

# BARRY COUNTY, MICHIGAN

## A MASTER PLAN



ADOPTED OCTOBER 11, 2005

Williams & Works



# TABLE OF CONTENTS

	<u>Page</u>
<b><u>SECTION I. INTRODUCTION</u></b> .....	1
SUMMARY .....	1
THE PURPOSE OF THE MASTER PLAN .....	2
PLAN METHODOLOGY .....	2
COMMUNITY OPINION SURVEY .....	4
THE ORGANIZATION OF THE PLAN .....	5
ACKNOWLEDGEMENTS .....	6
<b><u>SECTION II. COMMUNITY PROFILE</u></b> .....	7
<b><u>CHAPTER 1. NATURAL FEATURES AND THE ENVIRONMENT</u></b> .....	9
CLIMATE .....	9
LAKES & RIVERS .....	10
WATERSHEDS .....	13
GROUNDWATER & SURFACE WATER .....	17
SOILS .....	18
WETLANDS .....	23
ENDANGERED, THREATENED, & SPECIAL CONCERN SPECIES .....	27
INVASIVE & EXOTIC SPECIES .....	27
<b><u>CHAPTER 2. POPULATION</u></b> .....	31
HISTORICAL POPULATION TRENDS .....	31
COUNTY POPULATION PROJECTIONS .....	35
REGIONAL POPULATION .....	38
AGE, SEX, & ETHNICITY .....	39
ENROLLMENT PROJECTIONS .....	42
EDUCATIONAL ATTAINMENT .....	43
PLANNING IMPLICATIONS .....	44
<b><u>CHAPTER 3. HOUSING AND ECONOMIC DEVELOPMENT</u></b> .....	47
HOUSING & HOUSEHOLDS .....	47
HOUSING QUALITY .....	48
EQUALIZED VALUE GROWTH .....	49
BUILDING PERMITS .....	51
EMPLOYMENT .....	53

<b><u>CHAPTER 4. LAND USE AND DEVELOPMENT PATTERNS..</u></b>	<b>59</b>
LAND COVER	59
LAND USE	66
ZONING	67
REGIONAL PERSPECTIVE	73
PLANNING IMPLICATIONS	74
<b><u>CHAPTER 5. COMMUNITY FACILITIES &amp; SERVICES.....</u></b>	<b>77</b>
SCHOOLS	77
PARKS & RECREATION FACILITIES	85
PUBLIC SAFETY SERVICES & FACILITIES	89
<b><u>CHAPTER 6. UTILITIES .....</u></b>	<b>93</b>
PUBLIC WASTEWATER SYSTEMS	93
PUBLIC WATER SYSTEMS	101
UTILITIES & GROWTH MANAGEMENT	108
INDIVIDUAL SEPTIC SYSTEMS & WELLS	109
PLANNING IMPLICATIONS	110
<b><u>CHAPTER 7. TRANSPORTATION .....</u></b>	<b>111</b>
NEW ROAD PLANS	111
TRAFFIC VOLUME	112
REGIONAL TRANSPORTATION PLANS & INFLUENCES	114
PUBLIC TRANSIT	120
AIR TRANSPORTATION	120
<b><u>SECTION III. FUTURE LAND USE.....</u></b>	<b>123</b>
THE RELATIONSHIP OF PLANNING TO ZONING	123
<b><u>CHAPTER 8. GOALS AND OBJECTIVES.....</u></b>	<b>127</b>
<b><u>CHAPTER 9. FUTURE LAND USE PLAN.....</u></b>	<b>139</b>
<b><u>CHAPTER 10. IMPLEMENTATION STRATEGIES.....</u></b>	<b>157</b>
<b><u>BIBLIOGRAPHY .....</u></b>	<b>167</b>

**APPENDIX 1. HAZARD MITIGATION PLAN (BOUND SEPARATELY)**



## LIST OF FIGURES

Figure 1. 100 Year Population Trend .....	31
Figure 2. Rate of Population Change by Jurisdiction.....	32
Figure 3. 40 Years of Population Change.....	33
Figure 4. Comparison of In- and Out-Migration.....	34
Figure 5. Population Projection Comparison.....	37
Figure 6. Comparison of Age by Sex, 1990 – 2000.....	41
Figure 7. Educational Attainment .....	43
Figure 8. 2000 Housing Occupancy Comparison .....	48
Figure 9. Breakdown of Barry County SEV.....	49
Figure 10. Trends in Property Values .....	50
Figure 11. Barry County Building Permits .....	51
Figure 12. Comparative Unemployment Rates .....	53
Figure 13. Composition of Barry County Employment.....	54
Figure 14. Trends in Employment 1980 – 2000 .....	57
Figure 15. Barry County Land Use.....	61

## LIST OF MAPS

Map 1. Watersheds .....	15
Map 2. Septic Tank Drainfield Capabilities .....	21
Map 3. Wetlands.....	25
Map 4. Land Cover .....	63
Map 5. Composite Zoning Map.....	71
Map 6. School Districts.....	83
Map 7. Public Sewer Systems .....	99
Map 8. Public Water Systems .....	105
Map 9. Traffic Counts .....	117
Map 10. Future Land Use.....	155

## LIST OF TABLES

Table 1.	Component Change of Population: 1990-1999.....	34
Table 2.	Barry County Population Forecast: 1990-2020 .....	36
Table 3.	Regional Population Projections .....	39
Table 4.	Barry County Building Permits: 1998-2002 .....	52
Table 5.	Key Manufacturers in Barry County.....	55
Table 6.	Comparison of Major Employment by Industry and County.....	56
Table 7.	Comparison of Consolidated Land Cover: 1978-1994.....	65
Table 8.	Comparative Zoning District Analysis.....	68
Table 9.	Sewer District Capacities .....	108
Table 10.	Home Heating Fuel Usage.....	110
Table 11.	State Highway Daily Volume.....	112
Table 12.	5,000 ADT Roadways.....	114

## SECTION I: INTRODUCTION

### SUMMARY

This Master Plan represents the culmination of nearly two years of work by numerous local residents and local officials. It reflects the County's profound concerns regarding growth and the preservation of rural character and natural features. The effort that went into this Plan illustrates a strong commitment to retain and strengthen local quality of life. The Plan outlines the preferred future for the community and a comprehensive set of strategies to realize it. The Plan is appropriately general, recognizing that planning for the future is a delicate blend of art and science and that sufficient flexibility will be needed to respond to the ever-changing challenges of the future.

**The Plan is  
appropriately general  
... sufficient flexibility  
will be needed to  
respond to the ever-  
changing challenges of  
the future.**

This Plan was developed in response to a desire in the community to strengthen existing assets and preserve what the residents value. The earlier Master Plan was approximately seven years old and no longer reflected current development trends. This revised Plan is based on a recognition of the need to view the pace and character of growth and development in the context of its long-term impact on the community. Barry County has reached a critical and defining moment in its history. Through the community input process of this Master Plan, the residents of the County have chosen to primarily proceed with low impact patterns of development designed to enhance the sustainability and economics of the region. Once officially adopted and maintained, this Plan will serve as an advisory guide for the physical conservation of certain areas and for the development of other areas.

This Plan will be successful to the extent that it:

- ◆ Reflects the needs and desires of the citizens of Barry County;
- ◆ Realistically interprets and reflects the conditions, trends and the dynamic economic and social pressures that are brought about by change; and
- ◆ Inspires consensus and cooperation among the various public agencies, developers, municipalities, and the citizens of the County toward achieving common goals.

## THE PURPOSE OF THE MASTER PLAN

**It creates a logical basis for zoning, subdivision design, public improvement plans ... as well as other public and private endeavors dealing with the physical conservation and development of the County.**

When the Master Plan Advisory Group began the Plan preparation process, it had several objectives. First, it was important to clearly define the priorities of the County with regard to growth and development and land use. Secondly, the County sought to develop a Plan that is tailored to local conditions and yet coordinated with the planning activities of the larger metropolitan areas surrounding the community. Thirdly, the planning process was seen as an opportunity to build and strengthen a community consensus about the future land use patterns in the County. Finally, the County sought realistic and effective mechanisms to achieve the Plan's objectives.

This County Master Plan accomplishes all these objectives. More specifically, this Plan will serve the County in the following ways:

It provides a comprehensive means of integrating proposals that look years ahead to meet future needs regarding general and major aspects of physical conservation and development throughout the County. The Plan serves as the official, advisory policy statement for encouraging orderly and efficient use of the land for residences, parklands, services, and infrastructure, and for coordinating these uses of land with each other, with streets, and with other necessary public facilities and services. It creates a logical basis for zoning, subdivision design, public improvement plans, and for facilitating and guiding the work of the County Planning Commission and the County Board of Commissioners as well as other public and private endeavors dealing with the physical conservation and development of the County. It provides a means for private organizations and individuals to determine how they may relate their building and development projects and policies to official County planning policies. It offers a means of relating the plans of Barry County to the plans of Southwest Michigan and the metropolitan areas of Grand Rapids, Kalamazoo, Battle Creek, and Lansing.

## PLAN METHODOLOGY

The planning process involved four inter-related phases:

- Data Analysis – A Community Profile;
- Goals and Objectives – Creating a Policy Foundation;

- Plan Preparation – Analyzing the Issues and Defining the Preferred Future; and
- Implementation Strategies – Getting There from Here.

The first phase of the effort involved the formation of a citizen input structure (Advisory Group) and a summary review and analysis of available data gathered from local and regional sources. The County Planning Commission appointed the Advisory Group. It included residents, business owners, public officials from the County and local municipalities which comprise the County, as well as the members of the Planning Commission, and various other boards, departments, and commissions serving the County. The Advisory Group was formed as an ad hoc entity to guide the planning process and to serve as a sounding board for the consultant throughout the process.

## DATA ANALYSIS

During the first phase, demographic, economic and land use data was gathered to support the Plan. The purpose of this effort was to develop a comprehensive impression of the patterns of growth and the challenges that will impact the County. This phase culminated in the preparation of the Community Profile Report. This report served as a technical resource for the Advisory Group and the consultant. It also represents the Community Profile which constitutes Section II (Chapters 1 through 7) of this Plan.

**The Master Plan  
process employed  
methods to garner  
extensive public input.**

## GOALS & OBJECTIVES

The objective of the second phase was to establish a policy basis for the County's planning and land use regulations. To do this it was important to "take the pulse" of the community and determine what direction residents were looking for the future of their community. The Master Plan process employed three methods of acquiring community input. These were County Futuring Workshops, Focus Groups, and a Community Opinion Survey.

**County Futuring Workshops:** Barry County sponsored four community Futuring Workshops, one for each quadrant of the County. These were public meetings intended to give community residents an opportunity to voice concerns about the demographic, land use, farmland, and traffic impacts and trends facing the growing County. The four workshops were held as follows:

- ◆ Thursday, January 29, 2004, at the Hastings Township Hall

- ◆ Monday, February 9, 2004, at the Barry Township Hall
- ◆ Thursday, February 12, 2004, at the Baltimore Township Hall
- ◆ Monday, February 23, 2004, at the Thornapple Township Hall

The objective of each activity was to develop a general consensus among the participants as to the likely result of a continuation of the current trends in growth and development in the Barry County community.

**Focus Groups:** The Futuring Workshops included a nominal group process intended to aid participants in identifying and prioritizing the factors that may affect the quality of life in the County. From the Futuring Workshops emerged several issues that the Planning Commission and its planning team felt required further input. The focus group activities were a means to gather that more refined input. The participants included residents of the community, individuals with expertise in particular areas of consideration as well as outside stakeholders. Issues areas included:

- ◆ Rural Quality and Preservation
- ◆ Water Quality and the Environment
- ◆ Code Enforcement and Municipal Cooperation
- ◆ Economic Development and Resource-Based Industries
- ◆ Villages, Hamlets, and Town Centers
- ◆ Traffic and Transportation
- ◆ Water and Sewer Improvements

**Community Opinion Survey.** In September of 2004, the County Planning Commission issued opinion surveys to a random sample of registered voters in the County to gather public opinions relative to growth and development. The previous two phases of the community input process (i.e., futuring workshops and focus groups) offered valuable insight into the perspectives of the participants in these various forums. However, in order to test the input gathered to determine whether it truly reflected the consensus of opinion in the county, a scientific survey was conducted. Using the County's database of its 26,747 registered voters, a random sample of 10% of the voters was developed. A total of 2,677 survey forms were mailed resulting in 530 responses, for a response rate of 21%. Survey questions focused on areas of identification, contemporary planning and zoning issues facing the County, desired future growth and development, economic development, environmental quality, traffic and transportation, and

farmland preservation. The results of the community opinion survey were published in October, 2004

### **PLAN PREPARATION**

The third phase involved drawing together the input from the previous two phases and preparing a Future Land Use Plan, which is reflected in Section III of this Plan. The future land use designations and map (Chapter 9) were developed in a series of interactive meetings of the Advisory Group. To support the desired development patterns envisioned in the Future Land Use Map, the Map is supported with a collection of texts describing how specific areas of the County should develop within the next twenty to twenty-five years.

### **IMPLEMENTATION STRATEGIES**

The final phase of the process involved the development of specific implementation strategies to carry out the Plan. These are reflected in general terms in Chapter 10. At the conclusion of the fourth phase, the Planning Commission held a public hearing on the entire Plan.

## **THE ORGANIZATION OF THE PLAN**

This Plan is organized into three sections, each consisting of one or more chapters or sections. Section I includes this introductory chapter which outlines the purpose of the plan, the process for its development, and acknowledgements to those involved. Section II is the Community Profile, which presents an overview description of Barry County from the perspective of:

- ◆ Chapter 1. Natural Features and the Environment
- ◆ Chapter 2. Population
- ◆ Chapter 3. Housing and Economic Development
- ◆ Chapter 4. Land Use and Development Patterns
- ◆ Chapter 5. Community Facilities and Services
- ◆ Chapter 6. Utilities
- ◆ Chapter 7. Transportation

Section III constitutes the Future Land Use Plan, which includes the County's Goals and Objectives (Chapter 8), the Future Land Use Plan



(Chapter 9), and the Implementation Strategies (Chapter 10). The Bibliography outlines all the various resources consulted in the completion of this Plan.

## ACKNOWLEDGMENTS

The process to prepare this Plan has involved numerous community residents as well as public officials. The following individuals have provided key input and their contributions are gratefully acknowledged:

Linda Blackmore	Jan McKeough	James Alden
Kym McNally	Pete Dunn	Tony Crosariol
Dayna Porter	Linda Gasper	Clyde Morgan
George Dibble	Tom Guthrie	William Stough
Jim French	Matt Habecker	Michael Barney
Sherry Wood	Rose Heaton	Serafin Nieves
Michael Brown	Dave DesJardin	Jeff MacKenzie
Mark Marentette	Margaret Wood	Jim French
Mary Ann Maier	Roger Caris	Sandy James
Ron Bracey	Terry Swisher	Wayne Adams
Gary Klooster	Jean Pugh	Don Nevins
George Cullers	Karen Roth	Howard Gibson
Tom Doyle	Paul Schuurmans	Clare Tripp
Cathy Strickland	Barb Lyons	Thomas Wing
Roger Turner	Kim DeFresne	Michael Callton
Wes Knollenberg	Lyn Briel	Danny Boulter
Jim Brown	Pat Sensiba	Robert L. Mack
Ken Kornheiser	Barry Wood	Dave Coleman
Bradley Carpenter	Kathy Kunde	Tiffany Forbes
Douglas MacKenzie	Dave Logan	Dave Federinko
Donald Drummond	Elizabeth Forbes	

## SECTION II: A COMMUNITY PROFILE

**Residents and visitors seek to preserve the rural lifestyle, recreational amenities, and small town charm.**

Barry County offers residents and visitors a rural lifestyle, recreational amenities and small town charm; all at the fringe of one of Michigan's strongest economic regions. A strong West Michigan economy, and rapidly expanding urban areas surround Barry County, are beginning to impact land use in the County. While growth is often desirable and sustainable economic development is fundamental for healthy communities, the County seeks to proactively monitor, evaluate, and plan for attractive and enviable neighborhoods, preserve important features and farmland while respecting individual property rights. A new Barry County Master Plan sets the groundwork for such a task, and sets a foundation for other objectives.

Producing a Master Plan begins with gathering and analyzing large amounts of data. Data was gathered from local sources, such as the individual municipalities within the County, state agencies, the United States Census Bureau, published literature, and environmental organizations. The result of such a compilation of research helps to tell Barry County's story; and the analysis of such data comprises this portion of the Master Plan: the Community Profile. Consequently, the data collected and analyzed has a key role in the master planning process since it serves as an actual measure of Barry County's past, present, and likely future. As the informational stage of the planning process, the Community Profile also makes possible a comparison of local conditions, which is helpful to see the broad, realistic picture of Barry County's circumstances.

A Hazard Mitigation plan has been completed and is supplemental to the text of the Master Plan as Appendix 1. It was developed in response to a desire in the community to strengthen responsiveness to existing and recurring hazards, to identify potential hazards, and to prepare for and mitigate these hazards. The fundamental purpose of the Hazard Mitigation Plan is to enable the County's emergency management and planning staff to establish a future direction for the County's protection of its resources.



## CHAPTER 1. NATURAL FEATURES AND THE ENVIRONMENT

**The county continues to experience increasing growth pressures and the effects of growth and development are impacting the natural resources and local quality of life.**

Barry County is situated in the southwestern lower peninsula of Michigan in the center of the triangle with metropolitan areas of Grand Rapids, Lansing, and Kalamazoo/Battle Creek at its points. Numerous inland lakes, rivers, and a rolling terrain mixed with upland forests characterize the County. The county continues to experience increasing growth pressures and the effects of growth and development are impacting the natural features and local quality of life.

The County is approximately 576 square miles in area and consists of 16 Townships, which are as follows:

- |                             |                            |
|-----------------------------|----------------------------|
| ◆ Assyria Township          | ◆ Johnstown Township       |
| ◆ Baltimore Township        | ◆ Maple Grove Township     |
| ◆ Barry Township            | ◆ Orangeville Township     |
| ◆ Carlton Township          | ◆ Prairieville Township    |
| ◆ Castleton Township        | ◆ Rutland Charter Township |
| ◆ Hastings Charter Township | ◆ Thornapple Township      |
| ◆ Hope Township             | ◆ Woodland Township        |
| ◆ Irving Township           | ◆ Yankee Springs Township  |

The City of Hastings is the only City in the County and is the most urbanized area in the County. The Villages of Freeport, Middleville, Nashville, and Woodland are located in the north half of the County.

The County is home to the Middleville and Barry State Game Areas. These areas provide areas for wildlife, recreation, and timber resources and are located in Hope, Irving, Orangeville, Rutland Charter, Thornapple and Yankee Springs Townships.

### CLIMATE

According to the Midwestern Regional Climate Center (MRCC)<sup>1</sup> that averaged annual climatic conditions between 1971 and 2001, in January, temperatures in the County range from an average low of 13°F to an average high of 30°F. These temperatures, along with an average of 57 inches of snowfall annually, are conducive to many

<sup>1</sup> Midwestern Regional Climate Center Website and National Climate Data Center, 2001.

wintertime activities such as cross-country skiing, snowmobiling, and ice fishing.

In July, the average low temperature of 58°F and average high of 82°F makes for a pleasant and comfortable environment for fishing, golfing, hiking and many other outdoor summer activities. The average annual rainfall for the County is 35 inches.

## LAKES AND RIVERS

**Defining characteristics of the County are the abundance of water, farmland and rolling terrain.**

Defining characteristics of the County are the abundance of water, farmland and rolling terrain. Inland lakes, such as Gun Lake, Pine Lake, Upper and Lower Crooked Lake, Wall Lake, Long Lake, Cloverdale Lake, Wilkinson Lake, Algonquin Lake, and nearly 250 smaller lakes are found in the western portion of the County offering excellent recreational, residential and wildlife opportunities. Many of these lakes attract residential development that can produce potential water quality impacts due to fertilizer application and other human related activities.

In the eastern portion of the County there are fewer and smaller lakes, which include Fine Lake, Thornapple Lake, Long Lake, Middle Lake, Leach Lake, and Jordan Lake. These lakes in the east half of the County are generally surrounded by residential and agricultural land uses.



**Gun Lake**

### **Gun Lake**

Gun Lake, one of the larger inland lakes in Michigan's Lower Peninsula, is located in Yankee Springs and Orangeville Township in Barry County, and in Wayland and Martin Townships in Allegan County. The lake is 2680 acres in size with approximately 17.8 miles of shoreline and an additional 1.4 miles of island shoreline.<sup>2</sup> The Yankee Springs Recreation Area is located on the northern shore of Gun Lake offering picnic areas, a boat launch, and a modern campground. A

small portion of Gun Lake is located in eastern Allegan County, which is primarily dedicated to Gun Lake County Park, offering a four-acre

<sup>2</sup> Michigan Department of Natural Resources, Gun Lake Status of the Fishery Resource Report 91-2, 1991.

facility with 450 feet of beach, basketball courts, picnic areas and a boat launch. Clearly, an area offering a variety of amenities and recreational opportunities, the Gun Lake area is a major regional draw for outdoor enthusiasts in southwest Michigan. The primary land use around the remaining shoreline is privately owned single-family homes.

