optimum land use relationships and minimize land use conflicts.

. Promote cooperative efforts with the cities in dealing with development issues in municipal fringe areas.

. Utilize the planned development zoning district to accommodate a mix of land uses, promote the arrangement of uses on a comprehensive rather than piecemeal basis, and address problems related to existing land use patterns.

. Encourage new residential construction to locate on previously platted lots and other parcels which already qualify as building sites.

. Consider limited development in those areas where parcel size and competing land uses have substantially reduced the economic viability and future success of agricultural operations.

. Restrict development of transition areas so service improvements are not needed before municipal infrastructure can be economically extended.

. Employ a density standard of one dwelling per quarter-quarter section in those areas where current land use patterns have not significantly impacted farming operations.

. Work with the Minnehaha Community Water Corporation to ensure that future water system improvements do not conflict with county development policies and the long term viability of agricultural operations.

. Limit rural densities so that current service levels are not exceeded, thereby avoiding the creation of special purpose districts (i.e. sanitary, water and road districts).

. Coordinate the siting of industrial uses with the Minnehaha County Economic Development Association.

. Enhance industrial development by restricting incompatible land uses in areas where rail access is

available.

. Preserve and protect natural drainage systems within development areas. Storm water management plans for the entire drainage basin should be required as a prerequisite to development.

. Restrict development in areas where unsuitable soils and other physical limitations are present.

. Preserve sensitive environmental areas through the development review process.

. Minimize soil erosion and siltation by requiring proper site preparation and construction techniques.

. Maintain an inspection program that ensures proper installation of on-site wastewater treatment systems.

. Discourage strip development along transportation arteries, particularly those which serve as gateways to the cities and major activity centers.

. Restrict development along major transportation corridors for future right-of-way acquisition and to minimize future construction costs.

Commercial Agricultural Areas

Agricultural land is commonly viewed as a temporary use just waiting for the opportunity to be developed. Only a small percentage of the county's agricultural land base will be needed to support the population and economic growth expected to occur during the planning period.

Commercial agricultural areas are generally those areas which have experienced little or no competing nonfarm development. These areas are intended to be preserved for farm related use where such activities can freely operate without the need to impose restrictions due to competing uses. A density standard not exceeding one dwelling per quarter-quarter section of land should be maintained for the planning area. Small scale developments should not be allowed because of their cumulative negative impact on agriculture and the increased need for urban type services.

Policies

. Restrict the density of residential uses within commercial agricultural areas and direct higher developmental densities to the municipalities.

. Preserve and protect the agricultural productivity of rural land by restricting the development of nonfarm residential sites. Maintain a residential density of not more than one building site per quarter-quarter section.

. The premature development of agricultural land should be discouraged.

. Discourage development patterns that require public improvements financed in part by the farming community but which are not necessary to support agriculture.

. Limit rural densities so that current service levels are not exceeded, thereby avoiding the creation of special purpose districts (i.e. sanitary, water and road districts).

. Discourage the splitting of land parcels into fragmented units which are incapable of supporting farming activities.

. Protect the rural area from uses which interfere and are not compatible with general farming practices.

. Avoid regulations which have a negative impact on farming operations.

. Promote development patterns which will avoid producing inflated agricultural land values.

. Within the framework of density zoning, every effort should be made to cluster residential uses and limit driveway approaches onto arterial and collector roads.

. Construction of infrastructure improvements in the rural area should be directed at addressing existing service deficiencies and not to justify additional nonfarm development.

. Work with the Minnehaha Community Water Corporation to ensure that future water system improvements do not conflict with county development policies and the long term viability of agricultural operations.

. Allow the siting of agri-business activities at appropriate locations in the rural area.

. Discourage the random and haphazard siting of commercial and industrial uses within the rural area where such uses do not support the agricultural industry.

. Protect construction aggregate resources by restricting adjacent land uses to those that are compatible with extraction operations. Require operators to meet developmental and operational standards.

. Regulate concentrated animal feeding and processing operations to protect environmental quality and minimize conflicts with human activities.

. Maintain an inspection program to ensure proper installation of on-site wastewater disposal systems.

Rural Service Areas

The county has been fortunate to have avoided development patterns distinguished by satellite communities with independent taxing authority encircling the metropolitan Sioux Falls area. Development which previously spilled into the rural area has either been annexed into one of the freestanding communities or is not of sufficient concentration to exert any significant influence or exhibit a community identity.

Cities will continue as the primary providers of goods and services to urban as well as rural residents. Historically, several areas outside the cities evolved as rural centers, located mostly along major transportation routes, providing basic convenience services to the agricultural community and highway travelers. Rail access played a part in the development of Lyons, Ellis, Corson and Rowena while areas such as Huset's Corner, Wall Lake Corner, Pumpkin Center, and Union Center developed along Highway 16 (now Highway 42). Highway 77 (now Highway 115) supported both Renner and Midway Corners while Buffalo Trading Post offered services to Highway 19 travelers. Rural service areas generally do not have an urban infrastructure and are not capable of supporting much more than limited development.

Many existing rural centers were severely impacted by the decline in the farming population, rail abandonment and construction of the interstate highway system - factors which eventually forced many businesses to close. Others continue to survive due to increased urbanization of the county and the ability to capitalize on the growing rural population. Higher traffic volumes on major roads in the county are likely to encourage the development of new centers and the expansion of existing ones.

The Future Development Plan encourages the majority of commercial and industrial development to locate within the cities. However, it is recognized that convenience goods and services as well as some industrial uses could be appropriately sited within the rural area. These locations include existing service areas where some reasonable expansion is appropriate and at major highway intersections.

Policies

. Promote optimum land use relationships and minimize land use conflicts.

. Discourage the random and haphazard siting of commercial and industrial uses within the rural area when such uses do not support the agricultural industry.

. Utilize the planned development zoning district to accommodate a mix of land uses, promote an arrangement of uses on a comprehensive rather than piecemeal basis, and address problems related to existing land use patterns.

. Coordinate the siting of industrial uses with the Minnehaha County Economic Development Association.

. Facilitate agri-business activities at appropriate sites in the rural area.

. Enhance industrial development by restricting incompatible land uses in areas where rail access is available.

. Locate commercial uses at interstate highway interchanges and high traffic intersections. Such uses should be developed in a nodal pattern and geared to the support of highway users.

. Discourage strip development along transportation arteries, particularly those which serve as gateways to the cities and major activity centers.

. Promote development patterns which maintain the safety and carrying capacity of major roads. Discourage strip development patterns.

. Preserve the environmental quality of the county with respect to economic development.

Development Plan Summary

Minnehaha County is expected to grow in population to 177,000 by the year 2015. The rural area will continue to accommodate new residential construction and also provide further opportunities for economic development. This additional growth will require a sound land use management plan that can effectuate a development pattern focusing on three main areas - economical provision of governmental services, harmonious development among competing land use interests and agricultural preservation.

This plan recognizes that the continued growth of Sioux Falls will exert a strong influence on what happens throughout the remainder of the county. The city is expected to expand its employment opportunities which will attract more people to the area. Since not all future residents will choose to live within the city, there will undoubtedly be development pressure on both the rural area and freestanding cities to accommodate future development. Minnehaha County must anticipate this growth and the potential impacts on local government's ability to provide an effective transportation system, law enforcement and emergency services, park and recreation facilities, and environmental safeguards.

The goals and policies established by this plan provide an overall direction for growth during the planning period. Locations for future development should be guided by the intensity and density of land uses. Urban densities should occur in the municipalities where existing and expanded infrastructure can best and most efficiently meet public service needs. This direction will also reduce the needless and premature conversion of productive agricultural land to urban uses.

The existing level of support services can be severely strained and farming operations adversely impacted by nonfarm uses. The county must strive to protect the integrity of its agricultural resources and ensure that this industry remains a vital part of the local economy.

While Minnehaha County will not be directly involved in municipal land use decisions, the actions of the county regarding development beyond municipal boundaries will most definitely impact the cities. Communication and coordination concerning future development must be maintained between the county and cities. Most cities will be confronted with rising costs for utility improvements to serve the expected growth. Commercial and industrial development will broaden municipal tax bases only when it occurs within the cities.

Residential development in the rural area prior to 1979 was allowed to occur virtually unrestricted which strained public services and conflicted with agricultural operations. This plan seeks to build on recent actions that recognize the importance of agricultural land and the adverse impacts resulting from over development of the rural area.

The plan acknowledges that a segment of the county's growing population will desire a rural life style. Such opportunities will continue but in the context of managing residential densities in order to reduce conflicts with farming and other special land uses (i.e. construction aggregate mining, solid waste disposal sites), preserve farmland and environmentally sensitive areas, and support efficient and economical delivery of public services.

The construction of over 1,900 housing units in the rural area will be significant and the impacts far reaching if planning area policies are not followed. The plan seeks to accommodate the projected growth in a manner which avoids costly public services and facility improvements and minimizes conflicts with agricultural uses.

The plan further promotes the clustering of houses by allowing the transfer of residential building sites to less desirable farmland so the more productive land remains in production and free of competing uses.

The plan encourages a future land use pattern that will maintain and strengthen community identity. This can be achieved by concentrating future development in the cities where residents can identify with a neighborhood, school, park or other community facility. Rural subdivisions usually lack a focal point that can foster a sense of community. Community identity promotes pride in home ownership and upkeep of property, and enhances crime prevention measures such as neighborhood watch groups.

Municipal planning traditionally determines the amount of land that will be required for each of the several land use categories based on population and economic projections, and directs growth into areas which can be developed with utilities and services at the most economical cost. In rural Minnehaha County, a projected 1,925 new housing units must be accommodated within a developable land area of some 435,000 acres. The foundation of this plan is the concept of density zoning which in a practical sense will spread the new residences across the land base, thus avoiding a concentration of development within the rural area. The disadvantage is that more residents will lead to even greater interference with farming operations and neighborhood objections.

The development policies accommodate residential uses consistent with the limited level of services in the rural area and discourage development of residential subdivisions in commercial agricultural areas. Transition areas will probably experience the greatest pressure to convert agricultural land to residential use and there may even be a tendency to push beyond these boundaries into predominately agricultural areas.

While it should be a policy to limit the platting of new residential subdivisions until municipal services become available, some development may be appropriate in transition areas if steps are taken to ensure that present services are not severely burdened and there will be compatibility with urban land use

patterns and services once annexation occurs.

Commercial uses should be allowed in the rural area as a convenience to highway users. Appropriate locations include interstate interchanges and the intersections of high traffic volume roads. Development should occur in compact patterns buffered from adjacent land uses. Driveway approaches should be properly located and designed to minimize the impact on traffic flow.

Commercial and industrial uses intended to support the agricultural sector should be accommodated at appropriate rural locations. Access to the regional highway and rail systems, ample land area and compatibility with neighboring land uses should be considered in siting such development. Land which is capable of providing rail access for industrial development is limited within the county and such areas should be protected from incompatible uses. Of primary importance to economic development in the county is the Corson area north of Brandon and the rail corridor extending southeast from Crooks.

Subarea plans should be prepared as development proposals emerge for specific areas of the county. While the Future Development Plan outlines a broad framework for growth, subarea planning can be an effective way to identify and address development issues in greater detail. The planned development zoning district will be a key component in formulating subarea plans.

Land Use Location and Design Criteria

Residential

Commercial agricultural areas

- Residential density of one eligible building site of one acre or more for each quarter-quarter section of land.
- Transfer of building eligibility to promote clustering of houses and preservation of the most productive farmland.
- Building eligibility on previously recorded legal descriptions (lots of record).
- Minimize driveway approaches onto county and state highways.
- Discourage land splits which erode the integrity of agricultural use areas.

Transition areas (lot size one acre or less)

- Availability of services and utilities that support anticipated housing densities.
- Density of one dwelling per quarter-quarter section where adequate services are not available.
- Natural drainage systems supporting ultimate development densities.
- Alternative wastewater treatment systems in future municipal growth areas to support smaller lots consistent with urban scale development.
- Hard surfaced subdivision roads accessing state and county highways.

Rural service areas

- Development limited by availability of services.
- Buffering from adjacent commercial and industrial uses.
- Alternative wastewater systems.

Commercial/Industrial

Agriculturally related businesses

- Adjacent to county and state highways.
- Rail access for industrial uses.
- Controlled access onto major roadways.
- Adequate buffering from neighboring uses.
- Convenient siting of commercial uses for customers.
- Hard surfaced driveways and parking areas.

Rural service areas

- Buffering from residential uses where a mix of uses has already occurred.
    - Nodal development pattern around high traffic intersections.
- Industrial park setting establishing optimum building orientation and landscaping amenities.
    - Intensity of development based on environmental considerations.
- Convenience uses serving highway travelers.
- Screened outside storage areas.
- Hard surfaced driveways and parking areas.

Special Uses

Intensive agricultural uses

- Includes feed lots, animal confinement facilities.
    - Environmental impacts - aquifer protection, runoff, land application of animal waste.
    - Adequate separation from residences, churches, institutional uses, parks.

Mining

- Developmental criteria based on type of extraction, intensity and duration of use.
- Appropriate separation from existing residences.
- Adjacent to hard surfaced roads or upgrade existing roads used for hauling.
- Visual considerations - berms and natural screening.
- Environmental impacts - noise, dust, blasting, hydrology.
- Reclamation as an ongoing process.

6. Transportation

A strong relationship exists between land use patterns and transportation systems. Projected population growth, new land developments, and changes in land use and density will necessitate improvements to the highway system within Minnehaha County. Rail, air and surface transportation systems must be maintained and in some cases expanded to support residential growth and business development. On the other hand, construction of new highways and improvements to the existing system will influence the location and timing of future development. Land use and transportation planning must be coordinated if the goals and objectives of the plan are to be achieved.

The existing transportation system in rural Minnehaha County consists of roads and railroads which move people and goods within and through the county. Air transportation is another part of the system but this travel mode is not expected to impact rural development patterns during the planning period. The Sioux Falls Regional Airport will continue to serve the area's air transportation needs from its present location in the city. A small local airport located at the I-29/Tea interchange in Lincoln County just south of Sioux Falls provides private air service only. No other air facilities are anticipated to develop in the rural area during the planning period.

Road Classifications

Minnehaha County's existing roadways are classified in the following manner:

- **State and federal highways** - These highways consist of the interstate system and a network of highways that carry both intra- and interstate traffic. The South Dakota Department of Transportation is responsible for system maintenance and improvements.

- **County highways** - Minnehaha County maintains 356 miles of roadway designated as the county highway system. County highways are hard surfaced with the exception of 15 miles. It is likely that a few miles of gravel will always be present because roads are periodically added to the system and programmed for improvement to handle higher volumes of traffic. The system carries traffic between major attraction points and connects to the state and federal highway system. Together these two systems provide continuous travel throughout the county and link with roads of similar function in adjoining counties.

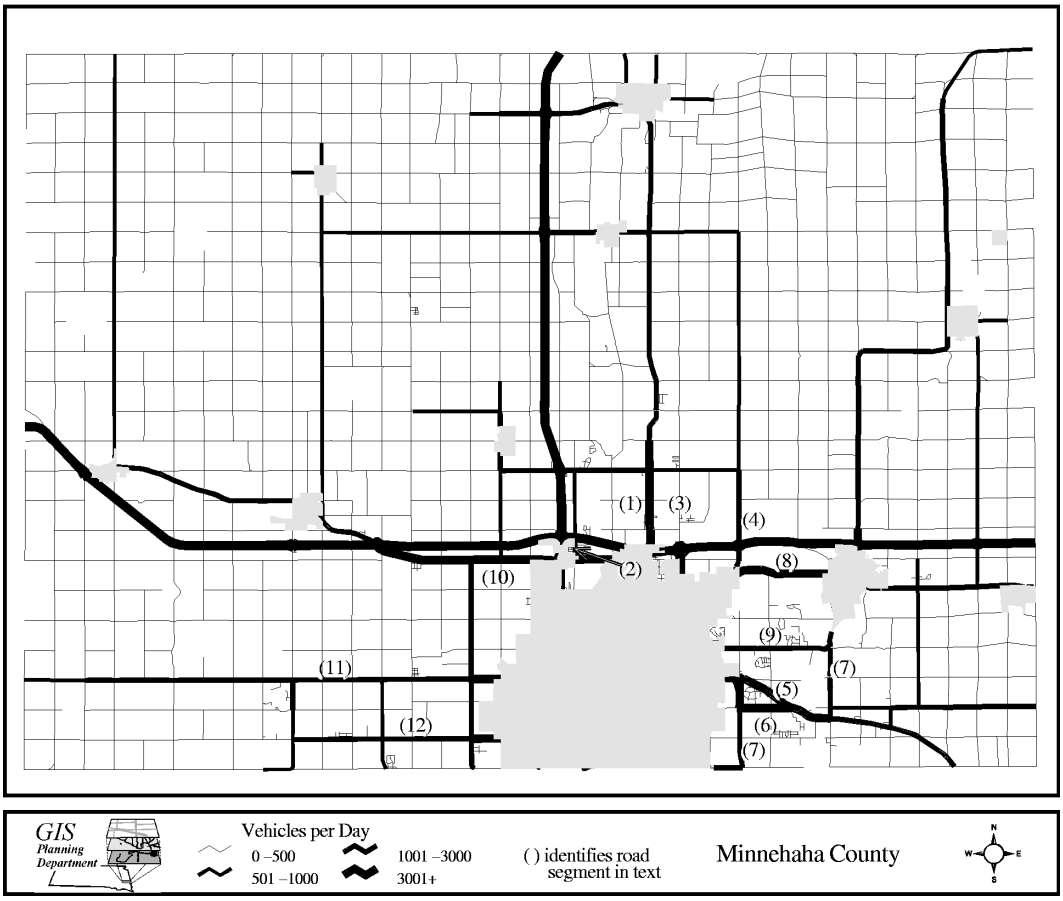
- **Local roads** - Local roads are mainly section line gravel roads maintained by the 23 townships in the county. The local system also includes both publicly dedicated and private subdivision roads. In some instances townships have assumed responsibility for maintaining subdivision roads. Otherwise, homeowner associations must take on this responsibility.

