

KANABEC



COUNTY



COMPREHENSIVE



PLAN

MAY 2002

Kanabec County
COMPREHENSIVE PLAN
ORDINANCE #22
MAY 2002

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Kanabec County Comprehensive Plan

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PREFACE

This Comprehensive Plan has been developed as a policy guide for managing growth and development in Kanabec County. This Plan represents the first formally adopted countywide comprehensive plan for Kanabec County. This Plan and planning process acknowledges the past, current and anticipated growth and development patterns confronting Kanabec County and has been developed in an effort to address those changing patterns. The Kanabec County Comprehensive Plan consists of four primary elements:

- Introduction
- Background Information
- Kanabec County Issues, Goals and Policies; and
- Growth Management Recommendations

It is the intent of the Kanabec County Board of Commissioners that this Plan be viewed as a growth management tool, which provides the necessary flexibility to manage current and future growth in the County. This Plan should be revised and adapted so as to continue to reflect County policy concerning growth and development issues.

This Plan is intended to be a policy plan in that the County policies are viewed as the framework, which establishes the identified Growth Management Plan Recommendations. The background provided generalized descriptions of existing conditions in the implementation of this Plan would be accomplished through development and adoption of official growth management programs.

SECTION 1 INTRODUCTION

1.1 Legislative Authority

Minnesota counties are given authority to plan for and manage development within their jurisdictions under Minnesota Statutes 394.21 to 394.37. The County Planning Enabling Act states that county boards in Minnesota “shall have the power and authority to prepare and adopt by ordinance, a comprehensive plan.” The stated purpose of the plan is to provide a means for “promoting the health, safety, morals, and welfare of the community,” The plan provides a process for establishing a common set of goals and policies for addressing the land use and development issues for the County.

The comprehensive plan, when adopted by the County Board, becomes the basis for official controls adopted under the provisions of Minnesota Statutes Sections 394.21 to 394.37. Official controls here generally mean Township zoning ordinances, subdivision regulations and other environmental management ordinances.

1.2 Plan Purpose

The primary role played by the comprehensive plan is to serve as a statement reflecting the desired direction for future development occurring in Kanabec County. The Comprehensive Plan achieves this goal by:

- Identifying through policies the County’s attitude toward past, current and future development;
- Providing a reference to review and evaluate changing development patterns;
- Serving as a document to promote discussion concerning how to manage growth and development in the County;
- Presenting statements which establish a framework that defines the desired direction of growth and development in Kanabec County; and,
- Provides Growth Management Recommendations, which identify provisions and direction in adopting official controls.

1.3 Planning Process

The process followed in Kanabec County to develop this Plan revolved primarily around working sessions carried out by the Kanabec County Planning Commission. This Commission consists of members appointed by the County Board. These members represent general geographical areas of the County, township boards, and interested citizens of the County.

In addition to their ongoing administrative responsibilities dealing with shorelands, flood plain and subdivision regulations, the Planning Commission serves as the primary arena for discussion, evaluation and development of the Kanabec County Comprehensive Plan. Following a process of review and development of land use issues, goals and policies and plan

recommendations, the Planning Commission recommended a draft Kanabec County Comprehensive Plan for presentation to the Kanabec County Board of Commissioners.

At specific points during the planning process, key elements of the draft plan were distributed to the townships, cities and resource people in Kanabec County. Distributing these elements at key points in the process served to keep the local governments informed concerning the planning sequence and also sought recommendations concerning the issues addressed, draft land use policies and draft plan recommendations.

The Comprehensive Plan, as discussed and evaluated by the Planning Commission, consists of these key elements:

- A statement of land use issues, followed by land use goals and policies to address those issues; and,
- A series of plan recommendations, which translate the land use goals and policies into more specific recommendations on land use management.

Following development of each key element by the Planning Commission, it was distributed as a draft document open for comment and revision, to local governments and interested citizens. The final document was adopted by resolution of the Kanabec County Board of Commissioners.

SECTION 2. BACKGROUND INFORMATION

2.1 Location

Kanabec County is located in east central Minnesota. Mora the county seat is located in the south central part of the County, and is approximately 60 miles north of the Minneapolis/St. Paul Metropolitan area. The County has a total of approximately 339,000 acres.

Kanabec County is considered to be within the limits of the metropolitan area daily commuting zone. The County lies in region of Minnesota which is experiencing population growth. The growth can be attributed to three primary factors:

- The county is a convenient distance to the major employment, retail, entertainment and services offered by the Twin Cities Metropolitan and St. Cloud areas;
- It is experiencing retirement, and second home development,
- The County also lies at the intersection of two major transportation routs in the state. Highway 65 serves a major link between the Metropolitan Area and Iron Range cities and also as a route for recreation traffic to northern Minnesota. Highway 23 serves as a major route between central Minnesota and the Duluth/Superior area. Map 1 shows the County's location in Minnesota.

2.2 County History (prepared by the Kanabec County History Center)

Kanabec County had its start during the last ice age some 7,000 years ago when the last great ice sheet receded from this area, leaving the land covered with glacial drift up to a hundred feet thick in spots. This drift eventually transformed itself into the soil structure of the county. This defined the general contour of the landscape. It is unknown, how long a period elapsed until the newly re-emerged landscape developed into the lush old-growth forests America's indigenous peoples found here. It certainly predated, by thousands of years, the first recorded accounts, which indicate that perhaps, two French fur traders, Radisson and Groseillier, together with a large band of Huron and Ottawa Indians, spent the winter of 1659-1660 on Knife Lake, north of present-day Mora. Twenty years later, Father Hennepin, taken captive by a band of Mille Lacs Sioux in St. Paul, passed through Kanabec County.

The County bears a name given by William H.C. Folsom of Taylor's Falls, who proposed its formation in a legislative bill to the state senate in 1858. Kanabec (Ka-Nay'-Bec) is the Ojibwe word for snake. (The name evidently was chosen because it was also the Ojibwe word for the winding river, which traverses the county from north to south.) The word has a long "a" sound and heavy accent on the second syllable. This bill, set the stage for the organization of the county in 1859; the year after Minnesota became a state. Prior to 1849, Kanabec was part of St. Croix County, Wisconsin. Then until 1852 it was part of Ramsey County, and until 1854 it was part of Chisago County. Thence until its organization in 1859 it was part of Pine County.

Brunswick remained as county seat until 1882, when a vote was taken and the county seat was transferred to the newly platted Village of Mora, and a new courthouse and jail built there at a cost of \$7,000. Up to 1882, Kanabec County had remained attached to Pine County for judicial purposes. In 1882, the first term of court was held at Brunswick, and in 1884, the second term of court was held in Mora with F.M. Crosby, Judge; S.E. Tallman, Clerk; and C.E. Williams, Sheriff. The first jury ever-summoned in Kanabec County also met in 1884.

Mora was platted by Myron R. Kent in 1882. It was named at the suggestion of Isreal Israelson, a settler then living near Lewis Lake, who mentioned to Mr. Kent that it would be nice if he named the new village after his hometown in Mora, in Dalarna, Sweden. Accounts of the early days of Mora suggest that it enjoyed “boon” times almost immediately, being situated on the new railroad, and in a great position to serve as supplier to all the logging camps still existing at the time. Mr. Kent built the first building in Mora, a hewn log structure, which, according to C.E. Williams’ account of Mora’s early days, he promptly sold to Mrs. C.P. Conger, who has been operating a hotel in Pine City, and opened Mora’s first structure as a hotel. Mr. Williams also goes on to relate that a total of 46 buildings were erected in Mora in the summer of 1883, including 19 business buildings, 14 dwelling houses, 3 barns, 2 warehouses, 1 sawmill, 1 courthouse, 1 jail.