The Gun Lake watershed encompasses thirty square miles and is in the Kalamazoo River Basin, which drains into Lake Michigan. Eight lakes, including Payne, Long, Hall, and Fawn, drain into the Gun Lake and the outlet is the Gun River, which is a designated trout stream for most of its length. The Hall Lake inlet feeds three walleye rearing ponds on the east shore of the lake.

The lake is divided into an east and west basin, with the west basin is almost uniformly shallow and has a maximum depth of 5 feet, with the exception of Robin's Bay and Pickerel Cove being 34 and 25 feet deep, respectively. Depths of the east basin vary greatly and reach up to 65 feet.<sup>3</sup> Fish species in the lake include bluegill, bass, walleye, sunfish, crappie, bullheads, musky, perch, and others. Like many lakes in Michigan, the lake has very heavy recreational boating traffic in the summer between Memorial and Labor Day.

The water quality in Gun Lake is generally good. This is in part due to the sewer system that serves all of the residences and businesses around the lake, which is run by the Gun Lake Sewer Authority. The sewer system helps protect surface and ground water quality, may allow greater density and it creates a variety options for development in the sewer service area.

Deep Lake and Hall Lake are also located in the Yankee Springs Recreation Area. Deep Lake is a 32.4-acre lake that reaches depths up to 35 feet. A rustic campground, offering 120 sites, is located on the east side of the lake, which is close to several hiking and mountain biking trails and a public boat launch. There is no private development along the shoreline of Deep Lake. Hall Lake was originally only eight acres in size until Barry County constructed Gun Lake Road and placed an outlet culvert high enough to flood an additional 42 acres. The addition of a dam in 1965 flooded an additional 4 acres, to the increase the lake to the present size of 46 acres. There are several islands in Hall Lake and the shoreline is not developed with any structures. Other Lakes in the Yankee Springs Recreation Area include

---

<sup>3</sup> Michigan Department of Natural Resources, Gun Lake Status of the Fishery Resource Report 91-2, 1991.

Baker Lake, Chief Noonday Lake, McDonald Lake, Williams Lake, and Long Lake.

### The Thornapple River

**The entire  
Thornapple River  
Watershed includes  
227 lakes, 741 total  
river miles, and a  
total area of 876  
square miles.**

The Thornapple River is a predominate feature in Barry County. Today, the riverfront offers excellent recreational destinations, residential locations and wildlife habitat. However, development can produce potential negative water quality impacts due to individual septic system density, fertilizer application, and other human-related activities.

The Thornapple River originates in eastern Eaton County and meanders west into Barry County. It enters the County in the Village of Nashville and flows westward through Castleton and Hastings Townships. Thornapple Lake, a natural lake formed from inlets that include the Thornapple River, Highbanks Creek and Mud Creek, is approximately 409 acres and reaches depths up to 30 feet. The Thornapple River continues westward into the City of Hastings, creating an attractive amenity through the urban area. The river then flows through Rutland Charter, Irving, and Thornapple Townships, and into the Village of Middleville. All of the major population centers of Barry County are located on the Thornapple River.

The river then flows northward into Kent County and eventually gives its water to the Grand River in Ada Township just east of the City of Grand Rapids. The Grand River flows west and eventually to Lake Michigan. The entire Thornapple River Watershed includes 227 lakes, 741 total river miles, and a total area of 876 square miles<sup>4</sup>. There are over 48 different types of fish species, including large and small mouth bass, bluegill, trout, catfish, walleye and perch, in the Thornapple River illustrating a healthy and clean river.

In 1995, the Natural Resources Conservation Service (NRCS), a division of the United States Department of Agriculture (USDA), proposed a flood plain study for the Thornapple River. As of January 2001, the project, officially called the *Thornapple River Flood Plain Management Study*, was approved and work began in the summer of 2001. The project will include detailed hydraulic and hydrologic studies with the management study scheduled for completion in March of 2004. The study area will include a 38-mile stretch of the Thornapple from McKeown Road, southeast of Hastings to the headwaters in

<sup>4</sup> Website, [www.thornappleriver.com](http://www.thornappleriver.com), 2003



Eaton County. The goal will be to identify the 10, 50, 100, and 500-year flood plains. With these flood plains identified, wise land use decisions can be made that will promote public health and safety.

In addition, the Lower Grand River Watershed Project is in process. The study includes an analysis of current conditions surrounding the Lower Grand River Watershed, including water quality of the Thornapple River. The Project includes several opportunities for public input, such as the Grand River Forum, a large committee of participants who meet quarterly to discuss progress of the project, and several subcommittees, and meeting dates are posted online.<sup>5</sup> During the study, which is presently incomplete, some contaminants were found near the Thornapple River Watershed, including: mercury in the Little Thornapple River near Lake Odessa; a poor fish community and macro invertebrate community in Tyler Creek and Bear Creek in Ionia County; and, phosphorous in Tyler Creek and Bear Creek in Ionia County, and the Coldwater River.

## WATERSHEDS

A watershed is a region of land that is drained by a particular river or river system. Typically these systems include many smaller tributaries such as creeks and streams that feed into a larger river and are influenced by elevation or the lay of the land. The Kalamazoo and Grand watersheds are the two regional watersheds in Barry County. They are broken down into the following local watersheds:

**Water quality within a watershed is directly related to the land management practices within that watershed.**

### Grand River Watershed

- |                   |                           |
|-------------------|---------------------------|
| ◆ Cedar Creek     | ◆ Little Thornapple River |
| ◆ Coldwater River | ◆ Mud Creek               |
| ◆ Duck Creek      | ◆ Quaker Brook            |
| ◆ Duncan Creek    | ◆ Scipio Creek            |
| ◆ Fall Creek      | ◆ Shanty Creek            |
| ◆ Glass Creek     | ◆ Thornapple River        |
| ◆ Gun River       |                           |

---

<sup>5</sup> Lower Grand River Watershed Project Website, December 2004

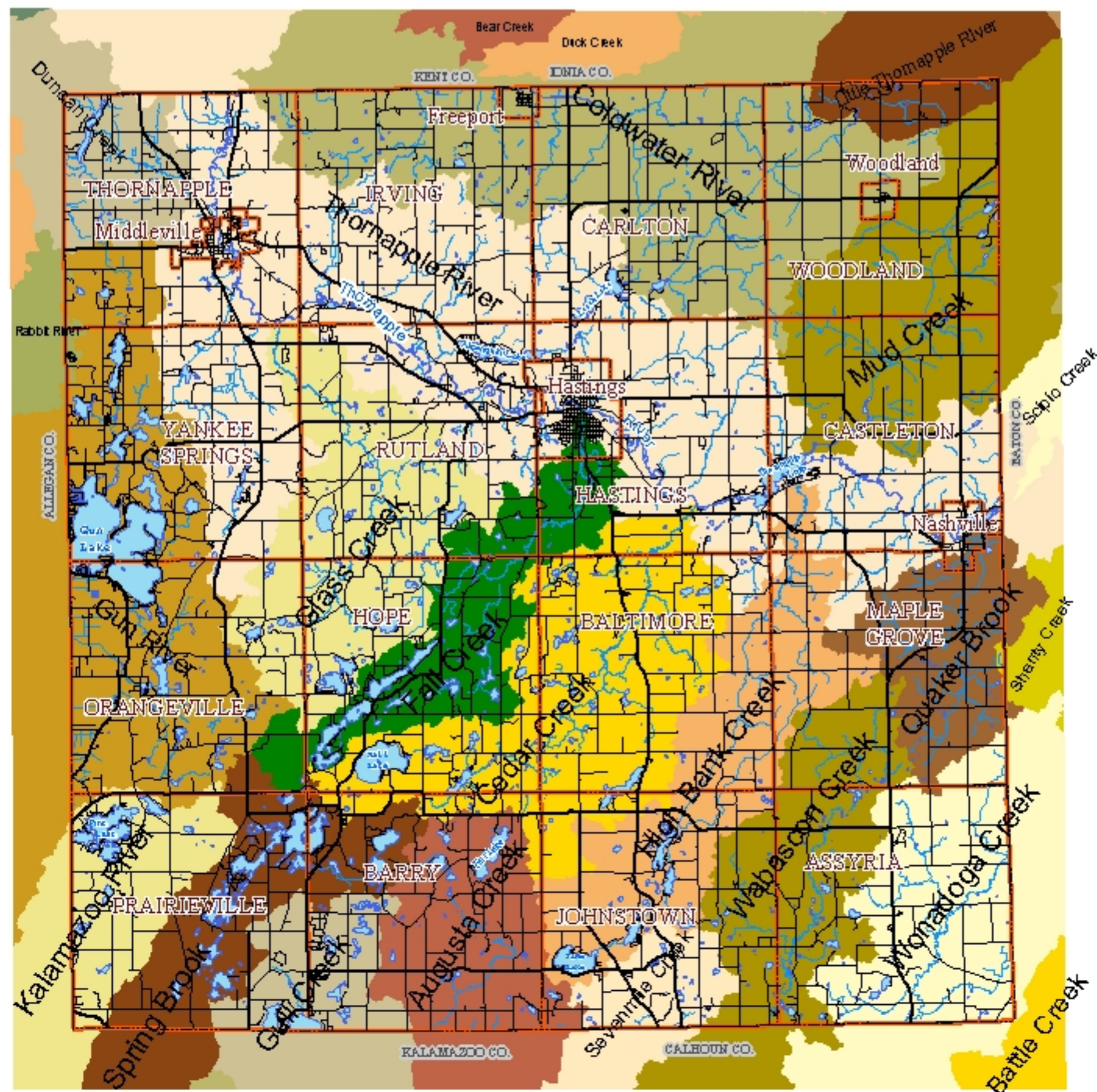
### Kalamazoo River Watershed

- ◆ Augusta Creek
- ◆ Gull Creek
- ◆ Gun River
- ◆ Kalamazoo River
- ◆ Rabbit River
- ◆ Sevenmile Creek
- ◆ Spring Brook
- ◆ Wabascon Creek
- ◆ Wonadoga Creek

All of the smaller rivers and streams within the local watersheds eventually feed the primary waterway, being the Grand or Kalamazoo River. Map 1 illustrates that Glass Creek flows north to the Thornapple River, which eventually feeds the Grand River east of Grand Rapids. The Grand River Watershed covers a total land area of approximately 5,572 square miles in Lower Michigan. In Barry County, the Grand River Watershed includes the northern three-quarters of the County. The Kalamazoo Watershed drains over 2,000 square miles in lower Michigan and in Barry County it covers the southern quarter of the County, including most of Assyria, Barry and Prairieville Townships. With such a considerable amount of land eventually draining water into one main waterway, it becomes more apparent that water quality changes to all of the smaller local streams can have cumulative affects to water downstream.

# Barry County, Michigan

## Map 1 Watersheds



### Legend

- Roads
- Key Routes
- Open Water
- Political Boundary
- Streams

Grand Watersheds: Little Thornapple River, Thornapple River, Shanty Creek, Sebawa Creek, Scipio Creek, Quaker Brook, Plaster Creek, Mud Creek, Libhart Creek, High Bank Creek, Glass Creek, Fall Creek, Duncan Creek, Duck Creek, Coldwater River, Cedar Creek, Bear Creek

Kalamazoo Watersheds: Wonomadoga Creek, Wabaston Creek, Spring Brook, Sevenmile Creek, Rabbit River, Kalamazoo River, Gun River, Gull Creek, Comstock Creek, Battle Creek, Augusta Creek

**Williams & Works**

414.334.1180 phone • 414.334.1981 fax  
905 Cassin Avenue NW • Grand Rapids, MI 49508

Source: State of Michigan CGI



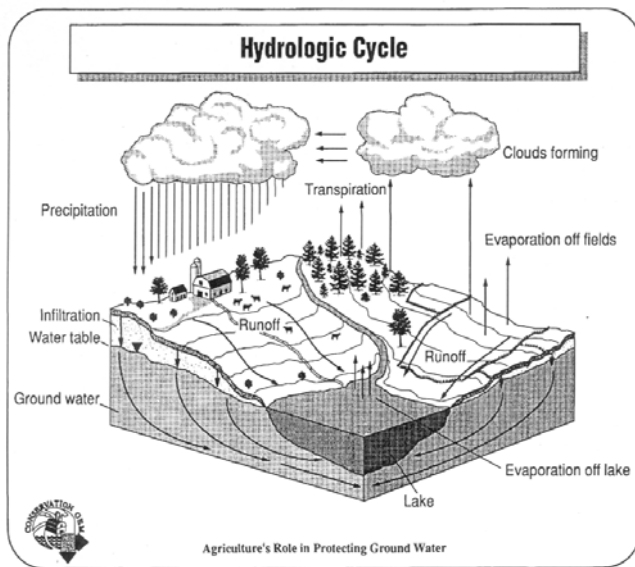
Back of Map 1

**As the population in Barry County continues to grow, natural resources will inevitably be impacted**

Water quality within a watershed is directly related to the land management practices within that watershed. For example, if a new development created a large amount of impervious surface (i.e. asphalt) and stormwater was not properly managed, it is possible that the flow of the run off into the creek, stream, or river could be increased to a point that stream bank erosion occurs. Stream bank erosion has the potential of increasing silt material on the streambed, changing the chemistry of the water with phosphates, nitrogen, and other chemicals, and altering the turbidity of the water. All of these changes may have an effect on the wildlife that is dependent on the stream or river for survival. Map 1 illustrates the watersheds, rivers, streams, and lakes in the County. A watershed, being an area where all of these water attributes are interconnected, should be looked at closely when assessing the impacts of new development within the County.

## GROUNDWATER AND SURFACE WATER

As the population in Barry County continues to grow, natural resources will inevitably be impacted. The groundwater supplies in the County, even though abundant, can be affected as more area becomes impervious and with greater demand placed on groundwater supplies.



There are several organizations that are involved with water quality in the Barry County area. Some of them include the Barry County Conservation District, the Barry-Eaton County Health Department and the Michigan Groundwater Stewardship Program at the Michigan State University Extension in Hastings. These organizations all have an interest in water quality protection and provide various services available to the public.

According to Dr. Roberta Dow of the Michigan Groundwater Stewardship Program at the Michigan State University Extension in Traverse City, there are many different ways ground water can be polluted. Two primary contributors are application of fertilizer on crops and residential lawns and septic tank drainfield effluent. Proper fertilizer application management and septic tank maintenance may help to significantly reduce nitrate levels. Abandoned wells may also be a threat to ground water quality if they have not been properly closed or "capped." Open wells may expose groundwater supplies to surface contaminants.



It is important to note that a groundwater quality study was conducted in Barry County within the last twenty years. Western Michigan University and WW Engineering & Science (currently Williams & Works) compiled *Groundwater Quality Variations in Glacial Drift and Bedrock Aquifers, Barry County, Michigan, USA*. As part of the study, groundwater samples were taken from 288 domestic wells and analyzed for 33 inorganic chemical parameters. Initial observation of the data indicated that about 26% of glacial-drift aquifer wells were degraded due to human activity in the County. Specifically, elevated levels of chloride, nitrate, and ammonia are most indicative of affected water quality. The report also stated that this chemical pollution is likely caused by fertilizers, road salt, and septic tanks. Identification of pollution sources for each well was beyond the scope of the study.

## SOILS

Soil composition is an important aspect of planning for many reasons. Some soils are not well suited for individual septic systems and therefore may threaten ground water or surface water quality due to lack of proper filtration. The composition of soils determines stability and suitability for structural development. Agricultural productivity is also determined by the fertility of the soils. With the soils of the County classified, areas can be appropriately designated for a suitable use.

**With the soils of the County classified, areas may be designated for a suitable use.**

The U.S. Department of Agriculture, Soil Conservation Service, classifies the soils of Barry County into eight different general soil associations. They are 1) Marlette-Capac, 2) Kalamazoo-Oshtemo, 3) Coloma-Boyer 4) Marlette-Oshtemo, 5) Perrington-Ithaca-Marlette, and 6) Houghton-Sloan, 7) Oshtemo-Coloma- Marlette, and 8) Coloma-Boyer-spinks. Map 2, which is reproduced from the U.S. Department of Agriculture, Soil Conservation Service, illustrates the capabilities of localized soils to accommodate septic tank drainfields.

*The Marlette-Capac association* exists primarily in the northeastern portion of Barry County, including Woodland, Carton, Castleton, Hastings, and Maple Grove Townships. This association makes up approximately 18 percent of the County and is primarily used for crops such as hay, corn, soybeans, winter wheat, and pasture. These soils are generally not well suited to septic systems due to wetness and low permeability. Slopes range from 0 to 12 percent.

The Kalamazoo-Oshtemo association is located in the southwest Barry Township, Southeast Prairieville Township, and in western Thornapple Township. This soils association, making up about seven percent of the County's soils, is slightly sloping with a range of 0 to 12 percent. Most

of these soils are used for crops, including hay, as well as pasture or woodland. The low slope areas are generally well suited to building site development and septic system function.

*The Coloma-Boyer association* is located in the northwestern portion of the County in parts of Yankee Springs, Irving, Rutland and Thornapple Townships. This soil is primarily sandy, well drained, and is used for cropland and forests. Septic systems are moderately suitable on this soil type but may cause well water pollution due to poor filtration.

*The Marlette-Oshtemo association* is a steep sloped soil ranging from 6 to 40 percent. This soil makes up approximately 21 percent of the county and is located in various locations throughout the County. Areas of steep slope not suitable to development or septic systems, but other areas with gentle slopes are generally well suited for both.

*The Perrington-Ithica-Marlette association*, only making up about 4 percent of the County's soil, is primarily located Maple Grove Township and is associated with the higher elevations in the County. The soils in this association are fairly well suited for crops such as corn

and soy beans. Suitability for development or septic systems varies greatly in this association, due to the soil composition and slope.



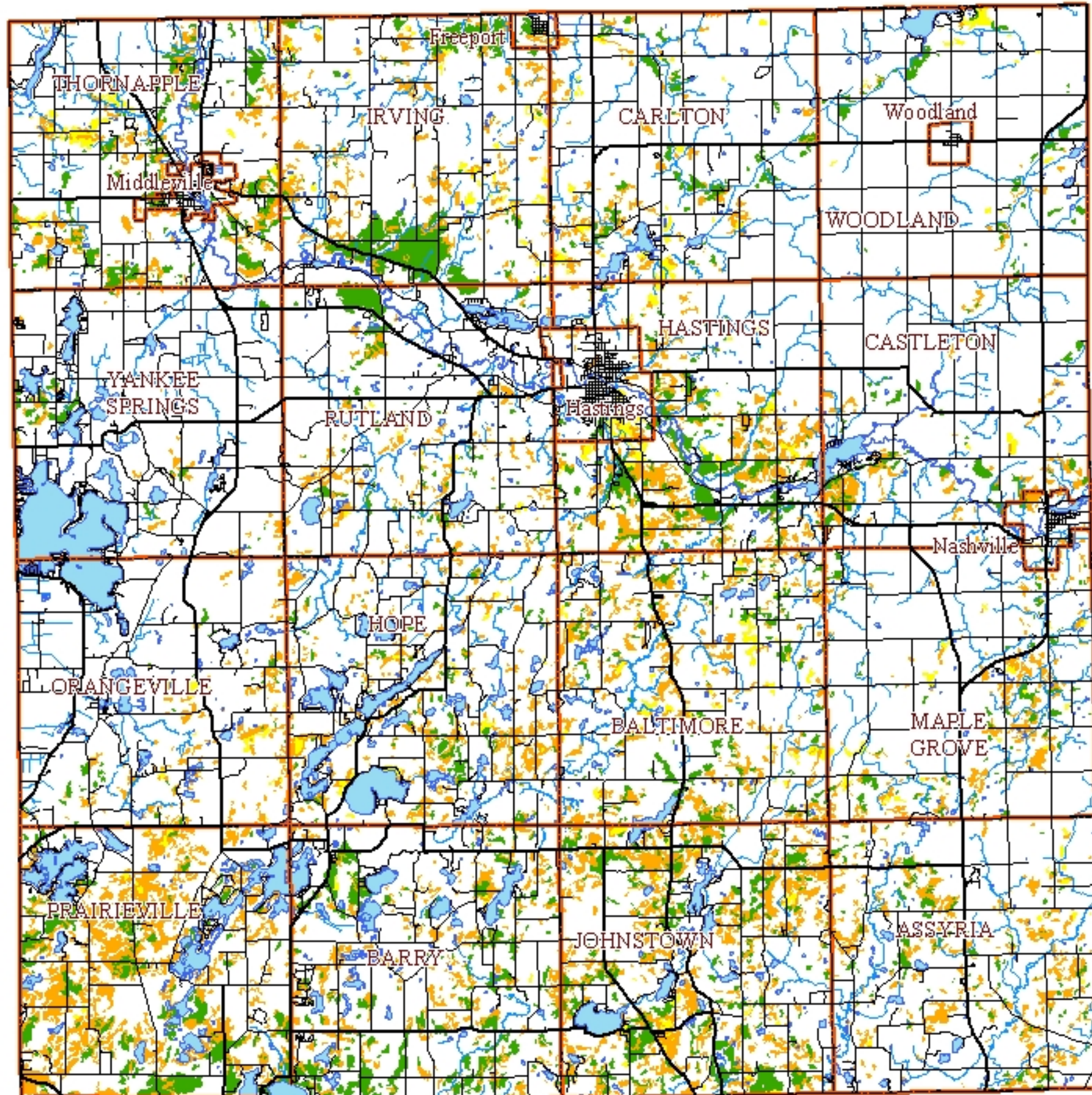
**Soils in the northeast portion of the County are generally very productive for field crops.**





# Barry County, Michigan

## Map 2 Septic Tank Drainfield Limitations



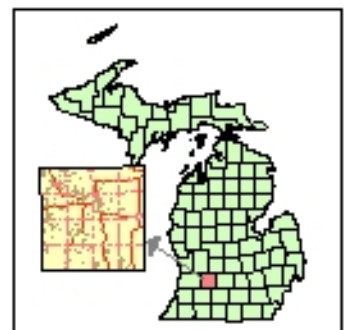
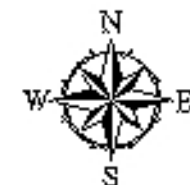
### Legend

	Political Boundaries	<b>Septic Limitations*</b>
	Roads	Slight
	Key Routes	s/s
	Streams	Moderate
	Open Water	Severe

\*Note: The information on this map indicates the dominant soil condition, but does not eliminate the need for onsite investigation.

