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Carlton County Community-Based Comprehensive Plan

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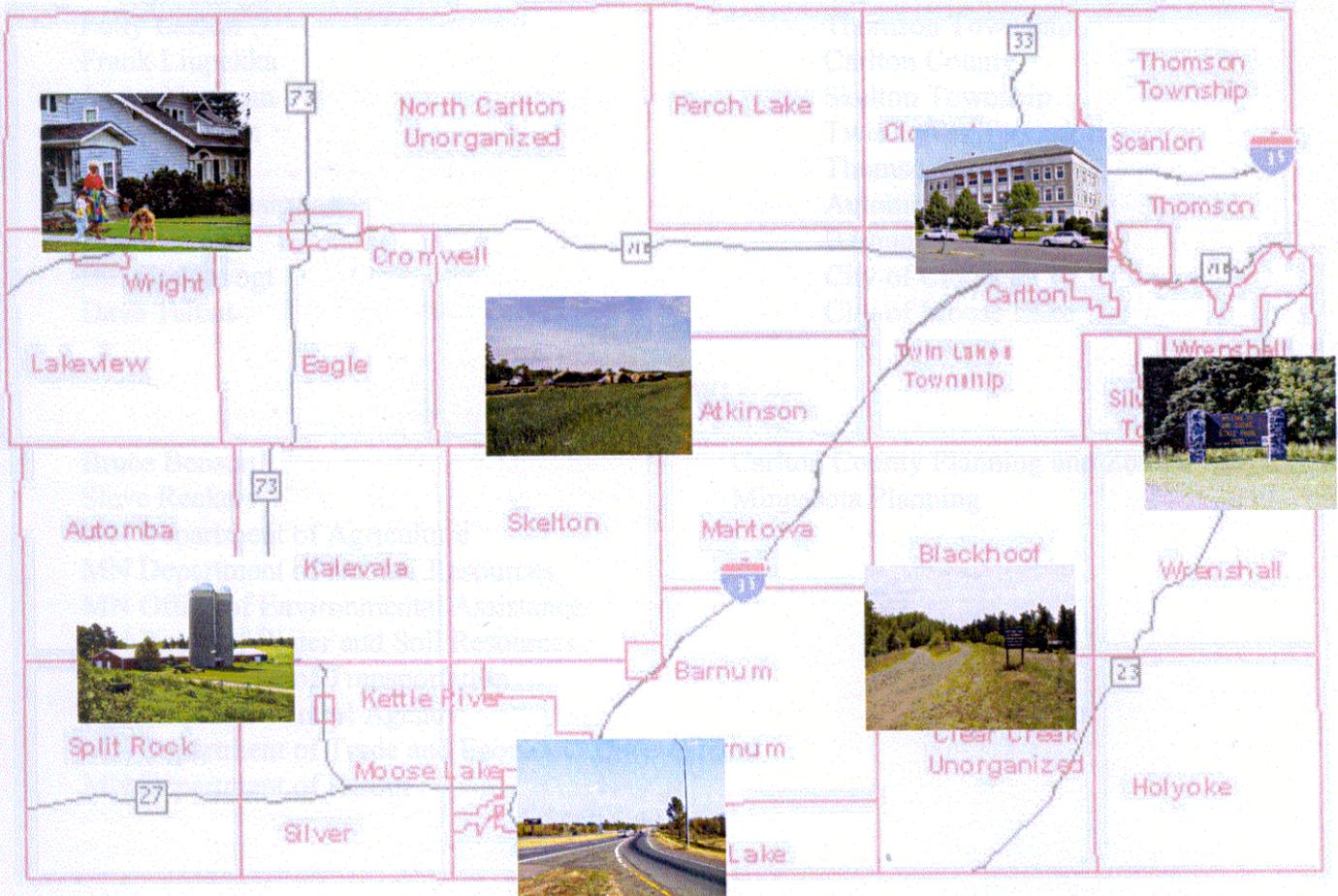
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Fond du Lac Reservation

City of Cromwell

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Introduction

The Carlton County Comprehensive Plan, which had not been updated since 1967, and the 1978 zoning ordinance no longer accurately reflected the views of Carlton County residents. The County felt that it was important to update the comprehensive plan in order to help guide future development and land use.

The planning process that resulted in the production of this document began with a grant from Minnesota Planning. In 1997, Minnesota Planning accepted applications from cities and counties throughout Minnesota to participate as one of four pilot projects in a planning effort called the Community-Based Planning Act. This initiative outlined eleven goals that pilot projects were to use as guidelines for the development of comprehensive plans for their jurisdictions. Carlton County submitted a proposal and was chosen to participate as one of the initial four pilot projects in the State of Minnesota. Four more pilot projects have been funded through this initiative since its inception.

In 1998, a contract was completed with the State for planning funding. Under this contract Carlton County formed a Joint Powers Board. This Board is made up of two commissioners from Carlton County, one representative from each of the ten cities, representatives from six townships, and one representative from the Fond du Lac Reservation. Five of the township representatives were chosen by the Carlton County Association of Townships and Thomson Township, because of its rapid growth, was chosen by the County Board to participate on the Joint Powers Board as the sixth.

The eleven goals outlined by the Community-Based Planning Act emphasize citizen participation, intergovernmental cooperation, housing, transportation, conservation, livable community design, sustainable development, public education, public investments, and land use planning. To guide the County and Joint Powers Board through this new comprehensive planning process, the County Board hired the Arrowhead Regional Development Commission (ARDC), a regional planning agency with experience in comprehensive planning.

A review of existing data, plans, land uses, and issues was carried out as an initial step in the planning process. This information was compiled and analyzed for use in developing goals and strategies for the comprehensive plan.

PURPOSE OF THE PLAN

Planning is an ongoing attempt to guide future development or redevelopment, in order to solve and avoid problems, meet future needs, and create new opportunities to enhance community life and environmental quality. Therefore, the comprehensive planning process should reflect the aims, goals, and ambitions of the citizens of Carlton County.

A comprehensive plan is a document that defines the current and future land uses of a community and guides growth and development within and around that community. A comprehensive plan has two main parts. The first part includes background data that describes a

community's resources and features. The second part is a policy element that sets forth the community's long-range goals and strategies by which it intends to achieve them. A comprehensive plan gives a community the factual basis and support for zoning ordinances and other land use decisions within the County.

The 2000 Carlton County Community-Based Comprehensive Plan provides both a framework and a set of goals for future decision making, as well as a set of strategies developed by the Joint Powers Board to carry out those goals. The plan identifies the desired type, intensity, and quality of land uses with the County's statutory planning limits. Citizen participation and intergovernmental cooperation were an integral part of the development of this plan, and are reflected in the plan's goals and strategies.

After review by the citizens of Carlton County and the State of Minnesota, this plan has been adopted by the Carlton County Board as a guide for the County and a framework for future planning efforts at the local level. Recommendations contained in this plan should guide public decision-making related to common County objectives, so that decisions by a variety of governmental boards and councils mutually reinforce, rather than compete with one another. The private sector should also use this plan to assist in development decisions that reflect the goals and strategies in the plan.

The 2000 Carlton County Community-Based Plan is a general framework from which local communities can model their planning efforts. Individual cities and townships that need more specific data and information should develop comprehensive plans of their own that have more defined land use classifications, goals, and strategies for implementation than can be provided to them at the County level.

The 2000 Carlton County Community-Based Comprehensive Plan has been structured in a way that can be used as a working document. The plan examines the critical factors in the planning process and presents the goals and strategies that were developed by the Joint Powers Board. The plan should be used as a decision-making tool and updated regularly with new information and new perspectives over the next five, ten, fifteen, and twenty-years.

HOW DOES PLANNING RELATE TO ZONING AND OTHER CONTROLS?

Planning addresses the use of land resources over the long-term. The types or categories of land use are general and broad in their definition. The plan identifies a pattern of land use that the County believes will help to achieve its goals. It also provides a framework that can be used by the County to evaluate development proposals and phase-in public improvements. The 2000 Carlton County Community-Based Plan serves as a guide to set aside land to meet future needs for uses such as transportation, public open space, and residential development.

Zoning is a tool established by State statute to control the type and intensity of land use within specific districts or zones. Most counties and cities are divided into zoning districts. The text of a zoning ordinance identifies what land uses are allowed in each district. This is to avoid conflict between land uses that may not be compatible and to encourage orderly growth. Certain

industrial, commercial, and agricultural operations, for example, may not be compatible with a single-family residential subdivision. Other uses are allowed by what is called a “special use permit”. Special uses are those that are generally compatible with the predominant uses allowed in the district, but which have the potential to create negative impacts. For example, drive-in commercial establishments may require the consideration of vehicle access in order to avoid safety problems on adjacent roadways or nearby residential development.

The zoning ordinance, therefore, is much more specific and detailed than the comprehensive plan, and is the legal tool that determines how land can be used. Zoning also contains what are called bulk regulations. Bulk regulations include such things as minimum setbacks for different types of buildings, maximum building height and buffers between residential and non-residential development. Zoning ordinances also typically control development densities, the size and location of signs, and provision of open spaces.

Subdivision regulations also represent a tool for implementing the Comprehensive Plan. They are authorized for use by counties by State statute. Subdivision regulations establish a system that enables County staff to review proposals for the subdivision of land for development purposes. Subdivision regulations include standards for public facilities, services, improvements, such as stormwater management provisions, erosion control plans, pavement width and strength, and the provision of public rights-of-way and easements.

Amendments to the existing Carlton County Zoning Ordinance should be completed in an efficient manner in order to implement the 2000 Carlton County Community-Based Comprehensive Plan. Amendments to the existing zoning ordinance will enable County staff to implement the goals adopted in the comprehensive plan. These goals should be reviewed and used to make changes in the existing zoning ordinance and related zoning maps.

PLAN SETTING

Carlton County is located approximately 120 miles north of the Minneapolis/St. Paul Metropolitan area. It is 862 square miles in area and consists of ten cities and 18 townships. It is primarily rural in character with the majority of its urban growth and population concentrated along the Interstate 35 corridor in the eastern side of the County. The County has experienced slow economic growth over the past ten years. Housing growth has remained steady with the exception of faster growth in Thomson Township and other townships and cities along Interstate 35.

Carlton County is diverse in both physical features and land use patterns. The western side of the County is rural in nature with many open areas, forests, wetlands, and old farmsteads. The eastern side of the County also has many natural aesthetics features including the Nemadji River basin, two state parks, and several farming operations. The eastern portion of the County is more developed and has a larger population than does the western. Because of this diverse spectrum of land use and population, balancing the needs of the entire County is both important, and challenging for the planning effort. With proper planning and citizen involvement, however, a

community-Based comprehensive plan can be developed which reflects the views from all corners of the County.

Background data and information were collected and are summarized in the comprehensive plan chapters. Goals and strategies were developed using this information as a guide by the Carlton County Joint Powers Board. These goals and strategies will be used to guide decision-making and zoning changes in the County. Implementation strategies that reflect underlying principles and relationships developed through the community-Based planning process have been outlined in this comprehensive plan, and can be used by the County as it moves toward the goals and strategies contained within the plan.

CARLTON COUNTY HISTORY

- 1679** Sieur Duluth, Daniel Greysolon, explores much of the territory of the Dakota Indians living in what would become Carlton County.
- 1854** The Treaty of 1854 is signed by the Ojibwe and the United States, turning over the land that would become Carlton County to the U.S. Government.
- 1857** Carlton County formed by the Minnesota Legislature.
- 1870** The first railroad in Carlton County, the Northern Pacific, is built. It begins at Northern Pacific Junction.
- 1890** The County seat is moved from Twin Lakes to Northern Pacific Junction, which is renamed Carlton the following year.
- 1918** Fire erupts in Cloquet, eventually destroying 23 communities and numerous sawmills. \$30 Million worth of damage is done within the County.
- 1921** The Cloquet High School is completed.
- 1925** The Northwest Paper Company is the only mill in the US to make five kinds of pulp and one hundred grades of paper.
- 1929** The Diamond Match Company makes its Cloquet plant its largest manufacturer.
- 1936** The Cloquet Co-op Credit Union is founded.
- 1940** The Selective Service Act passes, eventually pressing nearly 2,000 Carlton County residents into service on all fronts.
- 1957** Construction of a Frank Lloyd Wright gas station is completed at the intersection of Highway 33 and Cloquet Avenue.
- 1964** Northwest Paper Company merges with Potlatch Forests Inc.

Carroll, Francis. Crossroads in Time: A History of Carlton County, Carlton County Historical Society, Cloquet, 1987.

Carroll, Francis and Wisuri, Marlene. Carlton County: Reflections of Our Past, The Donning Company, Virginia Beach, 1997.

C **ounty Character**

One method of gathering input and providing an avenue for citizen participation is through a survey of a community's residents. In March 1999, a Community Attitudes Survey was mailed to every household in Carlton County. The survey received about a 20 percent response rate, which is good for a survey audience of this size.

The purpose of the survey was to obtain information from citizens in the County about issues and concerns they may have and which need to be addressed by decision-makers through the comprehensive planning process. The survey was structured in a manner to determine the needs of residents separated by gender and geographic location. The survey contained 36 questions which were grouped into the following six categories: Demographic Information, Types of Development, Commercial/Industrial, Public Services/Utilities, and General Attitudes About the County. The survey instrument can be found in Appendix A.

The completed surveys were entered into a statistical software program, tabulated, and analyzed for use in the planning process. The results of the survey were used as a guideline for prioritizing issues, developing a vision statement, and creating goals and strategies for the comprehensive plan. The survey analysis and results are referred to throughout the Comprehensive Plan and coincide with specific topic areas.

Survey data were used to determine the overall character and attitudes of the citizens of Carlton County. Nearly one-quarter of the residents have lived in the county for over 50 years, and more than half of the residents have lived in the county for over 20 years. This indicates that there are many families that have been in the county for several generations and have strong ties to the area. The survey also indicated that there has been an influx of new households in the past fifteen years.

In the survey, residents were asked to describe their vision of Carlton County ten years from now. The Carlton County Joint Powers Board used the comments from this question to aide them in the development of a vision statement. The purpose of the vision statement is to help provide the County with a direction for reaching goals set forth by the Comprehensive Plan.

CARLTON COUNTY'S VISION STATEMENT

"Carlton County is an area in which its residents enjoy a high quality of life. Continued planning, cooperation with other units of government, and citizen participation will ensure that residents of all ages and backgrounds will sustain this high quality of life for many years to come."

Overall Comprehensive Plan Concepts

One of the basic ideas behind the Community-Based Planning Act is the involvement of citizens in the planning process. Citizen participation provides a greater perspective in the development of a comprehensive plan, and allows citizens to provide input and ideas to the plan. This leads to a greater acceptance of the comprehensive plan upon completion and adoption by a community. In addition to the requirement of citizen participation, the Community-Based Planning Act provides guidelines for the development and implementation of the comprehensive plan. One of these guidelines includes a set of eleven goals. These goals, set forth by Minnesota Planning, are as follows:

Citizen Participation

To develop a community-Based planning process with broad citizen participation in order to build local capacity to plan for sustainable development and to benefit from the insights, knowledge, and support of local residents.

Cooperation

To promote cooperation among communities to work towards the most efficient, planned, and cost-effective delivery of government services by, among other means, facilitating cooperative agreements among adjacent communities and to coordinate planning to ensure compatibility of one community's development with development of neighboring communities.

Public Education

To support research and public education on a community's and the State's finite capacity to accommodate growth, and the need for planning and resource management that will sustain growth.

Sustainable Economic Development

To create sustainable economic development strategies and provide economic opportunities throughout the State that will achieve a balanced distribution of growth Statewide.

Public Investments

To account for the full environmental, social, and economic costs of new development, including infrastructure costs such as transportation, sewers and wastewater treatment, water, schools, recreation, and open space, and plan the funding mechanisms necessary to cover the costs of the infrastructure.

Livable Community Design

To strengthen communities by following the principles of livable community design in development and redevelopment, including integration of all income and age groups, mixed land use and compact development, green spaces, and enhanced aesthetics and beauty in public spaces.

Housing

To provide and preserve an adequate supply of affordable and life-cycle housing throughout the State.

Transportation

To focus on the movement of people and goods in transportation planning, and to maximize the efficient use of the transportation infrastructure by increasing the availability and use of appropriate public transit throughout the State through land-use planning and design that makes public transit economically viable and desirable.

Conservation

To protect, preserve, and enhance the State's resources, including agricultural land, forests, surface water and groundwater, recreation and open space, scenic areas, and significant historic and archaeological sites.

Sustainable Development

To provide a better quality of life for all residents while maintaining nature's ability to function over time by minimizing waste, preventing pollution, promoting efficiency, and developing local resources to revitalize the local economy.

Land Use Planning

To establish a community-Based framework as a basis for all decisions and actions related to land use.

Other guidelines include the establishment of a joint powers board, written reports on citizen participation, governmental cooperation, and technology, and the creation of urban growth boundaries in areas that are expected to experience growth.

Carlton County used these guidelines throughout the planning process. One of the ways that the County used these guidelines was in the development of a citizen participation plan. The Citizen Participation Plan utilized visioning sessions, a County-wide survey, and individual community meetings to gain public input. A joint powers board was formed to ensure government cooperation and representation from all jurisdictions in the County. The involvement of State agencies represented another way the County used the planning guidelines. The State agencies provided technical assistance and guidance during the planning process, and reviewed and commented on the comprehensive plan upon its completion. The use of technology, such as Geographic Information Systems (GIS), was a key part of the planning process. A land use inventory was completed which showed the existing land use cover for the entire County. A soils inventory was also completed. Street addressing was conducted using a Global Positioning System (GPS) and a GIS coverage was created to show areas of concentrated development. The County Assessor and emergency response staff can utilize the electronic addresses to provide more efficient service. GIS was also used to develop the maps in the comprehensive plan, and as an analysis tool to determine the best locations for different types of land uses in the County.

Based on all of the data collected, citizen input, public meetings, Joint Powers Board meetings, the County-wide survey, and technical assistance, the Joint Powers Board developed a set of goals, objectives, and strategies for the comprehensive plan. Based on the information presented to the Joint Powers Board, careful consideration was made in the development of the goals. The following goals were developed to help the County move forward into the future. An implementation strategy was developed to provide a way for the County to achieve these goals.

- Maintain active citizen involvement in the implementation and updating of the Carlton County Community-Based Comprehensive Plan.
- Ensure continued coordination among Carlton County communities and neighboring governments.
- Establish a community-Based planning framework that can be used as a basis for all decisions and actions related to land use within Carlton County.
- Promote land and water uses that result in sustainable use of natural resources.
- Maintain high water quality in Carlton County's lakes, wetlands, and waterways.
- Protect the native wildlife, plants, and their communities found in Carlton County.
- Manage forests sustainably to provide for multiple uses across the County.
- Maintain options for future mining activities in areas of high minerals potential.
- Encourage a variety of land use types within the County, which enhance the quality of life and environment of the area, and facilitate cost effective and efficient provision of public services.
- Provide adequate housing to all residents in Carlton County that encourages livable community design.
- Provide and maintain adequate public facilities in Carlton County that preserve and enhance the health, safety, and welfare of the residents.
- Provide recreation facilities to meet public needs while maintaining user safety and protecting the environment.
- Provide a transportation network that facilitates the efficient flow of people and goods throughout the County.
- Develop a strong and diversified economic base that will promote job growth and increase the tax base.
- Encourage agriculture as a viable part of a diverse economy and maintain rural settlement characteristics of agricultural areas.

Population

A study of population characteristics can indicate the unique features of a community and determine patterns of growth and decline, which in turn help to tell the community's history. Geographic areas can use township, city, county, state, and national population data to analyze variations in patterns. Theoretically, community structures reflect population patterns and can be adjusted through the use of updated population inventories.

Figure 1: Population Projections

Year	1990	1995	2000	2005	2010	2015	2020	%Change 1990-2000
Minnesota	4,375,099	4,626,514	4,806,020	4,948,730	5,066,540	5,167,870	5,243,620	19.9
Carlton County	29259	30559	30656	31175	31776	32459	33225	14%
Atkinson township	259	273	249	228	209	191	175	-32%
Automba township	156	151	135	123	111	101	92	-41%
Barnum city	482	494	509	529	549	569	591	23%
Barnum township	767	893	912	981	1056	1136	1222	59%
Beseman township	130	140	154	172	193	216	242	86%
Blackhoof township	578	658	673	702	733	765	799	38%
Carlton city	923	955	993	1030	1068	1108	1149	20%
Cloquet city	10885	11160	11105	11212	11319	11428	11537	6%
Cromwell city	221	215	210	206	202	199	195	-12%
Eagle township	529	529	554	568	583	598	613	16%
Holyoke township	160	164	149	135	122	110	99	-38%
Kalevala township	285	288	276	268	262	255	248	-13%
Kettle River city	190	197	202	211	221	232	243	28%
Lakeview township	167	175	177	181	185	189	194	16%
Mahtowa township	504	523	526	542	558	575	592	17%
Moose Lake city	1377	1596	1782	1950	2134	2335	2555	86%
Moose Lake township	1068	927	867	779	700	629	565	-47%
Perch Lake township	833	872	938	999	1064	1134	1207	45%
Scanlon city	878	890	832	784	739	697	657	-25%
Silver township	373	375	361	349	337	325	314	-16%
Silver Brook township	535	564	577	615	656	699	746	39%
Skelton township	364	374	377	389	401	413	425	17%
Split Rock township	141	144	127	114	102	91	82	-42%
Thomson city	132	139	134	132	130	128	126	-5%
Thomson township	3970	4269	4366	4538	4717	4902	5095	28%
Twin Lakes township	1673	1794	1845	1938	2035	2136	2243	34%
Wrenshall city	296	327	313	309	304	300	296	0%
Wrenshall township	304	327	332	334	337	339	342	13%
Wright city	144	142	136	133	130	127	125	-13%
Carlton Co. Unorganized	935	1004	845	724	621	532	456	-51%

Source: State Demographers Office and ARDC, March 2000

Figure 2: Population Change, 1990-1998

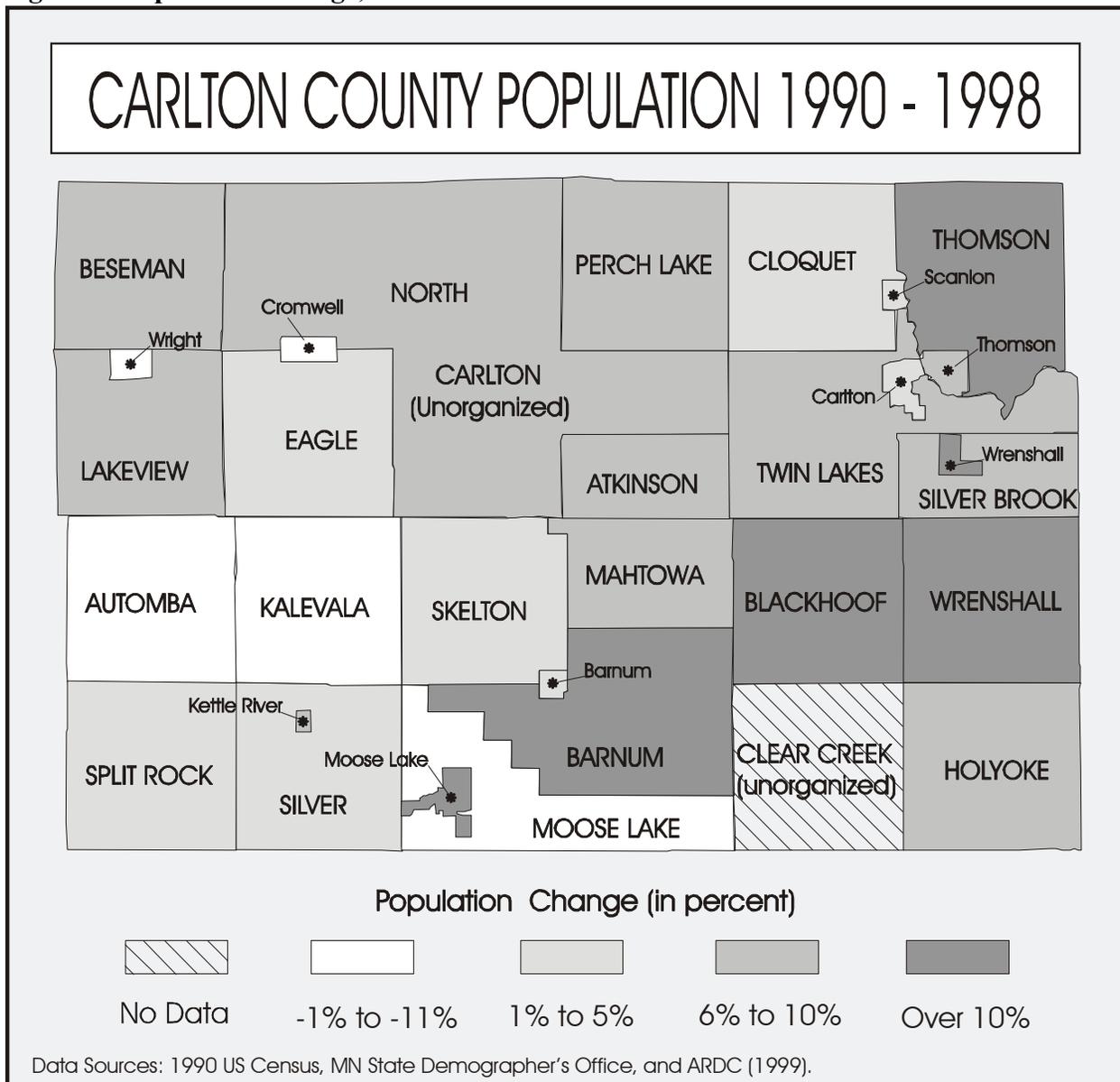
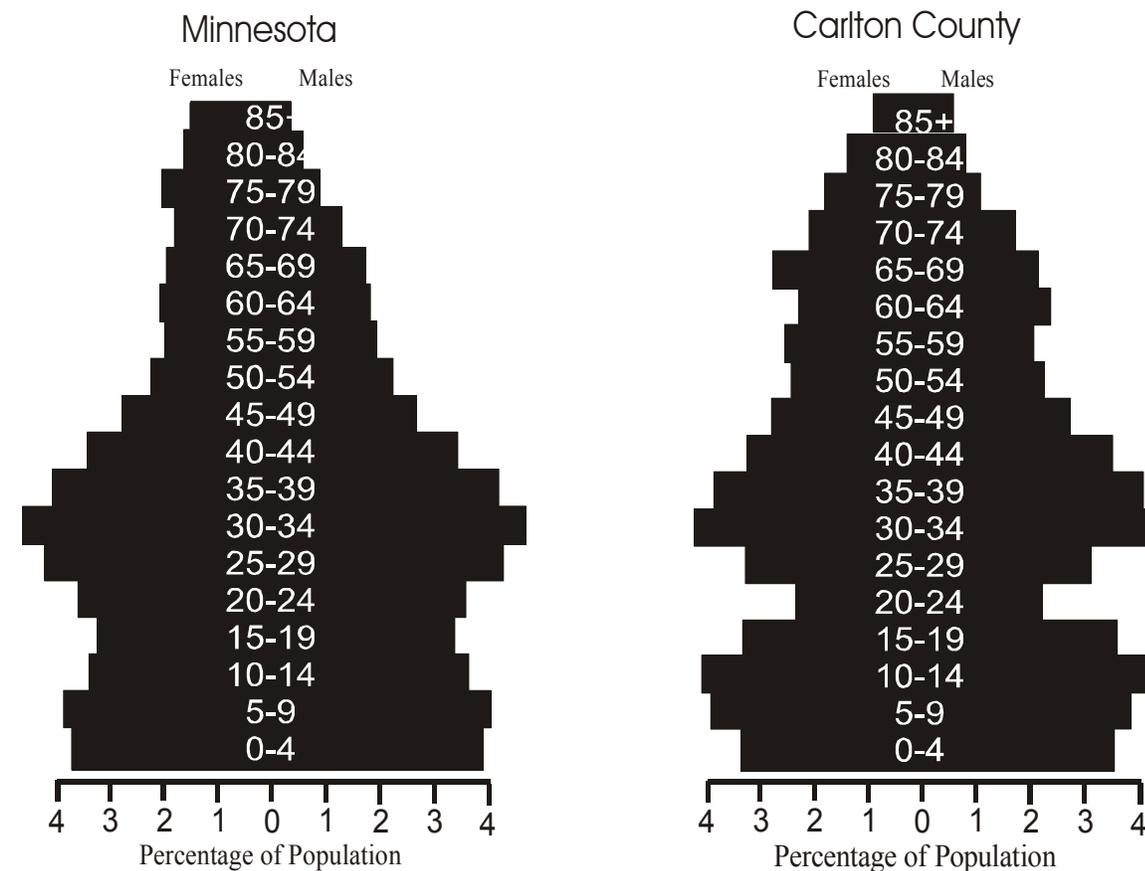


Figure 2 shows how Carlton County’s population changed by city and township from 1990 to 1998. Overall, most areas increased. Some areas, such as Thomson, Blackhoof, and Wrenshall Townships, as well as the cities of Wrenshall and Moose Lake, grew by over ten percent. The largest increases were in the northern and eastern sections of the County. This is most likely due to the proximity to Duluth and Interstate 35. The southeastern part of Carlton County had the slowest population growth. With the exception of the City of Moose Lake, townships are gaining in population at a faster pace than are cities.

The population pyramid illustrates the age distribution of a population. Its purpose is to determine if a community is growing or declining in population. Further, it anticipates social, economic, and political issues as well as needs and investment priorities. A pyramid with a large base and narrow top would indicate a high growth population. The opposite is indicative of an aging population, which means the community will decrease in size rapidly. In 1990, the population became more staggered and represented a middle-aged community. Common things to note are the small number of 20 to 24 year olds, who often leave home for college or careers. Because of Carlton County’s rural location, there are fewer numbers of men and women over age 65. However, its large number of 25 to 45 year olds offers great potential for growth, and the high number of 5 to 14 year olds indicates continued growth in the future.

Figure 3: State of Minnesota and Carlton County Population Comparison



Source: 1990 U.S. Census

Figure 4: Household Change, 1990-1998

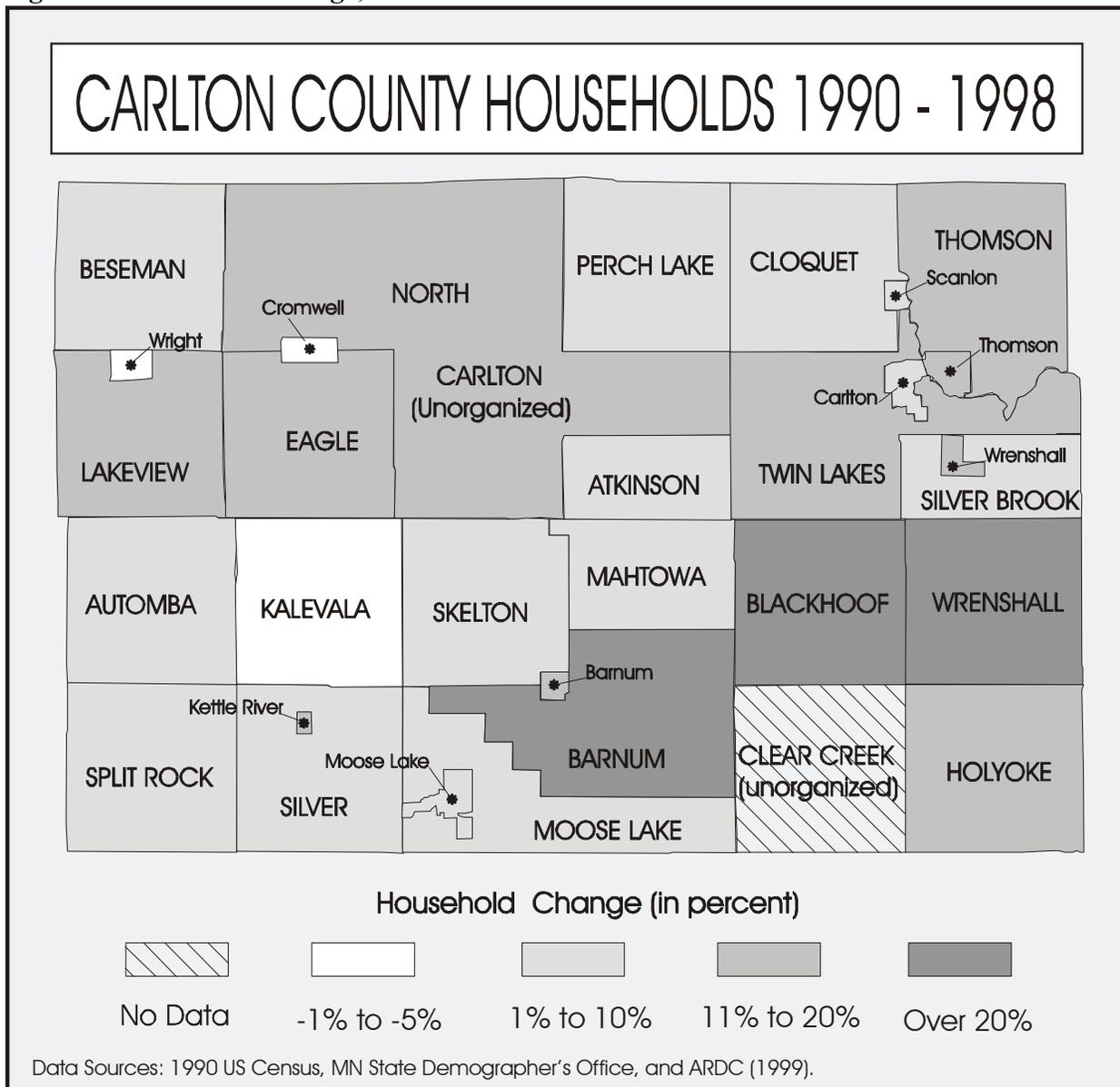


Figure 4 shows how the number of households in Carlton County changed from 1990 to 1998. It indicates that almost every part of the County increased the number households during this time period. Only three areas, the cities of Cromwell and Wright, and Kalevala Township showed a decrease in the number of households. Other areas of Carlton County increased considerably. Barnum, Blackhoof, and Wrenshall Townships grew by over 20 percent.

Figure 5: Projected Household Types

Household Type	1990	1995	2000	2005	2010	2015	2020	% Change 1990-2020
Married-Couple Households	6,610	6,440	6,290	6,260	6,260	6,290	6,260	-5.59
Married Couples with Children	3,173	2,960	2,700	2,480	2,360	2,360	2,330	-36.18
Other Family Households	1,246	1,270	1,300	1,350	1,380	1,390	1,390	10.36
Other Families with Children	786	700	680	700	720	750	750	-4.8
Male Householder	185	180	180	190	190	190	190	2.63
Female Householder	601	520	500	510	530	550	560	-7.32
Nonfamily Households, Living Alone	2,669	2,790	2,940	3,050	3,140	3,220	3,330	19.85
Living Alone, 65+ Years Old	1,384	1,490	1,570	1,610	1,650	1,740	1,900	27.16
Other Nonfamily Households	317	330	370	390	400	390	370	14.32
TOTAL HOUSEHOLDS	10,842	10,830	10,900	11,060	11,180	11,280	11,360	4.56

Source: Minnesota State Demographer's Office

The table above shows the various types of households in Carlton County and how they are projected to change from 1990 to 2020. In 1990, of all the households in the County, 61 percent (6,610) were married-couple households. Of these, 48 percent (3,173) were married couples with children. Of all the households in the County, 37 percent (3,959) included children. By the year 2020, it is projected that 58 percent (6,260) of households will be married-couple households and of these, 37 percent (2,330) will have children.

Another potentially important aspect is that the number of people over the age of 65 and living alone is projected to increase by 27 percent, becoming 17 percent of the total population. As this segment of the population increases, it will be an important factor for determining long-range needs for caring for the elderly.

Figure 6: Carlton County Projections, 1995-2025

Age	Sex	1995 Population Estimate	Projected Population 2000	Projected Population 2005	Projected Population 2010	Projected Population 2015	Projected Population 2020	Projected Population 2025
Total		30,559	31,050	31,110	31,020	30,920	30,720	30,250
0-4	Male	1,007	850	790	790	810	780	710
	Female	945	810	760	760	780	750	690
5-9	Male	1,201	1,120	920	840	830	840	810
	Female	1,187	1,040	880	810	800	810	780
10-14	Male	1,403	1,360	1,260	1,020	920	900	910
	Female	1,360	1,340	1,170	970	890	870	880
15-19	Male	1,156	1,270	1,250	1,150	930	840	820
	Female	978	1,230	1,220	1,060	880	810	790
20-24	Male	689	770	900	910	870	710	630
	Female	658	650	870	890	800	670	610
25-29	Male	786	760	820	960	970	920	750
	Female	818	720	720	940	970	860	720
30-34	Male	1,185	850	810	860	1,000	1,010	950
	Female	1,198	870	770	760	990	1,010	900
35-39	Male	1,310	1,240	880	830	890	1,020	1,030
	Female	1,288	1,240	910	800	790	1,010	1,040
40-44	Male	1,185	1,340	1,260	890	840	900	1,030
	Female	1,085	1,330	1,280	930	810	800	1,030
45-49	Male	1,005	1,190	1,340	1,260	890	840	890
	Female	957	1,110	1,350	1,290	930	810	800
50-54	Male	785	1,000	1,180	1,330	1,240	880	830
	Female	807	970	1,120	1,350	1,290	930	810
55-59	Male	725	790	1,010	1,180	1,320	1,230	870
	Female	744	830	990	1,130	1,360	1,290	930
60-64	Male	653	690	760	970	1,130	1,260	1,180
	Female	670	750	820	970	1,110	1,330	1,260
65-69	Male	629	600	630	700	890	1,040	1,160
	Female	766	630	710	780	920	1,050	1,260
70-74	Male	548	540	510	540	610	770	910
	Female	654	700	580	650	710	850	970
75-79	Male	437	440	430	420	440	490	630
	Female	559	570	620	510	580	630	750
80-84	Male	255	310	310	310	300	320	350
	Female	400	450	460	500	420	470	520
85+	Male	181	250	310	340	360	360	370
	Female	345	460	560	620	690	660	690

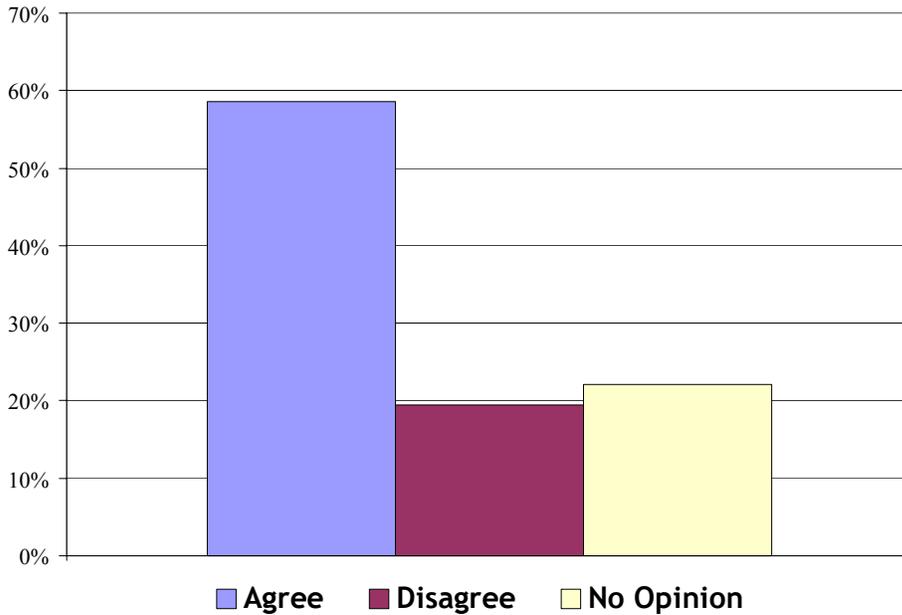
Source: Minnesota State Demographic Center, Minnesota Planning, June 1998.

Figure 6 breaks-down the projected population increases by sex and age groups. The total population of the County is expected to increase during the next ten years and then decrease slowly through the 2025 projection year. According to the State Demographer’s Office, males out number females during the early stages of life. The two sexes remain fairly equal through middle age, and then females begin to significantly out number males in old age. This trend is predicted to remain steady throughout the projection to the year 2025.

PUBLIC OPINIONS

Issues regarding population and its influence on the County were addressed as part of the Public Opinion Survey conducted in May 1999. Respondents were asked if an increase in population would be good for the County as a whole. Fifty-nine percent of respondents agreed with this statement while 19 percent disagreed.

Figure 7: Increased Population Will Benefit the County



This information was cross-tabulated and further broken down by area. Figures 8, 9, and 10 show how respondents of various areas throughout the County feel about an increase in population.

Figure 8: An Increase in County Population Would be Good (1 of 3)

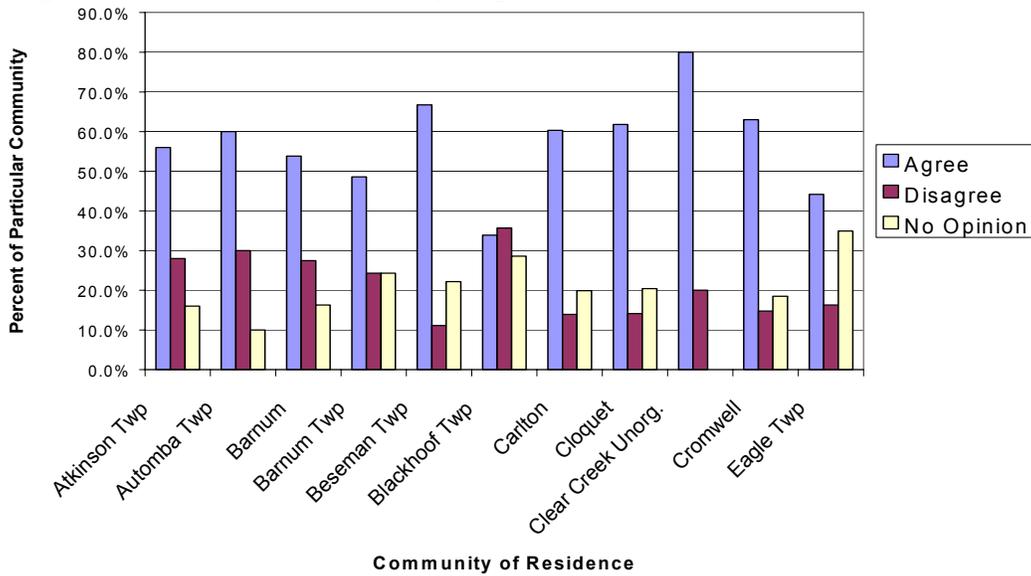


Figure 9: An Increase in County Population Would be Good (2 of 3)

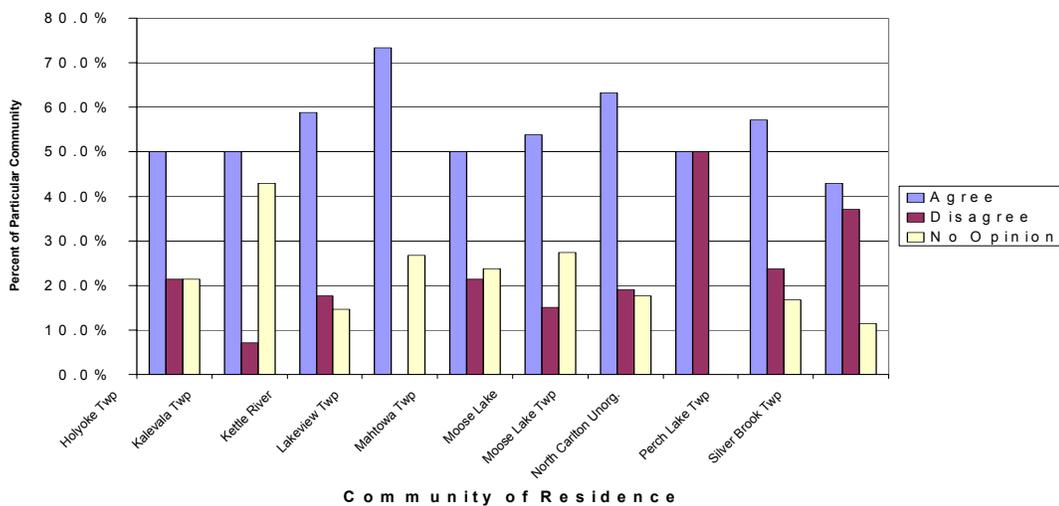
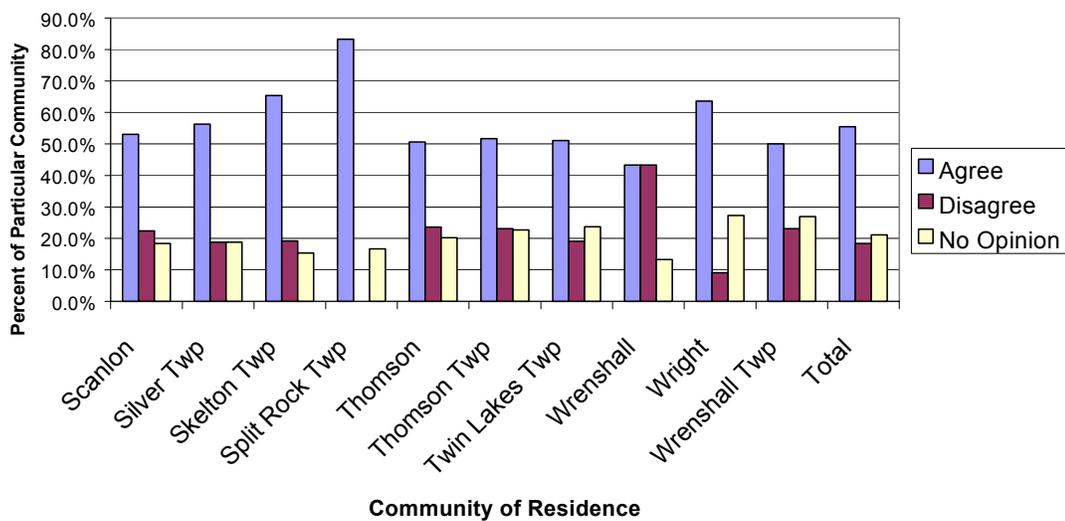


Figure 10: An Increase in County Population Would be Good (3 of 3)



Housing

The unincorporated portion of Carlton County, with the exception of Thomson Township, is predominantly rural. There are some farmsteads, but most of the housing conforms to ribbon patterns along major highways and secondary roads, with increasing densities as one approaches the northeastern part of the County and Interstate 35. A band of higher density settlement has developed along Interstate 35 from the Pine County border to the St. Louis County border. Population growth is occurring along Interstate 35 in the cities of Moose Lake, Barnum, Carlton, Cloquet, and the towns of Thomson, Twin Lakes, Mahtowa and Barnum. However, the housing growth in Carlton County is not uniform. The City of Barnum, and the townships of Twin Lakes and Blackhoof have all grown by between 12 and 23 percent in the past 17 years, while the Cities of Scanlon and Thomson, and Atkinson Township have decreased by between 5.6 and 18.1 percent.

Since 1960, the number of housing units in the rural areas of the County has increased by about 2,000. While residential development increased significantly in some areas, overall housing vacancy rates within the County rose between 1966 and 1990. The northeastern part of the County is experiencing suburban development patterns similar to those found in other parts of the State. During the past 20 years there has been a pattern of residents in Duluth and surrounding communities moving into rural areas. This pattern has created a number of rural development issues including increased population, conflicting land uses, and an increased demand for infrastructure.

Recent comprehensive housing studies have been completed for several cities within Carlton County. These cities include Cloquet, Moose Lake, and the city of Wrenshall. The Wrenshall housing study included the City and the Townships of Holyoke, Silver Brook, and Wrenshall. These studies should be referenced for more detailed information on these individual communities.

HOUSING UNITS

According to the 1990 U.S. Census, Carlton County has a total of 12,342 housing units. Forty-nine (49) percent of those units are outside of incorporated city boundaries. Of the 51 percent of the housing units located in cities, Cloquet has the largest number of units with 4,580. This amounts to 38 percent of the entire County's total housing units. Moose Lake has another five percent of the housing units with 592. Each of the remaining cities has three percent or less of the total housing units. The following table shows the total number of housing units within each city.

Figure 11: Number of Housing Units By City

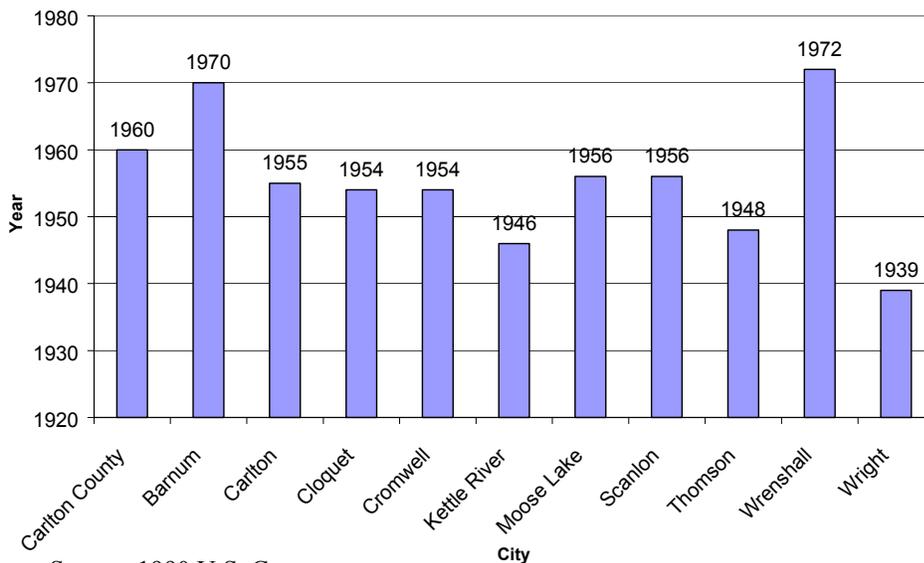
Name of City	Number of Housing Units	Percentage of County Units
Barnum	233	2%
Carlton	347	3%
Cloquet	4,580	38%
Cromwell	104	>1%
Kettle River	88	>1%
Moose Lake	592	5%
Scanlon	365	3%
Thompson	55	>1%
Wrenshall	92	>1%
Wright	61	>1%

Source: 1990 U.S. Census

Median Construction Date

In Carlton County, the median construction date for a home is 1960. County-wide, the median building age for cities ranges from over 60 years old (1939) in the City of Wright to less than 30 years old (1972) in the City of Wrenshall. Figure 12 illustrates the median age of housing stock in each community.

Figure 12: Median Year Home Built



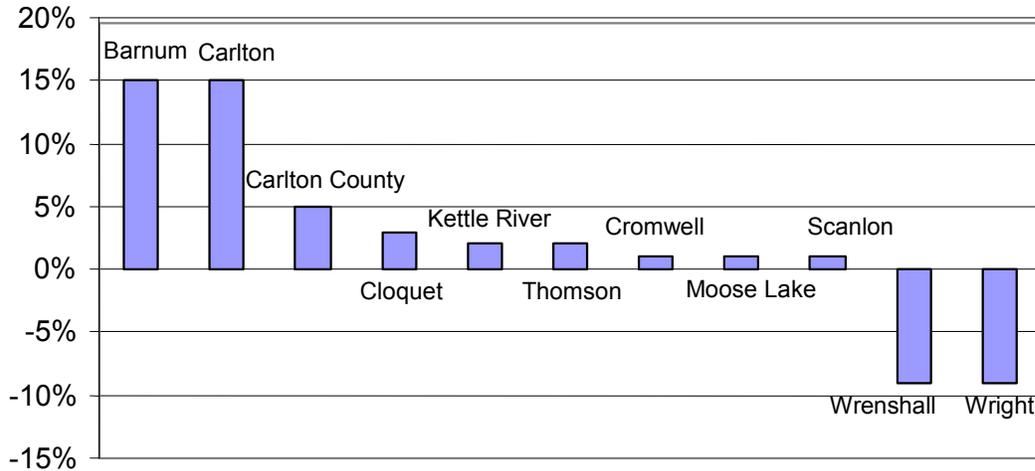
Source: 1990 U.S. Census

The average life span of a house, according to the U.S. Department of Housing and Urban Development (HUD), is 40-50 years without significant annual maintenance. Many homes in Carlton County are more than 40 years old. This could reveal a need for housing rehabilitation in some areas of Carlton County. Communities may need to identify this need on their own and seek their own solutions.

