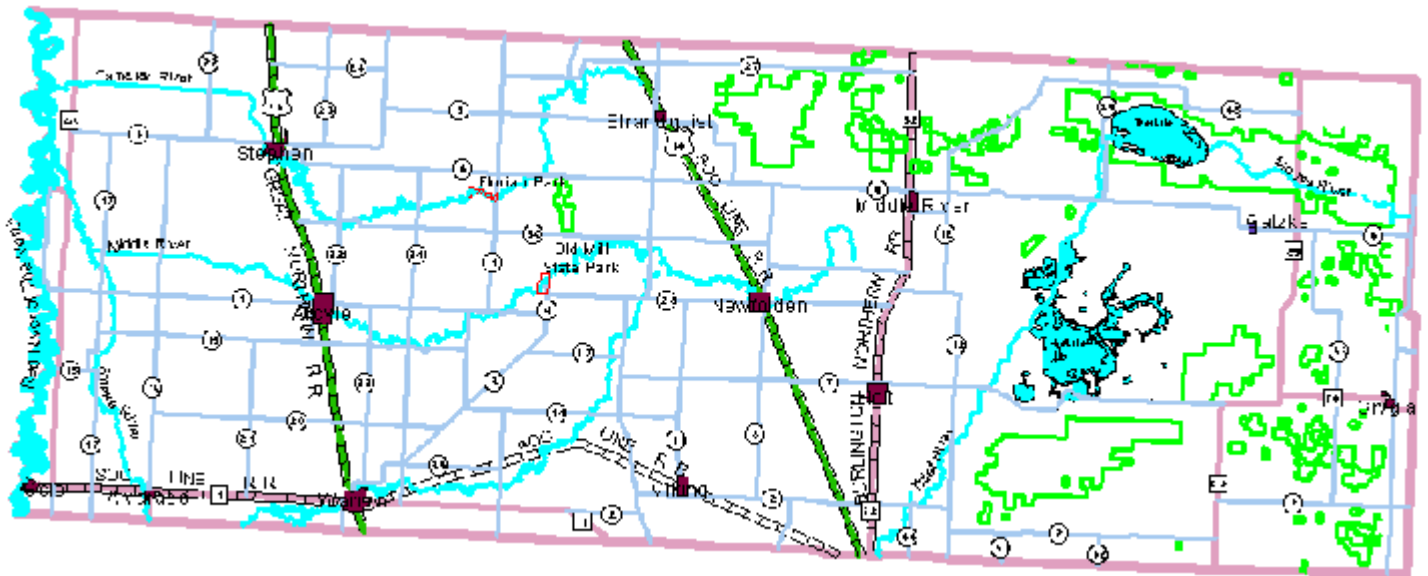


MARSHALL COUNTY COMPREHENSIVE LAND-USE PLAN

“Promoting Stability, Growth, Efficiency and Sustainability”

September 2000

Prepared by the Marshall County Land Use Planning Committee



and

The Marshall County Board of Commissioners

With technical assistance from:

Denver Tolliver & Associates

Fargo, North Dakota

In conjunction with

The Northwest Regional Development Commission

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Warren, MN

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I. Executive Summary

Marshall County is characterized by a social and a physical infrastructure well suited to support agriculture, small business, and outdoors activities. This infrastructure includes roads, ditches, small spread-out communities, a strong work ethic, productive soils, diverse natural resources, lots of space, and an appreciation for the risks involved in natural resource-based economies. This same set of characteristics has also promoted a moderate growth of manufacturing and a high quality of life, especially when measured by rural values. A long history of change in agriculture is the underlying basis for a population decrease over the past 50 years and concern that recent agricultural difficulties will spark another round of population decline. There is a strong consensus that economic development efforts must be increased to off-set this trend and prevent the on-going loss of the younger workers.

Land-use in the county is primarily orientated to agriculture, especially in the western part of the county. There are also significant tracts of public land contained in refuges, forests, and wildlife areas. Economic and social trends both inside and outside the county indicate there is very little growth pressure in the county but an increasing focus on natural resources management. There is no expectation we will see dramatic land-use changes in the immediate future, but it is likely that there will continue to be a high-spirited debate on the mix of agriculture and natural areas.

This plan has identified a comprehensive land-use approach for the county which moves toward a vision of modern agriculture combined with a more diverse employment base and the fullest possible range of services for both local citizens and visitors. Although there were no major environmental threats identified in the planning process, several steps were identified to maintain the quality of natural resources in the county. In fact, the growing value placed on outdoor experiences has sparked an interest in promoting increased recreational opportunities and taking advantage of the business opportunities presented by tourism.

The following is a summary of the major development policies outlined in the Plan:

Policy 1. Land-Use - Marshall County supports the existing balance of land-use in the county, studying future land-use trends, and implementing appropriate zoning ordinances.

Policy 2. Agriculture - Marshall County supports maintaining agricultural production, including a transition to the most economically viable forms of farming and processing.

Policy 3. Population and Economic Development - Marshall County supports preventing projected population loss and the growth of population levels within the capacity of public infrastructures.

Policy 4. Natural Resources Management - Marshall County supports a locally based approach to protecting the quality of natural resources in the county and making economically responsible improvements.

II. Summary of Implementation Steps

The following steps may be implemented in support of the policies outlined above. **The policies and implementation steps are more fully described starting on page 26.**

Policy 1. Land-use

Implementation Steps

- Create Agricultural Protection Zones
- Create Feedlot Promotion Zones
- Examine the Need for Natural and Recreational Areas
- Monitor Growth Pressures and Update the Land-use Plan as Needed

Policy 2. Agriculture

Implementation Steps

- Support Alternative Farming Approaches
- Promote Value Added Processing
- Maintain the County Road System
- Consider the Need for Agricultural Development Incentives

Policy 3. Population and Economic Development

Implementation Step

- Establish an Economic Development Task Force
- Support Work Force Development Especially for Younger Workers
- Examine the Need for Housing Promotion Zones
- Restrict the Conversion of Property to Non-taxable Status
- Examine Ways to Promote the County Including Business and Tourism
- Work with Other Counties\Region on Rural Development Policy and Programs

Policy 4. Natural Resources Management

Implementation Steps

- Continue Water Planning and Management
- Continue Floodplain Management
- Continue Solid Waste Management
- Continue Septic System Management
- Continue Shoreland Ordinance Management
- Continue Wetland Management
- Support the *Middle River Management Plan*
- Implement a County Building Permit Program
- Implement a County Feedlot Ordinance
- Implement a County Soil Loss Ordinance

III. Plan Development

1. Land-use Planning Committee

The first step in the development of the *Marshall County Comprehensive Land-use Plan* was the creation of a Land-use Planning Committee. (See Section 7, Purpose of Land-use planning for additional background information.)

Marshall County’s land-use planning committee is a combination of Marshall County Commissioners and Marshall County citizens. The committee had the responsibility of identifying what they want the county to look like in the future. It was their responsibility to provide early guidance and input for the visioning process, help identify key stakeholders, refine the scope, layout the process, and describe expected outcomes. The committee recommended goals, policies, implementation steps and monitoring indicators for the land-use plan. The committee met on six separate occasions, including a visioning session. Within these meetings, the future of Marshall County was discussed in depth.

Table 1. Marshall County Land-use Committee.

Name	Address
Curtis Carlson* Chairman	Route 1, Box 132, Argyle, MN. 56713-9777
Delray Larson* Vice Chairman	Route 2, Box 111, Gatzke, MN. 56724
Glen Bergeron	Route 1, Box 155, Argyle, MN. 56713
Kenneth W. Malm	Route 1, Box 2F, Alvarado, MN. 56710
Mildred Klammer	Route 2, Box 75, Gatzke, MN. 56724
Wallace Bengtson	Route 2, Box 21, Middle River, MN. 56737
Rolland Amundson	Route 2, Box 119, Newfolden, MN. 56738
Paul Anderson	Route 2, Box 153, Warren, MN. 56762
Norma Hanson	Route 1, Box 137, Goodridge, MN. 56725
Sharon Bring*	Route 1, Box 34, Strandquist, MN. 56758
Ben Kleinwachter*	Route 2, Box 72, Strandquist, MN. 56758
Terry Potucek*	Route 1, Box 55A, Warren, MN. 56762
Jan Anderson	Box 593, Stephen, MN. 56757
Robert Ellerbusch	761 N 5 th Street, Warren, MN. 56762
Doug Safar	202 W Johnson, Box 85, Warren MN. 56762
Brad Blawat	Route 1, Box 95, Viking, MN. 56760

* Indicates County Commissioners

Denver Tolliver and Associates in conjunction with the NWRDC provided background material and guidance for the planning process. The consultant team compiled the statements of committee members and helped in forming the written vision found in the next sections.

The *Marshall County Comprehensive Land-use Plan* will be an ongoing process to change with the changing world and react to problems and opportunities within and outside the county.

2. Vision for the Future

Residents of Marshall County have many visions of the future. Some dream of an ideal world while others picture on-going disasters. Most people see something in-between these two options. The visioning sessions included reminiscences of a grand past and opinions that the good-old-days involve selective thinking. There was much in common and fewer strong disagreements than expected. (See Section 8, Purpose of a Visioning Process for additional background on the visioning process.)

The clearest statements involved a demand for action. Action to prevent the loss of the rural and agricultural lifestyles which have dominated the county over the past two centuries. Comments on the county's farms, roads, towns, fields, rivers, wildlife, and neighbors brought out the strong connections residents have with the area. It became clear why a common drainage ditch is considered a life vein to the farmer.

The lack of local control over factors such as commodity prices, weather patterns, or environmental policies, and discussions about the growing number of outside interests with a plan for the county, sometimes fostered a negative mood. However, the discussion usually turned toward accepting a future different from the past. The final scorecard showed a list filled with positives such as work ethic, family, community, high quality natural resources, open space, infrastructure capacity, good schools, successful entrepreneurs, and a battered but determined farm sector.