Traffic Patterns

Traffic counts conducted by the State DOT and the County Highway Department provide useful information on existing and future traffic patterns. This data will also be utilized to determine the most appropriate locations for future commercial and industrial development.

Interstate 90 crosses the lower one-third of the county and provides exits at seven locations in addition to interchanges at Interstates 29 and 229. The Cliff Avenue interchange is the only exit located within the city of Sioux Falls. Traffic volume on the rural portion of I-90 varies from 9,800 to 11,200 vehicles daily. I-29 bisects the county from north to south and provides three rural and five urban exits. Daily traffic volumes range from 14,200 just north of the I-90 interchange to 10,700 near the Dell Rapids

Traffic Counts | Map 7



exit. Commercial and industrial development has occurred at each of the rural interchanges except Valley Springs.

Traffic patterns are strongly influenced by the population base and economic activity of Sioux Falls. Traffic counts are shown on Map 7 and the major road segments are discussed in the following sections.

- North - State Highway 115 (Cliff Avenue)(1) provides the primary access into the northern part of Sioux Falls. Over 8,000 vehicles per day travel on the highway segment just north of the I-90 interchange. The highway also carries 2,600 vehicles near the Baltic corner and over 2,400 vehicles between Dell Rapids and I-29. Alternative access from the north is provided by Kiwanis Avenue (Co. Hwy. 131)(2) which carries nearly 1,100 vehicles near 60th Street N.

  476th Avenue (3), presently a gravel township road, connects to I-229 at the I-90 interchange northeast of Sioux Falls and has emerged as an important access route into the metropolitan area. Traffic uses a 2½ mile segment of 476th Avenue to avoid the increased congestion on Cliff Avenue, creating a strain on the gravel road. This unique interchange does not permit southbound vehicles to access I-90 from 476th Avenue, but once traffic enters onto I-229 the city's major industrial parks are accessible from the Benson Road interchange along with southern destinations in the metropolitan area.

County Highway 121 [4] connects to Rice Street in northeastern Sioux Falls and carries over 1,400 vehicles just north of the I-90 interchange. Traffic volume is influenced by the EROS Data Center located nine miles north of the interstate, an employment center for 400 workers.

- East - Highway 42 [5] serves southeastern Minnehaha County where traffic counts are impacted by the concentration of rural subdivisions east of Sioux Falls and the rapidly growing city of Brandon. The highway is also a major route for commuters and shoppers traveling to Sioux Falls from northwest Iowa. Over 2,700 vehicles pass through Rowena daily, increasing to 16,000 vehicles near Sioux Falls. East 26th Street (Co. Hwy. 146)[6] carries nearly 3,000 vehicles at the intersection with Highway 42, and the count increases to 5,000 west of Powder House Road.

  Traffic patterns are also influenced by Highway 11 (Powder House Road)[7] which enters the county from the south, joining Highway 42 east for three miles, before heading north to Brandon. Counts range from 2,200 to 3,700 near 26th Street and 1,500 to 2,000 vehicles between Brandon and Highway 42.

  Rice Street (Co. Hwy. 140)[8] links Brandon and Sioux Falls, carrying 4,000 vehicles daily. Madison Street (Co. Hwy. 142)[9] is also an important link between the two cities. Madison Street was originally a state highway but reverted to the county following reconstruction by the State DOT. Although current counts are not available, Brandon and several large rural subdivisions in the area contribute to significant travel on Madison Street.

- West - State Highway 38 [10] moves traffic into the northern industrial parks and to the airport, carrying 3,500 vehicles at the I-29 interchange. Highway 42 [11] carries in excess of 2,500 vehicles on the rural portion, increasing to over 5,100 on the western edge of Sioux Falls. County Highway 148 [12], an extension of 41st Street in Sioux Falls, carries nearly 4,200 vehicles at the Ellis Road intersection.

Traffic counts provide a useful and objective way of determining appropriate locations for future commercial and industrial development. Traffic volume is generally an important determinant in the location of commercial uses. The county should encourage the siting of these developments at high traffic intersections to form a compact or nodal land use pattern. Since higher speed limits are associated with state and county highways, commercial uses should ideally be directed to intersections having four-way stops so dangerous turning movements can be avoided. Likewise, strip type development should be discouraged so that high speed traffic is not impeded by numerous vehicles entering and leaving the roadways. Commercial development should also provide a convenience to highway traffic rather than being destination oriented. Destination uses promote more traffic that could potentially exceed roadway design capacity.

Agriculturally related industrial uses should also be accommodated in much the same manner as commercial uses. Although it may not be reasonable to concentrate all such development at major intersections, sites should at a minimum have access to a hard surfaced road. Consideration must also be given to the impact of additional traffic on existing roadways.

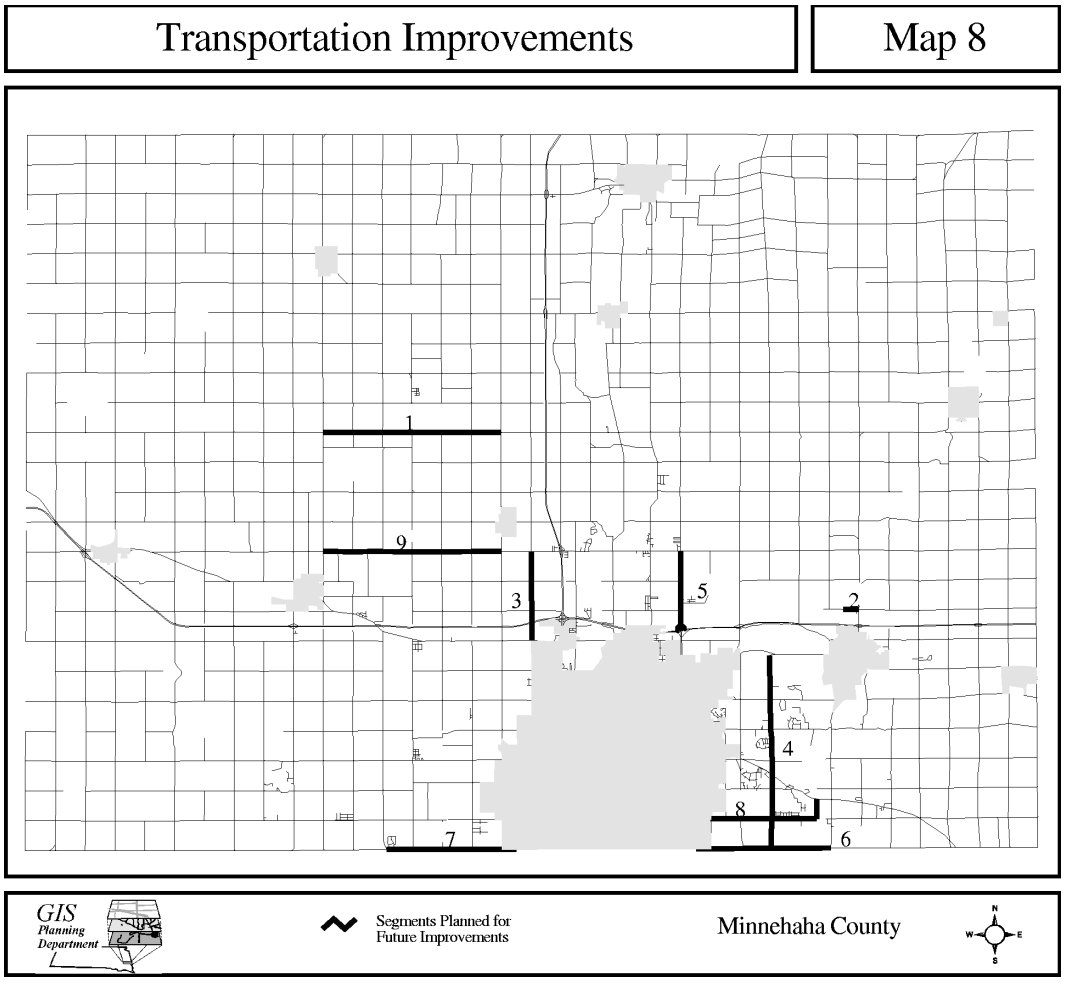
Transportation Improvements

Regional transportation planning is a coordinated effort of the metropolitan planning organization (MPO), comprising the counties of Minnehaha and Lincoln, the city of Sioux Falls, the South Eastern Council of Governments, the South Dakota Department of Transportation, the Federal Highway Administration and the Federal Transit Administration. This process assists in the identification of future improvement projects and areas for special study.

A 1995 MPO study was initiated to assess the need for a complete circumferential highway around Sioux Falls. The study concluded that an interstate type beltway was not justified based on area growth projections. However, the study did identify a need for a system of limited access high speed arterial roads to serve the city's projected growth areas. This system will typically develop on the network of section line roads which currently exist beyond the present city limits. The county will play an important role in the development of this system by preserving future rights-of-way, controlling the number of access points, and in some cases initiating improvements on road segments prior to annexation.

A majority of the county's highway construction program involves projects that expand the arterial system beyond the current Sioux Falls city limits. There is presently a need to improve some existing local roads on the periphery of Sioux Falls which carry significant volumes of traffic associated with the urban center. These roadways will complement the city's arterial street system and be developed as part of the metropolitan area transportation planning process.

The Development Plan reserves a large share of the rural area outside the year 2015 Sioux Falls growth area for agricultural use. Highway improvement projects in this area will consist mainly of upgrading existing gravel roads currently on the county system. This will provide a strong network of rural highways to support the agricultural sector and freestanding communities of the county.



Future Transportation Improvement Projects (project locations are identified on Map 8)

1) Realignment/reconstruction of County Highway 122.
2) 260th Street (Hwy. 11 west in Corson).
3) Marion Road (60th St. N. to 258th St.).
4) Six Mile Road (57th St. to Rice St.).
5) 476th Street (I-90/I-229 interchange to 258th St.).
6) 57th Street (Sioux Falls east across the Big Sioux River, including new bridge).
7) 57th Street (Sertoma Ave. to Hwy. 17.).
8) 41st Street (Sioux Falls east to Riverview Ave. and north to Hwy. 42).
9) Asphalt surfacing of existing gravel roads on county highway system.

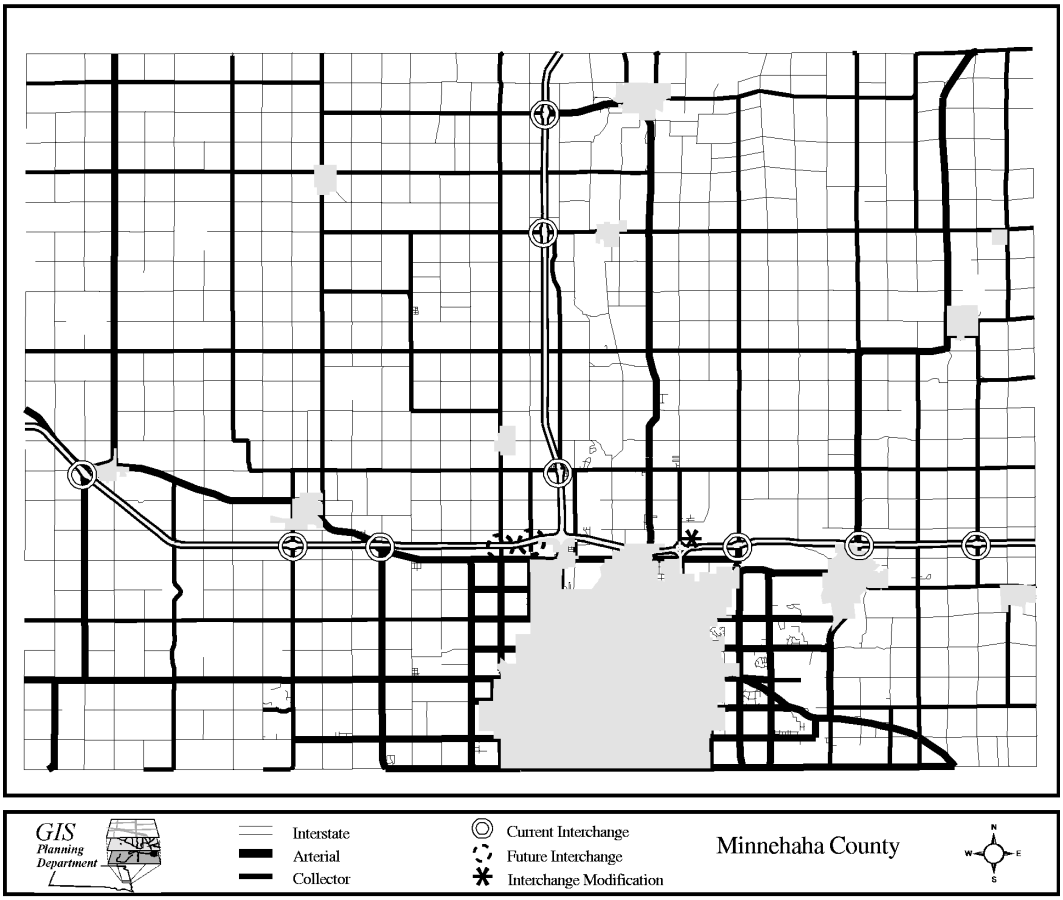
Major Street Plan

The Major Street Plan shown on Map 9 identifies the road system that is expected to evolve during the planning period to meet future transportation needs. Proposed projects will seek to minimize traffic congestion, ensure the safe movement of traffic, enhance convenience to the motoring public, and minimize user costs.

The Major Street Plan classifies roads as either interstate, arterial, collector or local. By properly staging road projects during the planning period, the desired growth patterns identified on the Development Plan can be achieved by influencing the direction and timing of growth. Additionally, the plan is designed to effectively move traffic through the county and between major attraction points. The metropolitan transportation planning process will provide the mechanism to coordinate projects among state and local governmental entities.

Further study is anticipated on a limited access arterial system encompassing the Sioux Falls urban area. The city's 2015 Comprehensive Plan has identified a potential corridor which would utilize Interstate 90 on the north and an enhanced arterial system on the periphery of the urban area.

Major Street Plan | Map 9



Access Management

Access management is the planning, design, and implementation of land use and transportation strategies that control the flow of traffic between roads and the surrounding land. Highways influence land use patterns by providing access to land which enables development to occur. In order to manage traffic along a highway, both land use and transportation strategies are necessary. Managing one without the other usually results in congestion, deterioration of the highway corridor, and landowner dissatisfaction.

The benefits resulting from access management include postponing or preventing costly highway improvements, improving safety conditions along highways, reducing congestion and delays, providing property owners with safe access to highways, and promoting desired land use patterns.

Current development patterns pose obstacles to implementation of the Major Street Plan. Scattered residential and commercial developments along roads identified for improvement will result in more difficult and costly right-of-way acquisition, and the numerous driveways add to design and safety problems. Land use strategies should be implemented to avoid a continuation of past development patterns such as strip commercial zoning and unrestricted access along transportation corridors.

Commercial and industrial uses should be arranged in compact centers of development. Building setbacks should be sufficient to protect transportation corridors for future right-of-way acquisition. Setbacks should also be used to maintain natural and scenic views along these corridors. Residential uses should be clustered so that internal subdivision streets provide direct access to lots and rural acreages share a common driveway. Metropolitan growth, economic development, and increased traffic generated by commuters, shoppers and tourists will require the expansion of the arterial system, primarily in the area surrounding Sioux Falls. Access management is necessary to achieve the safe, efficient and convenient movement of people and goods within the region.

Rail

Rail abandonments during the 1970's significantly reduced transportation service in Minnehaha County. The Burlington Northern Santa Fe Railroad is the only nationwide railroad currently operating in the county. A BNSF line extends from Sioux Falls northeast through Brandon and Garretson. The line splits at Garretson with one leg continuing northeast into Minnesota, linking to the BNSF core system which connects to West Coast and Canadian markets. The other leg runs southeast into Minnesota and Iowa, providing access to the southern Gulf markets.

The BNSF also maintains a line from Sioux Falls northwest to Madison, South Dakota. This line was spared abandonment through the creation of a two-county rail authority which assisted in the financing of rail improvements in order to preserve service to area grain elevators. Upon completion of these improvements, the authority was terminated and control reverted to the BNSF.

Abandonment of the Milwaukee Railroad led to the purchase of the line between Dell Rapids and Sioux Falls by the L. G. Everist Company. The company operates the D & I Railroad to transport rock from its quarry in Dell Rapids. The line connects to the state core rail system which extends south into Lincoln County.