Logging was Kanabec County’s first industry; its initial stirrings go back to 1837. In that year, vast tracts of land, including what was to become Kanabec County, were obtained in a treaty with the Ojibwe Indians, being purchased from them for about 1/3 cents per acre. The treaty called for the government to make payments to the Indians for the next twenty years. The loggers were impatient to start operations, but they had to wait until the Indians had been paid. When the treaty was ratified by Congress logging began in earnest.

From the 1850’s throughout the next half-century, the logging industry flourished in Central and Northern Minnesota. In Kanabec County, the logging companies built dams on rivers and streams, including the Snake, Knife, Ann, Grouse and others. This was done in order to build up a large enough head of water to float cut logs through these waterways, thence down the Snake to the St. Croix and mills at Stillwater. From there, they were floated down the Mississippi as far as Winona. In the latter stages of the timber harvest, the O’Neal Brothers overcame the lack of negotiable streams in that area by building a logging railroad from Knife Lake northwestward almost to Isle, enabling them to bring logs down to Knife Lake, where they would travel down the aforementioned waterways. The area northwest of Knife Lake also contained a considerable amount of hardwood, such as oak, which was too dense to float, so a mill was built at Knife Lake to handle this wood.

Once the timber was harvested, the logging companies had no further interest in the territory, and moved on. Land companies followed in their wake, relying on cheap prices and extravagant claims to entice settlers, such as calling Kanabec County “the land of the big red clover.” Settlers did come, and gradually the land was cleared and built up the agricultural base that still exists in the county today. Potatoes became the county’s first cash crop. Potato

warehouses sprang up to buy, store and ship the vegetable to markets. In Grasston a starch factory was built to handle surplus produce, much of the processed starch going to the garment industry in the East.

As the years rolled past, potato production dwindled, and for a long time dairy farming provided the backbone of the agriculture economy. However, that has downsized also, in favor of more diversified farming. An industrial base has also been established, with firms such as Engineered Polymer Plastics, Inc., Raven Tool and Machine, Inc., Carlson Marketing, Bluewater Marine, Hon Metfab, Inc., C.E. Rogers Company, and others. The county, now home to about 15,000 residents, has many financial institutions, and locally owned business. Mora remains the county seat. Other incorporated cities include, Grasston, Ogilvie and Quamba.

2.3 Population

Identified on Table 1 are historical populations and population projections for Kanabec County. The Minnesota State Demographer's Office predicts that population will grow at an average rate of 4.7% per decade to the year 2020.

Table 1
Kanabec County
Historical Population and Projections

	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>
Population:	9,775	12,161	12,802	14,996	15,700	16,430
Change:		24.4%	5.3%	17.1%	4.7%	4.7%

As shown on Table 2, the trends in population have shifted county residents from rural farm to rural non-farm and urban. In 1970 the rural non-farm population accounted for 38% of Kanabec County totals, while the rural farm population accounted for 36% of the total county population. By 1990 these percentages had changed so that non-farm made up 65% of the County total, rural farm population make up 12% and urban population accounted for 23% of the County total.

Table 2
Percent of Rural Farm, Rural Non-Farm and Urban
Population
Kanabec County, 1970-1990

TYPE	1970 Population	%	1980 Population	%	1990 Population	%
Rural Non-farm	3,696	38	6,940	57	8,345	65
Rural Farm	3,497	36	2,331	19	1,552	12
Urban	2,582	26	2,890	24	2,905	23
TOTAL	9,775	100%	12,161	100%	12,802	100%

Table 3 identifies historical population trends for local units of government in Kanabec County. According to historical population data, the largest population growth took place in Kanabec County during the years 1970 to 1980. Another higher than average increase occurred between 1990 and 2000.

Table 3
Historic Population Trends
Cities and Townships, Kanabec County

Cities	1970	1980	1990	2000	% Change 1990-2000
Grasston	132	123	119	105	-11.76%
Mora	2,582	2,890	2,905	3,193	9.91%
Ogilvie	384	423	510	474	-7.06%
Quamba	114	122	124	98	-20.97%
Total Inc. Area	3,212	3,558	3,658	3,870	5.8%
Townships					
Ann Lake	193	226	264	377	42.80%
Arthur	957	1,435	1,533	1,905	24.27%
Brunswick	765	978	1,107	1,263	14.09%
Comfort	569	756	819	931	13.68%
Ford	131	137	150	177	18.00%
Grass Lake	769	944	888	928	4.50%
HayBrook	108	206	165	218	32.12%
Hillman	233	311	335	384	14.63%
Kanabec	423	656	633	853	34.76%
Knife Lake	557	727	825	1049	27.15%
Kroschel	216	216	188	218	15.96%
Peace	386	485	609	963	58.13%
Pomroy	281	342	321	390	21.50%
South Fork	526	568	614	662	7.82%
Whited	449	616	693	808	16.59%
Total Inc Areas	6,563	8,603	9,144	11,126	21.68%
TOTAL	9,775	12,161	12,802	14,996	17.13%
Source: I.S. Census(1970-2000)					

Table 3 also shows that all of the townships gained population from 1990 to 2000. The City of Mora showed a somewhat slower growth rate in the 1990 to 2000 decade, while other cities lost population during this period.

Table 4 identified age composition for Kanabec County. Age composition can be significant as it influences income and expenses for education, housing and service requirements.

Table 4
AGE COMPOSITION: 2000 KANABEC COUNTY

Age Group	# of Persons	% of Total
0-4	901	6.01
5-9	1120	7.47
10-14	1256	8.38
15-19	1233	8.22
20-24	659	4.39
25-29	1684	11.23
30-39	2440	16.27
40-49	2054	13.70
50-59	815	5.93
60-64	720	4.80
65-74	1179	7.86
85 +	222	1.84

Source: U.S. Census 2000

2.4 Existing Land Use

A basic component of Kanabec County's Comprehensive Plan involves a review of existing land uses. In a sense all discussions and recommendations in the Plan are directly related to land use analysis, that is, all factors mentioned in this plan have impacts on either the existing land use or future land use of the County.

Forestlands account for 144,948 acres or 42.5% of the total county area, and dominate in the northern and western portion of the County. Scattered woodlots are found throughout the County and can be generally associated with home sites making up the majority of the rural residential development.

Pasture and open land accounts for 67,933 acres or 19.9% of the County's area. This category includes open and pasture lands not specifically cultivated. A lesser amount of rural residential development currently occurs on these lands.

The cultivated lands make up the 2nd largest land use category accounting for 20% or 69,483 acres in the County. For purposes of this analysis cultivated lands are defined as lands, which have been recently tilled or shows evidence of a recent harvest. Agricultural lands often display the soil characteristics, which also make good home sites: level or gently rolling, well drained, no groundwater or bedrock problems and adequate percolation. Traditionally the most significant competition with agriculture for this type of land has been residential development.

Forested, pasture and cultivated lands makeup 82.4% of the land use in Kanabec County. The remainder is divided among wetland (18,955 acres), open water (6,431 acres including some lakes which are under 10 acres in size), and rural residential (6,432 acres).

Table 5 identifies the percentage and acreage of existing land use, based on dominant land use of 40 acre cells.