The vision, shared by most, concentrated on identifying opportunities in agriculture, manufacturing, tourism, business, recreation, telecommunications, and home ownership. The vision did not include fewer people or more large tracts of natural habitat. Almost everyone agreed the base population level must be maintained, including stable numbers of school age children and young workers. Everyone agreed this will require innovative farming, job creation, and economic activities to attract retail sales. Discussion about land-use policies stressed the lack of imminent growth threats and a fear of reducing land owner rights, while also accepting certain restrictions related to outside policies or common sense. The concept of using land-use policy to promote both economic and environmental goals began to emerge as a possible growth tool, in contrast to the traditional vision of land-use controls as a means to prevent growth.

The following is a summary of the vision for Marshall County:

- A stable population and employment base.
- A strong, modern agricultural sector.
- A permanent, significant, high quality natural resource base which can support both human and wildlife needs.
- A well functioning public infrastructure which can support all county residents.

3. Resource Analysis

The vision outlined in the preceding section was developed by combining public input, the knowledge of committee members and statistical data. This section contains a summary of the resource inventory and analysis the Committee used to move the vision toward a set of goals, policies, and implementation steps. (See Section 9, Analysis Methods and Science for additional background on resource analysis.)

Introduction

Marshall County has four groups of resources that can be used to support the social and economic functioning of the county: land, capital, labor, and entrepreneurship. Land is all of the natural resources in the county (e.g., soils, groundwater, surface water, fish, and wildlife). Capital is the infrastructure available (e.g., utilities, technology, buildings, etc.). Labor is the blue and white-collar workforce. Entrepreneurship puts the first three resources together, and is a function of the education and/or the risk-taking mentality of residents or people willing to become residents.

The following sections provide an inventory overview of the land, capital, labor, and entrepreneurship in the county and an analysis of the social and economic trends in the county.

A. Land Inventory

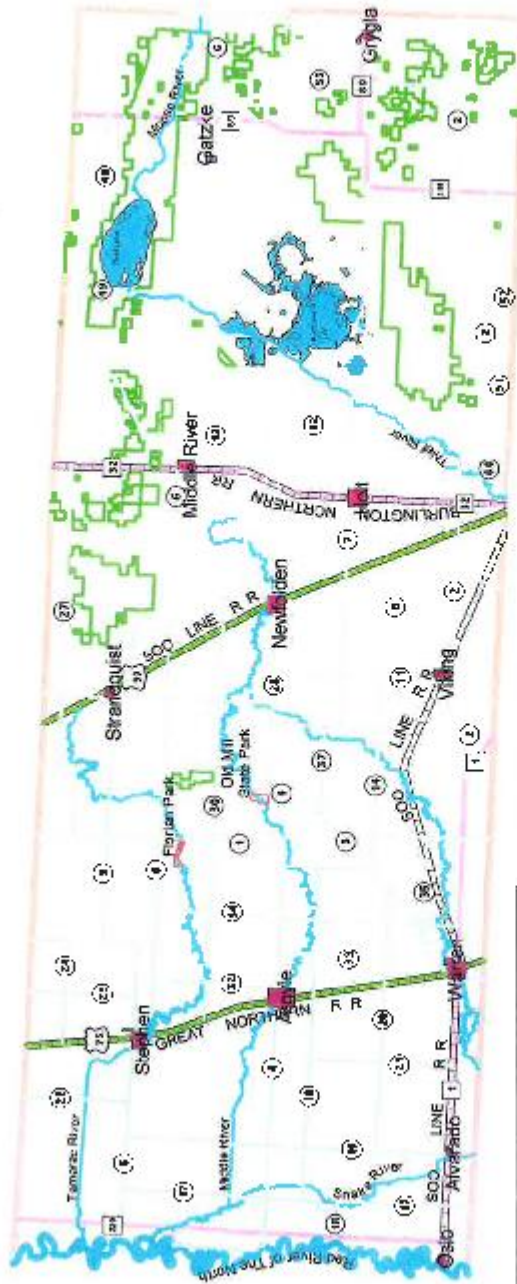
Marshall County is in the northwest corner of Minnesota with its western border formed by the Red River of the North. The geological features of the county are dominated by the activities and movements of Glacial Lake Agassiz 15,000 years ago. This includes an extremely flat contour and a variety of soil conditions such as rich loamy till, beach ridges, clay deposits, peat lands, and buried glacial deposits. One hundred feet or more of glacial drift covers much of the county. The total land area of 1,675 square miles includes a wide variety of natural and man-made features. The maps on the next pages provide an overview of those features. There is a great deal of variability in land-use, ranging from an agricultural dominance in the western parts to a mixture of agriculture and wildlife areas in the eastern sections. This is related to soil type and topology differences which, to some extent, dictate the suitability to agriculture. Land-use distribution is shown in the table below and in the soils map on page 8.

Table 2. Land Cover in Marshall County, Minnesota (1999).

Cover Type	ACRES	PERCENTAGE
Cultivated Land	811,622	69.9%
Urban and rural development	10,029	.9%
Hay, Pasture, Grassland	64,662	5.6%
Brush land	62,201	5.4%
Forested	126,660	10.9%
Water	13,067	1.1%
Bog/marsh/fen	71,434	6.2%
Mining	1,382	.1%
TOTAL	1,161,057	100%

Source: www.mnplan.state.mn.us/

Marshall County



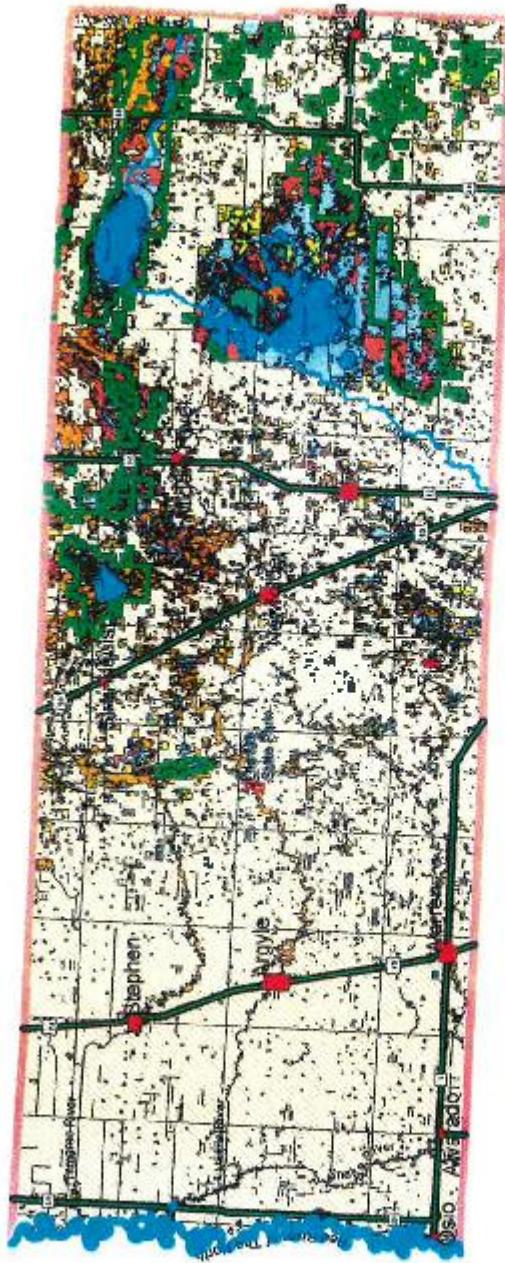
Legend

-  Cities
-  Old Mill State Park
-  Florian County Park
-  County State-Aid Highways
-  Rivers
-  Wildlife Management Areas
-  Railroad
-  US Trunk Highways
-  MN Trunk Highways

10 0 10 20 Miles
 Northeast
 RDC
 Land Use Planning

Information provided by the Minnesota Department of Transportation
 and the Minnesota Department of Natural Resources. TAS January 2003

County Landuse



Legend

- Wildlife Management Areas
- Farms and Rural Residence
- Rural Ind. Dev. Comp.
- Other Rural Dev.
- Cultivated Land
- Transitional Ag.
- Open Space
- Forest (Oak)
- Forest (Pine)
- Forest (Cedar)
- Forest (Spruce/Fir)
- Forest (Mixed)
- Forest (Deciduous)
- Forest (Coniferous)
- Water
- Wetlands
- Overall Use



Northwest
RDC
Land Use Planning

Information provided by the Land Management Information Center. TAS January 2000

General Soils Map Marshall County



Northwest
RDC
Land Use Planning



Information provided by the Natural Resource Conservation Service soils database (STATSGO).
TAS January 2000

There is concern about soil erosion, especially in the sections of the county that have soil types which are easily moved by wind. The county is currently in the process of examining this issue and is likely to create a soil erosion ordinance. This will include restrictions geared to soil type.

Wildlife is very abundant in the county. Marshall County supports large numbers of whitetail deer, fish, and other game species such as elk, moose, bear, sharp-tail grouse, and ruffed grouse. Ducks and geese migrate south during the fall in great numbers. There have been noticeable increases in many species including deer, eagles, and native plants. Studies of endangered or threatened species in the county show a good likelihood existing species will be preserved. In many cases, the proximity of farm land to refuges provides the ideal habitat with a high quality food supply and good living conditions. Wildlife habitats in the county include 178,570 acres of land in wildlife refuges and State Forest plus a significant amount of forest, wetland, brush land, and grassland on private land. (Table 3).

Table 3. Land Ownership in Marshall County, Minnesota.