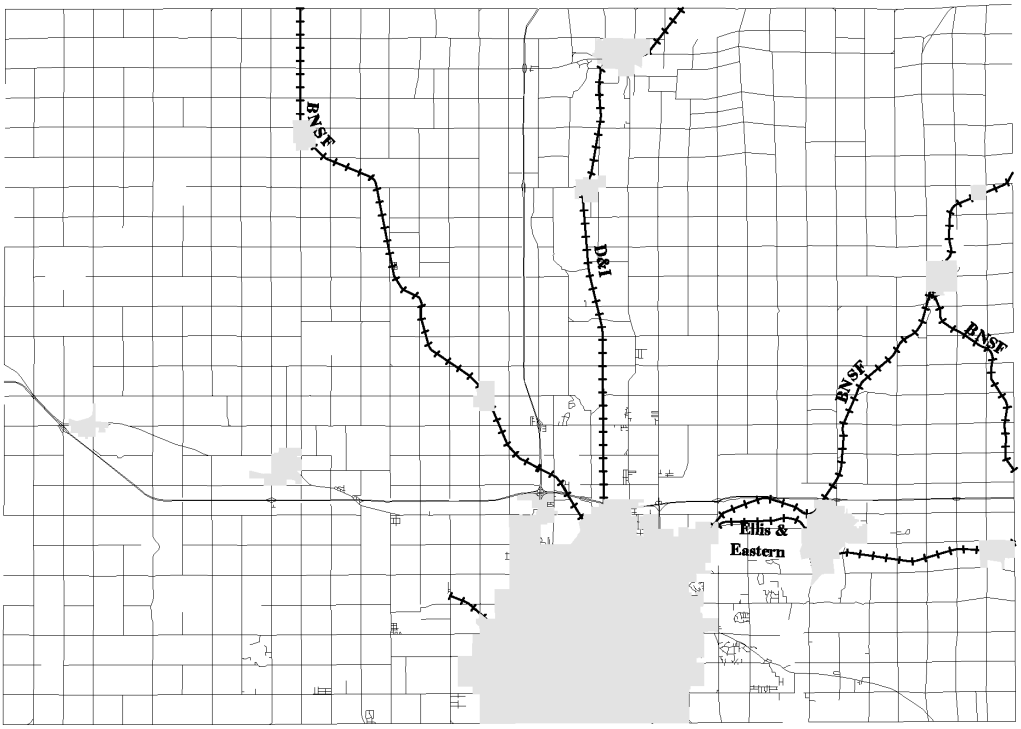
The Ellis and Eastern Railroad is another privately owned rail line operating within Sioux Falls and extending east to Brandon. Concrete Materials Company operates the line to transport construction

aggregate to local processing sites. The line continues east from Brandon into Minnesota but this segment has been inactive for several years and will probably be abandoned during the planning period.

The rail corridor from eastern Sioux Falls to the Brandon/Corson area has the greatest potential to attract industrial uses. In addition to rail, the area is served by an excellent highway network and is in close proximity to the urban population center. The area south of Garretson is also a potential development area although its attractiveness is diminished by the greater distance from the interstate system and urban population center. A third area with rail access extends southeast from Crooks to I-29. Although this area has good access to I-29 and the urban area, the branch line status of the rail is considered a negative factor in promoting development.

Due to the limited amount of land with rail access, it is especially important to protect these areas from land uses that are incompatible with industrial development.

Rail System | Map 10



GIS Planning Department

Minnehaha County

Traffic Demand Management

Traffic Demand Management (TDM) is the art of modifying travel behavior, usually to avoid more costly expansion of the transportation system. The most recognizable method of TDM is public transit which generally provides bus service in an urban setting. Sioux Falls currently provides bus service within the city limits. Interestingly, a municipality is prohibited by state law from providing public transit service beyond its borders.

TDM also includes other methods such as park and ride, car pooling, alternative work schedules and telecommuting. It is important to consider TDM within the scope of the Comprehensive Plan because of the numerous benefits which can be realized by county residents. Future development patterns will also determine the level of success in implementing TDM practices.

Public transit does not extend into the rural area or freestanding cities but there is evidence of other TDM activities. EROS Data Center, located six miles west of Garretson, is the workplace for 400 employees, many of whom live in Sioux Falls. A cooperative effort between employer and employees resulted in the purchase of vans which are used for ride sharing. Not as visible are the ride sharing efforts which have developed among commuters from outlying areas of the county, especially those who work for large Sioux Falls employers such as the hospitals.

Goal and Policy Statements

Goal

▫ To provide a safe and effective transportation system that promotes the efficient movement of people, goods and services within and through the county.

Policies

. Recognize the relationship between land use and transportation in planning for the county's future development needs.

. Encourage a future land use pattern that utilizes the capacity of the existing transportation system and minimizes further transportation improvements.

. Coordinate county transportation plans with the metropolitan area transportation planning process in the development of a regional system and the staging of improvements.

. Preserve the integrity of the present and future arterial and collector system through appropriate land use planning. Require adequate building setbacks along the system and restrict access from adjoining properties.

. Coordinate plans with the city of Sioux Falls in the development of a network of arterial roads that promotes efficient traffic movement and supports growth in projected development areas.

. Maintain a systematic program of county highway improvements based on traffic demand and changes in land use and traffic patterns.

. Utilize the Future Development Plan to assist in the location and timing of highway improvements.

. Develop a transportation system which supports the staged development and shaping of urbanizing areas.

. Discourage strip type development along major thoroughfares to maintain the carrying capacity of highways and to avoid conflicts with other land uses.

. Restrict commercial uses to those which provide a convenience to the traveling public. Direct destination type uses to sites where the transportation network is capable of supporting the additional traffic.

• Enhance opportunities for expanded transit services and other TDM activities by encouraging compact development patterns.

• Review subdivision standards to ensure the proper design and construction of new subdivision roads.

• Identify maintenance responsibilities as part of the platting of new subdivision roads.

• Require new development to finance road improvements needed to support increased traffic volumes.

7. Public Facilities and Services

Parks and Open Space

Goals

- **To enhance recreational opportunities and preserve the county's open spaces and unique natural features.**

- **To provide opportunities to engage in a variety of recreational experiences at the regional level which are safe, enjoyable and attractive.**

- **To provide recreational opportunities that are accessible and affordable to all citizens.**

Existing Facilities

Numerous recreational opportunities, both passive and active, are available in the county for residents and visitors to enjoy. Municipal, county, state and federal governmental entities contribute to the current supply of park and recreation facilities shown on Map 6 in the pocket insert. In addition, the private sector operates commercial outdoor facilities that include several golf courses, gun (trap/skeet) clubs and rifle ranges, and an outdoor amusement park. The natural environment also offers recreational activities such as hiking, sightseeing, fishing, boating and canoeing.

Minnehaha County maintains two parks, McHardy and Wall Lake, under the direction of the County Park Board, an appointed citizen advisory group, and the County Commission. In both instances, the land for these facilities was given to the county for park purposes. On a historical basis, the county has not actively pursued the purchase of park and recreation land. Rather, its role as a recreation provider has evolved as a result of individuals who donated property for public use.

Both parks are centered around the natural environment. McHardy Park encompasses 38 acres along the shoreline of Split Rock Creek. A foot bridge spans the river, making more of the park accessible to visitors. The park is a regional attraction for families and large groups where picnicking is the main activity. Two picnic shelters, play equipment and a ball field are provided and the river is accessible for fishing. Sledding is a popular winter activity. The park has a central water supply system but lacks modern restroom facilities. A large part of the park is within the Split Rock Creek flood plain.

Wall Lake Park consists of 25 acres along the south shore of the 220 acre lake. The park also provides approximately 800 feet of beach. A picnic shelter and play equipment are available along with a modern bathroom. Although the county has owned the property since the late 1940's, park improvements did not begin until 1985. The Girl Scouts used the rear portion of the property exclusively since the 1950's and continue to occupy this area under an agreement with the county. The summer cabin constructed in 1933 by the Lyon family, donors of the property, still stands on the property. The stone structure was renovated in 1993 to preserve its historical character and functions as a shelter for group activities. A large part of the park is undeveloped.

Wall Lake beach is a popular attraction simply because it is the only facility of its kind in the county. General park improvements, most notably maintenance and upkeep of the grounds and increased law enforcement, have made the facility into a more inviting attraction. Restoration of the lake was completed in 1993, enhancing water quality through dredging and conservation practices implemented

within the watershed and increasing the desirability of the beach for swimming. A sanitary district was also constructed to replace the residential septic systems around the lake. Due to the lack of water based recreation resources in the southeast region of the state, beach usage is extremely heavy and parking facilities are inadequate at times to accommodate the demand.

The South Dakota Department of Game, Fish and Parks maintains Palisade State Park along Split Rock Creek south of Garretson, the Big Sioux Recreation Area on the western edge of Brandon, and Beaver Creek Nature Center west of Valley Springs. The state also provides a boat ramp and parking area at Wall Lake. Both the state and city of Dell Rapids own property along the Dells of the Big Sioux south of Dell Rapids. Several acres of land located throughout the western part of the county have been acquired by the state for use as public hunting areas.

The U. S. Fish and Wildlife Service owns several acres in western Minnehaha County for public hunting and fishing access.

Park Classification System

The size, location, ownership, and type of activities determine the functional classification of parks.

- Municipalities generally provide neighborhood or community type parks. Neighborhood parks provide recreation activities primarily to children and are located within a safe and convenient walking distance of those intended to be served. Open space is available for spontaneous activities in addition to ball fields and play equipment. Community parks are larger in size and the service area often extends across the entire city. These parks can accommodate a large number of persons in all age groups, providing more extensive facilities such as swimming pools, tennis courts, lighted ball fields, picnic shelters, and restrooms. Community parks often attract users from beyond the municipal boundaries.

Municipal facilities play an important role in the total recreation picture but are not included in this plan because they are the responsibility of the cities. Nationally recognized standards are available to determine current municipal deficiencies and it will be the function of each city to assess its needs for future park and recreation facilities.

- Regional parks are generally centered around the natural environment and usually emphasize the preservation of natural resources. State parks function in this capacity, identifying with natural features such as water, scenic vistas, woodlands, and unique resources such as the quartzite rock outcroppings found at Palisade State Park. Camping facilities offer park users the opportunity for an extended visit. Trail systems are also common along with passive types of recreation. Highly developed facilities such as lighted ball fields are usually absent from regional parks. Depending on the uniqueness of a regional park, the service area includes a one hour or more driving time.

County parks are also included in the regional classification system. Although few South Dakota counties are in the park and recreation business, it is this level of government that is in the best position to fill the void which often exists between municipal and state facilities. A county park may have a somewhat smaller service area but exhibits many of the same characteristics as a regional facility, with the exception that camping facilities are absent and a user fee is not required.

Future Parks and Open Space

This plan encompasses the entire county as the planning area for future parks and open space. This is consistent with the primary role of the county as a provider of regional recreation facilities. Future planning will focus on natural amenity areas as potential sites for county recreation facilities in addition to the expansion of existing park areas. It is unlikely that the county will participate in major property acquisitions but rather depend on land donations to develop additional park sites. A system of open space areas should also be maintained through private land ownership, where such areas are preserved and protected from incompatible uses through sound land use policies and zoning controls. Proposed park and open space areas are shown on Map 6 in the pocket insert.

- **River greenway system.** Segments of the major water courses - Skunk Creek, Big Sioux River, and Split Rock Creek - offer the greatest potential to expand the county's recreation base by building on existing facilities associated with these natural amenities. Sioux Falls has developed an extensive greenway system within the city, encompassing nearly all of the Big Sioux River and a portion of Skunk Creek. The river greenway connects several city parks and provides a hard surfaced path for bicycling, roller blading, jogging and walking.

A 1993 study proposed that the greenway be extended along the Big Sioux River between Sioux Falls and Brandon. The greenway would connect existing facilities at the Big Sioux State Recreation Area on the western edge of Brandon, Brandon's Aspen Park and the county's McHardy Park through a joint effort of the local governments and the state. The study presented alternative routes for a trail system and identified major focal points for expanded recreational development. This is an ambitious undertaking which will take many years to complete, demanding the cooperation of four separate governmental entities and requiring a substantial commitment in financial resources.

A proposed water supply reservoir on Slip Up Creek northeast of Sioux Falls would provide opportunities for development of the adjoining land for park and conservation use. The site is located just north of Interstate 90 and could be easily connected to the Big Sioux greenway.

There is also an opportunity to expand the greenway along Skunk Creek west from Sioux Falls. A three to four mile stretch of the river corridor is currently a major source of sand and gravel. Area landowners, mainly local construction companies, have organized as a study group to identify the most appropriate future use of the property and determine the best alternatives for reclamation. A majority of the Skunk Creek corridor is outside the Sioux Falls year 2015 growth boundary so extensive urban development is not anticipated without adequate services, particularly sanitary sewer. This is a sensitive environmental area due to the underlying Skunk Creek aquifer, a potential water supply area for the city. Development options include recreational lakes created by extraction operations and expanded park and open space areas extending outside the immediate river corridor which could also serve as detention areas during flood events. Property owners should be encouraged to reclaim land consistent with future greenway improvements along Skunk Creek.

- **East Sioux Falls.** In 1887, the community of East Sioux Falls was settled six miles east of downtown Sioux Falls. This thriving city was the site of four separate quarries first owned by the Sioux Falls Granite Company and later by the East Sioux Falls Quarry Company. The following year the Illinois Central Railroad was constructed to serve the community's transportation needs. The pink quartzite known as Sioux Falls Jasper possessed a coloring which was extremely delicate and pleasing to the eye and superior in quality to other stones. The rock was quarried and cut into building stones and paving blocks, then shipped to construction projects throughout the country. The stone was used in several buildings in Sioux Falls, including the old County Courthouse at Sixth Street and Main Avenue, the post office at Twelfth and Phillips Avenue, the Carnegie public library, and the Pettegrew home which with the old Courthouse comprise part of the museum system.

Numerous structures were built in East Sioux Falls including cottages to house the workers, a post office, town hall, depot, school house, general store, hotel, grain elevator, stable, saloons and a jail. The community felt the impact of the slowing economy in 1891 and the 1893 depression added to the economic problems. By the turn of the century, concrete had taken the place of stone as a building material and East Sioux Falls was forced to give up its charter in 1913. People continued to reside in the community until the last few remaining buildings were demolished in the late 1980's.

This historic and scenic area is slated for preservation through the efforts of the city of Sioux Falls and Minnehaha County. Properties encompassing East Sioux Falls are slated for donation. The county may become the owner of the actual townsite and possibly one of the quarries. Two other quarries south of Highway 42 and the property extending east to the Big Sioux River are to be transferred to the city. The future nature center would encompass approximately 225 acres and preserve the historical significance and natural beauty of the site. A trail system is proposed that would bridge or tunnel beneath the highway and connect to the Big Sioux River. This area could become an important element in the regional river greenway system.

- **Expansion of Existing County Parks.** McHardy Park presents the greatest potential for expansion. The current park was developed on land donated to the county by the McHardy family. Adjacent land owned by the family provides an opportunity to increase the park size. Property to the south along Split Rock Creek could be integrated into the park and also facilitate the completion of a recreation trail connecting McHardy Park with Aspen Park in Brandon and eventually the regional trail system along the Big Sioux River into Sioux Falls. Another parcel to the east along Split Rock Creek could also become part of the park.

Expansion of Wall Lake Park south of the beach should also be considered. The beach is constricted by County Highway 146 (266th Street) which runs along the south side of the lake. Parking is not allowed along the beach due to safety concerns and the existing parking lot is not conveniently situated for beach users. Relocation of the highway to the south would enable expansion of the beach and construction of additional parking facilities. This plan would also open up the existing parking lot to persons who want to use the other park facilities.

Park and Open Space Policies

- The county's primary responsibility should be to provide regional park and recreation facilities located in natural amenity areas.
- The county should seek to fill the void between municipal and state facilities. Facilities and activities commonly associated with city or community parks such as lighted ball fields, tennis courts and large scale play equipment should not be included in county parks.
- Protect existing and future park and open space areas from incompatible development by employing appropriate land use controls.
- Contribute to the area's quality of life through a system of county parks which are properly sited and maintained.
- Explore the concept of a regional park commission to enhance development of an area wide park and open space system.