HOUSING GROWTH

Between 1980 and 1990, the overall housing growth rate in Carlton County was five percent. The highest growth rate was 15 percent and was found in the cities of Barnum and Carlton, while the cities of Wrenshall and Wright experienced a decline of nine percent. The remaining cities in Carlton County witnessed minimal growth as illustrated in figure 13.

Figure 13: Housing Unit Growth Rate 1980-1990



Source: 1990 U.S. Census

Building permit data was collected from all communities from which it was available for the period between 1990 and 1998. Figure 14 and 15 indicates where and to what extent development is occurring in the County.

Figure 14: Building Permit Data for New Construction of Housing Units in the Cities

Cities	1990	1991	1992	1993	1994	1995	1996	1997	1998	TOTAL
Barnum	NA*	NA	NA	NA	2	2	3	2	0	9
Carlton	22	28	30	19	24	16	22	24	8	193
Cloquet	18	25	26	20	19	24	20	14	17	183
Cromwell	NA	1	1							
Kettle River	7	7	6	2	7	7	5	4	6	51
Moose Lake	NA	NA	3	0	8	4	4	0	4	23
Scanlon	NA									
Wrenshall	6	0	3	4	3	2	3	2	2	25
Wright	NA									

Source: Carlton County Assessor and Individual City Assessors, April 1999 and November 1999

Figure 15: Building Permit Data for New Construction of Housing Units in the Townships

Townships	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
Holyoke	1		3	1		2	1	1		9
Clear Creek	1		1	1	1	1			1	6
Moose Lake	4	5	7	5	7	7	5	7	5	52
Barnum	11	10	7	8	11	12	8	6	14	87
Silver	3				3	1	4	4	2	17
Split Rock	1				1	1		1		4
Wrenshall	1	1	2	2	6	2	6	3	5	28
Blackhoof	5	5	4	8	6	12	8	14	13	75
Mahtowa	1		4	1	5	5	2	3	3	24
Skelton	1	2		1	5	2	2	2	3	18
Kalevala	1		2		2			2	3	10
Automba		1			1			2	1	5
Silver Brook	1	1	4	2	5	6	7	7	7	40
Twin Lakes	7	6	19	12	18	8	13	11	12	106
Atkinson	1	1	3		2	1		3	4	15
Sawyer	1		2			3	1	2	4	13
Corona	1				1	1	2			5
Eagle		7	7	2	5	7	2	5	4	39
Lakeview				2			1	1		4
Perch Lake			3	1	7	2	3	3	3	22
Progress										0
Red Clover	1	1		2		2	1	3	3	13
Beseman			1		1	1	2	2		7

* 'NA' indicates that building permit information was not available for that year.

Source: Carlton County Assessor, April 1999.

The amount of new home construction is reliant upon a variety of factors. Important factors include the location of jobs and services, and ratio between cost of materials and value. According to the National Association of Home Builders, lumber prices averaged about \$200 per 1,000 board-feet during the 1980's. In the 1990's however, lumber prices rose and varied greatly, at times costing more than \$500 per 1,000 board feet. The cost of insulation and sheetrock have also increased in the past few years, as has the cost of labor. These increases make building new homes less affordable to many families and can even prevent some families from achieving homeownership.

MARKET VALUE ANALYSIS

Figure 16 provides an analysis of the market valuation of residential homesteads in Carlton County. The assessed value of a residential homestead includes the home, all other buildings, and up to ten acres of land. In order to make a uniform analysis of home values and housing unit growth, residential homesteads were the only form of housing looked at in the County. Farmsteads are assessed differently, as are multiple family housing units.

Figure 16: Market Valuation Analysis

Municipality	Number of Residential Homesteads 1989	Municipality's Market Value 1989	Market Value Per Homestead 1989
City of Cloquet	3046	\$105,446,100	\$34,618
City of Moose Lake	300	\$10,808,450	\$36,028
City of Scanlon	330	\$13,027,650	\$39,478
City of Barnum	103	\$2,624,400	\$25,480
Town of Thomson	1217	\$55,488,100	\$45,594
City Totals	4263	\$144,812,500	\$33,970
Town Totals	2983	\$118,597,300	\$39,758
County Totals	7246	\$263,409,800	\$36,352

Municipality	Number of Residential Homesteads 1999	Municipality's Market Value 1999	Market Value Per Homestead 1999
City of Cloquet	3290	\$228,091,959	\$69,329
City of Moose Lake	329	\$19,929,352	\$60,576
City of Scanlon	341	\$23,057,642	\$67,618
City of Barnum	116	\$5,416,555	\$46,694
Town of Thomson	1427	\$128,913,867	\$90,339
City Totals	4601	\$302,376,826	\$65,720
Town Totals	4052	\$316,321,400	\$78,065
County Totals	8653	\$618,698,226	\$71,501

Source: Carlton County Assessor's Office ~ January 2000

The tables in figure 16 indicate that the number of residential homesteads in Carlton County have increased over the past ten years. In addition, figure 16 indicates that the township and city Municipality's market value totals have more than doubled, and their market value per homestead totals have nearly doubled, over the same period.

Figure 17: Housing Growth Comparison to County

Municipality	Percentage of County Homesteads 1989	Percentage of County Homesteads 1999	Percent Change 1989-1999
City of Cloquet	42.0%	38.0%	8.0%
City of Moose Lake	4.1%	3.8%	10.0%
City of Scanlon	4.6%	3.9%	3.0%
City of Barnum	1.4%	1.3%	12.6%
Town of Thomson	16.8%	16.5%	17.3%
City Totals	58.8%	53.2%	8.0%
Town Totals	41.2%	46.8%	36.0%
County Totals	100.0%	100.0%	19.0%

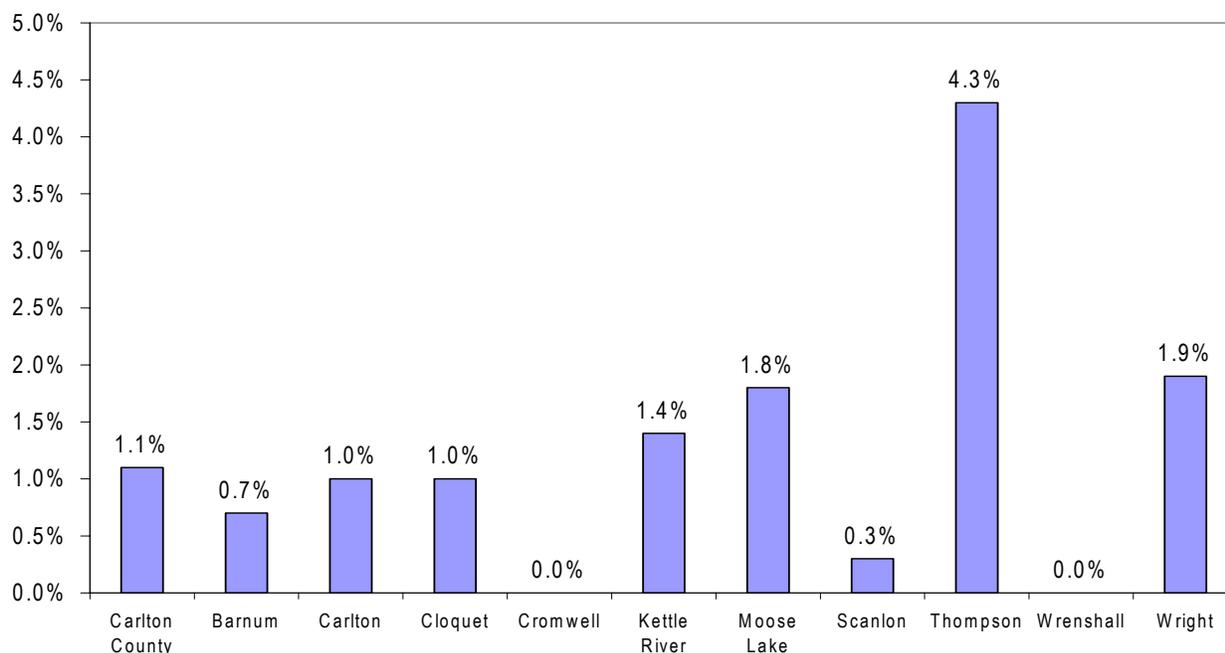
Source: Carlton County Assessor's Office January 2000

Figure 17 shows the County’s development trends over the past ten year. The percentage of existing County homesteads located in cities decreased, while residential homesteads located in townships, or more rural areas, increased during the period from 1988 to 1999. The trend is even more apparent when examining the percent change in the number of residential homesteads built between 1989 and 1999. The total number of homesteads located in cities increased by 8 percent during the ten-year period, while the total number of residential homesteads located in townships increased by 36 percent during the same ten-year period. The County as a whole experienced an overall increase in new residential homesteads of 19 percent. This trend can cause increased land values for residential development and at the same time increase the cost for infrastructure and services, such as law enforcement, schools, and emergency services.

VACANT HOUSING

The owner-occupied vacancy rate in Carlton County was 1.1 percent at the time of the 1990 U.S. Census. The owner-occupied vacancy rate in incorporated cities ranged from zero percent in Cromwell and Wrenshall to 4.3 percent in Thompson.

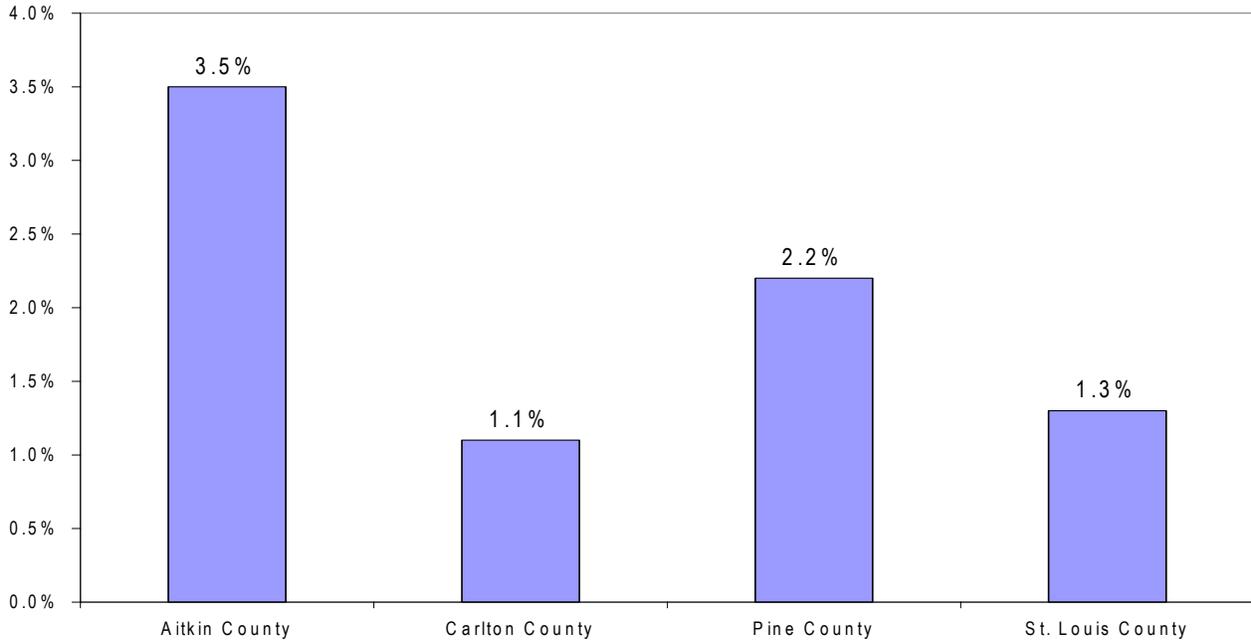
Figure 18: Owner-Occupied Vacancy Rate by City



Source: 1990 U.S. Census

Data from the 1990 U.S. Census indicate that Carlton County had a lower owner-occupied vacancy rate than did the surrounding counties. In a stable housing market, an owner-occupied vacancy rate of one percent can be considered healthy.

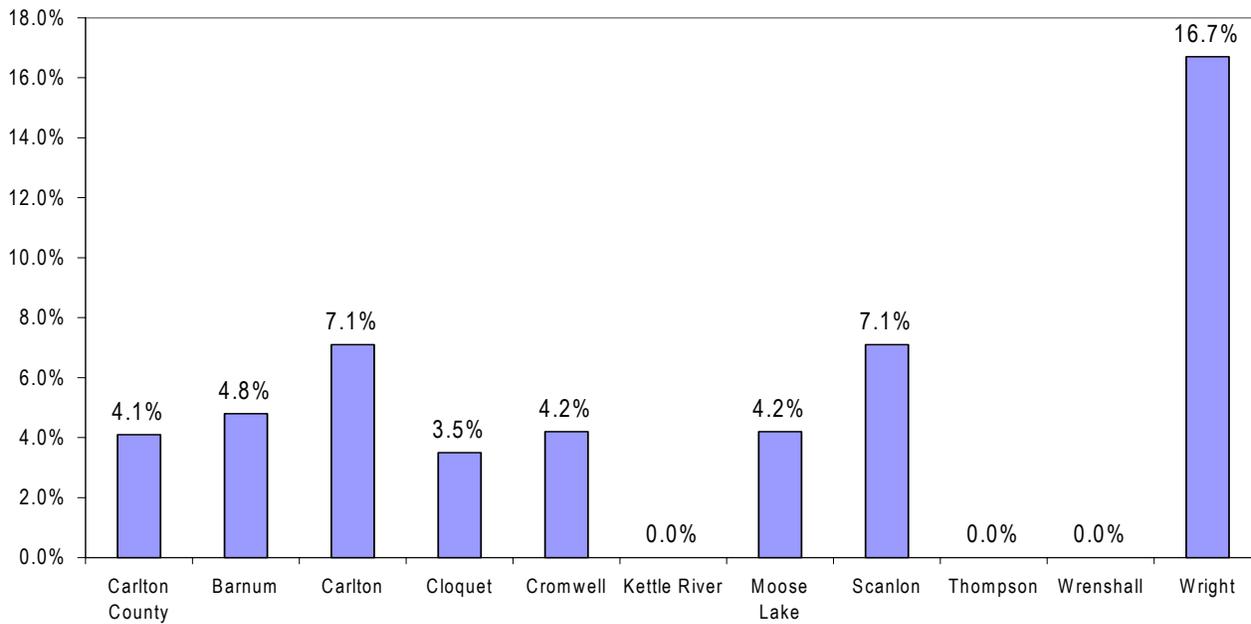
Figure 19: Owner-Occupied Vacancy Rate in the Carlton County Area



Source: 1990 U.S. Census

The rental vacancy rate in Carlton County was 4.1 percent at the time of the 1990 U.S. Census. The rental vacancy rate in incorporated cities ranged from zero percent in Kettle, Thompson, and Wrenshall to 16.7 percent in Wright.

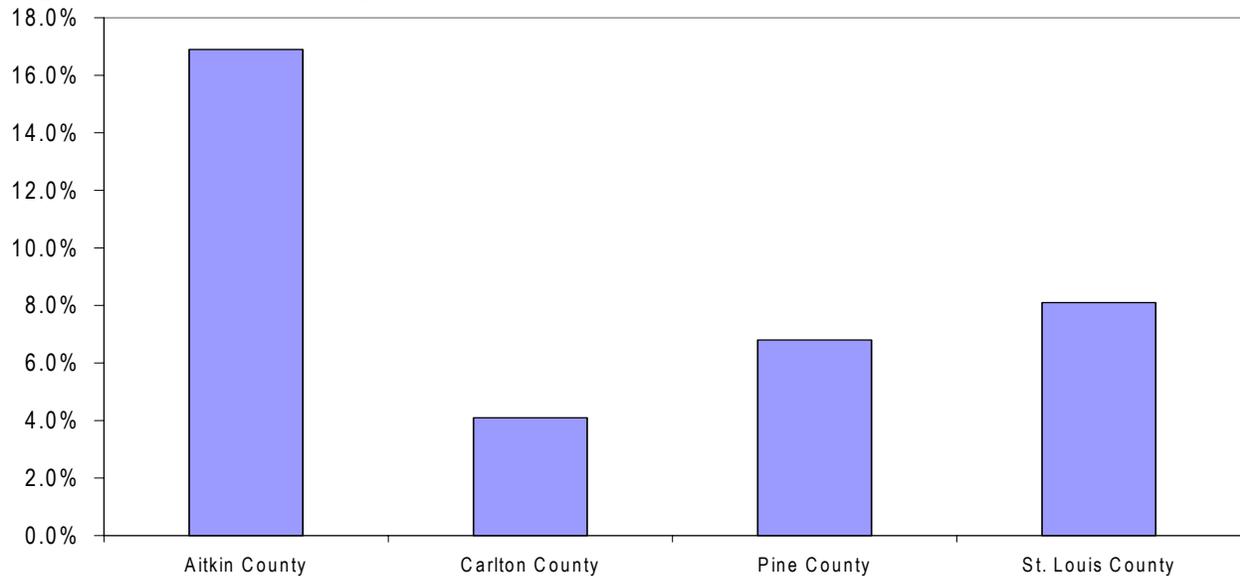
Figure 20: Rental Vacancy Rate by City



Source: 1990 U.S. Census

Data from the 1990 U.S. Census indicate that Carlton County had a lower rental vacancy rate than did the surrounding counties.

Figure 21: Renter Vacancy Rate in the Carlton County Area



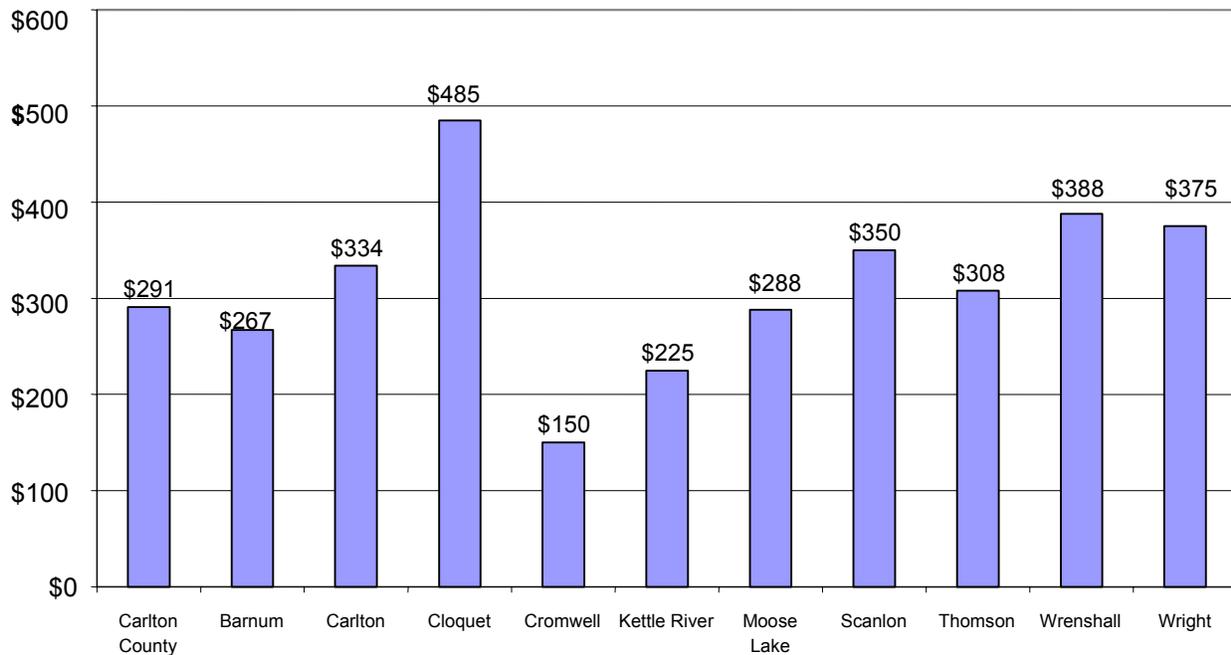
Source: 1990 U.S. Census

A rental vacancy rate of three to five percent is considered to be a desirable range for a healthy housing market, with supply and demand factors balancing the price of housing and offering different choices in style and type. Figure 20 indicates that the cities of Barnum, Cromwell, and Moose Lake, as well as Carlton County as a whole, have rental vacancy rates that fall within that desirable range. The Cities of Carlton, Scanlon, and Wright have rental vacancy rates that are higher than 5 percent. However, the City of Wright had a total of 6 rental units in 1990, only one of which was vacant, and the City of Scanlon had 28 rental units in 1990, only 2 of which were vacant. The cities of Thompson, Wrenshall, and Kettle River, having had four, nine, and 18 rental units in 1990, respectively, all had rental vacancy rates of zero percent. Because these communities have small numbers of rental units, a change in vacancy status of one or two of their units can have a significant impact upon their vacancy rates. Thus it is difficult to make accurate statements about the relative health of their rental markets from the available data. Generally speaking, however, high rental vacancy rates sometimes require rental property owners to lower their rents in order to attract tenants. This in turn affects the cash flow of the property. Low rental vacancy rates have the potential of increasing the average rent since property owners may raise rents in order to take advantage of the tight rental market.

RENT

The median gross rent for all housing in Carlton County was \$291 per month in 1990. However, there was a wide variation in housing rent, ranging from a high of \$388 per month in Wrenshall to a low of \$150 per month in Cromwell. Five cities in the County had a median monthly rent over \$300. The following table indicates that Wrenshall (\$388), Wright (\$375), Scanlon (\$350), Carlton (\$334) and Thomson (\$308) had the highest median rents in the County. All of these communities are located in northeastern Carlton County, except for the City of Wright. Again, this may reflect the effect that urbanization is having on this portion of the County. The two cities that had the lowest median rent, Cromwell (\$150) and Kettle River (\$225), are both in rural areas located in the western half of the County. The cities of Moose Lake and Barnum had median monthly rents of \$288 and \$267, respectively, in 1990. The following figure graphically displays these rental statistics.

Figure 22: Median Gross Rent by City



Source: 1990 Census

In 1990, the surrounding counties had median gross rents similar to that of Carlton County, which had a median gross rent of \$291. Aitkin County, Pine County, and St. Louis County had median gross rents of \$238, \$289, and \$291, respectively.

CARLTON COUNTY SENIOR FACILITIES

There are 23 housing facilities within Carlton County that offer various types of housing to the County's senior population. Of the 23 facilities, seven are apartment buildings that rent to seniors only, ten are 'mixed' apartment buildings that rent to non-seniors as well as seniors, four are long term care facilities (nursing homes), and two are assisted living facilities. In addition to the two assisted living facilities, two of the 'mixed' apartment buildings offer assisted living services to those who qualify, and one of the seniors-only apartment buildings offers assisted living services through a separate agency. The seven senior-only apartment buildings include Hillside Manor West in Moose Lake, Larson Commons in Cloquet, Parkside Apartments in Barnum, Pine View Apartments in Carlton, Southview Apartments in Cromwell, Whispering Pines Apartments number one in Cloquet, and Whispering Pines Apartments number two in Cloquet. The ten mixed apartment buildings include Cloquet Four Plex in Cloquet, Cloquet Housing Authority in Cloquet, Aspen Arms in Cloquet, Woodland Pines in Carlton, Hillside Manor East in Moose Lake, Kettle River Apartments in Kettle River, Maplewood Apartments in Cloquet, Mcdowell-Nemmers in Cloquet, Sahlmen East Townhouses in Cloquet, and Sahlmen West Townhouses and Apartments in Cloquet.

America's health care system relies on long-term care facilities, or nursing homes, to fill a special niche in the Continuum of Care – the provision of skilled care and custodial care to seniors who do not need the intensive, acute care of a hospital but for whom remaining home is no longer appropriate. Long-term care facilities are capable of caring for individuals with a wide range of medical conditions. The long-term care facilities located in Carlton County include the Interfaith Care Center (formerly the Carlton Nursing Home) located in Carlton, the Cloquet Community Memorial Hospital and Health Care Center and Nursing Home located in Cloquet, Mercy Hospital and Health Care Center and Nursing Home located in Moose Lake, and the Villa Vista Nursing Home located in Cromwell.

Assisted living facilities are for people needing assistance with Activities of Daily Living but wishing to live as independently as possible for as long as possible. Assisted living exists to bridge the gap between independent living and long-term care facilities. Although residents in assisted living centers are not able to live by themselves, they do not require the level of care offered by long-term care facilities. The two assisted living facilities located in Carlton County include Evergreen Knoll located in Cloquet and Carlton Place, associated with the Interfaith Care Center (formerly the Carlton Nursing Home), located in Carlton. Other housing facilities that offer assisted living services to seniors include the Cloquet Housing authority in Cloquet and Woodland Pines in Carlton, both of which offer assisted living services to those who qualify, and Hillside manor West, which offers assisted living services to seniors through Mercy Home Care.

A telephone survey of ten senior facilities located in Carlton County was conducted to determine their size, the services they offer, the monthly rent they charge, and the demand for them based upon waiting lists. Both market rate and subsidized senior housing facilities were surveyed. The survey was conducted in order to create an accurate comparison of the housing options available to seniors. Figures 23 and 24 compare the ten senior facilities that were surveyed in terms of their size, services, rent, and demand.

Figure 23: Description of Surveyed Senior Facilities in Carlton County

Name of Facility	Location	Type of Housing	Number of Units	Monthly Rate	Average Rent Range	**Services Included With Rent
Parkside Apts.	Barnum	*Sub. Low Income	25	Based on Income	\$275 -\$445 maximum	1,2,3
Pine View Apts.	Carlton	Market Rate	41	Varies by bedrooms	\$460-\$565	1,6,11,12
Wood Land Pines	Carlton	Sub. Low Income	20	Based on Income	\$100-\$300	None
Aspen Arms	Cloquet	Sub. Low Income	79	Based on Income	unavailable	None
Larson Commons	Cloquet	Sec. 8 Sub. Low Income	85	30% of adjusted	unavailable	1,3
Sahlman W Townhomes	Cloquet	Sub. Low Income	50	Based on Income and Bedroom	\$317-\$547	None
Sahlman E Townhomes	Cloquet	Sec. 8 Sub. Low Income	36	30% of adjusted	\$0-\$350	None
Southview Apts.	Cromwell	Sub. Low Income	16	Based on Income	\$50-\$270	12
Villa Vista Nursing Home	Cromwell	Intermediate Nursing Care Home	51 Beds	Varies by care level	\$68-\$131 daily A-K Rate	3,4,6,8,11
Hillside Manor East	Moose Lake	Sub. Low Income	41	Based on Income	\$90-\$400	3,11

** 1=Community Room 2=Public Restrooms 3=Laundry 4=All Meals 5=Bathing/Hygiene 6=Activities 7=24hr Care 8=Nurse on Call 9=Hair Care 10=Transportation 11=Housekeeping 12=Emergency Call System 13=Utilities

*Sub. indicates a Subsidized housing facility

Source: ARDC Telephone Survey April 1999

Most senior facilities, whether subsidized or unsubsidized, offer at least a few services as part of the monthly rent. There are additional fee-based services available, offered either by the facilities themselves or under private contract outside of the facility, that provide residents with the option of obtaining services in addition to those offered as part of their monthly rent.

Waiting lists for senior housing can help to determining whether there is a need for additional senior housing. The number of people on waiting lists for a particular type of senior housing may suggest a shortage of that housing option, as may the length of time an interested party can expect to be on a waiting list before an opening becomes available. Conversely, a large number of vacancies in a particular type of senior housing may suggest that there is not much demand for that housing option, or that the public is not aware that that type of housing is available.

Figure 24 indicates that six of the nine senior housing facilities listed have waiting lists. Three of these facilities are subsidized senior housing, while one is market rate. The waiting list with the greatest number of people on it and that with a three to six month waiting period are both senior

only facilities, while the two facilities experiencing vacancies are 'mixed' facilities. This suggests that there may be a shortage of senior only apartment buildings. All six facilities that have waiting lists offer to their residents services and amenities that are included with their rent. Both facilities experiencing vacancies offer no services to their residents as part of the rent. This suggests that there may be a shortage of housing available to seniors that includes services and amenities as part of the monthly rent.

Figure 24: Demand for Senior Facilities in Carlton County

Name of Facility	Location	Waiting List	Number on Waiting List	Openings
Pine View Apts.	Carlton	Yes	30-40	0
Wood Land Pines	Carlton	No	0	4
Aspen Arms	Cloquet	No	0	10
Larson Commons	Cloquet	Yes	3-6 months	0
Sahlman W. Townhomes	Cloquet	Yes	8	0
Sahlman E. Townhomes	Cloquet	Yes	10	0
Southview Apts.	Cromwell	No	0	0
Villa Vista Nursing Home	Cromwell	No	0	0
Hillside Manor East	Moose Lake	Yes	6	0

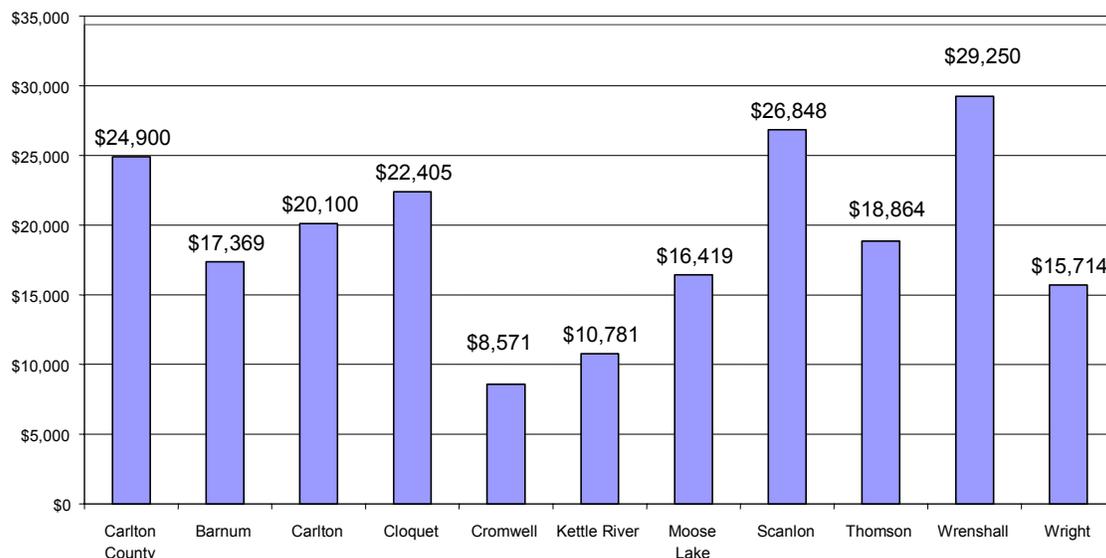
Source: ARDC Telephone Survey April 1999

At the time of the telephone survey of senior facilities in Carlton County, there were 20 openings in subsidized senior rental facilities. However, 18 people were on the waiting list for Sahlman Townhomes, a subsidized facility.

HOUSEHOLD INCOME

The Carlton County median household income was \$24,900 in 1990. Two cities in Carlton County were above the established County median income level. The two cities were the City of Wrenshall, with an annual median income of \$29,250, and the City of Scanlon, with an annual median income of \$26,848. The following figure indicates that the City of Cromwell had the lowest median income level in the County at less than \$10,000.

Figure 25: Median Household Incomes



Source: 1990 US Census

According to the Minnesota Department of Economic Security, the average annual salary for industries in Carlton County was \$27,344 in 1998. This average salary includes all industries, including agriculture, mining, construction, manufacturing, transportation, utilities, trade, real estate, finance, services, and government. The average annual salary reflects what the average individual earns in one of the Carlton County industries listed, which takes into account all employees at all levels, including lower level laborers and upper level executives.

These statistics, when compared to the 1990 U.S. Census data on annual median household income, indicate an increase in wages over the past ten years. Although the annual median income is for 1998 cannot be accurately determined, the average annual salary can be used as a reference point when trying to determine housing affordability.

HOME PURCHASE AFFORDABILITY

Based on information taken from the U.S. Census, most communities have a median annual household income ranging between \$8,500 and \$30,000. The tables in Figures 26, 27, and 28 calculate housing affordability based on an annual household income of \$25,000 and \$30,000. Several assumptions were used to determine each table. The assumptions for the following calculations are as follows:

- Affordability guideline calculated at 24 percent (\$25,000) and 26 percent (\$30,000) of annual adjusted income;
- Income levels up to \$55,000 could qualify for certain programs which only require 3 percent for a down payment;

- Typical monthly debt of \$250 was used. This could include car payments, students loans, minimum payments on credit cards, child support and any other type of debt that will not be paid off within ten months from the date of purchase;
- Available funds indicate what the homebuyer has saved for down payment and closing costs.

Figure 26: Annual Household Income Level: \$25,000 with \$1,000 Down Payment

Basis for Affordability		Income, Debt, & Down Payment	
Affordable Monthly Payment	\$500	Monthly Income	\$2,083
		Monthly Debt	\$250
		Available Funds	\$1,000

How Much House is Affordable with Additional Savings

Interest Rate	Sales Price	Loan Amount	Affordable Monthly Payment	Down Payment & Closing Costs	Funds Shortage (-)
8.00%	\$51,988	\$50,429	\$500	\$4,159	\$-3,159
8.25%	\$51,087	\$49,554	\$500	\$4,087	\$-3,087
8.50%	\$50,209	\$48,702	\$500	\$4,017	\$-3,017
8.75%	\$49,353	\$47,873	\$500	\$3,948	\$-2,948

How Much House is Affordable Today

Interest Rate	Sales Price	Loan Amount	Monthly Payment	Down Payment & Closing Costs	Funds Surplus
8.00%	\$12,068	\$11,706	\$116	\$965	\$35
8.25%	\$12,068	\$11,706	\$118	\$965	\$35
8.50%	\$12,068	\$11,706	\$120	\$965	\$35
8.75%	\$12,068	\$11,706	\$122	\$965	\$35

As illustrated by the tables in Figure 26, the down payment amount on a house makes a significant difference in the value of a home that a household is able to afford. Increasing the down payment from \$1,000 to \$2,000 means the difference between being able to purchase a \$12,000 house and a \$25,000 house at an eight percent interest rate for households earning \$25,000 annually.

Figure 27: Annual Household Income Level: \$25,000 with \$2,000 Down Payment

Basis for Affordability		Income, Debt, and Down Payment	
Affordable Monthly Payment	\$500	Monthly Income	\$2,083
		Monthly Debt	\$250
		Available Funds	\$2,000

How Much House You Could Afford with Additional Savings

Interest Rate	Sales Price	Loan Amount	Affordable Monthly Payment	Down Payment & Closing Costs	Funds Shortage (-)
8.00%	\$51,988	\$50,429	\$500	\$4,159	\$-2,159
8.25%	\$51,087	\$49,554	\$500	\$4,087	\$-2,087
8.50%	\$50,209	\$48,702	\$500	\$4,017	\$-2,017
8.75%	\$49,353	\$47,873	\$500	\$3,948	\$-1,948

How Much House You Could Afford Today

Interest Rate	Sales Price	Loan Amount	Monthly Payment	Down Payment & Closing Costs	Funds Surplus
8.00%	\$24,927	\$24,180	\$240	\$1,994	\$6
8.25%	\$24,927	\$24,180	\$244	\$1,994	\$6
8.50%	\$24,927	\$24,180	\$248	\$1,994	\$6
8.75%	\$24,927	\$24,180	\$253	\$1,994	\$6

In Figure 28, available funds have been increased slightly under the assumption that households earning more can save a little more over time.

Figure 28: Annual Household Income Level: \$30,000 with \$2,500 Down Payment

Basis for Affordability		Income, Debt, and Down Payment	
Affordable Monthly Payment	\$650	Monthly Income	\$2,500
		Monthly Debt	\$250
		Available Funds	\$2,500

How Much House is Affordable with Additional Savings

Interest Rate	Sales Price	Loan Amount	Affordable Monthly Payment	Down Payment & Closing Costs	Funds Shortage (-)
8.00%	\$67,585	\$65,557	\$650	\$5,407	\$-2,907
8.25%	\$66,413	\$64,420	\$650	\$5,313	\$-2,813
8.50%	\$65,271	\$63,313	\$650	\$5,222	\$-2,722
8.75%	\$64,160	\$62,235	\$650	\$5,133	\$-2,633

How Much House is Affordable Today

Interest Rate	Sales Price	Loan Amount	Monthly Payment	Down Payment & Closing Costs	Funds Surplus
8.00%	\$30,506	\$29,590	\$293	\$2,440	\$60
8.25%	\$30,506	\$29,590	\$299	\$2,440	\$60
8.50%	\$30,506	\$29,590	\$304	\$2,440	\$60
8.75%	\$30,506	\$29,590	\$309	\$2,440	\$60

In all instances of the affordability analysis completed for this income level, more funds could be secured for a down payment, but sometimes this is difficult for lower income households. Many first time homebuyers receive funds from parents or relatives and also qualify for certain programs that sometimes lower the interest rate, decrease down payment percentages required of conventional loans, or provide other special financing or incentives to the buyer. Households in these income levels may also lack sufficient down payment and closing costs to afford the homes listed. The available funds listed were made as realistic as possible for the purposes of this analysis.

Housing Goals and Strategies

Goal: Provide adequate housing to all residents in Carlton County, which encourages livable community design.

Objective 1: Promote an affordable range of housing types to accommodate current and future County residents.

Strategy 1: Determine the level of need and type of housing for single people, families, and seniors.

Action Steps:

- Consider a future feasibility study to determine housing needs.
- Implement solutions to housing needs.
- Conduct a housing study to implement this strategy.

Strategy 2: Examine the current zoning ordinance to make sure it supports the overall housing goal.

Objective 2: Encourage the preservation of the character and integrity of the existing housing stock.

Strategy 1: Determine the level of assistance that homeowners need to maintain their homes.

Strategy 2: Identify, support, and seek funding sources for housing rehabilitation, such as DTED's Small Cities Development Program, HUD funds, Community Development Block grants and MFHA funds.

Objective 3: Encourage new housing construction that is compatible with livable community design principles.

Strategy 1: Identify locations for new housing developments which are consistent with County land use goals.

Strategy 2: Identify and support financing programs for new housing construction.

Public Facilities

The issues concerning the provision of public facilities and services are particularly complex in Carlton County because there are so many entities involved in providing services. For some services, the County is responsible for part of a system of facilities, such as the transportation, regional park, and open space systems. Many services and facilities that are essential to County residents are provided by municipalities, special districts, and even private associations, including schools, fire and police protection, and central water and sewer.

This chapter provides more detailed information about existing facilities and services, and present and future needs. It recommends a coordinated long-term planning approach for public facilities, including those that are not directly provided by Carlton County. It also provides principles for developing a system of capital improvements.

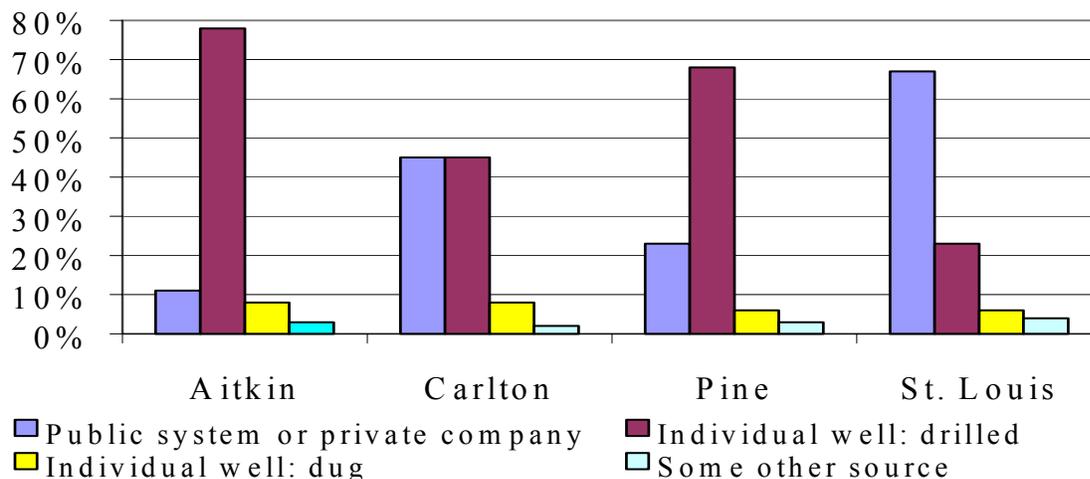
All communities within Carlton County were surveyed regarding their existing public facilities. The information in this chapter includes responses from those communities that chose to participate in this survey. This section provides background on service providers, current levels of service, and issues related to growth and development for the following infrastructure and services:

- Water
- Wastewater
- Solid Waste & Recycling
- Regional Parks & Green Space
- Law Enforcement Protection
- Fire Protection
- Libraries
- Public Education
- Medical Facilities

WATER FACILITIES

Water service in Carlton County is provided by municipalities, water districts, private water associations, and individual wells.

Figure 29: Source of Water



Source: U.S. Census.

The City of Carlton has three public wells that range in age from two to over 60 years, serving 274 housing units inside the City, at a cost of \$1.62 per 1,000 gallons of water. The wells have a storage capacity of 250,000 gallons and can pump at a rate of 200 gallons per minute. The average daily flow for Carlton is 107,000 gallons with peak flows of up to 207,000 gallons. A new water treatment plant was built in 1979. Due to concerns about the age of the ancillary facilities within the system, Carlton is planning a major water facility replacement at an estimated cost of \$766,000.

The City of Wrenshall has one public well that serves 78 housing units inside the City at a cost of \$12.00 per month. The average daily flow from this 40 year old well is 17,800 gallons. The pumping capacity is 53 gallons per minute and the system's storage capacity is 54,000 gallons. The water system was upgraded in 1989 and there are no scheduled improvements at this time.

The City of Cloquet has seven public wells that were drilled between 1942 and 1989. These wells serve 3,500 housing units inside the City at a cost of \$1.39 per 1,000 gallons. Cloquet's water system has an average daily flow of 1.1 million gallons per day with peak flows of 1.7 million gallons per day and a pumping capacity of 1.9 million gallons per day. Cloquet has 125,000 gallons of elevated storage capacity and 595,000 gallons of underground storage capacity. Even though there has been continuous upgrading since the system was built in 1905, the age and lack of elevated storage are the City's primary concerns. The City of Cloquet also has a water line from Lake Superior primarily used for Potlatch.

The City of Moose Lake has two public wells that were drilled in 1942 and 1955, each with a pumping capacity of 425 gallons per minute. These wells serve 505 housing units within the City and do not serve any units outside of the City. The water system has an average daily flow of 240,000 to 250,000 gallons per day with peak flows reaching 270,000 gallons. The City has a storage capacity of 50,000 gallons. The water system was built in 1918 and has not received any upgrades since then.

A \$1.8 million project, which will include a new water tower and improvements to the water main, is scheduled for the summer of 2001 and will be funded through a low interest loan from Rural Development (USDA). These improvements should help alleviate some of the concerns the City has regarding the inadequate storage capacity and the old, undersized water mains. The location of the two wells is also a concern because they are too close to one another.

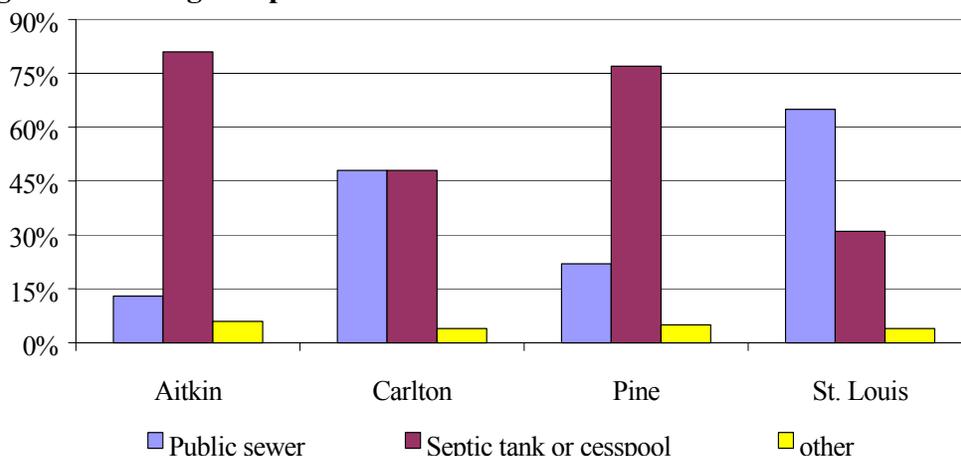
In 1995, the Fond du Lac Reservation built an extension of the Cloquet water and sewer lines into the Reservation. The two-mile extension brings service to several homes and Reservation buildings. A water line has also been extended to the Black Bear Casino and Hotel.

Holyoke Township has one public well that has been in service since 1978. The average daily flow of this well is two gallons per minute with peak flows of four gallons per minute. The pumping capacity is 200 gallons per minute. In Silver Brook Township, all wells are privately owned by individual property owners.

WASTEWATER FACILITIES

There are three types of wastewater treatment systems in Carlton County. The first type includes public sewer systems operated by municipalities and sanitary districts. The second type includes community systems operated by home owner associations. The third type includes individual sewage treatment systems.

Figure 30: Sewage Disposal



Source: U.S. Census

The Twin Lakes Township sewer system was built in 1993 and serves 30 housing units inside the Township. Costs are \$21 per month for residential service and \$3.15 per 1,000 gallons for industrial service. The average daily flow is 49,000 gallons per day with peak flows of 100,000 gallons per day. The Township has applied for a grant to extend the system into Olsonville at an estimated cost of \$462,000.

The City of Carlton’s sewer system serves 264 housing units inside the City at costs of \$2.59 per 1,000 gallons for residential service, and \$3.76 per 1,000 gallons for industrial service. The annual average daily flow is 350,000 gallons and peak flow can exceed 1,000,000 gallons per day. The concerns the City has with the system are that it is old, it is in poor condition, and it has too much infiltration and inflow. For these reasons, the City is planning a major sewer main replacement at an estimated cost of \$ 1,030,000.

The City of Wrenshall’s sewer system serves 115 housing units inside and three housing units outside of the City at a cost of \$6.00 per month. The system was built in 1964 and there are no reported problems or scheduled improvements at this time.

The City of Cloquet's sewer system brings service to 3,500 housing units inside the City at a cost of \$4.04 per 1,000 gallons. The annual average daily flow is 1.5 million gallons with peak flows of 4.5 million gallons per day. Even though the system has been under continuous upgrading since it was built, the City is concerned with treatment costs and the deteriorated collection system. Scheduled improvements (and estimated costs) include a 1999-2000 Sanitary Sewer Flow Evaluation and Infiltration/Inflow Reduction Plan (\$ 40,000) and annual collection system replacement (\$250,000).

Holyoke Township's sewer system was built in 1993 and serves one housing unit. The annual average daily flow is two gallons per minute with peak flows of 150 gallons per minute. There are no reported problems or scheduled improvements at this time. The Cities of Barnum, Scanlon, Cromwell, Kettle River, Thomson, Wright and the Townships of Moose Lake, Windemer, and Thomson, have waste water facilities.

The City of Moose Lake's sewer system serves 505 housing units within the City. The annual average daily flow is 216,000 gallons with peak flows reaching 389,000 gallons. The current system was built between 1994 and 1995. The main lift station and force main to the retention ponds have had nine major breaks that are of concern to the City. This problem will need to be addressed with a partial replacement of the force main, and close monitoring for any potential breaks. The Minnesota Pollution Control Agency (MPCA) will be monitoring this situation as the permitting entity. All septic systems are private in Silver Brook, Automba, Split Rock, and Kalvela Townships.

SOLID WASTE AND RECYCLING

Solid waste and recycling services are provided to County residents by the County as well as by a number of private operators. The County completed a Solid Waste Management Plan in November 1999 that details these types of activities in the County. Carlton County implemented and participates in several solid waste management programs throughout the County. The existing waste reduction program includes source reduction activities that assist businesses, residents, and County staff. This program includes public education and training, promotion of the Minnesota Waste Wise Program, environmentally responsible purchasing, and two-sided copying of County documents. In addition, Carlton County operates a Household Hazardous Waste satellite facility from May through October.

There are 13 recycling drop-off sheds located at various sites throughout the County for residents to use, as well as two recycling centers. The County also has curbside recycling programs in 12 cities and townships. Carlton County has met and exceeded state mandated recycling goals with their implemented programs. The County contracts with a private recycling company to collect and market the recyclable materials from the County drop-off sites. All waste haulers and recyclers are required by the County ordinance to be licensed by the County and submit monthly tonnage reports to the County.

Figure 31: Total Tons Collected for Recycling by Broad Category, 1991-1997

	1991	1992	1993	1994	1995	1996	1997
Banned	432.02	495.16	446.10	461.16	473.65	532.21	536.35
Glass	287.89	362.00	480.00	481.30	471.90	622.40	633.65
Metal	382.87	596.84	632.00	641.52	415.43	527.20	589.92
Organic	1,423.67	1,329.42	1,152.81	957.12			20.90
Paper	952.16	1,231.30	2,041.00	2,125.24	2,693.70	2,960.40	2,844.53
Plastic	76.42	91.58	103.00	100.95	104.20	137.20	164.70
Textiles	2.10	1.30	3.00	5.30	3.00		5.45
Total	3,557.13	4,107.60	4,857.91	4,772.58	4,161.88	4,779.41	4,795.50

Source: Minnesota Office of Environmental Assistance

Solid waste and recycling drop-off and processing facilities are located throughout the County and are described as follow:

North Carlton County Transfer Station:

The North Carlton County Transfer Station is the main waste disposal site in the County. Most of the waste materials collected in the County are stored at this site until proper waste management and disposal takes place. In 1997, this station handled 9,118 tons of municipal solid waste (MSW). The majority of this waste was then hauled to Western Lake Superior Sanitary District (WLSSD) in Duluth for processing at the refuse-derived fuel (RDF) plant. This RDF practice was terminated, however, on June 30, 1999, and now WLSSD in Duluth processes all MSW from Carlton County for shipment and final disposal.

The North Carlton County Transfer Station accepts MSW, industrial waste, demolition waste, yard waste, and white goods (appliances). A transfer station building was constructed on adjacent property to the landfill. It moves waste between the County and WLSSD in Duluth, where it is then transferred to the BFI landfill in Sorona, Wisconsin. Industrial waste and demolition waste is collected and then disposed of at the Rice Lake landfill. This transfer station has a 500-gallon storage tank, which holds used oil until it is ready for refinement or used as a source of fuel at an approved facility. Approximately 2,300 gallons of used motor oil is collected in the County each year at this transfer station.

The County participates in a regional household hazardous waste (HHW) program with WLSSD, and St. Louis, Lake, Cook, Koochiching, Itasca, and Aitkin Counties. The North Carlton County Transfer Station is the location of the HHW site within the County. This program encourages residents to drop off items such as paint, pesticides, solvents, oil, automobile batteries, tires, and flammable aerosols. These items are then shipped to the regional HHW facility and taken away for proper management by a contracted hauler.

Nordstroms Sanitation Transfer Station:

This site accepts MSW, white goods, demolition waste, tires, mattresses, and used oil. It has an additional storage tank for used oil. There are also 14 private businesses located around the County where residents can dispose of their used oil.

Nordstroms Sanitation Recycling Processing:

This station accepts newspaper, ledger, corrugated cardboard, glass, food cans, magazines, phone books, oil, and aluminum cans.

Riverside Recycling:

This site accepts newspaper, glass, corrugated cardboard, office paper, tin cans, aluminum cans, magazines, phone books, text books, plastic #1 and #2, copper, brass, scrap aluminum, aluminum foil, and catalytic converters.

Fond du Lac Environmental Program:

The Fond du Lac Environmental Program has developed a solid waste ordinance and is working on drafting a comprehensive waste management ordinance that will address burning barrels, mobile homes, junk automobiles, and other waste issues. This ordinance was in place by the end of June 2000. The Fond du Lac Tribe's Solid Waste Management Plan is being revised, which

will include recommendations for the creation of a Tribally owned waste hauling enterprise. This service will include curbside pick-up of both common household waste and recyclable items. The garbage hauling service currently available to Fond du Lac residents is contracted to private hauling companies. This service includes curbside pick-up for common household waste, but no curbside recycling. Recycling sheds are located throughout the Reservation where residents can drop off items.

The Fond du Lac Environmental Program conducts an annual 12 week long spring cleanup program that includes the cleanup of illegal dump sites and the collection of large household items such as furniture and appliances. The tribe also sponsors household hazardous waste collections three times per year. This provides residents the opportunity to dispose of their hazardous items.