Table 5
Generalized Land Use
Kanabec County

<u>Use</u>	<u>Acres</u>	<u>Percent</u>
Forested	144,948	42.5%
Cultivated	69,483	20.4%
Water	6,341	1.9%
Marsh (wetland)	18,995	5.6%
Urban Res/Non-Res	6,432	1.9%
Hayland/Pastures	67,993	19.9%
Brushland	26,563	7.8%
Mining	540	.2%
TOTAL	341,195	100.0%

Source: Land Management Information Center (2000 Census)

2.5 Natural Features

For the purposes of this Plan, natural features are divided into soils, topography, water resources and forested areas.

2.5.1 Soils

The soils of Kanabec County have been formed on extensive deposits of glacial till. Most of the County is composed of till, and outwash plain, presenting relatively level surfaces for soil formation. However, certain parts of the County, especially in the north, are steeper slopes. Of the major environmental factors which influence soil formation (topography, bedrock, climate, time and biological agents), topography is viewed as the most significant within an area such as Kanabec County.

The till over most of the County was deposited by the Patrician Ice Sheet, and is a red to reddish brown, loose-textured sandy or gravelly material. Chemically, it ranges from slightly acid to moderately alkaline, and contains fragments of basalt, granite and sandstone. A small area along the Isanti County line is made up of till from the Keewatin Ice Sheet. Also, the presence of the Glacial Lake Grantsburg bed in southern Kanabec County has some effect on the development of soils in that region, where areas of poor drainage, lake clays and silts, and peat bogs are present. Seven general soils associations make up the soils of Kanabec County and are shown on Map 4 and described below.

Milaca-Barrouk Association

This Association is found only in Ford and Kroschel Townships. It has developed from non-calcareous glacial till on level to gently undulating surfaces, which moderate to poor drainage. The Milaca soils are often gravelly and stony, and support stands of second growth oak and aspen. The Barrows soils are characterized by growths of willows, sedges, elm and black ash.

Milaca-Association

The Milaca Association occurs in a lateral belt, which runs through the north central part of the County. The Association is a reddish brown sandy loam, moderately drained and slightly acid, which has developed along the Snake River Valley. The Association supports pasturing and stands of aspen, birch and maple.

Dalbo-Brickton Association

This Association is found in the southern townships of the County and is a brown silt clay loam, which has developed on fairly level surfaces. This soil, unlike other Associations in the County, has developed from the calcareous gray drift of the Keewatin Ice Sheet. The drift was deposited in standing water, producing a level, stone free and very finely sorted soil type, which is well suited for agriculture or pasturing. The Association originally supported a dense hardwood forest of oak, basswood, elm and maple, but much of the area is now cleared.

Freon-Adolph Association

The Freon-Adolph Association characterizes a major part of Kanabec County. This Association has a base of sandy loam overlain by a shallow silt layer. In some areas the Association is found with a surface covering of peat or muck. Drainage varies from moderate to poor, depending on the topography. The soils have developed on level to gently undulating surfaces. This Association is often used for pasturing. Its inherent moisture allows vegetation growth to continue in periods of extended drought. These soils often support crops, with proper management of acidity, fertility and erosion problems.

Omega-Cloquet Association

This Association occupies the south central part of the County. The Omega soils have developed from non-calcareous red fine and medium-textured sand, and the Cloquet soils have been formed of sandy loam overlying gravelly glacial drift. Moisture retention is a major problem in this Association, as the sands and gravels are extremely permeable.

Antigo-Onamia Association

This Association is found in the southwestern section of the County and forms a narrow belt following the course of the Groundhouse River. It has developed on fairly level surfaces and is made up of a sand and gravel layer overlain in 2 to 3 feet of silt loam. This soil type is characteristic of outwash plains and stream terraces, and is fairly well drained. The Association supported extensive stands of red and white pine, but now is characterized by stands of second growth aspen and birch.

Milaca-Bain-Moosehorn Association

This Association occurs in Haybrook Township. It has developed on undulating surfaces, specifically the flanks of the Mille Lacs Moraine, and is derived from red, Patrician drift. The Association is made up of an acid sandy loam, and in some areas of poor drainage, includes herbaceous organic soils of sphagnum peat origin. Stands of pine, birch and aspen are supported, especially on the better-drained slopes.

Table 6 shows the use limitations of the major soil associations found in Kanabec County. Of importance for most development are questions relating to: septic tank and drain fields; shallow excavation; local roads and streets; potential frost action; depth to water table; and potential flooding. All development activities should be aware of the type of soils and their limitations. Site specific soil information as maintained by the County Soil Conservation Service should be consulted when making land development decisions.

Table 6
Use Limitations of Kanabec County Soil Associations

Soil	Unified	Septic Tank & Filter Fields	Soil Limitations Reservoirs & Lagoons	Res/Comm Development
Adolph	ML	Severe, b, f	Slight	Severe, l, q
Pomroy	SM	Mod to Severe h	Mod. S	Slight
Milaca-Chetak	SM, SM-SL, GW, GP, SP	Severe	Severe	Slight-Mod, n, d
Milaca	SM	Severe, h	Slight-Mod, h, q	Slight
Onamia	SM, ML, GW, SP	Slight, v	Severe, h	Slight
Chetek	SM, GW, GP, SM-SC	Slight	Severe, h	Slight-Mod, n, d
Emmert	SM, GW	Slight	Severe, h	Slight
Mora	SM	Severe, f, h	Slight-Mod	Slight-Mod
Ronneby	SM	Severe, f, h	Slight	Mod, f, j
Halder	ML	Severe, f	Mod, h	Severe, f
Omega	SM, SP-SM	Slight	Severe, h	Slight
Freon	ML-CL	Severe, f, h	Slight	Mod.
Freer	ML-CL	Severe, f, h	Slight	Mod.

a-bearing capacity

b-frost action

c-compaction

d-compressibility

e-depth to bedrock

f-depth of water

g-surface texture

h-permeability

I-limitation for septic tanks

j-flooding or pending freq.

k-limitations for foundation

l-slope

m-shear strength

n-shrink/swell

o-subsoil texture

p-stability

q-staminess

s-compacted permeability

t- piping resistance

u-workability

v-hazard of pollution

underground water

Source: Soil and Water Conservation District, USDA SCS

2.5.2 Topography

The major landforms of Kanabec County are considered to be moronic hills as the result of glacial movement and glacial till plains. The depositing of materials along the edges of the ice sheets from hills or ridges known as moraines. The dominant moraine of Kanabec County is the Mille Lacs moraine, which has an average elevation of 1200 to 1300 feet. The County slopes southward from the Mille Lacs moraine to an average elevation of about 950 feet, along the southern County boundary. Smaller moraines exist throughout the County.

Generally central Kanabec County is made up of till plains or material deposited by melting of glaciers. The land surface is gentle to moderately rolling. The southeastern part of the County contains lake clays, marsh and boggy tracts, evidence of former Glacial Lake Grantsburg.

Only limited exposures of bedrock are found in Kanabec County because of the extensive deposits of glacial till which covers the area. The bedrock of the County is composed of two major systems, one of the granitic or volcanic action, the other of a sedimentary origin. The northern parts of the County near Warman have exposure of granite that is of sufficient quality to be used for monuments and building stone. Sand and gravel pits as found in glacial till are scattered throughout the County.