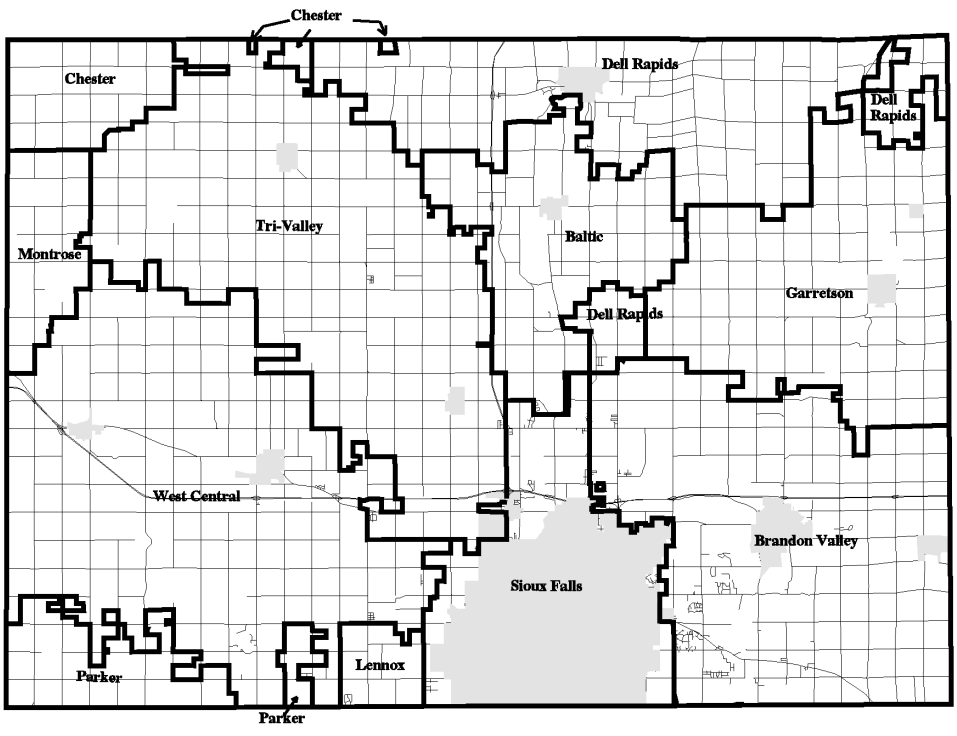
Schools

Educational facilities provide a significant contribution to the overall quality of life and economic

vitality of the county. Schools serve as focal points that foster the feeling of "community" within a broader geographic area. School locations have an influence on both traffic and land use patterns.

Seven school districts are headquartered in the county while four other districts are based in adjacent counties but extend into Minnehaha County-- Parker in Turner County, Lennox in Lincoln County, Montrose in McCook County and Chester in Lake County. School district boundaries are shown on Map 11. While most school facilities are located in a municipal setting, two schools currently occupy sites in the rural area. Tri-Valley School District facilities are located three miles south of Colton and Renberg Elementary serves the extreme northern portion of the Sioux Falls School District.

School Districts | Map 11



GIS Planning Department

School District Boundary

Minnehaha County

School enrollments for those districts based in the county have increased or remained steady since 1988. Table 12 shows student enrollment by district for the last 10 years.

The projected growth of Sioux Falls presents a significant challenge to several adjoining school districts. As noted in the city's 2015 Comprehensive Plan, anticipated growth will push the city limits beyond Sioux Falls School District boundaries, creating the need for five new elementary schools sites in the Brandon Valley, Tri-Valley and Lennox districts.

Future elementary school sites within the projected Sioux Falls growth area are based on a 1 ½ mile service area. It is expected that no additional school sites will be needed in the rural area. Future expansion is more likely to occur within the municipalities. If future school facilities are needed in the rural portion of the county, the site evaluation process should include a study of future transportation needs to meet anticipated traffic demands.

It is important to recognize that the policies identified in the Development Plan will assist school districts by directing growth toward the cities. The alternative of allowing a proliferation of houses into the rural area will increase bussing requirements and create additional demands for improvement of township roads.

TABLE 12
School Enrollment

School District	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Baltic	351	352	361	385	385	371	339	340	337	346
Brandon Valley	1,961	2,057	2,098	2,190	2,180	2,216	2,235	2,265	2,293	2,337
Dell Rapids	654	643	647	660	680	683	699	740	781	767
Garretson	427	416	419	439	448	471	477	472	492	504
Sioux Falls	15,145	15,422	16,092	16,417	17,077	17,786	18,065	18,303	18,045	18,257
Tri-Valley	735	739	795	834	830	815	810	826	822	814
West Central	912	900	963	994	969	1,022	1,065	1,108	1,145	1,165

Libraries

Libraries provide a valuable informational and educational resource to county residents. Public library facilities were first created in the cities of Sioux Falls and Dell Rapids. In 1960 voters outside these two cities approved the Minnehaha County library system which initially operated from a central library in Hartford and more recently in Crooks, along with branch libraries in most of the cities. In 1995, the rural library system combined with the Sioux Falls Public Library to form the Siouxland Libraries, serving the entire county with the exception of Dell Rapids where a city library is still operated. In addition to the Sioux Falls downtown main library and two city branch libraries, Crooks serves as the primary rural facility with outlying branch libraries in Baltic, Brandon, Colton, Garretson, Hartford, Humboldt and Valley Springs. A book mobile serves several remote locations and some of the more populated rural areas.

The name Siouxland Libraries was selected with the future in mind. Sioux Falls' geographic location at the southern end of Minnehaha County provides the opportunity to expand the library system to serve Lincoln County residents. In this same respect, the libraries in Dell Rapids and Canton have the opportunity to join the Siouxland system.

The rural branches operate from a variety of facilities, including a school, community center and freestanding buildings. The organization of a broader library system and technological changes have prompted an evaluation of the branch system. The public access catalog (PAC) available at some branches allows users to request books in the system and have them delivered to the site. Changes in use patterns are also occurring since residents living outside Sioux Falls now have complete access to the city libraries, resulting in reduced usage of the rural branches. It is possible that library services will be enhanced throughout the county by further automation, placement of public library terminals at common locations, and improvements in document distribution.

Public Safety

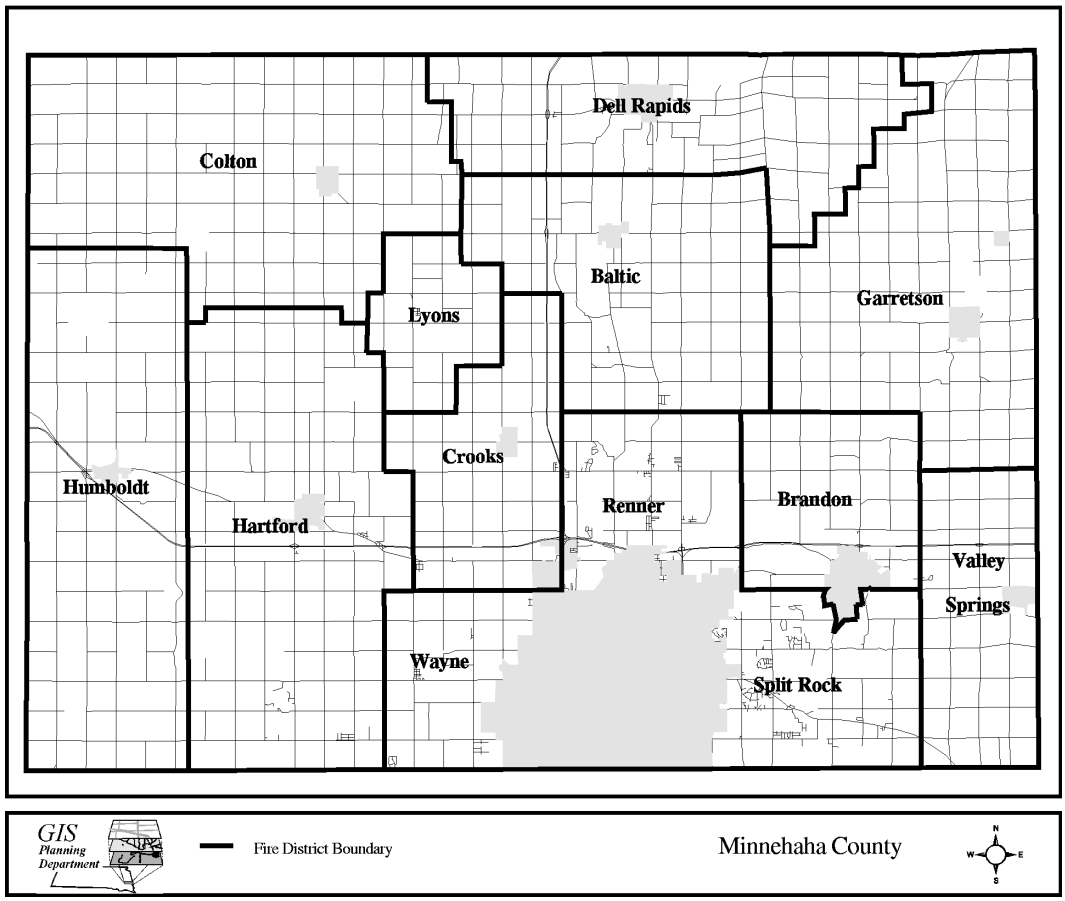
Minnehaha Metro Communications was established in 1980 as a joint department of the county and city of Sioux Falls. The department is responsible for coordinating and dispatching emergency services throughout Minnehaha County. Metro also serves McCook County to the west. In 1993, a rural addressing system was developed which allowed Metro to fully implement Enhanced 911 service throughout the county. Metro dispatches emergency response personnel, vehicles and equipment within the county for law enforcement, fire, ambulance and emergency management services.

Fire Protection Services

Sioux Falls maintains full time fire protection which includes seven fire stations in addition to the Air National Guard facility at the airport. The remainder of the county is served by 13 volunteer fire departments. A fire station is located in each municipality, except Sherman. Additionally, the fire station serving Wayne Township has been annexed into Sioux Falls, Split Rock fire station is located east of the city within the 2015 growth area, and there are fire stations in the unincorporated communities of Lyons and Renner. Fire district boundaries are shown on Map 12. Mutual aid agreements among the departments provide back up assistance.

Several sources finance the operations of the volunteer fire departments. County funding is generated from the fire levy on real estate and is distributed to the departments based on population, square miles served, real estate valuation and a base allocation. The districts also contract with the cities

Fire Districts | Map 12



and townships, conduct private fundraising events and receive state payments from fire insurance premium rebates.

Law Enforcement

It is important for the county to maintain an image of a safe environment in which to live and work. The area's relatively low crime rate promotes business relocation and expansion and assists in attracting and retaining quality employees. But with this strong growth comes the possibility that crime will increase, thus detracting from the quality of life. Effective law enforcement is fundamental to personal comfort and safety.

Law enforcement services are currently provided at the county and municipal level. Sioux Falls, Brandon and Garretson maintain city police departments. The County Sheriff's Department serves the rural area and also patrols the remaining cities under a contract for services. Each contract establishes the number of hours per week that a deputy will be on duty in the city.

The County Sheriff is also responsible for the Emergency Management Office, providing coordination among federal, state and local governments in times of disaster and extreme emergency. The office depends to a large extent on the participation of volunteers in the areas of reserve law enforcement, rescue squad, diver search and severe weather spotters.

Future development patterns will have an impact on law enforcement services. When the

population is concentrated in the cities rather than scattered across the rural area, responses times can be maintained and the need to increase personnel is minimized. The Development Plan should assist in maintaining efficient law enforcement services by encouraging compact development patterns. The county has also been fortunate in avoiding blighted areas where crime problems tend to occur.

8. Environmental Resource Management

In a historical context, the physical environment has been viewed as a resource to be exploited with little regard to the long term consequences of such actions. When human activities contaminated groundwater and surface streams, new areas were settled rather than conserving and protecting these natural resources. These actions ignored the long term costs to society in deference to the more immediate needs and desires of the day. It was often thought that "the solution to pollution is dilution" and in some cases when there was ample land and few people, that process worked.

As natural resources become more scarce and endangered, it is critical that environmental issues be addressed in the land use decision making process to ensure that even greater problems and costs are not passed on to succeeding generations. Management of solid waste and wastewater, ground and surface waters, wetlands, and storm water runoff should be important considerations in the development review process.

The quality of the environment can be eroded in many ways including destruction of natural features such as drainage ways and wetlands during development, runoff of farm chemicals and fertilizers into lakes and streams, improper treatment of human and animal wastes, and hazardous waste spills and leaks. The proper use of natural resources has taken on a greater importance as people recognize the benefits of clean water, access to outdoor recreation opportunities, enhanced aesthetic qualities, and cost saving measures that avoid mitigation of environmental impacts.

Physiographic Features

Minnehaha County is located in the southwestern part of the Couteau des Prairies section of the Central Lowland physiographic province. Topography is a direct result of Pleistocene Age glaciation. Of the five glacial epochs, Nebraskan, Kansan, Pre-Illinoian, Illinoian and Wisconsin, only the two most recent deposits of glacial till are exposed.

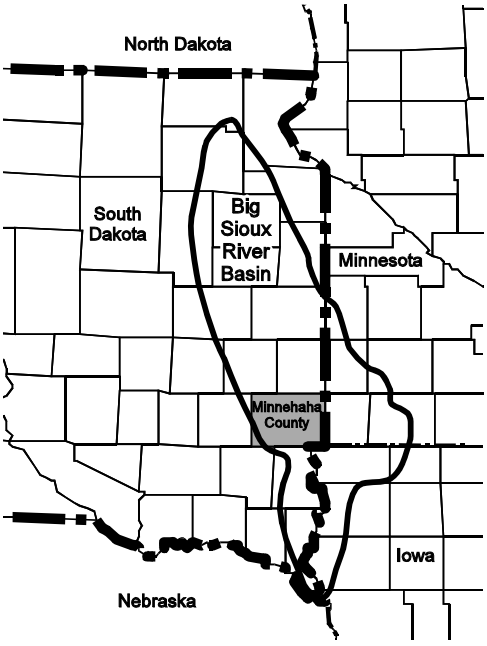
Skunk Creek marks the difference between mature, well developed drainage systems to the east and a less mature, poorly defined drainage system consisting of knobs, kettles and terminal moraine deposits in the western portion of the county. The mature development of drainage systems in the east indicates that the last lobe of the Wisconsin epoch did not cross Skunk Creek. Windblown deposits of loess occur along ancient shorelines of rivers and creeks and can be identified by the yellow color and bluff like ridges. Both glaciers brought limy shales and clays from the Canadian Prairie Provinces. The dominant soil groups are a result of degraded grass vegetation, being rich in nutrients but poor in drainage. Chernozem, humic gley, regosal and alluvium soils dominate and are susceptible to erosion. Several small, shallow glacial lakes occur in western Minnehaha County, most notably Wall Lake.

Geologically, Minnehaha County is underlain almost completely by a thick layer of sioux quartzite as a base rock, resulting from the metamorphism of sandstone. The glacial till combined with alluvial and loessal deposits provided the fertile soil for agricultural use. The natural progression of rivers deposited sand and gravel along the shorelines.

Streams, Lakes and Wetlands

Map 6 in the pocket insert shows the streams, lakes and wetlands in the county. The Big Sioux River, along with the Skunk and Split Rock Creek tributaries, form the major surface drainage features in

FIGURE 3
Big Sioux River Drainage Basin



the county, contributing to the larger Missouri River system. The Big Sioux bisects the county, flowing south from Dell Rapids to Sioux Falls, looping around the southern edge of the city and back north through the downtown area before heading east to Brandon and again south on its journey to the Missouri River. The Big Sioux River valley was originally cut by glacial meltwater flowing southward, confined between the glacier lobes that flanked the Coteau des Prairies. Figure 3 shows the extent of the Big Sioux drainage basin.

Significant natural features associated with the Big Sioux River are apparent at both Dell Rapids and Sioux Falls. The Dells of the Sioux is characterized by steep, vertical quartzite walls where it splits from the river in Dell Rapids. The Dells flows south for three miles before rejoining the river two miles north of Baltic. The Falls of the Big Sioux is located north of the Sioux Falls downtown area. The city recently embarked on a major renovation project to showcase this natural resource and promote the area as a major tourist attraction.

Skunk Creek and its west fork tributary drain the western portion of the county, joining the Big Sioux in western Sioux Falls. Sand and gravel deposits are prevalent in the lower reaches of Skunk Creek where mining has been active for many years.

Split Rock Creek forms the dominant drainage feature in eastern Minnehaha County. The stream drains into the Big Sioux south of Brandon, near the intersection of Madison Street and Highway 11. The natural beauty of the stream is prominently displayed in the Garretson area within the city park and south at Palisade State Park. Steep quartzite walls and ledges accent these recreation facilities.

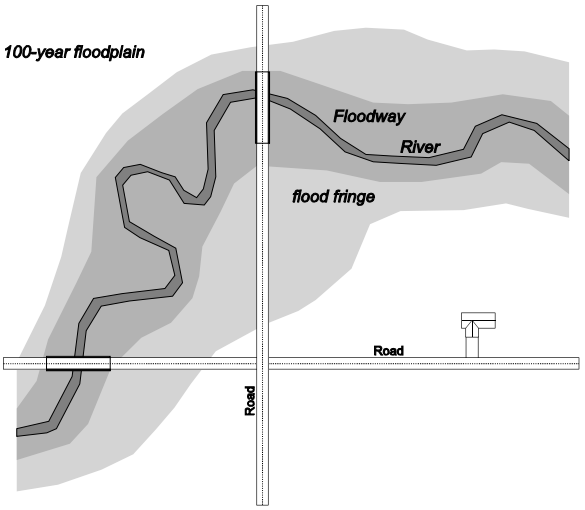
Numerous prairie lakes were created in eastern South Dakota by the glaciers. While they are most prevalent in northeastern South Dakota, a few prairie lakes were formed in the western portion of Minnehaha County. When the last glacier retreated from this area, glacial till filled many depressions formed by earlier glaciers, leaving shallow pot holes and wetland areas rather than well defined, deeper lakes. Wall Lake, with a surface area of 220 acres, is the only significant lake. The lake was dredged of silt during the early 1990's and now has a water depth in excess of 20 feet. Grass, Beaver, Lost, Clear, Buffalo and Diamond lakes are exceptionally shallow and function predominately as large wetland areas.