Other efforts coordinated by the Environmental Program include pollution prevention education, vermi-composting of food waste in the tribal schools, waste audits of Tribal facilities on the Reservation, and the promotion of double-sided copying and environmentally responsible purchasing.

Approximately 73 percent of households throughout the County contract for weekly or bimonthly collection service by licensed haulers. The remaining 27 percent of households haul their garbage directly to the landfill or dispose of it by their own means. A resolution passed by the County Board on February 14, 1995 stated that all townships have garbage service available with the exception of Automba and Spilt Rock Townships.

Most of the industrial waste that is collected in Carlton County is generated by Potlatch Incorporated and U.S. Gypsum Interiors Incorporated. These two companies produced 13.5 percent and approximately five percent of the County's waste stream by weight, respectively. Most of the County's industrial waste is disposed of at the Voyageur Landfill in Canyon, Minnesota which is in St. Louis County.

Figure 32: Carlton County Recycling Shed Locations

Shed Name	Address	City
Barnum	Barnum Firehall 3842 Church St.	Barnum
Blackhoof	Blackhoof Fire Hall County Rd. 5	Barnum
Cromwell	County Hwy. Garage 1372 Hwy. 73	Cromwell
Holyoke	Holyoke Town Hall County Rd. 8	Holyoke
Kettle River	3987 Cedar	Kettle River
Mahtowa	Mahtowa Ave. & Hwy. 61	Mahtowa
Moose Lake	Sewer Plant Road	Moose Lake
Wright	Pacific Ave.	Wright
Wrenshall	County Rd. 18 & Ableiter Road	Wrenshall
Carlton County Transfer Station	1950 Hwy. 210	Carlton
Carlton, City of	County Road 1	Carlton
Thomson/Esk	Canosia Road & Ridge Road	Esko
Perch Lake	Perch Lake Town Hall 2029 Big Lake Road	Cloquet

Source: Carlton County Planning and Zoning Dept.

Figure 33: Additional Sites and Transfer Stations

Facility	Address	City
Nordstrom's Transfer Station and Recycling Center	4045 Agate Rd	Moose Lake
FDL Recycling drop-off Center	10 University Ave.	Cloquet
Riverside Recycling	1103 Industry Ave.	Cloquet

Source: Carlton County Planning and Zoning Dept.

ELECTRICITY

There are several electricity suppliers operating in Carlton County. These companies and cooperatives can have influence over land use, economic development, and other planning issues within the County.

Lake Country Power was formed in January 1997 when three electric cooperatives, Carlton County Cooperative Power Association, Dairyland Electric Cooperative, and Northern Electric Cooperative Association voted to consolidate. Lake Country Power is a member-owned, non-profit power co-op that serves the rural areas of the Northland, including Carlton County. One of the three regional offices is located in Kettle River. Lake Country Power is the fastest growing power co-op in Minnesota, providing service to over 40,000 customers and new service to over 1,000 homes, cabins, and businesses each year. Lake Country Power employs 127 people throughout the region and owns two subsidiaries; Lake States Tree Service and Lake States Construction, which employ 152 and 40 people, respectively. Lake Country Power has 6,171 miles of overhead, and 1,220 miles of underground power lines that serve a 10,000 square mile area.

Great River Energy is Minnesota's second largest electric utility. It provides electrical energy and services to cooperatives through United Power Association in Cloquet which, in turn, supplies residential, commercial, and industrial customers, such as Lake Country Power.

Minnesota Power transfers, distributes, and sells electricity to about 14,000 customers in northeastern Minnesota and northwestern Wisconsin. Minnesota Power has several large industrial customers, including taconite producers, paper and pulp mills, and pipeline firms. The company also owns North Dakota-based BNI Coal and sells water and natural gas in the Superior, Wisconsin area. Recently, Great River Energy and Minnesota Power have announced their intentions to combine power supply assets and customer loads for power pool operations.

LAW ENFORCEMENT PROTECTION

The Carlton County Sheriff's Department

The Carlton County Sheriff's Department consists of three divisions: field, corrections, and dispatch. An investigation unit was recently started within the field division. The Sheriff's Department has a total of 45 employees including 20 full-time officers. The squad cars are fully equipped. Twenty-five employees work part-time in the jail, dispatch, and administration. The number of calls and criminal investigations were 8,171 in 1996, 9,372 in 1997, and 9,575 in

1998. The department moved into a new office facility in 1999, added five beds to the jail, and built a new dispatch office with three workstations. The department indicates a need for additional patrol officers. Other cities within the County contract for law enforcement through the Sheriff's Department.

The Cloquet Police Department

The Cloquet Police Department maintains a force consisting of 19 officers. They have numerous squad vehicles, ranging in age between seven and one years. Two additional vehicles include a 1986 Ford and a 1973 Holm camper. Calls to the Cloquet Police Department have remained fairly consistent over the past three years. There were 5,526 calls in 1996, 5,372 in 1997, and 5,466 in 1998. The number of criminal investigations has also remained consistent with 3,316 in 1996, 3,223 in 1997, and 3,280 in 1998. The City indicates that it needs a larger police department, two additional officers, and more funding for overtime and equipment. These needs stem, in part, from an increase in drug enforcement and investigations that have placed a strain upon police funding and manpower.

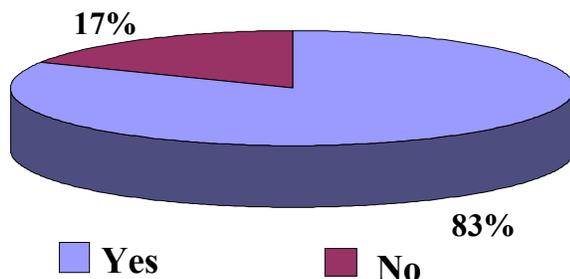
The City of Moose Lake Police Department

The City of Moose Lake Police Department consists of three full-time and two part-time officers, as well as a police chief. The department has two marked squad cars and one unmarked car. The number of calls to the Moose Lake Police Department has increased significantly in the last three years from 592 calls in 1997 to 850 in 1999. This increase was attributed to increased patrolling and officer initiated calls. The number of criminal investigations has also increased from 59 in 1997 to 98 in 1999. The City of Moose Lake Police Department plays a major role in southern Carlton County law enforcement by providing assistance to the Carlton County Sheriff's Department and the Minnesota State Patrol. The police department also responds to Moose Lake Township calls. The City has expressed the need for additional funding for personnel and new equipment. The City of Scanlon, Thomson Township, and the Fond du Lac Reservation have their own police forces.

The Fond du Lac Reservation Police Department

The Fond du Lac Reservation Police Department has four police officers, two support staff, and a police chief. The officers have three squad cars and one SUV for patrolling purposes. The Reservation also has an agreement with Carlton County and St. Louis County to assist in law enforcement issues on and around the Reservation.

Figure 34: Adequacy of Police Service



Source: Carlton County Survey, May 1999

FIRE PROTECTION

Adequate fire protection is an essential service within any community, often saving lives and property. Manpower, equipment, and a good emergency response system are important considerations, not only for current Carlton County residents but also for prospective residents and businesses. Fire protection and emergency response services in Carlton County are provided by fire protection districts, one municipal fire department, volunteer fire departments, and, in areas not otherwise covered, by the Carlton County Sheriff's department. Key issues for fire protection services include equipment needs, lack of joint training opportunities and the recruitment and retention of volunteer personnel. The fire departments that are located within Carlton County are described as follows:

The Barnum Fire Department

The Barnum Fire Department serves the City of Barnum and Barnum and Skelton Townships with fire protection and first responder services. The department belongs to a countywide mutual aid system and 911 emergency response system.

The Blackhoof Fire Department

The Blackhoof Fire Department is staffed by 16 volunteer firefighters. The department provides fire protection and first responder services to a 42 square mile area. The department's equipment includes one pumper, one tanker, and a grass rig. Issues the department currently faces include recruitment and retention of volunteers.

The Carlton Fire Department

The Carlton Fire Department has 25 volunteer firefighters who provide fire and ambulance services to the cities of Carlton and Thomson, townships of Twin Lakes and Sawyer, and the Black Bear Casino Complex. The department's equipment includes three pumpers and one tanker. Issues facing the department include equipment upgrades and the hire and retention of volunteers.

The Cloquet Fire Department

The Cloquet Fire Department is staffed by 21 career firefighters. The department provides fire protection to a 72 square mile area and provides ambulance service to a 250 square mile area. The department's equipment includes three fire engines, an aerial ladder, three ambulances, a snowmobile, an all terrain vehicle (ATV), and a boat.

The Cromwell Fire Department

The Cromwell Fire Department is staffed by 22 volunteer firefighters. The department provides fire protection to the City of Cromwell, Eagle Lake Township, and three unorganized townships, and provides ambulance service to a 261 square mile area. The department's equipment includes two engines, a tanker, a land fire unit, an ATV, and two ambulances. Issues facing the department include the recruitment and retention of volunteers, funding, and a need for increased facility space.

The Esko/Thompson Township Fire Department

The Esko/Thompson Township Fire Department has 35 volunteer members who provide fire, rescue, and first responder services to a 35 square mile area. The department's equipment

includes two tankers, two pumpers, a rescue truck, a brush truck and a utility vehicle.

The Holyoke Township Fire Department

The Holyoke Township Fire Department offers fire protection with eight volunteer firefighters and four vehicles. Issues facing the department include equipment upgrades, the large size of its service area, and the inadequate condition of its building.

The Kettle River Fire Department

The Kettle River Fire Department has 18 volunteer firefighters and three vehicles that serve the City of Kettle River, Automba Township, Kalevala Township, Split Rock Township, Part of Silver Township, and part of Beaver Township in Aitkin County. Issues facing the department include the recruitment and retention of volunteers and the need for equipment updates.

The Mahtowa Fire Department

The Mahtowa Fire Department has 21 volunteer firefighters. The department provides fire protection and first responder services to Atkinson Township, Mahtowa Township, and southern Korona Township. The department's equipment includes two engines and a water tender. Issues facing the department include equipment needs and a lack of joint training opportunities with surrounding departments.

The Moose Lake Area Fire Department

The Moose Lake Area Fire Department has 25 volunteer firefighters who serve the city and township of Moose Lake and the surrounding area, and part of northern Pine County, including Windemere Township. The department is housed in the Moose Lake Area Emergency Response Center, constructed in 1998. Issues facing the department include the ability to adequately serve the Interstate-35 corridor, the Southern Carlton County Airport, and the expanding State facilities located in Moose Lake.

Perch Lake Township Fire Department

Perch Lake Township offers fire protection with 15 volunteer firefighters and five vehicles. The vehicles include two tankers and a tanker/pumper, one engine, and a pickup. An issue the department currently faces is the need for a new engine.

The Scanlon Fire Department

The Scanlon Fire Department provides fire protection services to the City of Scanlon. The department has 20 volunteer firefighters and has first responder capabilities. The department's equipment includes two pumpers, a grass rig, and a rescue vehicle. Issues the department is facing are the recruiting and retaining of volunteers.

The Wrenshall Fire Department

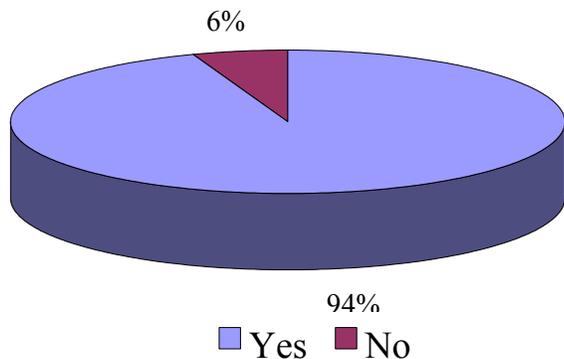
The Wrenshall Fire Department has 26 firefighters who serve an area that includes the City of Wrenshall and the townships of Silver Brook and Wrenshall. The department's equipment includes six vehicles. The Wrenshall Fire Hall was constructed in 1987.

The Wright Fire Department

The Wright Fire Department has 24 volunteer firefighters and six vehicles that serve Lakeview Township, Beseman Township, Eagle Township, and Red Clover Township. The department

also provides first responder services to the area. Issues facing the department include the recruitment and retention of volunteers.

Figure 35: Adequacy of Fire Protection



Source: Carlton County Survey, May 1999

PARKS AND GREEN SPACE

The abundance of outdoor recreational opportunities in Carlton County is a key element of the area's quality of life. The County owns and/or manages several large regional parks and open space areas in the eastern part of the County. In addition, there are City and township parks and many acres of land owned and managed by the Minnesota Department of Natural Resources

Figure 36: Park/Green Space Facilities in Carlton County

Facility	Owned by	Managed by	Acres	Improvements*
Chub Lake Park - Carlton	Carlton County	Carlton County	35	1, 2, 9, 10**, 11, 12, 15, 16, 17**
Bear Lake Park - Barnum	Carlton County	Carlton County	85	1, 2, 3, 9, 12, 13, 14, 16
Island Lake Park - Cromwell	Carlton County	Carlton County	4	1, 15, 16, 17
Kalevala Park - Kalevala TWP	Carlton County	Carlton County	5	11, 17
Moose Lake State Park	Minnesota	DNR	1,194	1, 2, 3, 4, 7, 10, 16, 18
Jay Cooke State Park	Minnesota	DNR	8,818	1, 2, 3, 5, 6, 7, 8, 16, 18

* Improvement codes: 1=picnic facilities, 2=flush toilets, 3=campground, 4=boat ramp, 5=fishing access, 6=backcountry camping, 7=trails, 8=historic sites, 9=beach with lifeguard, 10=fishing piers, 11=baseball fields, 12=changing house, 13=electricity, 14=water, 15=pavillion, 16=playground, 17=outhouse, 18=volleyball courts.

** Handicap Accessible

Source: Carlton County Planning Department, March 1996.

For more information on parks, historical sites and green space see Appendix E.

SCHOOLS

Public schools in Carlton County are provided primarily by seven districts, including Barnum, Carlton, Cloquet, Cromwell, Moose Lake, Esko, and Wrenshall. Growth and development

throughout the County has a direct impact on public school facility needs, personnel and operating costs. New school facilities can also have an effect upon other aspects of the County; by increasing demand on its transportation system, for example. Figure 37 shows changes in enrollment over time, and indicates that growth is taking place in four out of seven school districts. The Cloquet, Esko, and Wrenshall districts have grown the most, between eight percent and 14 percent since 1990. It is no coincidence that these districts are located in areas that are seeing overall population growth, most likely due to the proximity to the Duluth metropolitan area. Overall, the Carlton County school districts have seen an increase of nearly five percent in enrollments since 1990.

Figure 37: School District Enrollment Comparisons (All Schools)

District Name (Number)	School Year		Enrollment Change	Percent Change
	89-90	97-98		
Barnum (91)	727	698	-29	-4
Carlton (93)	808	792	-16	-2
Cloquet (94)	2352	2540	+188	+8
Cromwell (95)	338	304	-34	-10
Moose Lake (97)	766	789	+23	+3
Esko (99)	913	1045	+132	+14
Wrenshall (100)	371	407	+36	+9.7
Totals	6275	6575	300	4.8

Source: MN Department of Children, Families & Learning, 1990-1997.

Figure 38 indicates, all seven school districts maintain high levels of attendance (94.7 percent) and low pupil to staff ratios (13.6). The data indicates that a total of nine percent of students are minorities, with higher percentages in close proximity to the Fond du Lac Reservation.

Figure 38: 1996-1997 Average Daily Membership

District Name (and Number)	Pre-K	K	Elem. 1-6	Sec. 7-12	Total	% Min	% Attend	% Bused	Total Staff	Pupil-Staff Ratio
Barnum (91)	3	47	305	365	720	3.7	94.2	89	51	13.6
Carlton (93)	4	60	375	387	826	11.5	93.3	90	58	13.4
Cloquet (94)	12	194	1040	1040	2286	15.3	93.6	73	170	14.8
Cromwell (95)	1	16	115	115	247		95.8	93	23	12.6
Moose Lake (97)	3	56	319	319	697	2.3	95.3	92	60	13.1
Esko (99)	1	80	464	464	1009	1	95.9	95	68	15.4
Wrenshall (100)		18	157	157	332	2.6	95	93	33	12.5
Totals	24	471	2775	2847	5622	9% (507)	94.7	92.4	463	13.6

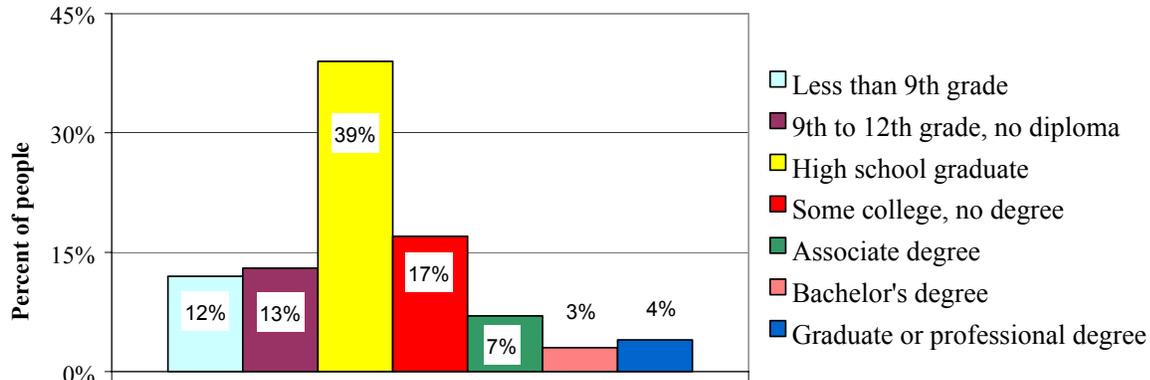
Source: MN Department of Children, Families & Learning, 1996-1997.

Carlton County is home to the nation's only combined tribal college and state community college, the Fond du Lac Tribal and Community College located near the City of Cloquet. This higher education facility offers a unique opportunity for students to further their education and continue to reside in Carlton County. The college offers two-year associate degrees in more than 30 fields of study, including law enforcement, human services, computer science, business,

liberal arts, American Indian studies, and environmental studies. In addition, Fond du Lac has a Head Start Program and a FACE Program to serve younger children. There is also the Fond du Lac Little Black Bear Elementary School and the Fond du Lac Ojibway High School.

According to 1990 U.S. Census data, 39 percent of residents in Carlton County have a high school level education. About 17 percent have some college level education, while only seven percent obtained an associate’s degree, and only three percent graduated to earn a bachelor’s degree.

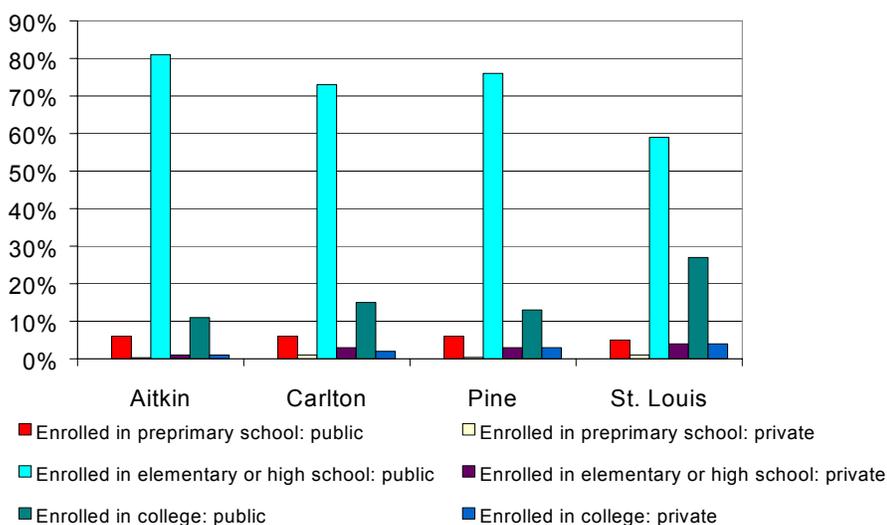
Figure 39: Educational Attainment



Source: 1990 U.S. Census

Carlton County’s rate of school enrollment is comparable to that of surrounding counties. The highest percentage by type of school was the enrollment of students in public elementary and high schools. Carlton County’s rate of enrollment in public school in 1990 was about 80 percent. Carlton County also had a strong enrollment rate compared to the surrounding counties in public college. Only St. Louis County ranked higher in this category.

Figure 40: School Enrollment and Type of School



Source: U.S. Census

LIBRARIES

Arrowhead Library System

The Arrowhead Library System (ALS), serving rural residents and member community libraries of the seven counties in northeastern Minnesota is geographically the largest library system in the state. Three municipal libraries are located in Carlton County, all of which are members of the ALS. These libraries are discussed further in the following sections of this chapter.

Through its Bookmobile source, the ALS provides high quality library access to residents who live outside member library communities. A number of different types of materials and services are available through the ALS Bookmobile:

- Adult and Children's Books
- Large Print Books
- Video Cassettes
- Books on Tape
- Compact Disc Music
- Inter-library Loans

The Arrowhead Library System's Mail-A-Book program is designed to supply library services to rural and homebound residents of Carlton, Cook, Itasca, Koochiching, Lake, Lake of the Woods, and St. Louis counties. Patrons that qualify for this program may order materials that will then be mailed to them at no cost. Mail-A-Book is available to rural residents of Minnesota, those who live in a City without a public library, and homebound residents of cities in general. This tax-supported program provides library service directly to one's home and will pay the return postage. The Mail-A-Book Collection includes materials in a number of formats including:

- Paperback Books
- Audio Books
- Video Tapes
- Large Print Books

Moose Lake Public Library

The Moose Lake Public Library (MLPL) serves a wide user population, with its primary user community being the City and Township of Moose Lake and the immediate outlying area. Due to the proximity of northern Pine County, the MLPL serves many users from that area, as well. The MLPL is available for anyone to use, with materials circulation restricted to Minnesota users with valid library cards from other systems within the state. As a member of the Arrowhead Library System (ALS), the MLPL is also expected to, and does, serve users within the seven northeastern counties comprising the ALS. The MLPS is one of three libraries in Carlton County that is connected to this system.

In June of 1999, the Moose Lake Public Library moved to the new Civic Center in Moose Lake. The facility is 3,300 square feet, houses approximately 15,000 books, 100 periodicals, 1,000 videos, and 300 books on tape. In total, the Moose Lake Public Library circulates nearly 56,000 items.

In addition to the printed and audio-visual materials, the MLPL has six computers available for public use at no charge. Two of these computers are connected to the Internet, and all are well used. The library is currently open 45 hours a week and is open every day except for Sunday.

The MLPL also offers various special interest services and programs throughout the year. For example, the summer reading program serves 200 area children annually. Also, story hour is held weekly on Fridays.

Cloquet Public Library

The City of Cloquet is the primary service area for the Cloquet Public Library, but the library also has visitors from rural Carlton County including Esko and Scanlon. The library houses about 45,000 volumes of books and maintains a library staff to assist visitors with questions, research, and other interests. There are seven full-time staff members, including a director, a children's professional, an adult services and bookkeeper, a library clerk, and three library aides. There are also three part-time library aides and a building maintenance worker.

The Cloquet library's annual budget has nearly doubled in the last ten years from \$219,010 to \$437,780, allowing the library the ability to provide many services. There are children's services, which include story time, special programs, story kits, toys, books, videos, music, and Internet access on Macintosh computers. The library provides six computer workstations with Internet access that can be used by the general public. Other technology at the library includes an automated card catalog linked to the Arrowhead Library System, a dial-in access catalog, and three computers with word processing and spreadsheet software.

The library maintains its building and services on a regular basis. One recent improvement has been the addition of outdoor lighting at handicapped curb cut locations. This improvement was funded through Potlatch, the Cloquet VFW, and the State of Minnesota. Future improvements will include the addition of more space to the building. Censorship of library materials and the Internet are a concern for the library. Funding for technology in the library is also a concern. These concerns could play a role in the types of services and materials that the library has to offer in the future.

Fond du Lac Library

The administration building/community center contains a library with a collection of many books and periodicals along with 12 computers, which have Internet access. All of these services are free to the Reservation Band members.

City of Carlton Library

The City of Carlton has its own library located in the basement of City hall. This library has variable hours, but offers a refuge for kids after school and others who want access to the many services it provides. These services include videos, magazines, books, including new releases, reference materials, a rotating stock of large print books, and many books and games for children. The library has one staff person who is available to assist with Internet use on one of the library's two computer terminals.

Carlton County Area School Libraries

The Wrenshall School library moved into a brand new facility in the fall of 1998. It offers books that are both related to the curriculum and are for recreational reading. They also have books on tape, music compact disks, videos for teachers to augment their lectures, and Internet access. Community outreach is being extended to include work with the Headstart program, parent

reference and adult career sections, and a summer program where the library is open one day per week. The library is staffed by one full-time and one three-quarter time person. It is handicap accessible.

The Cloquet High School library is staffed by one full-time and one three-quarter time employee. They offer books, audio, videos, and Internet access. No needs or concerns were reported at this time. Each school in the City of Cloquet has a library, including the elementary and middle schools.

The Carlton School library offers print materials such as books, magazines, and newspapers, and non-print materials such as audio books and videos. They also have seven computers with Internet access. Carlton is planning to build a new high school facility that will address the needs of a growing library. One such need is for a facility that allows each student to have a computer with Internet access during instructional sessions. Other needs to be addressed in the future include improving print materials and community access. The schools in Barnum, Esko, Moose Lake, and Cromwell also have libraries with similar services.

MEDICAL FACILITIES AND SERVICES

Access to quality health care is a critical element in the quality of life for current County residents. The current and future availability of quality health care can play an important role in the location calculus of businesses and families. Figure 41 provides information concerning the number of health care personnel who were working within Carlton County in 1997.

Figure 41: Healthcare Personnel within Carlton County, 1997

Total Number of Physicians	35
Physicians per 10,000 population	11.4
Number of Physician Assistants	2
Number of Dentists	21
Number of Dental Assistants	25
Number of Dental Hygienists	11
Number of Chiropractors	7
Number of Pharmacists	24
Number of Respiratory Care Practitioners	4
Number of Physical Therapists	12

Source: Minnesota Planning Land Management Information Center, 1998.

According to the Carlton County Public Health Department, important health-related issues facing the County include shortages of Mental Health providers, Home Health Aids, Nursing Assistants in the County's long term care facilities, and dentists who accept Medical Assistance. The shortage of dentists who accept Medical Assistance is of particular concern because it impacts about 2,500 of the County's children, early dental care is critical for the development of healthy teeth, and people with disabilities who rely upon Medical Assistance for their dental care needs. An issue that may emerge in the future is a possible shortage of dentists in future years. The majority of dentists currently practicing in the County are older. The number of dentists

practicing within the County may become critically low unless older dentists are replaced as they begin to retire.

Ambulance and first responder services represent a critical link between emergency patients and medical facilities. There are four ambulance services within Carlton County. They are located in Carlton, Cloquet, Cromwell, and Moose Lake. The ambulance service located in Cloquet employs paid emergency medical service (EMS) personnel and provides full Advanced Life Support (ALS) services to a 250 square mile area. The ambulance service located in Cromwell employs paid EMS personnel and provides Basic Life Support (BLS) to a 261 square mile area. Those located in Carlton and Moose Lake employ volunteer EMS personnel and offer BLS services to area residents. The Carlton ambulance service is associated with the Carlton Fire Department and the Moose Lake ambulance service is associated with Mercy Hospital. In addition, there is full ALS emergency air dispatch available associated with Mercy Hospital through St. Luke's Hospital in Duluth. First responder services are found throughout the County and are associated with the local fire departments.

There are several issues facing the provision of EMS services in the County in the coming years. The first issue is associated with funding changes mandated by the Federal Balanced Budget Act of 1997. Revenue available to ambulance services from Medicare payments will be reduced by up to 40 percent in the near future and 62 percent of the revenue volume generated by ambulance runs in the County is from Medicare payments. The second issue is associated with population increases and changes in the County's age profile. Increased population, especially during the summer months when there is an increase in recreational tourism, and an aging population place increased demand upon the provision of EMS services. The final issue is associated with the emergency communication system used the County's ambulance services. The equipment currently used for radio patches is nearing the end of its useful life. There is a need to incorporate newer communications technology into EMS provision in the next few years.

Within the County there are two hospitals and five clinics. These facilities, along with the Carlton County Public Health Department, are described as follows:

Carlton County Public Health Department

The Carlton County Public Health Department is dedicated to protecting and improving health and quality of life of county residents' by extending health services and education into the community. All Carlton County residents are served by Health Services. This includes persons of all ages and income levels, the public, businesses, organizations, groups, and individuals. Health Services coordinates programs with other organizations and agencies or refers clients to other services in order to give them the best possible assistance. It sponsors such programs as influenza immunization clinics, hypertension screening and cholesterol tests, footcare, homecare, and adult foster care.

Community Memorial Hospital, Cloquet

Started in 1958, the hospital is community-owned and monitored by a volunteer board of directors and an association of local residents. The Hospital Foundation and Auxiliary raise funds each year for the facility. It is a 36-bed hospital and an 88-bed nursing facility. It currently employs 260 people. Some of the services offered at the hospital include radiology,

inpatient care, outpatient diagnostic service, cardiac rehabilitation, physical therapy, chemotherapy, a birthing center, and cataract, laparoscopic, and orthopedic surgery. The hospital has services that include a 24-hour emergency room, respiratory care, laboratory services, and intensive care.

Puumala Clinic, Cloquet

The Puumala Clinic is served by three family practice physicians. This clinic offers a variety of services including diagnostic and common family practice services.

Gateway Family Health Clinic, Moose Lake and Cromwell

The Gateway Family Health Clinic has 15 physicians at its main facility in Moose Lake, one surgeon and 14 family practice doctors. The Gateway Family Health Clinic also operates a satellite clinic in Cromwell. The Cromwell facility is served by one doctor whose services are supplemented by doctors from the Moose Lake facility as needed.

Raiter Clinic, Cloquet

The Raiter Clinic is served by nine family practice physicians and two general surgeons. The Clinic also has consulting specialists and diagnostic services.

Mercy Hospital & Health Care Center, Moose Lake

Mercy Hospital and Health Care Center provides progressive rural health care. Mercy is a 31-bed acute care facility with a 94-bed health care center featuring a special care unit designed for those living with Alzheimer's and dementia. Kenwood Place, an 11-unit Senior Housing with services complex, is also included in the care center. These facilities currently employ 325 people.

Fond du Lac Reservation Min-No-Aya-Win Human Services Center

This facility serves a Native American population that extends from Duluth and through Superior, west to McGregor, and south toward Barnum. It provides medical and dental care, including public health nursing, Min No Aya Win Clinic, Fond du Lac Dental Clinic, podiatry and footcare services, optometry services, a housing office, a nutritionist and registered dietician, a pharmacy, social services, smoking cessation support services, mental health, and foster care placement.

Public Facilities Goals and Strategies

Goal: Provide and maintain adequate public facilities in Carlton County that preserve and enhance the health, safety and welfare of the residents.

Water and Wastewater

Objective 1: Ensure adequate water and wastewater facilities and infrastructure throughout the County.

- Strategy 1: Examine the feasibility of adding water and sewer services to concentrated areas of rural development.
- Strategy 2: Evaluate the effectiveness and efficiency of existing infrastructure on the environment, and the health and welfare of residents in the County.
- Strategy 3: Encourage cooperative agreements to expand water and wastewater services to areas that need it.

Objective 2: Ensure adequate potable water sources and supplies to residents of Carlton County.

- Strategy 1: Support the efforts of public water suppliers to develop wellhead protection plans.

Action Steps:

Assist as needed with the following:

- Delineate drinking water supply management areas
- Inventory potential contaminant sources
- Develop management strategies

- Strategy 2: Support public water supplier's implementation of wellhead protection management strategies.

Action Steps:

- Identify the Carlton County Water Plan Advisory Committee's role in the implementation of these management strategies.
- Utilize knowledge and regulatory powers of Carlton County Planning and Zoning Office in implementation and regulation.
- Link the land use plan to wellhead protection management.

- Strategy 3: Work with the Minnesota Department of Health to prepare source water assessments for all public water supplies by May 2003.

- Strategy 4: Coordinate the development of a GIS database of potential groundwater contaminant sites on a case-by-case basis with local and State agencies.
- Strategy 5: Support local public education efforts regarding wellhead protection and safe drinking water.

Law Enforcement and Fire Protection

Objective: Continue to serve the County's residents with effective fire and law enforcement protection.

- Strategy 1: Encourage participation in volunteer fire departments, as well as all other fire and law enforcement departments.

Action Steps:

- Support activities that promote participation in volunteer fire departments and rescue squad activities.

- Strategy 2: Support completion of the electronic 911 addressing system.

Libraries

Objective: Maintain a public library system that meets the needs of Carlton County.

- Strategy 1: Keep library materials and services accessible to all residents.

Action Steps:

- Provide information to the public about library services.
- Keep funding available for the County library system.
- Utilize the Internet to get information to the public.

Public Schools

Objective: Encourage quality educational opportunities for students throughout the County.

- Strategy 1: Support adequate learning facilities and curriculum in all school districts.
- Strategy 2: Support the possibility of combining school administration among all of the districts.

Action Steps:

- Actions taken should be initiated by the School Boards.
- Pairing and sharing school services and administration.

Solid Waste and Recycling

Objective: Provide opportunities for every resident to participate in solid waste management and recycling.

- Strategy 1: Utilize and implement programs and policies outlined in the Carlton County Solid Waste Management Plan.
- Strategy 2: Provide solid waste management and recycling education and services to all residents as financially feasible.

Medical Facilities

Objective: Make residents aware of the medical facilities and services available to them within Carlton County.

- Strategy 1: Encourage the Carlton County Collaborative to put together information concerning available services for distribution at all of the medical and health care facilities in the County.
- Strategy 2: Incorporate information about all of the medical and health care available to county residents into Carlton County's website, including the services provided at each facility and links to their websites.

Transportation

The primary purpose of a transportation system is to move people and goods in a safe and efficient manner. A variety of different travel demands need to be analyzed in order to fulfill this purpose (for example, traffic passing through rural areas of the County versus traffic from rural parts of the County with an actual destination within the County). The movement of people and goods involves various transportation modes, including vehicular, transit, pedestrian, bicycle, rail, and air in order to provide for a high degree of mobility to all segments of the population.

Extensive studies have been completed which involved Carlton County transportation systems. These plans and studies include the Northeast Minnesota Bikeways Plan, Northeast Minnesota Freight Study, Snowplow Facilities Analysis, GIS Inventory for the Arrowhead Region, Northeast Minnesota Maintenance Services Coordination and Sharing Project, Scenic Routes of the Arrowhead, and the Long Range Trunk Highway Plan for Northeast Minnesota. The ARDC has completed or assisted with these planning processes over the past five years. The background data in this chapter, as well as the goals and strategies developed for transportation in Carlton County, used these plans as guidance throughout the planning process.

ANALYSIS

In order to understand how transportation is currently provided within the County, an inventory of the existing system's elements was conducted. The existing transportation system was inventoried through a variety of sources, including the County Roadway Database, Minnesota Department of Transportation (Mn/DOT) road and bridge inventories, public meetings, and citizens' comments. In order to analyze the road system, the hierarchy of roads known as the *functional class system* should be understood (see Page 69), but for the purposes of this plan the analysis of the road system is broken down by the road administrator's jurisdiction: state, County, township, or city.

HIGHWAYS AND ROADS

Carlton County is served by six highways administered by Mn/DOT. These highways include Interstates, US Highways, and State Highways. These routes are the most heavily used, primarily for longer trips, and serve the trucking industry as well as personal automobiles. The following are common abbreviations used to describe roadway characteristics.

Average Daily Traffic (ADT): the total number of vehicles passing a certain point in both directions in a 24-hour period.

Heavy-Commercial Average Daily Traffic (HCADT): the total number of large commercial trucks passing a certain point in both directions in a 24-hour period.

The following is a breakdown of each major highway in the County.

Interstate 35

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
27, 73, 210, 33	Moose Lake, Barnum, Cloquet, Esko	16700/1750

Interstate 35 is the main artery running through Carlton County, connecting Duluth and the Twin Cities. It has high amounts of traffic, including large numbers of trucks. It carries a considerable amount of recreation traffic, particularly on weekends, causing some congestion. This weekend traffic congestion may someday require traffic management or additional lane capacity between Duluth and the Twin Cities. The highway is very important to the movement of the region and needs to be maintained.

Trunk Highway 27

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
35, 73	Moose Lake	500/35

Trunk Highway 27 is a short road serving as a connection between Interstate 35 and Trunk Highway 65. The majority of the highway has wide shoulders. Trunk Highway 27 has a ten-ton weight restriction in the spring, between Moose Lake and Trunk Highway 65. This section has a permit limited bridge, requiring limits on the categories of overlegal loads that are allowed by permit such as vehicle speed, positioning of load, deck planking, or in some cases denial of some or all overlegal load categories. Trunk Highway 27 also has substandard shoulder widths between the west and east junctions of Trunk Highway 73.

Trunk Highway 73

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
35, 27, 210	Moose Lake, Kettle River, Cromwell	1300/63

Serving as an alternate route between the Iron Range and Interstate 35, this highway is generally considered by the public to be in very poor condition. The pavements are rough and the shoulders are substandard along nearly the entire length of the highway. The highway also has several permit limited bridges and has a seven-ton spring weight restriction. Mn/DOT has many improvements planned on Trunk Highway 73 in the next five years that will improve the road greatly.

Trunk Highway 210

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
73, 35, 23	Wright, Cromwell, Carlton, Thomson	2700/324

Trunk Highway 210 is the primary east/west route crossing the County. The road sees moderate amounts of traffic, with higher amounts of truck traffic due to grain shipments going to the port. Its characteristics change east of Interstate 35, becoming a narrower road that winds through Jay Cooke State Park. That section of road is a State Scenic Byway (See Page 69) and handles less

traffic. The pavement is in good shape west of Interstate 35, and the shoulders are adequate. The pavement is poor on the eastern section, however, and the road is subject to failure due to landslides. This section also has a seven-ton spring weight restriction.

Trunk Highway 33

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
35	Cloquet	4800/575

Trunk Highway 33 is a moderate volume route that connects Trunk Highway 53 with Interstate 35. Trunk Highway 33 supports a high amount of heavy-commercial traffic as it connects Interstate 35 to the Iron Range and beyond. Its pavements are in excellent condition, and it has good shoulders. There is one section of highway between Skyline Road and Stark Road in Cloquet that is not four-lane, but is programmed for expansion in 2002. This means a full four-lane highway will be constructed through the city of Cloquet, thereby easing congestion and safety issues.

Trunk Highway 23

Intersecting Trunk Highways in County	Cities Served	ADT/ HCADT
210	Wrenshall	100/85

The section of Trunk Highway 23 from Pine County to Duluth is a low volume road with low amounts of truck traffic. This section of Highway 23 is also a State Scenic Byway (See Page 69). Trunk Highway 23 is in need of pavement improvements, and has a seven-ton spring weight restriction.

Trunk Highway Bridges

Mn/DOT maintains the bridges on Trunk Highways. In Carlton County, most bridges are in good condition. If a bridge deteriorates, it may be posted as unsafe for heavy loads, thereby limiting truck traffic, and possibly forcing a truck to make a longer trip.

County Highway and Road System

The county highway and road system is also an extensive network in Carlton County. Its 486 miles of roads are broken down into two categories, County State-Aid Highways and County Roads. Carlton County has jurisdiction over the County State-Aid Highways (CSAH), but are eligible for funding through the State for construction and maintenance. County roads are maintained and repaired solely through the use of County funds.

The County system is a key element of the transportation system in accommodating the majority of travel needs outside municipal boundaries. This is likely to remain the case into the foreseeable future as automobiles remain the primary mode of transportation. Therefore, it is important to develop a County transportation plan that will satisfy the travel needs of County residents.

The County roadway network was designed to serve rural and regional needs. Arterial and local roads were constructed in conjunction with low-density development patterns. Recent growth

and development in the County have created an increase in traffic demands on this roadway network. These issues need to be addressed.

The County's ability to construct new roads and improve existing roads is dependent on available funding. A majority of the County's new construction budget is currently used for maintenance and repair of existing roads. The high maintenance costs are attributable to the high number of road miles serving Carlton County. The low density and scattered development across the County increases the costs of road maintenance by increasing the number of miles of roadways and increasing the traffic use of those roadways.

Figure 42: Summary of 1998 County Highway Information

	Miles	Total	Maintenance Costs (1998)	Cost Per Mile
CSAH - blacktop	227.55	293.65	\$1,037,380.50	\$4,558.91
CSAH - gravel	66.10		\$363,457.98	\$5,498.61
County - blacktop	58.60	192.04	\$354,413.49	\$6,048.01
County - gravel	133.58		\$787,783.66	\$5,897.48

Source: Carlton County Highway Department, October 1999

County Bridges

Carlton County maintains and repairs 217 bridges and culverts located on County and Township roads. Of these, five are posted as unsafe for certain weights. Repairs and maintenance are done on an "as needed" basis and costs can vary greatly – from \$5,000 to \$10,000 or more per year.

Township Road System

Townships often maintain a road system as well. These roads have typically very low use. Township roads mainly serve to get rural residents from their homes to another road, typically a County or State highway. Often, Township roads are unpaved.

City Street System

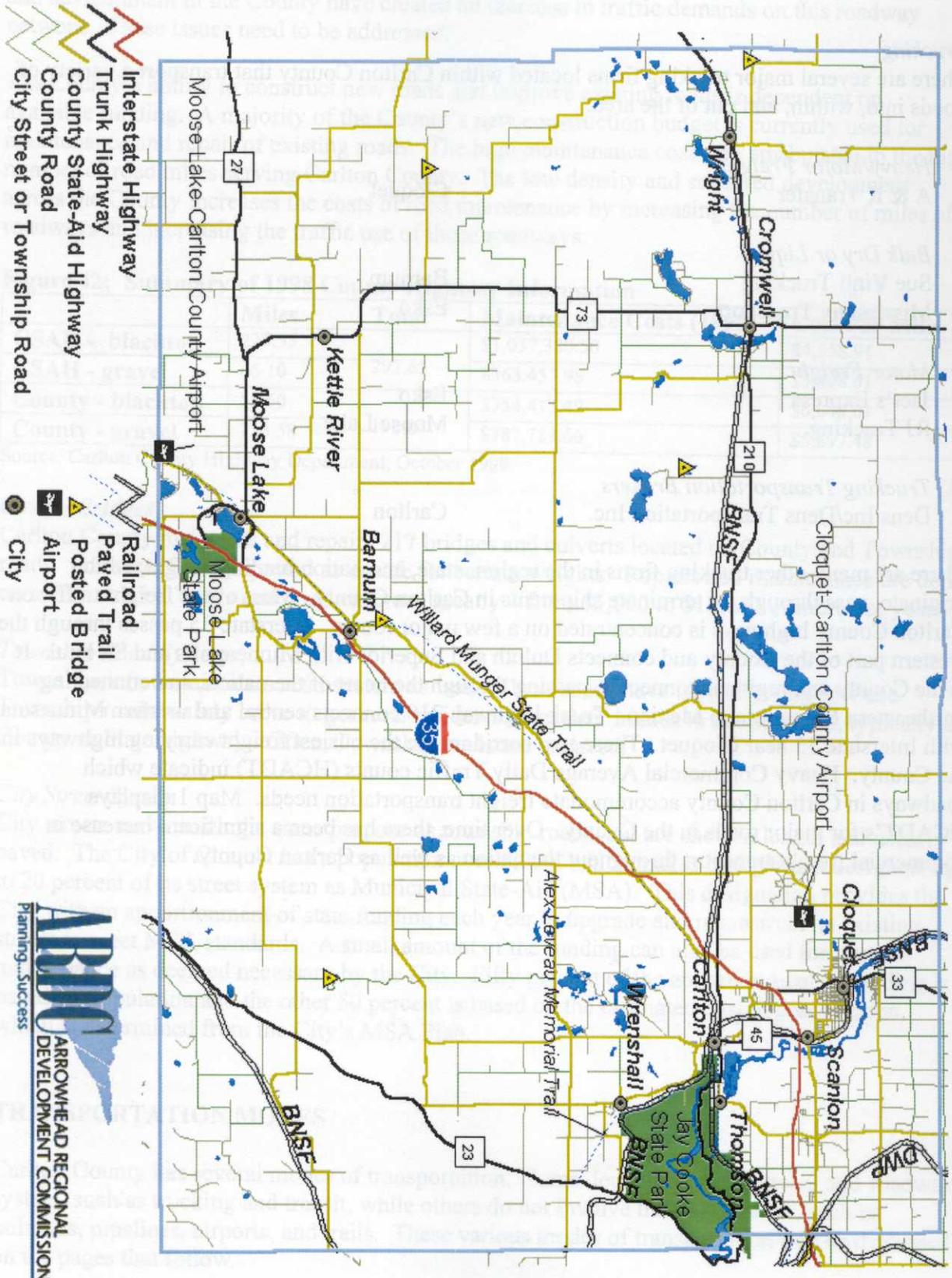
City streets serve much the same purpose as township roads, but are short in length and usually paved. The City of Cloquet has a population over 5,000, which makes it eligible to designate up to 20 percent of its street system as Municipal State-Aid (MSA). This designation provides the City with an apportionment of state funding each year to upgrade and reconstruct its existing streets to meet MSA standards. A small amount of the funding can also be used for routine maintenance as deemed necessary by the City. Fifty percent of the apportionment of funding is based on population and the other 50 percent is based on the estimated cost of construction, which is determined from the City's MSA Plan.

TRANSPORTATION MODES

Carlton County has several modes of transportation. Some depend on the highway and roadway system, such as trucking and transit, while others do not involve the use of roads, such as railroads, pipelines, airports, and trails. These various modes of transportation will be discussed on the pages that follow.

Insert Map 1

Carlton County Transportation Facilities



Map One: Carlton County has an extensive transportation network.



Transit

The utilization of public transit offers many benefits such as energy conservation, reduction in pollution, and individual cost savings. There are several forms of public transportation available to the residents of Carlton County. There is a lack of daily service, however, to numerous locations, and many of these services are on an as needed or dial-a-ride basis. Many of these services are offered to seniors and the disabled only.

The chart below indicates that there is a need for transit services by many families. The 1990 U.S. Census data shows that, in Carlton County, a high number of households with an income less than \$15,000 have no car available to them. In some cases, this may prohibit people from seeking or maintaining employment, which in turn, makes purchasing or maintaining an automobile extremely difficult. Detailed information on demographic characteristics can be found in the Population Chapter of this plan.

Figure 43: Number of Households With No Vehicle Available by Income

County	HH Income Less than \$5,000	HH Income \$5,000 - \$9,999	HH Income \$10,000 - \$12,499	HH Income \$12,500 - \$14,999	Total # of HHs with No Car and Earning <\$15,000
Aitkin	140	170	22	13	345
Carlton	232	455	111	57	855
Cook	23	38	13	11	85
Itasca	342	653	52	67	1,114
Koochiching	114	257	27	36	434
Lake	55	172	43	30	300
St. Louis	2,307	4,395	874	525	8,101
Region	3,213	6,140	1,142	739	11,234

Source: 1990 Census of Transportation Planning Package, U.S. Census Bureau

- *Duluth Transit Authority*

The Duluth Transit Authority is interested in the possibility of creating service routes that connect smaller communities within northeast Minnesota to the City of Duluth and to each other. These routes would target commuters and provide a few trips per day to regional cities such as: Two Harbors, Cloquet, Virginia, Chisholm, and Hibbing, as well as Duluth.

- *Arrowhead Transit*

The Arrowhead Economic Opportunity Agency (AEOA), through Arrowhead Transit, provides varying levels of public transit services in the seven-County region of northeastern Minnesota to a number of people. Frequency in service ranges from several times a day to once a month.

Arrowhead Transit further extends its coverage by allowing vehicles to travel two-and-one-half miles off of their routes to pick up passengers, if notified in advance. Service is also extended a total of five miles from these routes to pick up or drop off people with disabilities. This flexibility allows Arrowhead Transit to be more responsive to the transportation needs of people in these corridors, while still maintaining their regular route service.

Arrowhead Transit is the major provider of transit service to the Arrowhead Region and is the lead regional agency for coordinating ride-sharing arrangements. Local service is also provided by Arrowhead Transit in the City of Cloquet.

- *Other Transit Providers*

A number of other private and public organizations operate vehicles of various sizes, catering to the needs of select individuals. The Cloquet Dial-A-Ride program provides service to the residents of the city at their request. This program serves as a viable transportation option for workers who live and work in Cloquet. The trips with Dial-A-Ride may be linked with Arrowhead Transit routes to provide access to destinations outside the citywide service area.

The Section 5310 program, is a process where Mn/DOT grants busses to eligible applicants on a competitive basis. Provides applicants who serve the elderly and disabled, particularly those in wheelchairs, rank competitively in the selection process. Those, who are awarded a bus, are encouraged by Mn/DOT to share the vehicle with other groups in the community as needed. A Section 5310 vehicle recipient in Carlton County is used by the Cloquet Community Education program.

Figure 44: Carlton County Planning Area

Agency	Description of Service	Service Area
Carlton County Veterans	Serves veterans and families with every-other-day fixed route service	Northeastern Minnesota
Cloquet Community Education	Section 5310 participant; provides demand responsive service to the elderly and people with disabilities	Cloquet
Fond du Lac Reservation Business Committee	Provides fixed route service to the elderly	Fond du Lac Reservation
Pine Ridge Homes, Inc.	Operates daily fixed route service to people with disabilities	Cloquet
Volunteer Services Carlton County Inc.	Provides volunteer service for the elderly, available upon request	Carlton County

- *Car and Van Pooling*

Car and van pooling have been occurring through the efforts of some employers and individuals. Privately organized van pools are bringing commuters to Duluth from Cloquet. Van pools can provide an excellent transportation alternative for commuters working for the same employer or nearby employers.

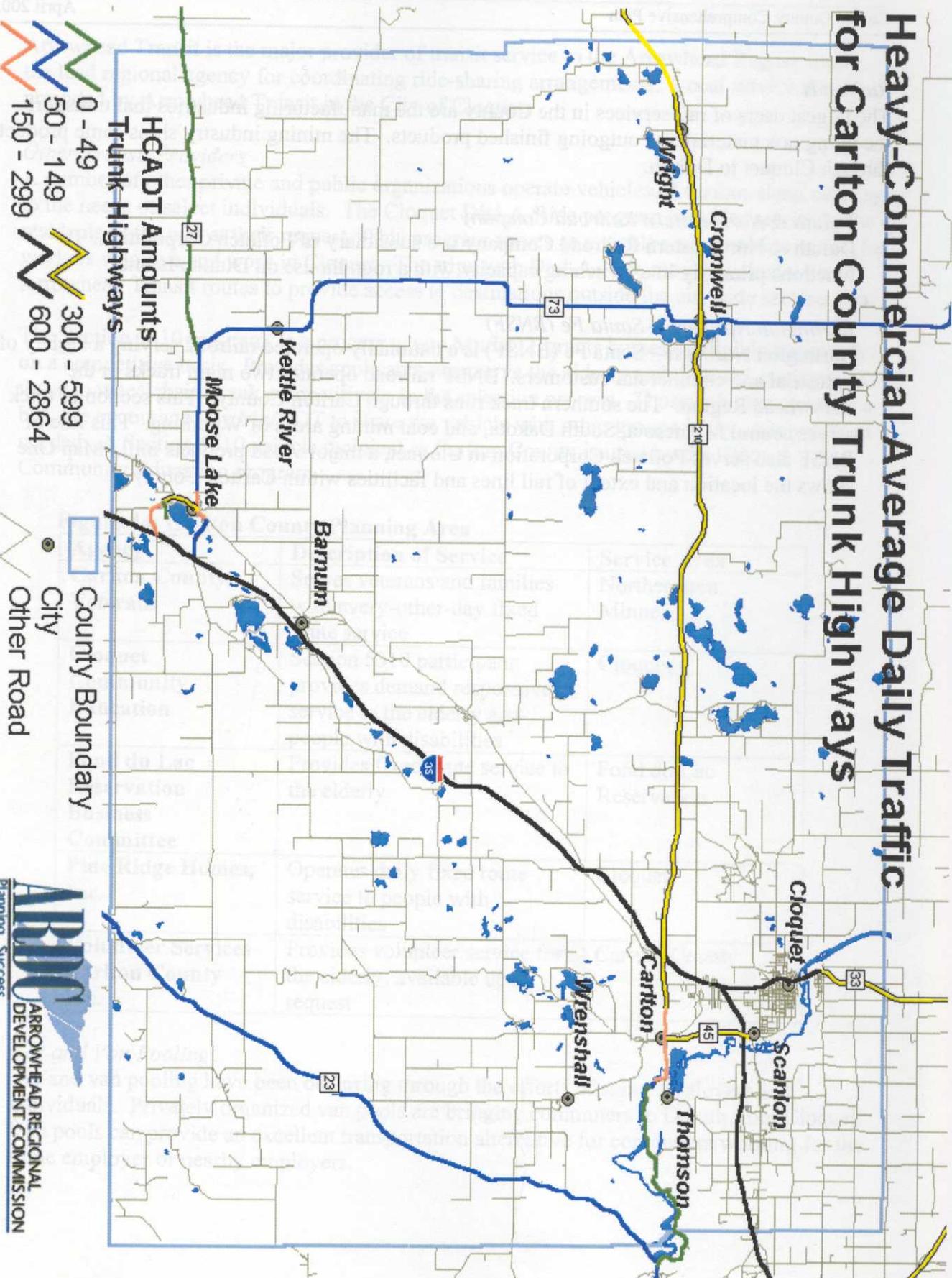
Railroads

The largest users of rail services in the County are the manufacturing industries that transport incoming raw material and outgoing finished products. The mining industry ships some products through Cloquet to Duluth.