2.5.3 Water Resources

Kanabec County lies within the watershed of the Rum, Kettle, and Snake Rivers. The Rum River watershed includes a very small portion of northwestern and southern Kanabec County. The extreme northeastern corner of the County is in the Kettle River watershed with nearly all the county lying in the watershed of the Snake River.

Kanabec County is described as having an interrupted drainage pattern. Meandering streams, many small pothole lakes, bogs, swamps and intermittent streams characterize these patterns. Glacial landforms have blocked the original stream flow and produced the present system. The County contains all or parts of 105 Department of Natural Resources Protected Waters including lakes, rivers and streams and wetlands, totaling approximately 6,200 acres or just under two percent of the County's area.

Kanabec County's shore lands are a valuable resource, both for tourists and residents of the County. Shore land property has and will continue to attract development, making it important that the County develop and maintain policies, which reflect the issues, and development pressures found in the lakeshore areas.

Table 7 identifies an inventory of the protected lakes and streams in Kanabec County, and also the lake or stream classification as adopted by the County for purposes of implementing shore land management regulations. All the County's thirty-four lakes fall within the recreational Development or Natural Environment Lake Class with the County's rivers and streams classified as Forested, Remote, Transition or Tributary. In addition to those water bodies identified on this Table, wetlands exist that are subject to wetland management regulations consistent with the Wetland Conservation Act. Kanabec County Protected Waters are identified on Map 5.

The lakes and rivers of the County will continue to hold attraction as residential areas. In particular in recent years those townships which have Snake River, Ann Lake, Fish Lake, Knife Lake lakeshore have registered significant population increases, suggesting that these townships are experiencing development associated with the shore land areas. Adequate shore land management programs will help to ensure that development will be environmentally sound. Lakeshore improvement associations and other similar interest groups are valuable in assisting the County and townships in identifying land use and water management issues. The County and townships should continue to work with these groups in managing shore land areas and water quality in general.

Table 7
DNR Protected Waters
Kanabec County
(For which Shore land Management Regulations apply)

<u>Natural Environment Lakes</u>		<u>Protected Waters</u> <u>I.D. Number</u>
1.	Beauty	33-2
2.	Five	33-3
3.	Twelve	33-4
4.	Thirteen	33-5
5.	Featherbed	33-6
6.	White Lily	33-8
7.	Peace	33-10
8.	Rice	33-11
9.	Grass	33-13
10.	-Unnamed-	33-14
11.	Spence	33-16
12.	-Unnamed-	33-17
13.	Sells	33-18
14.	Twin	33-19
15.	Luchts	33-21
16.	Full of Fish	33-24
17.	Pocket Knife	33-25
18.	Snowshoe	33-26
19.	Pennington	33-30
20.	Erickson	33-31
21.	Kent	33-35
22.	Telander	33-37
23.	Lindgren (Boundary Lake)	30-144
24.	Long Lake	33-44

Recreational Development Lakes

1.	Eleven	33-1
2.	Pomroy	33-9
3.	Mud (Quamba)	33-15
4.	Spring	33-27
5.	Knife	33-28
6.	Lewis	33-32
7.	Devils	33-33
8.	Fish	33-36
9.	Ann	33-40
10.	Bass (Boundary Lake)	33-137

Table 7 (Continued)

Protected Waters

Rivers and Streams

Remote Rivers

Snake

Legal Description

From border of Aitkin and Kanabec Counties to South section line, Sec. 2, T41N, R24W.

Forested Rivers

Snake

Legal Description

From North section line, Sec. 11, T41N, R23W to South Section line, Sec. 19, T40N, R23W.

Groundhouse

From border of Mille Lacs and Kanabec Counties to confluence with S. Fork Groundhouse R. in Sec. 7, T38N, R24W.

Ann

From Ann Lake in Sec.29, T40N, R25W to Fish Lake in Sec.28, T39N, R24W.

Transition Rivers

Snake

Legal Description

From North Section line, Sec. 30, T40N, R23W, to Border of Pine and Kanabec Counties.

Groundhouse

From confluence with S. Fork Groundhouse R, In Sec. 7, T38N, R24W to confluence with Snake R. in Sec. 6, T38N, R23W.

Ann

From outlet Fish Lake in Sec.28, T39N, R24W to confluence with Snake River in Sec.24, T39N, R24W.

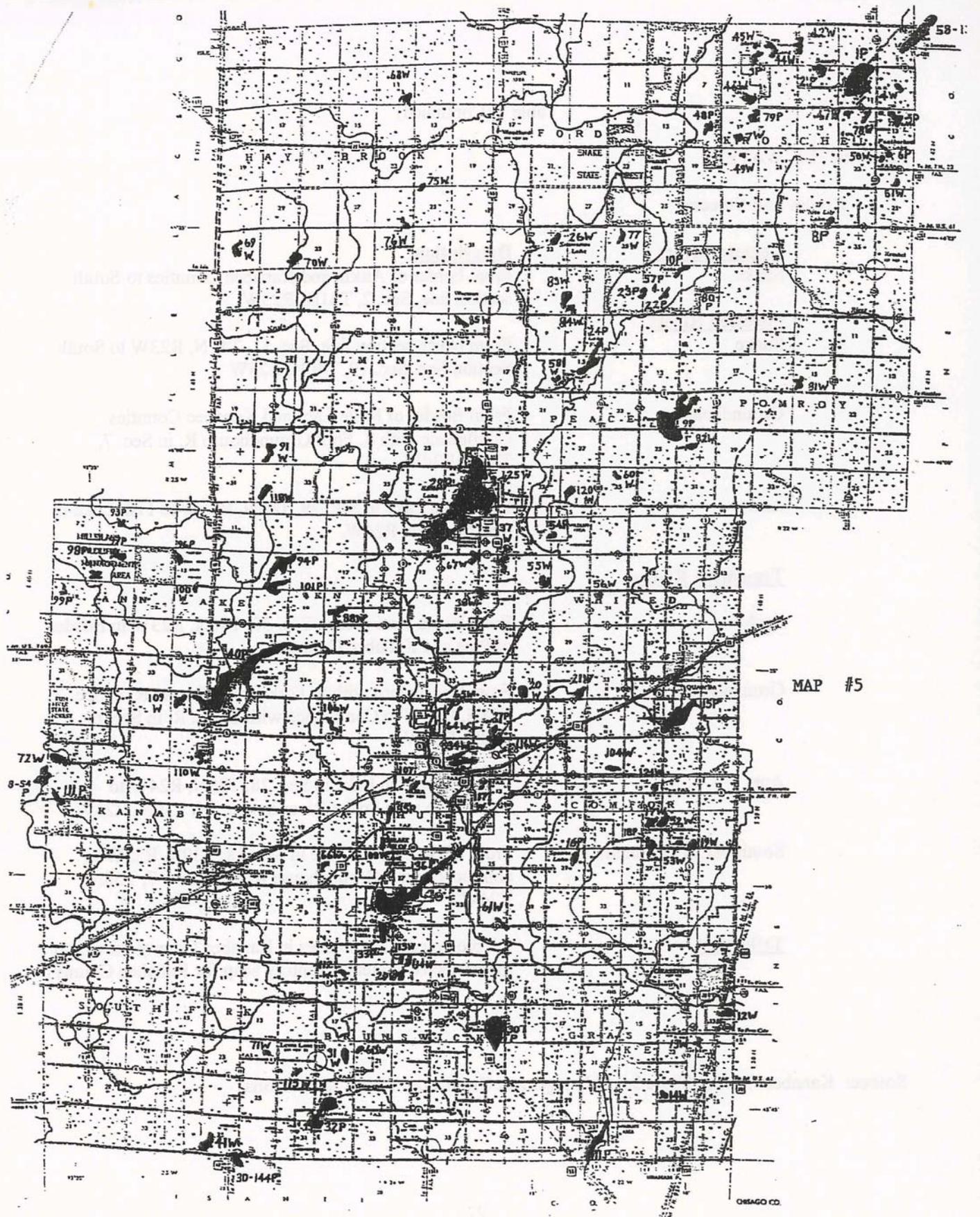
Southfork of Groundhouse

From Mille Lacs Co. line in Sec. 18, T39N, R25W to confluence with Groundhouse River in Sec.7, T38N, R24W.