Wetlands are prevalent throughout western Minnehaha County. They perform several important functions, serving as natural water purifiers by filtering out pollutants, thereby enhancing surface and groundwater quality, increasing wildlife and fish habitat and providing recreational opportunities. Wetlands also reduce siltation and control flooding by slowing runoff during rapid snow melt and heavy rainfall, releasing water gradually so erosion and downstream flooding are minimized.

Flood Plains

Flood plains are lowlands adjacent to the channels of rivers, streams and other watercourses where inundation periodically occurs due to extreme natural events. Unaltered flood plain systems reduce flood velocities and flood peaks by providing space for the dispersal and temporary storage of flood waters until natural drainage can carry away the water. One acre of flood plain inundated to a depth of one foot can store about 325,000 gallons of water.

The shallow aquifers underlying many of the flood plains in the county benefit from the natural process of infiltration, purification and groundwater recharge. Flood plains also offer some of the most beautiful landscapes, productive wetlands, fertile soils, significant plant and animal life, and valuable historical and archaeologic features in the county. Water has always been basic to human survival, transportation and commerce so settlement patterns were largely influenced by rivers. Unfortunately, early development frequently encroached into flood plain areas where life and property were threatened and the streams became disposal systems for human and industrial wastes.



The flood plain has two constituents - a floodway and a flood fringe. Together they comprise the flood hazard area generally referred to as the 100-year flood plain identified by the Federal Emergency Management Agency (FEMA), where the chance of experiencing a flood of such magnitude is once every 100 years. The reference to a 100-year flood has promoted some misconceptions, most common the belief that if one has been experienced, a similar event will not happen for another century. Less misleading terms are “1% annual chance flood” and “national base flood standard”. The public also has a tendency to become more complacent about the dangers of a flood plain the longer the interval between major flood events. Flood plain areas in Minnehaha County are shown on Map 6 in the pocket insert.

Early in the history of flood plain management, federal actions focused on controlling flooding through structural measures. Massive investments in construction projects demonstrated the effectiveness of these measures but flood losses and disaster costs continued to rise because of the occupancy and use of flood plains. In 1968, the National Flood Insurance Act made federally subsidized flood insurance available to property owners of participating local governments if nonstructural flood loss reduction measures were implemented.

Minnehaha County maintains eligibility in the National Flood Insurance program by enforcing the Flood Damage Prevention Ordinance. Participation in the program enables residents of flood plain areas to purchase special insurance at subsidized rates. The ordinance requires the lowest floor of residential structures to be constructed to the base flood elevation while flood proofing must occur in nonresidential construction. Residential structures are prohibited from being constructed in flood ways while encroachments, including fill and new construction, are prohibited unless engineering certification demonstrates that the activity will not result in an increase in flood levels. The county’s zoning regulations are even more stringent, prohibiting all new residential construction from designated flood plain areas.

Development in the flood plain areas of rural Minnehaha County has been minimal, occurring mainly as scattered residential acreages. The only notable concentration of development is at Renner. This success can be attributed to the county's early commitment to zoning enforcement. The county's flood plain management program should be broadened to encompass such activities as storm water management, green way expansion, river corridor management, and watershed management.

Water Resources

The county's water resources consist of surface water found in streams and lakes, and groundwater occurring in glacial and bedrock aquifers. The Big Sioux River is the major surface water feature along with the tributary streams of Skunk Creek, Split Rock Creek, Beaver Creek, Pipestone and West Pipestone Creeks, and Colton Creek. Discharge from groundwater storage areas contribute to surface flow.

There are nine major glacial aquifers in the county composed primarily of unconsolidated sand and gravel deposited as outwash from glacial activity. These aquifers are shown on Map 13 and collectively contain approximately 725,000 acre-feet of water storage. The Wall Lake, Howard and Valley Springs aquifers are buried, confined aquifers. The other glacial aquifers - Big Sioux, Skunk Creek, Pipestone Creek, Beaver Creek, Brandon and Colton - are predominately shallow, water table aquifers with an

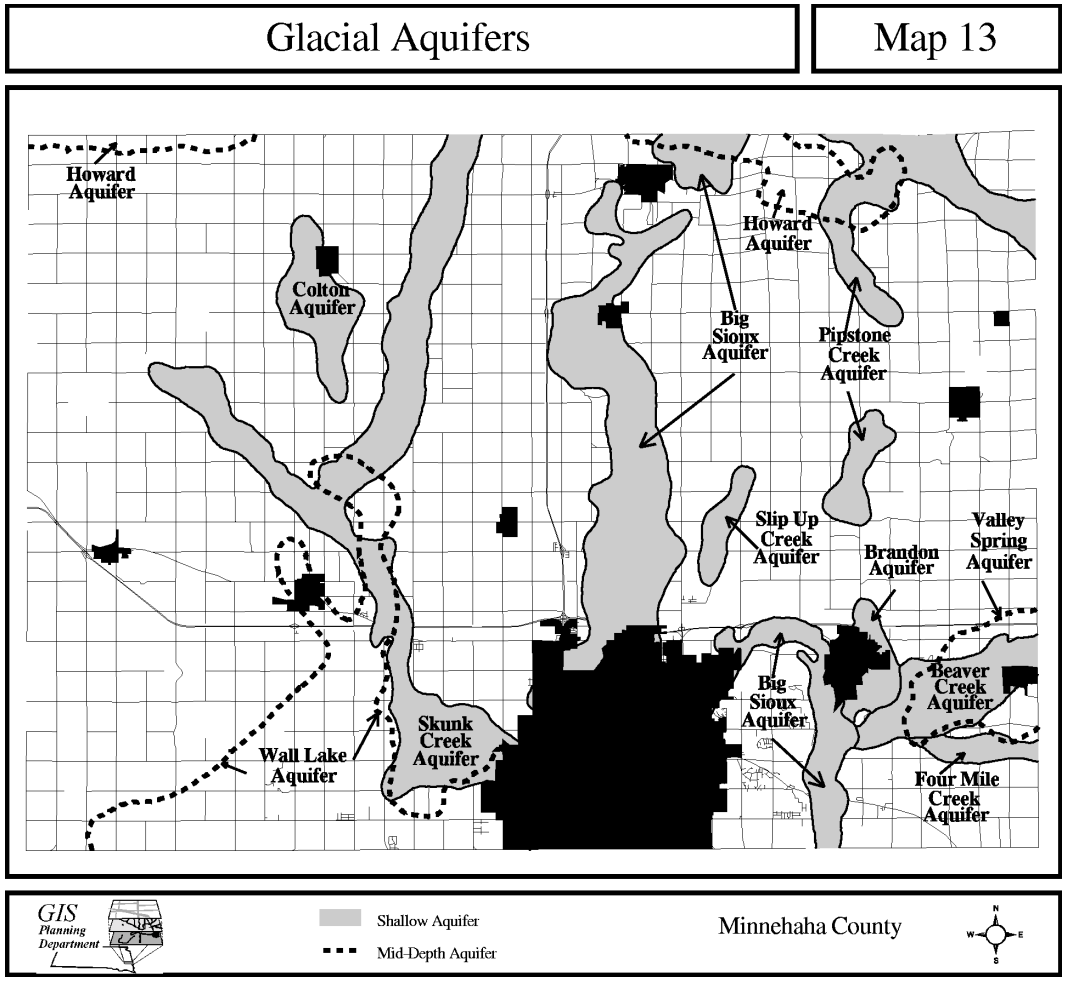


TABLE 13
Major Aquifers

Aquifer	Area (square miles)	Maximum Thickness (feet)	Average cumulative thickness (feet)	Range of depth below land surface (feet)	Average depth below land surface (feet)	Estimated volume of water in storage (acre-feet)
			GLACIAL AQUIFERS			
Big Sioux	68	71 [1]	22	0-82	10	190,000
Skunk Creek	43	84 [1]	21	0-93	9	115,000
Pipestone Creek	19	36	15	1-52	11	35,000
Beaver Creek	11	49	17	0-118	22	25,000
Brandon	6	62 [1]	35	0-24	7	25,000
Colton	8	26	12	1-57	20	10,000
Wall Lake	58	88	33	19-205	106	245,000
Howard	15	63	28	123-265	202	55,000
Valley Springs	14	26 [1]	15	93-207	131	25,000
			BEDROCK AQUIFERS			
Split Rock Creek	139	222 [1]	48	21-337	160	855,000
Sioux Quartzite	815	NA	NA	2-510	120	NA

[1] Includes multiple layers.

average depth of 20 feet below the land surface. The minor glacial aquifers of Slip Up Creek and Four Mile Creek underlie the flood plains of these two streams. Detailed information on these aquifers is shown in Table 13.

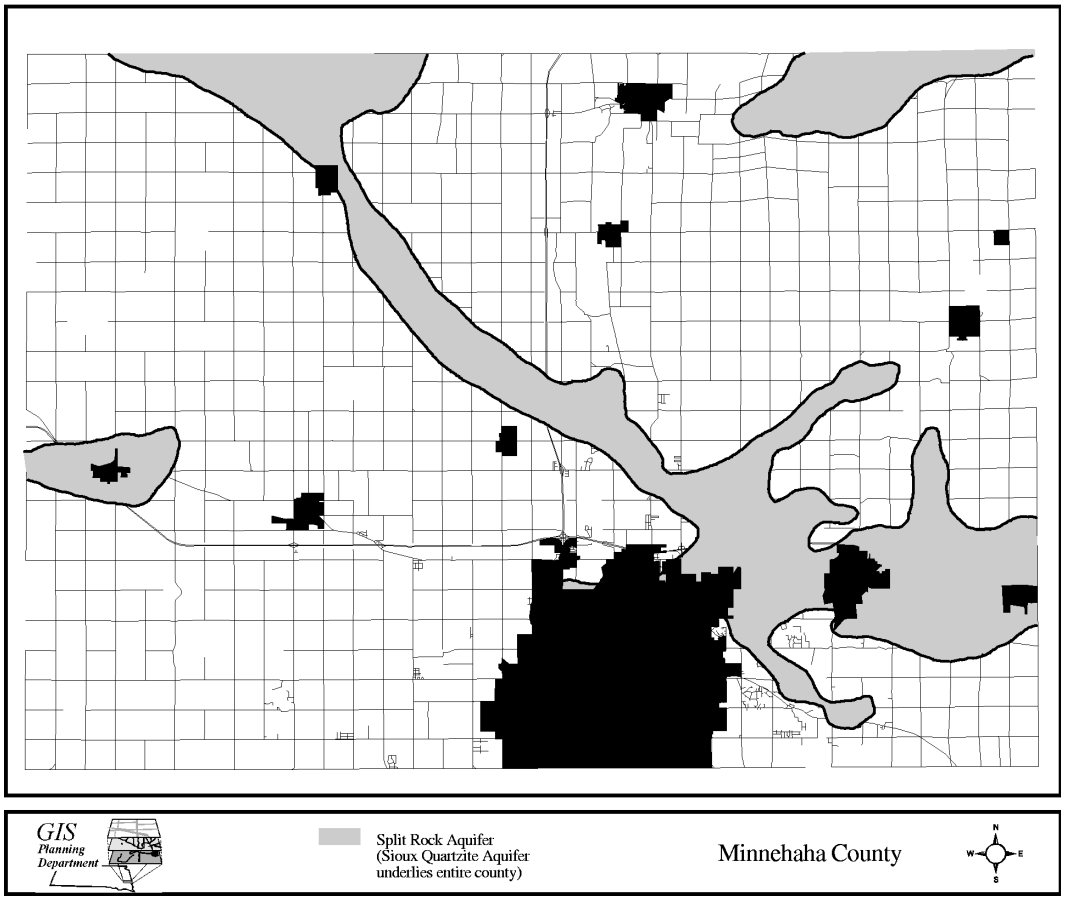
Two major bedrock aquifers, Split Rock Creek and Sioux Quartzite, are also important water sources in Minnehaha County. These aquifers are shown on Map 14. The Split Rock aquifer has a substantial storage capacity consisting of 855,000 acre-feet. The Sioux Quartzite aquifer, which underlies all of Minnehaha County, has an unknown storage capacity because of insufficient data concerning aquifer depth and development of the fracture system.

Table 14 details these aquifers as a source of water for municipal, rural domestic, livestock and irrigation use. In 1995, glacial aquifers accounted for 98 percent of the total groundwater use with the remainder coming from bedrock aquifers. Estimated water use from all groundwater sources totaled 4.7 billion gallons in 1995.

The Big Sioux aquifer accounted for 90 percent of the total groundwater withdrawn in 1995 and 80 percent of this volume was used by Sioux Falls. The aquifer is also the only water source for the Minnehaha Community Water Corporation. This means that the aquifer is serving most of the county's domestic and industrial water needs. Sioux Falls recently expanded into the Skunk Creek aquifer near Lyons to supplement water supply needs and reduce dependence on a single aquifer.

Another 3.4 billion gallons was withdrawn directly from streams in 1995. The Sioux Falls intake structure on the Big Sioux River accounted for nearly all of this total. Over 8 billion gallons were withdrawn from groundwater and rivers sources in 1995.

Bedrock Aquifers | Map 14



Two projects are being considered to meet future water supply demands. The Lewis and Clark Water System project proposes the construction of a pipeline from the Missouri River to supply treated water to municipalities and rural water systems in southeastern South Dakota, northwestern Iowa and southwestern Minnesota. Sioux Falls is also investigating a project involving the construction of a reservoir on Slip Up Creek northeast of the city. Water from the Big Sioux River would be pumped into the reservoir during high flow periods for use during dry months.

TABLE 14
Major Groundwater and River Withdrawals in 1995
(in millions of gallons)

	Total	Sioux Falls	Other Cities[1]	Rural Water[2]	Irrigation
Glacial Aquifers					
Beaver Creek	0	na	na	na	na
Big Sioux	4267.97	3449.60	14.53	639.00	164.84
Brandon	0	na	na	na	na
Colton	23.14	na	23.14	na	na
Howard	0	na	na	na	na
Pipestone	0	na	na	na	na
Skunk Creek	339.42	279.50	na	na	59.92
Valley Springs	0	na	na	na	na
Wall Lake	8.28	na	na	na	8.28
Bedrock Aquifers					
Sioux Quartzite	45.78	na	45.40	na	0.38
Split Rock Creek	32.27	0.16	32.11	na	na
Aquifer Total	**4716.86**	**3729.26**	**115.18**	**639.00**	**233.42**
Rivers					
Beaver Creek	0.31	na	na	na	0.31
Big Sioux River	3297.39	3239.00	na	na	58.39
Split Rock Creek	74.67	na	na	na	74.67
River Total	**3372.37**	**3239.00**	**0.00**	**0.00**	**133.37**
Total Water Usage	**8089.23**	**6968.26**	**115.18**	**639.00**	**366.79**

[1] Includes Brandon, Colton, Garretson and Valley Springs

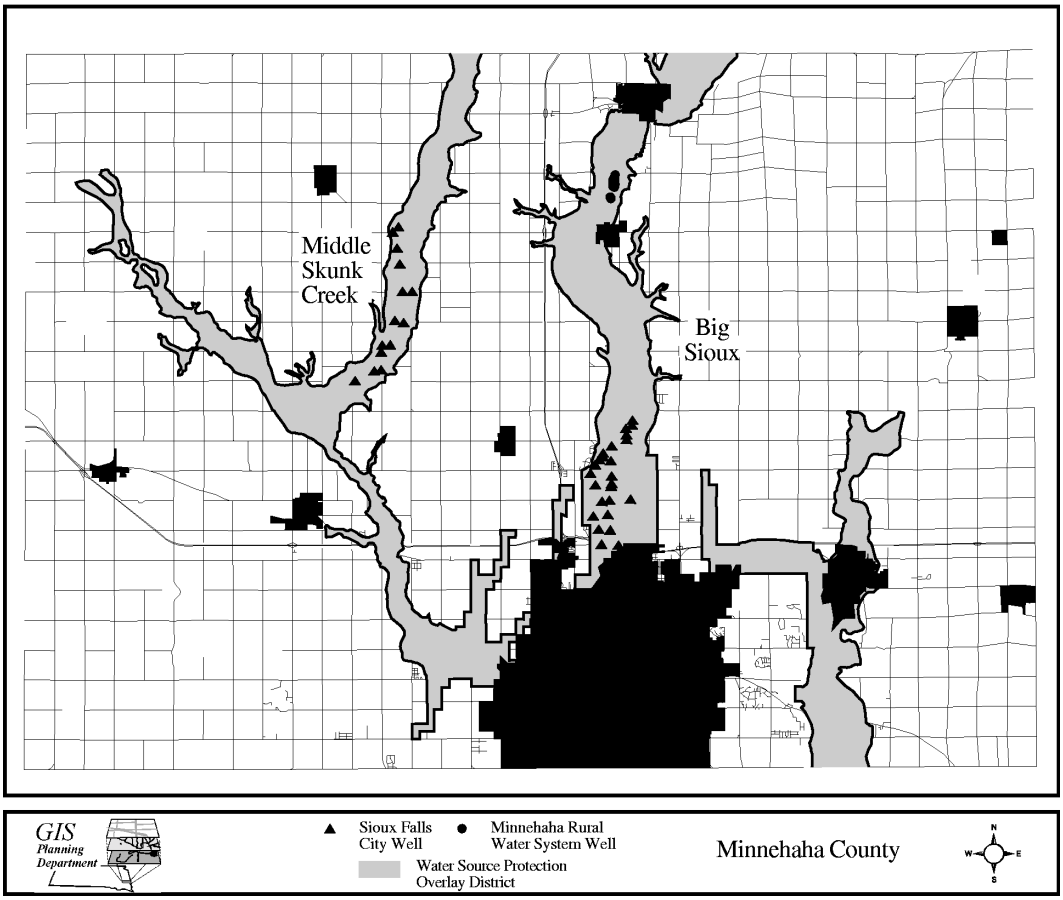
[2] Includes Baltic, Crooks, Dell Rapids, Hartford, Humboldt and Sherman

Water Source Protection

Shallow aquifers and streams are at risk of contamination by a variety of sources - inadequate wastewater treatment and disposal attributed to both on-site and municipal sources, mismanagement of waste from livestock facilities, overuse of fertilizers and pesticides, solid waste disposal sites, and sites for the storage and manufacture of regulated substances. The county enforces measures to protect these vulnerable areas through the water source protection overlay district provisions of the zoning ordinance. The overlay district prohibits uses which pose a high risk of contamination to groundwater resources and regulates other potentially damaging uses so that adverse environmental impacts are minimized.