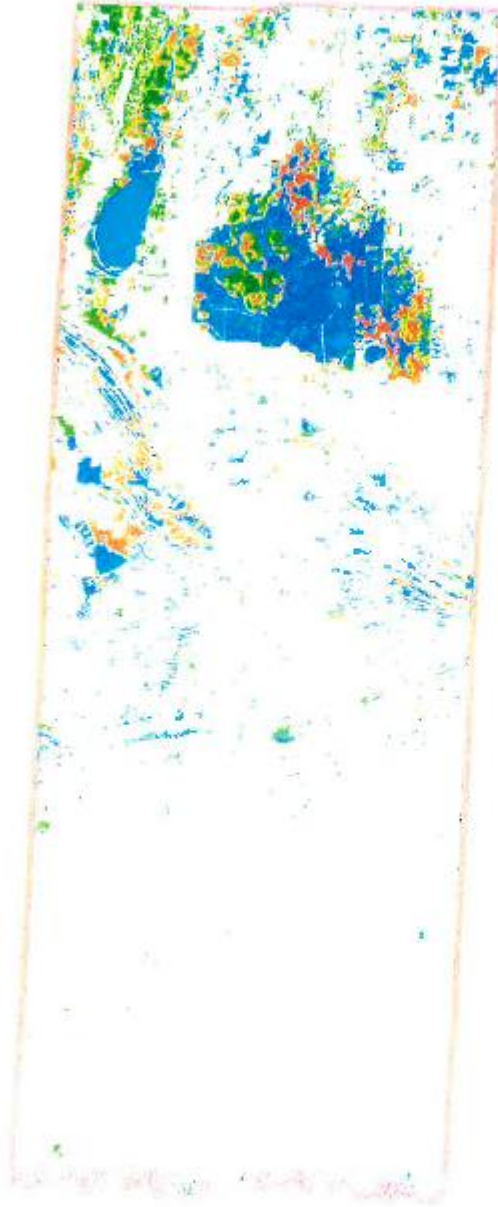
Land Owner	ACRES	PERCENTAGE
National Wildlife Refuges	62,000	5.34%
DNR Forestry	50,390	4.34%
DNR Wildlife Management	66,180	5.70%
Private Ownership	981,093	84.50%
Other	1,393	0.12%
Total	1,161,057	100.00%

Source: 1983. Land Management Information Center (LMIC), St. Paul MN.

About 85% of Marshall County's land area is under private ownership. The remaining 15% consists primarily of wildlife refuges and DNR forestry and wildlife management areas. The Thief Lake Wildlife Management Area and the Agassiz National Wildlife Management Area are prime examples of a high quality wildlife habitat which draw an average of 20,000 visitors per year to view birds and other animals. The Red, Thief, Snake, Middle, and Tamarac rivers, wetland areas (see map on the next page), shelter belts, ditches, drainage systems and other non-crop lands provide a network of habitat and habitat connections. This habitat, along with CRP acres, provide a range of wildlife areas covering approximately half the counties land area, or more than one half million acres.

The County's water planning effort indicates there is an adequate supply of good quality water and little evidence of contamination. This includes both ground water and surface water. A water monitoring program recently started in the county will provide the additional information needed to document the condition of water resources and to prevent any future problems. Water concerns include the potential for damage from large scale floods such as the 1997 event, the more localized difficulties related to more frequent lower level flooding, and some concern about natural and cultivation induced erosion. The 1997 flood (See Map on Page 11) may have created additional wildlife habitats in the county based on depopulation of the most severely affected areas. Flood plain rules and the availability of relocation funds resulted in the movement of several homesteads.

Wetlands



Legend

- Class 1 Wetlands**
- Emergent** (Blue)
- Forested** (Green)
- Scrub Shrub** (Orange)
- Unconsolidated Bottom** (Light Blue)
- Unconsolidated Shore** (Yellow)
- Aquatic Bed** (Pink)



*Northmead
RDC
Land Use Planning*

Information provided by the Minnesota Department of Natural Resources
1987 National Wetlands Inventory. T&S January 2000

FEMA Floodplain & 97 Flood Extent



Legend

-  Farms/Residences/Rural Residences
-  FEMA Floodplain
-  1997 Flood Extent
-  Perennial Streams
-  Intermittent Streams
-  Drainage Ditches



Information provided by the Federal Emergency Management Agency

The county's weather is characterized by fluctuations, both annually and over longer periods of time. Temperatures vary from an average of about 4 F° in January to 70 F° in July. Annual rain fall usually ranges from 18 to 22 inches, but the range goes as high as 35 inches and as low as 15 inches. During the year, precipitation can vary from less than .5 inches during winter months to ten inches or more in the summer. A recent example of the weather's variability is the change from drought conditions in the late 1980's to the extremely wet conditions in recent years. Interestingly, the Red River Valley experienced flooding in 1989 during a period of relatively low amounts of precipitation.

B. Capital Inventory

The capital assets of the county are characterized by a system of small towns and farms which are linked and served by an extensive system of roads, ditches, and utilities. For example, there are more than 1,300 miles of public drainage in the county and many more private ditches. The road system consists of 2,701 miles of state, county, and township roads, not including city streets. (See map on next page) Public utility systems provide services to both rural residents and towns. These systems include electricity, telephone, water, sewer, and emergency services.

As a general rule city residents are served by a combination of municipal services and large private providers, while rural residents are served by the county, townships, cooperatives, smaller private providers and homeowner-installed facilities. Key rural service providers include the electrical cooperatives, local telephone cooperatives, and rural water systems. Railroads, although less numerous than in the past, continue to provide the capacity to move bulk agricultural commodities.

Towns in the county, including Alvarado, Argyle, Grygla, Holt, Middle River, Newfolden, Oslo, Stephen, Strandquist, Viking and Warren, contain a wide variety of capital resources including schools, libraries, medical facilities, businesses, homes, churches, banks, community centers, elevators, airports, industry and recreational facilities. Rural areas in the county are characterized by scattered residences and farm operations. Recreational areas, such as Old Mill State Park and Florian Park, are also located in rural areas, along with a sprinkling of churches, specialized businesses, and small industries.

Examples of the value of these resources include an estimated value for all farm land, buildings and equipment of \$561,754,336 based on the *1997 Census of Agriculture* and an estimated value for all owner occupied housing of \$157,694,400 based on the *1990 Census of Population and Housing*. County residents, along with state, federal and private funding sources have continued to invest in the necessary capital upgrades to maintain an up-to-date public infrastructure system.

Marshall Drainage & Roadways



Legend

- Drainage Ditches
- Township Roads
- Perennial Streams
- Intermittent Streams
- US/MNTH
- County State Aid Highway
- Lakes



*Northwest
RDC
Land Use Planning*

Information provided by the Minnesota Department of Transportation's '99 Basemap. There may be public and private drainage systems that are not shown with this map. TAS January 2000

B. Capital Inventory (Continued)

The table below represents new housing capital investment at a time when population was decreasing, but the average number of people in each household decreased, requiring more housing for the same population level:

Table 4. Change in the Number of Housing Units 1970 – 1990.

	1970	1980	1990	Change '70-'90	Change '80 – '90
Kittson	2249	2485	2865	646	380
Marshall	3958	4463	5049	1091	586
Norman	3298	3431	3468	350	217
Pennington	4164	5437	5682	1418	245
Polk	10502	12154	14317	3815	2163
Red Lake	1529	1818	1899	370	81
Roseau	3459	4331	6236	277	1095
Region 1	29159	34119	39696	10537	5577

Source: 1990. US Bureau of Census, Washington, DC.

C. Labor

The labor supply comes from the county population and the immediate surrounding area. The information below outlines the characteristics of the county population and the county labor force.

Total Population

There are 33% fewer people in Marshall County than there were at its peak population in 1950 (U.S. Bureau of Census). This is depicted in the table below:

Table 5. Marshall County Population 1950 to 1997

1950	1960	1970	1980	1990	1997	Change
Pop.	Pop.	Pop.	Pop.	Pop.	Pop.	50 to
Census	Census	Census	Census	Census	Est.	97
16125	14262	13,060	13,027	10993	10676	-5449

Age Structure

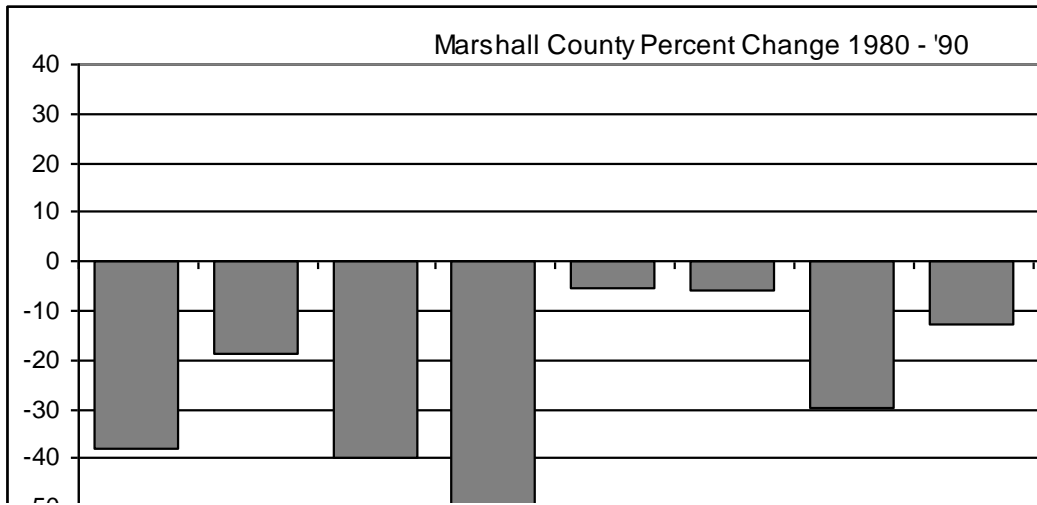
The age structure of the county has also been changing with dramatic decreases in some age groups. There is a great deal of concern about this trend (Table 6 and Figure 1), especially the loss of the younger population.

Table 6. Marshall County, Age Class.

Age Class	1970	1980	1990	% Total (1990)	Change 80 to 90	% Change 80 to 90
< 5 Years	1,084	1,124	695	6.3	-429	-38.2
5-17 Years	3,881	3,049	2,474	22.5	-575	-18.9
18-20 Years	360	528	319	2.9	-209	-39.6
21-24 Years	448	689	346	3.1	-343	-49.8
25-44 Years	2,537	3,062	2,894	26.3	-168	-5.5
45-54 Years	1,514	1,226	1,153	10.5	-73	-6
55-59 Years	690	700	492	4.5	-208	-29.7
60-64 Years	694	696	606	5.5	-90	-12.9
65-74 Years	1,106	1,072	1,092	9.9	20	1.9
75-84 years	638	685	671	6.1	-14	-2
85 + Years	108	196	251	2.3	55	28.1
Total	13,060	13,027	10,993		-2,034	-15.6

U.S. Bureau of Census, Washington, DC.