**Williams & Works**  
engineers • planners • surveyors

414.234.1188 phone • 414.234.1861 fax/voice  
548 Cassin Avenue NW • Grand Rapids, MI 49509



Back of Map 2



The *Houghton-Sloan* association is typically found close to water bodies including rivers and streams, and in the lower parts of the landscape. This soil, often located in flood plains, is usually level and composed of mucks, peat, and sand. Not well suited for development or agriculture due to instability and wetness, this association can provide excellent areas for wildlife and forests. Individual disposal of effluent is severely limited due to low permeability and high water tables. This soil makes up about 8 percent of the County soils.

The *Oshtemo-Coloma-Marlette* association is located in the central and southern half of Barry County, making up about 22 percent of the County soils. Steep areas are not suitable for development or septic fields, although this area is well suited for pasture and hay.

The *Coloma-Boyer-Spinks* Association is generally high sloped soil, ranging from 6 to 40 percent. This soil makes up approximately 13 percent of the soils in the County and is located east of Gun Lake and west of Podunk Lake in the western portion of the Township. The Yankee Springs Recreation Area and the Barry State Game Area are in this region, which was primarily because these soils were not suitable to agriculture. The federal government bought these land areas in the 1930's and rehabilitated the soils through efforts of the CCC and Workers Project Association.

## WETLANDS

Wetlands play a critical role in regulating the movement of water within watersheds. Wetlands are characterized by water saturation in the root zone, or above the soil surface, for a certain amount of time during the year. The fluctuation of the water table above and below the soil surface is unique to each wetland type.



**Without wetlands, water quality decreases, areas are prone to flash flooding and habitat for specialized plants and animals is reduced.**

Wetlands store precipitation and surface water and then slowly release the water in associated water resources, ground water, and the atmosphere. They help maintain the level of the water table and may serve as filters for sediments and organic matter. They may also serve as a sink to catch water, or transform nutrients, organic compounds, metals, and components of organic matter. Wetlands have the ability to impact levels of nitrogen, phosphorous, carbon, sulfur, and various metals. Without them, water quality decreases, areas are prone to flash flooding and habitat for specialized plants and animals is reduced.

The wetlands in Barry County are dispersed and are primarily associated with low-lying areas and drainages. The National Wetlands Inventory (NWI) map illustrates the wetlands in Barry County. Creation of this map involved a variety of federal government agencies, which involved the consolidation and interpretation of aerial photographs, land cover maps, and soil maps. This map is intended to illustrate the general location of wetlands; however the exact location of any wetland should be determined through a field site inspection by a qualified scientist.



# Barry County, Michigan

## Map 3 Wetlands

### Legend

-  Political Boundary
-  Roads
-  Key Routes
-  Open Water
-  Streams
-  Wetlands\*

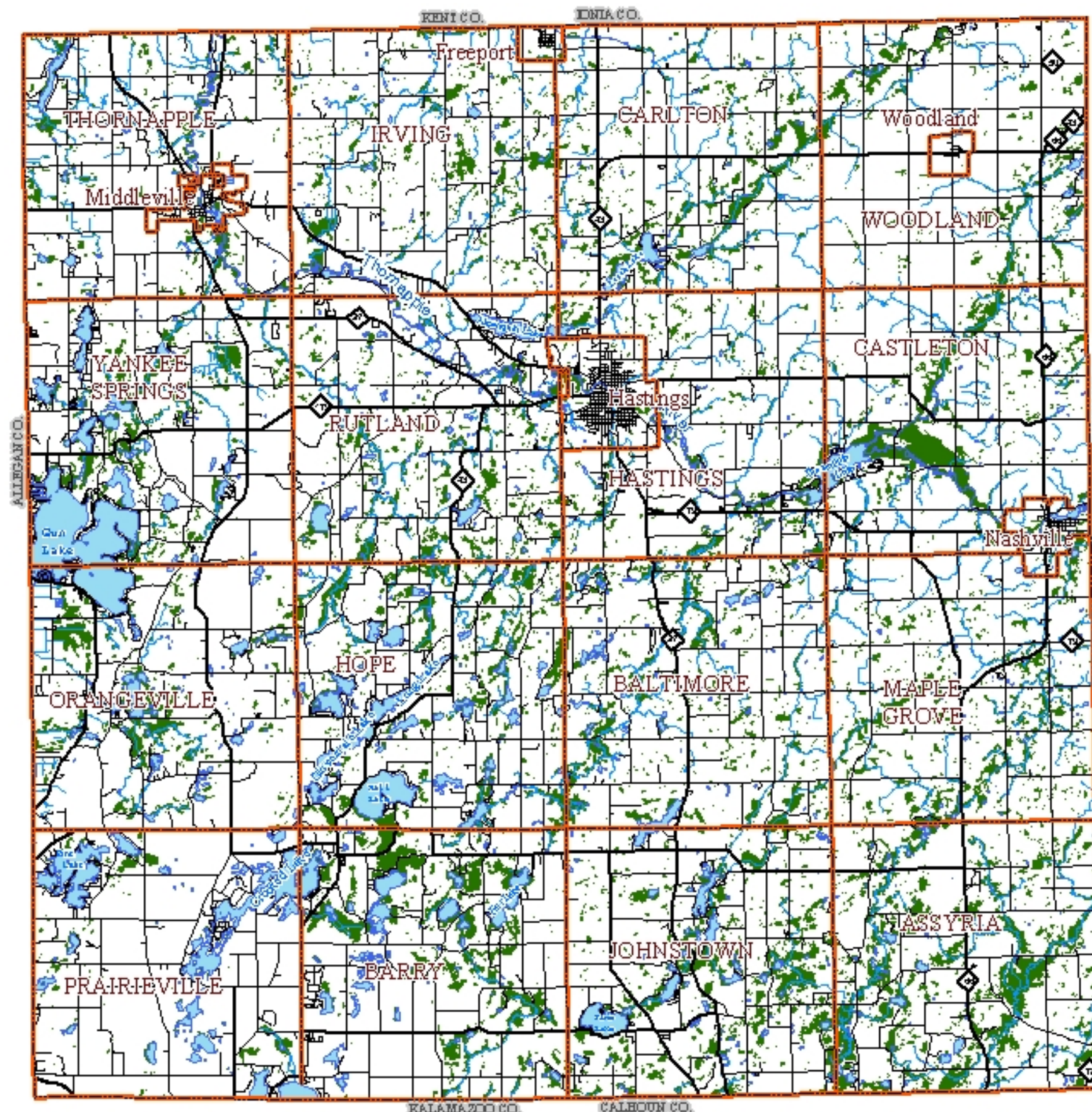
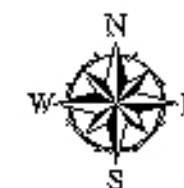
\*This Wetlands Inventory Map is intended to be used as one tool to assist in identifying wetlands and provide only potential and approximate locations of wetlands and wetland conditions.

This map is not intended to be used to determine specific locations and jurisdictional boundaries of wetland areas subject to regulation under part 303 Wetlands Protection Act, 1994 PA 451, as amended. Only an on-site evaluation performed by MDEQ in accordance with Part 303 shall be used for jurisdictional determination. A permit is required from the MDEQ to conduct certain activities in jurisdictional wetlands.

**Williams & Works**  
Surveyors • Planners • Engineers

616.234.1888 phone • 616.234.1888 fax  
805 Canton Avenue NW • Grand Rapids, MI 49500

Source: U.S. Fish & Wildlife Service,  
National Wetlands Inventory, 1979-1984  
Map Created: November 04, 2003



Back of Map 3



## ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES

Loss of habitat and increased human activity overall threatens the plant and animal diversity of Barry County. According to the Michigan Natural Features Inventory<sup>6</sup>, there is a variety of plant and animal species that are considered endangered, threatened, or of special concern in Barry County. At this time, the Three Staff Underwing, the Indiana Bat, and Mitchell's Satyr are the only listed state endangered species. The Three Staff Underwing has a wingspan of 45-55 millimeters and has a range that spans from Florida, to west Texas, to Michigan. The primary food plant for this insect is the Leadplant (*amorpha canescens*), which is listed as a state special concern species.



**The Three Staff Underwing is considered an endangered species in Michigan.**

As the human population of the County continues to expand, it is possible that plant and animal diversity will also continue to decrease.

Other animals including the Blanchard's Cricket Frog, the Common Loon, and the Spotted Turtle are listed as threatened state animal species. In many cases, these animals are often called "indicator species," which is a plant or animal that is sensitive to

changes in an ecosystem. These environmental changes can be a direct result of human activity or development and may also occur naturally within an area.

## INVASIVE AND EXOTIC SPECIES

Invasive plant and animal species can also affect human activity and natural processes. Exotic species are classes of plants or animals that are introduced into a "foreign" environment, and often these new varieties can have negative impacts on the native environment.

**Like the proverbial canary in the coal mine, the Blanchard's Cricket Frog may be an indicator species of the impact of development on the watersheds in the County.**

For example, purple loosestrife has the capacity to quickly degrade natural wetlands. The loosestrife is found throughout much of the United States, and Barry County is not an exception. The loosestrife has a tendency to multiply rapidly and densely, by means of prolific root and seed production, which often crowds out native wetland plants and alters the chemical balance of the wetland.<sup>7</sup>

Methods to control the spreading of the loosestrife can often be unreasonable for large areas. For example, burning, digging, water

<sup>6</sup> Michigan Natural Features Inventory Website, October 2003.

<sup>7</sup> U.S. Fish and Wildlife Service

level management, herbicides, and cutting are impractical for regions where the weed has dominated native species. Biological control, or the introduction of natural enemies into the new habitat, is a more viable, yet costly and rigorous, alternative.

In addition, the zebra mussel, a European species, has the propensity to impair human intentions and damage native processes. The zebra mussel was first discovered in 1988 in Lake St. Clair near Detroit, and had colonized the Great Lakes region by 1990. The exotic mussels spoil lakeside industry, costing hundreds of thousands of dollars. The mussels clog pipes, which can create pump and mechanical difficulties. Also, the exotic species lessen food and oxygen for native mussels.<sup>8</sup>

Methods to control the spreading of this exotic species include thermal flushing, chlorination, mechanical filtration, anti-fouling paints, acoustics, and electrical shock. However, these solutions are generally only useful for spot control. Barry County boaters can also assist in the process. After boating in waters likely contaminated, the following are recommended tasks to ensure that the mussels do not spread:<sup>9</sup>

- Do not transport bait used in infested waters, and wash bait pails with hot water
- Leave boat out of water for at least 3 days in hot, dry conditions (zebra mussels can stay alive up to 5 days out of water)
- If boat trailer has water in it, drain immediately

The gypsy moth also may present a problem for the forests of Barry County. This imported pest's larva feeds on tree leaves, particularly poplar and oak, from about mid-May to late-June.<sup>10</sup> Even though many insects eat tree leaves, the gypsy moth caterpillars are especially difficult since population figures for these pests may get extremely high, thereby devastating forests on a massive scale. According to the USDA Forest Service, this insect is one of North America's most devastating forest pests. Aerially spraying with pesticides to repress outbreaks has been a typically mechanism to manage the pest. Also, "tree banding," which precludes caterpillars from climbing trees to feed, destroying eggs, and natural parasites, viruses, and diseases, are other methods to help eradicate the moth.

---

<sup>8</sup> U.S. Geological Survey

<sup>9</sup> Kildeer Countryside Wetlands Preserve Website, November 2003

<sup>10</sup> Jackson County Michigan State University Extension Website, November 2004

Finally, the Eurasian milfoil, a submerged aquatic plant, poses a risk for Barry County's shallow lakes and ponds. The non-native milfoil can spread itself quickly across shallow water (about 1 to 3 meters deep), choking out native species, and the dense foliage often blocks sunlight to other plants. This pattern tends to establish sterile, monotypic habitats, killing native aquatic communities and reducing the variety of plants available for waterfowl consumption. Managing this pest includes removing weed pieces at boat launches; and various mechanical, chemical, and biological measures.<sup>11</sup>

---

<sup>11</sup> Wisconsin Department of Natural Resources Website, November 2004



## CHAPTER 2. POPULATION

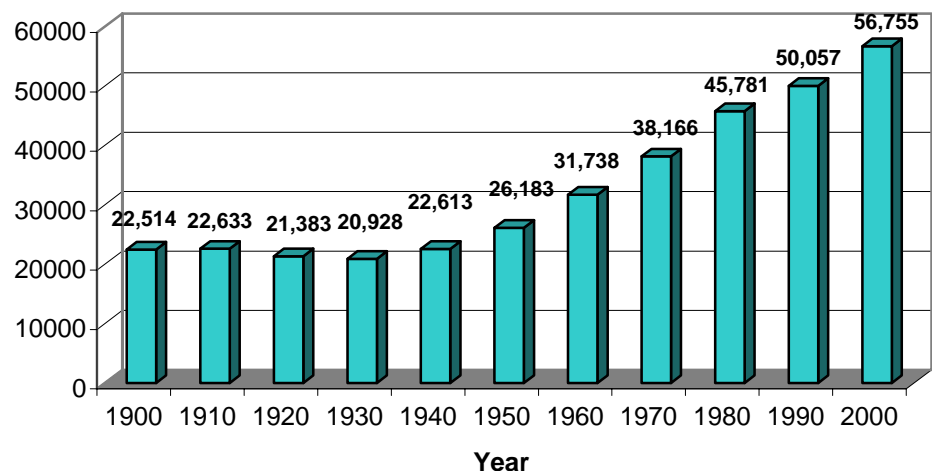
Population is among the most important measures to express growth and its likely impact on land uses in a community. Therefore it is vitally important to achieve an understanding of the County's population and its growth trends in order to prepare a meaningful and realistic Master Plan. In this section, the population of Barry County is analyzed and the current and likely future growth trends are discussed.

### HISTORICAL POPULATION TRENDS

**The 2000 Census indicates a continued trend of strong population growth within Barry County**

To begin, it is appropriate to determine the overall growth the County has experienced in the recent past. Historically, the population of Barry County has grown at a fairly steady pace. The only decline in the region's population took place between 1910 and 1930. This decline was the result of populations statewide moving into urban areas as Michigan became a center for industrialization. Since 1930, the County's population has been steadily increasing.

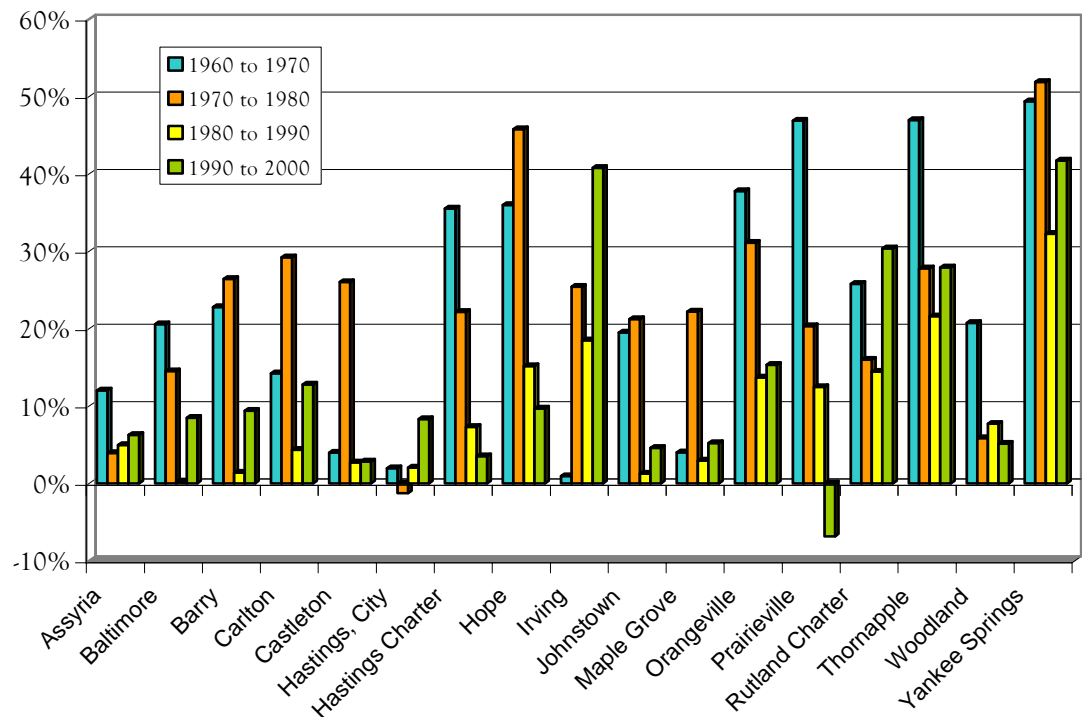
Figure 1. 100 Year Population Trends in Barry County



The recently released data for the 2000 Census indicate a continued trend of population growth within Barry County. In the ten-year period between 1990 and 2000, the County grew from 50,057 residents to 56,755 residents, representing a 13.4% increase. Yankee Springs Township realized the highest rate of growth at (43.2%). The

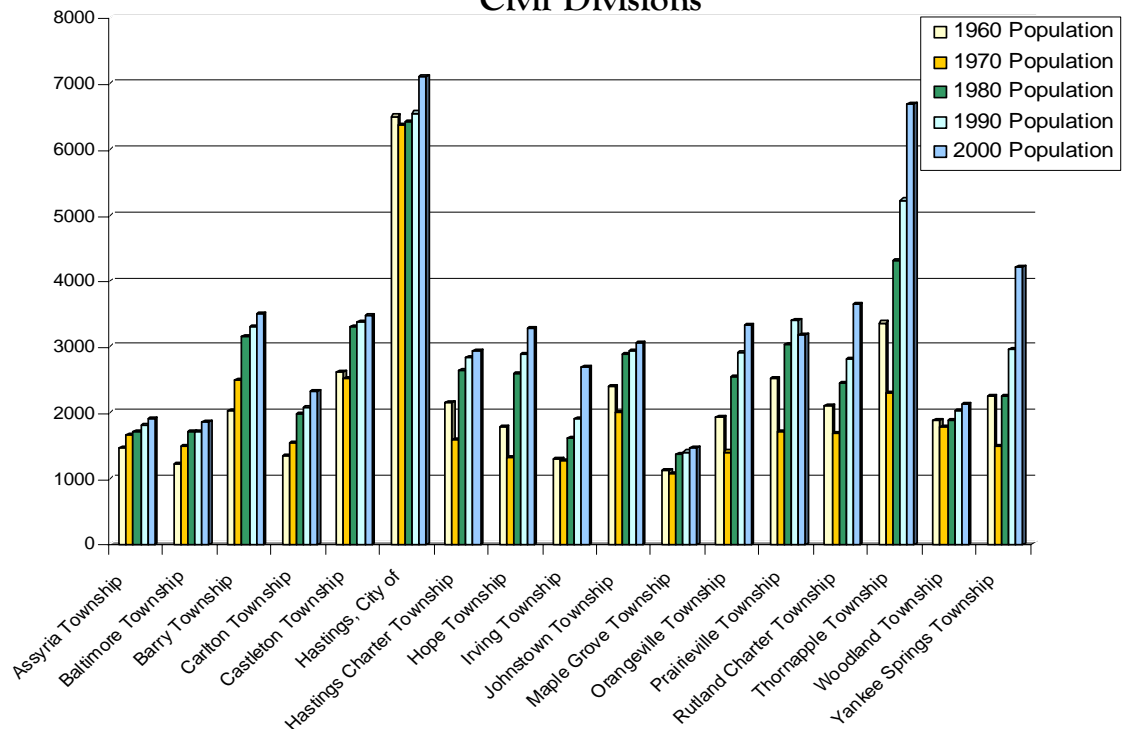
Townships with substantial populations that also experienced the high rates of growth within are Rutland Charter Township (30.2%), Thornapple Township (27.9%) and Irving Township (40.9%). These four communities comprise the northwest corner of the County most impacted by the growth and out-migration of the Grand Rapids metropolitan area.