A large number of public wells withdraw groundwater from the county's shallow aquifers. The Sioux Falls well field is concentrated within a five mile segment of the Big Sioux aquifer north of the city. More recently, the city expanded their well field into the Middle Skunk Creek aquifer southeast of Colton. Rural water wells are also located in the Big Sioux aquifer south of Dell Rapids. Map 15 shows the well sites in relation to the county's water source protection overlay district.

Water Source Protection Areas | Map 15



Hydrologic studies have identified the interrelationship of ground and surface waters where a stream is in contact with an aquifer, as is the case with the Big Sioux River and the outwash deposits along the Big Sioux valley. Depending on the relative water levels, water may move into or out of a stream. An influent stream supplies water to an aquifer while an effluent stream receives water from the aquifer. Groundwater discharge from aquifers into the Big Sioux forms the base flow of the river. This base flow is a significant part of the total flow during periods of low surface runoff but becomes a same fraction of the total flow when high surface runoff occurs. A comprehensive management program is important not only above the aquifer but within the entire drainage basin because of the connection between ground and surface waters.

Other measures which have been implemented by the county to protect the environment include requirements for solid waste disposal and management facilities (solid waste ordinance) and siting and installation requirements for individual wastewater systems (on-site wastewater treatment systems ordinance). Waste disposal from concentrated animal feeding facilities is controlled by the conditional use permit process of the zoning ordinance and state environmental laws.

Wastewater Treatment and Disposal

When central sewer facilities are not available, individual wastewater treatment systems have generally been considered an acceptable alternative. This is placing extraordinary faith in a method which was designed for use on farms and isolated sites, but increasingly has been used to serve higher concentrations of development.

Central wastewater collection and treatment facilities serve municipal residents and a limited rural population located within the four sanitary districts. Most rural residents and businesses utilize an on-site wastewater treatment (septic) system. There are approximately 4,800 residential septic systems presently in use within Minnehaha County. Additionally, rural commercial and industrial uses, churches, and park facilities dispose of sewage by individual means, usually a septic system or a holding tank in which the contents are routinely pumped and disposed off-site.

Central sewer facilities are generally not economical to construct in the rural, predominately agricultural areas of the county, and existing on-site systems will probably be replaced only when they are in the path of municipal growth. Therefore, much of the projected rural growth will be served by individual systems. Further dependence on individual wastewater systems will necessitate safeguards to protect public health and the environment.

An on-site system treats wastewater in a two-step process. In the first stage, wastewater flows from the structure to a septic tank where the solids settle out. The tank must have sufficient volume to retain the wastewater long enough to allow for some primary treatment. Otherwise more extensive treatment is needed after the wastewater leaves the tank. An outlet in the tank allows the liquid waste or effluent to be dispersed throughout the soil by a drain field. Aerobic bacteria then break down and treat the wastewater elements. An on-site system must provide adequate treatment and not merely act as a means to dispose of sewage. For on-site systems to function properly, operate free of problems, and be environmentally safe, they must be properly located, designed, installed, and maintained.

Location is the single most important determinant. Even the best built system is bound to fail if improperly sited. A system must be located where soils have an acceptable percolation rate, the seasonally high water table and bedrock are more than four feet below the drain field, steep slopes are avoided, and surface drainage is directed away from the absorption field. A test hole should first be dug in the area of the proposed absorption field at least four feet below the bottom of the trench. If the soil profile indicates a seasonally high water table, adjustments to the trench depth are necessary.

Since soil type can change within the building site, percolation tests must be taken at the proposed location of the system to accurately calculate the proper sizing of the absorption field. Soils where the effluent is absorbed slowly will require a larger drain field. On the other hand, soils with a very rapid absorption rate are not acceptable because effluent will reach the groundwater before proper filtration occurs.

An on-site system which is properly designed and installed can still experience operational problems and even fail if routine maintenance is not performed. This situation can result in environmental and health problems for both the occupants of the structure and the general public.

People who move from the city to the country should make major changes in their lifestyle when using an on-site system. Water consumption and the use of cleansers should be reduced, extra care should be taken to restrict certain substances from entering the wastewater system, and appliances such as garbage disposals should not be used. If these changes do not occur, the wastewater treatment system should be completely upgraded to accommodate the additional demands. On-site systems also require periodic maintenance such as pumping to ensure proper long term operation.

Improperly treated sewage poses a number of dangers, particularly health related. A variety of bacterial, viral and parasitic diseases can be spread through contact with untreated wastewater. Outbreaks of diseases in the United States such as typhoid, cholera, hepatitis, gastroenteritis, dysentery, giardiasis and others have been directly linked to improperly treated sewage. There have been incidents in the last few years of illnesses in South Dakota which were attributed to contact with wastewater in the soil or groundwater.

Septic system failures place people at risk for exposure to untreated waste if sewage surfaces on the ground or backs up into the structure. Effluent which enters the groundwater before being properly treated broadens this risk of exposure. Aerobic or oxygen-using bacteria is an important part of the on-site wastewater treatment process. These bacteria are not found in soils which are frequently water saturated, resulting in the improper treatment of the effluent before it reaches surface or groundwater and contamination occurs.

Even when a septic system is ideally designed, sited, constructed and maintained, there is still the potential for exposure to some potentially harmful components. A correctly operating on-site system can remove most micro-organisms and phosphates found in the wastewater. On-site systems, however, do not adequately remove nitrogen compounds such as nitrates. Nitrates, which are a common component of wastewater, have been responsible for health problems such as methemoglobinemia, or "blue baby disease." This potentially fatal disease interferes with the oxygen transporting capability of blood in infants.

It is inaccurate to conclude that a system is operating properly simply because wastewater has not surfaced or backed up. The old saying “out of sight, out of mind” should not be used to rate the success of these systems. Nor should it be assumed that proper system installation and maintenance results in 100 percent treatment efficiency.

On-site wastewater systems pose the least risk to human health and the environment when used in low density, large acreage type settings. In addition to restricting the concentration of on-site systems, larger lot sizes allow failing systems to be replaced elsewhere on the property. The degree of risk can generally be expected to increase in direct proportion to the concentration of development. Although dilution should not be the solution, poorly operating systems on scattered sites pose a lesser chance of polluting the groundwater. But when systems are more concentrated and not operating properly, nature’s safeguards become overloaded and contamination is much more likely to occur.

The discharge from a central treatment plant can be monitored for compliance with water quality standards, but such is not the case for wastewater entering the ground from septic systems. The difference between these two situations is termed point and non-point source pollution. If nitrates are present in private wells, contamination may be coming from one or more sources and locations, septic systems, animal feeding operations and farm chemicals being the most common sources, but it is difficult if not impossible to identify the exact source. Although sites near the problem area are most suspect, the exact location cannot be determined - hence the reference to non-point source pollution.

Several concentrated rural housing areas have been required to install costly central sewer systems due to the failure of on-site treatment systems. The Prairie Meadows, Wall Lake, Renner and Corson Sanitary Districts were all created due to conditions such as high groundwater level, proximity to shallow aquifers and other water features, poor soils, inadequate design and concentration of development. The physical limitations of soils tend to be amplified as septic systems become more concentrated.

The effluent from both Prairie Meadows and Renner is pumped into the Sioux Falls wastewater collection system. The Renner area developed over the Big Sioux aquifer where the sandy soil provided

little opportunity for septic systems to cleanse the effluent prior to reaching shallow groundwater. Since the city depends heavily on the aquifer for its water supply, the Renner Sanitary District was critical to eliminating a potential source of contamination. Nearly 300 users are connected to the system.

The Prairie Meadows Sanitary District was created after federal and state environmental officials determined that residents were being exposed to a severe health threat from sewage that was surfacing due to high water table conditions. The district services 46 houses. Although there was no immediate danger to Sioux Falls residents or municipal water supplies, the city authorized the district to connect to the municipal sanitary system. Two other sanitary districts, Norton-Froehlich and Hayward, were annexed into Sioux Falls in the early 1980's.

The Wall Lake Sanitary District was created to provide central sewage collection and treatment to lake side homes. A combination of poorly constructed on-site systems, small lots and the change from seasonal to permanent residents contributed to partially treated and, in some instances, raw effluent entering the lake. The district operates a lagoon to treat the sewage from approximately 70 users.

Sanitary districts can potentially impact future growth patterns by pulling development toward areas where urban uses are not planned, thus altering the orderly expansion of municipal utilities. In some cases, large rural lots and random development interspersed with large tracts of vacant land substantially increase construction costs and generally work contrary to the efficient and economical provision of services.

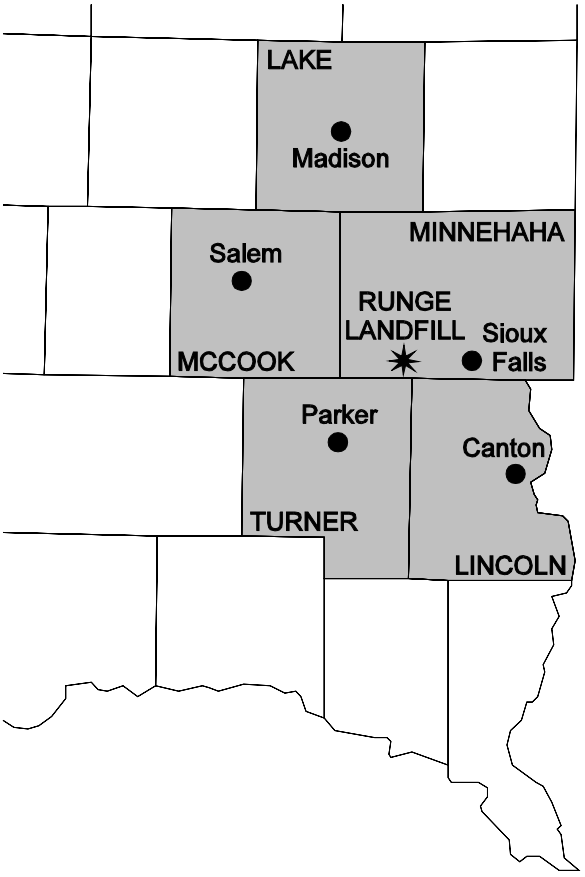
Federal grant and loan programs have traditionally funded a large portion of the construction costs associated with sanitary districts. Federal monies result in a substantial reduction in monthly customer charges for service and debt retirement. A reduction in federal funding for wastewater projects is a very real possibility. Reduced cost sharing assistance or program elimination would place future districts in jeopardy simply because the cost will increase substantially for a relatively small customer base. This situation underscores the importance of managing future growth based on density considerations so there is no need to create additional sanitary districts.

Solid Waste Management

Stringent federal requirements have placed enormous responsibility and cost on local governments for the continued operation and maintenance of solid waste disposal facilities. Facilities must now be constructed with impervious liners, and groundwater monitoring devices must be installed to detect any migration of leachate into the groundwater. Daily soil cover is required to reduce litter and control disease vectors. The reality of higher operating costs and tougher closure requirements forced smaller communities to close their local landfills, ushering in a regional approach to solid waste disposal.

Sioux Falls owns and operates the only solid waste disposal site in Minnehaha County. The Runge sanitary landfill is located six miles west of the city on the border between Minnehaha, Lincoln and Turner Counties. The landfill serves a five-county region (Figure 4) with a population of over 175,000.

FIGURE 4
Five-County Solid Waste Region



The 160 acre facility was opened in 1979 and an additional 160 acres to the west has been acquired for future expansion. This area exhibits physical characteristics ideally suited for solid waste disposal due to the underlying clay formation which provides a natural impervious liner. However, observation wells are in place to monitor for leachate from the facility.

It is projected that the entire facility will satisfy regional disposal needs for the next 35 to 40 years. Recycling will contribute to the extended life expectancy of the facility. A reduction in solid waste tonnage (Table 15) has already occurred at the landfill during a time when the regional area grew in population.

Some smaller communities operate restricted use sites that are permitted to accept only limited classes of waste material, primarily construction and demolition debris. Restricted use sites include an area within the Runge landfill, and sites at Dell Rapids and Colton. Proposed new sites will be required to obtain a conditional use permit in conformance with county zoning regulations in addition to a state permit.

TABLE 15

Solid waste Disposal at Runge Landfill (in tons)

	1993	1994	1995	1996
Municipal Solid Waste	154,470	146,259	139,297	125,604
Construction and Demolition Waste	439	8,440	28,989	26,578
Grass and Leaves	3,988	3,094	2,841	2,416
Petroleum Contaminated Soils	13,195	5,848	8,466	9,219
Total	**172,092**	**163,641**	**179,593**	**163,817**

Recycling

Some components of the solid waste stream are no longer deposited in the landfill but recycled for future use. Lawn and garden wastes such as branches, leaves and grass clippings are separated from the waste stream for composting at the Runge landfill. The compost is used mainly as final cover in reclamation of the facility. Tires and household appliances are no longer buried in the landfill. Tires are shipped out for use as fuel supplements and appliances are recycled through private salvage yards.

For a number of years, hazardous wastes have been banned from the nation's landfills. Sioux Falls periodically sponsors paint exchanges where residents can take unused paint. The paint is then mixed together for reuse. Hazardous household waste drop off sites are also available to residents. These programs are offered to the five-county region served by the Runge landfill.

Several recycling programs and private businesses operate in the region. Sioux Falls has adopted a recycling pickup program and some of the smaller communities have developed drop-off sites for recyclables. Programs are also available in the region to recycle or reuse a variety of materials including cardboard, newspaper, motor oil, office paper, magazines, tires, aluminum, ferrous metals, glass, plastics, and paper milk cartons. Employers have developed in-house programs to recycle waste products, most notably paper. A state grant program, funded from tonnage fees charged at landfills, has been established to assist businesses in developing and expanding sustainable recycling programs.

The various recycling programs have a number of benefits. In addition to removing potentially hazardous materials from the waste stream and reducing the potential for environmental degradation from improper disposal, these programs have greatly reduced the amount of material being deposited in the landfill. This will extend the life of the current landfill, delay costly expenditures in constructing new disposal sites, and avoid the NIMBY (Not in My Backyard) syndrome which confronts government officials when new sites are needed.

The illegal disposal of solid waste on private property and in rural road ditches has increased, in part because some residents find it more convenient and less expensive to dump their waste at unapproved sites rather than drive to the landfill. The county's nuisance ordinance along with public education programs and stronger penalties at the state level will assist in combating this problem.

Transfer facilities may necessarily become part of the regional approach to solid waste disposal. In neighboring Lincoln County, a transfer station is owned and operated by the county which serves a population of 15,000. Waste from the entire county, except the city of Beresford, is hauled to the facility where it is compacted, baled and then trucked to the Runge site for disposal. Lincoln County officials have found that the operational costs of the transfer station are more economical than maintaining their own landfill. Furthermore, compaction allows a greater volume of waste to be transported at a reduced cost. As the outlying population in Minnehaha County increases, one or more transfer stations may also be needed. Ideally, this should be a private sector approach among the region's waste haulers with local government support as needed.

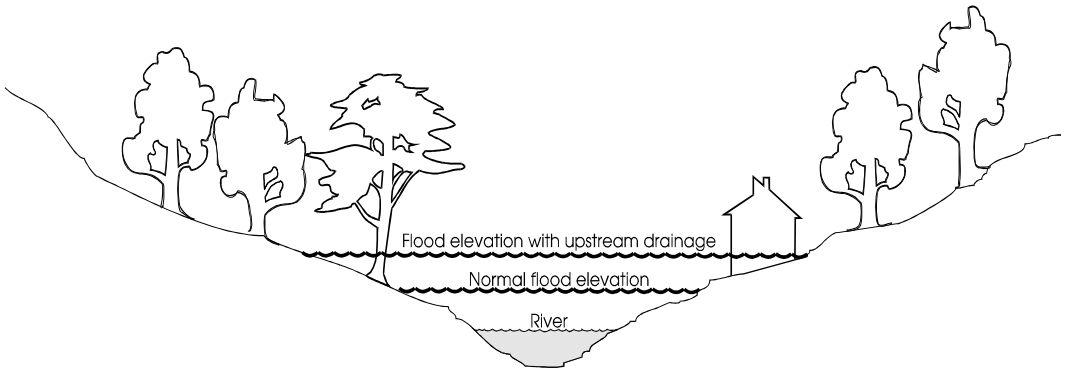
The impact of regional population growth on future landfill space requirements can be lessened by reducing the waste stream through the implementation of effective solid waste reduction and recycling programs. Public information and education will assist in these endeavors.