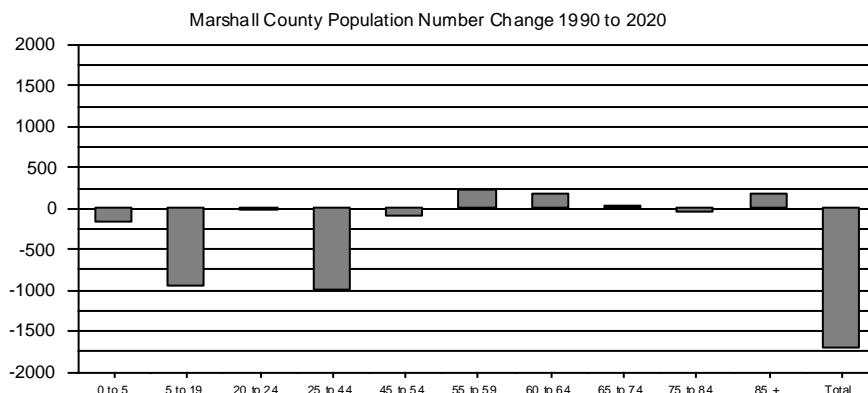
Figure 1. Marshall County Population Age Distribution, Change 1980 to 1990.



Source: US Bureau of Census, Washington, DC.

Population projections through 2020 indicate the total population could fall to as low as 9,270. Forecasts estimate a significant loss in the school age population and the younger working population (Figure 2).

Figure 2. Marshall County Age Distribution 1990 to 2020



Source: US Bureau of Census and MN State Demographers Office

There are many local observations that job growth outside the county and increases in commuters may prevent this degree of population loss. The 2000 Census will give a better picture of more recent trends.

Labor Force

Labor force statistics represent an estimate of persons actively seeking employment. The Table below shows the total labor force, number employed and unemployment trends over the past ten years. Unemployment in the county is historically very high in comparison to state or national averages. For example, the 1999 unemployment rate in Minnesota was 2.4% and the U.S. Rate was 4.2%.

Table 7. Marshall County Labor Force Trends

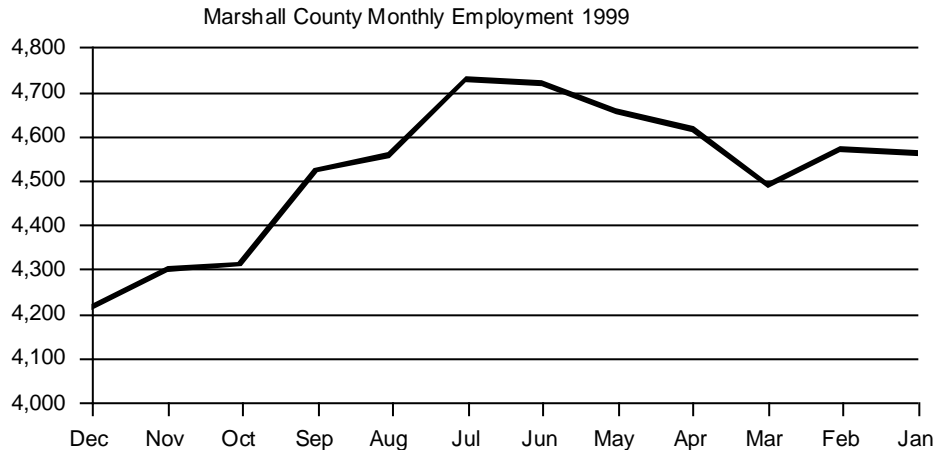
Year	Labor Force	Employment	Number Unemp.	Unemp. Rate
1999	4,520	4,131	389	8.6%
1998	4,585	4,190	395	8.6%
1997	4,713	4,189	524	11.1%
1996	4,748	4,181	567	11.9%
1995	4,722	4,260	462	9.8%
1994	4,855	4,339	516	10.6%
1993	4,790	4,170	620	12.9%
1992	4,673	4,040	633	13.5%
1991	4,807	4,149	658	13.7%
1990	4,950	4,318	632	12.8%

Source: MN Department of Economic Security Labor Force Estimates

There are also significant seasonal variations, as shown below:

Figure 3. Marshall County Employment 1999

Source: MN Dept. of Economic Security Labor Force Estimates



The trend towards a smaller labor force and less employment is a key factor in population loss.

Education

Educational levels in the county differ significantly from statewide averages (Table 8). The lower percent of persons in Marshall County with a post secondary degree may indicate residents receiving an education have the ability to find employment elsewhere. The higher levels of high school and less than 9th grade probably represent the current high quality schools and the past pattern of males leaving school early to help with family farm labor needs.

Table 8. Educational Attainment for Marshall County and Minnesota.

	Less than 9 th grade	High School Diploma	Post Secondary or Graduate
Marshall	31%	59%	10%
Minnesota	18%	52%	30%

Source: U.S. Census of Population, 1990.

D. Entrepreneurship

The county has established an intricate system of public and private services in response to a variety of social and economic needs. This includes a vast list of agencies, community groups, organizations, businesses, industries, committees, and programs that are common to a modern rural area. The sections on the next pages highlight these efforts.

Private Business

The economic vitality of Marshall County is largely dependent upon the system of production agriculture that has been established over the past century. Contributions from light manufacturing, services, government, and tourism have helped round out the County's economy.

Manufacturing sales (adjusted for inflation) have increased in Marshall County since 1986, while agricultural sales have declined. Retail sales appear to follow agricultural sales trends. The range of county sales hovers around \$100 million for agriculture, \$50 million for retail and \$10 million for manufacturing. The next sections contain a more detailed analysis of business in Marshall County.

Production Agriculture - Almost 70 percent of Marshall County land is in agricultural production (Table 1). Production agriculture in the county relies heavily on small grains, row crops, alfalfa, poultry, dairy, and beef cattle. Though faced with drainage problems, low commodity prices, and crop disease, farm operators have been persistent and committed to their way of life. Other than some specialty crops (e.g., sugar beets, native grass seed), livestock (domestic and exotic) enterprises and value-added processing offer the greatest development opportunities in the agricultural sector. The number of dairy farms and the number of milk cows in Marshall County have both declined since 1992. However, the number of dairy farms has declined at a faster pace than the number of cows, reflecting more intensive dairy operations.

Developments in agriculture over the past five years have placed increasing pressure on operators. Rising production costs, extremely low prices and years of crop failures have required a constant series of adaptations. The table below outlines some of the longer term trends created by the adaptations. The reduction in the number of farms, the decrease in total acres farmed, and the loss of full time farmers represents high levels of economic stress.

Table 9. Marshall County Farm Characteristics

Characteristic	1987	1992	1997	Change 87 to 97
Farms	1,299	1,012	1,144	-155
Size: 1 to 499 acres	711	514	674	-37
500 to 999 acres	333	232	215	-118
1,000 acres or more	255	266	255	0
Sales: Less than \$2,500	138	109	352	214
\$2,501 to \$49,999	721	406	402	-319
\$50,000 to \$99,999	219	158	127	-92
\$100,000 or more	221	339	263	42
Production Acres	819,664	744,710	774,342	-45,322
Principal occupation: Farming	1,017	762	686	-331
Principal occupation: Other	282	250	458	176

Source: 1997 Census of Agriculture

The future of agriculture in the area is very uncertain. The key factors, including weather, price, and government policy are unpredictable. Local innovation has helped many farmers survive the past seven to ten years of poor crops, but often with a recurring annual equity loss. The Farm Management Program, operated by the Minnesota System of Colleges and Universities, estimates that 50% of the clients enrolled in the program at Thief River Falls would not have enough equity and/or cash flow to obtain operating loans in 2000. This will be moderated by government payments, but continued problems for farmers are very likely.

Manufacturing - Manufacturing sales have increased steadily from 1987 to 1995 (Table 10). Manufacturing sales were more than \$10 million in 1995. The manufacturing sector of the economy has provided some strength to the region's economy. The revenue increases have provided off-farm jobs for farmers or employment for young people wanting to stay in the area. Manufacturing can also provide second incomes for households desiring such employment.

Table 10. Manufacturing Sales by County (X1000).

	1989	1990	1991	1992	1993	1994	1995
Kittson	\$592	\$555	\$368	\$523	\$677	\$914	\$29,598
Marshall	\$3,389	\$4,720	\$5,450	\$6,769	\$7,857	\$9,772	\$10,606
Norman	\$1,698	\$1,571	\$156	\$1,620	\$417	\$481	\$36,298
Pennington	\$179,020	\$193,560	\$237,122	\$264,460	\$105,771	\$122,722	\$169,932
Polk	\$31,418	\$29,510	\$34,872	\$31,938	\$32,466	\$38,663	\$51,306
Red Lake	\$7,925	\$6,513	\$7,330	\$9,525	\$13,802	\$12,940	\$15,417
Roseau	\$182,453	\$241,724	\$216,172	\$238,765	\$218,519	\$246,008	\$242,486
Region	\$406,495	\$478,154	\$501,471	\$553,600	\$379,508	\$431,500	\$489,747
Minnesota	\$27,252,851	\$27,726,131	\$28,277,375	\$31,746,103	\$32,568,007	\$30,820,652	\$35,513,678

Source: MN Department of Revenue, Sales and Use Tax, St. Paul, MN (PPI Adjusted).

Increases in manufacturing in surrounding counties may also provide Marshall County with the opportunity to increase household numbers and gain population by being a bedroom county for surrounding industry (i.e., Arctic Cat in Thief River Falls, and Cabela's in East Grand Forks).

Retail - Retail sales in Marshall County appear to reflect the agricultural trends within the county (Table 11). The overall trend has shown a decrease in the past few years. The drop from 1993 to 1994 was the most dramatic example (Table 11).