**Figure 2. Rate of Population Change by Jurisdiction**



The population in Prairieville Township was reported to have declined slightly, although the community was subject to population losses due to changes in the way the Census defined residence in 2000. It is also important to note the approximately 370 people enrolled at the Michigan Career and Technical Institute in Prairieville, many of whom live on site and may not have been included in the population estimate. All of the other Townships continue to grow, including the City of Hastings.

**Figure 3. 40 Years of Population Change in Barry County's Minor Civil Divisions**



As Table 1 illustrates, the rate of natural population increase for the County from 1900 to 1999 was estimated to be 5.5%, while the total rate of population increase over this same time period was 9.2%<sup>12</sup>. It can therefore be determined that the rate of in-migration to Barry County over the same time period was 3.7%. In other words, over one-third of the County's rate of population growth results from people moving into the community. In comparison, the average natural increase for the State of Michigan between 1990 and 1999 was 5.6%, while the overall average rate of growth for all Michigan Counties over the same period was 6.1%, or only 0.5% increase due to in-migration.

There are many reasons this influx of people continues to occur in higher than normal numbers Barry County. Certainly the natural beauty of the area, relatively strong economy and local quality of life account for much of the draw.

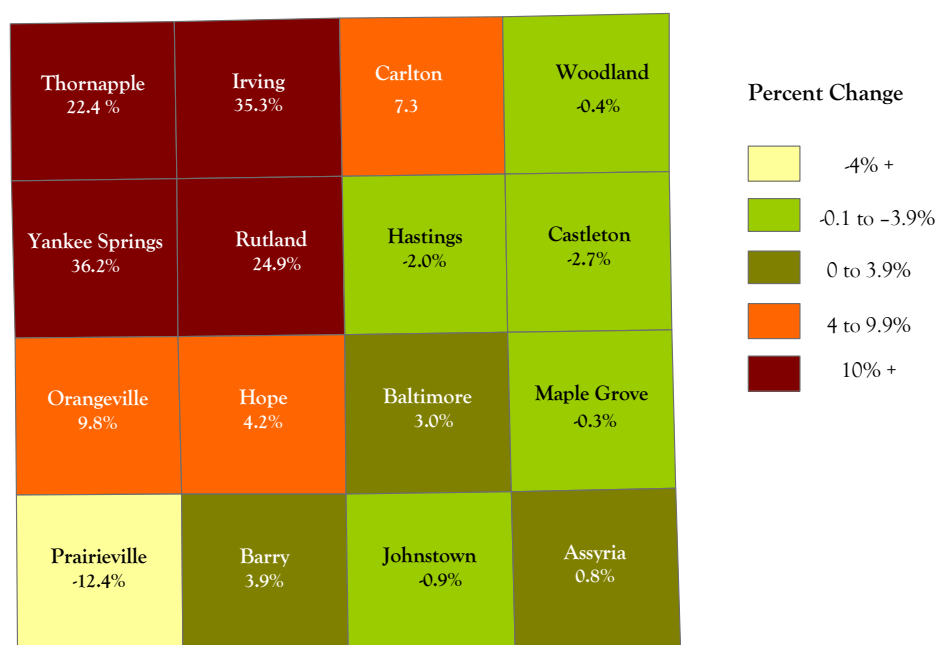
<sup>12</sup> Natural population increase or decrease is directly related to births and deaths within the existing population. If births outnumber deaths, the natural population increases, if deaths outnumber births, the natural population decreases. The total population increase or decrease includes natural population increases or decreases and the in-migration and out-migration of population.

Table 1- Component Change of Population in Barry County: 1990-1999								
Population			1990-1999 Change		4/1/90-7/1/99		Natural Increase	
	Est.	Est.						
4/1/90	7/1/98	7/1/99	Number	Percent	Births	Deaths	Number	Percent
50,057	54,465	54,648	4,591	9.2%	6,518	3,750	2,768	5.5%
Source: U.S. Census								

However, it is clear from the change in population over the past 40 years that some areas of the County are experiencing much heavier growth pressures than others. It is fair to assume that each community on average experienced approximately a 5.5% increase in population over the last decade due to natural increase, since that is the rate recorded for the County. Therefore, it is likely that any population increase in excess of 5.5% was due to in-migration. Applying this assumption on a jurisdictional basis and looking at the rates of population change from 1990 to 2000 it is possible to identify overall patterns of migration, by jurisdiction. In-migration and out-migration in Barry County ranges from a low of 12.4% out-migration for Prairieville to 36.2% in-migration for Yankee Springs from 1990 to 2000.

Figure 4 graphically illustrates the patterns of migration in the County during the 1990s and the impact of the proximity to the Grand Rapids metropolitan area and the Gun Lake area is apparent.

Figure 4. Comparison of In- and Out-Migration 1990 – 2000



Source: Michigan Information Center, from U.S. Census Bureau



The four communities on the eastern border of Barry County, (Woodland, Castleton, Maple Grove and Assyria) have had minimal population gain due to in-migration. In fact, of those, Assyria had only an estimated 0.5% gain while the other Townships lost residents due to estimated out migration.

It is important to note that some communities have reported miscounts in the 2000 Census and/or are subject to population losses due to changes in the way the Census defined residence in 2000.

## COUNTY POPULATION PROJECTIONS

For the purposes of the Community Profile, statistical averaging techniques were utilized to project the County's population growth to the year 2025. These approaches are adequate to give a general sense of growth trends, but they have limitations especially in areas of rapid growth or decline that may run counter to statistical trends.

It is estimated that over this time period, the population will increase from an estimated 57,943 in July of 2002 to as much as 85,066, or more, representing an increase of another 46.8%. This population growth translates into an increased demand for public services, infrastructure, commercial developments, and housing over the next twenty years.

Several indicators suggest that much of this population will continue to locate in the northwestern portion of the County, including Thornapple, Yankee Springs, Irving and Rutland Townships. Reasons for this include continued investment in these Townships and the presence of infrastructure. Of course, extrapolating growth into the future based on past trends provides only a rough approximation of the future and it may mask other shifts in demographic trends.

For example, the average growth rate of all Townships was 13.3% between 1990 and 2000. If this rate of increase continues, the Townships that have the larger populations will naturally continue to gain more people due to exponential growth. Simply put, the more populated Townships in the County would gain a larger population due to exponential growth using this relatively simplistic methodology.

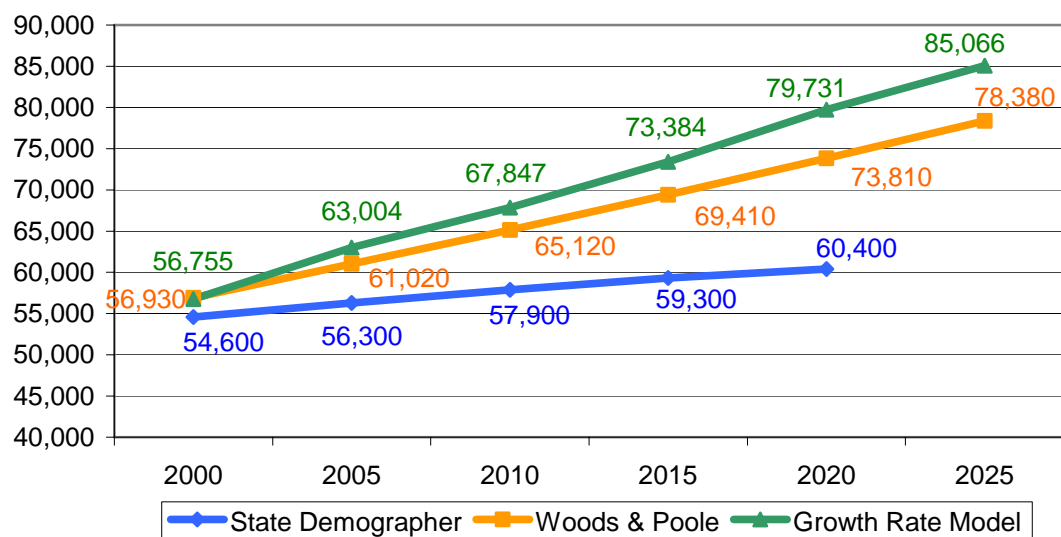
In Table 2, similar projections are presented for each of the jurisdictions in the County. This was prepared to illustrate the particular areas of the County that have the highest population and the areas that have the highest rate of population growth. This is useful in attempting to forecast the likely areas of future growth. These figures may be compared with the population projections found in local community Master Plans.

**Table 2. Barry County Population Forecast**

Population Projections							
	1990 Population	2000 Population	Rate of Growth 1990-2000	2005	2010	2015	2020
Assyria Township	1799	1,912	6.3%	1,972	2,034	2,098	2,164
Baltimore Township	1701	1,845	8.5%	1,923	2,004	2,089	2,178
Barry Township	3300	3,489	5.7%	3,589	3,692	3,797	3,906
Carlton Township	2069	2,331	12.7%	2,479	2,636	2,802	2,980
Castleton Township	3380	3,475	2.8%	3,524	3,573	3,624	3,674
Hastings, City of	6549	7,095	8.3%	7,391	7,699	8,020	8,354
Hastings Charter Township	2826	2,930	3.7%	2,984	3,039	3,095	3,152
Hope Township	2883	3,283	13.9%	3,511	3,754	4,015	4,293
Irving Township	1903	2,682	40.9%	3,231	3,892	4,689	5,649
Johnstown Township	2932	3,067	4.6%	3,138	3,210	3,284	3,359
Maple Grove Township	1401	1,471	5.0%	1,508	1,545	1,584	1,624
Orangeville Township	2910	3,321	14.1%	3,556	3,807	4,075	4,363
Prairieville Township	3409	3,175	-6.9%	3,066	2,961	2,859	2,761
Rutland Charter Township	2801	3,646	30.2%	4,196	4,829	5,557	6,396
Thornapple Township	5226	6,685	27.9%	7,618	8,682	9,893	11,274
Woodland Township	2021	2,129	5.3%	2,186	2,244	2,304	2,366
Yankee Springs Township	2947	4,219	43.2%	5,130	6,237	7,582	9,219
	50,057	56,755	13.4%	63,004	67,847	73,384	79,731
*The source of percent change on actual population of each of the Townships and the County was derived from the U.S. Census estimates of 1990 population and 2000 population increase. Population projections are based on an extrapolation of the rates of growth experienced from 1990 to 2000 in five-year increments.							

The projections in Table 2 result from a simple extension of the rates of growth experienced between 1990 and 2000. Of course, this method assumes a continuation of all growth factors resulting in an identical rate of growth through 2020. The office of the Michigan State Demographer has, in the past, prepared more detailed projections and the most recent such projection was prepared in 1996. The State Demographer uses a cohort-component method to prepare population projections, based on 1990 census counts, estimated 1996 population and projected fertility, mortality, and migration rates by age, sex, and race. This exercise has not yet been completed with 2000 information.

**Figure 5. Projection Comparison**



The 2000 Census determined that there was a 13.4% increase in the County population. Only 5.5% of the total population increase was due to a natural increase. Where appropriate the preliminary July 1, 2002 estimates developed by the Census Bureau through the Federal-State Cooperative Program are used to adjust the projections and benchmark the projections. To balance the Census projections, a private econometric projection service was also consulted in the preparation of this Community Profile. Woods & Poole Economics uses a rigorous national projection technique for population and economic activity. This is broken first into economic area basic sector projections and further into county projections. This has the advantage of capturing the economic and demographic impacts of one region on its neighbors and, likewise, of one county on its neighbors. The Woods & Poole projections help to offer a degree of academic objectivity to the local projections or those completed by the Office of the State Demographer.

A final means to check the numeric projections indicated in Figure 5, is the “real world” recent history of new construction in the County. Referring to Figure 11 in Chapter 3, from 1994 through 2002, an average of 502 building permits were issued for new homes in the County. While these figures do not reflect new apartment construction, it is felt they offer a reasonable measure of the housing industry’s response to population growth in the County. If this rate of new construction would support 502 new households annually, and if the average household size in the County is 2.68 persons,<sup>13</sup> it may be assumed that the new home construction industry anticipates about 1,345 new residents in the County annually. These figures would support the following population projections:

#### BUILDING PERMIT PROJECTIONS

Average No Permits/Year	Persons per H/H	2000 Population	2010	2020	2030
502	2.68	56,755	70,208	83,662	97,116

**The County is on  
pace to add as many  
as 40,000 persons to  
the local population  
in the next thirty  
years.**

While this assumes a straight-line rate of growth over the next thirty years, it does tend to support recent rates of growth in the County. The above projection also assumes that all new housing built in the County is occupied by “new residents.” Of course, much of the housing that is built in the County is occupied by existing residents. Nevertheless, it is likely that as new housing is constructed and as residents relocate around the County, eventually the vacancies created are filled by in-migrating population.

Another way to view these projections and the fact that they reflect a larger population than the other projections is to recognize that the County is on pace to add as many as 40,000 persons to the local population in the next thirty years. This equates to about 15,000 new households.

## REGIONAL POPULATION

Comparing the counties surrounding Barry County is an excellent way to gauge what type of growth is happening on a regional level. Of the counties listed below in Table 3, Allegan County has experienced the greatest rate of growth (54%) since 1970, with Eaton (48%) and Barry (43%) being second and third. Since 1990, Allegan County also

<sup>13</sup> 2000 Census

experienced the fastest growth rate (13%), with Kent (11%) and Eaton (10%) being second and third. Since 1990, Barry County has grown by about 9%. Calhoun County, to the southeast of Barry County, experienced the least amount of growth with less than 1% change in total population from 1970 to 2000.

**Table 3. Regional Population Projections**

	Census	Census	Estimated	Census	Estimated	Census	Projected Population			
County	1970	1980	1985	1990	1995	2000	2005	2010	2015	2020
Allegan County	66,575	81,555	84,500	90,509	97,700	102,600	107,100	111,900	116,900	121,800
Barry County	38,166	45,781	47,700	50,057	52,600	54,600	56,300	57,900	59,300	60,400
Calhoun County	141,963	141,597	134,500	135,982	140,900	142,900	144,400	145,500	146,400	147,200
Eaton County	68,892	88,337	88,200	92,879	98,000	102,100	105,900	109,600	113,500	117,400
Ionia County	45,848	51,815	53,100	57,024	59,800	61,300	62,500	63,800	64,800	65,500
Kalamazoo County	201,550	212,378	214,200	223,411	228,100	230,200	237,900	241,300	244,500	247,500
Kent County	411,044	444,506	465,000	500,631	525,400	553,500	579,800	607,300	636,900	667,400
Source: Michigan Department of Management and Budget, Office of the State Demographer, January 1996										
Note: The cohort-component method is used to prepare population projections for every five years from 1995 to 2020, based on 1990 census counts, and projected fertility, mortality, and migration rates by age, sex and race. It does not include detail with regard to building permit activity or other localized information, thus it tends to be somewhat conservative.										

Another important trend for the County includes the continued decline in the number of persons per household. The average household size in Michigan overall is 2.56 persons while Barry County has a 2.68 persons per household average. It is important to be observant of this trend given that the combination of an increasing population and decreasing household size can indicate a likelihood of less efficient development patterns.

## AGE, SEX AND ETHNICITY CHARACTERISTICS

Comparing the age distribution of a community's population over time provides another opportunity to measure change. Also, an age breakdown of a community's residents helps to determine the type of housing demands and recreational facilities that may be needed.

In 2000 the median age of Barry County residents was 36.9 years compared to the median age for the State overall of 35.5 years. The median age represents the mid-point in the range of all ages within the County and State with one-half of the population younger and one-half of the population older than the median. Typically, the median age is viewed as an appropriate measure of the overall age of the population.

**Paralleling national trends, the population of the Barry County is aging.**

**THE MEDIAN AGE OF BARRY COUNTY RESIDENTS CONTINUES TO  
INCREASE:**

	<u>1980</u>	<u>1990</u>	<u>2000</u>
Barry	30.0	33.8	36.9
Michigan	28.8	32.6	35.5
U.S.	30.0	33.0	35.3

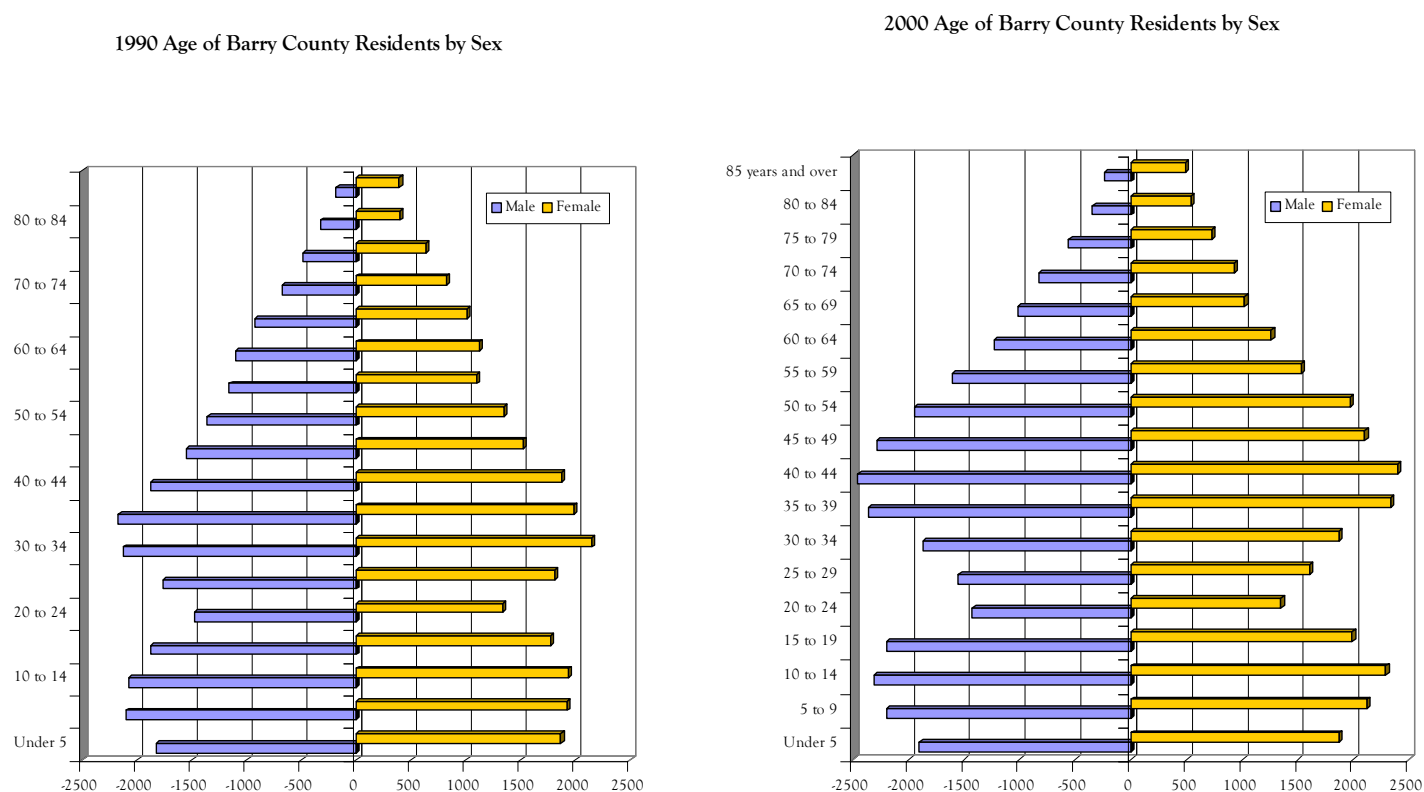
The 2000 Census figures also reveal the number of persons 65 years and older, grew by 859 or 14.7% since 1990. The rate of increase in a senior population may have implications on the land use and public service needs of the community. This is especially true when that rate of increase is greater than that of the overall population, as it was in Barry County.

The fastest growing age group is the “empty nesters” which is the age 45 to 64 year old cohort. This includes the oldest of the “baby boomers”. This group grew by 3,680 or 35.8% since 1990. Persons in this age group typically have reached their peak earning potential and have higher disposable incomes. Those citizens aged 65 and over grew by 623 or 10.7% since 1990. Now over one in ten Barry residents is age 65 or older.

The 20 to 59 years age group overlaps several cohorts, including young singles, early families and empty nesters. It is important as it represents the prime wage earning population as well as the principal child rearing group. About 54% of the population falls in this age group in Barry County. This relatively large percentage of the population translates into family formations, the need for single-family housing stock, recreational facilities, future increases in the under 5 and 5 to 19 years age groups, and increases in retail trade.

It is clear from the age-sex cohort graph (Figure 6) that the age group from 20 to 29 years old is the smallest. This is likely because there are no major universities in the Barry area and many college age students seek their education elsewhere. However, the trend from 1990 to 2000 is revealing that young people are leaving Barry County in their early twenties and not returning, which may be due, in part, to a lack of affordable housing for young families.