Drainage

Draining wetlands for agricultural and development purposes has been a common practice for many decades. Wetlands are generally perceived as a liability but their destruction has had an adverse impact at both the local and regional level. Wetlands should be recognized for their value in flood reduction, water quality enhancement, and as fish and wildlife habitat.

Wetlands serve as natural water treatment plants. Vegetation and bacterial action within the wetland purifies water by holding and breaking down nutrients, sediments and pollutants before they percolate into the soil or are released into surface waters such as lakes and streams. Wetlands also serve as a major source of groundwater recharge by retaining precipitation so it can percolate into the water table.

The storage capacity of wetlands also helps to reduce downstream flooding. Wetland buffers reduce the rate at which storm water reaches streams or lakes and decreases the total water volume reaching these surface features. When extensive drainage occurs within a watershed, flood levels and the frequency of flood events increase, and flood waters rise much more rapidly. Small individual projects may not have a detrimental effect on drainage but the cumulative impact of many actions can produce catastrophic events. All wetlands in a watershed assist in flood reduction but those within the flood plains are most critical in providing storage capacity for flood waters. Flood plain wetlands also are important to the recharge of shallow aquifers in the county.



Effects of Drainage on Downstream Flooding

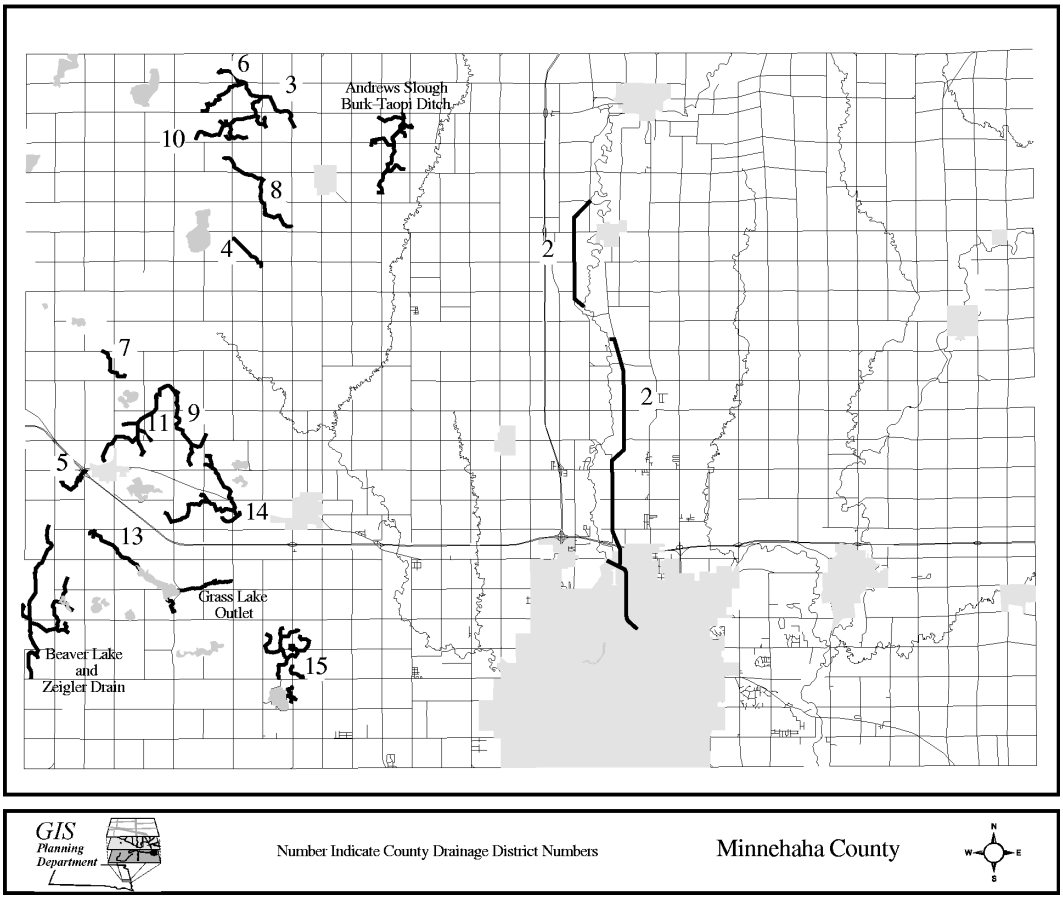
In 1985, the South Dakota Legislature assigned counties the responsibility for drainage matters. South Dakota Codified Law 46A-10A authorized county commissions to develop drainage plans and implement regulatory measures. The law also requires that a board of resolution be appointed to address drainage disputes. The Minnehaha County Commission currently serves in this capacity.

In response to SDCL 46A-10A, Minnehaha County adopted a drainage ordinance which includes a permit system for drainage projects proposed within a watershed of 40 acres or more. Drainage projects within watersheds of less than 40 acres, routine repair of existing drainage works and work projects performed under the auspices of the township boards, the Natural Resources Conservation Service or Army Corps of Engineers are exempt from the permit requirements provided the county is informed of the drainage project prior to commencing the work.

SDCL 46A-10A also required any person with existing drainage improvements on their property to file the location of such drainage with the Register of Deeds by July 1, 1991 in order for the drainage to vested. Many drainage projects were never filed so are not vested which means a drainage permit is required before any alteration or repair work is done.

Several drainage districts were formed during the 1920's and 30's, consisting of underground tile systems located mainly in western Minnehaha County. These districts are shown on Map 16. Much of the tile has deteriorated and is in such a state of disrepair that drainage no longer occurs. Collapsing tile is also creating dangerous situations where large holes form due to erosion.

County Drainage Districts | Map 16



Poor record keeping and the absence of detailed maps will make it difficult to determine the benefitted area of these drainage districts if improvements are to be made in the systems. Prior to the 1985 state drainage law, a drainage district was granted the power to assess properties for the purpose of maintaining the drainage structures. Legislative changes now require counties to determine benefitted areas, solicit bids for repair work, and assess costs.

Due to potential liability exposure, Minnehaha County should move very cautiously in dealing with existing or proposed drainage projects. The county should identify coordinated drainage areas and work with landowners to assess the costs and benefits of drainage improvements. The county's experience in addressing drainage matters should also be used to evaluate the present drainage ordinance and identify changes in the regulations.

Soils

The Natural Resources Conservation Service recently completed a major update to the Minnehaha County soil survey. Soil boundaries were provided in digital format for entry into the county's geographic information system (GIS) along with attribute information associated with the various soil types.

Soil attributes provide information on agricultural productivity, erosion factors, and limitations for the use of wastewater absorption fields, lagoons, buildings, roads and other engineering applications. GIS affords the opportunity to analyze these attributes as part of the site development evaluation process.

Storm Water Management

Water quality and the intensity, timing and velocity of runoff events are closely related to storm water management. Vegetated surfaces slow or capture runoff but when these areas are replaced by impervious surfaces such as roofs, driveways, parking lots and streets, runoff is substantially increased.

Storm water management, especially on an area wide basis, has generally not been considered in the rural development review process. Individual subdivisions have been approved without a watershed drainage plan, and the cumulative impact of these decisions has affected natural features and manmade improvements such as bridges and roads in their capacity to handle surface runoff. The county's subdivision regulations should ensure that storm water management is an integral part of the development review process.

Development should not be allowed prior to completion of a comprehensive drainage basin study which defines natural drainage corridors and identifies the number and location of detention facilities needed to accommodate additional runoff from impervious surfaces. Developers should be encouraged to use natural areas for aesthetic, open space, natural habitat, and recreational purposes.

Policy Statements

. Restrict development in areas where unsuitable soils and other physical limitations pose problems in the effective operation of wastewater systems.

. Development that exceeds the county's density standards should be directed into areas where central sewage disposal services are available. Avoid concentrations of on-site wastewater systems.

. Maintain a permit and inspection system to ensure that on-site wastewater systems are properly sited and installed.

. Conduct periodic training sessions for installers on application requirements for wastewater system permits.

. Encourage the use of new and innovative construction techniques for on-site wastewater systems.

. Prepare and disseminate information to homeowners about the proper care and maintenance of on-site wastewater systems.

. Maintain and manage an environmental data base as part of the county's geographic information system.

. Cooperate with and support state and federal efforts to protect the county's natural resources.

. Ensure that the disposal of solid waste occurs in an environmentally acceptable manner.

. Encourage and support a regional approach to solid waste disposal.

. Encourage solid waste recycling and effective waste management practices throughout the county.

. Assess the need for solid waste transfer facilities and provide technical assistance for development activities.

. Maintain a licensing procedure for solid waste haulers in cooperation with the city of Sioux Falls to ensure compliance with applicable solid waste regulations. Avoid duplication in the licensing of haulers working in several jurisdictions.

. Support waste collection services as a private sector function with minimal county involvement.

. Participate on the Solid Waste Planning Board to ensure that county solid waste issues are being addressed.

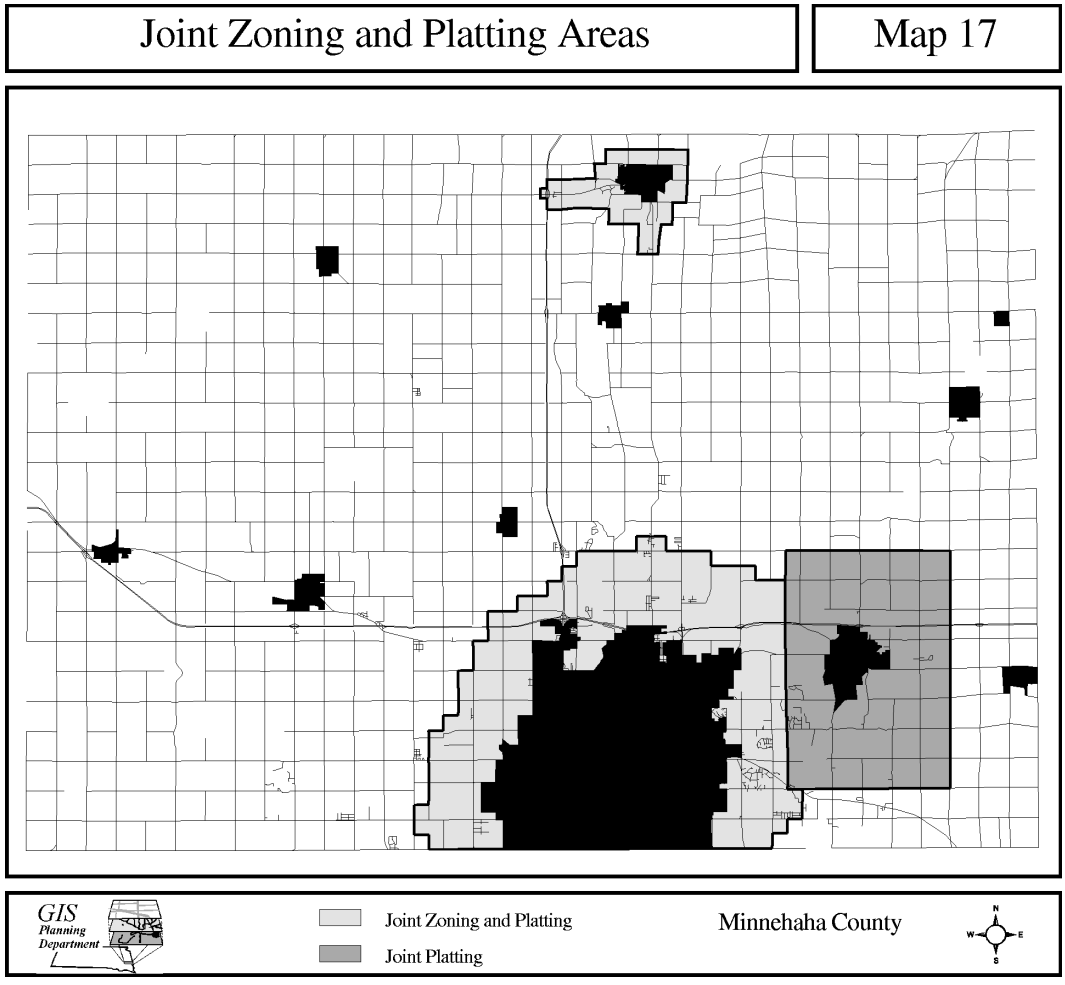
9. Plan Implementation

The preceding chapters have presented the fundamental elements of the comprehensive planning process including demographic and economic data, past and present development trends, transportation systems, public facilities and environmental resources. An analysis of these elements provided a framework for preparing a plan consisting of goals and policies to assist in shaping the physical development of the county.

The Comprehensive Plan is a policy guide to decisions about the future spatial distribution of rural land uses and a visualization of how these use patterns should occur. The plan is not a piece of legislation but rather a foundation or basis under which legislative documents operate. Zoning and subdivision regulations are specific and detailed legislative measures intended to carry out the policies and recommendations of the Comprehensive Plan. These and other implementation tools are discussed in the following sections.

Zoning Ordinance

Zoning is the most commonly used legal mechanism to achieve the goals and policies of a comprehensive plan. The county's zoning ordinance regulates land use activities in the unincorporated area. The county also maintains a joint (extraterritorial) zoning relationship with the cities of Dell



Rapids and Sioux Falls. The joint zoning boundaries for these two cities are shown on Map 17.

Although three separate zoning ordinances regulate specific portions of the rural area, the regulations within each ordinance are similarly structured to promote uniformity throughout the county.

The Minnehaha County Zoning Ordinance has undergone several revisions since it was first adopted in 1973. The most significant change occurred in 1988 when density zoning requirements were incorporated into the ordinance to control scattered and haphazard nonfarm residential development in the rural area. In 1990, the zoning ordinance was completely revised in text and format. In the last ten years changes have been made to include a water source protection overlay district and a planned development zoning district. An inventory of off-premise signs was completed and the sign regulations were strengthened. Aesthetic standards are maintained through conditions imposed on permitted special uses or required as part of the conditional use permit process. Density zoning and the planned development district are more fully discussed later in this chapter.

The county zoning ordinance should be completely revised to reflect recent changes and to streamline the approval process, including regulations for telecommunications facilities and broader application of the permitted special use category within the district regulations to lessen the need for conditional use approval. Further studies should be conducted on the boundaries and characteristics of the water source areas and the regulations which govern uses within these sensitive environmental areas.

A study should evaluate the current and future impact of residential density standards. The results should be used to determine the adequacy of the standards in relation to the policies identified in the plan. Regulations on rock, sand and gravel operations should be reviewed, appropriate changes made to reflect new information and technology, and more workable requirements developed for temporary extraction sites.

Zoning Techniques

Density Zoning

The Comprehensive Plan stresses the importance of avoiding scattered and sprawl development in the rural area. In order to manage rural growth, the county employs a technique known as density zoning which controls the maximum density for residential dwellings in areas zoned for agricultural use.

Prior to density zoning, agricultural district regulations proved ineffective in maintaining a rural environment, particularly on land experiencing development pressure from growing urban centers. For several years the only requirement to build on agriculturally zoned property was for the dwelling to be located on a lot of at least one acre in size. This resulted in a scattering of residential uses which appeared as strip developments along major roads and highways or as multi-lot rural subdivisions. The minimum acreage requirement did little to control growth in agricultural areas of the county.

Changes were made in the agricultural district regulations in an attempt to address these deficiencies, requiring a conditional use for the siting of an individual nonfarm residence and a rezoning for subdivision development. For the first time a review process was required when land use changes were proposed on agriculturally zoned land but this still proved ineffective in controlling the long term land use pattern. Piecemeal and fragmented development continued because the ultimate residential density had not been established.

This prompted further changes that incorporated density zoning into the regulations. This approach accommodates residential uses in the predominately agricultural areas of the county but maintains control over the density in such a manner that premature urban development is avoided.

In Minnehaha County, a density of one dwelling for each quarter-quarter (1/4 1/4) section of land is allowed, provided there are no other dwellings located on the parcel. The minimum lot size is one acre while the balance of the parcel must continue in agricultural use. The transfer of residential building eligibility between quarter-quarter sections is also allowed as long as the parcels are contiguous and under the same ownership. This is accomplished through the conditional use process and is intended to encourage the grouping of building sites on the least productive farmland. There are several advantages to the density zoning concept:

- The density approach offers more assurance that farming will continue as the dominate land use in agriculturally zoned areas.
- Land use conflicts between residences and farming activities are reduced due to the lower density.
- A farmer is allowed to convert less productive farmland to residential use as long as the overall density is not exceeded.
- A lower density of population that initially attracted residents to the rural area is better preserved through density zoning.
- There is less potential that population densities will exceed the existing level of services, thereby avoiding costly public expenditures.

Density zoning is considered to be a more practical approach to growth management than "large lot zoning". Although the latter approach also controls density by increasing the minimum lot size, there are several disadvantages to this method.