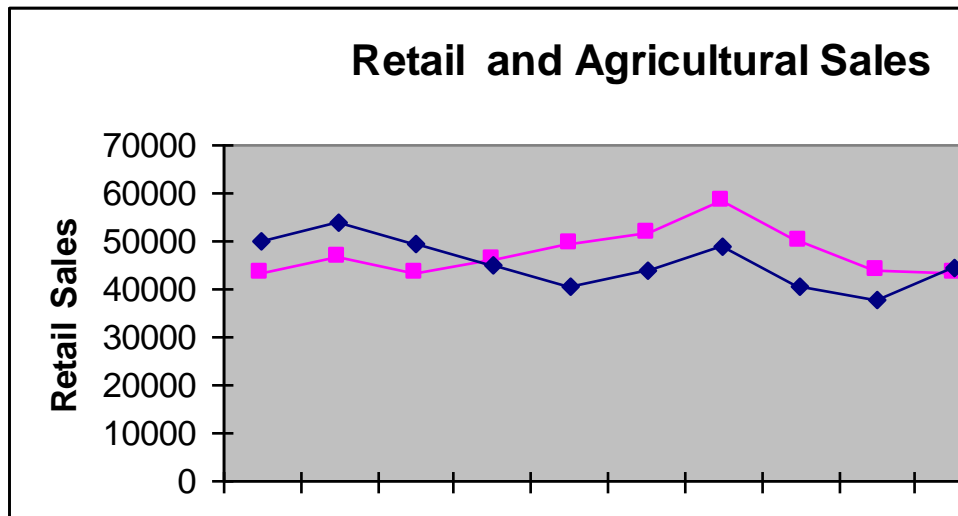
Table 11. Retail Sales* by County (X1000).

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Kittson	36,518	36,578	31,023	37,121	34,968	29,230	30,157	27,259	26,772	29,598
Marshall	58,885	61,331	55,305	58,910	59,492	58,237	64,058	63,971	44,532	43,183
Norman	36,993	39,141	37,383	37,760	36,418	37,296	40,072	37,918	38,121	36,298
Pennington	183,896	134,711	144,333	155,901	115,662	108,913	108,204	98,786	114,925	104,783
Polk	220,516	217,232	179,643	184,697	177,159	176,735	188,414	177,206	175,966	157,488
Red Lake	25,068	24,182	25,829	26,491	25,701	22,296	21,634	27,557	21,463	18,980
Roseau	84,313	83,333	96,297	104,422	108,699	106,241	122,860	123,541	133,948	133,455
Region	646,190	596,509	569,812	605,302	558,099	538,947	575,399	556,239	555,726	523,785
Minnesota	39,877,917	40,910,322	43,346,604	45,783,033	46,668,494	42,966,947	42,605,048	43,267,705	44,524,612	45,722,881

Source: MN Department of Revenue, Sales and Use Tax, St. Paul, MN (CPI Adjusted).

The connection between agriculture and retail sales contrasts with the connection between national economic cycles and retail sales seen in Minnesota as a whole. Although small business owners have also responded to the situation with innovation and persistence, staying open has been a struggle.

Figure 4. Retail and Agricultural Sales (Millions)



Source: MN Department of Revenue, Sales and Use Tax, St. Paul, MN

Leisure-Time and Cultural Amenities.

Leisure-time and cultural activity in rural, sparsely population areas of the Midwest centers around school activities, church related activities, family, and outdoor related activities. School-related activity has diminished as rural populations become sparser. Schools have consolidated and the number of school-aged children has declined. Participation in active forms of outdoor recreation (e.g., hunting, snowmobiling) and passive forms (e.g., picnicking, bird watching) are largely a function of population demographics. Younger people tend to participate in active forms of outdoor recreation while older people enjoy more passive outdoor activities. In recent years, Native American casinos, such as River Road Casino (Thief River Falls) and Shooting Star Casino (Mahnomon), provide another type of recreation, attracting primarily senior citizens.

Health and Safety

Healthcare is generally very good; however, it isn't always conveniently located. Marshall County's only hospital is in the city of Warren. There are no specialized health care providers in the county. The nearest facility with specialized services is in Thief River Falls. Emergency health care service is provided, but long distances and logistics of emergency care facilities can be a problem.

Recreation/Tourism

Marshall County's large, sparsely populated land-base has provided opportunity for many types of recreation and tourism. Attractions like Agassiz National Wildlife Refuge have been the keys to attracting more visitors to the area. Local businesses and recreation facilities have capitalized on the travelers passing through the county on their way to other destinations (e.g., Winnipeg, local casinos, and Cabela's store in East Grand Forks). The County's approximately 250 miles of groomed snowmobile trails and publicly owned lands have seen increasing development, use, and promotion, especially in the past ten years. There are now active tourism groups in the county and county participation in the promotion of Marshall County attractions by groups in surrounding communities, such as Thief River Falls. Traditional outdoor activities such as hunting, fishing, and camping, hiking, and cross country skiing are very popular.

There is a strong, growing interest in outdoor recreation by both local residents and outside visitors. Examples include expanded facilities at Florian Park, increasing purchases of land for hunting use, the new popularity of catfish on the Red River, efforts to secure funding for paved bicycle trails, and the advent of pay-to-hunt arrangements on some private land. Many of these activities have been identified as potential avenues for local businesses to supplement current sales which are primarily orientated to local customers.

Government and Service Providers

A comprehensive system of government units and service providers has been created in response to local, state, and federal needs. The major local units of government include the county, cities (11) and townships (49). Special districts which serve the county include the Marshall County Soil and Water Conservation District, nine school districts, two watershed districts, and the Northwest Regional Development Commission. Regional service providers that are active in the county include the Lutheran Social Services, the Northwest Foundation, the Pembina Trail RC&D, the Northwest Community Action Agency, Northwest Multi-County Housing and Redevelopment Authority and the Northwest Educational Cooperative Unit. State agencies with an active presence in the county include the Department of Natural Resources, the Department of Transportation, the Board of Water and Soil Resources, MN Pollution Control Agency, the MN Department of Health, the MN Department of Tourism, MN Department of Economic Security and the MN Department of Trade and Economic Development. Federal agencies directly active in the county include the U.S. Department of Agriculture and the Federal Emergency Management Agency. (Note that most major federal agencies provide funding for the state, regional, and local agencies listed above.)

A multitude of community groups has been organized to address issues such as sports, recreation, religion, seniors, hobbies, landowner's rights, conservation, commercial improvements, charity, skills development, advocacy, political action, and many, many more. Marshall County, as a unit of local government, specifically addresses a wide range of issues including social services, roads, tax collections, solid waste, natural resources, courts, coroner activities, law enforcement, health care, agricultural extension services, and veteran's services. Economic development activities have been led by local communities in the past; but concern about population loss and state policies orientated toward high growth areas, will probably result in a more active county participation.

Natural Resource Management

Landowners, local units of government and state agencies have historically filled the role of land managers and resource stewards in the county. Settlement of the county was paralleled by the creation of organizations and programs to improve drainage, increase agricultural production, or deal with threats to crops and livestock. These efforts were very successful and there was general agreement that creating the “breadbasket of the world” was a good management practice. The expansion of agriculture turned a corner when continued expansion of drainage proved financially impractical. Attention began to focus on improving production on proven agricultural lands and towards finding other uses for the remaining lands. A strong local, state and federal interest in improving wildlife habitat led to the creation of wildlife areas and the extensive use of both public and private lands for hunting, fishing, and other types of outdoor sports.

Shifting demand for agricultural products has always resulted in land moving between crop production and other farm or recreation uses. Recent years have seen a proliferation of opinions about the best use and management practices on both public and private lands. The increasing interest in protecting resources, preserving habitat, restoring natural functions, and creating areas undisturbed by human activity has refocused many natural resource management programs and led to the creation of new agencies and advocacy groups. A sampling of new groups and programs include the MN Board of Water and Soil Resources, the Northwest Minnesota Land Owners Rights Coalition, the Red River Basin Board, the Red River Water Quality Committee, the eco-systems management initiative by the Department of Natural Resources, best management practices in farming, the abandoned well sealing program, the Water Unification Initiative Task Force created by the Governor, the tall grass prairie effort supported by the U.S. Fish and Wildlife Department, county biological surveys, and many more.

Picture 1 - Water Quality Monitoring Site - County Water Planning Program



The county has incorporated or expanded a number of the new programs related to natural resource issues including county water planning, solid waste disposal, shore land management, feedlot management, septic system management wetlands management and floodplain management. There has also been an outpouring of groups interested in flood control including the Soil and Water Conservation Districts, Watershed Districts, state agencies, federal agencies, a multitude of Red River basin groups, and the International Joint Commission.

Resource Analysis

The county has an extensive pattern of roads, rivers, streams, drainage ditches, and wetlands which support economic, social and wildlife systems. Although the interaction of these systems is complex, most of the systems have been in place for fifty to one hundred years, and most serious dysfunctions have been worked out.

There is some concern about issues such as soil erosion or maintaining water quality and efforts are underway to study the causes and implement initiatives which will bring about sustainable levels of function. The decreasing use of land for agriculture is highlighted by approximately 200,000 acres of Conservation Reserve Program (CRP) enrolled as of 1999.

The high quality of life stemming from the County's social environment is one of the County's strengths. However, many of the factors residents believe contribute to quality of life (i.e., low population density) can be seen as a weakness. Demographic data show steady depopulation in Marshall County. The number of residents over 55 is increasing and younger people are emigrating in search of employment opportunities in urban centers. Consistent with many other rural areas in the United States, Marshall County is experiencing something of a "brain drain." Many young adults of Marshall County have left for greater opportunities in more populated areas. These young, often better-educated individuals, may be the entrepreneurs or "risk takers," who could provide the impetus for economic development if they were encouraged to stay and live in Marshall County.