- *Duluth & Northeastern Railroad Company*
Duluth & Northeastern Railroad Company is a subsidiary of Potlatch Corporation. It functions primarily in a switching capacity with a roundhouse on Dunlap Island.
- *Burlington Northern – Santa Fe (BNSF)*
Burlington Northern – Santa Fe (BNSF) is a nationally operated railroad serving a variety of industrial and commercial customers. BNSF railroad operates two main tracks in the Arrowhead Region. The southern track runs through Carlton County. This section of track serves central Minnesota, South Dakota, and coal mining areas of Wyoming. This line of BNSF also serves Potlatch Corporation in Cloquet, a major wood products mill. Map One shows the location and extent of rail lines and facilities within Carlton County.

Insert Map 2

Heavy-Commercial Average Daily Traffic for Carlton County Trunk Highways



Map Two: Interstate 35 is used heavily by trucks in Carlton County.

Pipelines

The Arrowhead region is served by a gas and petroleum pipeline system. The natural gas arrives from the southern U.S. via a pipeline that enters the region in southern Carlton County and runs to a storage facility outside of the Duluth metropolitan area. The gas is then redirected in the Region to local municipalities and companies for distribution and resale. Another gas pipeline enters the area via Itasca County and passes through the region in route to Wisconsin.

Pipelines in Carlton County transport large amounts of fossil fuels. The pipelines are owned by Northern Natural Gas, Great Lakes Transmission, and Williams Pipeline. Williams Pipeline carries mainly crude oil, while Northern Natural Gas and Great Lakes Transmission move liquefied natural gas.

- *Williams Pipeline*
Williams Pipeline Company transports crude oil in two directions, either north to Duluth from Minneapolis or south from Duluth to Minneapolis. The three area facilities that use the pipeline are Conoco, in Wrenshall, Amoco, in Superior, and Phillips, in Duluth.
- *Great Lakes Transmission*
A daily average of 2.2 billion cubic feet of natural gas passes through the pipelines of Great Lakes Transmission. One hundred thirty eight million cubic feet of gas per day is diverted to the Northern Natural Gas facility in Carlton, where it begins its distribution to the region.
- *Northern Natural Gas*
Northern Natural Gas owns both transmission lines and storage facilities in northeast Minnesota. Its Wrenshall storage facility can hold 2.1 billion cubic feet of liquefied natural gas. The tank is stocked during the summer months in order to provide adequate heating fuel for winter.

Trails

Trails are an important feature in the County's transportation system, as they provide alternative routes through the County's scenic and natural areas. A vast system of trails throughout the County offers residents and visitors an opportunity to utilize alternative forms of transportation for practical and recreational purposes such as walking, biking, snowmobiling, in-line skating, and horseback riding. Serving local and regional geographic areas, the trails vary in length from several miles to over 100 miles and consist of various surfaces, mostly blacktop and gravel. These, ranging in length, surface, and use, provide opportunities for people of all ages and skill levels to take part in recreational activities.

- *Willard Munger State Trail*
The Willard Munger State Trail is a collection of multiple use trails between Hinckley and Duluth. It consists of interconnecting trails offering hiking, bicycling, in-line skating, and snowmobiling. Of note is the fact that the trail follows the historic route of the railroad that saved many lives in the Hinckley and Cloquet fires of the nineteenth century. There are three different trail segments in the Willard Munger State Trail including the Hinckley to Duluth segment, Alex Laveau Memorial Trail, and the Boundary segment. The 63-mile Hinckley to

Duluth segment of the Willard Munger State Trail is almost completely paved with the exception of a section between Douglas Road and County Road 1.

The Alex Laveau Memorial Trail honors the memory of a former County Commissioner and dairy farmer who was a strong advocate of the idea to reuse abandoned railways as public trails. This trail allows users to go from Gary-New Duluth for 16 miles through Wrenshall and into Carlton. Six new miles of off-road paved trail from Carlton to Highway 23 are open. The remaining miles are a combination of bike routes on paved highway shoulders.

The Boundary segment of the Willard Munger Trail is an 80-mile natural surface trail used primarily for snowmobiling, horseback riding, hiking and mountain biking. This trail passes through remote forests linking St. Croix State Park with the Chenwatana, St. Croix, and Nemadji State Forests. Some areas are impassable in the summer.

- *Soo Line Trail*

The Soo Line Trail is another important component of Carlton County's trail system. The trail links several communities including Moose Lake, Carlton, and Wrenshall to the east and Automba and Aitkin to the west. The trail is approximately 92 miles long and is primarily used as a snowmobile trail, but it offers many other recreational opportunities such as biking and walking.

- *DNR Recreational trails*

The Minnesota Department of Natural Resources (DNR) manages several trails in Carlton County. These trails are located within Moose Lake State Park, Jay Cooke State Park, the Nemadji State Forest, and the Fond du Lac State Forest. The DNR also manages the St. Louis River Canoe & Boating Route.

Airports

Carlton County is served by two airports. The Carlton County Airport Commission manages both of these facilities.

- *The Cloquet /Carlton County Airport*

Cloquet /Carlton County Airport is located approximately three miles southwest of the Cloquet Central Business District near the intersection of the University and Airport Roads. The Airport provides services for general aviation aircraft, such as aircraft tiedowns, hangers, maintenance, flight training, and charter service. The refueling facility offers three different types of fuel. The Airport has two asphalt runways, one having high intensity lights, and measuring 4,000 feet long and 75 feet wide and the other a crosswind runway 3,100 feet long. The Airport has constructed a new administration building and has plans to build T-hangars at Cloquet and Moose Lake.

- *The Moose Lake County Airport*

Moose Lake County Airport is located three miles southwest of Moose Lake on County Highway 61. The airport provides very limited services, but has aircraft tie downs, 100 low lead fuel, and an automated weather information system that may be accessed by telephone

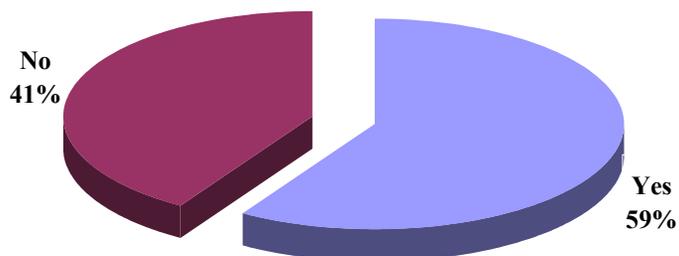
or radio frequency for current weather conditions on the field. The airport maintains one runway, measuring 3,200 feet by 75 feet, and is paved and lighted.

COMMUNITY ATTITUDES SURVEY RESULTS

Several questions were asked in the Carlton County Community Attitudes Survey regarding the transportation system in Carlton County. Among these were questions on transportation adequacy, needs, property access, and public transportation. The transportation needs questions included answer options such as more roads, better road surfaces, wider roads, or better maintenance.

A majority of the respondents replied that Carlton County's transportation system is adequate. Of the responses that disagreed, 50 percent replied that better road surfaces were needed. Other improvements listed included better maintenance (35 percent), wider roads (14 percent), and more roads (one percent).

Figure 45: Is Transportation System Adequate?



Source: Carlton County Community Attitudes Survey 1999

A question was included in the survey, which allowed residents to name particular highways or roads they felt needed to be improved. The most frequent answer was Highway 73, which could indicate a strong need for improvement to this highway in Carlton County. Other common answers included Carlton Avenue, and Highways 61, 33, and 23.

The adequacy of property access in Carlton County is another issue that was addressed in the Community Attitudes Survey. The vast majority (78 percent) of respondents reported that the public road or street on which they access their property is adequate. Of the 22 percent of people who reported that their property access was inadequate, the reasons given most often included poor surface, poor maintenance, and/or lack of shoulders.

FUNCTIONAL CLASS SYSTEM

A roadway network is typically comprised of a hierarchy of road types. In general, roads serve two functions: access and mobility. The degree to which a road serves these functions defines the *functional classification* of the road. Local roads and collector roads principally provide access to businesses, residential developments, schools, and other areas of the community. Arterial roads primarily provide mobility by connecting major destinations.

Identifying the functional classification of existing and proposed roads is important for day-to-day planning and engineering activities in at least two ways: (1) it defines the right-of-way that needs to be acquired or reserved for future roadway improvements and (2) it determines the spacing of access points onto the roadway. The functional classification, in combination with design standards for each of the roadway classes, determines the improvements that are necessary for existing roads, and how new roads should be designed and constructed. The four categories of functional classification are described as follows:

Principal Arterial

Roadways that serve vehicles traveling moderate to long trips and provide a system to distribute traffic that is making external trips. Turning movements are often handled with channelized turn lanes or signal systems.

Minor Arterial

Minor arterials may provide slightly greater direct access to abutting properties than principal arterials. Direct land access to minor arterials is typically restricted. Although in the undeveloped areas of the County that experience very little traffic, direct access is quite common.

Collectors

These streets serve as connections between local streets and minor arterials. Collector's main function is to carry vehicles traveling short trips and to serve adjacent land. At the same time, collectors must be capable of moving relatively large traffic volumes for limited distances.

Local Streets

Residential streets are best described as those carrying less than 100 vehicles per day with average speeds less than 20 miles per hour. They serve almost exclusively to collect and distribute traffic, by way of interconnecting blocks, within neighborhoods or in areas with similar land uses, and for getting in and out of neighborhoods.

SCENIC BYWAY DESIGNATION

In 1992 the Minnesota State Scenic Byway Program was established. The purpose of state scenic byway designation is to recognize those roads in Minnesota that reflect one or more of the following intrinsic values: scenic, historic, cultural, natural, archaeological, and recreational. The Scenic Byway program encourages citizens' groups and local units of government to organize and promote their transportation corridor as a possible destination for visitors and tourism economic activity.

There are two state designated scenic byways located within Carlton County. Map 3 shows the scenic byways in Carlton County. They are Rushing Rapids Parkway (Trunk Highway 210 from Carlton to Duluth) and Veterans Evergreen Memorial Scenic Drive (Trunk Highway 23) from Duluth to Askov (located in Pine County).

Rushing Rapids Parkway (Highway 210 from Carlton to Highway 23)

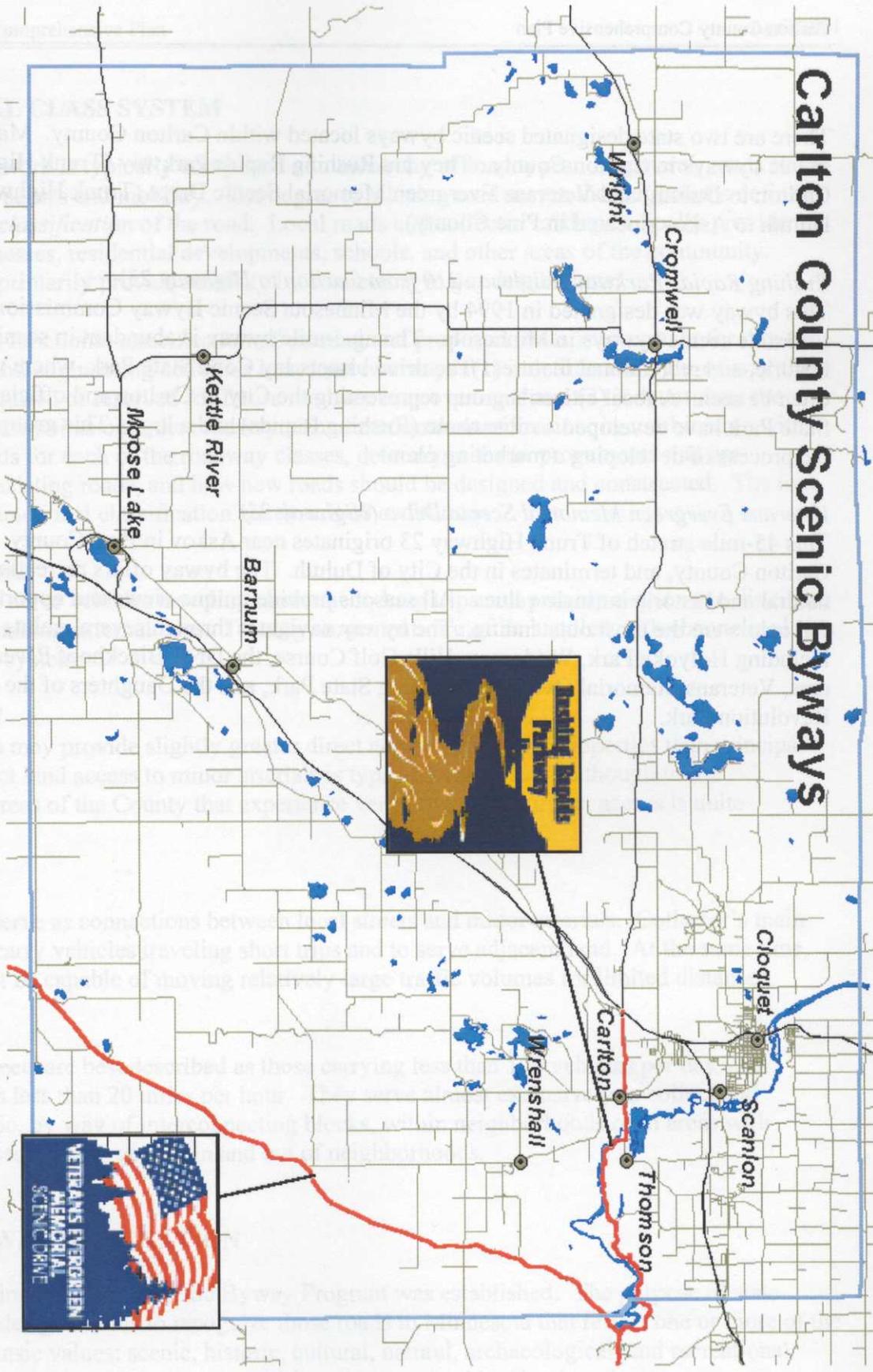
This byway was designated in 1994 by the Minnesota Scenic Byway Commission as one of the first state scenic byways in Minnesota. The nine-mile byway is abundant in scenic, natural, historic, and recreational features. The drive bisects Jay Cook State Park, where wildlife can often be seen. A local citizen's group representing the City of Carlton and officials of Jay Cooke State Park have developed a route name (Rushing Rapids) and a logo. This group is currently in the process of developing a marketing plan.

Veterans Evergreen Memorial Scenic Drive (Highway 23)

This 45-mile stretch of Trunk Highway 23 originates near Askov in Pine County, travels through Carlton County, and terminates in the City of Duluth. The byway offers recreational, scenic, natural and historic intrinsic values. All seasons provide unique views and opportunities, but the fall colors are the most outstanding. The byway navigates through several points of interest including Holyoke Park, Wilderness Hills Golf Course, the DNR Blackhoof River Management area, Veterans Memorial Overlook, Banning State Park, and the Daughters of the American Revolution Park.

Insert Map 3

Carlton County Scenic Byways



Map Three: Carlton County has two State Scenic Byways.

Transportation Goals and Strategies

Goal: Provide a transportation network that facilitates the efficient flow of people and goods throughout the County.

Objective 1: Provide thorough and efficient maintenance and construction of roadways.

Strategy 1: Create a program to identify deficiencies in roadways and lobby for new construction and repair.

Action Steps:

- Work with Mn/DOT.
- Work with neighboring counties in lobbying for state funds.
- Work with Area Transportation Partnership (ATP) representatives to help prioritize federal funding for large projects.
- Work with the Regional Transportation Advisory Committee (RTAC) on policy issues and lobbying for funds.

Strategy 2: Set policy of where new and upgraded roads should be located according to the land use and growth goals in the County.

Action Steps:

- Complete a road inventory to identify existing roads and needs.
- Focus initial needs identification in the western part of the County and move to other areas of the County as needed.
- Work with county officials to ensure that the County's Five Year Plan addresses the road inventory and its outcomes, as well as reflects Mn/DOT's 20 Year Plan.

Strategy 3: Support safety and driving condition improvements to Highway 73 as a priority.

Action Step:

- Work with the Trunk Highway 73 Coalition, support their efforts, and stay informed.

Strategy 4: Support the improvement of Highway 23 for safety and driving conditions.

Strategy 5: Support the efficiency and safe driving conditions of Interstate

Objective 2: Manage access to highways to maintain a smooth and safe flow of traffic.

- Strategy 1: Adopt local regulations on access considerations designed to protect the integrity of the road system and to reduce accidents.
- Strategy 2: Consider the State's Access Classification System and Spacing Guidelines before approving new road access permits.

Objective 3: Continue to provide transit services in Carlton County and investigate the potential of expanding these services to serve a greater number of people.

- Strategy 1: Promote transit use in Carlton County.

Action Steps:

- Market the services available and create a central contact for information regarding available transit providers.

Objective 4: Maintain sidewalks and trails to allow pedestrians to reach community goods and services through alternative means of travel.

- Strategy 1: Encourage pedestrian friendly communities within the County.
- Strategy 2: Encourage cities and neighborhoods to work together to maintain sidewalks.

Action Steps:

- Identify non-friendly or safety concern areas affecting pedestrians within the County.
- Create plan to fix these areas and find funding to help communities with this task.
- Support funding for continued maintenance of sidewalk systems.

- Strategy 3: Develop a coordinated trail system within the County.

Action Steps:

- Inventory and create a management plan for existing trails and recreational roads within the county, including Best Management Practices.
- Create an expansion plan, which will promote connectivity of trails.

- Seek funding for the recreational trail system maintenance and expansion.
- Utilize existing data to show the importance of trails in Carlton County in order to provide potential funding sources.

Objective 5: Coordinate transportation development so that it is consistent with the County's land use goals.

- Strategy 1: Consider both land use and transportation before approving subdivisions, rezoning, and new development plans.
- Strategy 2: Coordinate and share local development plans with Mn/DOT, County, and local road agencies early in the development process.

Objective 6: Maintain the character of scenic roadways, Veterans Evergreen Memorial and Rushing Rapids Scenic Byways, within the County

- Strategy 1: Consider flexible road design standards to increase the attractiveness of routes serving tourist destinations.
- Strategy 2: Modify scenic road development standards by identifying areas in need of flexibility for future road improvements.
- Strategy 3: Limit the placement and number of advertising signs and establish design standards for them along scenic roads.
- Strategy 4: Develop vegetative management plans for roadsides of scenic roads, including planting and/or maintaining long-lived trees along the edges of road right-of-ways.
- Strategy 5: Encourage appropriate landscaping along roadways to screen incompatible uses.
- Strategy 6: Investigate the feasibility of minimizing the visual impact of utility lines along scenic roads.
- Strategy 7: Consider creative incentives for landowners along scenic roads to reduce development pressures (i.e. scenic easement).

Economic Development

Maintaining the economic base of a community is as important as attracting new businesses. In order to accomplish either, periodic examination of a community's economic characteristics is required to determine its strengths and weaknesses. This information provides decision-makers with a tool to understand economic changes and to make informed decisions. This will help to strengthen the economy, maintain economic stability, and ensure a desirable rate of economic growth.

Jobs and economic diversity are only two factors that are influenced by the economy of an area. A strong local economy also provides the following benefits:

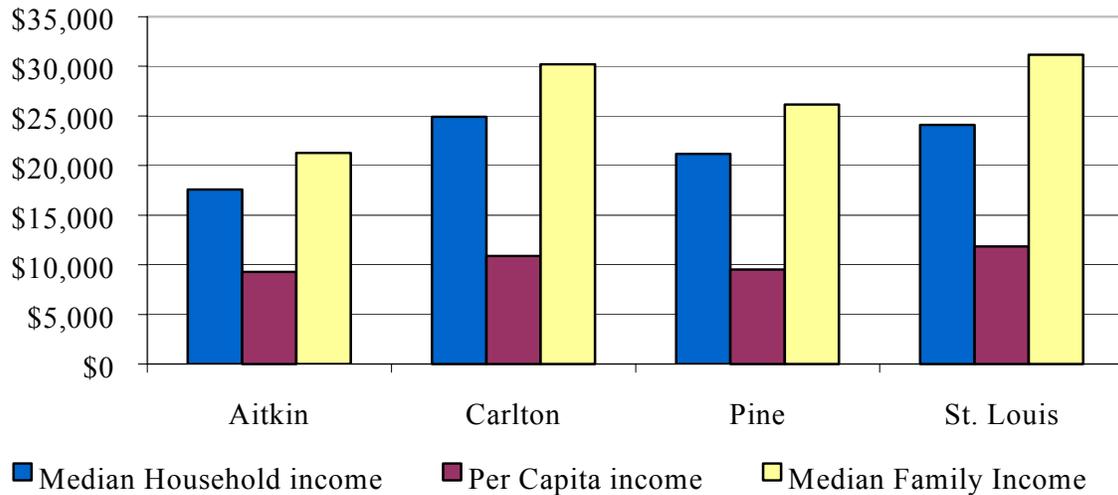
- A better tax base;
- Increased opportunities for local entrepreneurs;
- More opportunities for young adults to remain in the community;
- A stronger market for real estate and property development;
- A wider range of goods and services for residents;
- Increased opportunities for residents to accumulate wealth; and
- A variety of other individual and community benefits.

The rise, prosperity, and decline of any economy are based upon a number of factors, including its location, transportation system, and natural and human resources. The proper combination of these factors produces a healthy economy. Some communities have both advantages and disadvantages in the combination of these factors. It is the role of the individual community to promote its advantages in order to overcome its disadvantages.

INCOME LEVELS

Income information is an indicator of a community's economic condition. Per capita income is the mean income computed for every man, woman and child in a particular geographic area. For household income, the median is based on the distribution of the total number of housing units, including those occupants that have no income.

Figure 46: Comparative County Income Levels

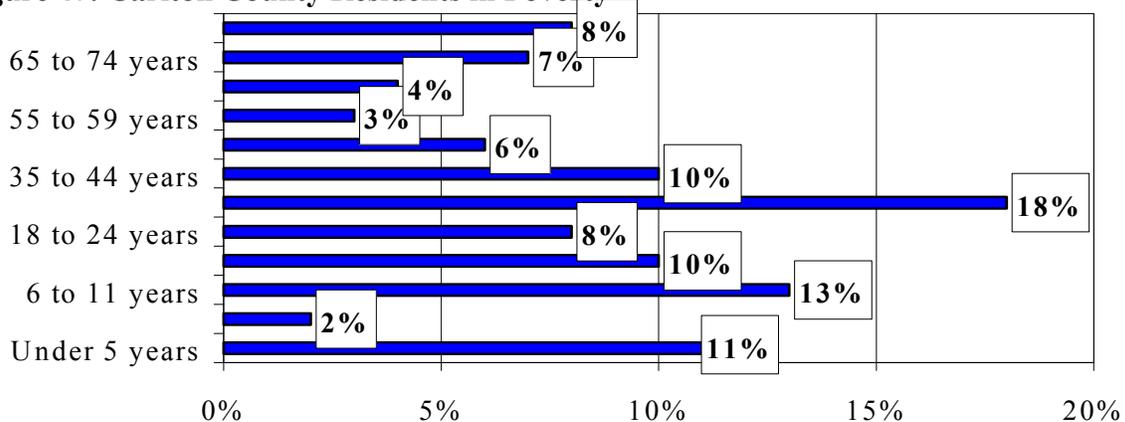


Source: 1990 US Census.

According to the 1990 US Census, Carlton County income levels are comparable to surrounding county income levels. The median household income in the County is approximately \$25,000 annually, while the per capita income is about \$10,000 annually.

Figure 47 shows the number of residents, by age group, living in Carlton County who were below the poverty threshold in 1990. The total population of the county in 1990 was 29,259. The majority of residents in poverty that year were children and working age adults. This could indicate a need for additional employment opportunities with higher wages. It may also indicate that the skilled labor force needs to be maintained, (the trend has been out migration from the county). The maintenance of a skilled labor force could be accomplished in several ways, including development of a training program, school outreach programs, and additional education opportunities.

Figure 47: Carlton County Residents in Poverty



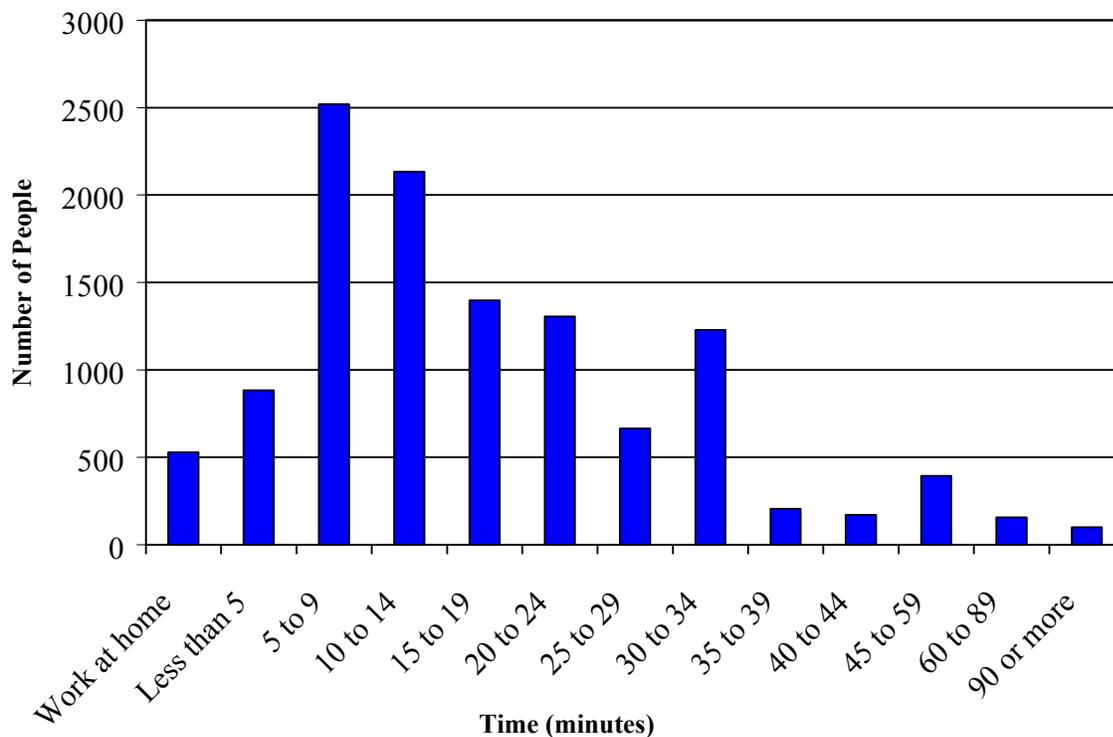
Source: 1990 US Census

According to the 1990 US Census, the highest proportion of people (18 percent) in poverty in Carlton County are between the ages of 25 and 34 years old. There are also a significant number of children living in poverty in the County. There may be links between the two age groups because adults with in the age category of 25 and 34 may also have children.

EMPLOYMENT

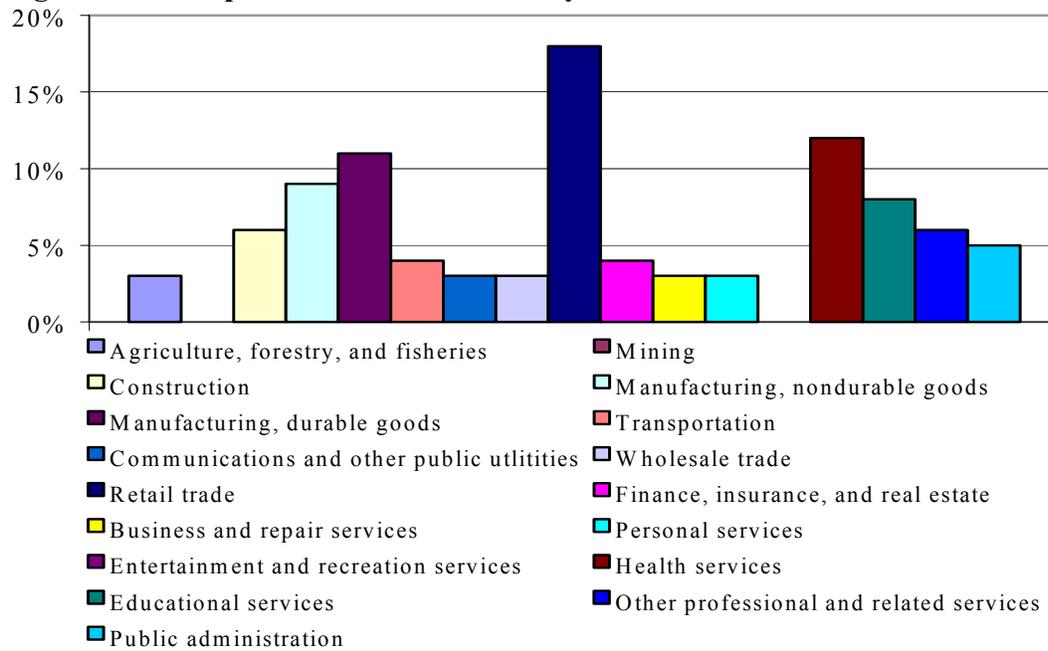
According to the 1990 US Census data, over half (58 percent) of the workforce in Carlton County work in the same community in which they reside. About 36 percent of the county workforce commutes between five and nine minutes to their place of employment. Forty-five (45) percent commute between 15 and 34 minutes to work.

Figure 48: Travel Time to Work



Source: 1990 US Census

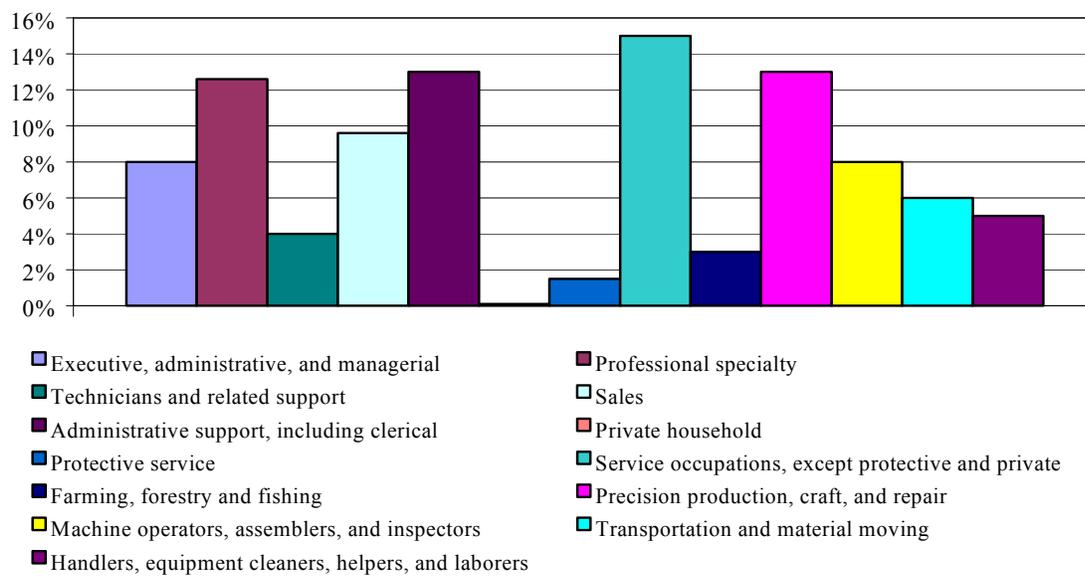
Figure 49: Occupations in Carlton County



Source: 1990 US Census

About 15 percent of the jobs that were held by individuals in Carlton County in 1990 were in the service industry, as defined by the US Census, excluding protective and private services. Professional specialty, administrative support, (including clerical, and precision production), craft, and repair, each accounted for 13 percent of occupations held by individuals in the county.

Figure 50: Industry In Carlton County



Source: 1990 US Census

The largest industry in Carlton County is retail trade. This includes many types of businesses that offer a wide variety of goods and services to consumers in the county.

Figure 51: Carlton County Retail Trade

	Number of Establishments	Sales (\$1,000)	Number of Employees
Building material and garden supplies	15	13,019	108
General merchandise stores	3	(D)	20-99
Food stores	24	48,132	342
Automotive dealers	14	27,873	108
Gasoline service stations	29	44,024	319
Apparel and accessory stores	7	2,124	25
Furniture and home furnishings	6	2,002	23
Eating and drinking establishments	52	15,746	651
Drug and proprietary stores	6	9,228	95
Miscellaneous retail stores	39	(D)	100-249
Retail Trade	195	192,181	1,921

Source: 1992 Economic Census--Retail Trade

According to the 1992 Economic Census, the 52 eating and drinking establishments account for the majority of retail trade businesses in Carlton County. These 52 businesses employed 651 people. There were a total of 195 retail trade businesses located in Carlton County in 1992. Combined, they employed over 1,900 people.

Figure 52: Carlton County Labor Force

Labor Force Type	1990	1995	2000	2005	2010	2015	2020	1990-2020 % Change
Males	7,215	7,300	7,360	7,380	7,270	7,020	6,790	-6.26
Females	5,788	5,900	6,070	6,120	6,090	6,000	5,900	1.9
Ages 16-24	1,944	2,230	2,410	2,320	2,080	1,900	1,840	-5.65
Ages 25-44	7,179	6,660	6,060	5,620	5,640	6,000	6,060	-18.47
Ages 45-64	3,602	4,020	4,670	5,270	5,300	4,710	4,310	16.43
Ages 65+	278	280	290	300	340	400	480	42.08
Total Labor Force	13,003	13,200	13,430	13,510	13,360	13,020	12,690	-2.47

Source: 1990 US Census, Minnesota State Demographer's Office

According to the State Demographer's Office, the Carlton County labor force is projected to increase in the next five years and then decrease slightly by 2020. The ratio of females to males in the workforce is expected to increase as more women enter the workforce. Overall, the population is aging. This means that the demographic make-up of the County is changing to an older labor force. This will require correlation in changes in the decisions that are made by government officials, employers, and service providers. The projections listed in Figure 52 can be used as a tool to help predict what changes may occur in the future based on past trends.

Though projections are a useful tool, they are not 100 percent reliable and should only be used as one of many criteria for making a decision.

ECONOMIC ASSETS AND OPPORTUNITIES

Historically, the County has relied on agriculture and the wood products industry for economic stability. Although agriculture is still a part of the economy in the County, it is no longer a prominent industry. The wood products industry has remained stable and continues to provide a strong employment base through Potlatch Incorporated, Diamond Brands, and private logging companies that supply the timber. The County also has a strong manufacturing base, which could continue to be a stable industry for the future.

New industries have also emerged as the economy has changed. Tourism and recreation have become a strong force in the economy of Carlton County. Trails for biking, hiking, and snowmobiling have been promoted in the County and are used by a variety of local and visiting recreationalists. Carlton County offers other opportunities for tourism, such as the Black Bear Casino, which attract many people throughout the year. Hockey has also become very popular in the County as communities have invested in facilities. All of these industries bring visitors to Carlton County, thereby increasing consumer spending.

High technology is also an emerging market in the County's economy. High technology and telecommunications will play a vital role for economic development in the future of cities and counties. The cities of the next century will be defined by their capacity to produce, process, and move information, both electronically and by skilled workers linked to high speed telecommunication networks. There is rapid growth of major metropolitan regions lacking in traditional industrial era infrastructure, such as deepwater ports. They are able to compete effectively with other cities because of their capacity to attract and retain information intensive industries. High technology offers a solid option for economic development because it can be located almost anywhere. Many small to mid-sized cities have an opportunity to develop and utilize a sophisticated Infrastructure for internet communications. Given the right set of opportunities, some of these cities could emerge as important technology hubs.

The zoning regulations that govern most cities reflect the values of the industrial era and separate activities into distinct zones for residential, commercial, and industrial uses. In the 21st century, information-based activities will be the foundation for urban economic growth. New approaches to economic development that utilize high technology must be developed to address these changes.

It is important to recognize that communities with a technologically skilled labor force and technological infrastructure will thrive in the coming years, while others are likely to decline. To compete economically in an information age, communities need to have an advanced telecommunications infrastructure, a highly skilled workforce, and a core of information-based activities that are able to take advantage of new technologies. Carlton County currently has a strong manufacturing industry, which can be utilized for technology development, such as creating and distributing electronic devices and software.

Besides technology and telecommunications, there are a number of ways to create a strong economy within an area. This involves many factors, such as consumer generated spending and employment opportunities, which rely heavily on the overall health of the US and Global economies. Carlton County has many assets that can help maintain its local economy and opportunities that could strengthen it for the future. Some of these assets include the following:

- Availability of technological infrastructure;
- Proximity to Lake Superior;
- Interstate 35 corridor traveled on by many people every day;
- Natural forest environment;
- Rail transportation facilities;
- The State Scenic Byways of Rushing Rapids Parkway (Hwy 210) and Veteran's Evergreen Memorial Scenic Drive (Hwy 23);
- State Parks and Forests;
- State Trails;
- Tourist attractions;
- Recreational opportunities;
- Strong workforce;
- Land available for development.

ECONOMIC DEVELOPMENT ASSISTANCE

There are many studies that reflect, and organizations that recognize, the importance of economic development in a specific community and in the Arrowhead Region in general. The Comprehensive Economic Development Strategy (CEDS), formerly the Overall Economic Development Program (OEDP), is a planning and implementation process designed to provide guidance for the stabilization, revitalization, and diversification of the Arrowhead Region's economy, which includes Carlton County. The CEDS seeks to identify ways to assist local communities in improving living conditions, creating jobs, and providing plans for the coordination of efforts of individuals and organizations involved in the region's economic development. The CEDS is updated every three years. An updated CEDS was completed in 1998 for the seven county region. The regional economic goals are as follows:

- Sustained above average economic growth consistent with environmental stewardship;
- Family incomes adequate to provide a reasonable standard of living;
- Educational investment in the region adequate to ensure economic renewal and competitiveness;
- A business environment that stimulates business creation, innovation and retention;
- Improved employment and economic opportunities for all citizens in the region;
- A diversified industry mix to insulate the regional economy from shocks and national business cycles.

The Arrowhead Business Connection (ABC) is a confidential, business assistance program offered through the NorthSpan Group, Incorporated in Duluth. ABC works in cooperation with the Arrowhead Regional Development Commission and the Carlton County Economic Development Advisory Committee. ABC provides services to businesses interested in expanding in northeastern Minnesota including searches for specific commercial property and a confidential listings for referrals.

The Arrowhead Business Connection is an initiative to interact with key decision-makers of specific Minnesota businesses and provide them with services for locating in northeastern Minnesota. ABC has several primary and secondary industry clusters targeted for 2000. The primary target clusters include the following:

- Technology: software development, hardware manufacturing, and printing companies;
- Information Technology: high-level customer service, data entry, shared services, application development, and telecommunications;
- Precision Manufacturing and Assembly: medical devices, plastics, and tooling;
- Science Related Manufacturing: metal and plastics, plastic injection molding, metal plating, and cell and molecular biology initiative;
- Natural Resources: value-added wood products and peat development.

The secondary target clusters include aircraft repair and refurbishing, and environmental industries.

The Carlton County Economic Development Advisory Committee (CCEDAC) is another organization that can assist communities with economic development in the county. This committee consists of members from throughout Carlton County. The objective of the

committee is to develop, encourage, promote, and protect the business interests of the Carlton County area by encouraging the development of the employment base, and by providing centralized services for Local Development Corporations (LDC's) and developers.

CCEDAC has two programs which provide financial assistance to businesses and communities in Carlton County. The Economic Development Grant Program provides grant funding, on a competitive basis, to public, non-profit and tax-exempt organizations. Proposals for funding are ranked by the following criteria: job retention or creation, leveraged sources of funding for the project, relative need, impact of the project on the community, and the project viability. Some of the projects that have been funded in the past include comprehensive planning, housing, and other economic development related projects. CCEDAC also has a loan program called the Carlton County Revolving Loan Fund, which provides loans to assist businesses and industries. Priority for funding is given to projects that will create jobs or provide job retention and/or diversification. Some of the eligible uses of the loan include land and building acquisitions, new construction, and renovation.

The Carlton County Comprehensive Plan should incorporate the concepts and objectives from these three organizations for economic development in the County. Goals and strategies for economic development should be developed by working cooperatively with CCEDAC to establish guidelines for Carlton County.

FACTORS INFLUENCING LOCATION DECISIONS

Locations of businesses and major companies influence economic development. The Paragon Decision Resources, Incorporated recently presented *Trends in Site Selection* in April of 2000 to Minnesota Power in Duluth. Paragon Decision Resources has been working with companies to determine the most important factors when choosing a new location. The following is a list of important attributes that a company examines in a community or area when determining the best location for their new facility:

- Labor conditions;
- Labor costs (wages and fringes)/labor relations;
- Utility costs and conditions;
- Accessibility/freight costs;
- Taxes (corporate/property) and business climate;
- Site/building availability/construction costs;
- Environmental permitting;
- Incentives (financing, training, infrastructure);

- Relocation costs and pay back versus recurring operating costs.

Some of these factors can be altered or influenced in a variety of ways, such as workforce availability and skills, utility infrastructure, real estate availability, and financial incentives. These factors should be considered in the goals and strategies for economic development.

When a company decides to seek a new location, hundreds of communities are evaluated. Only a few of those communities will be contacted by the company concerning real estate, infrastructure, and incentives. Therefore, a community needs to be ready for economic development before it begins to occur. This includes having readily available information on the community's assets, such as infrastructure, real estate, and financial incentives. There are several organizations that can assist communities that do not possess this capability. Those Organizations include the ARDC, the NorthSpan Group, Incorporated, ABC, and the CCEDAC.

Comprehensive planning is a good starting point for promotion of economic development within a given area. The plan can be used as a tool to guide land use and economic development and to assist decision-makers in shaping the future of the county. The goals and strategies developed in the plan should be implemented in an effective and appropriate way in order to maximize the potential for economic development in Carlton County.

FUNDING SOURCES

- Arrowhead Community Economic Assistance Corporation (ACEAC)
- Arrowhead Regional Development Commission (ARDC) Revolving Loan Fund
- Carlton County Revolving Loan Fund
- Great River Energy (GRE) Business Financing Program
- Minnesota Investment Fund through the Department of Trade and Economic Development (DTED)
- Minnesota Power Loan Program
- Northeast Entrepreneur Fund, Incorporated
- Northland Foundation Business Loan Program
- Northland Foundation Loan Guarantee Program
- Small Cities Development Program through DTED for community development

Economic Development Goals and Strategies

Economic Development

Goal: Develop a strong and diversified economic base, which promotes job growth and an increased tax base.

Objective: Maintain and improve a favorable climate for ongoing business activities.

Strategy 1: Conduct a strategic planning process for the Carlton County Economic Development Advisory Committee, in order to reflect and implement the concepts in the Carlton County Comprehensive Plan.

Strategy 2: Actively promote commercial/industrial development and redevelopment within the County.

Action Steps:

- Continue to participate in the ABC program.
- Continue to provide funding support for new and expanding businesses.
- Identify and market the County's assets.
- Use the County Comprehensive Plan as a marketing tool for location, type, and intensity of business development throughout the County.
- Evaluate development proposals based on the cost of the project in terms of overall County investment.

Strategy 3: Work to achieve better County and community access to telecommunications systems and technology hubs.

Action Steps:

- Work with private sector telecommunications and technology companies to locate in the County and provide services in a timely and affordable manner.
- Appoint a technology task force to develop a local technology plan.

Strategy 4: Support the establishment of an economic development commission for those areas of western Carlton County that want to belong.

Action Step:

- Encourage townships to work with Carlton County Economic Development Advisory Committee (CCEDAC).

Strategy 5: Work with existing businesses that want to expand and those who wish to relocate to Carlton County.

Action Steps:

- Develop assistance packages, such as tax increment financing, the CCEDAC revolving loan fund, and other development programs.
- Develop and maintain a business retention program for existing businesses.
- Identify and target acceptable industries to locate in the County.
- Inventory and maintain a list of available properties in the County suitable for business location.
- React to businesses needs in an effective and timely manner.
- Identify needs to upgrade and expand city and County infrastructure in order to promote and support continued commercial and industrial development.
- Assist local development organizations in retaining and expanding existing industries.
- Redevelop abandoned or vacant industrial lands within municipal service areas.
- Consider promoting sustainable economic development in accordance with Carlton County's Solid Waste Planning document.

Strategy 6: Recognize tourism and recreation as a viable part of a diversified economy.

Land Use

The land use section of the comprehensive plan identifies Carlton County's existing land use pattern and provides data and information that directs how the land use patterns should change in the future. This section will serve as a guide for the Planning Commission and elected governing bodies within Carlton County as they review private development proposals and make decisions on the location of public facilities, future housing, commercial, and industrial development, as well as recreational development such as trails and open space. The land use plan lays the foundation for zoning and subdivision regulations as well as the capital improvement program which put the goals and objectives of the land use section into action. Carlton County's vision for the future, which includes growth, environmental protection, and development, are reflected in the land use plan.

A community that has a healthy environment, through land use management, can realize many benefits. In a healthy environment the quality of life will be improved and will help to attract potential residents. As the population increases so too will land values. Creating a healthy living environment can be as simple as planting trees and shrubbery, or keeping one's property maintained. However, the protection of a healthy environment involves such measures as the adoption of erosion control and tree protection ordinances, and by establishing conservation districts.

This section of the Carlton County Community-Based Comprehensive Plan inventories the current land uses in the County, as well as such natural resources as soil types, wildlife habitat, agricultural land, forested areas, wetlands, and water resources. The land use section will also set forth goals and strategies to help achieve the County's visioning objectives.

There have been several communities within Carlton County that have undergone their own planning process in the past few years. The City of Cloquet completed a comprehensive plan, which identified areas for future growth. Thomson Township completed a comprehensive plan, which included Esko, an area experiencing tremendous housing growth. The City of Carlton is undergoing a land use study, which will help inventory and identify existing and future needs. As part of the Community-Based Planning Project, the City of Moose Lake is working on a comprehensive plan to address existing and future needs in its area. Moose Lake Township is taking part in this effort.

EXISTING LAND USE PATTERNS

The existing land use pattern in Carlton County is an important factor when planning for future development. By examining the current pattern of land use, a determination of planning needs and development goals can be made.

As part of the pilot project for the County, a land use inventory was conducted by the ARDC using GIS software. Land uses were delineated based on available zoning maps, aerial

photographs, and conversations with local communities for accuracy. Figure 53 shows the number of acres for each land use type, as determined by the GIS process.

Figure 53: Current Land Use in Carlton County

Land Use	Code	Total Acres
Bare Rock	15	166
Coniferous Forest	9	54,438
Cultivated Land	1	10,574
Deciduous Forest	2	172,816
Farmsteads & rural residences	8	2,545
Forest cut-overs	14	21,321
Grassland	4	96,498
Gravel pits & open mines	12	967
Mixed wood forest	5	16,504
Open water	3	11,864
Other rural developments	10	4,344
Shrubby grassland	11	3,786
Urban/industrial	13	4,523
Wetlands-bogs	7	99,024
Wetlands-marsh & fens	6	44,293
Total Acres (map)		543,663
Total Acres (Soil Survey 1978)		551,734

Source: ARDC, Manitoba Remote Sensing Center.

Definitions of the land use categories and codes identified in Figure 53 are as follows:

1 - Cultivated Land

This class includes those areas under intensive cropping or rotation, including fallow fields. Fields seeded to forage or cover crops are included. The fields exhibit patterns associated with current or recent tillage.

2 - Deciduous Forest

This class includes areas with at least two-thirds or more of the total canopy cover, composed of predominantly woody deciduous species. It may contain coniferous species, but is dominated by deciduous species. It includes woodlots, shelter belts, and plantations.

3 - Water

This class includes permanent water bodies such as lakes, rivers, reservoirs, stock ponds, ditches, and permanent and intermittently exposed palustrine open water areas where photo evidence indicates that the area is covered by water the majority of the time.

4 - Grassland

This class includes areas covered by grasses and herbaceous plants. It may contain up to one third shrub and/or tree cover. Areas may range from small to extensive and from regular to

irregular in shape. These areas are often found between agricultural land and more heavily wooded areas, along right-of-ways and drains. Some areas may be used as pastures and be mowed or grazed, and may range in appearance from very smooth to quite mottled. Included are fields which show evidence of past tillage but now appear to be abandoned and grown to native vegetation or planted to a cover crop.

5 - Mixed Forest

This class includes areas of forest where the canopy is composed of approximately equal amounts of deciduous and coniferous species.

6 - Wetlands: Marsh and Fens

This class includes grassy, wet areas with standing or slowly moving water. Vegetation consists of grass and sedge sods, and common hydrophytic vegetation such as cattail and rushes. Areas are often interspersed with channels or pools of open water.

7 - Wetlands: Bogs

This class includes peat covered or peat filled depressions with a high water table. The bogs are covered with a carpet of sphagnum and ericaceous shrubs and may be treeless or tree covered with black spruce and/or tamarack.

8 - Farmsteads and Rural Residences

This class includes farmsteads include farmhouse and adjoining farmyard area. It includes machinery storage buildings, grain storage buildings, corrals and livestock holding and feeding areas directly associated with farmyard area.

9 - Coniferous Forest

This class includes areas with at least two thirds or more of the total canopy composed of predominantly woody coniferous species. It may contain deciduous species, but is dominated by coniferous species. It includes woodlots, shelter belts, and plantations.

10 - Other Rural Developments

This class includes commercial, industrial, cultural, recreational, and agricultural developments not associated with urban areas.

Commercial and industrial developments include substations, communications facilities, power plants, private airstrips, landfills, storage maintenance yards, businesses, factories, lumber mills, and commercial livestock/poultry/grain operations.

Cultural and recreational developments include built-up facilities and service areas associated with parks, rest areas, campgrounds, and golf courses. It includes churches, cemeteries, community halls, and rural schools.

Agricultural developments include agricultural facilities not directly associated with farmsteads. It includes machine and grain storage areas, barns, corrals, and isolated buildings and farmsteads that no longer have an apparent road access.

11 - Shrubby Grassland

This class includes a combination of grass, shrubs, and trees in which deciduous and/or coniferous tree cover comprises from one third to two thirds of the area, and/or the shrub cover comprises more than one third of the area. This complex is often found adjacent to grassland or forested areas, but may be found alone. These areas are often irregular in shape and vary greatly in size.

12 - Gravel Pits and Open Mines

This class includes areas that are stripped of topsoil revealing exposed substrate such as sand or gravel. Included are gravel quarry operations, mine tailings, borrow pits, and rock quarries. Natural beaches/sand dunes are included.

13 - Urban/Industrial

This class includes cities, towns, and villages with place names. It also includes commercial, industrial or urban developments included within or directly associated with an urban area such as manufacturing or processing plants, power plants, airports, and waste treatment plants.

Rural residences and rural residential complexes include all other non-urban residences including associated structures such as garages and sheds, and associated landscaped area. This category includes residences in close proximity with no distinguishable, intervening, non-residential features.

14 - Regeneration/Young Forest

This class is made up of areas that have a good likelihood of being young forest that were either replanted or naturally regenerated since 1970. It includes lands that were commercially logged or affected by catastrophic events, primarily fire and wind damage.