Figure 6. Comparison of Age by Sex Change – 1990 to 2000



Source: Michigan Information Center State Demographer's Office

It is also clear that the demographic group of 20 to 34 year olds is declining (-9%). The community may be interested in finding ways to retain what Richard Florida calls the creative class<sup>14</sup>. In his book *"The Rise of the Creative Class,"* Richard Florida calls young professionals and generally the 20 to 34 year olds in society, members of the creative class. This group tends to relocate to urban areas for high tech or creative jobs, diversity, culture and entertainment. Members of the creative class "crave stimulation, not escape. They want to pack their time full of dense, high-quality, multidimensional experiences. Seldom has one of my subjects expressed a desire to get away from it all." From the chart age by sex graph, it appears the creative class is leaving Barry County, possibly for higher education, and not coming back.

<sup>14</sup> "The Rise of the Creative Class" by Richard Florida; Basic Books, June 2002.

School age children age 5 to 19 make up approximately 29.8 % of the population of Barry County. This number is up slightly from the 1990 population (9%), indicating an increased need for schools and services.

In terms of ethnicity, Barry County is a very homogeneously Caucasian community. Approximately 97.4% of the county population is white, compared to 78.6% of the state population. Persons of African American, American Indian, Asian, Hispanic or Latino and persons of two or more races also reside in the County in numbers of 1.1% or lower.

## ENROLLMENT PROJECTIONS

School district enrollment trends and the careful enrollment projections prepared by the districts tell a story that has implications for land use planning. Since most Barry County communities are growing in overall population, one would assume that school enrollments are increasing, as well. However, while the overall population is growing, school enrollment projections reveal a general stability or even decline.

For example, the Delton Kellogg School District presently has approximately 2,000 students enrolled in the school system. The district has projected enrollment as far into the future as the 2007/2008 academic year, and has concluded that enrollment for that year would be about 1,850 students. Any grade level in the district has about 150 students, so this decline in enrollment is significant, and could even effect funding and programming.

The Lakewood Public Schools has forecasted similar enrollment decline. From the present academic year to the 2007/2008 academic year, projections illustrate an expected loss of about 300 students, out of a total current enrollment of 2,500 students, a decrease of about 12%.

Thornapple Kellogg Schools, due to its proximity to the sprawling Grand Rapids region, has predicted that student enrollment will increase, slightly. From the present 2003/2004 academic year to the 2006/2007 academic year, the district expects to see the arrival of about 150 students, an increase of about 5%.

Notwithstanding Thornapple Kellogg Schools, these trends are presumably linked with three phenomena: a general aging of the overall population, a decrease in the average household size, and

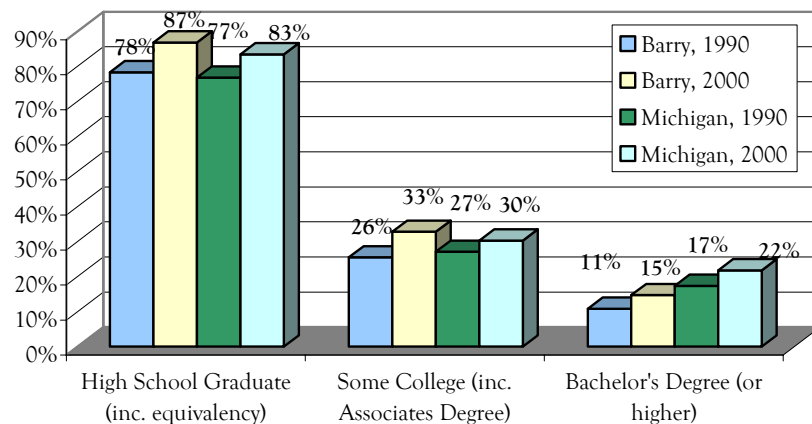


inroads into public education by private facilities. An influx of persons into Barry County has been noted, but as illustrated earlier in this Plan, these individuals and families are maturing. Empty nesters no longer have school-aged children in the household, who would contribute to local school enrollment. In addition, families are having fewer children at present than they did, say, 30 years ago. Such an inclination implies that, in correspondence with present enrollment trends, even though the number of households may increase in the County, the number of school-aged children is, at best, stable.

## EDUCATIONAL ATTAINMENT

In addition to school enrollment, it is appropriate to consider the effectiveness of the local education system. The quality of the local school system is generally an important consideration for families choosing a place to raise a family. In Barry County, residents are served by twelve different school districts as described in Chapter 5.

**Figure 7. Educational Attainment for Persons 25 and Over**



High school educational attainment increased significantly (8.5%) from 1990 to 2000 for persons age twenty-five and over. This appears to have followed a state trend of high school completion, however residents of Barry County are slightly more likely to have a high school diploma than residents from other areas of the State.

Barry County lags behind Michigan for those persons age 25 and over with a college degree. In 2000, 21.8% in Michigan had a college degree; in Barry County the rate was 14.7%. Barry ranks 39<sup>th</sup> among

Michigan's 83 counties for persons age 25 and over with a college degree.

In 2000, 254 teenagers age 16 to 19 in Barry County were not enrolled in school and not high school graduates for a rate of 8.1%. This "drop-out" rate is lower than Michigan's overall rate of 8.7% and a national rate of 9.8%. The following are some techniques that parents, school administrators, teachers, and counselors can use to help teenagers remain in school:

- ◆ Help them with personal problems or arrange for professional help;
- ◆ Help them schedule work and family obligations while accommodating time for school;
- ◆ Arrange for assistance with making up missed assignments, free tutoring, or transferring to another school, where necessary;
- ◆ Educate them on the choices they make – becoming pregnant, marrying, getting suspended, or failing classes – and help them understand the consequences;
- ◆ Help them find school or special social programs to meet their personal needs; and,
- ◆ Help them find a GED program and encourage them to stay with it until successfully earning a diploma.<sup>15</sup>

## PLANNING IMPLICATIONS

**Population growth  
implies a number of  
land use challenges.**

The population will continue to grow at rates in excess of those in most of the remainder of Michigan. This implies a number of land use challenges. For example, if the County adds about 23,000 persons to its population in the next 20 years, based on approximate projections, using current growth patterns the following are some of the statistics this growth would generate:

- ◆ Nearly 8,600 additional housing units, based on the 2000 average household size of 2.68 persons.
- ◆ About 82,000 additional automobile trips per day.<sup>16</sup>

<sup>15</sup> Information derived from two digests published by ERIC Clearinghouse – *School Dropouts: New Information and an Old Problem*, and *The Impact on Vocational Education on Racial and Ethnic Minorities* – and 2000 Focus Adolescent Services.

<sup>16</sup> Institute of Traffic Engineers, *Trip Generation*, 5<sup>th</sup> Edition, 1991

- ◆ Nearly 3.5 million gallons per day of additional wastewater flow.<sup>17</sup>
- ◆ About 5,400 additional school-age children, based on the current proportion of school age children in the County.

The aging of the population in Barry County and the over-balance of single family homes may present housing challenges for the community in the future. If the county desires to attract and retain younger families and couples, it will be necessary to assure a supply of affordable, and sometimes more transient housing. These types of housing help to support new residents as they become established. On the other end of the spectrum, as the County's senior citizens begin to retire in greater numbers, many may want to consider more economical and efficient living spaces but may find that they have to leave their home areas to do so.

---

<sup>17</sup> Lindeburg, Michael, R., P.E., *Civil Engineering Reference Manual*, 1989. This text suggests an average factor of 165 gallons per day, per capita.



## CHAPTER 3. HOUSING AND ECONOMIC DEVELOPMENT

This chapter analyzes the housing and economic development trends within the County. By comparing the housing trends with the population projections, housing shortages or surpluses can be estimated. Further comparisons of housing and land values against the incomes of current residents can illustrate whether or not housing is affordable to residents of the community. Finally, local job growth and investment in commercial and industrial development provide evidence of the strength and weaknesses in the local economy.

### HOUSING AND HOUSEHOLDS

**Consistent with the trends seen throughout the country family size in Barry County continues to decline and the number of single-person households is growing.**

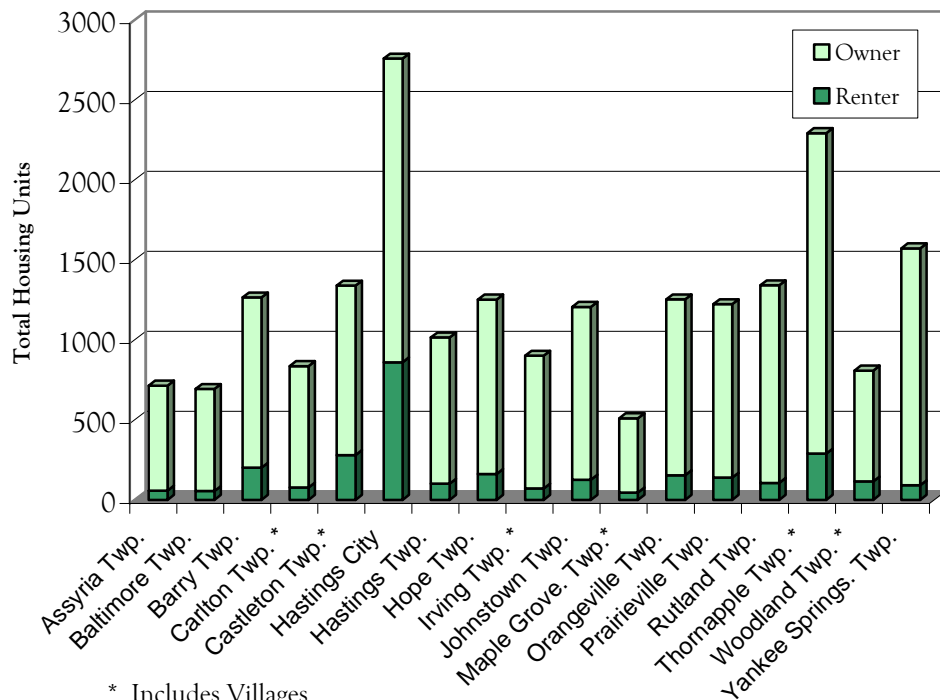
In the 1997 County Master Plan, it was pointed out that total housing units in the County had increased from 14,733 in 1970 to 20,887 in 1990. This equates to an overall increase of about 42% in twenty years, or an average annual increase of about 2.19%. A slightly reduced rate of growth was experienced from 1990 to 2000. During the 1990s, the number of units increased by 2,989 to 23,876 total units for an average annual rate of increase of 1.43%. During this same period, the number of persons per household declined slightly. In 1970, average persons per household (household size) was 2.59 persons. By 2000, that figure had declined slightly to 2.38 persons per household. This is consistent with the trends seen throughout the country as family size continues to decline and the number of single-person households grows.

The vast majority (83.3%) of the housing units in the County consist of single family detached units. Owner-occupied homes comprise 85.8% of all housing units with the remainder composed of rental units. This results in a ratio of owner-occupied to rental of slightly more than 5:1. A frequently used analysis of the health of a community is the ratio of renter-occupied housing to owner-occupied housing. Generally, urbanizing communities strive to achieve a 2:1 or 3:1 ratio of owner-occupied to rental housing within the market. The greater ratio found in Barry County is indicative of its largely rural nature, typically providing fewer rental opportunities. Of course, this ratio will vary depending on the degree of urbanization in a particular community.

For example, housing in the City of Hastings consist of 68.8% owner-occupied units, resulting in a ratio of owner occupied to rental housing

of slightly more than 2:1. By comparison, in rural Assyria Township, the ratio is 9:1, with 91.9% of the housing stock comprised of owner-occupied units. Figure 8 below illustrates the varying percentages of owner-occupied to rental housing in the County.

**Figure 8. 2000 Housing Occupancy Comparison**



\* Includes Villages

Source: 2000 U.S. Census

## HOUSING QUALITY

Barry County has not undertaken a comprehensive housing quality survey to identify areas of sub-standard housing. However, the Census does identify housing units with incomplete plumbing and/or kitchen facilities which may be considered one measure of housing quality. In the 2000 Census, only 108 housing units out of a total of 23,879 were reported as not having complete kitchen and/or plumbing facilities. In the 1990 Census, a total of 370 housing units were reported as lacking some plumbing facilities in the County. Thus it may be concluded that the vast majority of the housing in the County provides complete plumbing and/or kitchen facilities and the number without such facilities declined by about 71% during the 1990s.

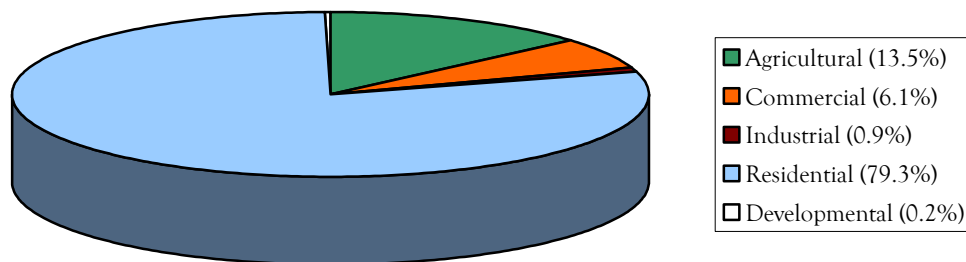
Housing affordability is also of interest in the completion of this community profile. Affordability is a measure of the percentage of disposable income consumed in housing costs such as rent payments for rental properties and principal and interest expense for home owners. Typically mortgage underwriters and housing specialists consider housing affordable if rent payments or principal and interest payments fall below 25% to 28% of gross income. Comparing median household incomes with median rents and median mortgage payments indicates that much of the housing in the County would meet this standard. In 2000, median annual household incomes stood at \$46,820, so using the 25% standard, about \$11,705 annually might be needed for housing costs in an affordable market. The Census reported that median mortgage payments were \$888 monthly, or \$10,656 annually, and median monthly rents were \$493, or \$5,916.

It is important to remember that median household income reflects the mid-point in the range of all incomes. Therefore, about one-half of the households in the County have incomes falling below the median. In addition, according to the Census, about 27% of the home-owners in the County devote more than 25% of their household incomes to mortgage payments and nearly 40% (39.7%) of renters spend more than 25% of their incomes on rent.

## EQUALIZED VALUE GROWTH

An important measure of the economic vitality of a community is found in property valuation trends and the mix of real property valuation. Figure 9 allocates the \$1.98 billion in equalized property values by property classification. State equalized values are intended to

**Figure 9. Breakdown of Barry County State Equalized Values, 2003**

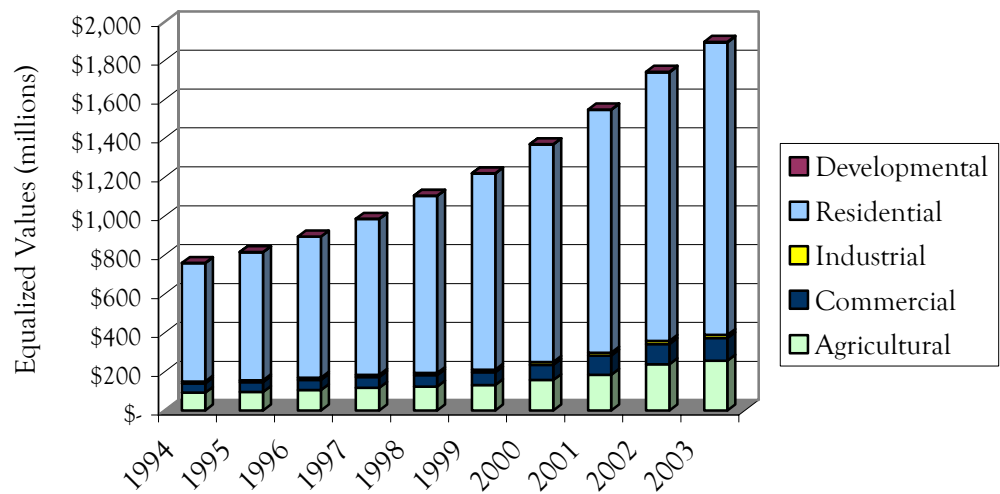


Source: Barry County

reflect about 50% of actual market values in the County. The breakdown reflects the 2003 Barry County State Equalized Values (SEV) as adopted by the Board of Commissioners.

Residential properties constitute over \$1.5 billion, or almost 80% of the total real property value in the County, while agricultural lands account for about 13%. Over the past ten years, residential lands have constituted a steadily increasing share of total valuation in the County. Figure 10 below indicates the ten-year trend.

**Figure 10. Trends in Property Values 1994 - 2003**



Source: Barry County

Even though total real property values in the County have steadily increased over the past ten years, it is clear that the vast majority of the growth in value has occurred in the residential classifications which increased from \$608 million in 1994 to \$1.5 billion in 2003, an increase of 146%.

**Some agricultural land may be increasing in value not as a result of its agricultural use, but rather as potential development sites.**

A closer look at Figure 10 reveals that the SEV of agricultural land has increased even more dramatically between 1994 and 2003. In 1994 all agricultural lands in the County were valued at \$91.6 million. By 2003, agricultural lands were valued at \$256.8 million, an increase of 180%. This increase may be accounted for by the property assessment process. It is likely that in many areas of the County, agricultural land is increasing in value not as a result of its agricultural use, but rather as potential development sites. In addition, as indicated in Chapter 4,



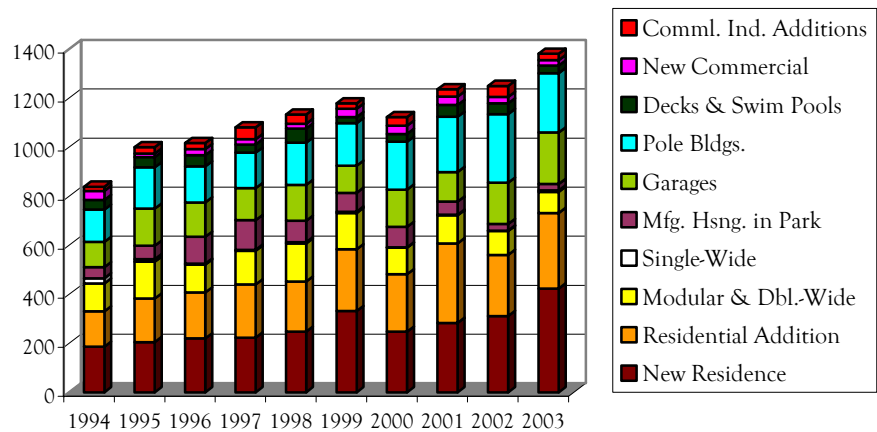
the amount of land in agricultural use actually declined from 1978 to 1994 by over 8,000 acres. With new population pressures increasing the demand for housing and commercial uses, development adjacent to agricultural land likely accounts for much of the increase in land value.

## BUILDING PERMITS

**In every year, but 2001,  
new residential  
construction accounted  
for the largest single  
category of development  
in the County.**

Building permits are a good indication of investment in the community. As Figure 11 indicates, the number of total building permits issued in Barry County has ranged from 839 to 1,300 permits per year. In every year, but 2001, new residential construction accounted for the largest single category of development in the County. This was followed by residential additions, pole buildings and garages. Interestingly, in the mid 1990s, double-wide and modular homes constituted a fairly large share of the permits issued, but by the late 1990s and early 2000s, the number of these permits issued had declined significantly.

**Figure 11. Barry County Building Permits Trends  
1994 - 2003**



These figures would indicate that new residential building permits accounted for about 3,965 new single-family homes in the County from 1994 to 2003. These include building permits for new residences (2,679), as well as manufactured housing units (1,286) over this period. If each new unit accommodates an “average-sized household,” which was 2.68 persons in 2000, these new units could account for about 10,626 in population growth in the community over the past decade. Clearly, this represents a rate of growth greater than that reported by the Census from 1990 to 2000, so some of these units may have been for

seasonal housing or replacement units that would not impact year-round population counts.

Table 4 below reflects recent trends in building permit by jurisdiction in the County. This information includes all types of permits, but as indicated above, the majority of development in the County is residential in nature, and it may be assumed that essentially the same proportions would apply at the jurisdiction level.