The residents of the county have proven to be resilient, both in terms of maintaining the agricultural base of the area and exploring new opportunities. The population is characterized by 1) an ethnically homogeneous mobile workforce, 2) third or fourth generation farm operators, and 3) senior citizens. The mobile workforce, largely Caucasian between 25 and 55, are self employed, work for one of the few businesses in the county, or commute to nearby blue-collar jobs. The work ethic of the County's

1Picture 2 - Farming



workforce is one reason they are so mobile. This mobility could also be a positive factor in local economic development. Businesses and firms often locate where they find the most reliable labor force. Hard work, honesty, dedication, and punctuality characterize Marshall County residents' work ethic.

Marshall County's size, very productive Red River Valley soils, and internationally recognized wildlife habitat (i.e., Agassiz National Wildlife Refuge) are assets which will continue to support county residents.

The County's scenic, sparsely populated landscape and abundant game offer excellent hunting opportunities. If marketed properly, these harvestable natural resources could draw sportsmen from across the county.

Growing interest in the value of conservation and natural/recreational areas will provide both opportunity and conflict. Agricultural is currently under extreme financial stress, so the added cost of best management practice can be a large burden. Though the farmer may see a benefit in improved land management approaches, the additional economic strain can be a breaking point for those on the financial edge. This is added to the on-going strain of an unpredictable climate, characterized by both too much or too little moisture and a relatively short growing season.

Agricultural production and natural habitat are often not good neighbors. Water infiltration from wetlands, weed growth, crop harvesting by wildlife, predator threats to livestock, and land value competition are viewed as additional burdens created by outside interests and values. Advocates for natural areas often view agriculture as an obstacle to preservation and restoration. The local population's desire for people and vehicle-intensive use of non-agricultural land is seen by some as a type of trespass. Local residents have a very hard time understanding why people, who will probably never visit the county, have a strong interest in the simple existence of untouched public lands in the county. There is also the constant concern by local units of government that converting private land to public land or lower economic uses will erode the tax base and increase the cost to live or farm in the county. This extends to the long term effect of large amounts of CRP. There is a question about the future of CRP land, including the possibility that some of it will not be farmed when the 10 year contracts are completed.

Picture 3 - Marshall County Wildlife



There is a great deal of middle ground in this debate. CRP, although now more orientated towards conservation, has been a financial salvation for many farmers. Hunting, snowmobiling, bird watching, fishing, camping, hiking, bicycling and other outdoor activities can provide the extra retail business needed to stay open. Three hundred dollar per acre hunting land pays taxes and extra income from rented hunting or the sale of less productive property could help local landowners. The debate about the advantages and disadvantages of promoting outdoor recreation is likely to continue.

Summary

The County's social, economic, and natural resource base is a mixed blessing. It is attractive to some and the reason others leave. Similar to many other rural agricultural areas in the United States, Marshall County is facing severe economic hardships. If trends continue, local decision-makers will be forced to make some tough decisions in the face of eroding tax bases and depopulation. The hardships and economic realities in Marshall County are compelling reasons for developing a comprehensive plan.

There were lengthy discussions regarding strategies which can have a real effect on the county. The planning process led to the goals, policies, and implementation steps listed in the next sections, which are intended to move toward the county's vision.

4. Goals

The planning process, including visioning sessions, resource analyses, and a review of reference materials, resulted in the identification of four “grand” goals for the county. Each goal was also supplemented with specific ideas on the factors each goal should address. (See Section 10, Background for Setting Goals for additional information on goal setting).

Stability - The County must maintain its economic and social viability, which is currently threatened by difficulties in the farm economy and the out-migration of rural residents.

- Preserve Agricultural Opportunities
- Expand the Economic Base
- Increase Job Opportunities

Growth - The County must encourage new thinking which expands opportunities for the use of our human and natural resources.

- Promote Population Growth
- Seek Higher Per Capita Incomes

Efficiency - The County must improve levels of public service efficiency to keep stride with fast paced change at local, state, and national levels.

- Maintain School Enrollment
- Equalize property taxes
- Maintain the Tax Base

Sustainability - The County can maintain, grow, and improve while sustaining the high quality of life and natural resource.

- Sustain and Enhance the Quality of the Environment
- Sustain and Enhance the Quality of Life for Individuals
- Sustain and Enhance the Quality of Community Life

5. Development Policies and Implementation Steps

The goals described in the preceding section help focus thinking on actions the county can take to achieve the county's vision for the future, both in terms of land-use and economic development. This section identifies overall development policies and the more detailed steps the county has chosen to implement in working towards the goals. Each policy and implementation step addresses multiple goals, so they are not attached directly to individual goals. Instead, each policy and implementation step has been selected according to its potential for helping achieve all the goals. (See Section 11, Methods of Intervention for additional background information).

Policy 1. Land-Use - Marshall County supports the existing balance of land-use in the county, studying future land-use trends, and working with townships to implementing appropriate zoning ordinances.

Implementation Steps

Agricultural Protection Zones - Create agricultural protection zones in the county. (Land-use Planning Committee, townships.)

Feedlot Promotion Zones - Create feedlot promotion zones based on analyses of the most feasible locations in the county. (Land-use Planning Committee and County Extension.)

Natural and Recreational Areas - Examine the need for identifying or promoting areas in the county which are best suited to development as conservation, natural or recreational areas, and which are least likely to create land-use conflicts or additional economic pressures. (Land-use Planning Committee.)

Growth Pressures - Monitor growth pressures in the county on an annual basis and update the land-use plan and county ordinances when required by changing conditions in the county. (Land Use Planning Committee and County Board.)

Policy 2. Agriculture- Marshall County supports maintaining agricultural production, including a transition to the most economically viable forms of farming and farm product processing.

Implementation Steps

Alternative Farming - Provide information and support to farmers on alternative farming methods or crops which will assist with the economic viability of local operations. (County Extension)

Value-Added Processing - Work with local, regional, and state efforts to identify and support value added-processing which would add to the viability of local agriculture. (County Extension in cooperation with local farm groups, MN Extension Services, the Agricultural Utilization Research Institute, the MN Department of Agriculture and other appropriate groups.)

County Road System - Maintain and improve the quality and load bearing capacity of the county road system to support the increasing sizes of farm equipment. (County Engineer in cooperation with the NW Transportation Advisory Committee and the District 2 Area Transportation Partnership.)

Incentives - Examine the possible benefits in providing or locating incentives for the creation of innovative farm operations, especially value added processing, animal intensive farming, or other approaches which produce improved income levels. (County Board)

Policy 3. Population and Economic Development - Marshall County supports reversing projected population loss and growing population levels within the capacity of public infrastructures.

Implementation Steps

Economic Development Task Force - Examine the value of increasing the county development effort by the appointment of a one-year task force of county, city, business, and agency leaders. The Task Force would examine the existing capacity of the county in terms of a wide variety of services and make recommendations on target population levels and strategies to maintain or reach those levels. Services and strategies would include but not be limited to: work force development, education, health care, police protection, fire protection, seniors, community parks and recreation, industry, main street business, residential growth, retirement housing, attracting persons working outside the community, tourism, trails, telecommunications, natural, scenic and historical areas, hunting, and tax equity.

Work Force Development - Implement strategies to increase the size of the county work force, especially those which attract the younger workers and adapt to the capabilities of the worker. This should include job creation and commuting or telecommuting.

Housing - Examine the need to designate housing promotion areas or zones in rural areas of the county.

Tax Base Protection - Implement county ordinances that would restrict the conversion of property to non-taxable status. (County Board and Land-use Planning Committee.)

Promotion - Examine ways to promote increased economic activity in the county including tourism promotion, business promotion, increased use of telecommunications, and ways to address the effects of CRP. (County Board and Economic Development Task Force.)

Rural Development - Work with surrounding counties, the Region, and other interested organizations to create new policies and programs in Minnesota which address growth issues in urban areas and population loss in rural areas. (County Board, Task Force, NWRDC.)

Policy 4. Natural Resources Management - Marshall County supports a locally-based approach to protecting the quantity and quality of natural resources in the county and making economically responsible improvements.

Implementation Steps

Water Quality Management - Continue operation of the County Water Planning program as the key component in monitoring natural resources, implementing natural resources management practices, and providing incentives to area landowners to improve the quality of water and other natural resources in the county. Issues to be addressed should include, but not be limited to, water quality, flood and ditch management, and land-use management. (County Water Planning and Solid Waste Programs in cooperation with the Marshall County Soil and Water Conservation District, Watershed Districts in the county, MN Board of Water and Soil Resources, MN Department of Natural Resources, MN Pollution Control Agency, MN Department of Health, Federal Emergency Management Agency.)

Floodplain Management - Continue operation of the Floodplain Management program to reduce the risk of property damage during flood events. (County Water Planner)

Solid Waste Management - Continue operation of the County Solid Waste Program as the key component in minimizing solid waste impact on natural resources. (County Solid Waste Officer in cooperation with the County Water Planner and the MN Department of Pollution Control.)

Septic Systems - Continue to operate the Individual Sewage Treatment System program to insure there are no negative effects on the county water supply. (County Water Planner in cooperation with the MN Pollution Control Agency.)

Shoreland Ordinance - Continue to operate the Shoreland Ordinance program to protect water quality and enhance the quality of natural areas adjacent to the waterways. (County Water Planner in cooperation with the MN Pollution Control Agency.)

Wetland Regulation - Continue to operate the county wetlands program to maintain the integrity of existing wetlands areas. (County Water Planner in cooperation with Marshall County Soil and Water Conservation District, Watershed Districts, MN Board of Water and Soil Resources.)

Middle River Management Plan - Support the on-going operation of the Middle River Management Board to manage the Middle River area for economic and conservation purposes. (Middle River Management Board with support from the County Board.)

Building Permits - Implement a building permit process which informs land owners of restrictions created by federal, state and local natural resources management rules, including Shoreland, Floodplain, Wetlands, and Individual Sewage Treatment Systems. (County Water Planning Program and County Board.)

Feedlots - Implement a county feedlot ordinance which will assist local livestock operations to meet state feedlot regulations and incorporate the ordinance into the county building permit process. (County Water Planning Program in cooperation with area livestock operations and MN Pollution Control Agency.)

Soil Erosion - Implement a soil loss ordinance which addresses problems in areas with erosion prone soils.