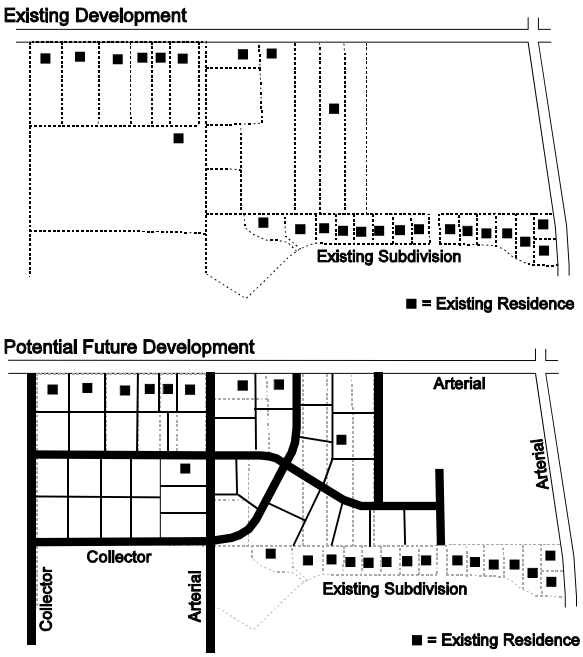
- Large lot zoning represents a form of exclusionary zoning. The larger the lot size, the less opportunity there is for people to live in the country due to economic considerations since land costs escalate in direct proportion to the acreage requirement.
- A considerable amount of farmland is needlessly removed from production.
- Experience has shown that people have difficulty maintaining a large number of acres and appearance becomes a problem. Abandoned vehicles and junk on the larger properties are frequent problems.

Ideally, density zoning ensures that no more than 16 dwellings will occupy any one section of land. In practice, however, a greater number of dwellings can be expected due to the existence of previously described lots and parcels. These properties are known as lots of record and each such parcel qualifies as a building site under the zoning regulations. This will ultimately push residential densities to higher levels in some areas of the county.

Planned Development Zoning District

Conventional zoning districts can be a barrier to innovative design and development techniques. The planned development (PD) zoning district was added to the zoning regulations to provide developers with greater flexibility while at the same time increasing public review of development proposals. Several land uses can be accommodated in a single PD District.

Figure 5
Planned Development District Concept



This concept can also be applied in areas where density standards will be difficult to maintain because land has been carved into smaller parcels, making agricultural use no longer practical. Portions of Split Rock Township from Sioux Falls east to the Big Sioux River typify this type of development pattern. It is recommended that the planned development zoning district be applied within such areas to address future development proposals.

The PD District is most useful where past parcelization and land subdivisions have produced a disjointed and piecemeal development pattern. As this trend continues, future development options become more limited. Specific examples include strip residential development along major transportation routes and the further division of existing parcels without providing for future access to adjoining properties.

Application of the PD District should occur as a comprehensive approach in the redevelopment of contiguous parcels so that a coordinated land use pattern is achieved. An example of this concept is shown in Figure 5. This application demonstrates the importance of interrelating the transportation network with further subdivision of existing parcels.

Development Review Process

The present zoning ordinance utilizes the conditional use review process for many uses. This procedure is used quite extensively in the commercial and industrial zoning districts. Conditional use applications are reviewed by the Planning Commission and stipulations are imposed in such areas as screening, landscaping, site configuration and highway access. It is recommended that the zoning ordinance utilize permitted special uses to a greater extent in dealing with design and aesthetic requirements. This change would result in faster administrative review in comparison to the more time consuming Planning Commission review and approval process.

Agricultural Preservation

The county's agricultural resources are often overshadowed by the dominance of metropolitan Sioux Falls, yet agriculture remains a vital part of the local and regional economy. Significant strides have occurred in recent years to protect the farming industry, but major challenges still exist for agriculture to continue as an economic force into the 21st century.

Routine farming practices are threatened by the emergence of nonfarm residences in agricultural areas, undermining the freedom that farmers enjoy in operating their businesses. As the size of farms increases, operations diversify, and innovative business concepts are introduced, land use conflicts between farming and residential uses are certain to become an even greater problem.

The current density zoning standard allows up to 16 residences on each square mile of land. This density may be contrary to long term farming interests who must endure more nonfarm population while attempting to sustain a profitable business without causing conflicts with neighbors.

The county should assist the agricultural sector in exploring methods for preserving and protecting agricultural resources, including exclusive agricultural areas established as special zoning districts. If this concept is to succeed, farmers must be involved at the grass roots level, delineating the district boundaries and formulating district regulations.

Subdivision Ordinance

The subdivision ordinance regulates the division of land into lots and parcels by requiring specific standards for road design and construction, lot configuration, grading and drainage, and erosion control. The county's subdivision ordinance was updated in 1993, incorporating major changes for the platting of roads.

Several older rural subdivisions were platted with road rights-of-way dedicated to the public. This did not mean, however, that a public (governmental) entity had accepted the roads for the purpose of maintenance, repair and snow removal. Quite often, subdivision homeowners had to assume this responsibility unless they were fortunate enough to have the township accept the roads. The 1993 amendments require that roads dedicated to the public must be accompanied by a certificate on the plat for township acceptance of the roads. Otherwise, the owner's certificate must certify that the roads are private and will be maintained by a homeowner's association.

There is a downside to requiring private roads in the absence of public dedication and acceptance. Oftentimes, rural residents view their particular subdivision as an exclusive area where roads begin and end in the subdivision and do not connect to adjoining properties. If private roads are created and a homeowner's association is formed to assess property owners for repair and maintenance costs, residents will be even more opposed to the extension of roads into adjoining developments. This could become a barrier to fostering a systemic road network within developing areas of the county. It is recommended that the subdivision ordinance be amended to allow public roadway dedication without township acceptance if the plat includes a certificate for private road maintenance.

A provision was added to the 1993 subdivision regulations requiring hard surfacing of newly platted roads which connect to existing hard surfaced roads. All other roads can be constructed with a gravel driving surface unless the access road is proposed for improvement, in which case the new subdivision roads must be hard surfaced.

State statutes allow municipal subdivision control over land within three miles of a city if a major street plan for the area has been filed with the Register of Deeds. When a city exercises platting control over rural property, the statutes require plats to be submitted to the County Planning Commission for review and recommendation. If the Commission recommends disapproval, a two-thirds vote of the entire membership of the city council is required. The platting jurisdictions for Dell Rapids and Sioux Falls correspond to the extraterritorial zoning boundaries. The only other city currently exercising platting authority over rural property is Brandon. The municipal platting jurisdictions are shown on Map 17.

Municipal subdivision regulations can impose unrealistic and unreasonable development requirements when applied to rural areas of the county. Curb and gutter, storm sewer, street lighting, and fire hydrants are common to municipal developments but impractical in a rural setting. The 1991 update of the Sioux Falls subdivision ordinance included specific provisions for rural subdivisions. The county

should work with the other communities who are or will be involved in platting outside municipal borders to ensure that subdivision regulations take into consideration the rural character of the property.

Extraterritorial Zoning

South Dakota Codified Laws allow counties and cities of the state to enter into joint planning and zoning agreements. Extraterritorial zoning has existed in the county since completion of the Greater Sioux Falls Regional Comprehensive Plan in 1968. A major revision occurred with the adoption of the 1983 Comprehensive Extraterritorial Zoning Regulations based on the Sioux Falls 2000 Comprehensive Plan. With this revision came a major change which moved administrative and enforcement authority to the county. This move reduced the complaints coming from rural residents who objected to the city's influence on zoning matters.

Another significant issue at the time was the way in which the extraterrritorial zoning boundary was unilaterally moved when the city annexed land. This issue was resolved by requiring county approval prior to a boundary change. Several revisions have been made in the 1983 extraterritorial regulations consistent with changes in the county zoning ordinance. The extraterritorial ordinance should be completely updated to maintain uniformity with the county ordinance and incorporate changes based on the adopted Sioux Falls 2015 Growth Management Plan.

A joint zoning relationship has been maintained between the county and the city of Dell Rapids since the early 1970's. A complete revision to the zoning regulations was completed in 1992, including a reduction in the extraterritorial area to more accurately reflect the city's future growth pattern.

The following **Policy Statement on Extraterritorial Zoning in Minnehaha County** was adopted by the Planning Commission on May 20, 1991 to guide decisions involving joint zoning activities with the municipalities.

General Overview

South Dakota Compiled Laws enable municipalities to adopt zoning regulations within their corporate jurisdictions. Similarly, the authority for zoning in the unincorporated areas is placed with the counties. Municipalities may also exercise zoning powers within three miles of their corporate limits subject to county approval. In this case, the city and county must mutually agree upon joint (extraterritorial) zoning regulations. The county may also relinquish zoning authority to a city within three miles of the corporate limits.

Municipalities also have authority over the platting of land within three miles of their corporate limits. Under state statutes, a city assumes this authority by preparing a major street plan and filing the plan with the county register of deeds. If a joint zoning jurisdiction does not exist, a city has exclusive platting jurisdiction beyond its corporate limits. Where joint zoning has been authorized, plats require approval of the county planning commission in addition to municipal approval.

Since joint zoning authority requires the concurrence of both governing bodies, the city in effect maintains veto power over county decisions. For example, if the county approves a rezoning or conditional use but the city denies the request, the county's action is negated.

State law fails to address the procedure necessary to terminate a previously agreed upon joint jurisdiction. It is assumed that this can be accomplished by mutual agreement of the county and city or the county can unilaterally terminate an existing extraterritorial jurisdiction on the basis that State law

requires both entities to approve a substantially identical zoning ordinance. If the county does not agree with the city on a zoning ordinance, there can be no joint jurisdiction.

The origin of extraterritorial zoning in the United States can be traced back to the period following World War II when many of the nation's large cities were experiencing explosive growth into adjacent unincorporated areas previously untouched by urban development. While municipal zoning sought to promote a sound and efficient land use pattern inside corporate limits, counties were generally ill prepared to handle the land use problems and conflicts associated with this new expansion. Without such planning and control, numerous conflicts and haphazard uses contributed to the undermining of city zoning efforts.

State legislatures have approached the issue in different ways. In some instances, the size of the extraterritorial zoning jurisdiction is based on a city's population. Some states allow municipalities to zone outside corporate limits only if the county has no zoning. In other cases, the city is allowed to perform planning functions for the fringe areas and the county then zones those areas in accordance with the plan.

There are several arguments dealing with this issue which are worthy of discussion. Foremost is the argument that a serious impairment of the rights of property owners occurs when zoning regulations are extended beyond municipal boundaries without consent of the affected residents. Property becomes subject to decisions on land use restrictions and legislative matters over which the landowners have no voice.

The counter argument is that extraterritorial zoning is a more equitable alternative than annexation because of its single purpose intent. Annexation is premised on the idea of present land need, while extraterritorial zoning is concerned with future need and development. Municipal officials argue that the latter concept is less burdensome than the former, but the opposing point of view indicates that extraterritorial zoning is more objectionable because it results in restriction without any immediate or tangible advantage. Annexation on the other hand results in immediate benefits to residents, including police and fire protection, utility services and of particular importance, a voice in the municipal government.

Annexation and zoning are different concepts, designed to accomplish different ends. But one common element is present in both concepts - the basis or justification required of a municipality prior to taking such action. South Dakota law requires a study as a prerequisite to annexation to determine the need for additional territory and to identify the resources necessary to extend municipal boundaries. This study must ensure that ample and suitable resources exist to accommodate the orderly growth of the annexed area, that there is a definite timetable upon which municipal services such as utilities and streets will be extended, and that the anticipated cost of improvements to residents is identified.

State law is not specific as to the scope of municipal planning and zoning authority outside city boundaries, only that the jurisdiction cannot extend more than three miles from the corporate limits. The only direction set forth in the law is that the city planning commission is responsible for proposing a plan for the physical development of the municipality, including any areas outside the corporate limits and within its planning jurisdiction which, in the commission's judgment, bear relation to the planning of the municipality.

Alternatives to Joint Zoning

There is no doubt that a city's input into future growth patterns and the impact this growth may have

beyond the city are important considerations for the county as well. When improperly managed, this growth can pose serious short term problems to the county and result in future long term liabilities for the city. This is not to imply, however, that extraterritorial zoning is the only possible solution. Several options are available and should be seriously considered by a city before requesting joint zoning jurisdiction.

- County endorsement of the municipal comprehensive plan pertaining to areas beyond the corporate limits. Development proposals would be reviewed by the county to determine conformance with the plan before final action is taken.

- Notification by the county of development proposals around the fringe of the city. The city would be given a specified time to review the proposal and make a recommendation before any action is taken by the county.

- Municipal control over platting of land outside the city by filing a major street plan with the register of deeds.

The above options ensure input into county land use decisions without establishing a formal and burdensome process required by extraterritorial zoning. State law mandates joint meetings of planning commissions and governing bodies before decisions are reached in the extraterritorial area. This could be a burden for some cities to assemble a quorum for these meetings.

Final decisions on land use issues outside corporate boundaries would rest exclusively with the county. This removes the argument that landowners in the joint jurisdiction are subject to decisions by city officials who do not represent them. It also ensures that land use issues which may have regional significance are addressed at the county level and not by any one city with self serving interests.

Procedural Requirements for Joint Zoning Requests

Court decisions nationwide have upheld the constitutionality of extraterritorial zoning. But this authority is based on several critical elements. First, there must be a grant of state enabling authority. Secondly, it must be determined that the regulations are a reasonable exercise of the police power in the public interest. Third, it must be established that extension of municipal zoning powers over adjacent territory is necessary to the orderly and harmonious expansion of the core city. Fourth, the exact area to which extraterritorial zoning will apply must be justified on the basis of municipal need and the general welfare.

It can only be implied that the State Legislature had the last element in mind when enacting planning and zoning statutes in South Dakota. To ensure that any authorization of extraterritorial zoning jurisdiction is constitutionally defensible, the county has set forth the following requirements to be met by a municipality proposing joint zoning control outside corporate boundaries.

1) The municipality must have adopted a comprehensive plan or updated a previously adopted plan within the past three years. The plan shall include the following elements:

   a) Population component, including past and present trends, and projected population for the 20-year planning period shown in five year increments.

   b) Forecast of land consumption during the planning period for residential, commercial and industrial uses based on projected population.

c) Location and supply of vacant developable land presently within corporate limits and the classification of these areas for residential, commercial or industrial use.

d) Net land area required beyond the corporate limits during the planning period.

e) Feasibility and timetable for extending municipal utilities to serve future development areas.

2) The municipality shall present their comprehensive plan to the county planning director. The planning director shall review the document for completeness and accuracy before making a recommendation to the Planning Commission. The plan shall include the proposed boundary of the extraterritorial jurisdiction.

3) The Planning Commission shall make a recommendation to the Board of County Commissioners as to the need for joint jurisdiction. The Planning Commission may recommend a different boundary or recommend denial of the municipal request.

4) If the Board authorizes joint zoning jurisdiction for a municipality, the county and city planning commissions shall meet jointly to propose a zoning ordinance for the area. The zoning ordinance should conform as much as possible to the existing zoning regulations of the county. Administration of the regulations should rest with the county.

5) Joint action by the county and city in adopting the ordinance shall constitute the agreement for the extraterritorial zoning jurisdiction

Building Code

A building code establishes minimum construction standards for new structures as well as for remodeling and repair work performed on existing buildings. These standards are intended to safeguard life, health, property, and the public welfare by regulating and controlling the design, construction, quality of materials, and occupancy of structures.

Minnehaha County maintains a building inspection program by enforcing the nationally recognized Uniform Building Code (UBC). The UBC is updated every three years to improve safety requirements and account for innovations in building materials and construction technology. The county amends certain sections of the code to reflect local conditions. By enforcing the building code, county ensures that construction meets minimum structural and life safety standards.

In the past, several communities have inquired about using the services of the county's building inspection program. This function is currently being performed individually by each of the cities, but under this arrangement it is difficult to retain qualified individuals in a position which is generally only part time. The county should study the alternatives for a cooperative building inspection program with the small cities.

Housing Code

A housing code addresses existing buildings within a community and is directed at structures which are in need of major repair and rehabilitation. The city of Sioux Falls is the only entity within the county to enforce such a code.

As the county's rural housing supply ages, particularly among those structures built prior to

adoption of the building code, the need for a housing code will become more apparent. The county should explore the potential of a cooperative venture with Sioux Falls, utilizing the expertise of city officials in implementing a housing code in the rural area. By contracting for city services, the county would be able to call upon qualified personnel as needed.

Geographic Information System

Development of a geographic information system (GIS) started in 1990 as a joint effort between Sioux Falls and the county. GIS is a computer technology used to gather, store, manipulate, analyze and display spacial information in digital format.

GIS technology provides a valuable tool to assist in implementing the comprehensive plan. Much of the spacial information gathered for this plan has been entered into the GIS, including land parcels, existing land use, flood plains, aquifers, water resources, topography and transportation systems. Boundaries of service areas for school, fire, and sewer exist as coverages. Other features such as public well sites, pipelines, railroads, electrical transmission lines and aerial photography are also in the data base.

This data is not new but since it generally existed as single purpose paper maps, manipulation and analysis of data was extremely difficult. A GIS involves spacial operations such as the linking of data from different sets which is stored in digital form. For example, the location of failed septic systems can be shown along with soil type, terrain features and water resource information so an analysis can be performed to determine the impact of various combinations of elements. Modeling can be performed to determine the impact of new highway construction or if hazardous materials will reach the groundwater and how quickly. It is recommended that GIS technology be used to assist in the implementation of the Comprehensive Plan as well as to support other county departments.