Table 4 - Barry County Building Permits							
Community	1998	1999	2000	2001	2002	2003	2004*
Assyria	42	38	46	51	51	44	31
Baltimore	42	48	41	37	47	37	37
Barry	84	76	74	91	73	79	72
Carlton	66	63	47	63	66	55	70
Castleton	44	62	42	45	35	36	26
Freeport Village	5	5	2	7	10	13	6
Hastings	62	54	47	78	65	56	62
Hastings, City	107	85	126	101	105	124	89
Hope	N/A	N/A	N/A	117	95	85	70
Irving	70	79	80	78	84	77	68
Johnstown	69	58	74	70	69	61	61
Maple Grove	40	32	25	22	34	39	37
Middleville	55	96	89	62	60	85	54
Village							
Nashville Village	16	17	18	17	29	21	18
Orangeville	89	91	86	66	88	67	64
Prairieville	120	119	77	87	81	93	62
Rutland	N/A	89	N/A	79	67	151	97
Thornapple	89	111	77	71	107	104	99
Woodland	42	34	28	32	44	40	25
Woodland	8	7	4	6	4	5	3
Village							
Yankee Springs	203	149	128	153	111	113	109
<b>Total Permits</b>	<b>1,133</b>	<b>1,179</b>	<b>1,123</b>	<b>1,246</b>	<b>1,176</b>	<b>1,305</b>	<b>1,076</b>
*As of November 2004. Source: Barry County and various local building officials							

Using the data provided by the County, it is possible to track the values of new construction in the community. The average value of all building permits issued by the County has increased slightly from \$34,593 in 1995 to \$61,767 in 2002. Of course, these are gross figures

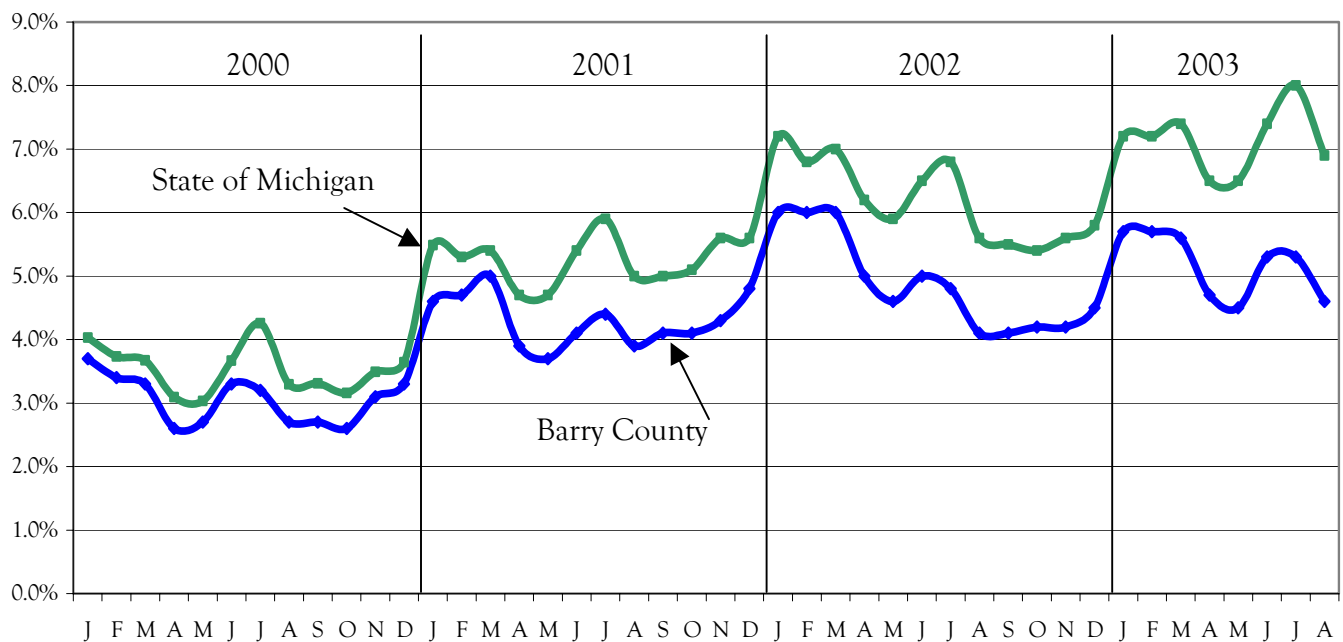
including a broad range of building types, from utility buildings, to single-family homes to commercial and industrial structures. Nevertheless, as indicated in Figure 10 above, residential properties constitute the majority of the County's land values and the overall value of properties in that classification is increasing more rapidly than other classifications.

## EMPLOYMENT

**Paralleling national trends, the effects of the economic downturn are reflected in increased unemployment.**

The effect of the recession of the past few years is very apparent in the recent unemployment trends in the County. At the start of the decade, the County was enjoying virtually full employment with less than 3% of the work force receiving unemployment benefits. In terms of total workers unemployed during 2000, an average of only 1,025 persons had filed for benefits out of a total workforce of 33,475. In fact in the spring of 2000, employment in the County was at historic highs with 97.4% of the workforce working.

Figure 12. Comparative Unemployment Rates 2000 - 2003



Source: Michigan Department of Career Development, Office of Labor Market Information.

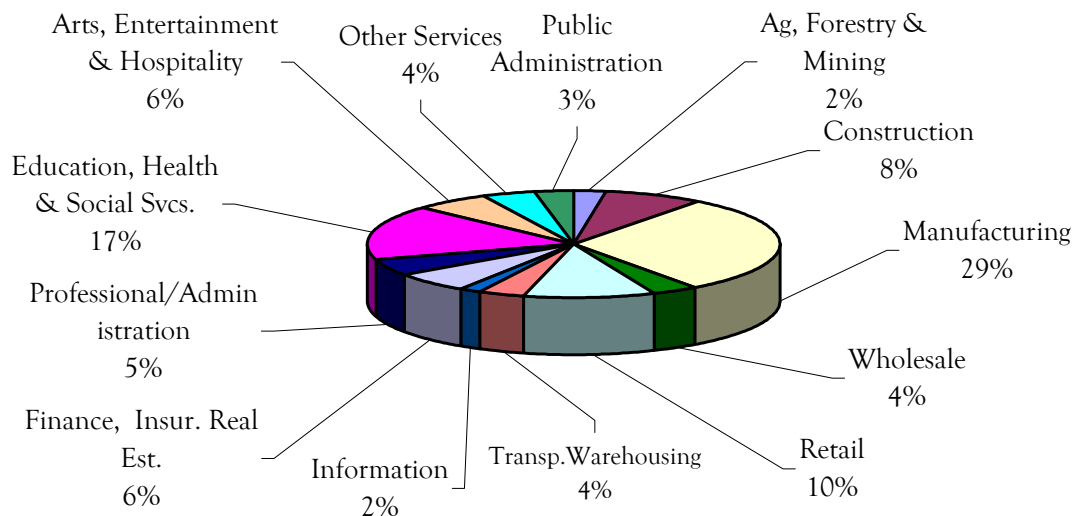
However, by early 2002, the situation had significantly worsened. The rate of unemployment had risen to 6% county-wide with some communities reporting rates nearing 9%. Of course, this trend

essentially parallels the broader state and national economy. Declines in durable goods spending and consumer confidence as well as residual impacts from terrorist attacks are generally regarded as the primary causes of the softening of the national economy.

By the beginning of second quarter of 2003, the unemployment rates declined slightly showing of a gentle recovery. By August 2003, the year to date average unemployment rate for Barry County was 5.2%. This is down slightly from the high levels of 2002, but Barry, Hope and Prairieville Townships are still showing rates of 7.8%, 7.7% and 6.4% respectively, for the year. In spite of the weakened economy, it is significant that unemployment in Barry County continues to track well below that of the State overall and by the end of the summer of 2003 it was nearly 2.5 percentage points lower than the state-side figures.

Figure 12 also illustrates the seasonal fluctuations in local unemployment rates. The winter increase in unemployment is clearly evident, even as the overall rate increases. This may be due to several factors, but since about 10% of the County's labor force is employed in the agricultural or construction industries<sup>18</sup> which tend to reduce employment in the winter months, this seasonal adjustment may be a perennial feature of the local economy.

**Figure 13.**  
**Composition of Barry County Employment**



Source : U.S. Census Bureau, DP-3, Profile of Selected Economic Characteristics: 2000

<sup>18</sup> US Census Bureau, DP-3 Profile of Selected Economic Characteristics: 2000

As indicated in Figure 13, the 2000 Census reports that the County's workers are distributed among a broad range of industries. Manufacturing accounts for the largest share of local employment (29.6%) followed by education, health and social services (16.7%). The composition of Barry County is generally consistent with that of nearby Counties, as indicated in Table 5 below. West Michigan has long been regarded as a manufacturing center and even with the broad distribution of employment in other sectors, manufacturing still account for the largest share of jobs. However, there is a clear change occurring as noted in Figure 14.

The primary manufacturing employers in the County include Bradford-White with over 1,000 employees, VHI and Flexfab, as well as Hastings Manufacturing and Viking Corporation.

<b>Table 5. Key Manufacturers in Barry County</b>		
<b>Business</b>	<b>Product</b>	<b>Reported Employment</b>
Bradford White, Corp.	Water-heaters	1,050
VHI	Silicone hoses	500
Flexfab	Silicone hoses	500
Hastings Manufacturing	Motor vehicle parts	400
Viking Corp. (Tyden Seal)	Fire suppression	400
Metaldyne	Motor vehicle parts	165
Bliss Clearing Niagra, I	Machinery, metalwork	100
J-Ad Graphics	Publishing	100
Hastings Fiberglass Prod	Plastics, electrical	80
Quality Aluminum Product	Aluminum siding	65
Middleville Tool & Die	Tools, dies, jigs	60
Viatec/Hastings Engineer	Plastic products	55
D & S Machine Repair, In	Press repair	40
Dimond Machinery Co.	Buy/Sell used machines	30
Buskirk Lumber Co.	Saw-mills, Handwood	25
BJ Hydraulics	Manufacturer	20
TNR Machine	Die mold parts	20

Source: Barry County Economic Development Alliance

In addition to manufacturing employment, County residents find service employment at Pennock Hospital, the various school districts, the County itself and the community's numerous retailers.

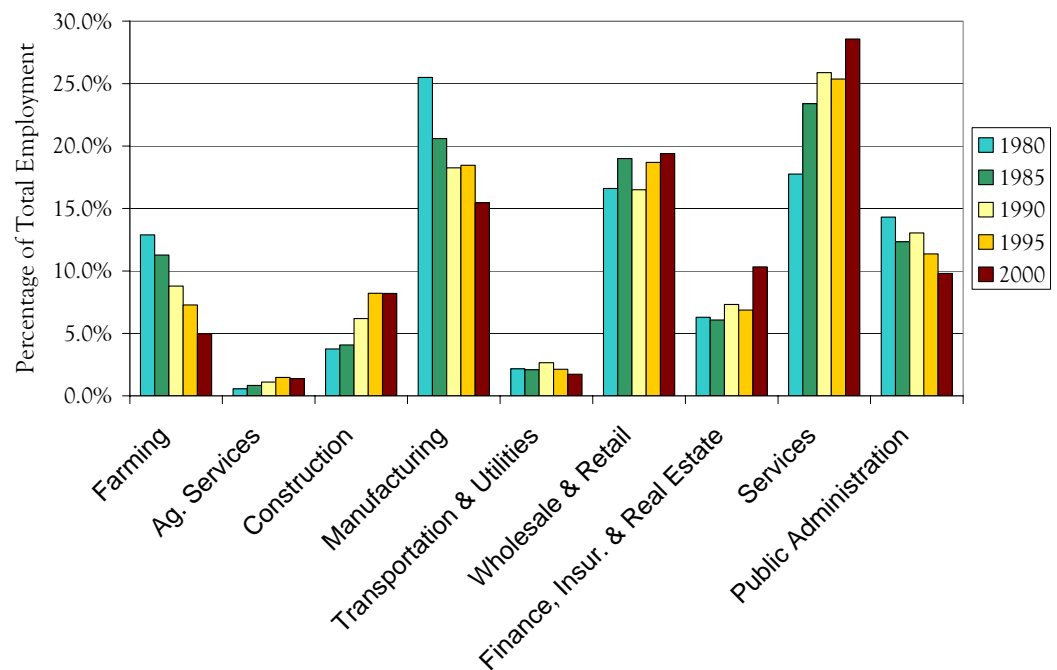
It is also important to understand how the employment picture of Barry County compares with its neighbors. Table 6 provides a comparison among the seven-county area centering on Barry County. Clearly, the rural nature of the County is evident in its employment. Barry, Allegan and Ionia Counties reflect over twice the level of agricultural employment when compared to their more urbanized neighbors. Nevertheless, even in these communities, agriculture, forestry and mining account for a relatively small proportion of total employment.

<b>Table 6. Comparison of Major Employment by Industry and County</b>							
	<b>Percentage of Total Employment by County</b>						
<b>Industries</b>	<b>Barry</b>	<b>Allegan</b>	<b>Calhoun</b>	<b>Eaton</b>	<b>Ionia</b>	<b>Kalamazoo</b>	<b>Kent</b>
Agriculture, forestry, mining, etc.	2.5%	2.9%	1.0%	1.0%	3.2%	1.1%	0.6%
Construction	7.9%	7.3%	4.7%	6.1%	7.4%	5.6%	5.6%
Manufacturing	29.6%	32.6%	26.1%	18.2%	26.9%	20.4%	23.7%
Wholesale and Retail	13.9%	15.1%	13.7%	14.4%	14.6%	14.8%	18.7%
Transportation & Warehousing	3.6%	4.1%	4.3%	4.3%	3.4%	3.2%	3.4%
Information	1.8%	1.2%	1.3%	1.6%	1.5%	2.0%	2.0%
Finance, Insur. Real Estate	6.0%	3.7%	4.6%	7.2%	5.5%	5.8%	6.0%
Professional, Mgmt, Admin.	5.2%	5.2%	5.7%	6.4%	4.3%	7.0%	7.8%
Education, Health & Soc. Services	16.7%	15.4%	20.1%	19.4%	15.1%	24.1%	18.8%
Arts, Entertainment & Hospitality	5.7%	6.0%	7.8%	5.7%	5.5%	8.7%	7.1%
Other Services	4.3%	4.2%	5.0%	5.2%	4.4%	4.7%	4.4%
Public Administration	3.0%	2.0%	5.6%	10.4%	8.2%	2.6%	2.0%
Source : US Census Bureau, DP-3 Profile of Selected Economic Characteristics: 2000							

Looking at these figures over an extended period of time reveals some of the fundamental changes that are occurring in the local economy.

Farm employment has declined from nearly 13% of the Barry County work force in 1980 to about 4.7% in 2003, according to Woods & Poole Economics, a Washington-based economic and demographic forecasting service.<sup>19</sup> Manufacturing jobs, as a share of the total economy, declined as well. However, the total actual number of manufacturing jobs increased to about 8,141 in 2000, according to the Census. At the same time, employment in the services grew from about 17.7% to nearly 29% of total jobs and employment in construction showed strong increases through 1995, but has since leveled off.<sup>20</sup> This parallels a shift in Michigan's economy from manufacturing jobs to service industries. As manufacturing jobs move south or overseas, Michigan communities are forced to redefine their economic future.

**Figure14. Trends in Employment: 1980 - 2000**



Source: Woods & Poole Economics, Barry County 2003 Data Pamphlet

<sup>19</sup> *Barry County Michigan, 2003 Data Pamphlet*, Woods & Poole Economics, 2003. It should be noted that the reporting mechanisms used by Woods & Poole differ somewhat from those employed by the U.S. Census Bureau, so the percentages reported by Woods & Poole in 2003, will not mirror those found in the 2000 Census.

<sup>20</sup> *Ibid.*

### **Brownfield Redevelopment Authority**

The Barry County Brownfield Redevelopment Authority (BCBRA) is authorized under Act 145 of 2000 to aid in the clean up and re-use of contaminated properties in the County. The BCBRA was established recently and has formed bylaws and has designated twenty sites as potential redevelopment properties.

Under the Act, the BCBRA may use the incremental growth in property and personal tax revenues resulting from remediated and redeveloped properties to foster further cleanup and economic development in the County.



## CHAPTER 4. LAND USE AND DEVELOPMENT PATTERNS

Barry County is approximately 576 square miles, or 368,640 acres. The County is divided into 16 Townships, 1 City, and 4 Villages, and incorporates about 25,000 acres of State Game Area and parklands. This acreage is protected from development, and is planned to remain as public parkland into the foreseeable future.

Primarily, the County has remained a composite of rural bedroom towns with farmland and lakes scattered throughout the community. There are some relatively concentrated land uses in the County's population centers, near Hastings and Middleville. The Villages of Woodland and Nashville also have dense residential development, though on a smaller scale. Rutland Charter Township and Thornapple Township, in the northwest portion of the County, also have more intense land uses, such as strip commercial, industrial, and an airport, and have experienced the most growth in recent years due, in part, to sprawl from the growing Grand Rapids region. In addition, other northwestern communities, such as Yankee Springs and Irving Townships, are facing increasing single-family growth demands. The southern portion of the County is experiencing some pressure for housing development, as well, due to reasonable proximity to the Kalamazoo and Battle Creek Metropolitan areas.

### LAND COVER

**Most of Barry County  
is still open lands,  
woodlands and  
agriculture.**

Land cover describes the vegetation or land use that occupies the land in a given community. The land cover in Barry County is reflected in Map 4. The Land Cover map is based on computerized mapping prepared by the Michigan Resources Information System (MIRIS). MIRIS is an effort to create a "statewide computerized database of information pertinent to land utilization, management, and resource protection activities."<sup>21</sup> It is important to note that the map was prepared from aerial photography and reflects composite groupings of land use categories. MIRIS information is not bounded by parcel lines, but instead follows natural systems. Therefore the map is intended not to reflect zoning or exact land uses. For generalized zoning, see Map 5. The original mapping for the Barry County was done in 1978 and was updated with a land cover change comparison in 1994.

---

<sup>21</sup> Michigan Department of Natural Resources, Michigan Resource Inventory Program established under the Michigan Resource Inventory Act, 1979 PA 204.

MIRIS data depicts some 52 categories of urban, agricultural, wooded, wetland, and other land cover types for the entire State of Michigan. The 1994 update reflects changes including expansions of residential areas and a shift of some expansions of industrial and commercial development in formerly vacant areas.

The land cover in the County has been categorized into eighteen groupings with the acreage percentage for each general category estimated as follows:

<b>Land Use Class</b>	<b>Percent of Total County Land Cover</b>
Residential	5.43%
Commercial, Business, Institutional	0.37%
Open Water	0.01%
Reservoir	0.02%
Forested Wetland	5.72%
Non Forested Wetland	2.37%
Coniferous	2.65%
Deciduous	25.03%
Cropland	45.24%
Other Agricultural Lands	0%
Permanent Pasture	0.75%
Orchards, Bush-Fruits, Ornamentals, Vineyards	0.16%
Herbaceous Rangeland	5.18%
Shrub Rangeland	2.60%
Confined Feeding Operations	0.09%
Industrial	0.12%
Extractive	0.33%
Transportation	0.09%

\*The sum of the percentages may slightly exceed 100% due to rounding.

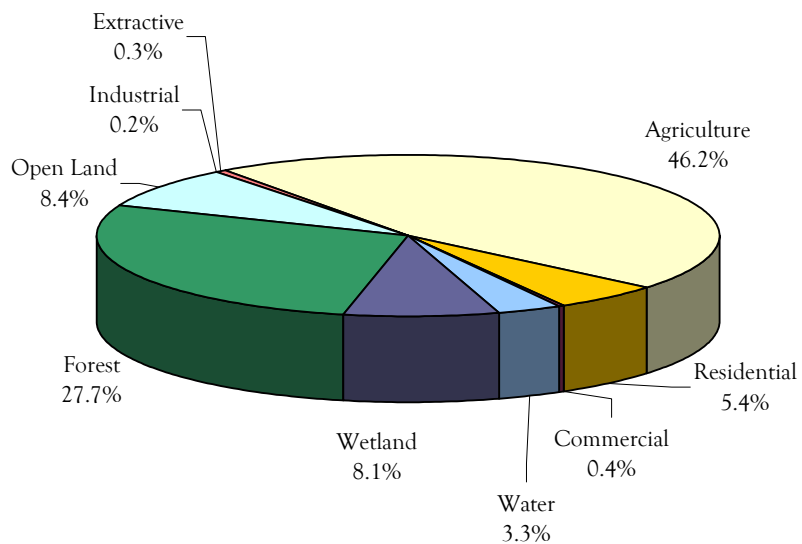
When land cover categories are consolidated into more general categories, land use patterns become more readily visible and development areas can be illustrated. In the completion of Map 4, the 52 land cover categories of the MIRIS system have been consolidated into nine categories which are more general and useful for the purposes of this Community Profile Report. On Map 4 Barry County Consolidated Land Cover areas of urbanized development are

apparent. The map illustrates residential development occurring in densities in the City of Hastings, the Villages, around the lakes and along County roads. Large, unbroken tracts of agricultural lands are seen in a horseshoe pattern around the City of Hastings and Yankee Springs natural areas. The natural ecological systems can be seen in the consolidation of forests as they exist in combination with wetlands and stream corridors.