6. Monitoring Indicators

The County Board will review the following statistical items on an annual basis to determine if any adjustments are needed in the County Land-use Plan. Appropriate representatives of groups, agencies and units of government will be asked to participate in this review and to add observational information to the statistical data. Results of the County Board review will be forwarded to the Land-use Planning Committee for consideration, study, research, and any appropriate action recommendations back to the County Board. (See Section 12, Purpose of Monitoring for additional background on monitoring.)

Statistical Indicators

Land-use

- Building Permits
 - Location
 - Number
 - Dollars
- Tax Value
- Land Sales

Agriculture

- Agricultural Sales
- Animal Numbers
- Number of Farm Operations

Population

- Total Population
- Population by Age Group
- School Enrollment

Economic

- Employment
- Retail and Manufacturing Sales
- Per Capita Income

Social

- Crime Statistics (Specifics to be set by County Law Enforcement)
- Health Statistics (Specifics to be set by County Social Services)

Natural Resources Management

- Water Quality (Specifics to be set by Water Planning Program)
- Other Factors as recommended by Soil and Water Conservation Districts or Watershed Districts.

IV. Reference Materials

7. Purpose of Land-use Planning

Introduction

The Marshall County land-use planning process started with a County Board interest in maintaining local control of land-use planning. The County Board joined forces with other counties in northern Minnesota with this same interest and formed the Northern Counties Land-use Coordinating Board (NCLUCB). NCLUCB is composed of ten counties participating in a two-part planning process. Part 1, which involved development of a suggested land-use planning process, resulted in a document entitled *Science and the Land-Use Planning Process: A Roadmap for Northern Minnesota*. This document was intended to guide the Northern Counties in developing land-use planning procedures. NCLUCB wanted a roadmap to the planning process that was neutral, without a specific environmental or development agenda, while using science in the planning process (Botkin et al., 1998). In Part 2, individual counties will establish land-use planning procedures and develop draft plans.

At the direction of the Marshall County Board, a request for proposals was developed by NWRDC. Denver Tolliver and Associates was chosen to help the NWRDC and Marshall County develop a draft land-use plan. The proposal set the direction for Marshall County's land-use planning process (Appendix A). It called for several steps to be completed by the Northwest Regional Development Commission (NWRDC) and Tolliver and Associates. To summarize, the milestones of the planning process included:

1. Survey of local capacity determining data availability, hardware systems, software systems, interest in data/GIS system development training needs and future information system needs.
2. Aggregate available data on to a CD-ROM for the county to use for land-use planning.
3. Analyze data including placing boundaries around all streams and lakes and link one new data item with one shape file to demonstrate the ability of the system to work with new data.
4. Conduct one training session for county employees using the land-use data items and ArcView software.
5. Determine missing data items and recommendations on missing data that are high priority to Marshall County.
6. Hold a visioning conference to determine major land-use issues facing Marshall County and the direction the committee would seek for Marshall County.
7. Perform a county analysis of social economic and natural resource base of the county addressing the issues developed in the visioning session.

8. Draft sustainable development goals, determine objectives and strategies needed for attaining the goals. Determine monitoring indicators needed for measuring goal attainment.
9. Identify barriers to implementation of the goals and objectives.
10. Determine the process necessary to achieve the previous steps.
11. Prepare a draft county plan and submit to the county for review.
12. Conduct a public forum to discuss and educate the public on the Marshall County draft land-use plan.

Purpose and outcomes of County Land-Use Planning

In a limited sense, land-use planning is thought to focus on land and natural resources. However, *comprehensive* land-use planning also encompasses issues related to the economy, environment, transportation, and other aspects of county development.

Land-use planning has many potential benefits for Marshall County. It helps the county understand its goals, preserve long run options to achieve its goals, identify where pursuit of county goals may conflict with the rest of the world, and identify what resources are available or likely to be available to accomplish the goals.

This draft plan is the first major outcome of the planning process. It is intended as a guide, or roadmap, that can be updated or modified in response to future events or conditions. It is not intended as a program or formula for allocating resources, but it does discuss factors or criteria that the county should consider when making important planning decisions.

Planning Framework

The planning process or framework is considered equally as important as the draft plan. The framework is based on four overarching criteria that are implicitly considered in planning decisions and affect how resources are used. They are: efficiency, equity, stability, and growth. Efficiency is using resources to accomplish the highest level of aggregate satisfaction possible now and into the future. Equity is the fair distribution of wealth among present generations and between the present and future generation. Stability is softening the amplitudes of change. Growth is continuous improvement in the per capita quality of life. In the planning process, goals and strategies are derived from these broad criteria.

The planning framework also calls for a participatory, or citizen planning process in which county citizens develop goals, strategies and priorities with guidance and assistance from planning consultants. A citizen land-use planning committee was established to guide the process. The draft plan and planning process were developed through a series of meetings between consultants and the

County Board and/or the land-use planning committee. In the early meetings, it was concluded that the land-use planning process should identify shared visions for the future of Marshall County, desired future conditions or states (goals), and ways of attaining or reaching these states (strategies). Also, the process and plan should culminate with the Marshall County land-use committee (and citizens of Marshall County) feeling that they have achieved tangible results and gained valuable insights. An important early event was a *visioning conference* which was held to determine shared land-use goals and visions. The results of the conference and land-use committee planning meeting are discussed throughout the plan.

The planning framework also considers societal goals established at other levels. For example, the State of Minnesota has developed a set of general policy goals which describe the state's vision of future social, economic, energy, and environmental conditions. These general goals are intended to guide planning and investment decisions throughout the State. The state planning goals are:

1. A growing economy that is adaptive, innovative, and internationally competitive, providing meaningful economic opportunities for all citizens.
2. A safe, caring society that respects diversity and is responsive to the needs of different individuals, cultures, and age groups.
3. Economically viable rural and urban areas that have employment opportunities and an enhanced quality of life.
4. Sustainable natural resources that balance long-term management with opportunities for the public to enjoy the state's wide variety of scenic and natural amenities.
5. Environmental quality that results in clean air and water, conservation of resources, and preservation of scenic and natural areas.
6. Energy conservation that encourages conservation, less use of non-renewable resources, and more use of renewable alternatives.
7. Governmental cooperation and coordination that strive toward common goals and recognize the value of partnerships between all levels of government, business, and the public.
8. Learning that results in ongoing, life-long opportunities for individuals to grow, prosper, and interact with others.
9. Responsive, effective, and efficient public services that are close to the people they serve, with programs tailored to meet the needs of neighborhoods and communities

The state goals are an important part of the planning framework. However, the local land-use planning process should be tailored to the unique needs and issues of the county. While there is no universal agreement as to what the planning process should produce, some typical or expected outcomes are discussed next.

Description of Alternative Futures - The land-use plan should identify and describe several alternative futures or scenarios for Marshall County -- i.e., what will the county look like in the future if certain policies are followed and only certain actions are taken. One future scenario is the status quo -- i.e., what the county will look like if today's policies are maintained and current trends continue.

Articulation of County Visions - From the pool of alternative futures or scenarios, several desirable futures should be identified and prioritized. These visions should describe desired future states of affairs and conditions in Marshall County-- i.e., what should the county look like in the future. Futures discussed by the committee include an economically viable county with employment opportunities for current and future generations and an enhanced quality of life. This future vision can be contrasted with the status quo future of continued out-migration of people in the 21 to 45 year age bracket with continued loss of agricultural employment.

Evaluation of Tradeoffs - The identification and description of tradeoffs associated with each alternative future is an essential component of the planning process. For instance, debate already has occurred within the committee regarding the economic benefits of intensive livestock operations versus potential environmental quality effects. Such debates are necessary before consensus visions or goals can be stated.

Articulation of Goals - Goals are statements of desired states or conditions that are descriptive of the county vision. They reflect the values and aspirations of a society or group. Goals may be very broad or targeted at specific behaviors or conditions. For example, the Minnesota state planning goal of a safe, caring society that respects diversity and is responsive to the needs of different individuals, cultures, and age groups describes a general idealized state of society. In comparison, a more specific planning goal may include strategies for moving society toward a desired state. An example is the Northwest Regional Development Commissions goal of "maintaining the local and regional populations"

Articulation of Objectives, Strategies and Criteria - In most cases, a goal statement cannot be condensed to a single measurable concept. However, more specific statements of objectives and criteria can be used to measure progress toward goal attainment. Objectives may be thought of as measurable targets that can be attained within a specified time period. Even if a goal statement can not be measured, the objectives related to the goal can be measured by one or more indicators.

Statement of General Policies - In many cases, the desired societal outcome depends upon the specific circumstances surrounding an event or issue. In such cases, policies can provide guidance for future decisions and identify actions that will help attain goals and objectives.

Reaching a consensus on goal statements requires a process. Different planning approaches tried and debated through the years are described in the appendix, along with answers to such questions as 'Why do planning?' and 'What are the ends and means?' Next, the report reviews the scope, the committee, visioning, objectives, strategies, and also several overarching societal goals and the criteria that can be used as framework for county land-use planning.

8. Purpose of a Visioning Conference

A visioning conference is a first step in a much more comprehensive planning process resulting in the publication of a plan and a statement of goals, strategies, and monitoring indicators. The following are usually part of the first phase of a planning process:

1. Identification of key factors or trends, assessment of constraints, articulation of goals and objectives, development of implementation strategies, policies, and programs, and
2. Formulation of criteria or indicators for monitoring progress towards objectives.

The purpose of the visioning conference was to recommend goals, objectives and strategies to the Marshall County Land-use Planning Committee. The visioning conference was followed by two workshops to refine and review goals, strategies and monitoring indicators.

Goal statements reflect or recognize the existence of major forces and trends as well as the existence of financial, physical, and other constraints. Goals are statements of desired states or conditions. They reflect the values and aspirations of a society or group. Goals may be very broad and sweeping, or targeted at specific behaviors or conditions. Sometimes, a hierarchy of goals is defined in which more specific statements or sub-goals are used to clarify or refine broad goals.

A goal may express a broad societal vision, such as the Minnesota policy goal of a safe, caring society that respects diversity and is responsive to the needs of different individuals, cultures, and age groups. However, a planning goal is usually more specific may include strategies for moving society toward the desired state.