15 - Bare Rock

This class includes areas of rock outcrops that lack appreciable soil development or vegetation cover.

16 – Roads, Improved Trails, and Rail Lines

This class includes all highways, secondary gravel roads, improved dirt trails, rail lines, and utility easements.

Insert Map

NATURAL RESOURCES

Many times the natural resources and physical features of an area will determine the type and intensity of land use for that area. While there is a substantial amount of land within the County that is suitable for development, there are other portions that have intrinsic natural value. Some of these areas limit development and would be best left in their natural state. Preservation of significant natural resources is a legitimate goal for any local government. The protection of important natural areas and resources will allow future generations a chance to enjoy them, as well as contribute to the quality of life for today's residents.

Topography

The topography of Carlton County is the result of glacial activity that occurred over 10,000 years ago. The County has land varying from flat to hilly with a maximum relief of 750 feet in the northeastern part of the County where the St. Louis River approaches Lake Superior. This varied topography is due to glacial deposition that formed moraines and left outwash sediments throughout the County. At one time, there were large lakes covering portions of the County. This glacial activity is important to recognize because it created the County's landscape, soil types, and watersheds, and, therefore, affects the County's development patterns.

Bedrock Geology

The primary bedrock in the County is called Thomson Formation and consists of slate and impure quartzite. This bedrock underlies about three-quarters of the County starting in the northeastern portion. These deposits were formed from the deposits of mud, which were compacted into shale. These deposits were buried deeper by additional sediments, and the shale was converted into slate. Sandstones can also be commonly found in Carlton County. These deposits are located in southeastern Carlton County and are known as the Hinckley and Fond du Lac Sandstones. Volcanic activity formed the Keweenawan Intrusives, which can be found in the southwestern portion of Carlton County. The Keweenawan Lava Flows can be found in the southeastern corner of the County.

Soils

Carlton County has a wide variety of soil types, all of which are acidic. Most of them have a reddish brown subsoil and a foundation from glacial drift. Approximately 48 percent of the County consists of nearly level soils. Organic soils make up nearly one-half of these soils, or encompass about one-fourth of the County.

Most of the terrain in Carlton County is used for woodland, recreation, and wildlife habitat. Not much of the soil is used for farming due to a short, cool growing season that limits the types of crops that are suitable for the area. Because of this, dairy and beef operations are the major farming enterprises in this area. However, due to economics, farms and small farm operations are declining in number.

Climate

Summers are warm in Carlton County and contain the most precipitation of the year with approximately 71 percent, almost 22 inches, of annual precipitation occurring from April to September. The mean temperature in June, July, and August is 63.6° Fahrenheit.

Winters are in sharp contrast as the County cools rapidly with shorter days and a lower sun on the horizon. Prevailing northerly winds cause additional cooling, and because polar air masses are relatively dry, winter is the season of least precipitation. The mean temperature in December, January, and February is about 12° Fahrenheit. During the winter there is an average of 50 days with temperatures of zero degrees Fahrenheit or lower.

FOREST RESOURCES

Carlton County has a total land area of 552,800 acres, of this, 352,600 acres is forest land. The majority of forest land in the County is defined as timber land, which is land that is producing or capable of producing in excess of 20 cubic feet per acre per year of industrial wood crops under natural conditions. This does not include land that is withdrawn from timber utilization or land that is associated with urban or rural development. This does include land that is currently inaccessible or in an inaccessible area.

Timber land makes up 340,500 acres of the County’s forested land. The remaining forest land consists of 6,900 acres of reserved forest land and 5,200 acres of other forest land. Reserved forest land is land that is withdrawn from timber utilization through statute, administrative regulation, designation, or has exclusive use for Christmas tree production. Other forest land is land that is not capable of producing 20 cubic feet per acre per year of industrial wood crops under natural conditions and not associated with urban or rural development. Many of these sites contain tree species that are not currently utilized for industrial wood production, are of small size, or poor quality.

Carlton County’s forests are owned by a variety of different groups. They include state, city, municipal, and Tribal governments, the forest industry, individuals, and corporate owners. Over one-half of the land in Carlton County is owned by private individuals. The following table shows the breakdown in ownership classes for the County.

Figure 54: Area of Timber Land By Ownership Class (in thousands of acres)

Total Ownership	State	County and Municipal	Indian	Forest Industry	Individual	Corporate
340.5	58.9	58	10.4	27	173.8	12.4

Source: U.S. Department of Agriculture, 1990.

There are several different types of timber land in the County. They are broken down into categories that include similar types of trees. Timber land in Carlton County falls into six different local groupings. They are white-red pine, spruce-fir, oak-hickory, elm-ash-soft maple, maple-basswood, and aspen-birch. The majority (53 percent) of the County’s forest land falls into the aspen-birch group. The following table contains the individual amounts for each group.

Figure 55: Area of Timber Land by County and Forest Type (in thousands of acres)

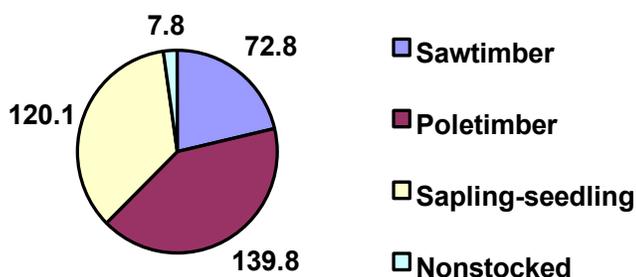
White and Red Pine	Spruce - Fir	Oak - Hickory	Elm –Ash – Soft Maple	Maple – Basswood	Aspen - Birch
8.9	68.6	3.2	43	29.5	179.5

Source: U.S. Department of Agriculture, 1990.

Of the total timber land in the County (340,500 acres), 7,800 acres are unaccounted for in the previous table. That is because they are considered nonstocked timber land. Nonstocked land is forestland that is less than 16.7 percent stocked with live trees.

Timber land is categorized into stand size classes. These classes are sawtimber, poletimber, sapling-seedling, and nonstocked. Sawtimber trees are tree species of commercial value containing at least a 12-foot saw logs or two noncontiguous saw logs 8 feet or longer and meeting regional specifications for freedom from defect. Softwoods must be at least nine inches diameter at breast height (dbh) and hardwoods must be at least 11.0 inches dbh. Poletimber trees are trees of commercial species at least five inches dbh but smaller than sawtimber size. A sapling-seedling is a live tree one to five inches dbh. A sawtimber stand must consist of half or more live trees stocked in sawtimber or poletimber trees, with sawtimber stocking at least equal to poletimber stocking. In order to be a poletimber stand, half or more live tree stocking must be in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber. A sapling-seedling stand is a stand where more than half of the live tree stocking is in saplings or seedlings.

**Figure 56: Stand - Size Classes in Carlton County
(in thousands of acres)**



Source: U.S. Department of Agriculture, 1990.

Figure 57 represents the 1990 major species data for Carlton County.

Figure 57: Net Volumes on Timber Land by Major Species Group

	All Species	Pine	Other Softwoods	Soft Hardwoods	Hard Hardwoods
Growing Stock	314,830	19,392	62,883	170,623	61,932
Swatimber	558,848	94,935	139,964	275,904	78,045

Source: U.S. Department of Agriculture, 1990.

Important information for forest resources management is derived from the average annual removals and average net annual growth of growing stock and sawtimber. The annual averages in the following tables were derived from data collected between 1977 and 1989. Growing stock is measured in thousand cubic feet while sawtimber is measured in thousands of board feet.

Figure 58: Average Annual Removals from Timber Land

	All Species	Pine	Other Softwoods	Soft Hardwoods	Hard Hardwoods
Growing Stock	3,658	185	531	2,359	583
Sawtimber	5,991	878	1,185	3,370	558

Source: U.S. Department of Agriculture, 1990.

Figure 59: Average Net Annual Growth on Timber Land

	All Species	Pine	Other Softwoods	Soft Hardwoods	Hard Hardwoods
Growing Stock	9,167	487	1,757	5,132	1,791
Sawtimber	24,094	2,885	5,584	18,515	2,125

Source: U.S. Department of Agriculture, 1990.

Figure 60: Carlton County Wood Harvest Thousand Cords

Species	1990	1995	1996	1997
Aspen	28.4	28.7	37.7	28.2
Balm/Gilead	3.1	0.4	0.9	0.8
White Birch	12.7	17.4	13.8	9.1
Ash	1.3	0.6	0.6	0.5
Oak	6.0	1.0	1.0	1.0
Elm	0.1	*NA	*NA	*NA
Basswood	0.1	0.1	0.1	0.2
Maple	4.4	2.4	1.3	1.9
Red Pine	1.6	2.1	1.3	1.9
White Pine	0.7	0.2	0.2	----
Jack Pine	1.6	4.3	2.8	1.2
Spruce	2.0	2.2	5.0	2.5
Balsam Fir	12.7	9.0	9.1	1.1
Tamarack	*NA	0.1	*NA	*NA
Total	74.7	68.5	76.1	49.9

*NA: Information not available.

Source: Pulpwood Harvest: USFS-North Central Forest Experimental Station.

AIR QUALITY AND GRAVEL OPERATIONS

Air quality is managed by Minnesota State law and the MPCA. However, in the series of public meetings held to discuss this plan, the issue of gravel extraction was raised in relation to air quality and to its overall importance as an industry in the County. For more information on air quality and the MPCA, see Appendix D and Carlton County Zoning Ordinance number six, Amendment number seven.

Carlton County is a gravel rich County. The extraction and processing of gravel is a major industrial land use in the rural parts of Carlton County. There are a total of 118 gravel pits located in the County according to a 1992 Mn/DOT gravel inventory. Of these gravel operations, 64 are active and five are used for commercial aggregate, 21 of the gravel pits are inactive, and no data was available for the remaining 28. The majority of the gravel pits are located within close proximity of the I-35 corridor and are concentrated around the Moose Lake and Barnum area and the cities of Carlton County and Cloquet. This pattern can be explained in part because of access to the transportation network as well as proximity to areas in need of gravel.

Gravel operations need a permit from the County in order to operate. Carlton County identifies two distinct types of aggregate mining operations in its zoning ordinance. The Borrow Pit permit is a temporary land use and allows for the removal of material from a specific use or project and is effective for one year. This permit is issued as a regular zoning permit and may in some cases require a conditional use permit if surrounding residents disapprove of the proposed operation. This permit allows contractors to access gravel resources in a timely fashion for construction projects. Other more permanent extraction operations require a conditional use permit. All new gravel operations operating under the current zoning ordinance are required to restore the gravel pit after its use. The zoning ordinance also indicates that crushers and hot-mix plants should be operated in accordance with MPCA standards for air pollution. Dust control measures should be utilized on non-paved routes.

The City of Cloquet has its own zoning regulations for gravel mining. It too, has a permit process, which is similar, though not identical to the County's. The City of Cloquet Zoning Ordinance was amended in 1997 to strengthen its gravel mining operations. Cloquet currently has four active gravel mining operations.

Not only are the gravel pits important for Carlton County, they represent an important resource beyond its borders. Due to Carlton County's strategic location in relation to the Duluth/Superior area as well as the Twin Cities gravel from Carlton County pits contribute significantly to construction project in these areas. This has raised some concerns that a significant amount of gravel is leaving the County without providing any significant benefit.

Because Carlton County is gravel rich and there will be a continued demand for aggregate for construction projects, it is likely to experience continued pressure for the expansion of current operations and the establishment of new operation over time. As a result, the potential or conflict is heightened as residential land use in rural areas continues to increase. Gravel pit operations could cause conflicts with surrounding residential uses due to dust, noise and

increased commercial traffic. It is therefore important to try to minimize development of new gravel pit operations close by areas that have developed a more residential character. These areas may eventually need to be considered for rezoning to rural residential. By the same token, it is important that residential development is directed away from areas adjacent to known gravel deposits that are likely locations for the development of future gravel operations, or existing operations that may want to expand in the future. A buffer should be maintained between residential development and potential gravel operations.

WATER RESOURCES

Carlton County's water resources are very important to the community because they provide recreational and aesthetic value, as well as enhanced economic opportunity. Important water resources include both surface and ground water from aquifers, watersheds, lakes, rivers, wetlands, riparian habitats, fish, wildlife, household, livestock, recreation, aesthetic, and industrial uses. The aquifers are supplemented by an average normal precipitation of 28 inches annually in Carlton County and flow into the three major drainage basins, which are the Lake Superior Basin, Upper Mississippi River Basin, and St. Croix River Basin. Management practices in Carlton County that have a great impact on water resources include water-Based recreation lands, wildlife management areas, and landfills.

Ground Water

The primary water sources within the County are from the sand plain shallow aquifers located at the northeast corner and continuing to the south central area of the County. Other areas of the County have water sources from deeper aquifers or shallower surficial layers. Approximately half of the wells in Carlton County use sand and gravel aquifers found at depths less than 100 feet, generally situated in the sand plain area. Roughly a quarter of the wells are in sand and gravel aquifers at depths greater than 100 feet. The remaining quarter of the wells draw water from bedrock aquifers. The principal geologic formations that have the greatest effect on water resources in the County are the location and character of the Onanego Sand Plain Aquifers. These include the Chub Lake and the Red Clay areas. The southeast formations include two bedrock aquifers that underlie most of Carlton County. They are the Proterozoic Metasedimentary Aquifer and the Hinckley-Fond du Lac Sandstone Aquifer. There are also two other bedrock aquifers that underlie smaller portions of the County. They include the Keweenaw Volcanics Aquifer and the Precambrian Undifferentiated Igneous and Metamorphic Aquifer. The Hinckley-Fond du Lac Sandstone Aquifer yields at least 15 gallons per minute (GPM) and may yield several hundred GPM in southern Carlton County where the bedrock is up to 400 feet thick. The other four aquifers have a lower yield, around five GPM, except where joints, fractures, and weathered areas near the bedrock surface increase secondary porosity and yield potential.

Surface Water

Surface water is very valuable to Carlton County. The area relies heavily on the quality of water resources in the form of its lakes, rivers, wetlands, and other water resources, both for the tourism industry and the quality of life. There are approximately 74 lakes in Carlton County, mainly formed by glacial drift. They have a total surface area of 9,142 acres. Surface waters become especially important in Carlton County due to many inadequate septic systems within a

concentrated area, as they can easily contaminate the water. Within the County there are an unknown number of abandoned and improperly sealed wells. There may possibly be as many as 9,000 abandoned wells in the area according to statewide estimates. The effects of abandoned wells on water quality are unknown. But could be substantial in terms of the contamination of water resources. For more information on surface water please refer to the detailed Carlton County Waste Management plan, herein incorporated by reference.

Based on data from the 1996 update of the Carlton County Local Water Management Plan, the following surface water bodies were determined to be priorities in Carlton County for funding and other activities:

- | | |
|--------------------|---|
| Water Sheds | <ol style="list-style-type: none"> 1. St. Louis Watershed 2. Tamarack Watershed 3. Nemadji Watershed |
| Lakes | <ol style="list-style-type: none"> 1. Hanging Horn Lake 2. Little Hanging Horn Lake 3. Bear Lake 4. Island Lake 5. Chub Lake 6. Tamarack Lake 7. Big Lake 8. Eagle Lake 9. Park Lake 10. Sand Lake 11. Moose Head Lake |
| Rivers | <ol style="list-style-type: none"> 1. St. Louis River 2. Tamarack River 3. Nemadji River 4. Moose Horn River 5. Midway River |

FACTORS OF CHANGE

Many different economic, environmental, and demographic changes within a County can have great effect on both surface and ground water resources. Some of these changes in Carlton County include the expected increases in forestry harvesting, agricultural land uses, population, and recreational tourist activities. A few of these changes may negatively impact the surface and ground water quality in their respective areas. This could include examples such as the increased number of temporary and permanent dwellings near surface waters, and an expected increase in tourism. Other changes involved may include the expected expansion of the forest industries within the County and throughout the State. This will increase the harvesting of trees and will, in turn, increase the possibility of greater surface water sedimentation through erosion. The expected chemical control of undesirable vegetation will increase the hazard of surface and

ground water contamination. Increased agriculture activities, mainly in dairy and specialty crop production, will bring an increase in irrigation, chemical use, and soil disturbance. These changes will cause a need for more information to be provided to landowners regarding chemicals, fertilizers, agronomic application rates, soils, water tables, animal waste control systems, and how the impact upon the water resources can be minimized. The extent of negative impacts will depend upon such factors as soil types, water tables, development activities, agronomic application rates, and density of residential lots. Close surface and ground water monitoring can identify and address problems as they arise, or prevent them before they occur.

WETLANDS

Wetlands are an essential and vital part of water resources and are scattered throughout Carlton County. Many of these areas provide recreation opportunities and fish and wildlife habitat. They also help to recharge ground water and improve water. Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The single feature that most wetlands share is soil or substrate (the base on which an organism lives) that is at least periodically saturated with, or covered by, water. These areas are considered to be among the most productive ecosystems in the world. Wetlands can act as nutrient traps and provide many tangible benefits in the form of erosion control, water supply, groundwater recharge, harvest of natural products, recreation, and flood and storm damage protection. Wetland management is addressed in Carlton County's Water Management Plan in accordance with Minnesota Rule, Chapter 8420, 0110, Subp. 52.

WATER-BASED RECREATION LANDS

Within Carlton County, there are many water-Based recreation areas and many more that are in the process of being developed. The Bear Lake County Park is being developed to provide more campsites, water access, recreation facilities, and storm water control. Funds from Reinvest in Minnesota Reserve were used to purchase land for the Blackhoof River Wildlife Management Area. Efforts aimed at the protection of water resources and the creation of minimum impact walking trails to access the river for fishing are in progress. Innovative plans to develop an international-class kayak course and training center on the St. Louis River immediately below the Thomson Reservoir. Canoe routes have been established on the upper reaches of the Kettle River to be used during high water conditions. A whitewater canoeing/rafting route on the St. Louis River from Scanlon to the Thomson Reservoir has also been developed. These water-based recreation projects have far-reaching impacts on the County. These projects, and future projects, will include environmental protection to enhance the water-Based recreation lands in Carlton County.

There are several water related scenic areas within Carlton County that are important because of the water-Based recreational opportunities they offer. Jay Cooke State Park is the largest of these areas, providing a recreation and wildlife environment and a spectacular scenic view overlooking St. Louis River.

WILDLIFE

Carlton County has an abundance of wildlife including both game and non game wildlife. Wildlife is important to the residents of the County for several reasons. Many people enjoy hunting big and small game animals, fishing, and trapping. Others simply enjoy observing wildlife in fields, forests, or at their birdfeeders. In addition, many tourists are attracted to Carlton County each year in order to enjoy the variety of species that flourish in the area.

The most common big game animal in Carlton County is the white tail deer. Deer feed primarily on shrubs, small trees, acorns and crops. The white tail deer population has been increasing in the past few years due to unusually mild winters. Although this improves the success of deer hunting in the County, it also increases the number of car–deer collisions. The larger deer population also increases the amount of crop damage caused by foraging deer. Each of these situations can have a severe economic impact. The black bear is another big game animal that can be found in Carlton County. The black bear prefers to live in large tracts of woodland and feeds upon a variety of food sources. An adult bear weighs between 250 and 300 pounds and can have a height of two to three feet at the shoulder. Although very rare, moose can occasionally wander down into the County from the northern part of the state.

There are many types of small game animals in the County, including waterfowl, upland game, and fur-bearers. The abundance of wetlands and wild rice makes Carlton County an attractive area for ducks and geese. Ducks and geese can be found in Carlton County primarily during the spring and fall migrations, although many do nest in the County during the summer months. The most common types of waterfowl that can be seen in the County are mallards, Canadian geese, teal, and wood ducks. There are two types of upland game birds that can be found in Carlton County. The most common is the ruffed grouse. The ruffed grouse lives in forested areas and feeds primarily on buds, berries, and leaves such as clover. It is probably the most popular species sought after by hunters in the County. The other upland game bird is the woodcock. The woodcock is a small migratory game bird whose most recognizable feature is its long, pointed beak. It can be found in moist, forested areas during migration and feeds primarily on worms. Fur-bearers such as beaver, muskrat, and mink can be found in Carlton County. The primary habitat of these fur-bearers is in or near water. Herbivores, including beaver and muskrat, feed primarily on aspen and aquatic vegetation. Mink are carnivores and feed mostly on fish, frogs, and other small wetland creatures. Other small game animals in Carlton County include squirrels, fox, hares, rabbits, and coyote.

Carlton County also has an abundance of non-game animals. One activity centered around non-game animals in Carlton County, is bird watching. Some birds such as chickadees, grosbeaks, bluejays, and ravens remain throughout the year, while others, such as robins, blackbirds, humming birds, and kingfishers, migrate south for the winter. There are also birds of prey that migrate through the area, most notably red-tailed hawks and bald and golden eagles. In addition, there are other non-game animals, such as turtles and various species of frogs, that can be found in Carlton County.

Carlton County has several species of game and rough fish. Game fishing is very popular in the County and draws many visitors who enjoy fishing. Game fish that can be found in area lakes and rivers include walleye, northern pike, bass, crappies, as well as brook, brown, and rainbow

trout. Rough fish are also popular with some anglers. Rough fish include suckers, carp, catfish, and bullheads.

WILDLIFE MANAGEMENT AREAS

Carlton County contains six wildlife management areas (WMA's). Three of them, the WMA's of Kettlelake, Sawyer and Blackhoof, contain significant water resources that are not currently managed, but have management potential. The County also has a vast acreage of land held in public trust, some of which contains significant water resources also, having management potential. An even greater acreage of private land has the potential for cooperative water resource management. Current programs exist to assist private landowners in setting aside land including the Federal Conservation Reserve Program (CRP) and Reinvest in Minnesota Reserve. The CRP enables landowners to remove cropland from production and receive an annual payment in an effort to preserve the soil quality and existing habitat of those lands. Reinvest in Minnesota Reserve enables landowners to set aside land primarily for wildlife purposes.

The Kettle Lake WMA is an area with important water resources. It is used in Carlton County for hunting, fishing, trapping, and ricing. Current management efforts in the Kettle Lake WMA include waterfowl production, wild rice production, fur-bearer production, non-game wildlife, fisheries, and recreation. Future efforts planned for the Kettle River WMA include the restoration of water level manipulation capability and the promotion of waterfowl nesting cover.

The Sawyer WMA has plans to develop a water level management plan for wild rice production and waterfowl management. A second dam structure is in the planning process for the Sawyer WMA to consider for effects on fish spawning areas. Increased wildlife habitat in this area will lead to improved hunting and recreation. Present management in the Sawyer WMA includes a waterfowl migration resting area, wild rice production, fur-bearer production, and recreation management. Future management activities will include the development of a new impoundment, promotion of waterfowl nesting cover, and the enhancement of wild rice and other emergent vegetation.

Both fish and wildlife habitat need to be improved in Carlton County. Much of the tourism in the County depends on these important resources. The St. Louis River has been negatively impacted as a result of human activities. The recent purchase of the Blackhoof River WMA will provide year-round tourist attractions in the County, while at the same time increasing the fish and wildlife potential.

Current management activities in the Blackhoof River WMA include the production of fish and wildlife habitat on newly acquired land and the development of a public boat access. Future management efforts needed for the future include the implementation of fisheries management plans and wildlife management plans.

The current management of public lands include wildlife habitat evaluation, waterfowl, vegetation, fur-bearer, non-game, fisheries, and recreation. Future management needs of public lands include wildlife, fisheries, and recreation management. The current management of private

lands includes fish and wildlife management. Future management needs of private lands include further development of the present fish and wildlife.

RECREATIONAL OPPORTUNITIES IN CARLTON COUNTY

There are a variety of recreational opportunities available in Carlton County throughout the year. Both downhill and cross-country skiing are popular activities in the winter. There are over 90 miles of groomed cross-country ski trails in Carlton County. Another popular winter activity is snowmobiling. There are 500 miles of scenic snowmobile trails as well as several riding clubs in the County. Others enjoy ice fishing on several local lakes or watching a local hockey game.

During the spring and summer months, numerous campgrounds and parks are open for the public to explore. Jay Cooke State Park is open year-round and offers many recreational activities. There are miles of biking and hiking trails, including 50 miles of paved trail on the Willard Munger State Trail. Moose Lake State Park also offers many recreational opportunities. In addition, rafting, fishing, golfing, and local festivals are recreational activities available to people in Carlton County. The fall colors can compound the enjoyment of many of these recreational pursuits.

Recreational amenities enhance property values and increase business revenue generated through local spending on recreational activities. Parks and open space can influence the quality of life and location decisions of families and businesses. They can also improve community attractiveness, as well as provide a foundation for the tourism industry. For more information on parks, historical sites and green space see Appendix E.

AGRICULTURE

Farming was once a very important industry in Carlton County. Although not as prominent as it once was, agriculture still remains a source of income to many families, and an important part of the economy of the County. Changes in agricultural practices and activities are still occurring in Carlton County, following a similar trend throughout Minnesota and the rest of the United States. Figure 61 shows the trend for farming activities in the County over a 15-year period between 1982 and 1997.

Figure 61: Number and Size of Farms

	1982	1987	1992	1997
Farms	732	649	509	511
Land in Farms (acres)	143,233	132,863	113,422	107,166
Average Size of Farm (acres)	196	205	223	203

Source: U.S. Census of Agriculture.

The number of farms in the County decreased by over 200 during a ten-year period from 1982 to 1992. The land in agriculture production also decreased over a 15-year period by more than 36,000 acres. The average size of a farm in Carlton County has remained relatively stable at approximately 200 acres.

Dairy operations remain in the southwestern portion of the County, but most of the County's farms are beef operations. As depicted in Figure 62, there were only slightly more beef farms than dairy farms in 1982, but ten years later, in 1992, the number of beef operations is twice that of dairy operations. Both, however, decreased in overall numbers of operations during that period. Hog and chicken farms also experienced significant decreases during that decade, while sheep and lamb farms remained stable.

Figure 62: Livestock Farming Operations

	1982	1987	1992
Beef cattle farm operations	295	197	209
Dairy farm operations	242	161	104
Hog and pig farm operations	41	27	22
Sheep and lamb farm operations	20	17	23
Chicken farm \geq 3 months old	79	48	32

Source: U.S. Census of Agriculture.

As shown in Figure 63, the Carlton County agriculture industry does not rely heavily on cash crop farming. Most farms that have some form of cash crop are producing hay, for sale to beef and dairy farms within the County. The next most prevalent cash crop is oats for sale as feed for livestock.

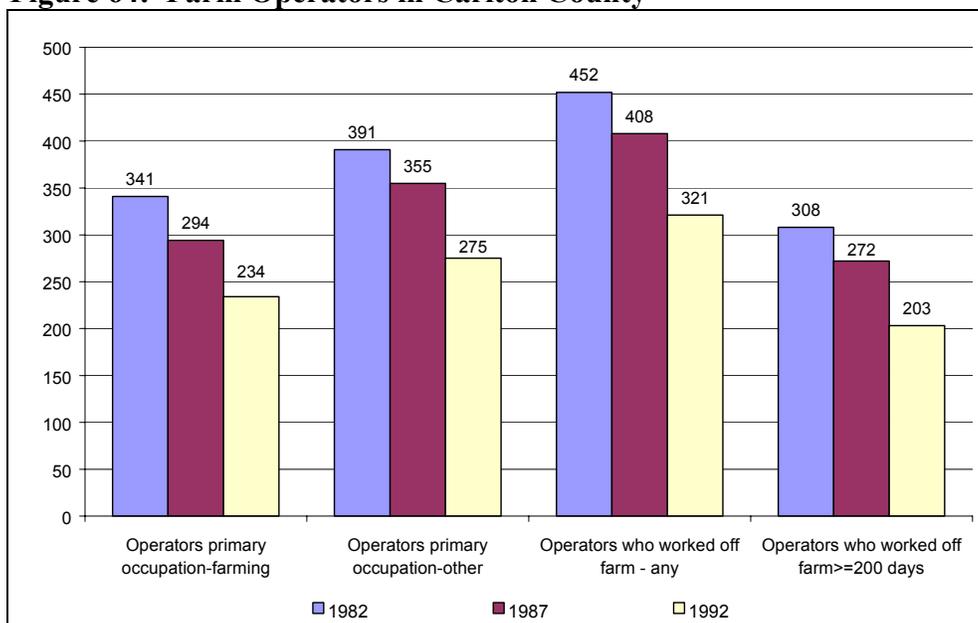
Figure 63: Grain Farming Operations

	1982	1987	1992
Corn for grain or seed farms	8	11	3
Wheat for grain farms	3	3	2
Barley for grain farms	12	11	8
Oats for grain farms	173	83	64
Sunflower seed farms	0	0	1
Soybean farms	2	0	1
Hay-all farms	651	571	453

Source: U.S. Census of Agriculture

Families using farming as their primary income have decreased by more than 30 percent during the decade between 1982 and 1992. From 1992 to 1997, another 21 (ten percent) full-time farms were lost in Carlton County. Out of 511 farms in the County, only 42 percent (213) are full-time farms, defined as the families' primary occupation.

Figure 64: Farm Operators in Carlton County



Source: U.S. Census of Agriculture

Most farms in the County now need additional financial support to continue operating. This is often accomplished through a second job for either the farmer or his or her spouse. Other types of farms found in Carlton County are hobby farms. Hobby farms may be strictly for the owners' enjoyment, or they may be small-scale specialty farms, such as organic farms, for example.

As shown in Figure 65, the market value of agricultural products sold from Carlton County farms has decreased significantly between 1982 and 1997 from a high market value of \$11,098,000 in 1982 to a low market value of \$8,451,000 in 1997. The average value of agricultural products sold per farm has remained fairly stable, with the exception of an increase in 1992. It decreased again in 1997 to \$16,035.

Figure 65: Value of Farm Products in Carlton County

	1982	1987	1992	1997
Market Value of Ag Products Sold	\$11,098,000	\$10,489,000	\$9,441,000	8,451,000
Average Value of Ag Sold/Farm	\$15,162	\$16,162	\$18,548	\$16,035

Source: U.S. Census of Agriculture.

DEVELOPMENT

Carlton County is predominantly rural in character with urban and suburban development occurring primarily along the Interstate 35 corridor, running north and south along the east-central side of the County. The Interstate 35 corridor has experienced much growth over the past ten years in both residential and commercial development.

Two large tracts of land are reserved as state forest, the Fond du Lac and Nemadji State Forests. Jay Cooke State Park and Moose Lake State Park also contribute to the abundant open space found in Carlton County. The forests and parks will remain undeveloped as long as they continue to be publically owned and managed, serving as recreational areas for Carlton County residents and tourists alike.

The Fond du Lac Reservation is located in the north-central part of Carlton County and overlaps into St. Louis County. The reservation undertook and completed a land use planning process in January of 1998. The resulting land use plan indicated that less than one-third of the land within the Reservation consists of land owned by the Fond du Lac Tribe. The plan also indicated that much of the reservation is undeveloped forest and wetlands. Pockets of concentrated development occur near Big Lake and Brookston, and a suburban expansion of Cloquet extends to the central portion of the Reservation.

A number of issues are associated with development. Such issues may include scattered large lot development near cities, requiring expensive sewer and water hook-ups or strip commercial development that reduces the carrying capacity and safety of the roadway. These issues should be considered in the planning of development.

Several predominant land uses will be considered in planning for future development patterns in Carlton County. These include residential, commercial, industrial, agricultural, and natural areas.

RESIDENTIAL DEVELOPMENT

Residential development in Carlton County has been occurring primarily in the eastern portion of the County. There have been scattered subdivisions constructed along the Interstate 35 corridor as well as adjacent to existing city limit boundaries.

Residential land use is categorized by density, and is based upon the number of housing units per square miles of land. Single-family dwellings traditionally house only one family, and usually consist of one house per lot. Single-family neighborhoods are primarily low density. High-density areas mainly consist of multiple-family dwelling characterized by three and four unit buildings, conventional apartment buildings, condominiums, or townhouses. High density development is usually found in urban areas that have ready access to municipal sewer and water services.

COMMERCIAL DEVELOPMENT

Commercial development is defined by the businesses and services provided within Carlton County. Commercial development has primarily occurred in the eastern portion of the County. It includes business districts within cities, highway corridor development and services, and scattered convenience centers throughout the County, such as gas stations.

INDUSTRIAL DEVELOPMENT

Industrial development can be separated into two levels of intensity: light and heavy. Light industry has fewer negative elements associated with it, such as heavy truck traffic, air and noise pollution, and unsafe conditions, than does heavy industry. Examples of light industry include warehouses, vehicular repair operations, and packaging, bottling or assembly plants. Examples of heavy industry include cement, gas, paint, explosive, paper, or glue manufacturing, rendering plants, garbage processing, or petroleum refining.

There are several areas in Carlton County with significant industrial development. The City of Cloquet has several heavy industries concentrated along the south and west banks of the St. Louis River. These include the Potlatch Corporation, Diamond Brands, U.S.G. Interiors, American Cyanamid Company, and Specialty Minerals, Incorporated. The Burlington Northern Railway switching yard, located in the southwest part of Cloquet, is another area associated with heavy industries, such as gravel mining and construction companies.

Industrial development can have significant impacts on the environment and quality of life for people in their vicinity. Proper planning for the location of these facilities must occur in order to avoid conflicts in land use and minimize industrial blight. Land use controls such as zoning can be used as a tool to guide and enforce orderly development.

An ongoing effort should be made to identify where conflicts between different land uses are occurring. Strategies should be developed to minimize and/or mitigate these conflicts, such as the relocation of industrial sites to more appropriate locations and the development of new housing in appropriate areas at appropriate densities. Land use should occur according to guidelines developed within the comprehensive plan.

SUSTAINABLE DEVELOPMENT AND LIVABLE COMMUNITY DESIGN

Many of the activities of local government have environmental, economic, and/or community impacts. Local sustainability includes various aspects of daily life. Sustainability can be defined as living within the resources limits of the planet without damaging the environment now or in the future. It also means having an economic system that provides an enhanced quality of life, rather than one that depends on increased consumption. Sustainability requires an understanding of the interdependence of different issues, too often these issues are looked at separately and the impacts on one another are not considered. An example of this occurs with different land use patterns. The kinds of land uses that are grouped together will have an impact on the mode of transportation that will be efficient and desirable within that area.

Sustainable communities are those which coordinate land use and transportation design, preserve land, habitat and native species, build a sense of community, preserve local culture, ensure a safe, healthful and equitable community for everyone, and prevent pollution through the better use of energy and natural resources. Sustainable communities can be described as having access, biodiversity, community identity, distribution, and eco-efficiency.

There are many ways to help promote or create sustainable communities. For many people this is accomplished through individual efforts in their own lives such as recycling, using alternative methods of travel, and respecting natural resources. Others see opportunities through group efforts such as adopting plans and reforming current land use, economic, government, and social systems. All of these methods can help ensure a high quality of life now and in the future.

Several aspects of sustainable land use can be observed within Carlton County. Original town landscapes that have not been redeveloped the way many places were in the mid-1900's, are characteristic of sustainable communities. Maintaining old buildings is a link to our past that can make a community pleasant which to live in. It is useful to note that many new sustainable communities and developments have structures and urban design similar to small towns from long ago. Traditional communities were affordable, efficient, scaled to human proportions and environmentally sound.

Through the goals and strategies developed by the Carlton County Joint Powers Board, sustainability and livable community design were addressed.

URBAN GROWTH BOUNDARIES

As part of the Community-Based Planning project, Carlton County addressed the need for urban growth boundaries in their communities. The primary areas where urban growth is occurring are near the Cities of Cloquet, Scanlon and Carlton along the Interstate 35 and also in the Cities of Moose Lake and Barnum. The Townships of Thomson and Twin Lakes are also experiencing growth.

These cities met with each other and their surrounding townships to discuss the future of growth, infrastructure, roads, and development within the area. From these meetings came an agreed upon boundary line. That will be used to help make decisions about development in the future. This is an urban growth boundary, defined as an officially adopted and mapped line separating rural and urban lands. The boundaries are used as regulatory tools and designed to be in place over the long-term, usually 20 or more years. The intention of the urban growth boundary is to provide land for urban growth, while protecting rural land from urban sprawl or unorganized growth.

Orderly growth, the minimization of environmental impacts, and cost of public services will be ensured through cooperative relationships between jurisdictions affected by growth. These cooperative relationships were created through the community-Based planning effort. Maintaining the guidelines created by the urban growth boundaries will require enforcement by

those entities with zoning authority, and a continuing effort to keep the partnership between jurisdictions intact.

The urban growth boundaries proposed by local officials and staff from their own jurisdictions are depicted on the Future Land Use Map on the following page. Areas that implement and have zoning authority will need to work cooperatively with neighboring jurisdictions to uphold the goals and strategies of the Comprehensive Plan and urban growth boundary concepts. Areas located outside of the urban growth boundaries that do not have zoning authority will fall under the jurisdiction of Carlton County zoning ordinances. This will mean that the cities involved will need to work cooperatively with the Carlton County Planning and Zoning Office.

Insert Land Use Map

PUBLIC OPINION SURVEY RESULTS

There were several questions related to the topic of land use on the public opinion survey for this project. They covered topics such as land use controls, agricultural preservation, and opinions concerning the placement of restrictions on items such as billboards, timber harvest, and scenic views.

Overall, the majority of people surveyed, (41 percent) felt that the current land use controls in the County were just right. About one-third (31 percent) felt that controls were too restrictive. On the other hand, some (10 percent) felt that the current land use controls were not restrictive enough. Opinions of land use controls were further broken down by community, as depicted in below

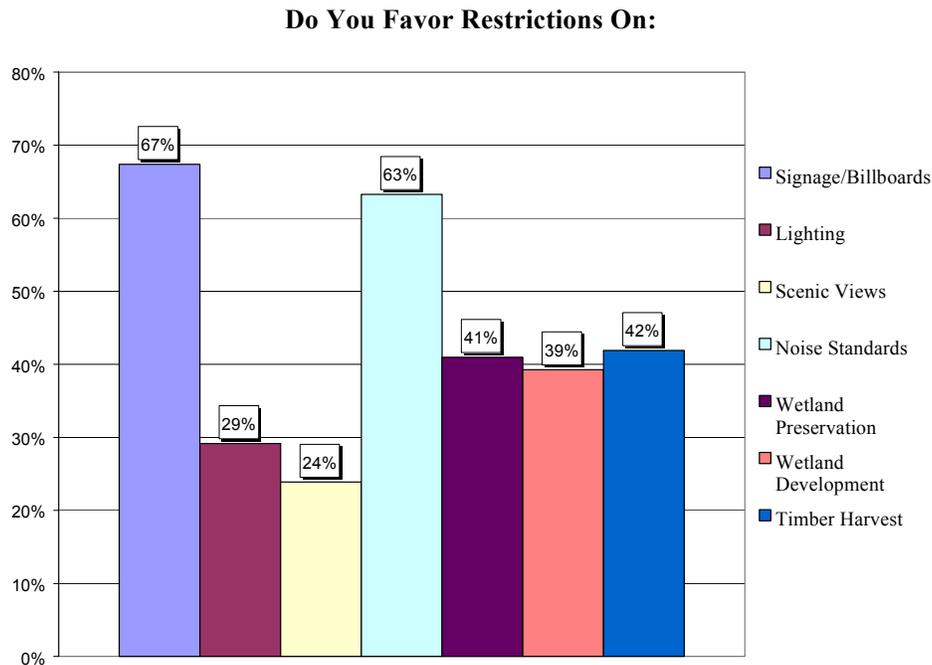
Figure 66: Opinion of Land Use Controls and Property Location

	Too Restrictive	Not Restrictive Enough	Just Right
Atkinson Twp	60%	4%	28%
Automba Twp	80%	10%	0%
Barnum	43%	21%	28%
Barnum Twp	49%	8%	32%
Beseman Twp	56%	0%	44%
Blackhoof Twp	30%	16%	43%
Carlton	22%	5%	6%
Cloquet	27%	11%	42%
Clear Creek Unorg	80%	0%	20%
Cromwell	48%	15%	19%
Eagle Twp	40%	5%	49%
Holyoke Twp	29%	14%	43%
Kalevala Twp	29%	0%	43%
Kettle River	27%	15%	38%
Lakeview Twp	60%	13%	20%
Mahtowa Twp	41%	7%	41%
Moose Lake	35%	7%	34%
Moose Lake Twp	32%	10%	46%
North Carlton Unorg	75%	0%	25%
Perch Lake Twp	62%	2%	21%
Silver Brook Twp	46%	3%	43%
Scanlon	18%	20%	43%
Silver Twp	56%	6%	25%
Skelton Twp	39%	12%	50%
Split Rock Twp	33%	0%	50%
Thomson	12%	10%	58%
Thomson Twp	22%	10%	53%
Twin Lakes Twp	32%	14%	43%
Wrenshall	33%	3%	53%
Wright	50%	5%	27%
Wrenshall Twp	31%	8%	50%

Note: Not all rows add up to 100 percent. Source: Carlton County Public Opinion Survey, April 1999

The survey also asked if people favored restrictions on signage and billboards, lighting, scenic views, noise standards, wetland preservation, wetland development, and timber harvest. Figure 67 shows the percentage of respondents favoring such restrictions.

Figure 67: Positive Replies



The majority (67 percent) of respondents favored restrictions on signage and billboards and noise standards. Restrictions on environmental issues rated a little lower (63 percent). There were Forty-one (41) percent of respondents who favored restrictions on wetland preservation and 39 percent who favored restrictions on wetland development. Also, 42 percent of respondents favored restrictions on timber harvest.

Agricultural preservation was another topic addressed by the survey. The vast majority, (74 percent) of respondents felt that preserving agricultural land in Carlton County should be a priority. Figure 68 shows the percentage of yes and no responses to the question of preserving agricultural land broken down by location.

Figure 68: County Opinion on Agricultural Preservation

Agricultural Preservation	Yes	No
Atkinson Twp	76%	16%
Automba Twp	60%	30%
Barnum	76%	15%
Barnum Twp	62%	32%
Beseman Twp	56%	11%
Blackhoof Twp	70%	20%
Carlton	57%	25%
Cloquet	56%	26%
Clear Creek Unorg.	80%	20%
Cromwell	78%	7%
Eagle Twp	51%	26%
Holyoke Twp	86%	7%
Kalevala Twp	64%	7%
Kettle River	74%	9%
Lakeview Twp	73%	13%
Mahtowa Twp	79%	12%
Moose Lake	66%	17%
Moose Lake Twp	65%	24%
North Carlton Unorg.	75%	0%
Perch Lake Twp	71%	21%
Silver Brook Twp	69%	14%
Scanlon	61%	27%
Silver Twp	69%	31%
Skelton Twp	73%	23%
Split Rock Twp	67%	33%
Thomson	62%	20%
Thomson Twp	61%	24%
Twin Lakes Twp	64%	24%
Wrenshall	70%	23%
Wright	64%	14%
Wrenshall Twp	58%	27%

FUTURE LAND USE IN CARLTON COUNTY

Future land use in Carlton County depends on, past trends in development, future breakthroughs in technology, and other factors, all of which will influence where and to what extent development will occur in the County. The Future Land Use Map attempts to depict where anticipated land use and development will occur in the County in the next 20 years. The formulation of this map was based on information, such as background data, citizen input, and Joint Powers Board discussions, gathered throughout the comprehensive planning process. The map also reflects the goals and strategies that were developed during the planning process. This map will serve primarily as a general guide for future land use in the County. The goals and strategies outlined in the Comprehensive Plan are intended as a framework, guiding future land use decision making in the County.

The map shows that most development is anticipated to occur in the northeastern part of the County and along Interstate 35. This growth will primarily be residential, with commercial development occurring directly adjacent to highway corridors. Economic development could begin to occur in the western part of the County with improvements to the highway systems and the establishment of an economic development commission to help attract businesses to the area. This type of development should occur in or immediately adjacent to the cities of Cromwell, Kettle River, and Wright. In general, most commercial and industrial development will remain along the Interstate 35 corridor, with some development of this type along Highway 73. If economic development does occur in the western part of the County, increased residential development may follow in areas near the new employment centers. This will create demand for public facilities and infrastructure. Capital improvement plans should be developed for all areas of the County that anticipate growth and an increased demand for public facilities and infrastructure. Individual city and township strategic planning could be a valuable tool to deal with increased development pressure.

Residential development will continue to occur in the rural areas throughout Carlton County. Joint Powers Board discussions and citizen input did not reflect a clear consensus of how large the minimum lot sizes should be in rural areas. Most townships in the western part of the County indicated that they would like to see the A-2 zoning districts increased from the current minimum of 2.5 acres to a minimum of 5 acres. Other townships indicated that 10, 20 or even 40 acres would be more suitable in order to maintain the rural character of the County. The overall consensus was that maintaining the rural character of the County was most important. The existing residential zoning districts in the rural areas of the County are already mostly developed with single family homes. These areas are primarily lakeshore properties. However, residential development continues to occur in rural non-lakeshore areas, sometimes requiring rezoning or variance hearings for smaller lot sizes.

The natural areas of the County are also viewed as important. Joint Powers Board discussions reflected a need to increase minimum lot sizes along important river corridors, such as the Kettle and Nemadji Rivers, in order to prevent harm to the watershed and preserve the natural beauty of the watershed. Zoning districts along important rivers should require a minimum lot size of 20 acres to maintain low densities. Other areas, such as those considered environmentally sensitive or those that need to be managed for a particular use, should be considered carefully when a rezoning request is made for an adjacent parcel of land. Factors surrounding the rezoning request, which may influence the environmentally sensitive area, should be considered before granting the request.

The projected locations of the urban growth boundaries shown on the future land use map are based upon current conditions and past trends in the County. A workshop was held to determine where growth was likely to occur and which jurisdictions would need to work cooperatively toward the establishment of these boundaries. Representatives from jurisdictions that are expected to out grow the confines of their current city limit boundaries participated in the workshop. The concept of urban growth boundaries includes focusing residential, commercial, and industrial development, within an established boundary, and maintaining open space and rural character outside of the boundary. Areas of the County without designated urban growth boundaries should focus their development needs within their current city limit boundaries, in order to utilize existing infrastructure and help make development more cost effective. The projections are speculative in nature and do not fully reflect major changes that may occur in the area, such as new technology or a major employer moving in. These types of development pressures can be dealt with through the County's goals and strategies that were developed during the comprehensive planning process.

Because of the changing environment that exists in Carlton County, the Future Land Use Map should be examined periodically and revised to suit the needs of the County. The map should be maintained so that it remains useful to the County as a tool in the planning and implementation processes.

Land Use Goals and Strategies

Land Use/ Natural Resources

Goal: Promote land and water uses that result in sustainable use of natural resources, in order to enhance the natural beauty of the County for this and future generations.

Objective: Balance development and environmental conservation through private land stewardship while minimizing the need for government regulation.

Strategy 1: Encourage County coordination with other governmental entities, joint powers boards, industries, organizations, and citizen's groups regarding the determination of appropriate land uses and developments within the County.

Action Steps:

- Establish an oversight committee comprised of the County Planning Commission and a Citizen's Advisory Committee to review and comment on proposed state and federal regulations effecting natural resources within the County.

Strategy 2: Support the identification of threats to environmentally sensitive areas, including those areas identified by the State of Minnesota County Biological Survey and monitor such efforts in light of County interests and awareness of private property rights and responsibilities.

Strategy 3: Review and monitor state generated or mandated tools to preserve open space, and limit development and land uses that can have adverse effects on environmentally sensitive lands, and encourage voluntary private initiatives regarding such tools as a preference over a regulatory approach.

Strategy 4: Support and encourage private conservation and protection efforts concerning natural resources before resorting to governmental or other regulatory approaches. Regulatory approaches should be considered only when private methods are found to be ineffective or ignored.

Strategy 5: Work with other public agencies to provide information about the various programs, regulations, and funding sources available to individual property owners and communities within the County.

Strategy 6: Include timing and sequencing parameters in efforts to implement the Plan.

Water Resources

Goal: Maintain high water quality in Carlton County's lakes, wetlands, and waterways.

Objective 1: Develop and coordinate planning and mitigation efforts for watersheds within the County.

- Strategy 1: Use historical baseline data about the quality of lakes and rivers to make recommendations, monitor trends, and provide information to guide future plans.
- Strategy 2: Continue to encourage the development of individual lake (watershed) plans to provide detail and direction for managing these systems in cooperation with local Lake Associations.
- Strategy 3: Continue the cooperative efforts between the Soil and Water Conservation District (SWCD) and Department of Natural Resources (DNR) to identify, maintain, and/or enhance water quality.
- Strategy 4: Support sustainable management of publicly owned shoreland and identify key publicly owned parcels for environmental protection.

Objective 2: Promote the protection and enhancement of water resources.

- Strategy 1: Develop standards for variances and conditional use permits.

Action Step:

- Update existing ordinances in accordance with local water resources plans.

- Strategy 2: Continue to support the Nemadji and St. Louis River Management Plans and use as models for other river management plans. Work closely with the DNR.

- Strategy 3: Develop and adopt management plans for other important rivers and drainages, such as the Sandy Lake Watershed, Kettle River, Moose Horn River, and Tamarack River.

- Strategy 4: Encourage private stewardship activities to protect and restore natural aquatic and shoreland vegetation.

Action Steps:

- Provide information to landowners on techniques to protect buffer areas along waterways.
- Encourage the use of natural methods and native vegetation to stabilize shoreline.

- Encourage and support the County's Master Gardener Program in their efforts to promote water quality, such as the Lakescaping Program.

Strategy 5: Preserve and enhance viewsheds along waterways in the County.

Action Step:

- Create and distribute materials that educate lakeshore owners on methods for screening buildings from the lakeshore and ways to reduce the visual impact of docks and other shoreline structures.

Strategy 6: Continue to inform the public on methods for minimizing the impact of residential and agricultural practices on the quality of lakes, rivers, streams, and wetlands.

Strategy 7: Support improvement of degraded water quality.

Objective 3: Recognize and promote wellhead/watershed protection efforts.

Strategy 1: Support public water supplier's efforts to develop wellhead protection plans. (refer to strategies under Public Facilities)

Strategy 2: Provide education to the public about on-site sewage treatment regulations and the use of alternative systems.

Strategy 3: Enforce on-site sewage treatment requirements and update as needed, in accordance with the county's Water Management Plan.

Action Steps:

- Identify areas of high groundwater sensitivity and areas where septic system failure is likely to occur.
- Monitor those areas closely and use mitigation efforts as necessary.

Strategy 4: Provide technical assistance and information about low interest loan programs that assist landowners to upgrade their systems.

Strategy 5: Evaluate the feasibility of providing sewer services to fully developed lakeshore areas with significant septic failure rates and explore funding possibilities for this purpose.

Wildlife

Goal: Protect the native wildlife, plants and their communities found in Carlton County.

Objective 1: Manage wildlife areas and species for their intrinsic values and long-term benefits toward people and wildlife.

Strategy 1: Cooperate with other agencies and private forest industry in developing wildlife management plans and implementation of those plans.

Strategy 2: Coordinate strategies from existing plans in order to identify clear wildlife objectives for the County.

Action Step:

- Review existing plans such as the Nemadji River Plan, St. Louis River Plan, and Moose Lake Area Forest Plan.

Strategy 3: Coordinate efforts with the DNR and other agencies for consistent management of County land.

Strategy 4: Coordinate with DNR to control nuisance wildlife including, but not limited to, beavers, deer, bear, geese, wolves and raccoons.

Action Step:

- Provide information to the public about nuisance wildlife control measures and DNR contacts who provide assistance.

Objective 2: Maintain aquatic ecosystems capable of supporting healthy populations of native fish species that exist in the natural waters of the County.

Strategy 1: Protect and enhance trout streams by working to reduce sediment loads and maintaining water quality.

Action Steps:

- Remove beaver and beaver dams on county property.
- Depress road and trail culverts 12 inches into the bed of trout streams.
- Control the number of ATV, livestock and other crossings.
- Encourage the installation of crossing devices in the streambed.

Strategy 2: Control streambed erosion by encouraging landowners to leave a maximum of 40 percent open land use space within sub-watersheds.

Forest Resources

Goal: Manage forests sustainably to provide for multiple uses across the County.

Objective 1: Encourage the sustainable management of forest land to protect timber resources and encourage long-term viability of forest-products industries.

Strategy 1: Consider the feasibility of certifying County-managed forest under a sustainable management certification process.

Action Step:

- Determine level of interest in the Certified Green Forests Program and encourage certification of all County forest lands.

Strategy 2: Continue to practice viewshed protection along roads and other visible timber harvest areas in the County.