Land Cover	Acreage	Percent of Total Land Cover
Residential	20,085	5.4%
Commercial	1,374	0.3%
Water	12,052	3.2%
Wetland	29,846	8.1%
Forest	102,033	27.6%
Agriculture	170,457	46.2%
Open Land	30,811	8.3%
Industrial	779	0.2%
Extractive	1,203	0.3%
<b>Total</b>	<b>368,640</b>	<b>100.00%</b>

As these general land cover categories are generalized, the rural nature of the County is evident. More of the County's acreage exists as

**Figure 15. Barry County Land Use**

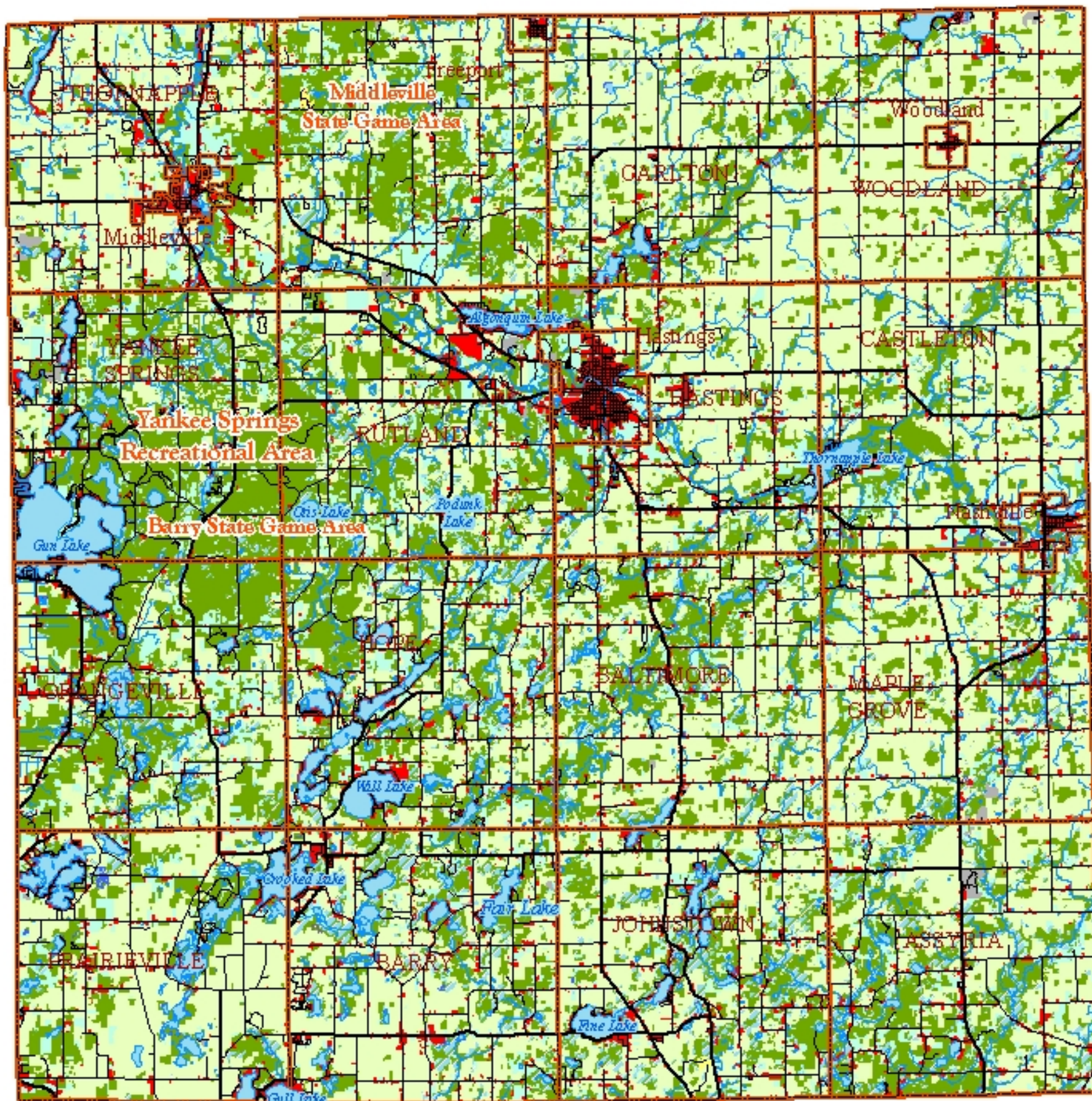


wetland areas than residentially occupied. Forested lands make up over a quarter of the County and agricultural land constitutes almost half of the County's land use. Commercial and industrial lands account for less than 0.5% of the total land cover or around 2,170 total acres.



# Barry County, Michigan

## Map 4 Land Cover

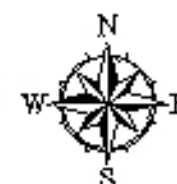


### Legend

	Political Boundaries	<b>Land Cover</b>		Urban and Builtup
	Roads			Agricultural
	Key Routes			Extractive
	Open Water			Forested
	Streams			Confined Feeding Operations
				Rangeland / Open Land
				Wetlands
				Open Water
				No data

**Williams & Works**  
engineers • planners • architects

615.234.5100 phone • 615.234.5101 fax  
845 Clinton Avenue NW • Grand Rapids, MI 49506





Back of Map 4

**TABLE 7. COMPARISON OF CONSOLIDATED LAND COVER  
1978 - 1994**

Consolidated Land Cover Category	Acres		Change	% Change
	1978	1994		
Residential	11,680	20,085	8,405	72.0%
Commercial	1,290	1,374	85	6.6%
Water	12,007	12,052	45	0.4%
Wetlands	28,884	29,846	963	3.3%
Forest	103,855	102,033	(1,823)	-1.8%
Agriculture	178,550	170,457	(8,093)	-4.5%
Open Land	31,054	30,811	(243)	-0.8%
Industrial	355	779	424	119.4%
Extractive	966	1,203	237	24.5%
<b>Totals</b>	<b>368,640</b>	<b>368,640</b>		

Map 4, which illustrates the 1994 land consolidated land cover, together with Table 7 above provide an impression of the changes that are occurring in Barry County land use. Table 7 provides a comparison of the existing land cover based on the most recent (albeit nine year old) land cover information with the previous state-wide land cover mapping done by MIRIS. Given the rate of population growth, it is natural to expect an increase in the amount of land devoted to residential use. However, from 1978 to 1994, the County's population grew by about 8,540 persons, or by about 4,260 households.<sup>22</sup> At the same time, about 8,400 acres of additional residential land cover was added to the County. Therefore, on average, new residential development occurred in low density patterns of about one dwelling unit per two acres. Another way to view these two rates of growth is to consider that the population increased by about 19%, while the amount of land for residential use grew by 72%.

During this same period, industrial and commercial land cover increased, as did extractive (mining). In total, about 9,151 acres of land was moved into more intense land uses, most of which had formerly been agricultural or open lands.

<sup>22</sup> Barry County Michigan, 2003 Data Pamphlet, Woods & Poole Economics, 2003

## LAND USE

**The County is dominated by agriculture and rural development patterns.**

Land use in the County is dominated by agriculture and rural single-family development patterns. The eastern half of the County is almost entirely agricultural in use. It is important to note that as growth occurs, large minimum lot sizes, characteristic of rural zoning, are often a key contributor to the loss of farmland, as large portions of former farms become yards for new homes. Very low-density residential development may appear to be “rural” by design, but this type of sprawling land use absorbs farmland quickly, and spreads development out further. Nonetheless, the previous County Land Use Plan included provisions for the preservation of prime agricultural lands and promotes the understanding of the Right to Farm Act.

Land use in and around the City of Hastings and in the Villages is more intense than in other areas of the County. Hastings is the County seat and therefore home to most government facilities, and is also where the majority of the County’s industrial development is. Housing is relatively dense, and downtown consists of older buildings with short setbacks. In addition, Middleville, Freeport, Woodland Village, and Nashville have similar land use characteristics, with aging housing, shorter setbacks, and some “main street” development.

Barry County has many natural lakes as listed in Chapter 1. Residential development has occurred adjacent to these lakes, and often is very dense. Lakes provide recreation and quality of life amenities, and therefore act as magnets for residential growth. The extent to which these lakes are served by sewer as opposed to individual septic systems, acts as a growth management tool, since utilities are one of the key tools to manage growth and development.

### Local Planning

Some communities within the County have independent planning and zoning. These communities include Thornapple Township, Yankee Springs Township, Rutland Charter Township, Prairieville Township, The City of Hastings, Hope Township and the Villages of Middleville, Freeport, Woodland and Nashville.

Thornapple Township has primarily planned for agricultural, agricultural residential, and rural residential land uses. Directly adjacent to the Village of Middleville, along M-37, commercial development is anticipated.



Rutland Charter Township plans for mixed-use development and high density residential along its border with the City of Hastings to intentionally keep more urban uses adjacent to the City's facilities. Primarily, the Township's future land use map illustrates country residential and State Game Area as the predominant land uses. Hope Township, just south of Rutland, is expecting similar low-density residential patterns throughout the community. Lake residential at slightly higher densities line the shores of several of the communities' lakes. Hope Township is directing the most intense commercial and industrial development to the bend in South M-43 in section 15. Other small pockets of commercial are planned at three key intersections in Hope.

The City of Hastings incorporates the broadest range of future land use designations into its future land use map. The southeast side of the City is master planned for industrial uses, and generally the other planned uses are residential, with medium and moderate density residential the principal uses. The downtown and State Street Commercial and office land use pattern is an important feature in Hastings and in the County.

Yankee Springs Township is largely comprised of the Barry State Game Area and the Yankee Springs State Park. Much of the remaining land is master planned for residential and agricultural uses. Commercial development is expected to occur along Chief Noonday Road and M-37 in the Township, however.

Planning and zoning in the four villages varies somewhat, but generally the villages seek patterns of growth consistent with their small town character.

## ZONING

The following communities are under County zoning:

- |                        |                      |
|------------------------|----------------------|
| ◆ Irving Township      | ◆ Baltimore Township |
| ◆ Orangeville Township | ◆ Hastings Township  |
| ◆ Barry Township       | ◆ Castleton Township |
| ◆ Johnstown Township   | ◆ Woodland Township  |
| ◆ Assyria Township     | ◆ Carlton Township   |
| ◆ Maple Grove Township |                      |

Much of the Townships are zoned chiefly for agricultural uses. The other primary zoning district is the Agricultural, Rural Residential and Recreational District. In the Agricultural District and the Agricultural, Rural Residential and Recreational District the minimum lot size is 1 acre. Generally, these zoning districts intend to enhance and preserve prime agricultural areas, to avoid conflicts among farm and non-farm uses, and to provide for low density, rural living environments.

In order to compare communities for zoning district compatibility and make estimates about potential buildout, the zoning categories for every community have been collapsed into general comparative zoning districts. The following zoning districts were created to accommodate all types of zoning present within the County. Comparative residential zoning districts were established based upon minimum lot size, both with and without utilities. The nature and intensities of the use determined other land use zoning districts.

**TABLE 8. COMPARATIVE ZONING DISTRICT ANALYSIS**

Comparative Zoning Districts for purposes of the Barry County Master Plan	Dimensional Standards without Utilities (in sq. ft.)	Dimensional Standards with Utilities (in sq. ft.)
USF - Urban Single Family	12,000	9,350
UMF - Urban Multi-Family	12,000	8,250
MHP - Mobile Home Park	5,500	5,500
SR -1- Suburban Residential	15,000	12,000
SR -2- Suburban Residential	24,000	20,000
SR -3- Suburban Residential	35,000	15,000
RR - Rural Residential	43,560	43,560
RE - Residential Estate	100,000	100,000
AG-1 - Agricultural & Recreation	43,560	43,560
AG-2 - Medium Lot Agricultural	130,680	130,680
AG-3 - Large Lot Agricultural	435,600	435,600
RC - Resource Conservation	871,200	871,200
C-1 General Commercial District		
C-2 Community Business District		
C-3 Heavy Commercial/Light Industrial District		
CBD Central Business District		
I Industrial		
PUD Planned Unit Development District		
POS Permanent Open Space		

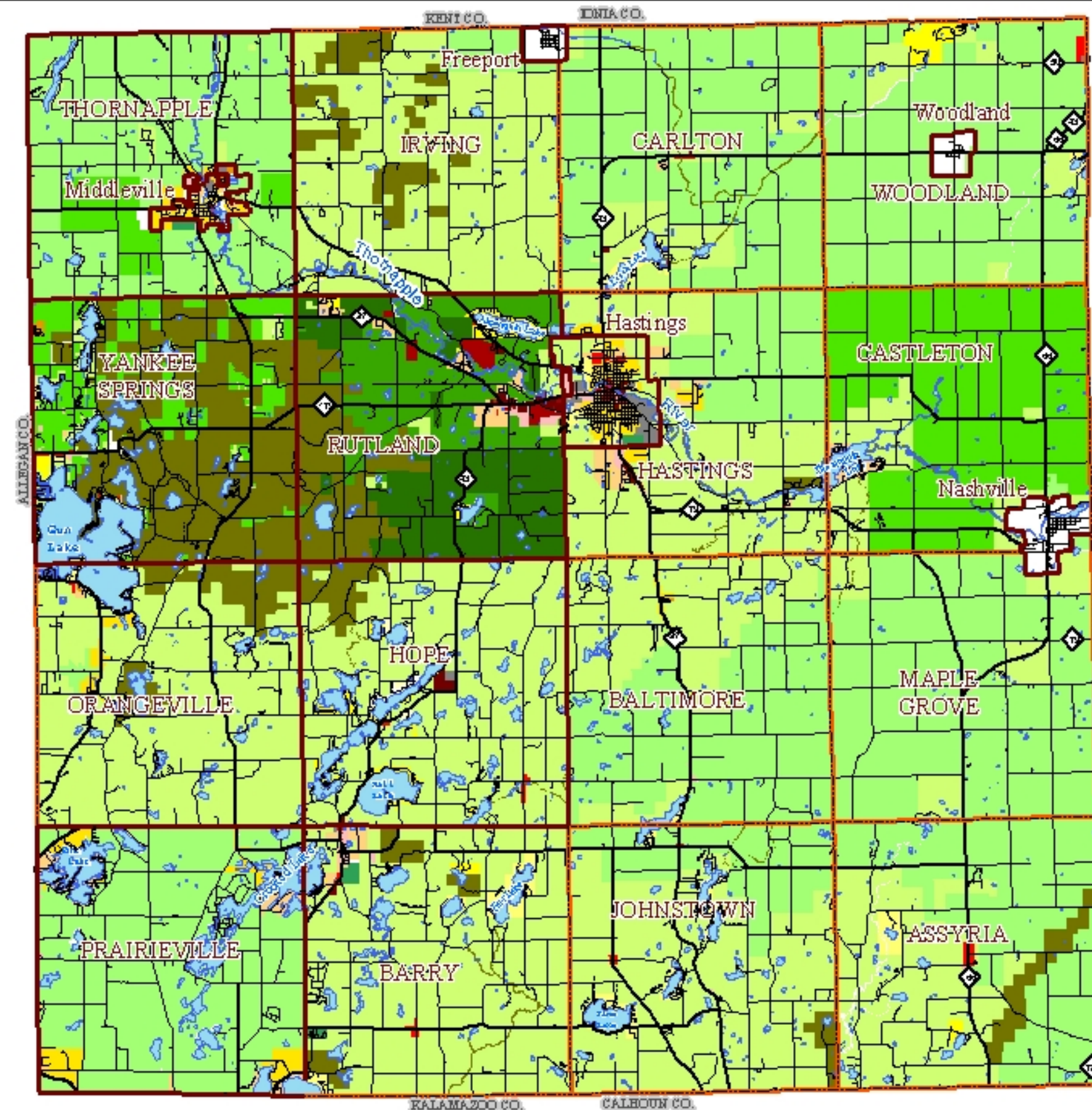
The County recently reduced the minimum lot size to one acre in order to resist the fragmentation of farmland. The intention of this approach was to reduce that fragmentation and allow farmers to gain income by selling a one-acre parcel for a residential development while allowing that farmer to keep the majority of the farmable land in-tact. Other communities that have implemented their own zoning have taken the reverse approach and required the minimum lot size to be large enough to farm.

Varying land use philosophies are evident in the zoning patterns as seen in Map 5, Comparative Zoning Map. Zoning categories were developed based on lot size and use. It is clear from the Comparative Zoning Map that the majority of the County is zoned for one acre lots to exist either in the form of Rural Residential or Agricultural and Recreation uses. Rutland and Yankee Springs Townships are an exception. These communities have encouraged larger lots and lower densities.



# Barry County, Michigan

## Map 5 Zoning



### Legend

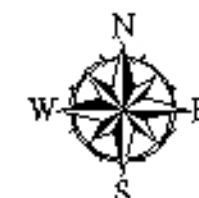
	Parcel		Suburban Residential (SR-3)
	Political Boundary		Urban Single Family (USF)
	Roads		Urban Multi-Family (UMF)
	Key Routes		Mobile Home Park (MHP)
<b>Zoning Districts</b>			Planned Unit Development District (PUD)
	Agricultural & Recreation (AG-1)		General Commercial District (C-1)
	Medium Lot Agricultural (AG-2)		Community Business District (C-2)
	Large Lot Agricultural (AG-3)		Central Business District (CBD)
	Residential Estate (RE)		Heavy Commercial/Light Industrial District (C-3)
	Rural Residential (RR)		Industrial (I)
	Suburban Residential (SR-1)		Permanent Open Space (POS)
	Suburban Residential (SR-2)		

In order to compare communities for zoning district compatibility and make estimates about potential buildout, the zoning categories for every community have been consolidated into general Comparative Zoning Districts. These zoning districts were created to accommodate all types of zoning present within the County.

**Williams & Works**  
engineers • planners • architects

414.224.1888 phone • 414.224.1888 fax  
805 Cass Avenue NW • Grand Rapids, MI 49508

Source: Barry County Land Information Services  
and Williams & Works  
Map Created: November 23, 2003



Back of Map 5

## REGIONAL PERSPECTIVE

**West Michigan is growing, and land use trends in surrounding metropolitan areas influence Barry County.**

Barry County is surrounded by: Metropolitan Grand Rapids to the northwest, Allegan County to the west, Eaton County and Metropolitan Lansing to the east, Ionia County to the northeast, and Kalamazoo and Battle Creek to the south. The land use trends in these areas have an influence on Barry County.

### Growth

West Michigan is growing. Between 1990 and 2000, Metropolitan Grand Rapids, which includes the counties of Kent, Allegan, Muskegon, and Ottawa, grew by 19%. During this same period, Kalamazoo County grew by 12%, Calhoun County lost 3% of its population, Eaton County grew by 21%, and Ionia County grew by 18%.

The growth of these surrounding communities, especially Grand Rapids, pressure Barry County. The southern Grand Rapids suburbs experience the most growth. For example, near to Barry County, Caledonia and Gaines Townships, which grew by 46% and 38%, respectively, during the 1990's and have quickly become the "next" suburbs in a concentric ring around the City of Grand Rapids.

In addition, regional developments, such as the new M-6, which already has an existing interchange at M-37 – Barry County's busiest corridor – about 4 miles to the north, will likely accelerate population growth within the County. Writing in the *American Planning Association Journal*, Robert Cervero has documented both "induced growth" and "induced investment" effects as a result of roadway improvements. In effect, real estate development gravitates to improved freeways. The study concluded that, while controlling for other factors, every 10% increase in roadway miles was linked with a 9% increase in vehicle miles traveled four years after roadway completion.<sup>23</sup> Therefore, new roads bring more traffic. More traffic is a clear indication of population growth, which has implications for land use consumption and development patterns. The likely effect of the completion of M-6 may be even more explicitly illustrated in the experience of Howard County, Maryland (suburban Washington, D.C.). Studies there indicated that 94% of the properties within a new highway corridor were developed after the highway was completed.<sup>24</sup>

<sup>23</sup> Cervero, R., *APA Journal, Road Expansion, Urban Growth, and Induced Travel*, 2003

<sup>24</sup> Washington Business Journal, *In Depth: Commercial Real Estate*, 2001

It is likely, therefore, that Caledonia's growth is going to rapidly increase, and soon the growth already spreading into Barry County will become accelerated, implying that the northwestern communities in the County are next in line for a change in character.

**The growth already spreading into Barry County will become accelerated, implying that the northwestern communities in the County are next in line for a change in character.**

It is important to note that in Michigan, the Land Use Leadership Council determine that on average land in Michigan is developed 8 times faster than the rates of population growth.<sup>25</sup> This is often termed "sprawl". *"If land is being consumed at a faster rate than population growth, then a metropolitan area can be characterized as 'sprawling.' If population is growing more rapidly than land is being consumed for urbanization, then a metropolitan area can be characterized as 'densifying'."*<sup>26</sup> The Brookings Institute Study revealed that most metropolitan areas in the United States are adding urbanized land at a much faster rate than they are adding population. Between 1982 and 1997, the amount of urbanized land in the United States increased by 47%, from approximately 51 million acres in 1982 to approximately 76 million acres in 1997. During this same period, the nation's population grew by only 17%.

### Land Use Conflicts

Generally, the planned uses that border Barry County include resource conservation, agriculture, low-density residential, public facilities, and primary agriculture. The most intense development pressures have been coming from the northwest. There do not appear to be any conflicts either planned or proposed that border Barry County.

## PLANNING IMPLICATIONS

**About 27 square miles of land will be consumed by residential development.**

A general analysis of the changes in land cover together with the residential building permit information reveals that low density residential development patterns continue in the County. About 502 new residential building permits were issued annually in the County from 1994 to 2002. In addition, the land cover change analysis reveals that about 8,400 acres of formerly vacant or agricultural land was converted to residential uses from 1978 through 1994. While the population grew by about 19% or by about 4,260 households, the average land area consumed for each new residence was about two

<sup>25</sup> Michigan Land Use Leadership Council, *Michigan's Land, Michigan's Future*, 2003

<sup>26</sup> Brookings Institute Center on Urban and Metropolitan Policy, *Who Sprawls Most? How Patterns Differ Across the U.S.*, July 2001.



acres. Continuing this pattern to accommodate the 502 new housing units cited above means that about 17,200 acres, or about 27 square miles of land will be consumed by residential development by 2025.