Tributary Streams

*All protected watercourses in Kanabec County shown on the Protected Waters Inventory Map for Kanabec County.

Source: Kanabec County Shore land Management Ordinance, subject to revisions.



The drainage pattern of the County is such that numerous areas of bog and marsh exist. It is important to realize the natural function that marshes or wetlands fulfill. Wetlands are defined as transitional areas between dry land and open water, which includes areas of low topography, poor drainage and standing water. Due to their seasonal and yearly variations in water levels, they are sometimes difficult to identify. Wetlands do exhibit set of common natural functions that make them valuable natural resources including: acting as a natural filter to remove natural and man-made sediment and pollution; acting as “no cost” flood control devices in periods of high water and water release systems during periods of low water; providing wildlife habitat and providing open spaces for certain recreation activities. These attributes of wetlands are being managed by County implementation of the Wetland Conservation Act as required by state statute.

The Kanabec County Water Plan is recognized as the primary surface and groundwater inventory and management tool and program for the County. Efforts are made in the County Comprehensive Plan to be consistent in policy with the County Water Plan. For more information and more detail concerning ground and surface water management, the Kanabec County Water Plan should be consulted.

2.5.4 Forest Resources

Kanabec County lies within the northern coniferous forest zone. The original vegetation of this area consisted of stands of red and white pine, with some spruce, tamarack and softwoods being found in marshy areas or in areas of fire damage.

Most of the County is presently characterized by hardwood forest associations, with pine making up 1.5% of the County’s forested area. This pattern is traceable to the characteristics of plant succession. When east central Minnesota was logged and burned, few coniferous seed trees were left to natural reforestation. Later fires and farming activities cleared off many remaining trees. With the overshadowing forest removed, the area experienced an explosion of bushy deciduous growth and the spread of hardwood forest.

The southeastern third of the County is characterized by hickory oak occurring mainly in small tracts or wooded pasture in agricultural areas. Only about one-fifth of this area is wooded. Central Kanabec County is about 40 percent wooded and is made up mainly of basswood, maple and birch. Most of these trees occur as second growth on small woodlots or wooded pasture that originally supported pine. Kanabec County’s major forest area is found in northern areas where over 80 percent of the land is classified as forestland. Second-growth aspen and birch dominate.

Improvement of forest resources requires action at all ownership and management levels, but in Kanabec County the private forester is of key importance because of the large amount of privately held forestlands. Whenever possible, all owners of forest land should be encouraged to learn and use the best techniques of planting, growing, harvesting and marketing timber.

Restocking programs, adequate fire protection systems, land exchange policies and stand improvement by thinning are several of the forest management techniques, which may be employed in Kanabec County.

2.6 Transportation Facilities

The Transportation system in Kanabec County is made up of three basic functions: highways, railroads and airports. In Kanabec County the highway system is most important, both in terms of providing access and movement of goods.

The highways in Kanabec County can be classified in a variety of ways: governmental jurisdiction, structure, or access, etc. Together, the elements that comprise a highway define a total system designed to provide one function: to carry a given range of traffic volume from one point to another in a safe, convenient, and efficient manner.

2.6.1 Jurisdiction

Jurisdiction determines the source of financing in the construction and maintenance of the highway system. There are four basic types of jurisdictional financing or aid used which are the Trunk Highway system, County State Aid Highway system, the County Road system, and the Township Road system.

The State Legislature designates the trunk highway system. Once a highway is designated as a trunk highway, an act of the Legislature is necessary to change its route. There are two types of trunk highway designations: U.S. Trunk Highway and State Trunk Highway. Some trunk highways provide interstate or cross-country routes and to aid the motorist, they are designated as U.S. Trunk Highways by mutual agreement among the states. Those trunk highways that are essentially interstate routes carrying traffic from one point to another within the state, are designated as State Trunk Highways, Minnesota statutes provide for the selection of a system of County State Aid Highways by resolution of each county. The County State Aid roads are to be maintained by each county and financed through the County State Aid Highway Fund.

County roads are designated by action of the County Board of Commissioners and maintained by the County Highway Department. County roads generally carry less average traffic than trunk or state aid highways. Township roads are designated and maintained by each township. As with county roads, township roads generally carry less traffic than trunk or state aid highways. County and township roads generally are subject to more residential development pressures than other classes of highways as they serve areas of the county more desirable for residential development. One concern to townships with zoning regulations is the requirement for public road frontage for new development. Many township ordinances require public road frontage in an effort to limit the total miles of township road maintenance and ensure adequate road construction for purposes of emergency vehicle access.

2.6.2 Functional Classification

The functional classifications of Kanabec County's primary highways include Principal Arterial, Minor Arterial, Major Collector and Minor Collector. Map 6 identifies the road classifications for Kanabec County. Average daily traffic volumes as recorded in 1998 for county highways are identified on Map 7. Comparing this information with average daily traffic projections, for year 2018 indicates that the Minnesota Department of Transportation is projecting a sixty percent increase in average daily traffic volumes for all major highways in the County.

Kanabec County has developed a 5 year Highway Construction improvement program which is updated as necessary. A copy of the current program can be obtained from the office of the county Engineer.

2.6.3 Highways and land Use Relationships

Roads and highways represent a major public investment, which can be lost by destroying their carrying capacity. Multiple points of access, poorly designated abutting land uses and commercial or industrial strips lining the highways, may depreciate the efficiency and capacity of the road to carry traffic to the point where roadway relocation may be necessary. This may lead to more land use changes, more public expenditure only to have the process repeated.