Action Steps:

- Use the State's Visual Quality Best Management Practices for Forest Management in Minnesota as a guideline for viewshed issues.
- Maintain and restore natural corridors, such as rivers, trails, roads, and contiguous habitat.
- Participate in DNR's Forest Subsection Planning efforts within the county.

Strategy 3: Use the Carlton County Forest Plan to guide forest management decisions.

Strategy 4: Update the Carlton County Forest Plan as necessary.

Strategy 5: Coordinate with the DNR on land exchanges that will benefit the County and the State.

Objective 2: Encourage forest management among all landowners, both public and private.

Strategy 1: Support coordinated forest development with public and private landowners, such that large tracts of land can be preserved for timber supply, wildlife habitat, recreation, and/or other multiple uses.

Action Steps:

- Support cooperative forest management plans with forest management agencies that address timber harvest, forest road development, and desired future cover-type composition.
- Work with DNR and other agencies to encourage forest development on private property.
- Make landowners aware of Best Management Practices and available incentive programs.

Strategy 2: Encourage private landowners to participate in the Forest Resources Council's Voluntary Management Guidelines and use County tax incentives to encourage participation when feasible.

Strategy 3: Encourage select-cut timber harvest practices in order to preserve valued forest cover-types, such as hardwoods, pine, and old growth.

Strategy 4: Support a County tax incentive program to encourage forest management.

Mineral Resources

Goal: Maintain options for future mining activities in areas of high minerals potential.**Objective: Encourage mining operations, which use sustainable methods of extraction and consider environmental protection/mitigation.**

- Strategy 1: Evaluate the State's existing environmental guidelines for mining operations and incorporate into the County's ordinance as necessary.
- Strategy 2: Evaluate the State's guidelines for visual screening and mitigation methods to reduce visual, dust, traffic, and other impacts of gravel mining operations and incorporate into ordinance as necessary.
- Strategy 3: Work with local agencies to inform the public of mining rights and regulations.
- Strategy 4: Develop guidelines for restoration when mining operations, including gravel, are complete. Guidelines should be in accordance with County ordinances and state law.

Recreation**Goal: Provide recreation facilities to meet public needs while maintaining user safety and protecting the environment.****Objective: Provide citizens with recreational and educational opportunities, which emphasize natural, cultural and historic resources.**

- Strategy 1: Work cooperatively with other organizations to develop an integrated green space and recreation system within Carlton County.
- Action Steps:
- Identify recreational needs for developed and undeveloped activities.
 - Update the Comprehensive Recreation Plan in cooperation with all County recreation providers.
 - Develop a new recreational facilities needs list.
 - Identify and seek funding for new and existing recreational facilities and needs.
- Strategy 2: Continue to maintain and improve the County's park and green spaces.
- Strategy 3: Develop standards for the use of trails in order to prevent conflicts from various uses.
- Strategy 4: Incorporate bicycle routes into roadway improvement projects to encourage tourist and recreational use.

- Strategy 5: Encourage new subdivisions and private recreation developments to connect to existing trails.
- Strategy 6: Plan cooperatively for the use of Off-Highway Vehicles.
- Strategy 7: Plan cooperatively for the grooming of snowmobile trails.

Agriculture

Goal: Encourage agriculture as a viable part of a diverse economy, and maintain rural settlement characteristics of agricultural areas.

- Strategy 1: Work with county organizations to provide information to farmers on methods for minimizing the impact of agricultural practices on the quality of water resources.
- Strategy 2: Develop and adopt a county-wide policy on the location and design of animal feedlots that minimizes the impact of feedlots on neighboring land uses and protects natural resources.
- Strategy 3: Direct non-farm residential development away from agricultural areas by promoting zoning to support agricultural uses, such large minimum lot sizes and cluster development techniques.
- Strategy 4: Create taxing structures that encourage ongoing agricultural land uses, while retaining the net positive tax benefit of agriculture.
- Strategy 5: Encourage conversion of marginally productive agricultural land to forestry or other beneficial uses.

Action Step:

- Use performance criteria (soils, slopes, native vegetation) and local farmers' input to distinguish between productive agricultural land and marginal land.
- Strategy 6: Incorporate planning and official control elements found in Minnesota Statute 40 A.05

Sustainable Development

Goal: Encourage a variety of land use types within the County, which enhance the quality of life and environment of the area, and facilitate cost effective and efficient provision of public services.

Objective 1: Maintain the County's natural environment, while encouraging diversified development that maximizes the use of existing infrastructure.

Strategy 1: Encourage residential development that is contiguous with existing residential development and can be effectively and efficiently provided with public services.

Action Steps:

- Establish density guidelines/standards, which are consistent with sewer and water availability, the transportation network, and locations of employment.
- Encourage more compact development, such as clusters or mixed-use development concepts.
- Update the zoning ordinance as needed to reflect these concepts.

Strategy 2: Utilize existing sources and create additional sources of funding to compliment revitalization efforts in the County.

Strategy 3: Maintain the rural character of areas outside of the urban growth boundary and municipal city limit boundaries.

Action Step:

- Update zoning and subdivision ordinances to maintain rural development patterns consist with the Comprehensive Plan.

Objective 2: Encourage all commercial and industrial businesses to be well designed and adequately maintained.

Strategy 1: Develop zoning standards that improve the design and appearance of commercial and industrial areas.

Strategy 2: Encourage the planned development of commercial and industrial in areas with high visibility and good access from regional roadways.

Action Steps:

- Promote cluster, rather than strip, commercial development.
- Encourage the development of commercial and industrial areas on sites accessible to public utility systems.
- Focus new industries in those areas depicted for such growth on the Future Land Use Map.

Plan Implementation

Planning is an ongoing process because Carlton County will continue to change in the years to come. The adoption of this Plan establishes a direction for policy making in the County. The Goals and Strategies developed by the Joint Powers Board establish a framework to help guide the County Board in decision-making. The implementation and continued update of this Plan is an important aspect of the ongoing planning process. Without implementation and regular updating, the accomplishments achieved in developing this Plan will have little lasting impact.

The implementation of this Plan may occur at two levels. Each local unit of government in the County has a role in updating their local plans, ordinances, and other documents to carry forth the vision and recommendations of this Plan. The County, upon adoption of this Plan, also has an obligation to update and examine its plans, zoning ordinance, and other documents to ensure that they are consistent with the Plan. This Plan will serve as a framework for Countywide discussions on many issues that affect planning in Carlton County. The goals and strategies developed by the Joint Powers Board and adopted as part of the Comprehensive Plan by the Carlton County Board should serve as the primary basis for updating other plans and making decisions about the future of the County.

This chapter describes the ways in which local units of government can carry out this Plan. It includes a description of possible financial and technical tools, as well as specific strategies, that may be used to ensure the Plan's viability. These descriptions and tools include the following:

- Local governments within the County should review and revise their Comprehensive and other Plans as necessary to remain consistent with the County Plan's goals and strategies.
- Local governments should review and revise their regulatory measures, such as zoning ordinances and subdivision regulations, which enforce this Plan's goals and strategies.
- Communities should use project scheduling tools, such as capital improvements planning, to implement the infrastructure facilities identified in this Plan.
- Cities should work with adjacent townships to eventually annex those areas identified within the Urban Growth Boundary that have a need for municipal services. Jurisdictions that did not establish an Urban Growth Boundary should monitor their growth and identify a process, if need arises, to establish an UGB.
- City, township and County officials must ensure that local stakeholders continue to be involved in the planning and decision-making process.
- A forum for an ongoing planning dialogue among jurisdictions in the County needs to be established.
- The Carlton County Economic Development Advisory Committee should be utilized to address economic needs within the County.

- The plan itself should be monitored and reviewed to ensure that updates are undertaken as needed to reflect local aspirations and changing opportunities.
- Communities within the County should take advantage of various financial and technical assistance tools and programs available to them through various County and state agencies.

The following items describe, in more detail, steps that can be taken to implement the goals and strategies developed in the planning process:

LOCAL PLANS

The Comprehensive Plan is the primary planning document for a community. This is the plan upon which all planning-related regulatory controls, such as zoning ordinance and subdivision regulations, should be based. The legal requirements of a comprehensive plan are contained in the State's enabling legislation.

The Comprehensive Plans include both a text and maps, that set forth goals, strategies, and future land uses for a community. The text may also include background research on such things as housing, public facilities, transportation, economic development, natural resources, and other issues related to the community. The land use maps include existing roadways, residential, commercial and industrial development, and open areas, such as forests and wetlands. The future land use map shows where development is likely to occur and indicates where infrastructure will be needed in the future. Local officials should use these maps to assist in the decision making process. In addition to the Comprehensive Plan, communities often have housing, sewer, transportation, redevelopment, economic development, and other plans.

Jurisdictions within the County should examine their Comprehensive Plans, as well as other relevant plans, to ensure consistency with the Carlton County Comprehensive Plan. If a community does not have a comprehensive or other type of plan, it may want to consider undertaking a planning process of its own, especially if it is experiencing growth or development.

ZONING AND SUBDIVISION ORDINANCE

Zoning is the primary regulatory tool used by local governments to implement planning policies. It consists of the zoning map and supporting ordinance text. The zoning map divides the community into zoning districts. The text describes regulations for the use of the land within those districts including the uses that are permitted, lot sizes, setbacks, and density standards. It can also include design controls and controls on the maintenance and upkeep of property. The County and other local units of government with zoning authority within the County should compare their zoning maps and ordinances with the adopted goals and strategies included in this Plan in order to identify and reconcile areas of discrepancy.

Density guidelines and standards for areas outside the Urban Growth Boundaries are primarily the County's responsibility. These density guidelines and controls should reflect the growth management recommendations of this plan. Within the Urban Growth Boundaries, cities and townships with zoning authority should work together to maintain the density guidelines set forth in the Comprehensive Plan.

Subdivision regulations are another regulatory tool that may be utilized for the implementation of this Plan. The subdivision ordinance regulates the development of land and the provision of public infrastructure within communities. Properly enforced subdivision regulations, coupled with zoning, can help ensure that the proper physical development and the provision of adequate public infrastructure are available to areas of growth. Standards for easements and right-of-ways, street improvements, lot setbacks and layouts, and utility infrastructure are normally prescribed through subdivision regulations. They can also ensure that the costs of public improvements within growth areas are assessed to the developer and new residents, rather than paid for by the established community. Each community's subdivision regulations should be reviewed against the recommendations of this Plan and revised where necessary.

CAPITAL IMPROVEMENT PROGRAMS

A Capital Improvement Program (CIP), which establishes schedules and priorities for capital improvements, can be used as a tool for the implementation of this Plan. Communities should prepare a list of all public improvements that will be necessary in the next five years, including transportation and community facilities projects. The next step in the process should be to review and prioritize all projects on the list. Cost estimates are then prepared and potential funding sources are identified. The community should determine which projects can be financed through annual tax receipts which will require public borrowing, and which may be eligible for outside sources of assistance.

A community's financial resources are limited and therefore competition exists for funding among the various projects. The CIP allows a community to provide the most critical public improvements while staying within budgetary constraints. Some recommendations of this plan can be accomplished using a CIP. Communities within the County should consider the capital improvements recommended in this Plan in their local CIP's where appropriate, particularly with regard to urban services to areas experiencing growth.

ANNEXATION

Certain parts of the County are more likely to experience rapid growth in the future than other areas. These areas have identified Urban Growth Boundaries to accommodate growth. It is important that future land uses and the efficient provision of adequate streets, infrastructure, and services be planned for these areas. Without proper planning, unorganized growth could occur bringing with it problems that may prove costly to alleviate.

Every reasonable effort should be made to annex land within the identified growth areas in a planned, orderly, and contiguous manner. These areas should be carefully planned to ensure the creation of a rational street system and efficient densities while preserving and protecting environmentally sensitive areas.

Cities should work with their surrounding townships to ensure that growth that does occur in these areas is compatible with the recommendations of plans. Cities also must work closely with their surrounding townships as well as the County to ensure that, when appropriate, they are annexed into the city and provided with urban services.

CITIZEN INVOLVEMENT

This Plan was developed with the involvement of the citizens of Carlton County. Citizen involvement should continue during the implementation of the Plan as well as during the updating of the Plan. This plan will affect everyone in the County and, therefore, everyone should have an opportunity to contribute to future planning decisions. The implementation process, which includes updating the zoning and subdivision ordinances within the County, should allow for citizen input and review. This may require additional effort to disseminate information to the public through a variety of means, including newspapers advertisements and notices to all city councils, township boards, and other County organizations.

ONGOING, SHARED PLANNING

A Joint Powers Board was established to carry out the planning process. This has provided representation from all areas of the County and has resulted in the material and recommendations found in this plan. An ongoing forum should be established to continue discussions and maintain the relationships that have been delivered. The Joint Powers Board should consider remaining as an advisory committee to the Carlton County Board for planning issues within the County. Monthly meetings may not be necessary, but bi-annual meetings might continue to facilitate the citizen input and intergovernmental cooperation that was established through the Community-Based Planning process.

ECONOMIC NEEDS

An entity needs to be established to address economic needs within the County. This could be an expansion of the Carlton County Economic Development Advisory Committee's Mission or a whole separate entity. During the planning process, considerable interest was expressed in favor of promoting economic development in the western portion of the County. An economic entity such as an Economic Development Commission representing the western townships could organize this effort.

REVIEW AND REVISION

Planning is a continuous process and therefore this Plan should be monitored and updated as necessary. When a plan is not working as a guide to decision-making in the County, it is time to go through the planning process again. The County should analyze the parts of the plan that need to be updated or revised, if not the whole plan. In general, the plan should be reviewed every five years to make sure that it is still relevant to the County. Proposed changes and their implications should be carefully examined and citizen input should be considered during the revision of the plan. If changes are found to be appropriate, they should be formally added to the plan by amendment.

TECHNICAL AND FINANCIAL TOOLS

Carlton County and the communities within the County should seek out sources of funding and technical assistance needed to carry out the recommendations of this plan. These could come from a number of State or Federal sources.

There are a wide variety of resources, both technical and financial, available for implementation assistance. The state agencies involved with the Community-Based Planning Pilot Projects are a good resource for information on the availability of programs and funding. The following is a list of contact information for the various agencies involved in the planning process.

Minnesota Department of Agriculture
Bob Patton or Becky Balk
90 West Plato Blvd.
St. Paul, MN 55107
(651) 296-5226 (651) 215-0369
bob.patton@state.mn.us;
becky.balk@state.mn.us

Minnesota Office of Environmental
Assistance
Monte Hilleman or Tim Nolan
520 Lafayette Road, N., Second Floor
St. Paul, MN 55155-4100
(651) 215-0264 (651) 221-5025
monte.hilleman@moea.state.mn.us;
tim.nolan@moea.state.mn.us

Minnesota Department of Natural Resources
Jim Weseloh
Region 2
1201 East Highway 2
Grand Rapids, MN 55744
(218) 327-4263
jim.weseloh@dnr.state.mn.us

Minnesota Department of Health
Beth Kluthe
NW District Office
1819 Bemidji Avenue
Bemidji, MN 56601
(218) 755-3823
beth.kluthe@health.state.mn.us

Minnesota Board of Water and Soil
Resources
Mark Nelson
394 South Lake Avenue
Duluth, MN 55802
(218) 723-4923
mark.nelson@bwsr.state.mn.us

Minnesota Department of Trade and
Economic Development
Martin English
Public Facilities Authority
500 Metro Square
121 East 7th Place
St. Paul, MN 55101-2146
(651) 297-1981
martin.english@dted.state.mn.us

Minnesota Department of Transportation
Dennis Johnson
Metro District One
1123 Mesaba Avenue
Duluth, MN 55811
(218) 723-4960
dennis.johnson@dot.state.mn.us

Chris Eng
Small Cities Development Program
500 Metro Square
121 East 7th Place
St. Paul, MN 55101-2146
(651) 297-3113
chris.eng@dted.state.mn.us

Minnesota Pollution Control Agency
Brian Fredrickson
Northeast Region
Duluth Government Services Bldg.
Rm. 204
320 West 2nd Street
Duluth, MN 55802
(218) 723-4665
brian.fredrickson@pca.state.mn.us

Henry Fisher
525 South Lake Avenue
Duluth, MN 55802
(218) 723-4660
cass.esd@state.mn.us

Carlton County COMMUNITY ATTITUDES SURVEY:

I. Demographic Information

1. How long have you lived in Carlton County?

- 1-5 years _____
- 6-10 _____
- 11-15 _____
- 16-20 _____
- 21-30 _____
- 31-40 _____
- 41-50 _____
- 50+ _____

2. Please indicate the total number of persons in your household, by the following age groups.

- 0 - 5 yrs. old _____
- 6 - 10 yrs. old _____
- 11 - 18 yrs. old _____
- 19 - 25 yrs. old _____
- 26 - 35 yrs. old _____
- 36 - 45 yrs. old _____
- 46 - 55 yrs. old _____
- 56 - 65 yrs. old _____
- 66 + yrs. old _____

Total number of persons in household _____

3. Indicate the city, town or township in Carlton County in which your property is located.

- Barnum _____
- Carlton _____
- Cloquet _____
- Cromwell _____
- Kettle River _____
- Moose Lake _____
- Scanlon _____
- Thomson _____
- Wrenshall _____
- Wright _____
- Atkinson TWP _____
- Automba TWP _____
- Barnum TWP _____
- Beseman TWP _____
- Blackhoof TWP _____
- Clear Lake _____
- Unorganized _____

4. How many months do you live in Carlton County each year (in your primary residence)?

- 1 - 3 _____
- 3 - 6 _____
- 6 - 9 _____
- 9 - 11 _____
- Year Round _____

5. If not a year round resident, where do you spend the remainder of the year?

- Other Northeastern Minnesota _____
- Twin Cities Metro _____
- Other Minnesota _____
- Out of State (please specify ZIP CODE) _____

6. What is the approximate annual personal income for each wage earner?

- | | | |
|--------------------|---------|-----------|
| | Primary | Secondary |
| Less than \$15,000 | _____ | _____ |
| 15,001 - 25,000 | _____ | _____ |
| 25,001 - 35,000 | _____ | _____ |
| 35,001 - 45,000 | _____ | _____ |
| 45,001 - 55,000 | _____ | _____ |
| 55,001 - 75,000 | _____ | _____ |
| Over \$75,000 | _____ | _____ |

7. What is the Employment status for each wage earner?

- | | | |
|----------------------------|---------|-----------|
| | Primary | Secondary |
| Full-time only | _____ | _____ |
| Full-time plus part-time | _____ | _____ |
| Part-time only | _____ | _____ |
| Multiple part-time | _____ | _____ |
| Full-time farming only | _____ | _____ |
| Full-time farm + part-time | _____ | _____ |
| Part-time farm + part-time | _____ | _____ |
| Part-time farm + full-time | _____ | _____ |
| Retired | _____ | _____ |
| Self-employed | _____ | _____ |
| Student | _____ | _____ |
| Unemployed | _____ | _____ |

8. In what type of housing do you live?

- Single family home _____
- Duplex _____
- Townhome/Condo _____
- Senior Facility _____
- Apartment _____
- Mobile home _____
- Other: _____

9. Indicate city, village or township where your place of work is located for each worker/wage earner?

- | | | |
|-----------------------|---------|-----------|
| | Primary | Secondary |
| Cloquet | _____ | _____ |
| Carlton | _____ | _____ |
| Moose Lake | _____ | _____ |
| Rural Carlton County | _____ | _____ |
| Duluth | _____ | _____ |
| Suburban St. Louis Co | _____ | _____ |
| Two Harbors | _____ | _____ |
| Aitkin County | _____ | _____ |
| Pine County | _____ | _____ |
| Range Cities | _____ | _____ |
| Twin Cities | _____ | _____ |
| Other (specify) _____ | _____ | _____ |
| Retired | _____ | _____ |

II. Types of Development

10. Do you think more housing may be needed in your community?

- Yes _____
- No _____

11. If you answered yes to question 10, what type of housing do you feel might be needed in the future? (multiple answers possible)

- Single Family Homes _____
- Duplex _____
- Townhouses/Condo _____
- Small Apt. Building _____
- Large/Med. Sized apt _____
- Mobile Homes _____
- Senior Assisted Living _____
- Senior Patio Homes _____
- Nursing Homes _____
- Affordable Housing _____
- Other: _____

12. What do you feel is the major housing need in Carlton County? (multiple answers possible)

- New construction _____
- Rehabilitation of existing homes _____
- Demolition of dilapidated homes _____
- Other: _____

13. What is the smallest lot size suitable for a single family home that you feel is reasonable in Carlton County for areas not served by public water and sewer?

- 1 acre _____
- 5 acres _____
- 20 acres _____
- 2-1/2 acres _____
- 10 acres _____
- 40 acres _____

III. Commercial - Industrial

14. Are you in favor of expanding / developing additional areas for commercial/industrial use? *(multiple answers possible)*

Limit new development to existing communities and corridors _____
 Develop additional commercial areas _____
 Against any expansion / development _____

15. Do you feel there is a need for more:

- | | |
|---------------------------------------|-------|
| Yes | No |
| _____ | _____ |
| Small Businesses | _____ |
| Home-Based Businesses | _____ |
| Retail/Commercial Establishments | _____ |
| Industrial developments | _____ |
| Agricultural Activity | _____ |
| Non-Traditional Agricultural Activity | _____ |
| Recreational Facilities | _____ |
| Eating Establishments | _____ |
| Lodging | _____ |
| State Parks | _____ |
| Access to Recreation Areas | _____ |
| None of the Above | _____ |
| Other: | _____ |

16. If growth is encouraged, which of the following do you think would most help in bringing about growth? *(multiple answers possible)*

- Adequate water and sewer service _____
- Improved highways _____
- Improved public Transit _____
- Business Incentives _____
- Promotion of the Area _____
- Public Schools _____
- Other: _____
- Growth should not be encouraged _____

17. Do you feel more development should be encouraged in rural areas?

- Yes _____
- No _____

If Yes, what type of development do you feel should be encouraged?

- Residential _____
- Industrial _____
- Other _____
- Commercial _____
- Recreational _____

V. Public Services/Utilities

18. Do you currently have: *(check all that apply)*

- Public Water _____
- Public Sewer _____
- Cable TV _____
- Local Internet Access _____
- Public electric Power _____
- Septic System _____
- Well Water _____
- Natural Gas _____
- Satellite TV _____
- Telephone Service _____

19. Which of the following services would you like?

- Public Water _____
- Cable TV _____
- Local Internet Access _____
- Public Electric Power _____
- Public Sewer _____
- Natural Gas _____
- Satellite TV _____
- Telephone Service _____

20. Do you feel that current health and social services are adequate? If not what areas need to be improved or expanded?

- Child Daycare _____
- Better medical Facilities _____
- Additional medical Facilities _____
- Expanded Social Services _____
- Programs for Seniors _____
- Senior Nutrition Programs _____
- No Changes Needed _____

21. Please rate the school systems in the County.

- Excellent _____
- Fair _____
- Substandard _____

Please identify your school district. _____

22. What improvements could be made to the local school districts?

- Improvements to curriculum _____
- More exposure to technology _____
- Lower Student to Teacher Ratio _____
- After school activities _____
- Improved Facilities _____
- Athletics _____
- No improvements needed _____

V. Transportation

23. Do you feel that the transportation system/roads in your community are adequate today?

- Yes _____
- No _____

24. If the road network is inadequate, what is needed? *(multiple answers possible)*

- More roads _____
- Better road surfaces _____
- Wider roads _____
- Better maintenance _____
- Other _____

25. Which major roads need improvements? _____

26. Do you feel that the public road or street on which you access your Carlton County property is adequate?

- Yes _____
- No _____

If No, please explain: _____

27. Do you currently utilize public transit?

- Yes _____
- No _____

28. If you answered no to question 27, would you utilize public transit if service were expanded?

- Yes _____
- No _____

VI. General Attitudes About the County

29. Increased population within the County is good for the County as a whole.

- Agree _____
- No opinion _____
- Disagree _____

30. Do you feel police/sheriff protection is adequate?

- Yes _____
- No _____

If No, what changes do you feel would be beneficial: _____

31. Do you feel that fire protection is adequate?

Yes _____ No _____

If No, what changes do you feel would be beneficial:

32. Do you feel land use controls are:

Too restrictive _____

Not restrictive enough _____

Just right _____

33. Do you favor restrictions on:

Yes No

Signage/Billboards _____

Lighting _____

Scenic Views _____

Noise standards _____

Wetland Preservation _____

Wetland Development _____

Timber Harvest _____

34. Should agricultural preservation be a priority for Carlton County?

Yes _____ No _____

35. Please indicate the type of recreational opportunities you would like to see developed or expanded in the future.

- Park Areas _____ Golf Course _____
- Baseball / _____ Tennis Courts _____
- Softball Fields _____ Swimming Pool _____
- Ice Skating Rinks _____ Soccer Fields _____
- Bike Trails _____ Hockey Rinks _____
- Walking / _____ Skateboard Park _____
- Hiking Trails _____ Activities for _____
- Snowmobile Trails _____ Seniors _____
- Playground _____ Boat Launch/ _____
- Equipment _____ Water Access _____
- River Canoe _____ Cross-Country _____
- Route _____ Ski Trails _____
- Snowshoe Trails _____
- Hunting / _____
- Fishing Access _____
- Other: _____

36. What is the single most important quality, characteristic and/or aspect of this area?

36. What is the least important quality, characteristic and/or aspect of this area?

37. Please describe your vision of Carlton County 10 years from now.

38. Please list any additional comments you may have about the survey or the Comprehensive Land Use Planning process the County has undertaken.

Thank you for participating in this survey. Your input is very valuable and will be used in guiding decision-making in the County for many years to come.

Carlton County Community Attitudes Survey Results

This survey was distributed to all households of Carlton County totaling 14,160. There were 2,769 surveys returned, which results in a return rate of 19.6%. The survey contained 38 questions broken down into six sections. Questions 36-38 were write-in responses relating to qualities of Carlton County and visions for the future. These responses are not summarized in this report, but will be used to develop goals and strategies for the Community-based Comprehensive Plan.

Section I: Demographic Information

Question 1: How long have you lived in Carlton County?

The results showed that 23% of county residents have lived there for over fifty years. Over half of the residents have lived in Carlton County for more than 20 years. The survey also indicated that there has been an increase in the number of new residents moving into the county in the last 15 years.

Question 2: Please indicate the total number of persons living in your household.

The majority (40%) of households in the county are two person households. 20% are one person; 15%, are three person; 16% are four person; 7% are five person, and 2% are six person households.

Question 3: Indicate the city, town, or township in Carlton County on which your property is located.

Of the 31 cities, towns, or townships in the county, 32% of the responses came from Cloquet. Thomson Twp accounted for 9%. The rest of the areas accounted for between 1% and 7%.

Question 4: How many months do you live in Carlton County each year?

Almost all (98%) of residents live in Carlton County all year long.

Question 5: If not a year round resident, where do you spend the remainder of the year?

Responses varied from Duluth, Pine County, Wisconsin, and several other states.

Question 6: What is the approximate annual personal income for each wage earner?

The survey indicated a fairly even distribution of wage earners across each income level, except households with income levels over \$55,000, where the percentage of households was slightly less.

Less than \$15,000 – 17%
\$15,001 - \$25,000 – 15.5%
\$25,001 – \$35,000 – 16.9%
\$35,001 - \$45,000 – 15.8%
\$45,001 - \$55,000 – 13%
\$55,001 - \$75,000 – 6.9%
Over \$75,000 – 3.5%

Question 7: What is the employment status for each wage earner?

Primary – Over half, 52%, are full-time only workers. There is a large percentage, 32%, of retirees who answered the survey. Self employed, full-time + part-time, and part-time only each account for 4%.

Secondary – 34% are full-time, 25% are part-time, 23% are retired, and self-employed and the unemployed each account for 5% of the responses.

Question 8: In what type of housing do you live?

Most residents (87%) live in a single family home. 5% live in mobile homes, 4% in apartments, and 2% in duplexes (1%) or senior facility (1%).

Question 9: Indicate city, village, or township where your place of work is located for each wage earner?

The survey indicated that many people residing in Carlton County work in Cloquet, Duluth, or are retired.

Primary – Cloquet-28%, Duluth-16%, Carlton and Moose Lake-6%, and retired-25%

Secondary – Cloquet-28%, retired-22%, Duluth-18%, Carlton and Moose Lake-8%, rural Carlton Co.-6%.

Section II: Types of Development

Question 10: Do you think more housing may be needed in your community?

The majority (60%) of survey respondents felt that more housing was needed in their community.

Question 11: If you answered yes to question 10, what type of housing do you feel might be needed in the future? (multiple answers possible)

The survey listed ten housing options to choose from. The responses were divided closely between senior assisted living (28%), affordable housing (26%), single family homes (25%), and apartments (25%).

Question 12: What do you feel is the major housing need in Carlton County? (multiple answers possible)

Rehabilitation of existing homes-45%, new construction-40%, demolition of dilapidated homes-35%.

Question 13: What is the smallest lot size suitable for a single family home that you feel is reasonable in Carlton County for areas not served by public water and sewer?

33% of respondents indicated 5 acres

32% replied 2.5 acres

25% indicated 1 acre

5% stated 10 acres

Section III: Commercial – Industrial

Question 14: Are you in favor of expanding / developing additional areas for commercial / industrial use?

49% were in favor of developing additional areas

36% wanted to limit development to existing communities and corridors

8% were against any development or expansion

Question 15: Do you feel there is a need for more:

The following percentages reflect the positive responses to this question:

Agricultural activity - 34%

Lodging - 27%

Eating establishments - 32%

Non-traditional agriculture - 25%

Home based business - 36%

Recreational Facilities - 45%

Industrial developments - 41%

Small businesses - 66%

Retail/commercial developments - 50%

Access to recreational areas - 32%

State parks - 19%

None of the above - 3%

Question 16: If growth is encouraged, which of the following do you think would be most helpful in bringing about growth? (multiple answers possible)

Improved highways-57%, business incentives-52%, promotion of the area-43%, adequate water and sewer service-42%, public schools-24%, improved public transit-22%, growth shouldn't be encouraged-8%.

Question 17: Should development be encouraged in rural areas?

Over half (54%) of the respondents felt that development should be encouraged in rural areas.

Section IV: Public Services/Utilities

Question 18: Do you currently have?

Public Water – 40%	Well Water – 57%
Public Sewer – 47%	Septic System – 50%
Cable TV – 31%	Satellite TV – 26%
Local Internet Access – 29%	Natural Gas – 36%
Public Electric Power – 86%	Telephone Service – 96%

Question 19: Which of the following services would you like?

Public Water – 10%	Local Internet Access – 9%
Public Sewer – 11%	Satellite TV – 8%
Cable TV – 9%	Public Electric Power – 4%
Natural Gas – 13%	Telephone Service – 4%

Question 20: Do you feel that current health and social services are adequate? If not, what areas need to be improved or expanded?

Child daycare – 18%	Programs for seniors – 30%
Better medical facilities – 17%	Senior nutrition programs – 24%
Additional medical facilities – 11%	No changes needed – 26%
Expanded social services – 10%	

Question 21: Please rate the school systems in the County.

45% replied excellent, 50% replied fair, 5% replied substandard.

Question 22: What improvements could be made to the local school districts?

21% replied improvements to the curriculum, 19% stated more exposure to technology was needed, 25% indicated a lower teacher to student ratio was needed, 11% replied more after school activities, and 10% stated that improved facilities were needed. 10% replied that no improvements were needed.

Section V: Transportation

Question 23: Do you feel that the transportation system/roads in your community are adequate today?

Almost 60% felt the transportation system and roads in their community were adequate.

Question 24: If the road network is inadequate, what is needed?

Of the 40% who felt that roads could be improved, 50% replied that better road surfaces were needed; better maintenance was an issue for 35%, wider roads were indicated by 14% of respondents, and 1% felt that more roads were needed.

Question 25: What major roads need improvement?

The most frequent responses were Hwy 73 and 23, and Carlton Avenue.

Question 26: Do you feel that the public road or street on which you access your Carlton County property is adequate?

78% of respondents felt that the road or street to their property was adequate.

Question 27: Do you currently utilize public transit?

Most residents (95%) in Carlton County, as indicated by the survey, do not utilize public transit.

Question 28: Would you utilize public transit if it were expanded?

The majority of respondents (67%) indicated that they would not use it, even if it were expanded.

Section VI: General Attitudes about the County

Question 29: Increased population within the county is good for the county as a whole.

Agree – 59%, Disagree – 19%, No Opinion – 22%

Question 30: Do you feel police/sheriff protection is adequate?

The majority of the residents (83%) in Carlton County are satisfied with their law enforcement protection.

Question 31: Do you feel fire protection is adequate?

Residents (94%) also feel that fire protection is adequate in the County.

Question 32: Do you feel land use controls are:

Most people (51%) feel that land use controls are about right, but some (37%) feel that they are too restrictive, while others (12%) feel that they are not restrictive enough.

Question 33: Do you favor restriction on: (positive replies)

Signage/billboards – 67%

Lighting – 29%

Scenic views – 24%

Noise standards – 63%

Wetland preservation – 41%

Wetland development – 39%

Timber harvest – 42%

Question 34: Should agricultural preservation be a priority for Carlton County?

The agriculturally based economy in Carlton County is reflected in the positive response of 74% of households in favor of preserving agricultural land.

Question 35: Please indicate the type of recreational opportunities you would like to see developed or expanded in the future.

Walking/Hiking trails – 45%

Activities for seniors – 39%

Park areas – 37%

Bike trails – 32%

Golf Courses – 31%

Swimming Pools 31%

Hunting/Fishing access – 28%

Cross-country ski trails and Boat launch/Water access 25%

Playground equipment – 24%

River canoe route – 21%

Ice skating rinks, snowshoe trails, and baseball/softball fields – 17%

Snowmobile trails and skateboard park – 16%

Soccer fields – 11%

Tennis courts – 9%

Hockey rinks – 7%

ARDC Land Use Classifications

1. **Residential** – Lands containing structures used for human habitation.
2. **Commercial / Light Industry** – Structures and associated grounds used for the sale of products and services, for business, or for light industrial activities. Includes all retail and wholesale operations. Includes “industrial parks” and other features which cannot be clearly classified as either a retail service or light industry, such as heavy equipment yards, machinery repair, and junkyards.
3. **Heavy Industry** – Structures and their associated grounds used for heavy fabrication, manufacturing, and assembling parts which are, in themselves, large and heavy; or for processing raw materials such as iron ore, timber, and animal products.
4. **Public / Semi-Public** – Lands of non-residential development that are used for public purposes; this classification may include, but is not limited to, the structures and associated grounds of schools, colleges and universities, government offices, healthcare facilities, airports, golf courses, parks, and cemeteries.
5. **Transitional** – Areas that are currently under a state of transition from one land use type to another. This may include undeveloped urban areas, open spaces, areas with less than 25% vegetative cover, or any “other” land use that cannot be adequately defined through airphoto interpretation.
6. **Cultivated Land** – Areas under intensive cropping or rotation, including fallow fields and fields seeded for forage or cover crops that exhibit linear or other patterns associated with current tillage.
7. **Grassland / Pasture** – Areas covered by grasslands and herbaceous plants; these may contain up to one-third shrub and tree cover. Some areas may be used as pastures and mowed or grazed. Included are fields that show evidence of past tillage but now appear to be abandoned and grown over with native vegetation or planted with a cover crop.
8. **Forested** – Areas where two-thirds or more of the total canopy cover is composed of predominantly woody deciduous and coniferous species and areas of regenerated or young forest where commercial timber has been completely or partially removed by logging, other management activities or natural events; includes woodlots, shelterbelts, and plantations.

9. **Brushland** – Areas with a combination of grass, shrubs, and trees in which deciduous or coniferous tree cover comprises from one to two-thirds of the area, or shrub cover comprises more than one-third of the area. These areas are often found adjacent to pasture / grassland or forested areas and vary greatly in shape and extent.

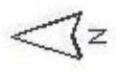
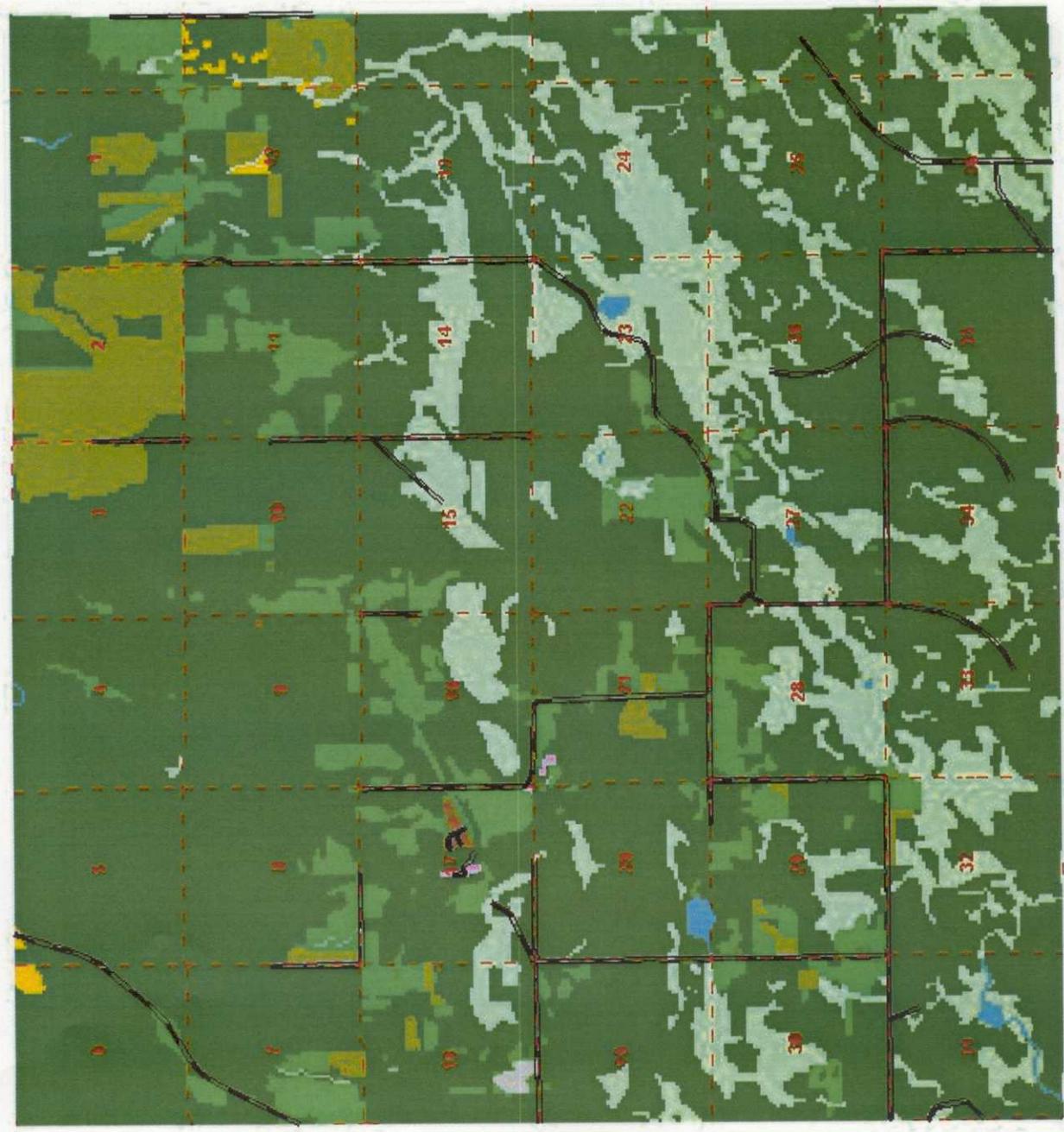
10. **Wetland** – Grassy, wet areas with standing or slowly moving water. Vegetation consists of grass and sedge sods, and common hydrophilic vegetation such as cattails and rushes. These areas include wetlands with lowland coniferous forest and peat-covered or peat-filled depressions with a high water table; areas are often interspersed with channels or pools of open water.

11. **Water** – Permanent bodies of water such as lakes, rivers, reservoirs, stock ponds and open water areas where photo evidence indicates that the areas are covered by water the majority of the time.

12. **Mining** – Area stripped of topsoil revealing exposed substrate such as sand or gravel, including gravel quarries, mine tailings, borrow pits and rock quarries. Included are areas that lack appreciable soil development or vegetation cover such as rock outcrops, sand dunes or beaches.

T. 46 / R. 16

Existing Land Use / Land Cover



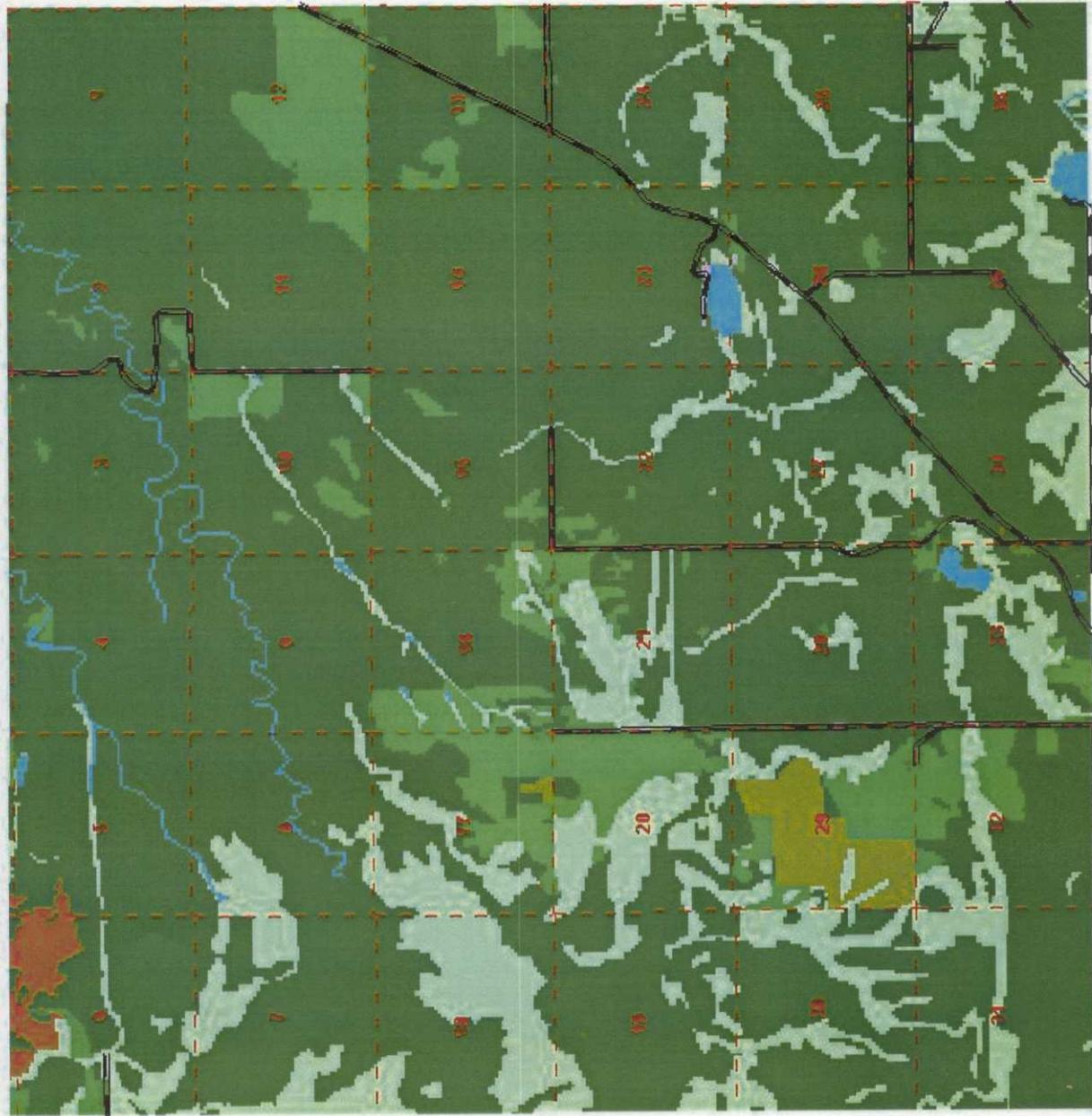
Legend

- Classifications
- Brushland
 - Commercial / Light Industry
 - Cultivated Land
 - Forested
 - Grassland / Pasture
 - Heavy Industry
 - Mining
 - Other Rural Developments
 - Public / Semi-Public
 - Residential
 - Transitional
 - Water
 - Wetland



T. 46 / R. 17

Existing Land Use / Land Cover



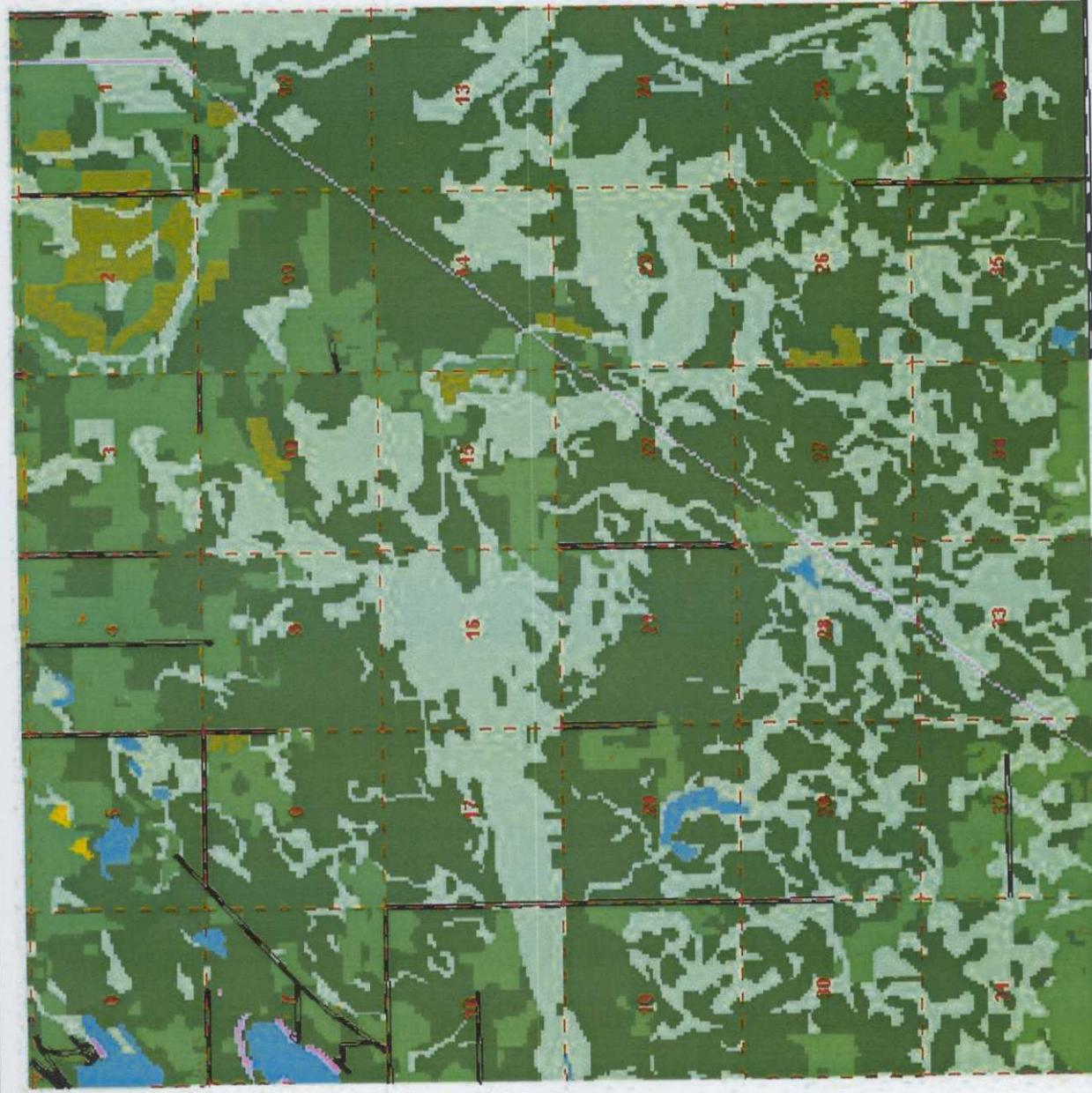
Legend

Classifications

- | | |
|---|-----------------------------|
|  | Brushland |
|  | Commercial / Light Industry |
|  | Cultivated Land |
|  | Forested |
|  | Grassland / Pasture |
|  | Heavy Industry |
|  | Mining |
|  | Other Rural Developments |
|  | Public / Semi-Public |
|  | Residential |
|  | Transitional |
|  | Water |
|  | Wetland |

T. 46 / R. 18

Existing Land Use / Land Cover



Legend

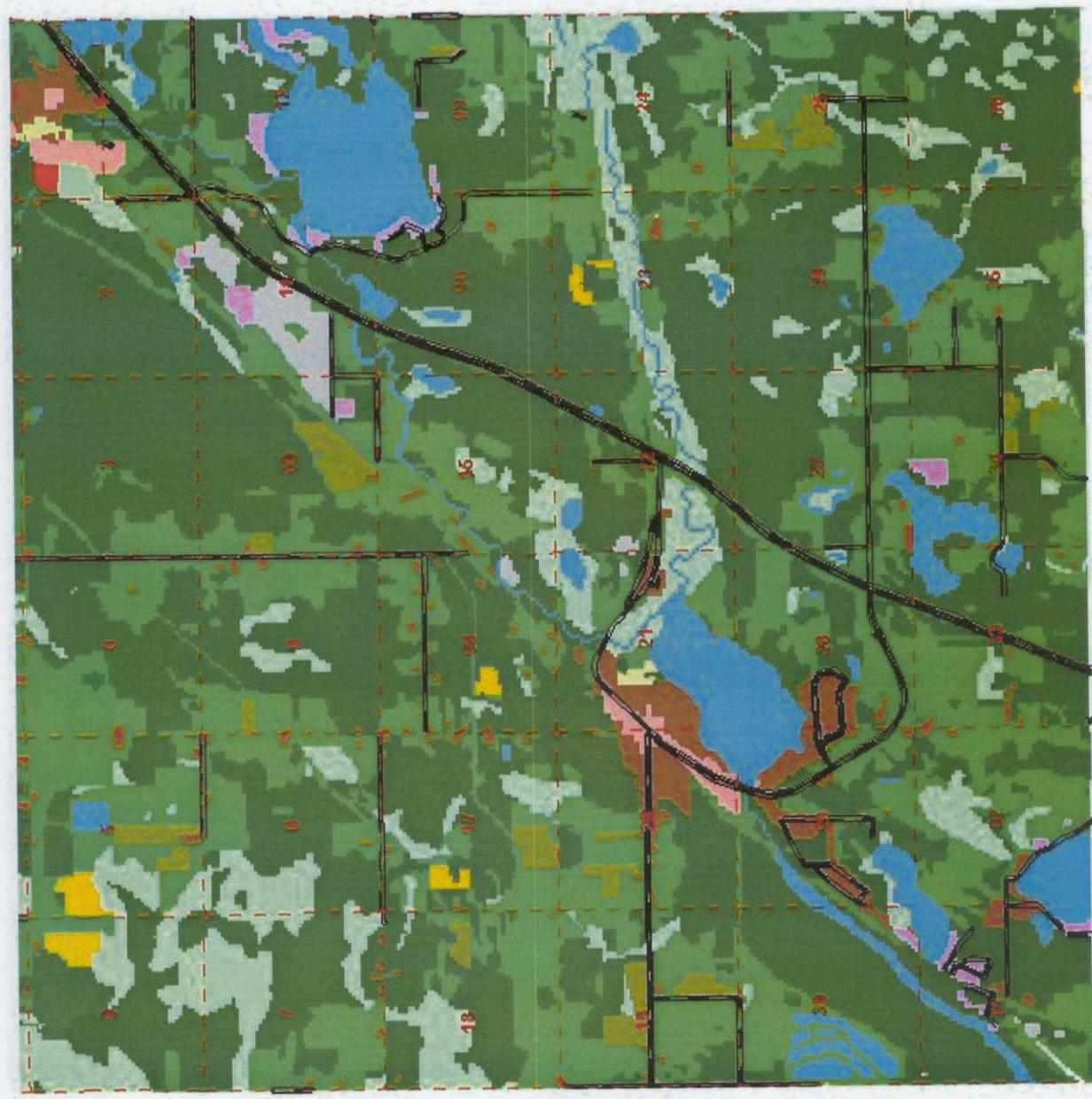
Classifications

Brushland	Commercial / Light Industry
Cultivated Land	Forested
Grassland / Pasture	Heavy Industry
Mining	Other Rural Developments
Public / Semi-Public	Residential
Transitional	Water
Wetland	