In most cases, a goal statement cannot be condensed to a single measurable concept. However, more specific statements of objectives and criteria can be used to measure progress toward goal attainment. Objectives may be thought of as measurable targets that can be attained within a specified time period. Sometimes, objectives may not be realized because of budgetary constraints or other limitations. However, attainment of an objective should be theoretically possible (and plausible) given adequate funding and program authority.

9. Analysis Methods and Science

Sound analysis of land-use issues involves facts and figures (science), technical know how (application of science), judgment, common sense, and an understanding of local/regional values and culture. Decision makers use the results of objective analyses and their understanding of the unquantifiable world around them to sort through options.

When most people think of science they think of technical issues, like soil chemistry, water quality, or botanical classification of plants. But, science is the systematic collection, organization, and analysis of data/information that adds to the body of knowledge in technical disciplines as well as in areas like economics, sociology, and political ‘science.’ The facts and figures of science are politically, socially, and environmentally neutral. Science is clear thinking about unbiased information. Science helps to identify all possible alternatives (including the “do nothing” alternative) and to assess the outcomes, both positive and negative, of those alternatives. It helps to minimize unintended consequences, by identifying them during the process.

Thus, science can,

- Help to identify options,
- Quantify the technical and monetary benefits and costs of options,
- Rank options according to someone else’s criteria (i.e., the decision maker’s),
- Identify areas where scientific knowledge is inadequate (i.e., not statistically significant for decision making),
 - Describe physical, biological, social, political, and other types of environments, and
 - Provide models and methods to aid, but not replace, decision making.

While, science can not

- Identify the ‘best’ option (without being given weighted criteria),
- Be the only input to decision making,
- Prove anything with 100 percent certainty, or
- Replace common sense or judgment in decisions affecting society.

A scientist is a person who collects and analyzes facts and figures in a neutral, unbiased fashion. For example, a biologist has the expertise and credentials to explain what might happen to certain populations of plants and animals under various land-use alternatives; but that scientist has no credentials for choosing among those alternatives (unless he/she also has other credentials, such as being an elected official). As another example, a resource economist has the expertise to provide advice about the likely economic effects of land-use alternatives, but is not a legitimate source of information about wildlife population dynamics. When scientists make statements beyond the range of their professional credentials, they leave behind their label as an expert and are no more credible than the next layperson.

Science is to land-use decision makers what movie reviews are to movie goers—information to help make the best choice given the information available at the time. Movie reviewers cannot select

Which movie you should see, they can only tell you about those movies. Science and scientists cannot tell land-use decision makers how to manage land-use, they can only inform them of the consequences of their choices. Clearly, science can help narrow the range of choices, given the presence of some widely held values about the world. For example, a land-use choice that would lead to extinction of several bird species in five years is beyond the range of socially acceptable land-uses—but is it in all cases?

Science and scientists are necessary components of land-use planning, but they are a long way from being sufficient components. In other words, science is needed but it cannot provide all the information. Nor can science make decisions—people make decisions based on what science can tell them about alternative outcomes. There are at least three legs to the decision-making stool, only one of which is science. The others are economics (a balancing act between what we want and what we can afford) and politics (the art of making socially appropriate trade-offs among competing interests in a complex environment).

10. Background for Setting Goals

Overarching Societal Goals

The overall objective of government planning and policies is to achieve maximum social welfare by promoting efficiency, equity, stability, and growth. Maximum Social Welfare is a situation where the aggregate well-being of all people over time is as high as possible. Ideally, governmental policies should move society toward this state of maximum social welfare by promoting efficiency, equity, stability, and growth.

Efficiency is using resources to accomplish the highest level of aggregate satisfaction (welfare) possible, today and in the future. Efficiency also can mean using the fewest resources needed to achieve a given, aggregate level of satisfaction. Equity is the fair distribution of wealth among present generations and between the present and future generations. Environmentalists use the term Sustainability to represent inter-generational equity. Stability is softening the amplitudes of changes (e.g., reducing inflation and preventing depressions). Growth is continuous improvement in the per capita quality of life.

Marshall County has four types of resources available for promoting social welfare through production and other activities:

1. Land (all natural endowments of the earth, living and nonliving)
 - A. Renewable (flow)
 - B. Exhaustible (stock)
2. Labor (people, workforce),
3. Capital (technology, equipment, infrastructure), and
4. Entrepreneurship (the ability to put the land, labor, and capital together).

Knowledge of these resources, the external constraints imposed by the rest-of-the-world (ROW), and a clear vision of where the county wants to go are necessary before a reasonable plan can be developed. As discussed later, knowledge of resources can be gained through an objective/scientific inventory and assessment. Identification of the constraints imposed by ROW can be accomplished by a review of applicable legislation, including discussion of the range of feasible interpretations of ambiguous rules.

A clear vision can only be described by elected representatives responsible for the collective decisions in the county (i.e., the County Board). The three alternatives outlined below should be considered during the planning process:

1. The Board can act and make decisions on comprehensive land-use issues based on available information (i.e., moral suasion, incentives, regulation, or government provisions),
2. The Board can delay action and initiate efforts to collect scientific data pertaining to issues they feel require further study (i.e., feedlot placement), or
3. The Board can do nothing.

Social science tells us who lives in the county and why. It tells us what we say we want in the quality of life. Physical/biological science will tell us the effects of using our resources to accomplish our goals while staying within our quality of life constraints. The sciences and data they generate provide local decision-makers with insight into what the outcome will be once an alternative is chosen.

Good information should ultimately lead to sound decisions in the best interests of Marshall County residents. However, science alone cannot be the only tool used by decision-makers. Other factors and information including political constraints and resource availability (i.e., staff, money) will also influence decisions. Ultimately it is the responsibility of the Marshall County Commissioners to make decisions regarding land-use and sustainable development issues that are efficient and in the best interests of all the residents in Marshall County.

11. Methods of County Intervention

When government knows the nature of a problem (i.e., what is keeping us from realizing maximum social welfare) and has made some broad decisions about issues such as property rights, it can select one, or a combination of, the following tools to intervene for the good of the whole:

1. Regulation (e.g., speed limits, effluent discharge levels, hunting and fishing regulations);
2. Government provision (e.g., roads, schools, national defense);
3. Moral suasion, such as education and persuasion (e.g., Smokey Bear, Iron Eyes Cody);
4. Market-like incentives (e.g., taxes, subsidies, auctions).

Understanding the boundaries the county must maintain and available tools in the county land-use planning process can provide practical benefits, including:

1. Helping the county understand its goals as some subset of the overarching goals of efficiency, equity, stability, and growth.
2. Helping identify where the accomplishment of Marshall County's goals may conflict with the rest-of-the-world.
3. Helping identify what resources are available or likely to be available to accomplish the goals.

Finally, constraints imposed by the rest-of-the-world on Marshall County are either complied with or changed through the political process. Implementation Options.

Jurisdictional Context and Constraints

The land-use planning process was completed with the assumption Marshall County may do what it wants inside its borders as long as it does not affect the rest of the world. The only control the county has is over the county and municipalities and townships. The county land-use plan has to account for existing plans within municipalities and townships and the county itself. For instance, a city may have zoning ordinances or the county may have a water plan which must be taken into consideration.

The future vision, the goals and the development policies describe what the planning process would like to see happen. The selection of implementation steps describes how the county will act to make it more likely the vision will be achieved. There are a variety of implementation tools available, some attempt to force development, while others guild or encourage. The following is a short summary of the types of tools the county can consider:

Tools for Implementation

Regulation

1. Shoreland Ordinance
2. Floodplain Ordinance
3. ISTS Ordinance
4. Livestock Ordinance
5. Wetland Management
6. Solid Waste Ordinance
7. County Wide Zoning

Market-Like Incentives

1. Limited Tax Breaks (depending on business type, size, and number of jobs).
2. Provide Infrastructure
3. Land Incentives
4. Educational Facility
5. County Education Program
6. Assisted Living Facilities
7. Improved Medical Services

Government

1. Adding County Staff
2. Committees or Task Forces
3. County 5 Year Road Plan
4. RDC Transportation Plan
5. County Water Plan

Marketing Programs

1. Tourism
2. Web Based Business

Moral Suasion

1. Resource Promotion
2. Marketing
3. Educational Programs

12. Purpose of Monitoring

Scientists have the ability to monitor a very wide range of land-use indicators to a very high degree of precision. However, monitoring is merely a method of collecting data to be processed into information (facts and figures) useful for decision making¹. The selection of what to monitor and to what extent (i.e., areal, temporal, precision) to monitor depends almost entirely on how that information will be used in the decision making process. It is inefficient to collect more data than are necessary, just as it is inefficient to not have adequate data to make decisions. The purpose of monitoring selected land-use indicators is to provide input for decision makers.

Along the way the data are used in scientists/technician's models of how the system (natural or otherwise) works. Thus, monitoring of land-use indicators, such as land cover, runoff, stream flows, wildlife populations, chemical composition of soils, soil moisture levels, and many others must be done according to valid protocols so that the data are reliable. Data collection procedures, including the frequency of such collection, need to be of sufficient rigor to provide statistically reliable data sets for subsequent analysis. Data collection should also be coordinated so data sets are compatible over time, space, and analyses platforms (i.e., computer models).

Since monitoring land-use indicators is not costless, care should be taken in designing a data collection system. The data need to be adequate for analytical purposes, but not such that its collection and analysis "breaks the bank" or leads to information overload. Too little data are worthless and too much data are time and money wasted. Data collection for monitoring purposes starts with an assessment of what decisions are going to be made; then steps back to what information is needed to make those decisions; then looks at how precise information needs to be for decision making; and, only then, can the indicators that need to be monitored be selected and the intensity of monitoring be efficiently and effectively chosen.

It makes little sense to measure with an electron microscope when all that is available for cutting is an axe. Likewise, knowing just total annual precipitation is not much help for water resources management planning.

¹The collection of data for no apparent current application contributes to the advancement of basic science, or knowledge for its own utility.