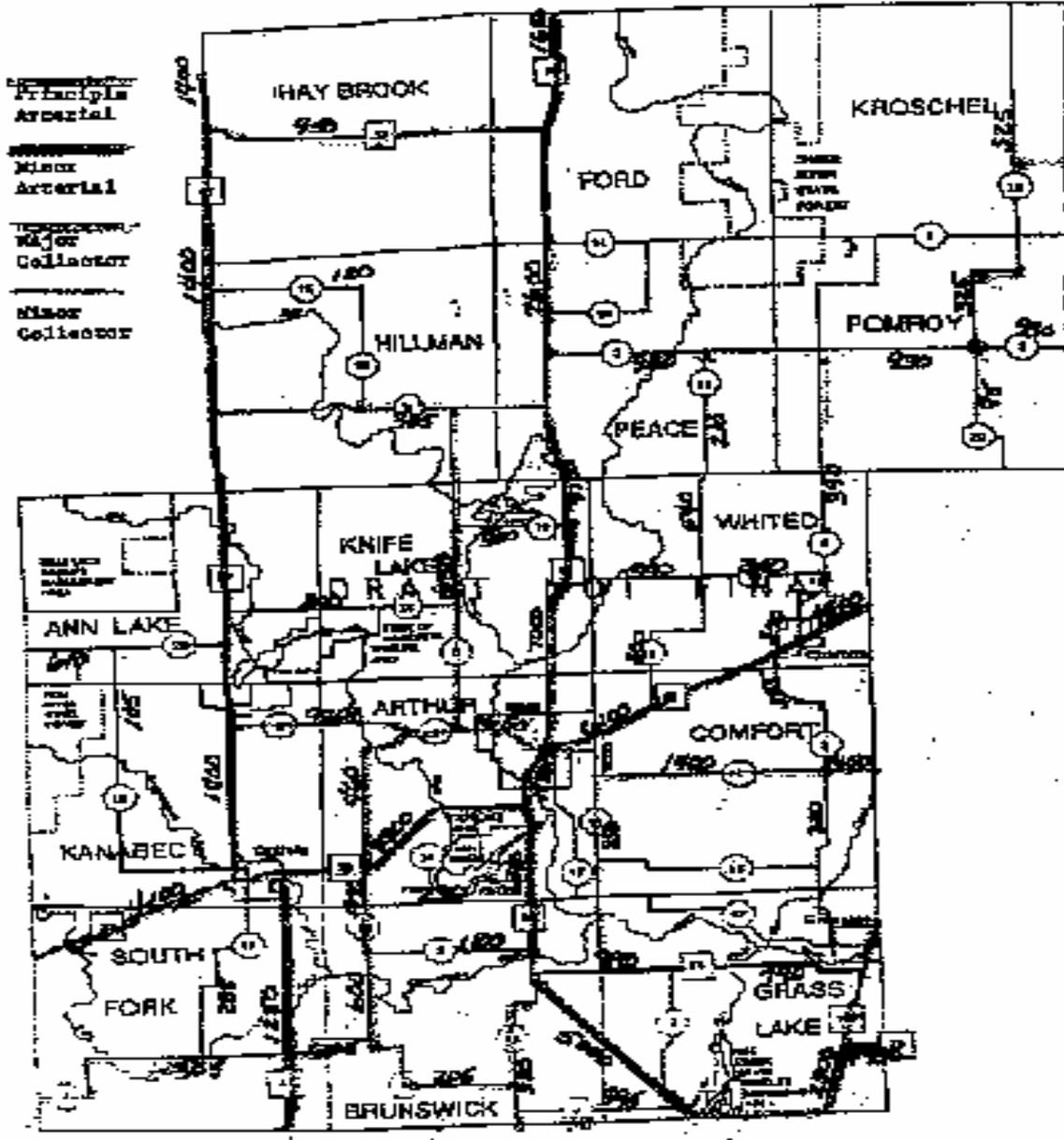
The traffic carrying capacity of principal highways should be considered when making land use decisions. Access control, service from a frontage road, adequate setbacks, adequate on-site parking, and the orientation of developments along highways are all factors, which should be considered when land development activities are reviewed.

2.6.4 Mora Airport

The Mora Municipal Airport is located in the city limits of Mora and Arthur Township. The primary service area for the Mora airport is generally a geographical area within thirty minutes of the airport. The main runway is 4000 feet in length. Facilities include an all weather runway and paved taxiway, arrival and departure building, aircraft hanger area and field lighting. A fixed based operator offers 24 hour per day service including maintenance, rental aircraft and training. The Airport Layout Plan, as maintained by the City of Mora, identifies runway extensions to meet continuing and increasing demands. The total estimated operations at the airport in 1992 was 18,000 and is forecast to increase over 25,000 by the year 2012.

The Minnesota Department of Transportation and the Federal Aviation Administration require Land Use and Zoning regulations concerning the Mora Airport. The primary purpose of these regulations is to avoid land use conflicts and provide for safe aircraft approach to the airport. Zoning regulations apply to specific safety zones associated with the runways and two airspace zones generally one and two miles from the runways. The City of Mora, Arthur, Comfort, and Knife Lake Townships, through the Mora Airport Zoning Board, implement these zoning regulations.

MAP 7 Average Daily Traffic



Two rail lines are located in the County. The St. Croix Valley Railroad serves the Mora Industrial Park and parallels Highway 23 to the east of Mora through Quamba. The Burlington Northern Railroad line parallels Highway 107, and traverses the county from Grasston to Braham.

2.7 Employment

The following data is an attempt to provide insight into the economic characteristics and trends of Kanabec County.

The table below identifies several sources of employment for Kanabec County, the # of employees for each source in 1995 and 1999, and the percentage of gain or loss from each source between these years.

<u>SOURCE</u>	<u>1995</u>	<u>1999</u>	<u>% OF CHANGE</u>
Forestry, fishing, hunting, agriculture	3362	3441	2.3
Construction	194	185	(4.6)
Manufacturing	770	709	(8)
Wholesale/retail, administrative support	1277	837	(34.5)
Finance, insurance, real estate	120	125	4
Other services/service related	932	1205	22.6

The major change in income sources from 1995 to 1999 was the shift from wholesale/retail to other services and service related jobs.

2.8 Existing Planning Responsibilities

Several types of planning activities are currently being implemented in Kanabec County aimed at managing different land use issues or responsibilities. In addition to the various planning activities, different levels of government are currently involved in implementing planning programs. Within the County the following land use management programs have been implemented:

- Comprehensive planning by fourteen townships and the cities;
- Zoning by thirteen townships and cities;
- Subdivision regulation by Kanabec County and two townships and the cities;
- Shoreland management by the County, one township and two cities;
- Floodplain management by the County, one city;
- On-site septic regulations by the county, one township and the cities.

2.8.1 Township Planning and Zoning

Kanabec County comprehensive planning and zoning is implemented at the township level. Of the fifteen townships within the County, thirteen have adopted township zoning and two have adopted township subdivision regulations. Arthur Township has adopted and administers zoning, shoreland, septic and subdivision ordinances. Ford and Ann Lake Townships have no land use regulations other than those implemented by Kanabec County at this time.

In comparing the thirteen township ordinances, much similarity in the types of land uses allowed and activities regulated throughout the County can be found. The greatest difference between the township ordinances relates to the density of residential development. Table 13 summarizes the individual ordinances in terms of residential densities and minimum lot sizes. Other land use issues as well as other zoning requirements exist which are included in the township ordinances and are not summarized in this Table. The information in Table 13 identifies the primary land uses provided for throughout the County as agricultural, forestry and residential uses.

Residential density is controlled through density requirements, access requirements and lot size. Density growth is reflected in Table 14. Eight townships limit the number of residences allowed per one-quarter of one-quarter section of land. These densities range from one to three residences per quarter/quarter section. Six townships have provisions that limit density by requiring lot frontage on existing roads, guiding development to areas where roads exist. Three townships rely on establishing minimum lot sizes from two to ten acres as the primary, residential development provision. Arthur Township, which is located around the City of Mora and is most urban in nature, allows residential development on one and two acres lots within the township.

Commercial and industrial uses are managed in the unincorporated areas either as permitted uses only in specific districts or by conditional use permits. Arthur, Brunswick, Grass Lake and Kanabec Townships provide commercial and industrial districts adjacent to state highways. The remainder of the townships allow for commercial and industrial uses through conditional use permits, except for Haybrook and Southfork Township, which had not adopted specific regulations to manage these uses.