T. 46 / R. 19

Existing Land Use / Land Cover



Legend

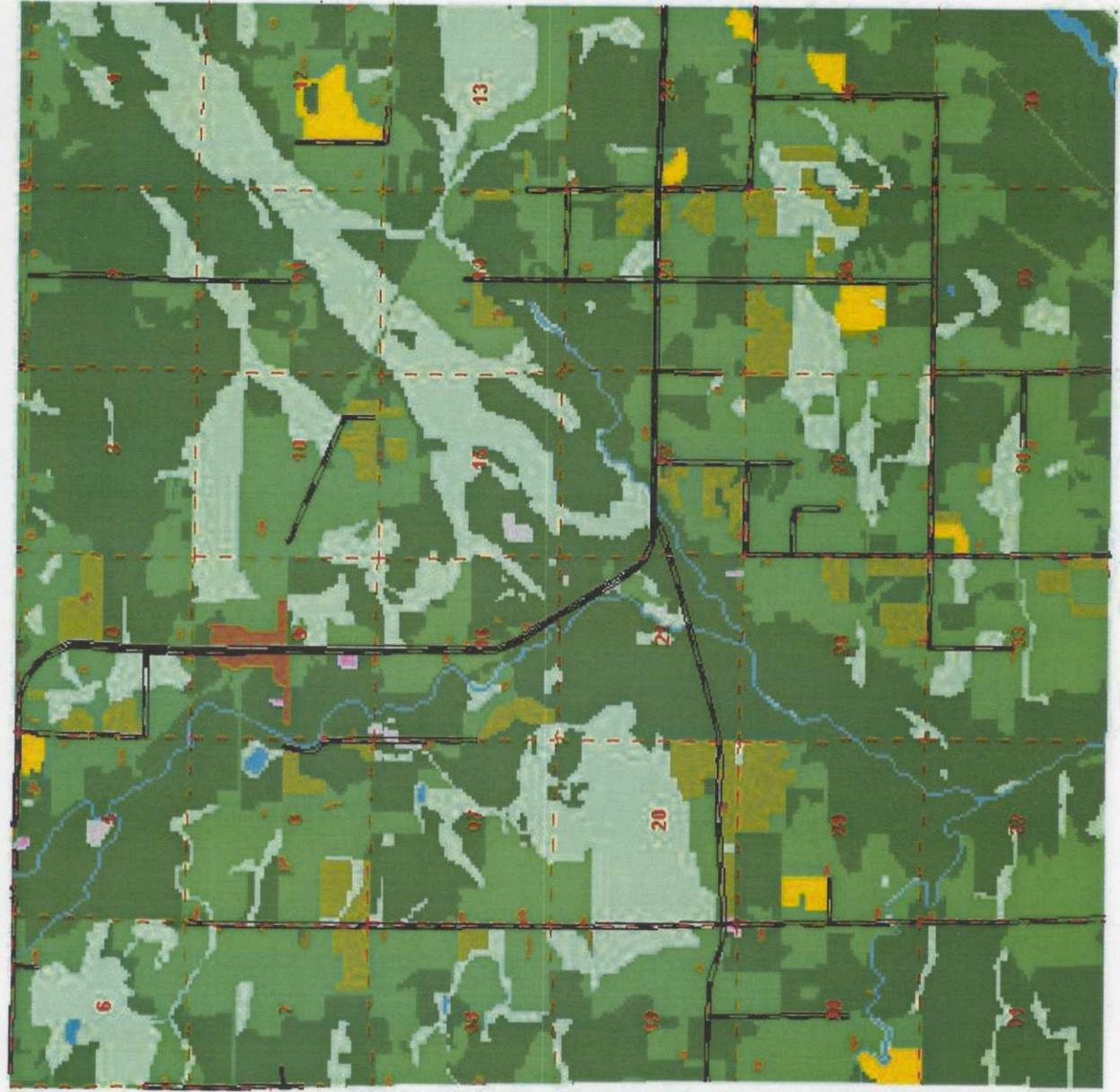
Classifications

- Brushland
- Commercial / Light Industry
- Cultivated Land
- Forested
- Grassland / Pasture
- Heavy Industry
- Mining
- Other Rural Developments
- Public / Semi-Public
- Residential
- Transitional
- Water
- Wetland



T. 46 / R. 20

Existing Land Use / Land Cover

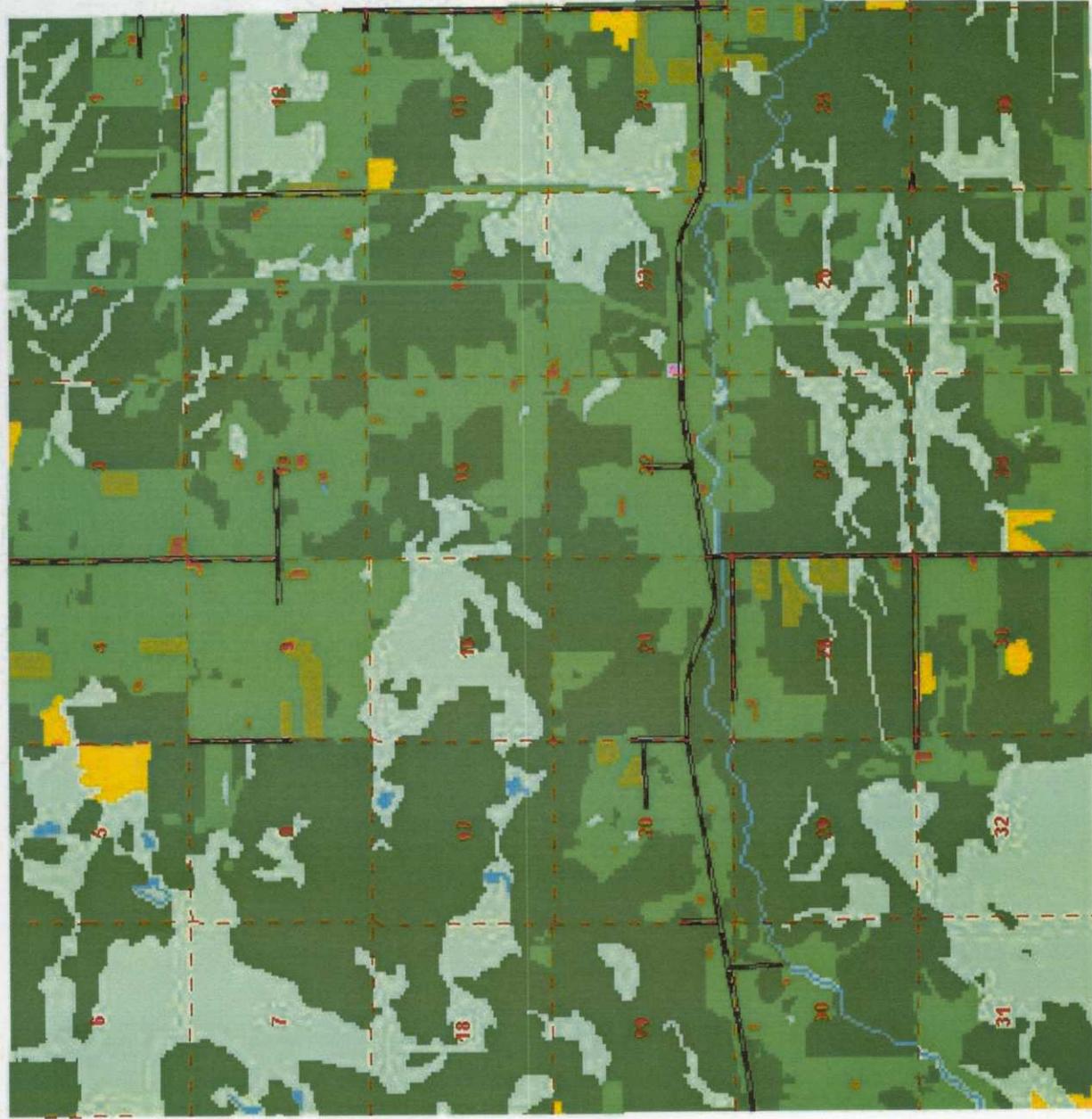


Legend

Classifications	Color
Brushland	Yellow
Commercial / Light Industry	Light Pink
Cultivated Land	Light Green
Forested	Dark Green
Grassland / Pasture	Medium Green
Heavy Industry	Red
Mining	Grey
Other Rural Developments	Purple
Public / Semi-Public	Light Yellow
Residential	Brown
Transitional	Light Pink
Water	Blue
Wetland	Light Green



Existing Land Use / Land Cover



Legend

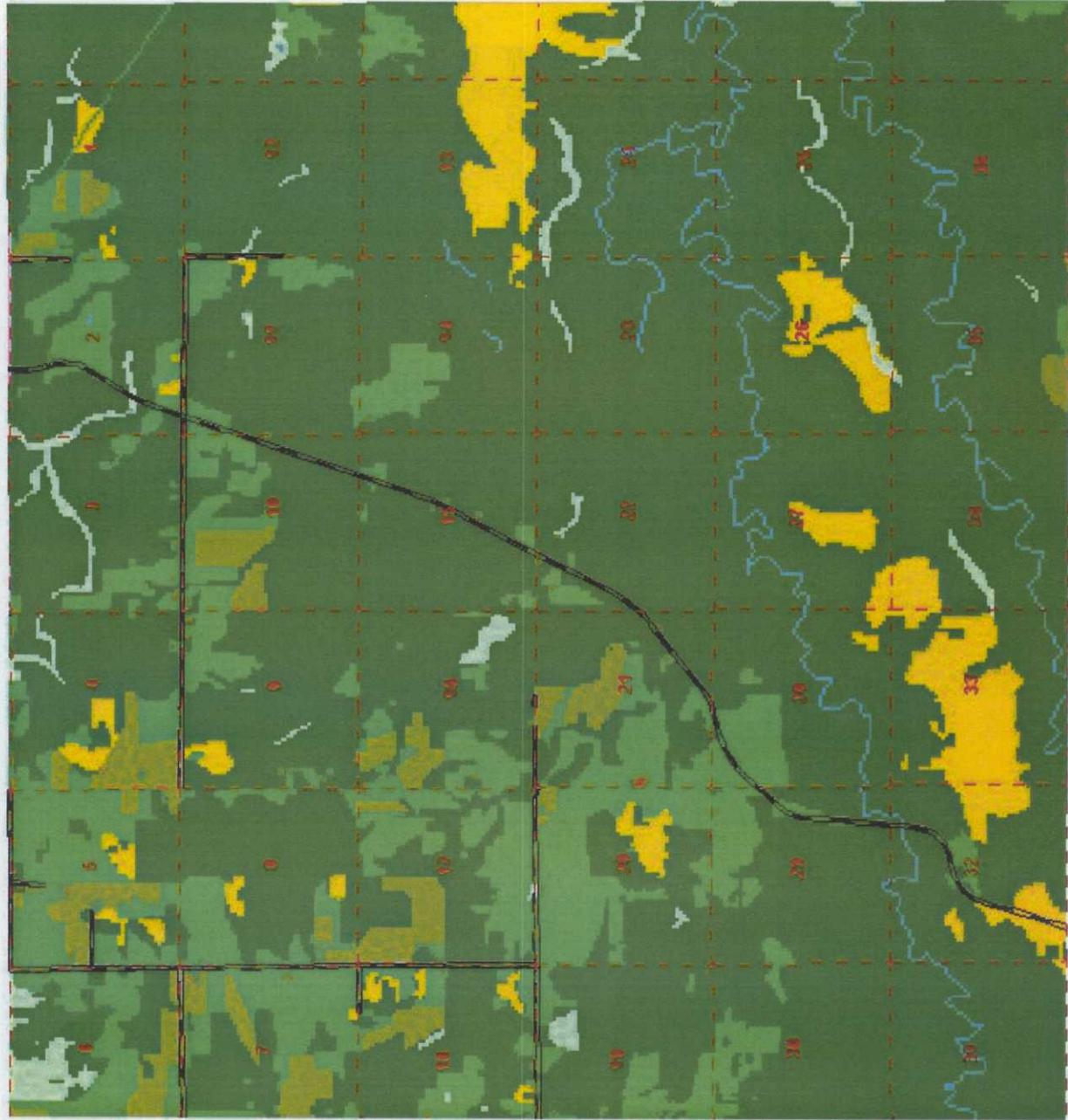
Classifications

- Brushland
- Commercial / Light Industry
- Cultivated Land
- Forested
- Grassland / Pasture
- Heavy Industry
- Mining
- Other Rural Developments
- Public / Semi-Public
- Residential
- Transitional
- Water
- Wetland



T. 47 / R. 16

Existing Land Use / Land Cover



Legend

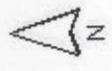
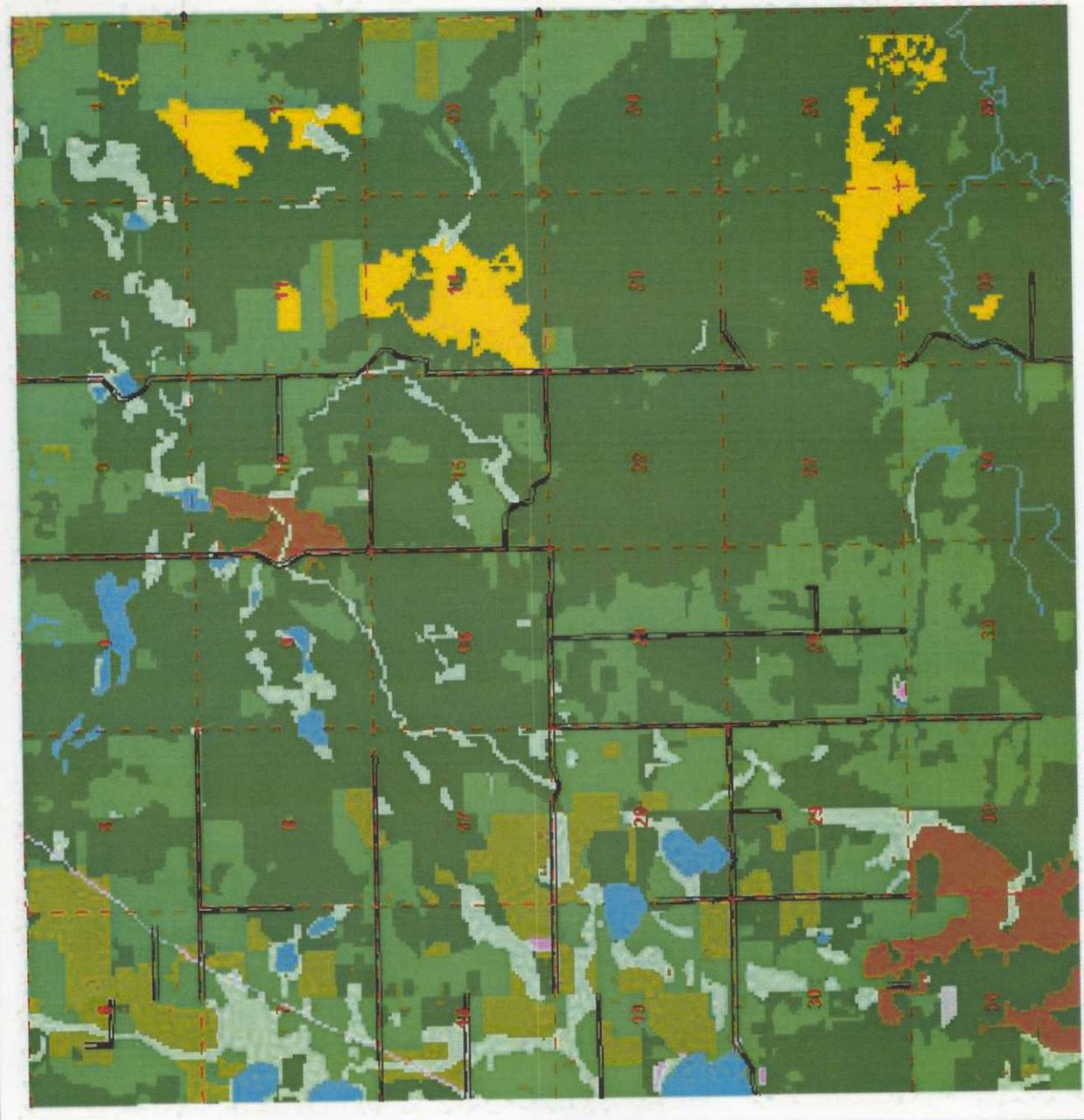
Classifications

- Brushland
- Commercial / Light Industry
- Cultivated Land
- Forested
- Grassland / Pasture
- Heavy Industry
- Mining
- Other Rural Developments
- Public / Semi-Public
- Residential
- Transitional
- Water
- Wetland



T. 47 / R. 17

Existing Land Use / Land Cover



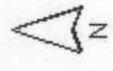
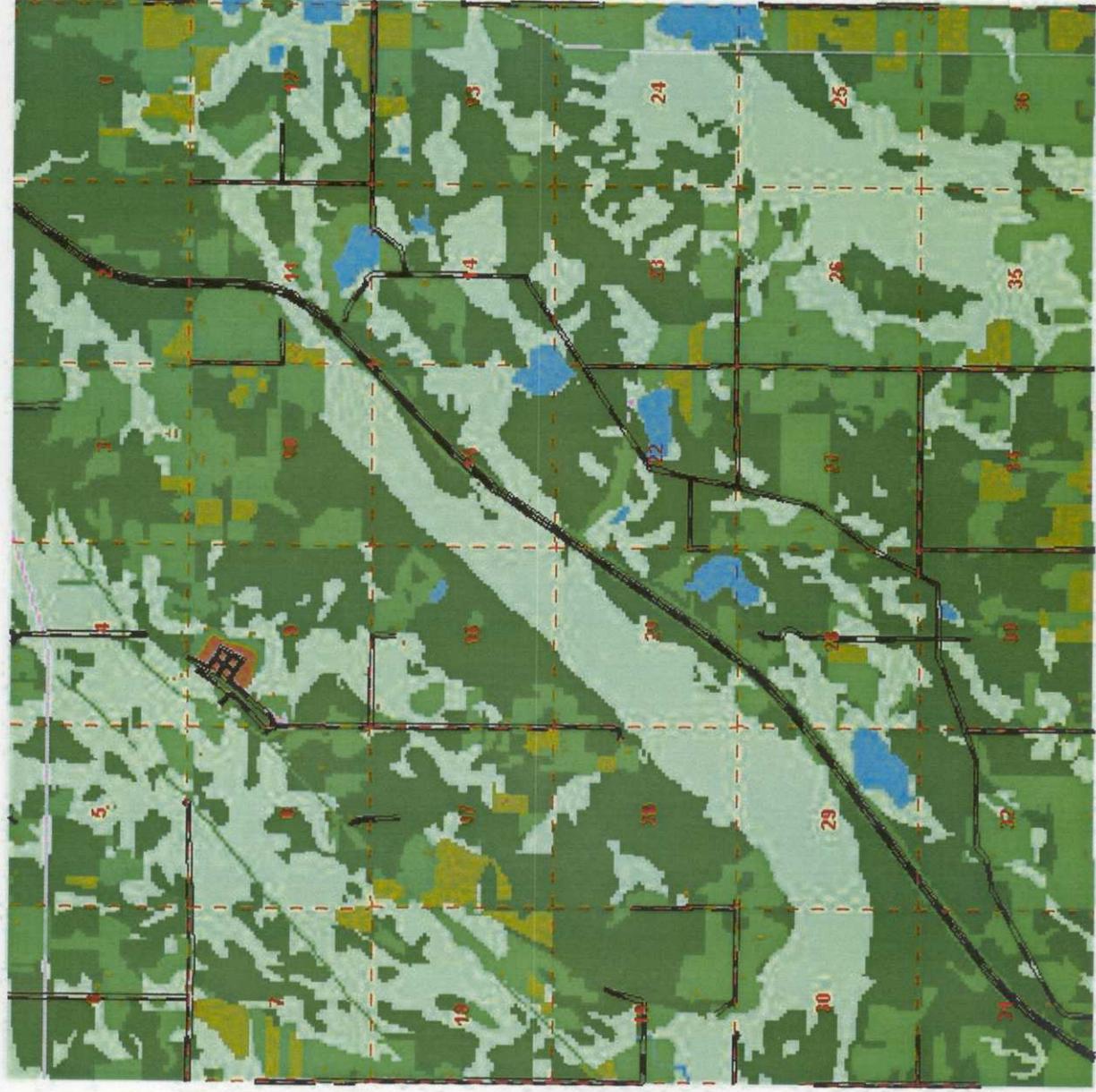
Legend

Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
Yellow	Light Pink	Olive Green	Dark Green	Medium Green	Red	Grey	Purple	Light Yellow	Brown	Light Red	Blue	Light Green



Existing Land Use / Land Cover



Legend

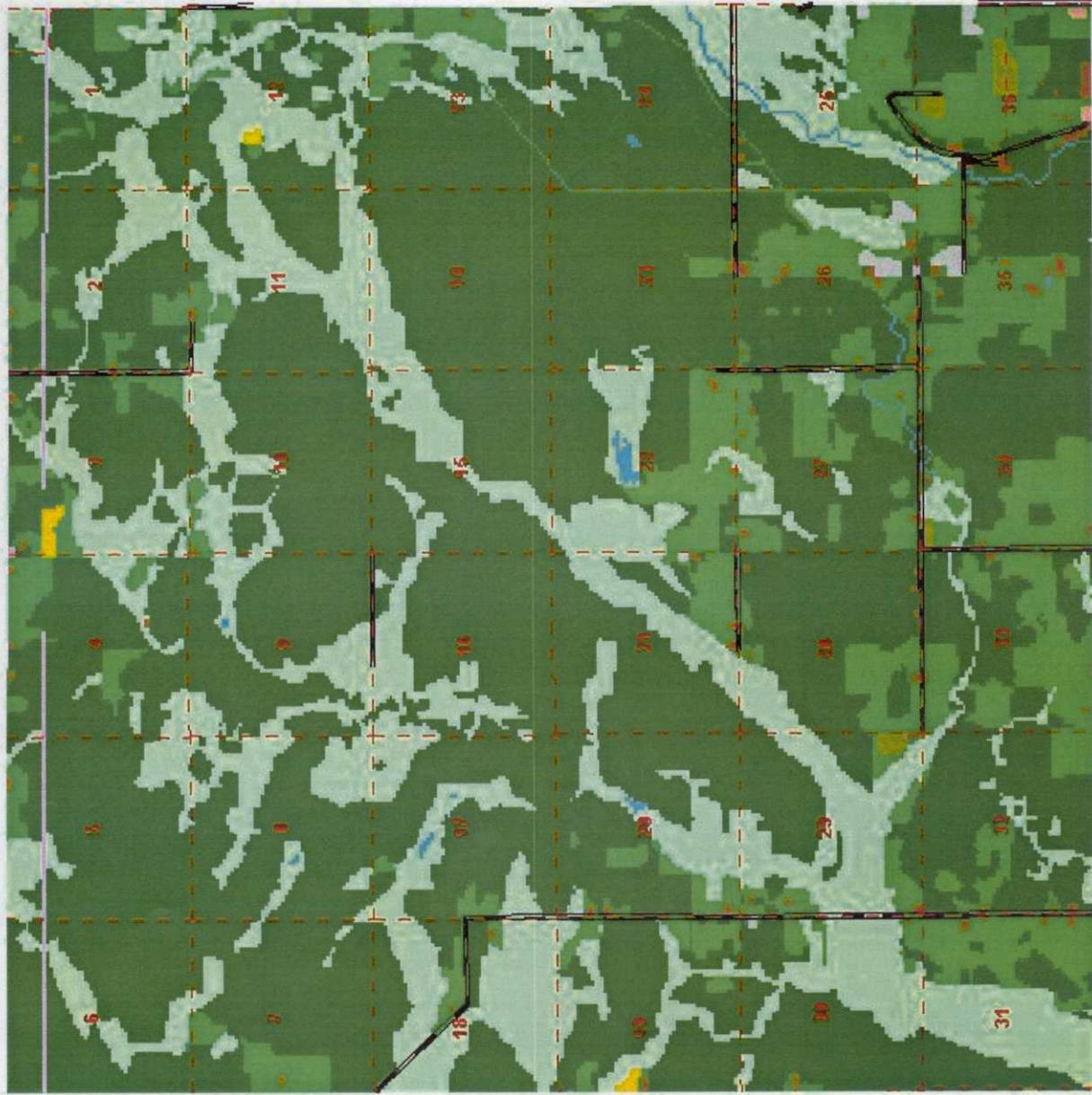
Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
[Yellow]	[Pink]	[Light Green]	[Dark Green]	[Medium Green]	[Red]	[Grey]	[Purple]	[Light Yellow]	[Brown]	[Light Blue]	[Dark Blue]	[Light Green]



T. 47 / R. 19

Existing Land Use / Land Cover



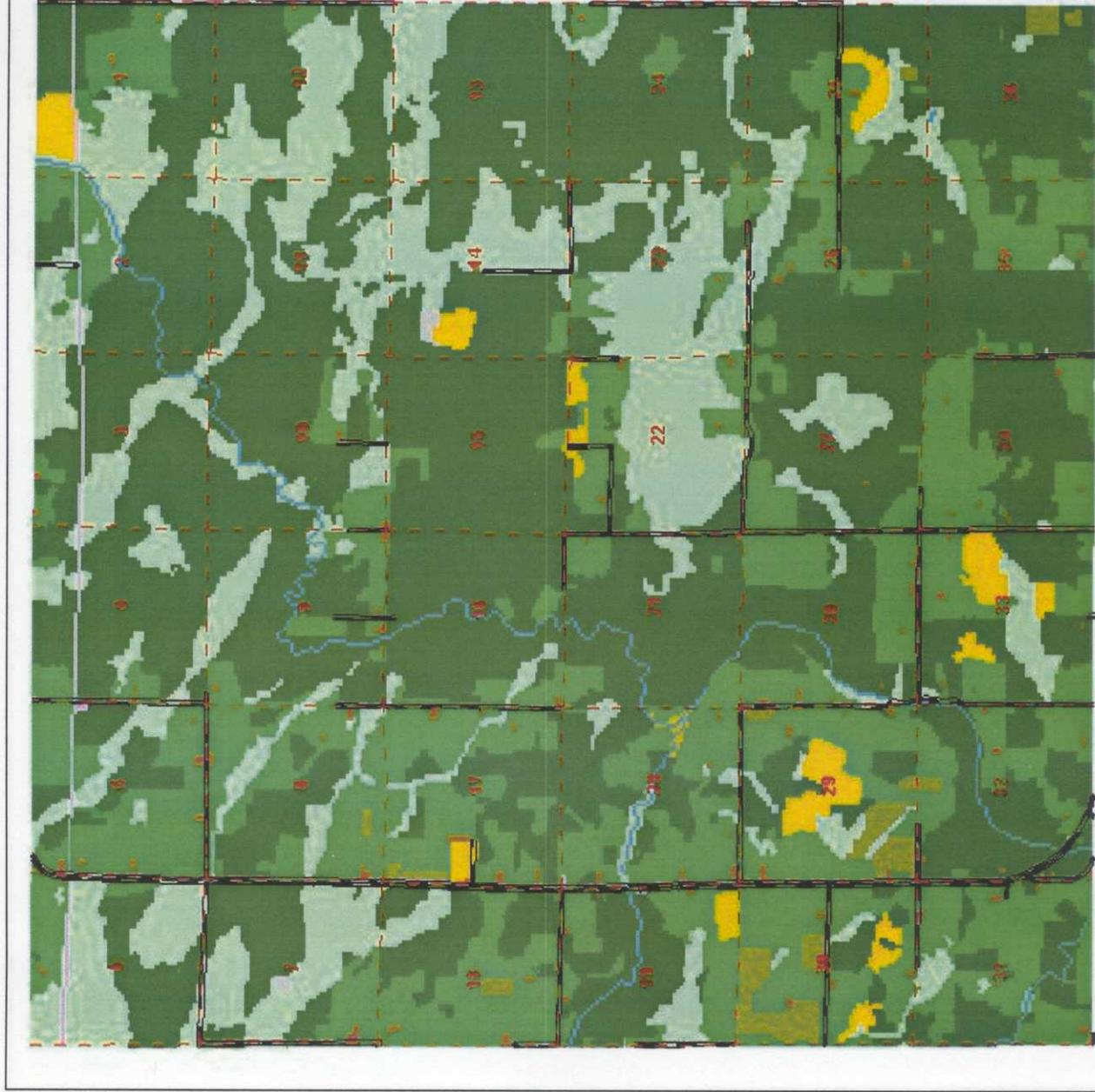
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Classifications

- Brushland
- Commercial / Light Industry
- Cultivated Land
- Forested
- Grassland / Pasture
- Heavy Industry
- Mining
- Other Rural Developments
- Public / Semi-Public
- Residential
- Transitional
- Water
- Wetland

T. 47 / R. 20

Existing Land Use / Land Cover



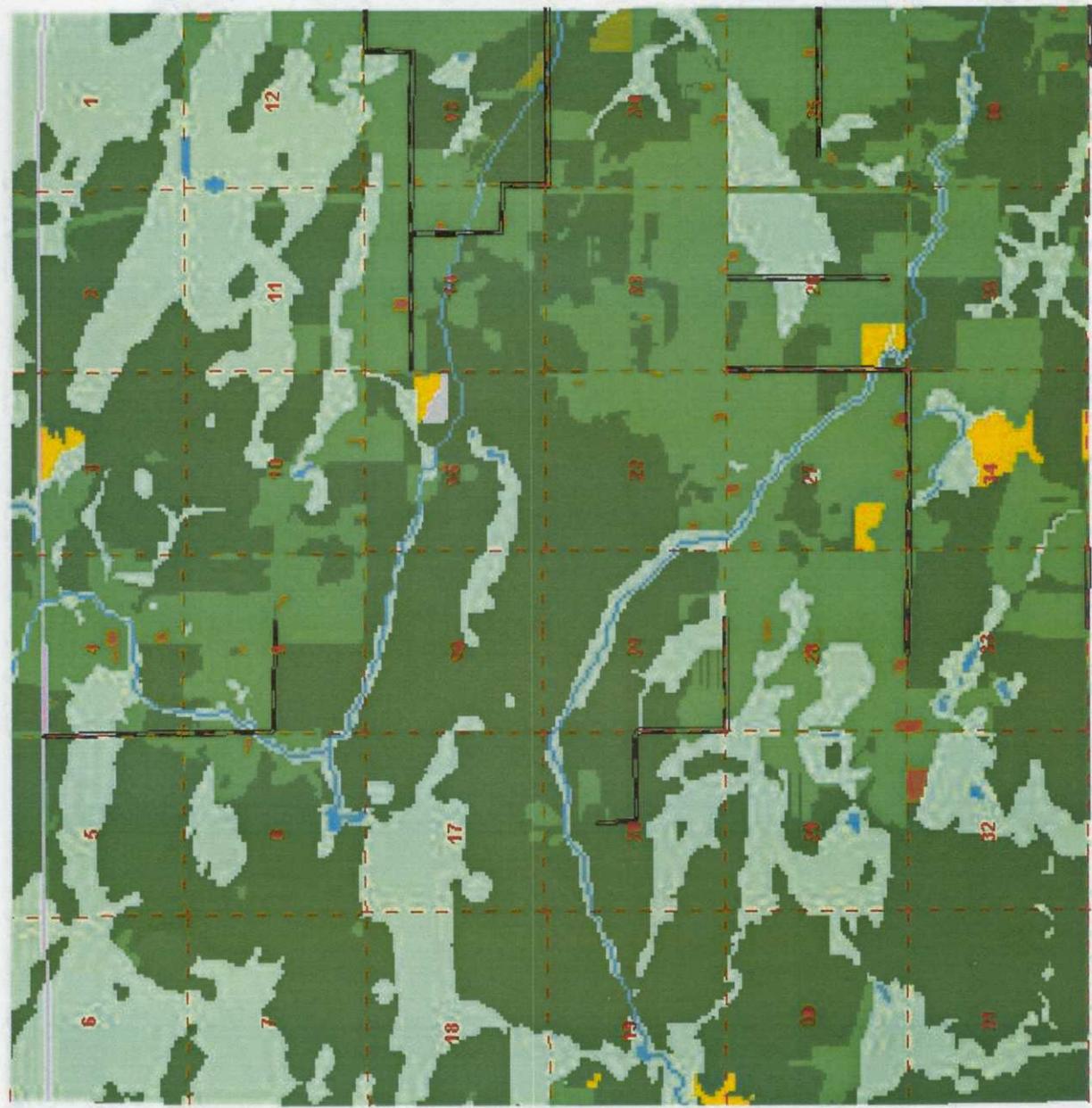
Legend

- | | |
|-----------------------------|--|
| Classifications | |
| Brushland | |
| Commercial / Light Industry | |
| Cultivated Land | |
| Forested | |
| Grassland / Pasture | |
| Heavy Industry | |
| Mining | |
| Other Rural Developments | |
| Public / Semi-Public | |
| Residential | |
| Transitional | |
| Water | |
| Wetland | |



T. 47 / R. 21

Existing Land Use / Land Cover



Legend

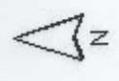
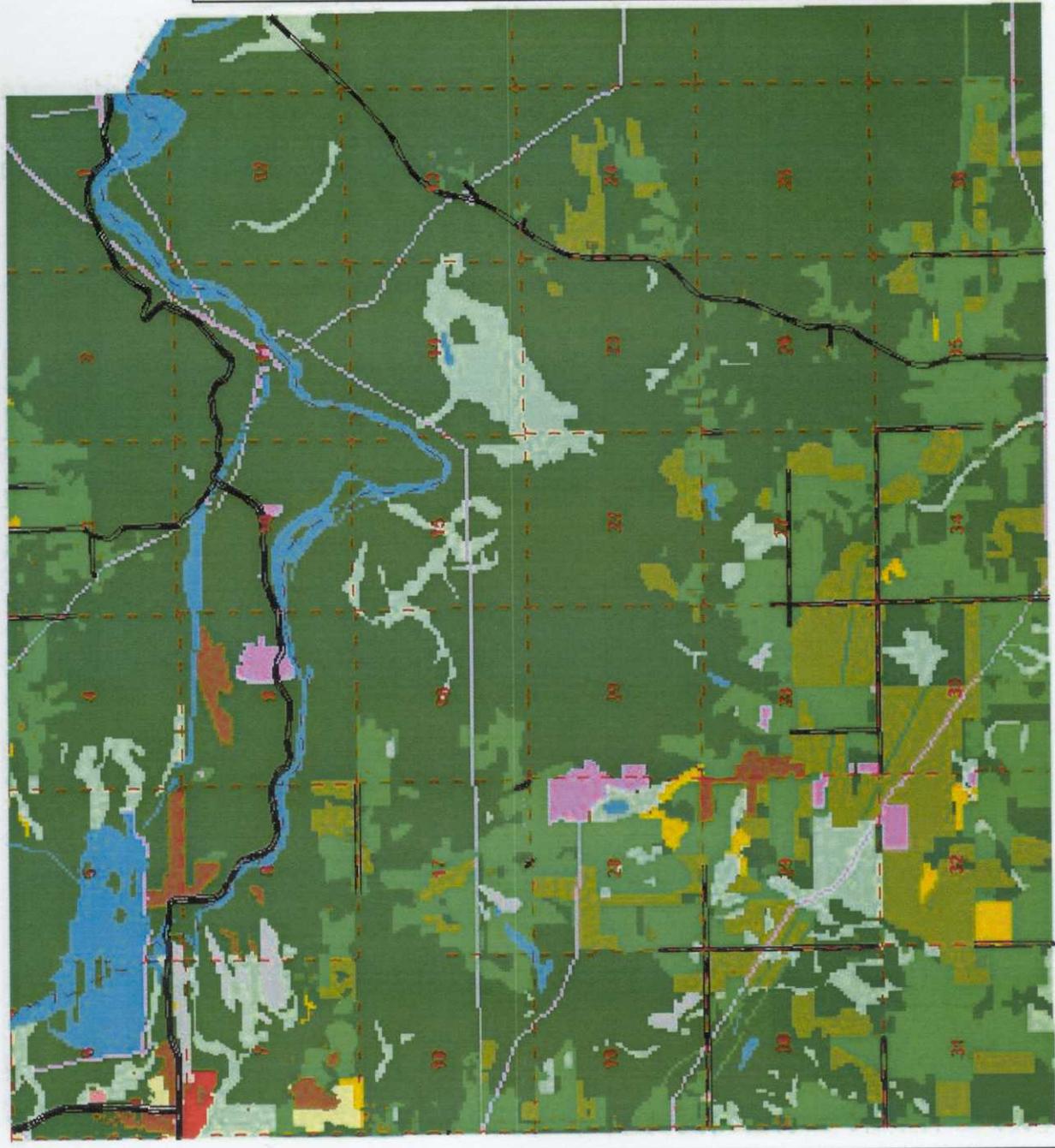
Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
[Yellow]	[Pink]	[Light Green]	[Dark Green]	[Medium Green]	[Red]	[Grey]	[Purple]	[Light Yellow]	[Brown]	[Light Blue]	[Blue]	[Light Green]



T. 48 / R. 16

Existing Land Use / Land Cover

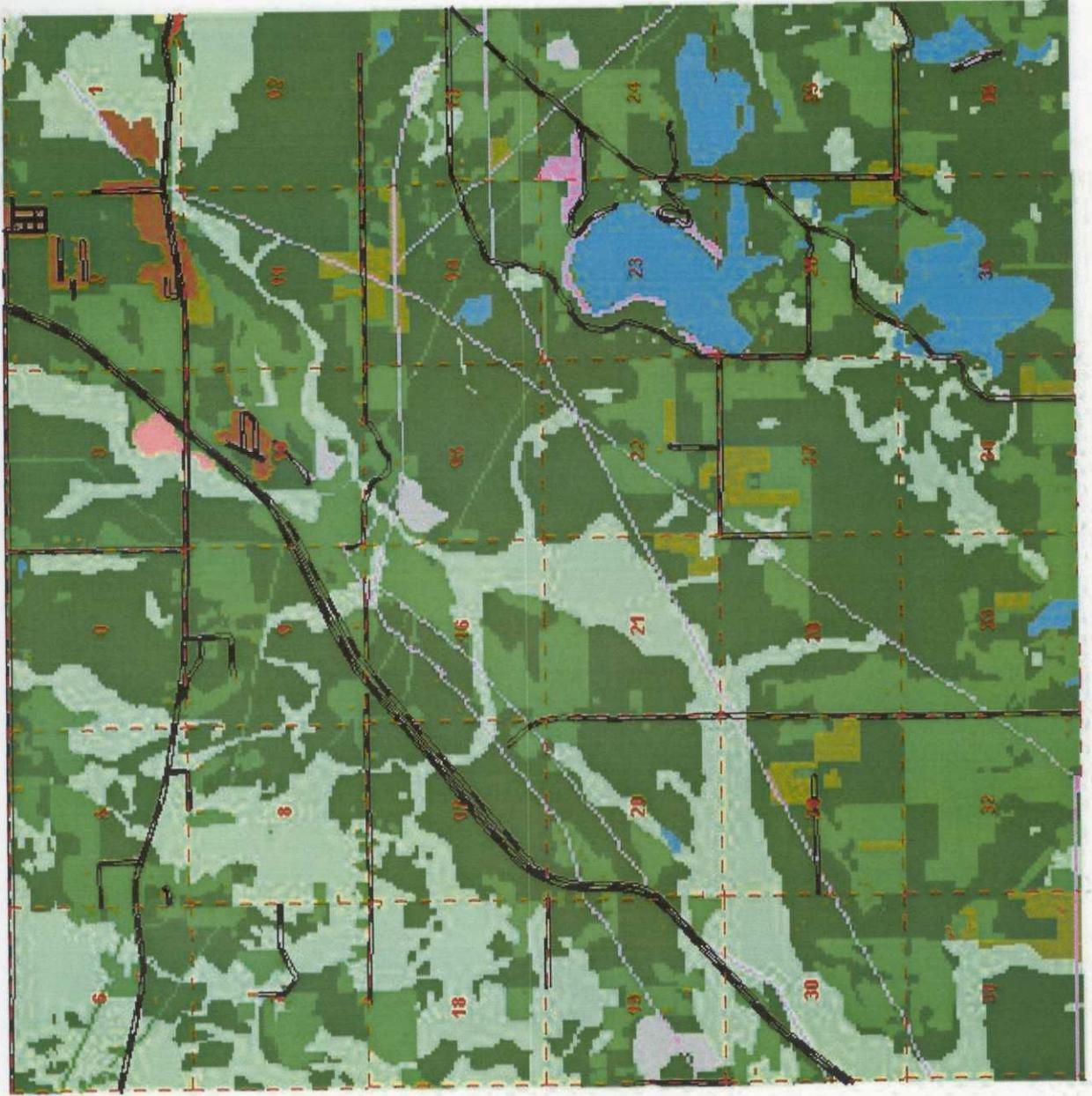


Legend

Classifications
Brushland
Commercial / Light Industry
Cultivated Land
Forested
Grassland / Pasture
Heavy Industry
Mining
Other Rural Developments
Public / Semi-Public
Residential
Transitional
Water
Wetland



Existing Land Use / Land Cover



Legend

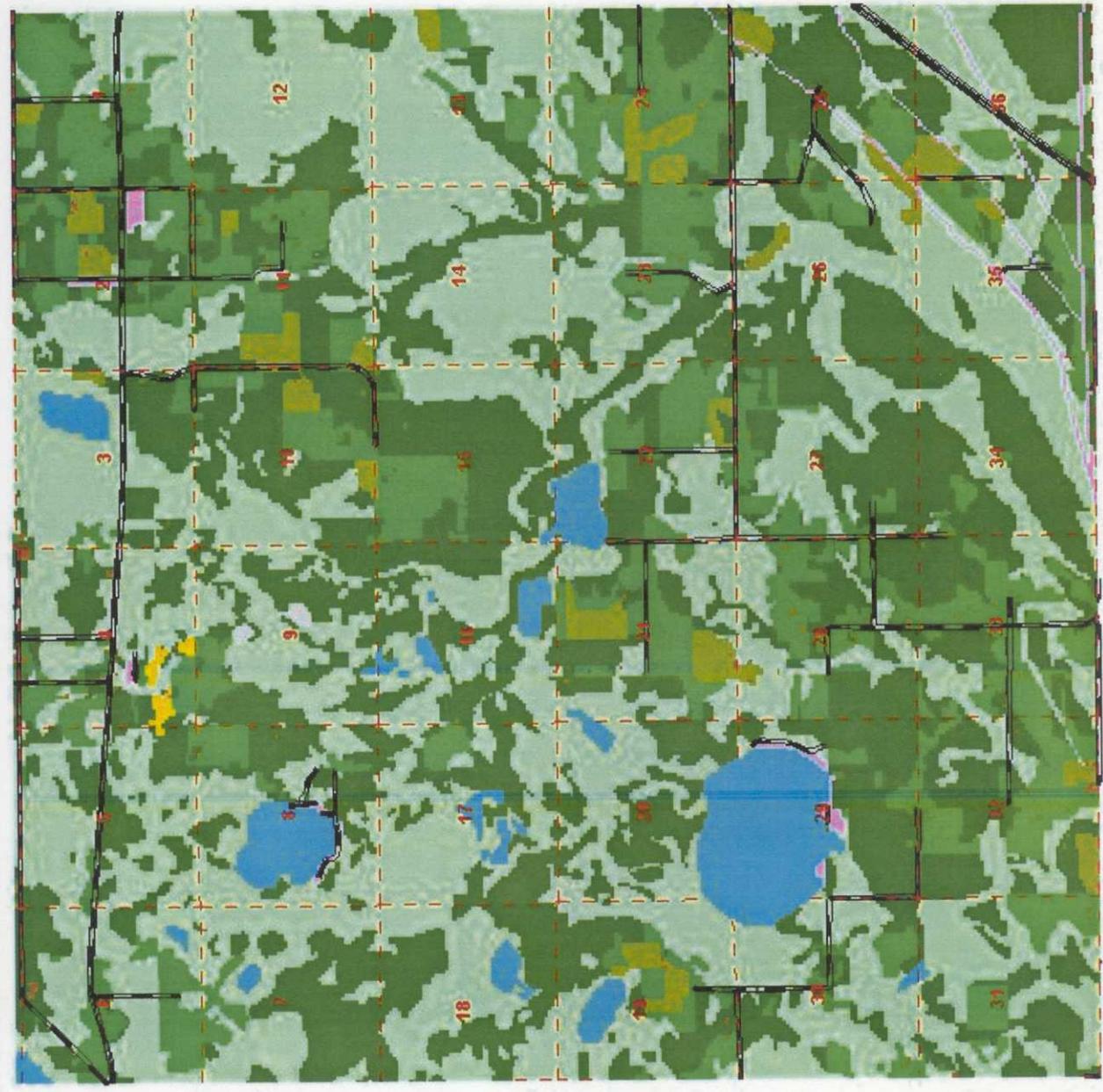
Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
[Yellow]	[Pink]	[Light Green]	[Green]	[Light Green]	[Red]	[Grey]	[Purple]	[Light Yellow]	[Brown]	[Light Blue]	[Dark Blue]	[Light Blue-Green]



T. 48 / R. 18

Existing Land Use / Land Cover

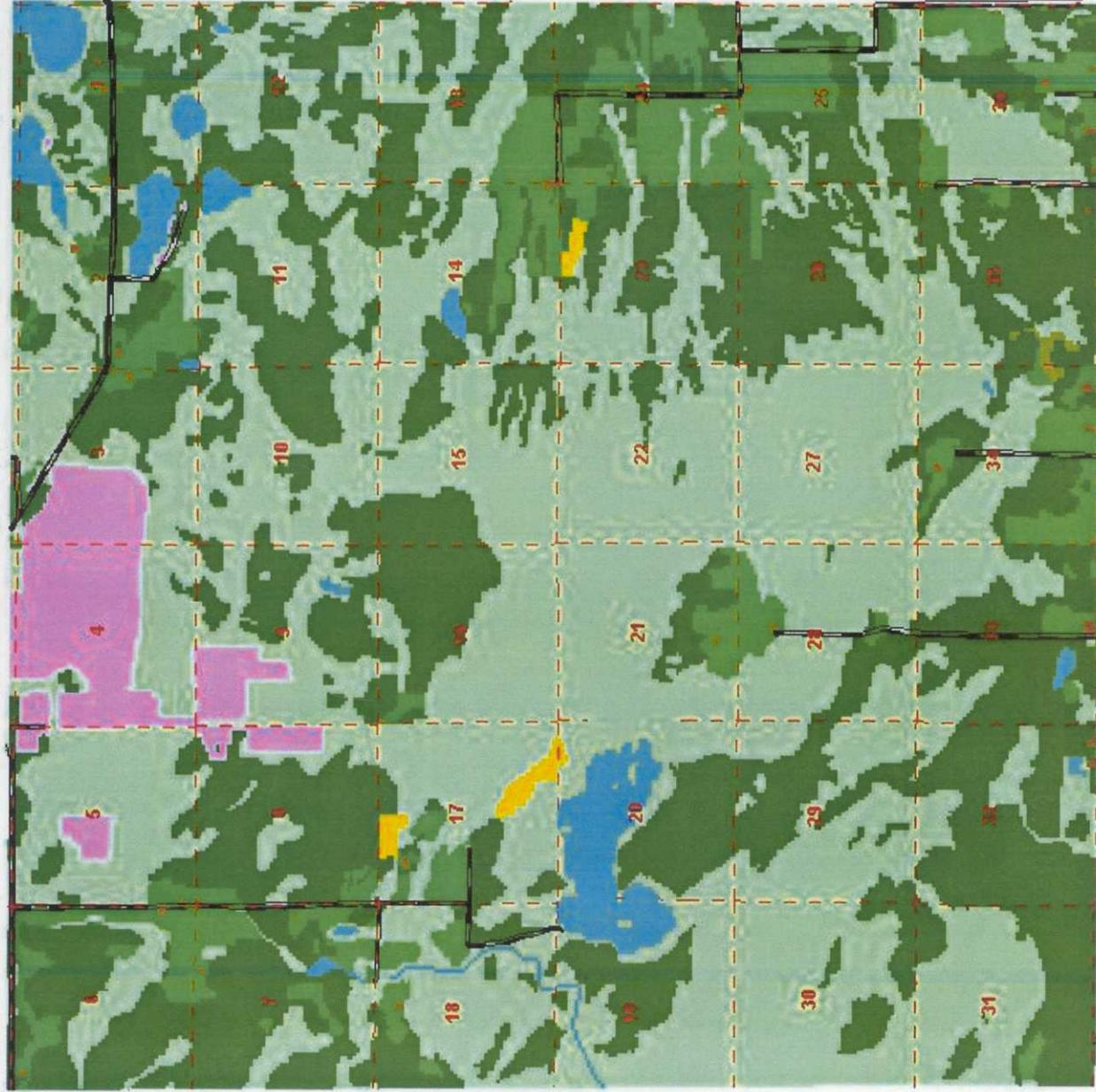


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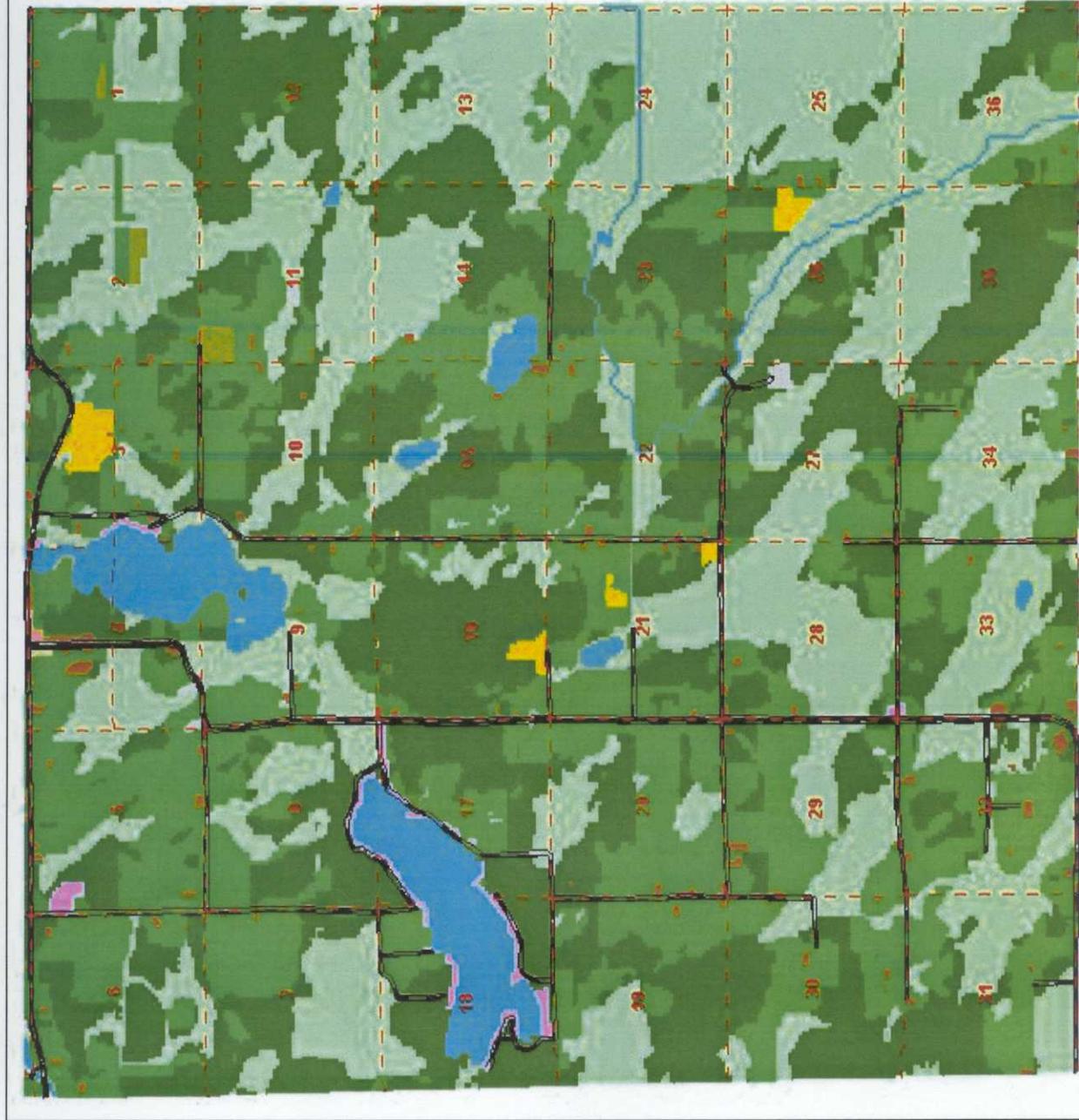
- Classifications
- Brushland
 - Commercial / Light Industry
 - Cultivated Land
 - Forested
 - Grassland / Pasture
 - Heavy Industry
 - Mining
 - Other Rural Developments
 - Public / Semi-Public
 - Residential
 - Transitional
 - Water
 - Wetland