Many of the township ordinances contain general provisions, which relate to the protection of water resources, establish performance standards, have development requirements for public road frontage, and regulate nuisances. Nearly all of the township ordinances regulate the storage or disposal of materials as to not result in pollution, or a conditional use permit is required if there is some potential for pollution. Land reclamation (grading and filling) is regulated in nearly all townships through a conditional use permit or regulations to prevent erosion. All of the townships require a conditional use permit for mining activities, which allows them to control factors including operations, drainage, and site reclamation.

2.8.2 Subdivision Regulations

Subdivision regulations have been adopted by Kanabec County and Arthur Township. In addition, Mora and Ogilvie have subdivision regulations. Kanabec County's present subdivision ordinance in effect since 1985, regulates the subdivision of land, established standards for streets, utility easements and other issues related to land development. The County's

Subdivision Ordinance generally applies to the division of a tract of land into two or more lots or parcels of less than five acres, or any division of a parcel where a new road is required.

The County’s ordinance applies to the unincorporated area of the County, except for Arthur Township which has enacted subdivision regulations within the township.

Table 13
Summary
Township Zoning Ordinances

	Districts			Residential Densities			Minimum Lot Size					
	Ag/Open	Ag/Res	Comm	1/40	2/40	3/40	1	2	5	10	20	
Ann Lk												
Arthur	X	X	X				X	X				
Brunswick		X	X			X		X				
Comfort		X			X							X
Ford												
Grass Lk		X	X		X				X			
Haybrook		X										X
Hillman		X			X			X				
Kanabec	X	X	X	X	X		X	X				
Knife Lk	X	X						X				
Kroschel	X			X	X							X
Peace	X	X							X	X		
Pomroy		X			X			X				
Southfork		X			X		X					
Whited	X	X							X			

Township/City	1970	1980	1990	2000	90-00% Change	2000 Density (Person/SqMi)
Ann Lk Twp	193	226	264	377	42.8	12.1
Arthur Twp	957	1435	1533	1905	24.2	52.9
Brunswick	765	978	1107	1263	14	35.08
Comfort Twp	569	756	819	931	13.6	25.8
Ford Twp	131	137	150	177	18	4.9
Grass Lk Twp	769	944	888	928	4.5	25.7
Haybrook Twp	108	206	165	218	32.1	6
Hillman Twp	233	311	335	384	14.6	10.6
Kanabec Twp				853		23.6
Knife Lk Twp	557	727	825	1049	27.1	33.8
Kroschel Twp	216		188	218	15.9	6
Peace Twp	386	485	609	963	58.1	26.75
Pomroy Twp	281	342	321	390	21.4	10.8
Southfork Twp	526	568	614	662	7.8	18.3
Whited Twp	449	616	693	808	16.5	26
Grasston Cty	132	123	119	105	(11.7)	
Mora City	2582	2890	2905	3193	9.9	
Ogilvie City	384	423	510	474	(7)	
Quamba City	114	122	124	98	(20.9)	
Kanbec County	9,775	12,161	12,802	14,996		

2.8.3 Shoreland Management

The Minnesota Shorelands Management Act requires local government to manage development activities and land uses within 1000 feet of lakes and within 300 feet of streams or rivers. Minimum shoreland zoning regulations are required by the State of Minnesota to be implemented by local governments. In Kanabec County, shoreland management regulations have been adopted since the early 1970's with amendments in 1989 and 2001 to stay consistent with state requirements. Kanabec County's Shoreland Management Ordinance applies to all unincorporated shorelands within the County except for those located in Arthur Township, which administers the shoreland management regulations within the Township. Generally, the township zoning ordinances recognize that shoreland management regulations are implemented by Kanabec County. Several townships have specific zoning provisions that apply to shoreland areas within their township.

The City of Mora administers its shoreland regulations within the corporate boundaries of the city.

2.8.4 Flood Plain Management

Minnesota Statutes, delegates the responsibility to local governments to adopt regulations designed to minimize flood losses. Kanabec County, the City of Mora, and the City of Ogilvie administer flood plain ordinances within the County.

Kanabec County's Flood Plain Management Ordinance No. 9 applies to the Snake River from Co. Rd. 24 in Peace Township to the Pine County boundary, excluding the incorporated areas of the cities of Mora and Grasston. An engineering study completed in 1978 delineated the floodway, flood fringe (100 year flood boundary) and the 500 year flood boundary. The Flood Plain Management Ordinance regulations are based on this study. The Ordinance limits uses within the designated floodway district to those of low flood damage potential, including agricultural uses, parking and loading areas, recreational uses and residential lawns. Uses shall not obstruct flood flows or increase flood elevation. Structural development is allowed in the flood fringe district however, they must be elevated on fill in order that the lowest flood is at or above the regulatory flood protection elevation (one foot above the 100 year flood elevation).

The Ordinance has been approved by the Minnesota Department of Natural Resources and the Federal Emergency Management Agency, thereby qualifying property owners within the flood plain district to be eligible for flood insurance.

The City of Mora has enacted and administers flood plain management provisions for designated flood plain areas within the corporate limits of Mora. The ordinance is structured like Kanabec County ordinance, providing consistent flood plain management throughout the County.

The City of Ogilvie has adopted and administers flood plain regulations to regulate development within the designated flood plain of the Groundhouse River.

2.8.5 On-site Septic Tank and Drainfield Regulations

Kanabec County permits and regulates individual sewage treatment systems through its Individual Sewer Ordinance No.6. The ordinance applies to all unincorporated areas of the County except for Arthur Township, which has adopted and enforces its own on-site septic regulations.

As required by Minnesota Statutes regulating shoreland areas, those local governments with shoreland management ordinances, must enforce the updated Minnesota Pollution Control Agency individual sewage treatment regulations, Chapter 7080, in shoreland districts. The 7080 regulations include standards for determining the ability of the treatment system to operate effectively, appropriate design in view of the treatment needs and site characteristics, system location, system maintenance and the feasibility of alternative systems.

The 7080 standards are also recommended by the Minnesota Pollution Control Agency to be used in other non-shoreland areas as they represent the most effective standards for on-site sewer systems. Local governments operating under the 7080 regulations must inspect and approve systems and maintain records of the location and design of each system.

To assist in achieving compliance with the current individual sewage treatment system standards and to protect the quality of surface waters, Kanabec County requires that individual sewage treatment systems be certified as being in compliance prior to the conveyance of property located in shoreland areas.

2.8.6 Municipal Planning And Zoning

The City of Mora has an adopted comprehensive plan, zoning ordinance, subdivision, shoreland and flood plain management regulations in effect. The City's comprehensive plan and zoning ordinance allows for residential, commercial and industrial land uses at an urban densities. Commercial areas are designated in the downtown area and along T.H. 65, an industrial park is located in the northeast area of the City, and the majority of the City is zoned for residential development at various densities.

Residential development is allowed on one acre lots if an on-site sewage treatment system can be installed to meet the minimum Minnesota Pollution Control Agency standards. However, it is the policy of the City to require development to be served by the central system, if feasible.

The City of Ogilvie has an adopted zoning ordinance and subdivision regulations. The zoning ordinance allows for commercial uses in the downtown area and along T.H. 23. Industrial uses are allowed in the Northern part of the City. The area on both sides of the Groundhouse River, which is subject to flooding is designated as a conservation area where structural development is not allowed.

The City of Grasston has recently prepared a comprehensive plan and zoning ordinance for the City. The plan and ordinance establishes land uses, lot sizes and other general regulations pertaining to development activities.