Existing Land Use / Land Cover



Existing Land Use / Land Cover



Legend

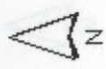
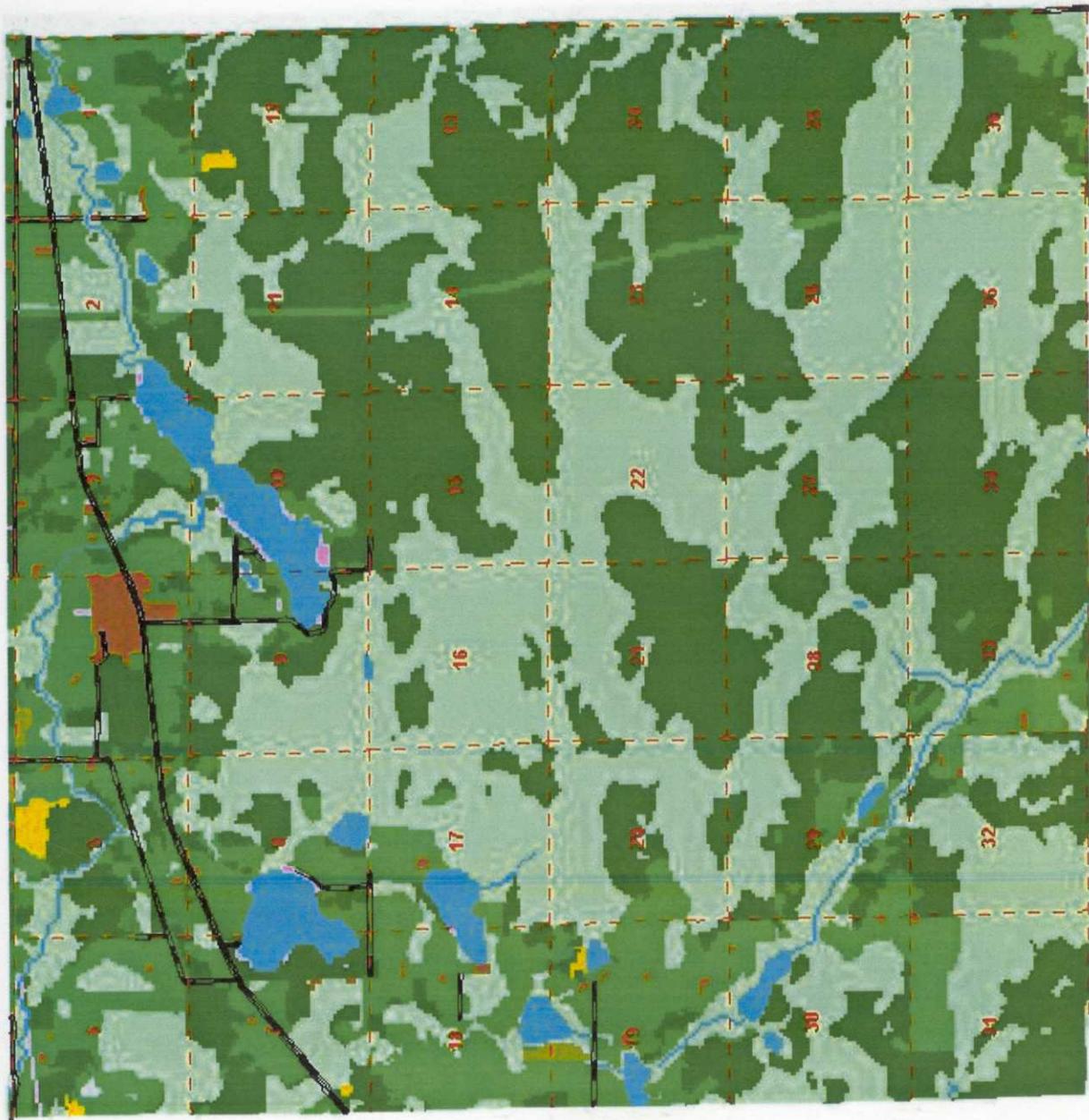
Classifications

- | | |
|---|-----------------------------|
|  | Brushland |
|  | Commercial / Light Industry |
|  | Cultivated Land |
|  | Forested |
|  | Grassland / Pasture |
|  | Heavy Industry |
|  | Mining |
|  | Other Rural Developments |
|  | Public / Semi-Public |
|  | Residential |
|  | Transitional |
|  | Water |
|  | Wetland |



T. 48 / R. 21

Existing Land Use / Land Cover



Legend

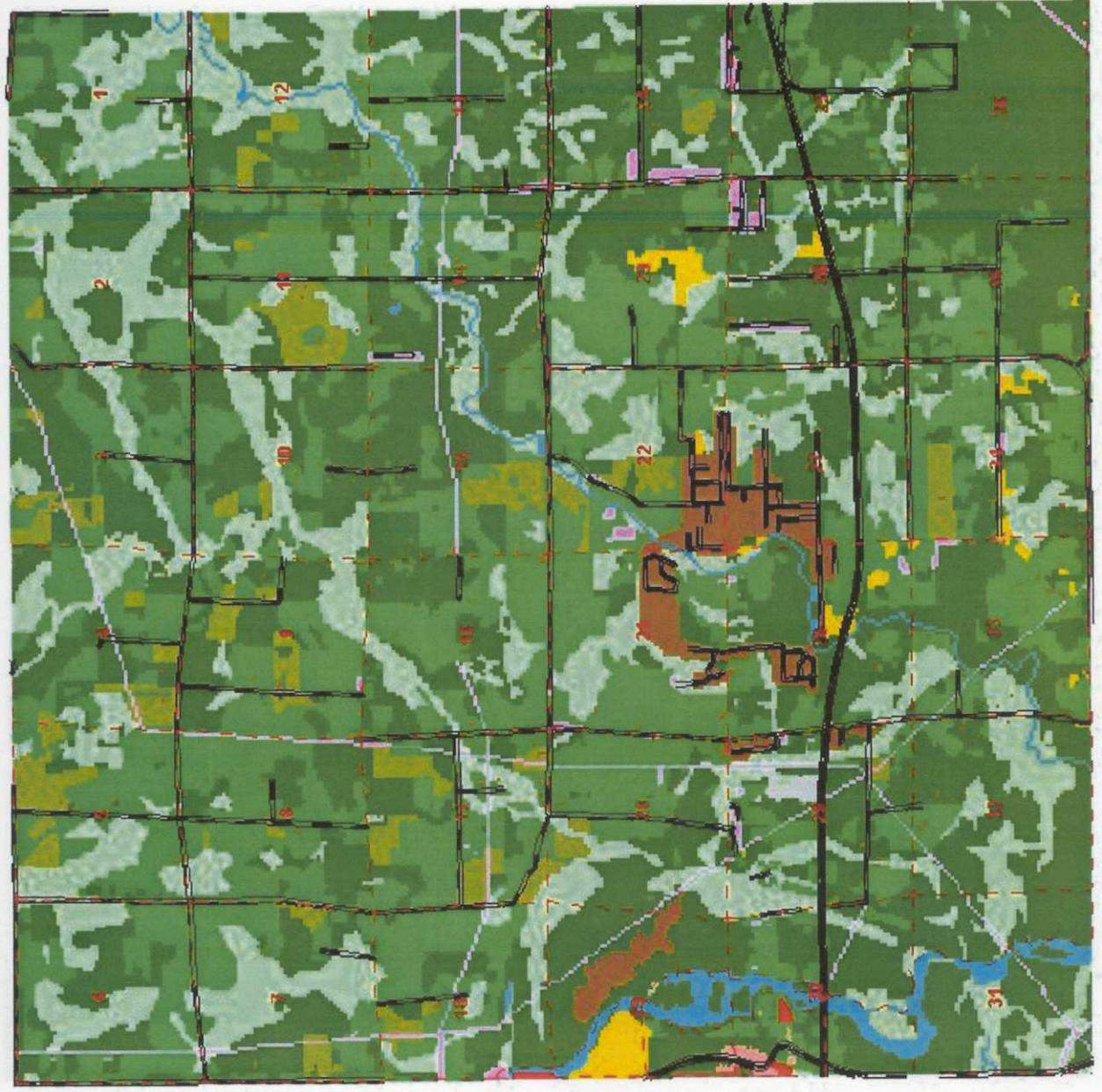
Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
Yellow	Pink	Light Green	Dark Green	Medium Green	Red	Grey	Purple	Light Yellow	Brown	Light Pink	Blue	Light Green



T. 49 / R. 16

Existing Land Use / Land Cover



Legend

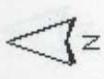
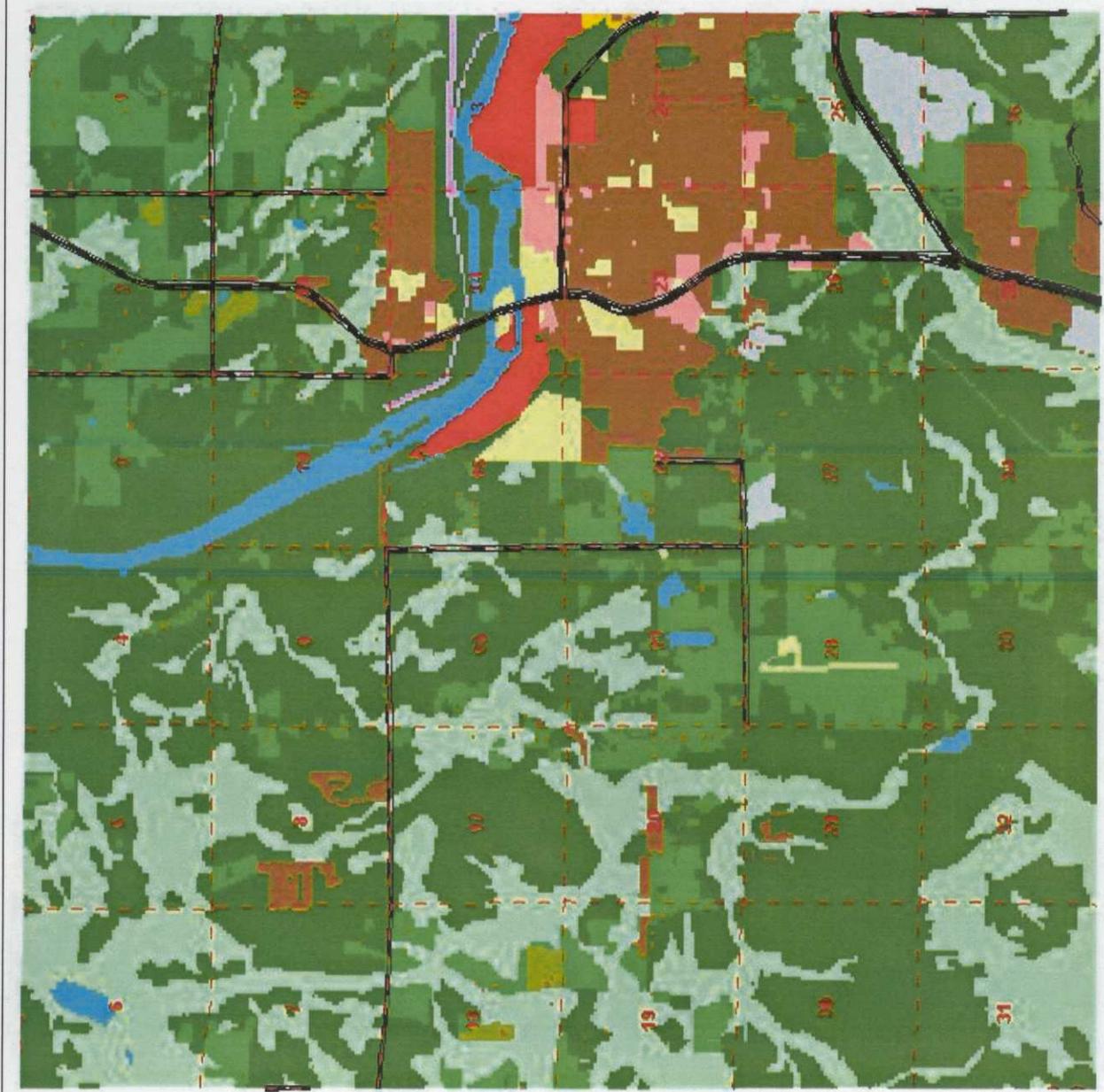
Classifications

- Brushland
- Commercial / Light Industry
- Cultivated Land
- Forested
- Grassland / Pasture
- Heavy Industry
- Mining
- Other Rural Developments
- Public / Semi-Public
- Residential
- Transitional
- Water
- Wetland



T. 49 / R. 17

Existing Land Use / Land Cover



Legend

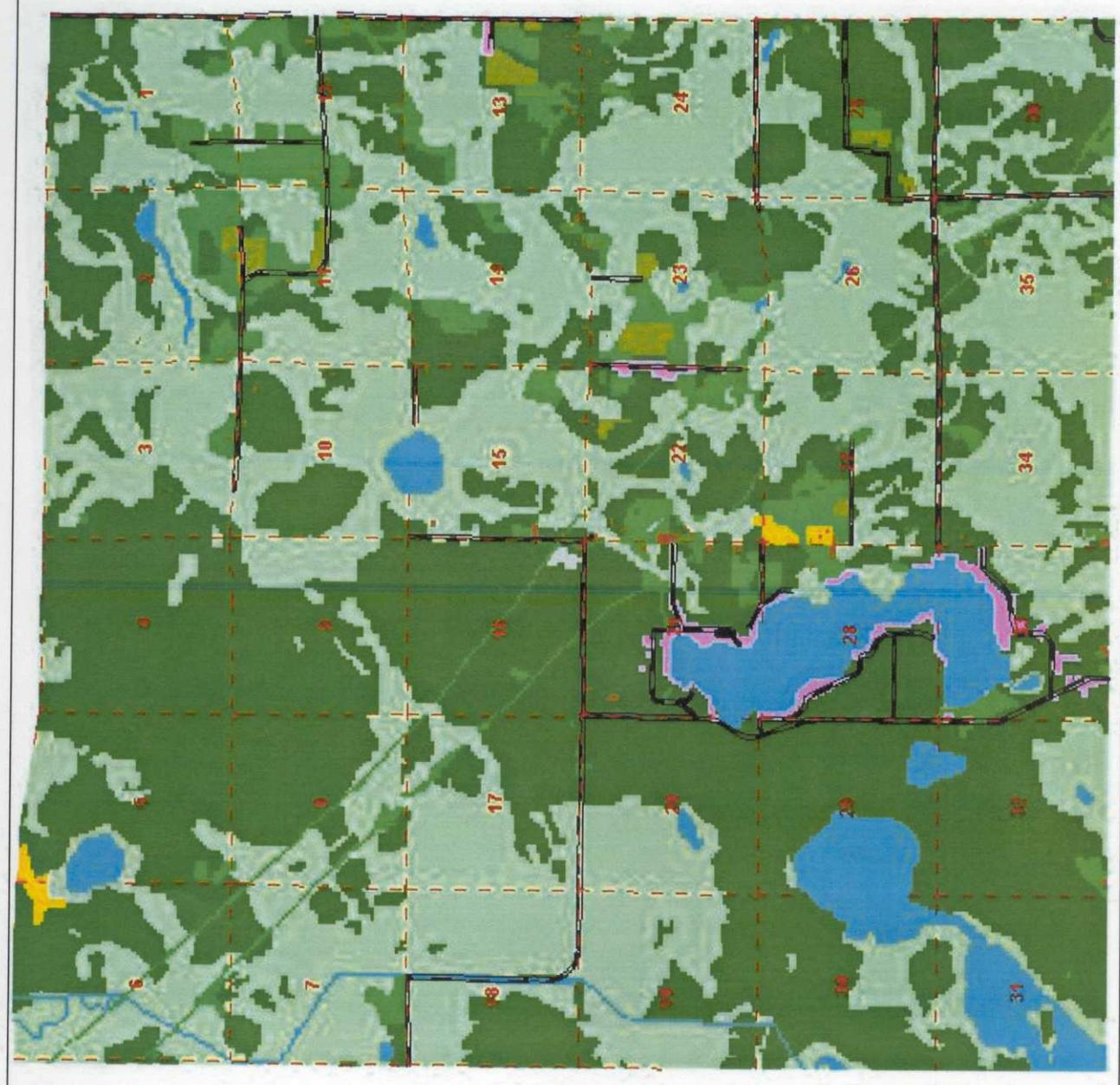
Classifications

Brushland	Commercial / Light Industry
Cultivated Land	Forested
Grassland / Pasture	Heavy Industry
Mining	Other Rural developments
Public / Semi-Public	Residential
Transitional	Water
Wetland	



T. 49 / R. 18

Existing Land Use / Land Cover



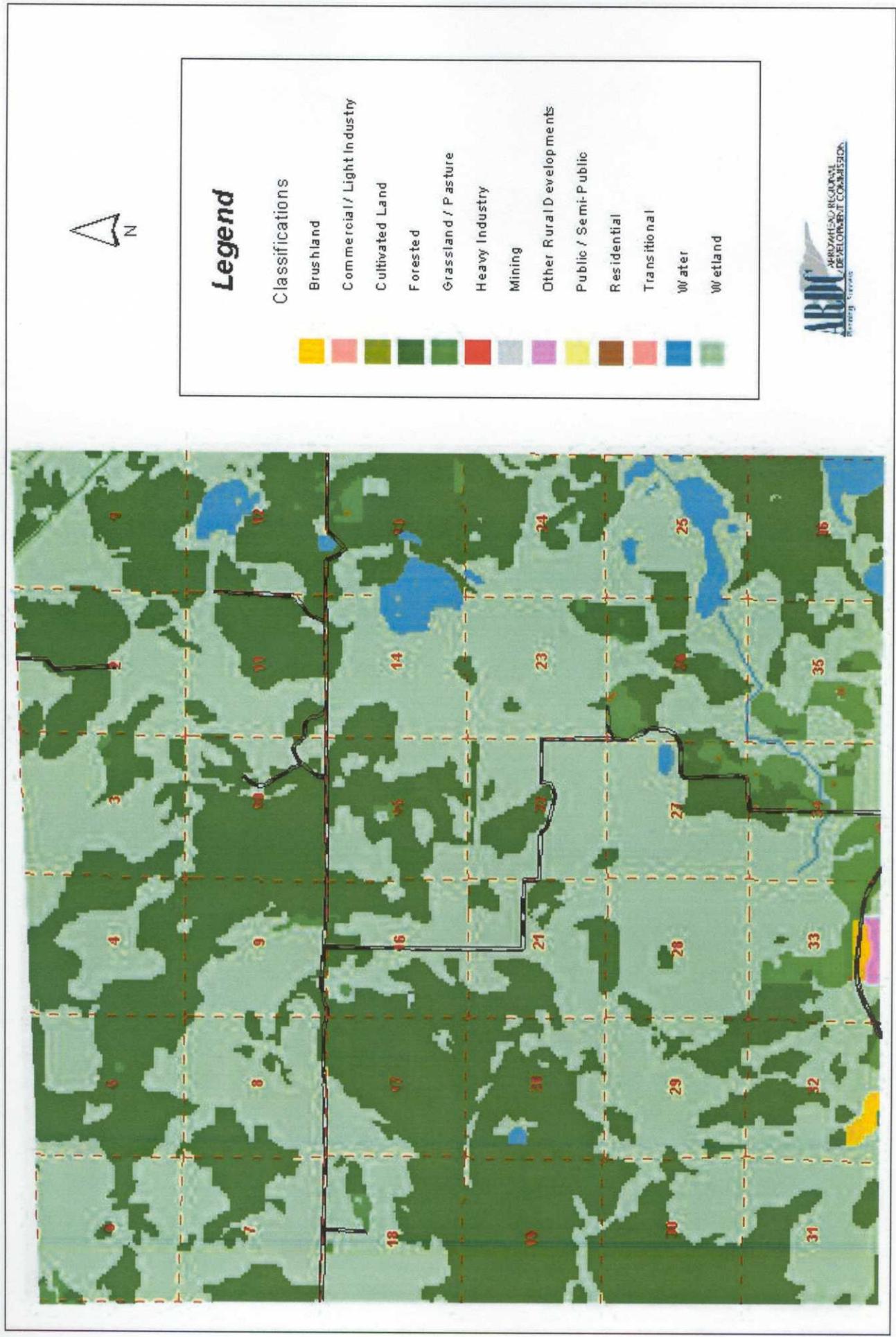
Legend

Classifications
Brushland
Commercial / Light Industry
Cultivated Land
Forested
Grassland / Pasture
Heavy Industry
Mining
Other Rural Developments
Public / Semi-Public
Residential
Transitional
Water
Wetland



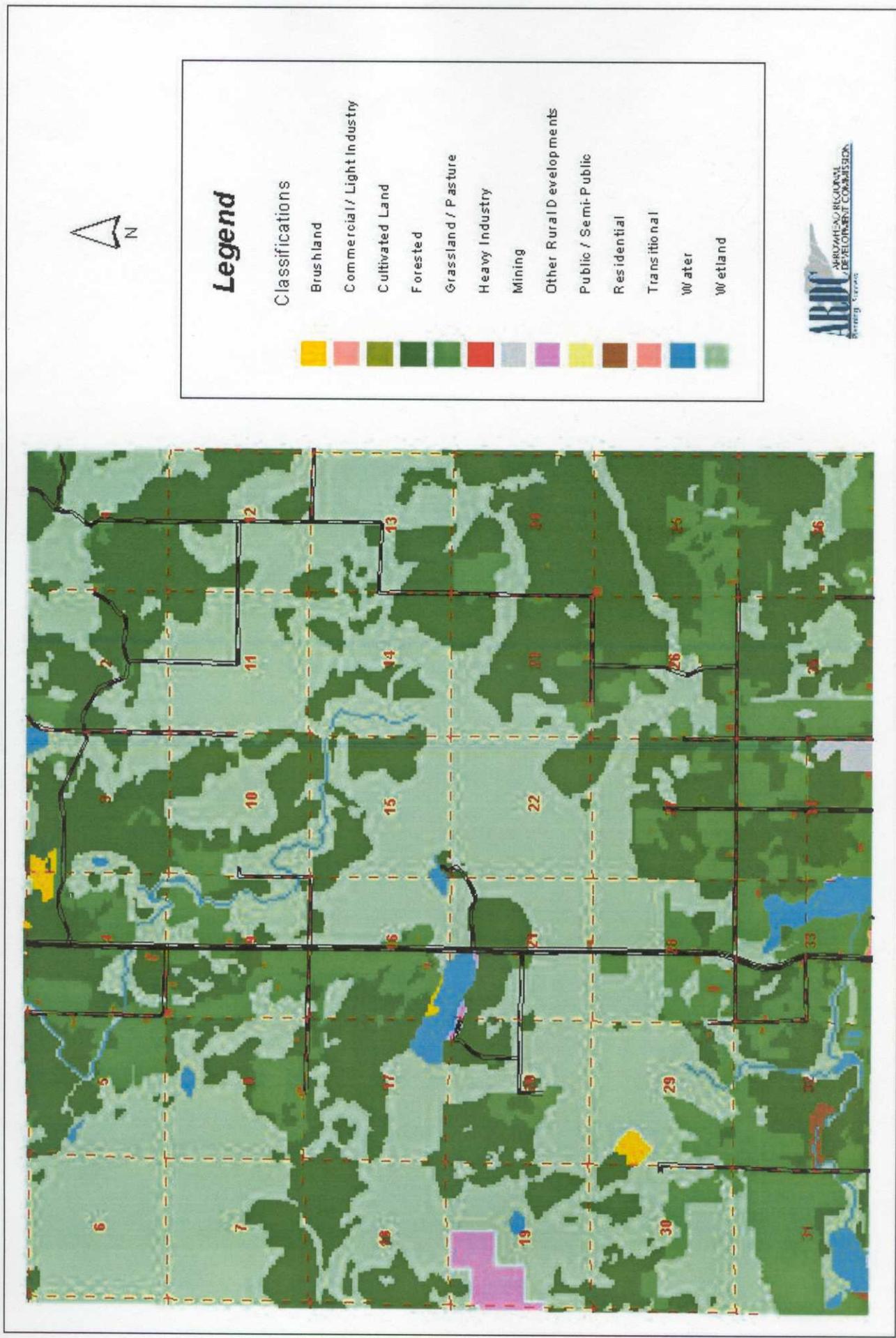
T. 49 / R. 19

Existing Land Use / Land Cover



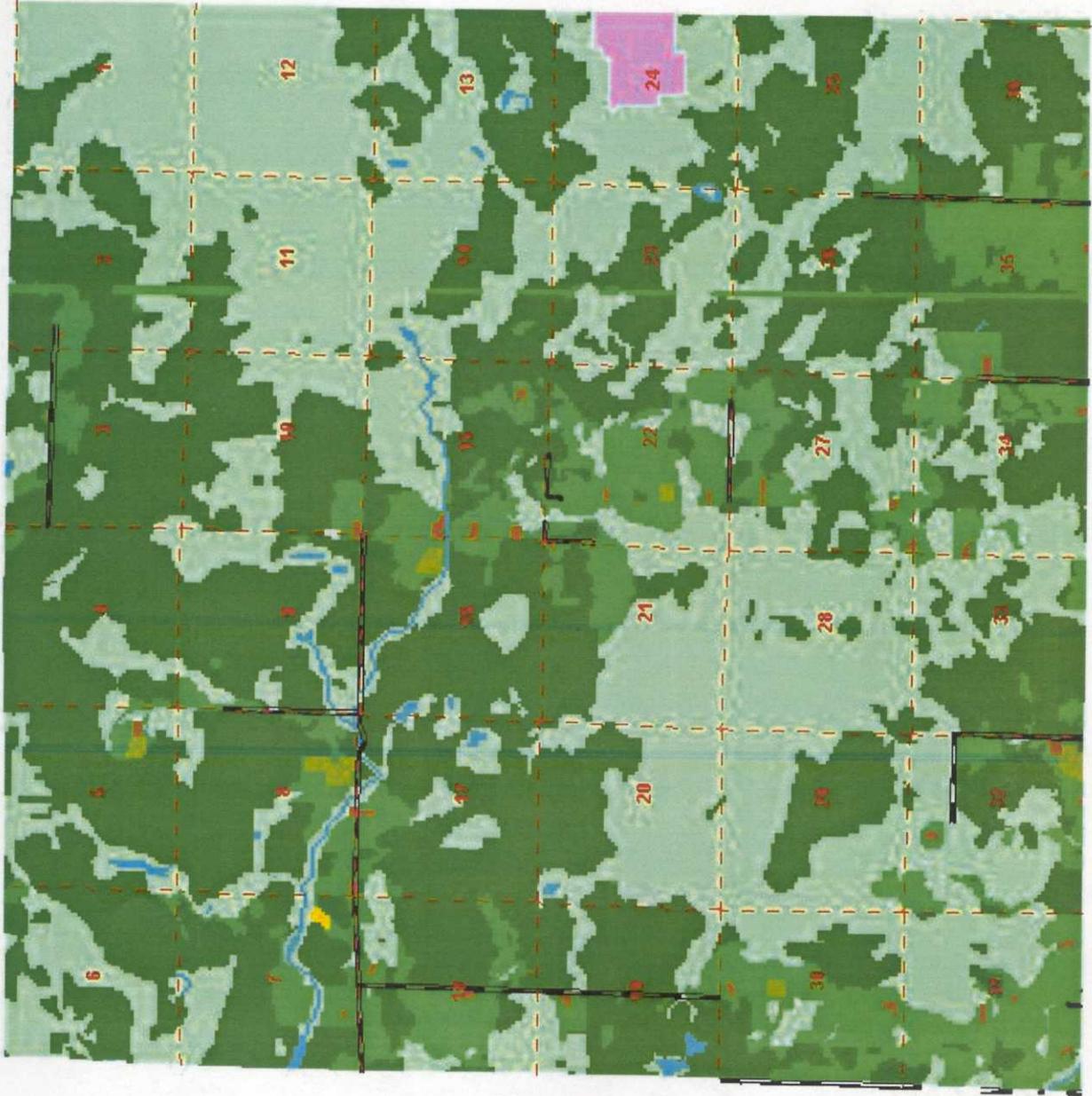
T. 49 / R. 20

Existing Land Use / Land Cover



T. 49 / R. 21

Existing Land Use / Land Cover



Legend

Classifications

Brushland	Commercial / Light Industry	Cultivated Land	Forested	Grassland / Pasture	Heavy Industry	Mining	Other Rural Developments	Public / Semi-Public	Residential	Transitional	Water	Wetland
Yellow	Light Pink	Light Green	Dark Green	Medium Green	Red	Grey	Pink	Yellow	Brown	Light Pink	Blue	Light Green





Facts about Odors, Noise, and Dust for Local Governments

A citizen has called your city or town office to complain about a nauseating odor, or dust coming from a local road or business. Or perhaps the complaint is about noises that interrupt sleep or conversations. What do you do?

Sometimes you call the Minnesota Pollution Control Agency (MPCA) or you direct your resident to call the MPCA instead. This fact sheet is designed to let you know what you can expect from the MPCA in these situations and suggest steps you can take when you receive such complaints.

Odors

A high percentage of the air pollution complaints the MPCA receives involve odors. Not only can unpleasant odors spoil residents' enjoyment of the outdoors and seep into their houses to disturb their home environments, but a persistent unpleasant odor can raise concerns about health effects. Even odors that have no real physical effects on the human body can cause temporary nausea and headaches if they are strong enough or unpleasant enough. We have all had the experience of smelling something that has "made us sick."

The MPCA is concerned about odors. However, the MPCA's odor rule has been repealed, because it was difficult, if not impossible, to enforce. Odor problems are generally not constant. Odors travel, linger,

Here's what we recommend you do when you receive a citizen complaint about an odor:

1. Determine the probable source of the odor.
2. Determine whether the odors should be considered nuisances or whether they may indicate the release of toxic air pollutants. The MPCA can help you here. If the source has an MPCA permit, agency staff may be able to suggest possible cause of the odorous emissions. In any case, if the emissions may be toxic, the MPCA wants to know about it for our enforcement records, and so that it can consider the need for emission control measures in future permits.
3. Document the complaint. City and town records of citizen complaints can be of value to the MPCA for enforcement purposes and will also be useful to you if you choose to enforce against the source. Items to document include weather conditions and time, duration, and description of the odor.
4. If you receive many complaints about a local source of odors that cannot be regulated as a toxic air pollutant, decide whether or not to handle the problem under your nuisance ordinance or advise the complainant to take legal action as an affected individual.

or dissipate depending on local weather conditions and activities causing the odors.

The odor rule included procedures for odor testing, using a six-member panel of people to determine whether a particular smell was detectable at various levels of dilution. It established "odor units" and limits on the number of odor units in the air at various points (at the stack, at the property line, in adjacent industrial or residential areas). In 1969, when the rule was adopted, the testing procedure was approved by the American Society for Testing and Materials. In 1986, that organization dropped its approval of the odor-testing procedure. Because the MPCA would not be able to present a good case if an industry were to contest alleged violations in court, the MPCA dropped the odor rule.

That does not mean that the MPCA is giving up on protecting the public from odors in situations where odorous emissions are actually harmful to the environment or public health. It does mean that odors that can be considered merely "nuisance" in nature can be best handled either by the local governing authority or by legal action by the affected parties.

For those odorous emissions that are "pollution" in the sense that they harm human health or the environment, the MPCA will limit emissions in its permits for the facilities causing problems. Substances considered to be toxic air pollutants similarly will be regulated by limiting emissions through permit conditions. Testing of emissions from the stacks or in the ambient air determines how much of these substances are being released and provides reliable data for enforcing the permit terms.

Noise

Noise that disturbs resident's rest, conversation, and peace of mind is another

Here's what we suggest you do when your residents call with complaints about continuing problems with noise. Remember, sometimes businesses are unaware of the noise problems they create, and the solutions can be simple.

1. Contact the source of the noise to attempt an immediate, voluntary solution (or encourage your resident to do so). As with odors, we suggest that you maintain records of these complaints.
2. You may want to take action based on your local nuisance ordinance. Even if the noise violates the state rule, the MPCA's enforcement process is relatively cumbersome, and enforcing noise violations is not as high a priority for the agency as enforcing more serious threats to public welfare and the environment.
3. You may ask the MPCA to monitor the noise. If the noise violates the state noise rule, local or MPCA enforcement is the next step.
4. If the noise does not violate the state rule, your nuisance ordinance is your best bet. The affected resident also has the option of initiating legal action against the facility causing the noise.

frequent subject of complaints to local governments and the MPCA. Obviously, barking dogs, noisy parties, and similar events are not situations in which the state should get involved.

Minnesota has a noise rule enforced by the MPCA for continuing situations in which noise may be a problem. Many municipalities have adopted the state noise rule as a local ordinance and are able to enforce it successfully. However, many noises may be unquestionably annoying to your residents and still not violate the noise rule. Those are most effectively regulated by local nuisance ordinances.

The state rule is based on one-hour statistical measurement of noise levels received by a listener. It regulates sources that emit loud noises for more than six minutes out of an hour and persistent noises that occur for more than 30 minutes out of an hour. Limits are lower for night hours and depend upon the type of land usage, requiring lower noise levels in areas that are residential or that require quiet because of health, religious, or cultural facilities, for example.

The MPCA can assist municipalities by sending staff and equipment to monitor noise levels. Local or MPCA follow-up generally has been successful in enforcing the noise rule.

MPCA staff usually work with city planning staff to resolve local noise problems. Enforcement of state motor vehicle noise limits is the responsibility of local law enforcement officials.

The state noise rule does not regulate what is termed "impulse noise." Impulse noise is a brief but loud noise that disrupts normal activities. Because of its short duration and often unpredictable occurrence, monitoring is difficult and usually does not reveal levels above the state noise rules. Impulse noise cannot be effectively regulated by nuisance ordinances.

Dust

A third source of citizen complaints is blowing dust.

State and federal rules include standards for the amount of fine dust particles (less than 10 microns in size) allowed in the air around us. That is because the fine particles have the potential to lodge in our lungs and affect our health. The rules include limits on the emission of dust, and the MPCA includes limits on the release of particulate matter in its air emissions permits for the kinds of facilities that have a potential for releasing particulates

from stacks. The permits also require dust-control measures to control the amount of dust produced from sources other than stacks, such as loading and unloading activities. Thus, cement and asphalt operations, grain elevators, and other materials-handling facilities must meet rule and/or permit conditions to limit dust.

Under Minnesota Rules, no one is allowed to cause avoidable amounts of dust to become airborne. This applies to all facilities, regardless of their permitting status.

If these kinds of operations are routinely causing dust problems, the MPCA wants to know about it. The MPCA needs the information in order to enforce the rule and permit conditions. Other dust sources such as roads, construction sites, parking lots, and stockpiles of sand and gravel often can more readily be controlled by your local nuisance ordinances.

Who to Call

Air Quality Complaints: (651) 296-7300

Noise: (651) 296-7898

Toll-free / TTY: (800) 657-3864

TTY: (651)297-5332

Names of complainants remain confidential.



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Carlton County – Parks and Recreation

The large number of rivers, lakes, and streams, as well as the vast wooded areas, provide great recreational and leisure opportunities for residents and tourists of Carlton County. In addition, the network of nature trails within the county expose outdoor enthusiasts to the natural splendor of Carlton County and Northern Minnesota, while providing year round recreation. Not only is the county known for its outdoor recreation options, but also the rich historical background of the area. Throughout the county, monuments and parks pay tribute to the historical sites that have shaped Carlton County and Northern Minnesota through time. The wide assortment of parks and outdoor recreation areas within Carlton County provide opportunities for individuals of all ages and interests to enjoy.

□ *State Parks*

Within its borders, Carlton County contains two state parks managed by the Department of Natural Resources (DNR). These include Jay Cooke State Park and the Moose Lake State Park.

Jay Cooke State Park:

Jay Cooke State Park is located three miles east of Carlton, Minnesota on State Trunk Highway 210. It was established in 1915 after the St. Louis River Power Company donated 2,350 acres of land. The park reached its current size in 1945 after additional land was purchased by the state. Jay Cooke Park now measures 8,818 acres and size and hosts approximately 220,000 visitors annually. The land is named after Jay Cooke, an early railroad Pioneer and entrepreneur in northern Minnesota. This park is home to many exceptional facilities and features. This includes 80 semi-rural campsites in close proximity to the St. Louis River, two group camps, two shelters with fire places, a picnic shelter, and backpacking campsites. In addition, there are 50 miles of hiking trails, 12 miles of snowmobile trails, and 32 miles of cross-country ski trails within the park borders.

Some of the main attractions of Jay Cooke State Park are the St. Louis River Valley, the swinging bridge, the Grand Portage Trail, Thomson Pioneer Cemetery, the Thomson Dam and River Gorge, the Scenic Drive, and Oldenburg Point.

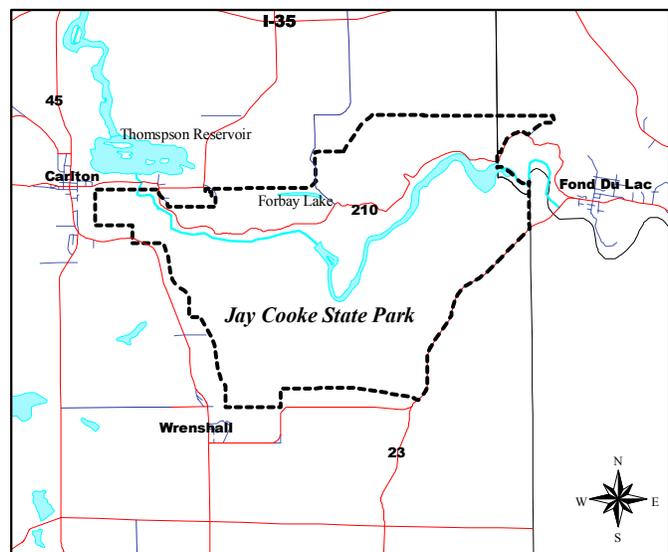


Figure 1: Jay Cooke State Park encompasses 8, 818 acres



Figure 2: Jay Cooke Park is host to 220,000 visitors annually.



Figure 3: The famous swinging bridge located in the park.

Moose Lake State Park:

Moose Lake State Park is the second state park located within Carlton County. The idea for a state park in Moose Lake started in 1962, when local residents expressed the need for more campsites. The initial idea for the park came to fruition in 1971. In 1977, a picnic area was added on the north shore of Echo Lake within the park which is located one-half mile east of U.S. Interstate 35 at the Moose Lake exit. Since then, additional picnic areas and campsites have been constructed. Moose Lake State Park currently contains 1,194 acres and hosts nearly 50,000 visitors a year. The easy access from I-35, as well as the park’s sandy beach, beautiful hiking trails, and fishing, make it a popular recreation destination. Facilities featured within the park include 35 semi-modern campsites; 20 electric sites; picnic grounds; hiking, cross-country, and nowmobile trails; boat rentals; a swimming beach; and drive-in boat access to Echo Lake located within the park.

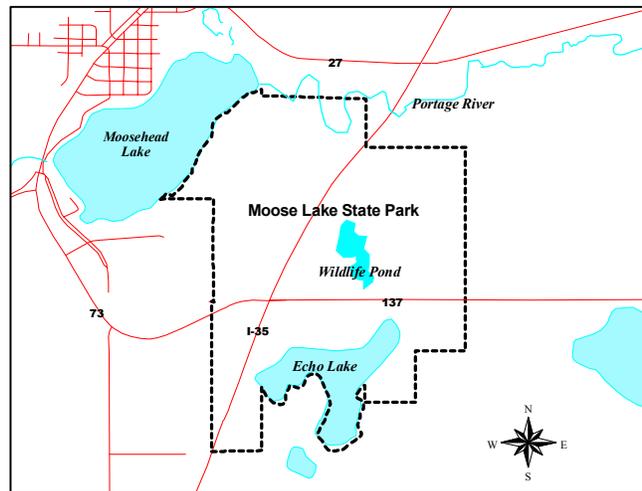


Figure 4: Moose Lake State Park contains 1,194 acres.



Figure 5: Established in 1971, Moose Lake State Park hosts 50,000 visitors each year.



Figure 6: The park has many miles of groomed ski trails.

□ ***State Forest Areas***

Within its borders, Carlton County contains portions of two State Forest areas. These areas include the Fond Du Lac State Forest and the Nemadji State Forest.

Fond Du Lac State Forest:

The majority of this forest is located in Carlton County, with a small portion found in St. Louis County. Although the Fond Du Lac State Forest contains no designated camping sites, there are many recreational activities including hiking, canoeing, and cross-country skiing. Some undesignated camping areas may still be available in this forest.



Figure 7: The Fond Du Lac State Forest is managed by the DNR.

Nemadji State Forest:

The bulk of this state forest is found in Pine County, with a small portion located within the southeast corner of Carlton County. This forest contains nine drive-in camping sites, a picnic area, water access, fishing, and three miles of nature trails.

□ ***Other Recreational Opportunities***

• *Moose Lake City Park & Campground:*

Situated on the shores of Moosehead Lake, the park has a swimming beach with lifeguards along with camping facilities with full water and electrical hookups. The park also contains a full kitchen pavilion and a covered picnic shelter. Recreational facilities include a complete playground with tennis courts. The park is open from mid-May until late September.

• *Roy Peterson Memorial Park:*

Located in Moose Lake, this park was established in 1991 on land donated by Carlton County. The park contains basketball courts, playground equipment, and a small picnic area. The park honors Roy Peterson, a longtime resident of the neighborhood Where the park is located.



Figure 8: Roy Peterson Memorial Park



Figure 9: Bear Lake Park

• *Bear Lake County Park:*

This park, found in the City of Barnum, is operated by Carlton County and offers swimming, picnicking, and fishing without fees. Overnight camping at the park requires a small fee. Featured here is a swimming beach with lifeguards, picnic areas and camping with electrical hookups, a fishing dock and boat launching area, and playground equipment.

• *Cromwell City Park and Pavilion:*

Located within in Cromwell City limits, the park contains a skating rink, regulation horse riding area, and land for ATV use. Also found in the park is a dance and reception hall that contains meeting rooms and kitchen facilities.

- *Hanging Horn Park:*

Hanging Horn Park is operated by the City of Barnum and is two miles from the city along the shores of the Moosehorn River. The park features a boat and canoe launching area, primitive campsites, a public water well, as well as a picnic facility. There is a nominal charge for nightly camping within the park.

- *Cich's Birch Bay Campground*

Located in Wright, this campground has fishing opportunities, a boat launch and dock area along with boat, canoe and paddleboat rentals. Other recreational facilities include a playground, biking trails, and a swimming beach. The park typically operates from May 10th to October 10th.

- *Cloquet KOA:*

This campground in Cloquet contains 69 sites for RV's and tents. Also available are small rental cabins. The park includes a recreation area, swimming pool, sauna, playground, badminton, horseshoes, and volleyball courts. The campground remains open from May 1st to October 15th.



Figure 10: Cabins available for rent at Cloquet KOA

- *Veterans Square:*

This area in Moose Lake is dedicated to the veterans of the area. Veterans Square is a place honoring individuals who risked their lives in service of the United States.

- *Centennial Square:*

Also in Moose Lake, this park was dedicated in 1989 as a part of the City's centennial celebration. The park honors veterans of the area and longtime community members. The park has space available for a rest area, as well as a small picnic area. Many city events and community gatherings are held in Centennial Square.

- *Bent Trout Lake Campground:*

Bent Trout Lake is a private campground and fishing lake six miles from Barnum. The park is made up of 150 acres and contains 80 sites with separate tent/group sites, a modern shower/restroom building, laundry facilities, a picnic shelter, playground and game room, recreation field, putting green, and lake side sauna.

- Island Lake Campground:

Established in Cromwell, MN the Island Lake Campground is open May to September and offers camping sites and fishing. Also available for use at the park are canoes, paddleboats, a recreation hall and playground, and a swimming area. In addition, there are cabins open for rent.

- Red Fox Campground & RV Park:

The Red Fox Campground and RV Park is situated off I-35 in Moose Lake, MN. This park features 35 secluded wooded sites, 10 pull through sites, as well as tent sites. The facility offers a recreation building, swimming, golf, fishing, and convenient access to bike and hiking trails.



Figure 11: The Red Fox Campground in Moose Lake.

- Barnum City Park:

Located in the center of town, the Barnum City Park provides recreational activities for city residents. The main feature of the park is the presence of the Moosehorn River and the nature path that follows along the shoreline. Other recreational options include playground equipment, picnic areas, horseshoe pits, volleyball courts, a pavilion, and limited camping areas.

- Robert Johnson Memorial Park:

The Robert Johnson Memorial Park is made available to residents of Barnum through a cooperative agreement between the city and the school district. Honoring a longtime teacher and mayor of Barnum, the park is open for all summertime activities. The park features tennis courts, ballfields, playground equipment, and a concession area.

- Pine Valley Park:

This park, found in Cloquet, has Olympic level cross-country ski trails that also serve as hiking trails in the summer. Also located in the park is an archery range, two ski jumps, and indoor hockey facilities.



Figure 12: Pine Valley Park in Cloquet

- General C.C. Andrews State Forest:

In addition, Moose Lake is home to the Willow River Campground. This park features a total of 41 camping sites and one group picnic site. There is also a boat ramp, fishing opportunities, and group campsites.

- Pinehurst Park:

Situated in downtown Cloquet, this park contains a community swimming pool with sand beach, softball fields, a winter skating rink, tennis and basketball courts, and sledding hills. In addition, Pinehurst Park has a picnic area and playground as well as a band shell.

- Riverfront Park:

Riverfront Park is an undeveloped piece of land found on the north shore of the St. Louis River west of Highway 33. The City of Cloquet is in the midst of a process of developing a recreational plan to use the site as a trailhead providing access to the Lumberjack Trail as well as other local trails.

- Veteran's Memorial Park:

Located at the intersection of Highway 33 and Cloquet Avenue, the Veteran's Memorial Park is home to a picnic shelter, playground, pond, and parking area. Future plans for the park include enhancement of the memorial and emphasizing its importance as a primary community event location.

- Sunnyside Park:

Found along the North Cloquet Road, Sunnyside park features softball/little league fields, a soccer field, exercise trails, tennis and basketball courts, a playground, and a winter skating rink.

- Spafford Park:

Located on Dunlap Island, Spafford Park has 22 trailer campsites, a boat landing on the St. Louis River, a fishing bridge, as well as access to the Lumberjack Trail and other miscellaneous trails.

- Voyageur Park:

Also found on Dunlap Island is Voyageur Park. This park contains two canoe landings, a group-gathering site, picnic tables, a trading post, as well as pedestrian trails and access to other area trails.

- Hilltop Park:

Hilltop Park is located to the west of 14th Street (County Road 3) and south of I-35. The park was reconstructed in 2000 with three new soccer fields. The park also contains tennis and basketball courts, and a picnic area.

- Little People’s Park:

Found on Carlton Avenue West, the Little People’s Park is a playground area designed specifically for small children. It serves primarily as a neighborhood part, but is open to residents from the entire community.

- Braun Park:

Located in Cloquet to the west of 14th Street and south of Lawrence Road, Braun Park was constructed in 2000. This park features four softball fields and two regulation baseball fields. The plans for the park also call for a picnic area, and concession building.

- *Other park facilities in Carlton County include, but are not limited to, the following sites.*

- ❑ Chub Lake Park, Carlton
- ❑ Kalevala Park, Kalevala Township
- ❑ Ervid T. Clemens Memorial Rest Area, Moose Lake
- ❑ Art Ohlgron Recreation Area, Moose Lake
- ❑ Twilight Park, Moose Lake
- ❑ Birch Knoll Campground, Holyoke
- ❑ Tom McFarland Park, Carlton
- ❑ Long Park, Cloquet
- ❑ Wentworth Park
- ❑ Atomba Park
- ❑ Knife Island Campground and Historical Site, Esko
- ❑ Township Park, Thomsom
- ❑ Athletic Field, Cloquet



Figure 13: Tom McFarland Park in Carlton

Carlton County Trails

- Willard Munger State Trail:

The Willard Munger State Trail is a series of multiple use trails that run between Duluth and Hinckley. The trail, running from east the Carlton to just south of Moose Lake, offers many recreational opportunities for residents of Carlton County. The Munger Trail is made up of a network of interconnecting trails that offer hiking, biking, in-line skating, snowmobiling, and horseback riding. The Munger Trail was created in 1973 and is managed by the Minnesota Department of Natural Resources (DNR). The trail runs through the Carlton County cities of Thomson, Carlton, Wrenshall, Atkinson, Mahtowa, Barnum, and Moose Lake.

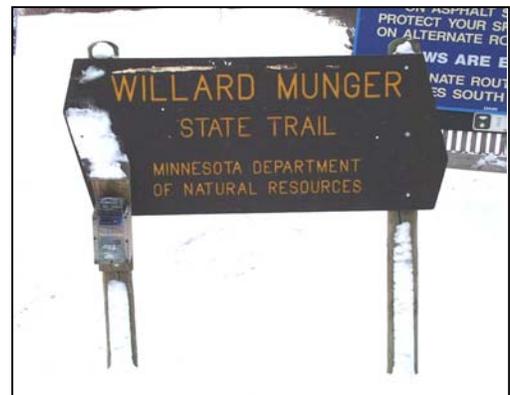


Figure 14: The Willard Munger State Trail



Figure 15: The Soo Line Trail

- Soo Line Trail:

Maintained by the DNR, the Soo Line Trail is made up of a north and south portion that both have mileage in Carlton County. The Soo Line North Trail is a 112-mile trail running through Carlton, Aitkin, and Cass Counties. The trail is open for ATV on a year round basis in Carlton County. The Soo Line South Trail is a 114-mile trail running in a southwestern direction through Carlton, Pine, Aitkin, Mille Lacs, and Morrison Counties. Like the northern trail, the southern trail is open year round for ATV use.

- *Additional Carlton County Public Recreational Trail Mileage*

Facility Name	Administrator	Total Miles
Fond Du Lac Ski Trail	MN DNR Forestry Division	11.3
Fond Du Lac Snowmobile Trail	MN DNR Forestry Division	21.0
Jay Cooke State Park	DNR Parks & Recreation	50.0
Kettle River Trail	Carlton Co. Grant-in-aid	58.5
Moosehorn Trail	Carlton Co. Grant-in-aid	82.5
Snow Gophers Trail	Carlton Co. Grant-in-aid	60.0
Pine Valley Park	Cloquet City non-GIA	5.0
Lumberjack Trail	MN DNR	-----
Alex Laveau Trail	-----	-----

Carlton County Historical Sites

There are many historical sites scattered throughout Carlton County recognizing the rich cultural history and traditions of the area. The history of the area that is now Carlton County dates back to the period of French exploration. The initial residents of the county were Sioux Indians. On May 23, 1857 Carlton County was formed by the Minnesota State Legislature. The namesake of the county was Reuben Carlton, a government Indian Agent who worked with Ojibway Indians. Carlton County was formed from St. Louis County and at the point of conception, had a very sparse population. In 1857, the first road was constructed through the county and on February 15, 1870 the first railroad went through the area paralleling the first road. Carlton County continued to grow due to the logging industry that was significant up until 1918. In 1918, the Great Cloquet Fire destroyed much of the forest areas and destroyed Cloquet as well as its sawmills. This fire marked the beginning of the end for the timber industry in the county, although some sawmills operated up until 1935 when the last of them ceased operations.

- Historic Sites:



Figure 16: Moose Lake Depot and 1918 Fire Museum.



Figure 17: Monument commemorating 1918 fire victims in Kettle River.



Figure 18: Site of Stage Station on the first road built in the county.



Figure 19: Location where the construction of the Northern Pacific Railroad was commenced in 1870.