One of the land use issues confronting Kanabec County is the normal growth associated with the suburban areas adjacent to incorporated cities. All cities in the County experience this growth and development but to varying degrees. Mora has experienced the most growth of this type. Development and implementation of growth management in these areas is of importance.

2.8.7 Solid Waste Management Planning

Kanabec County has adopted and is implementing a solid waste management plan and solid waste management ordinance.

In terms of waste management, Kanabec County is a member of the East Central Solid Waste Management Commission, made up of Kanabec, Chisago, Mille Lacs, Isanti, and Pine Counties. The Commission owns and oversees the operation, through contract, of a waste processing facility and landfill located in Arthur Township. All efforts are made in the Kanabec County Comprehensive Plan to be consistent with the solid waste policies and programs as identified in those plans and ordinances.

SECTION 3: KANABEC COUNTY ISSUES, GOALS AND POLICIES

Identified below are land use issues affecting Kanabec County. For each issue identified, County Goals and Policies are offered which assist in managing that issue. Once adopted by Kanabec County, these statements will serve as underlying guides to the Kanabec County Comprehensive Plan. The intent of Goals and Policies are to establish a framework for guiding future growth and development in the County.

All adopted growth management regulations which result from this Plan should be consistent with the Adopted Goals and Policies of the County. For purposes of this Plan, Goals are seen as long-range, broad objectives that as implemented will lead to the type of land use development pattern sought by Kanabec County. Policies are seen as more short term, specific actions which when implemented assist in achieving the identified Goal.

3.1.3 Guide future development to areas within the County where public services and facilities are available in the most efficient and effective manner in an effort to avoid unnecessary service cost impacts.

3.1.4 Cooperate with growth management policies adopted by cities within and adjacent to the County, surrounding counties and township within the County.

3.2 Issue: Development areas

Goal: Kanabec County will encourage new development areas that demonstrate the potential to provide adequate public services and facilities including utilities, transportation systems, recreational facilities, and convenient access to educational facilities at an economical cost to the cities, townships, County and school districts.

Policies

3.2.1 It is the intent that development be encouraged to occur within reasonable proximity to economic services and public facilities and services. Existing agricultural or open space land uses within such areas should be viewed as transitional uses.

3.2.4 Kanabec County encourages residential, commercial and industrial development to occur within the identified service areas within the County.

3.2.5 Cities and affected townships within the County are encouraged to prepare plans or policies to provide services in advance of anticipated development within their urban service area.

3.2.6 Within service areas, where public utilities are not provided in advance of development, residential land uses and residential subdivisions should encourage and provide for planned unit development and, or clustering of residences in such

manner to allow for existing on-site utility systems with potential for providing public utility systems in the future.

3.2.7 Within service areas, Kanabec County recommends innovative growth management policies to provide for planned unit development that allows flexibility in land development practices that may; result in lower development or service costs per site; allow for a more effective or economical use of land; promote the environmental integrity of the area; or allow for a more efficient provision of services or conservation of energy resources.

3.2.8 Kanabec County encourages site plan review for significant residential, commercial or industrial development activity to ensure: efficient provision of facilities and services; energy conservation practices; aesthetically pleasing site design; and, minimum impact to the environment.

3.3 Issue: Preserving and managing character of the land

Goal: Kanabec County intends that the rural areas of the County be maintained consistent with their existing rural character and desire of the township consistent with MN Chapter 394.33 granting the township authority to adopt local controls including shoreland regulations provided that Minnesota Statutes Section 103F-201-103F.221 are followed.

3.3.1 The County recommends that residential development in rural areas of the County be established at densities, which minimizes loss of agricultural lands and disruption to agricultural practices. Further, the County recommends that residential densities be established such that they do not detract from the existing rural character of the County.

3.3.2 Kanabec County recognizes the existence and need for non-agricultural rural land uses including: extraction uses, recreational uses and facilities, highway oriented commercial uses, residential development, agricultural oriented service industries, and, commercial or industrial uses requiring adequate land use buffers. Such uses should be accommodated either through growth management programs or on a case by base basis.

3.3.3 The County recommends that residential development in rural areas be encouraged only to the extent that adequate public facilities and services exist to meet customary residential needs.

3.3.4 Kanabec County will encourage commercial and private builders to implement adequate construction practices for all construction activities in the County.

3.3.5 The County encourages that a wide range of housing alternatives be provided within

the County.

3.4 Issue: Development impacts on the County's environment

Goal: Kanabec County will maintain, and where necessary, improve the quality of the County's land, air and water resources.

3.4.1 Policies:

Kanabec County will maintain Shore land Management Regulations consistent with State of Minnesota statutes.

3.4.2 The County will continue to implement on-site sewage treatment system design standards consistent with State of Minnesota rules and statutes.

3.4.3 The County will continue to maintain a County Solid Waste Management Plan.

3.4.4 The County will continue to Implement a flood plain management program consistent with the State of Minnesota statutes.

3.4.5 The County will continue to Implement the Minnesota Wetlands Conservations Act consistent with the State of Minnesota statutes.

3.4.6 Kanabec County will continue to cooperate with and coordinate its land use planning activities with the Kanabec County Water Plan planning process.

3.5 Issue: Development activities on structurally inadequate soils

Goal: Examine structural development, which occurs where potential exists for negative impact to the environmental and where the physical characteristics of the site are adequate to accommodate the development activities.

3.5.1 Policies:

Kanabec County recommends that structural development be discouraged from occurring on soils that exhibit any of the following limitations:

- a. Slope in excess of twelve percent
- b. Wetlands, peat or muck areas
- c. Areas where bedrock is within six feet of soil surface
- d. High water tables
- e. Soils subject to severe wind or water erosion, and,
- f. Soils of low permeability

3.5.2 Kanabec County encourages that background data and recommendations as identified in the Kanabec County Water Plan, be considered when making land use decisions.

SECTION 4 GROWTH MANAGEMENT RECOMMENDATIONS

For each of the issues identified in this Plan, a Growth Management Recommendation is offered that is consistent with the adopted Goal and Policies. For purposes of the Kanabec County Comprehensive Plan specific Growth Management Recommendations can address several of the Issues identified, or stated another way, individual Growth Management Recommendations can work to address more than one Issue.

4.4 Issue: Development impacts on the County's environment

Growth Management Recommendations:

4.4.1 To manage development that has a potential impact on Kanabec County's environment, it is recommended the County continue to implement:

- Shore land management regulations as an overlay district to provisions found in existing township ordinances which manage development in rural portions of the County;
- Flood plain regulations as an overlay district to provisions found in existing township ordinances which manage development in the rural portions of the County;
- On-site sewage treatment regulations for existing and future development in the County, consistent with the standards and recommendations of the Minnesota Pollution Control Agency;
- Wetland Conservation Act regulations consistent with state statutes;
- The Kanabec County Solid Waste Management Plan consistent with state statutes;
- The Kanabec County Water Plan as this process and program recommendations impact land use development activities; and
- The Minnesota Environmental Policy Act consistent with state statutes
- The Kanabec County Subdivision/Platting Ordinance

4.4.2. Kanabec County adopts this document as its Comprehensive Plan. Any future action concerning land use should be based upon the implementation of the recommendations contained herein.

4.4.3 If a zoning ordinance is developed, continued cooperation and dialogue with the townships and cities in the County is desired and necessary. The zoning ordinance requirements of Kanabec County's townships and cities shall be reflected in the County zoning ordinance, should be reflected in the ordinance.