There has been continued public discussion about the problems inherent in low density and sprawling patterns of development. However, the continued outward progression of housing development and the growth of traffic volumes suggests that the marketplace continues to seek very low density and isolated development sites. Relatively inexpensive land and gasoline for commuting to work and shopping tends to aid this trend.

If the Grand Rapids area is among the top 15 most sprawling metropolitan areas in the nation, the trend to “escape to the country” can be expected to continue.<sup>27</sup> Barry County has many areas of extremely attractive natural features within a relatively short commute from Grand Rapids. The County’s natural amenities will continue to attract this development, which may in the long run, lead to the degradation of those very natural features.

The continued decline or depression of agricultural commodity prices signals increasing pressures on farmers and owners of highly productive agricultural lands. Many farmers will be forced to consider converting their lands to more intense uses for economic reasons. As larger areas are developed, the farming infrastructure in the County will decline. Without farm service businesses and with more residential development to compete with, farming operations will be even further stressed.

Increased growth and development will mean even greater pressure to effectively manage growth to protect quality of life. At the same time, land owners and businesses will see economic opportunity in the growth and local units of government will need to carefully balance quality of life concerns with the desire to foster economic development – all the while remaining mindful of the rights of citizens to a reasonable use of their lands. This is never an easy balance to achieve, but in the context of rapid growth and with many natural features that could be threatened, the Barry County community may find maintaining this balance to be an especially daunting task.

---

<sup>27</sup> USA Today, *Wide Open Spaces The USA Today Sprawl Index*, February 21, 2001



## CHAPTER 5. COMMUNITY FACILITIES AND SERVICES

Community facilities play a significant role in preserving quality of life, augmenting civic engagement, sponsoring cultural events, and promoting town pride. Parklands and state managed game and recreation areas characterize Barry County. The benefit of thousands of acres of recreation land is extended beyond the County, as people from as far as Illinois, Ohio and Indiana come to enjoy the facilities. Therefore, Barry County's natural resource and recreation areas are a Midwestern destination.

**Community facilities  
play a significant role  
in preserving quality  
of life...**

In addition to these important networks of natural areas, public schools and safety services provide local spaces for interaction, learning, and community building. Elementary schools, middle schools, high schools, and even police and fire facilities, often serve as the heart of a small town – especially for children and youth.

This chapter of the Community Profile begins with a brief look at higher education opportunities within the region, and describes school enrollment. In addition, parks and recreation areas are discussed. Finally, the chapter touches on public safety services and facilities.

### SCHOOLS

#### HIGHER EDUCATION

The Kellogg Community College Fehsenfeld Center is a 95-acre campus two miles west of Hastings in Rutland Charter Township. Fehsenfeld Center opened in 1996 and offers the opportunities of video classrooms, and computer and science labs to Barry County area residents.



**Fehsenfeld Center, Kellogg Community College**

Initially, the campus provided 14 courses at Hastings High School to about 100 students. Currently, there are 110 course offerings and approximately 700 students a semester.

In addition to Kellogg Community College, which has its main facilities in Battle Creek, several colleges and universities are within an hour's driving distance from Barry County, including Kalamazoo College, Kalamazoo Valley Community College, and Western Michigan University in Kalamazoo. Schools

located in and near Grand Rapids include: Grand Valley State University, Aquinas College, Calvin College, Cornerstone University, and smaller schools, such as Davenport University and Grand Rapids Community College. Michigan State University, in East Lansing, is the largest facility for higher education in the state, and is located about one hour's drive to the east.

## PUBLIC SCHOOLS

Barry County is serviced by 12 public school systems, 5 of which have facilities in the County. Cumulative total enrollment of the 5 districts is approximately 15,000 students. It is important to note that several of these are multi-jurisdictional, serving communities in neighboring counties. In fact, in addition to the Barry County Intermediate School District, parts of the County are served by the Ionia, Eaton, Calhoun, Kalamazoo Valley, Kent, and Allegan Intermediate Districts. Some districts only serve small portions of a Township near the border of the County. For the purposes of this report, the 5 districts with facilities in the County are detailed. A paragraph discusses enrollment and facilities of the other 7 districts near the end of this section of the report. See Map 6 for school district boundaries in Barry County.

The following paragraphs describe facility locations and provide enrollment numbers for the school districts that serve Barry County.



**Thornapple-Kellogg Middle School in the Village of Middleville.**

### **Thornapple-Kellogg**

The Thornapple-Kellogg school district serves families in the northwestern area of the County. The Administration Building is located at 10051 Green Lake Road, Middleville, Michigan. Primarily, the district covers portions of Thornapple Township, Yankee Springs, Middleville, Irving Township, Freeport, Rutland Township, and Orangeville Township. Total enrollment is almost 3,000 students.

Page Elementary was constructed in 1989 and the Middle School in 1998. It is important to note that the district also plans on expanding all elementary schools, the middle school and the high school. Thornapple Township is one of Barry County's fastest growing communities due to its proximity to metropolitan Grand Rapids, and the influx of new students into the area should be

expected to continue. The following facilities are located in the County:

- Thornapple-Kellogg High - 3885 Bender Road, Middleville
- Thornapple-Kellogg Middle - 10375 Green Lake Road, Middleville
- Page Elementary - 3675 Bender Road, Middleville
- Lee Elementary - 840 W. Main Street, Middleville
- McFall Elementary - 509 W. Main Street, Middleville

### **Delton-Kellogg**

The Delton-Kellogg school system is in the southwestern quadrant of the County and primarily serves in portions of Prairieville Township, Barry Township, Johnstown Township, Orangeville Township and Hope Township. The Administration Building is located at 327 N. Grove Street in Delton. Total enrollment is over 2,000 students, and approximately 140 teachers serve the families in this district. The district has no plans to expand or close any school buildings, as enrollment is steady. Facilities in Barry County include:

- Delton-Kellogg High - 327 N. Grove Street, Delton
- Delton-Kellogg Alternative High - 324 N. Grove Street, Delton
- Delton-Kellogg Middle - 327 N. Grove Street, Delton
- Delton-Kellogg Elementary - 327 N. Grove Street, Delton

### **Hastings**

The Hastings school district encompasses more area in Barry County than the other districts. The Administration Building is located at 232 W. Grand Street in the City of Hastings. Hastings services portions of the following communities in the County: Carlton Township, Irving Township, Hastings, Hastings Township, Rutland Township, Castleton Township, Baltimore Township, Hope Township, Johnstown Township, and Assyria Township. Total enrollment is over 3,200 students, with approximately 200 teachers, counselors, and librarians. Star Elementary is the districts newest building. Presently, there are no immediate plans to build new school facilities, as enrollment is steady. All of the districts facilities are located in the County:

- Hastings High - 520 W. South, Hastings
- Hastings Middle - 232 W. Grand Street, Hastings
- Central Elementary - 5095 Broadway, Hastings

- Northeastern Elementary – 519 E. Grant, Hastings
- Southeastern Elementary – 1300 S. East Street, Hastings
- Star Elementary – 1900 Star School Road, Hastings
- Pleasantview Elementary – 3754 Lacey Road, Bellevue

### **Maple Valley**

The Maple Valley school district serves the central east communities in the County, including Castleton Township, Nashville, Maple Grove Township, Baltimore Township, and Assyria Township. The Administration Building is located at 11090 Nashville Highway, Vermontville, Michigan. Student enrollment is approximately 1,700. The following facilities are located in Barry County:

- Kellogg Elementary – 324 Queen Street, Nashville
- Fuller Street Elementary – 251 Fuller Street, Nashville

### **Lakewood**

The Lakewood school district operates the northeast jurisdictions in Barry County. They include Carlton Township, Woodland, Castleton Township, and Woodland Township. The Administration Building is located at 639 Jordan Lake Street in Lake Odessa. Student enrollment is approximately 2,500. Only three of the district's school buildings are within Barry County:

- Lakewood High School – 7223 Velte Road, Lake Odessa
- Lakewood Middle School – 8699 E. Brown Road, Woodland
- Woodland Elementary – 223 W. Broadway, Woodland

In addition to these 5 districts, there are several other school systems that serve segments of the Barry County community. These districts include Bellevue, Caledonia, Gull Lake, Martin, Pennfield, Plainwell, and Wayland-Union. The following table provides a brief description of each of these districts. Student enrollment data has been rounded.

District	Student Enrollment	Number of Teachers	Number of Schools
Bellevue	1000	60	3
Caledonia	1040	60	6
Gull Lake	3000	175	6
Martin	690	55	3
Pennfield	1900	118	5
Plainwell	2840	160	6
Wayland-Union	3190	185	6

### **Michigan Career and Technical Institute**

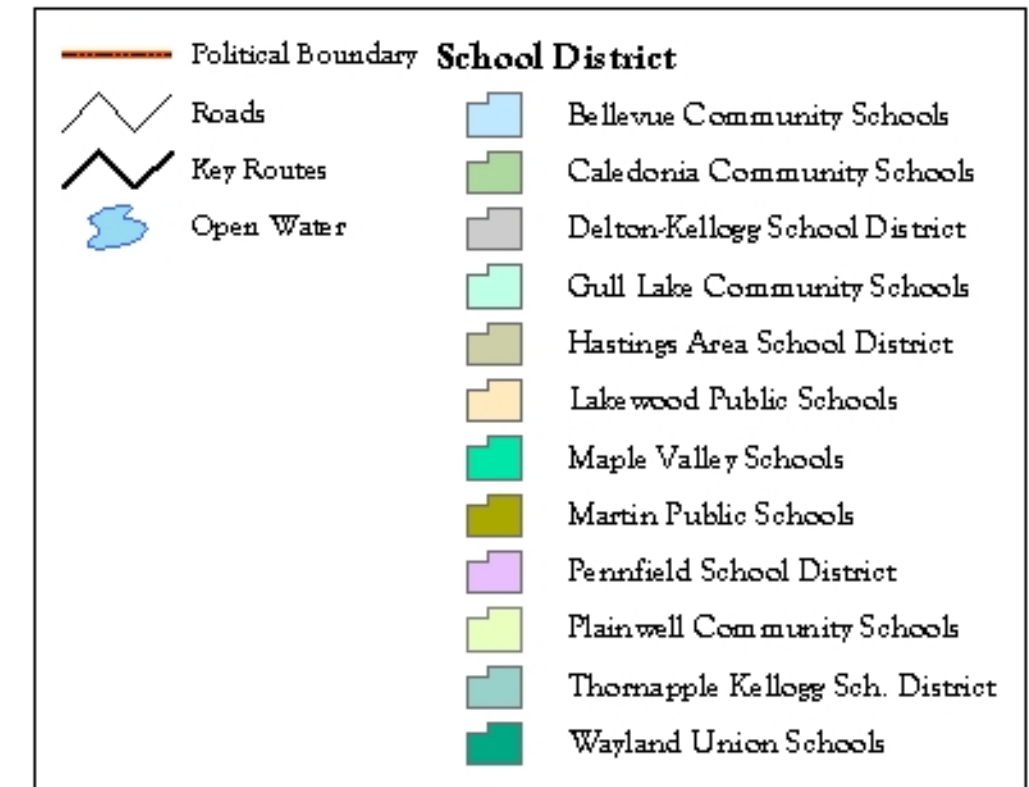
In addition to the public school districts in Barry County, the Michigan Career and Technical Institute (MCTI) serves adults with physical, mental or emotional disabilities to gain productive skills. The school and dormitory is located at 11611 West Pine Lake Road in Prairieville Township. Approximately 370 students are enrolled with some living at the facility and others commuting daily. Ninety-eight percent of MCTI's clients are affiliated with Michigan Rehabilitation Services.





# Barry County, Michigan

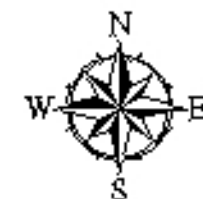
## Map 6 School Districts



**Williams & Works**  
a division of

616.254.1800 phone • 616.254.1811 fax  
400 Ottawa Avenue NW • Grand Rapids, MI 49503

Source: State of Michigan CGI  
October 30, 2003



Back of Map 6

## PARKS AND RECREATION FACILITIES

Public parklands in Barry County provide for public hunting, manage wildlife, conserve natural spaces, preserve aquatic wildlife habitat, and provide an important aesthetic amenity for residents and tourists. This section provides a brief inventory of major public recreation opportunities in Barry County.

There are over 25,000 acres of state-owned recreation land in Barry County. The Barry State Game Area is the largest recreation facility, with over 10,000 acres of woodlands and lakes. Coupled with the



Irving Lake in Irving Township.

Middleville State Game Area, area residents and tourists are offered nature and wildlife preserves, hunting areas, camping areas, and small lakes for fishing and canoeing. The 5,000 acres of the Yankee Springs State Park lends itself to many forms of recreation, such as modern and rustic campgrounds and cabins, snowmobiling, bicycling, horseback riding, hiking, skiing, and outdoor meeting facilities; and fishing and water sports take place on the park's nine lakes. The Yankee Springs recreation area also offers the following trail facilities:

- Hall Lake Trail, 2 miles
- Deep Lake Trail, 4 miles
- Chief Noonday Trail, 4 miles
- Long Lake Trail, 5 miles
- Sassafras Nature Trail, .5 miles
- Mountain Bike Trail, 12 miles

The City of Hastings owns and operates five parks. The largest and most popular is Fish Hatchery Park, which provides amenities such as ball fields, tennis, picnics, and fishing derbies. Tyden Park has recently received new modern bathrooms. Bob King Park (5 acres) includes an accessible playground and is known as a place of community volunteering; and Hastings integrates a number of other neighborhood parks into its landscape, such as Third Ward and Second Ward Parks, with 2 acres and .8 acres, respectively. The Village of Woodland incorporates one 5-acre memorial park into its landscape – Herald E. Classic. Nashville owns and manages three parks, including Putnam Park, Riverside Park, and Central Park. The Village of Middleville enjoys Stagecoach Park, Lion's Sesquicentennial Park, Spring Park, and Calvin Hill.

**There are over  
25,000 acres of  
state-owned  
recreation land in  
Barry County.**

Barry Township has one available recreational space adjacent to the Township Hall; however, the Delton-Kellogg educational campus services the Township with school sport fields. The Pine Lake Recreation area in Prairieville Township includes baseball, a picnic area, volleyball, and tennis and basketball courts. Prairieville Town Park incorporates a children's playground area. Thornapple Township is home to Crane Road Youth Baseball Fields (31.3 acres). In addition, Charlton Park (330 acres), located in Hastings Township, provides picnic areas, fishing, hiking, boating, swimming, and a historic museum and village. Hope Township maintains a small park on Cloverdale Lake, which consists of rustic restroom facilities, a pavilion, and boat launch.<sup>28</sup>



**Yankee Springs State Park**

Several trail facilities serve the area. The Paul Henry Thornapple Trail, when completed, will run approximately 42 miles from Grand Rapids to Vermontville. This multi-use recreational facility travels alongside or on a former rail corridor, and serves Barry, Kent, and Eaton Counties.<sup>29</sup> The North Country Trail is a footpath that will reach 4,000 miles when completed. Presently, more than 1,700 miles are installed, and the trail links 7 states. The trail will be the longest hiking facility in the United States, and the North Country Trail Association is seeking to develop trailway through the Barry State Game Area and the Yankee Springs State Park.<sup>30</sup>

Finally, the West Michigan Snowmobile Trail traverses through part of Barry County. The trail facility totals 195 miles.<sup>31</sup>

Numerous other parklands benefit residents of Barry County, offering varying amenities to patrons. For example, most of the Townships own and operate at least one park each, and boat launches are found throughout the County adjacent to various lakes, operated and maintained by the Michigan Department of Natural Resources. Adding to the area's heritage of recreation are the following:

<sup>28</sup> 1996 Parks and Recreation Plan, Barry County

<sup>29</sup> [www.thornappletrail.com](http://www.thornappletrail.com)

<sup>30</sup> [www.northcountrytrail.org](http://www.northcountrytrail.org)

<sup>31</sup> 1996 Parks and Recreation Plan, Barry County



## CAMPING AREAS AND RESORTS

- **Acker's Point**, 6914 Ackers Point Road
- **Chicago Point**, 4800 Wildwood Road
- **Camp Thornapple**, 376 Thornapple Lake Road
- **Forest Shores**, 5757 Guernsey Lake Road
- **Jones Lake Campground**, 6800 West Stevens Road
- **Parkside Park**, 2430 South Briggs Road
- **Sharp Park**, 8551 Deep Lake Road
- **Stoney Point Trailer Park**, 10896 Stoney Point Road
- **Welcome Woods**, 580 Welcome Road
- **Whispering Waters**, 1805 North Irving Road
- **Yankee Springs**, 2104 Gun Lake Road

## GOLF COURSES

- **Gun Ridge**, 4460 Gun Lake Road
- **Mulberry Fore**, 955 North Main
- **Mullenhurst**, 9877 Mullen Road
- **Ponderosa Golf Club**, 355 ½ South Peets
- **River Bend**, 1370 West State Road
- **Yankee Springs**, 12300 Bowens Mill Road

## Pierce Cedar Creek Institute

More than 660 acres of rolling hills, forests, wetlands, creeks, lakes, and prairies in Baltimore Township characterize the property of the Pierce Cedar Creek Institute. The Institute offers trails, ecological educational programs, various community events, and research facilities. Willard and Jessie Pierce formed the non-profit foundation in 1988 to give back to the Barry County community and to educate on issues surrounding the environment. In 1998, construction began on a research laboratory, education facility, visitor center, and housing.

## Private Facilities, Historic Museums, and Entertainment

In addition to these many amenities, Barry County boasts other recreational and cultural facilities that serve the community and the region. For example, the YMCA Community Center, near Algonquin Lake in Rutland Charter Township, provides many outlets for recreation and social interaction. The YMCA campus includes a retreat and conference center, and a camp which attracts youth from all over the County. In addition, the campus incorporates organized

sports, gym facilities, fitness classes, birthday parties, aquatic lessons and pool programs, and other various activities.<sup>32</sup>

The Grand Rapids YMCA operates Camp Manitou-Lin, located in Yankee Springs east of Barlow Lake. The goal of the camp is to present a deeper understanding of nature and to instill an appreciation for diversity.<sup>33</sup>

Additionally, the Gilmore Car Museum, located near Hickory Corners (Barry Township), is a non-profit Educational and Historic Preservation Foundation. This 90-acre attraction is home to the display of 175 automobiles representing 100 years of automotive history. Eight

historic barns, a reconstructed 1930's service station, and a small town train station distinguish the museum. Important to note is the addition of 21,000 square feet of display area to the museum for 2004.<sup>34</sup>



**Camp Manitou-Lin**

The Bernard Historical Museum, located 1 mile west of Delton on Crooked Lake, provides another opportunity for area residents and tourists to celebrate Barry County's history. The historic site includes 7 buildings and over 25,000 artifacts. The main building is a 1930's built hospital that was preserved as a museum after a doctor retired.<sup>35</sup>

Important to preserving the historic character of Barry County is Bowen's Mills, in Yankee Springs. Settlement began in the small town in the 1830's and a historic sawmill, general store, blacksmith's shop, cider mill, and other businesses characterize the village. Several spring and fall festivals attract people from southwest Michigan.<sup>36</sup>

Prairieville Farm Days draws thousands of people with displays, exhibits, food, and country music bands. This large show also includes camping. The festival typically begins the weekend before Labor Day; and there is a show around July 4<sup>th</sup>. The Michigan Farmers Hall of

<sup>32</sup> YMCA

<sup>33</sup> [www.campmanitou-lin.org](http://www.campmanitou-lin.org)

<sup>34</sup> [www.gilmorecarmuseum.org](http://www.gilmorecarmuseum.org)

<sup>35</sup> [www.delton-mi.com/bernard](http://www.delton-mi.com/bernard)

<sup>36</sup> [www.bowensmills.com](http://www.bowensmills.com)

Fame, located in Prairieville Township, also attracts people to the Farm Days festival.

Finally, several camps offer more recreational opportunities. Camp Michawana, near Long Lake in Hope Township, is a church children's camp (ages 9 to 18) with over 80 acres of land. The camp is over 65 years old and teaches swimming, archery, handcrafts, and volleyball. There are also several Wesley Camps and other facilities that add recreational and entertainment amenity to the County.

## **PUBLIC SAFETY SERVICES AND FACILITIES**

Police, fire, and hospital services are necessary for any community, as they protect the general welfare, help alleviate crime, and give treatment when needed.

Central to these services is the County Central E-911 Dispatch facility, located at 2600 Nashville Road in the City of Hastings. The primary responsibility of the dispatchers is to take calls for law enforcement, fire, and ambulance needs. The dispatchers are trained to provide medical assistance over the phone, and of course the operation runs 24 hours a day, seven days per week. The County dispatchers send helicopters for automobile accidents in which a patient needs to be flown to a hospital, and will call Consumer's Power and/or Great Lakes Energy when a car hits a power pole.

### **POLICE**

Barry, Prairieville and Woodland Townships, Nashville and Freeport Villages, and the City of Hastings are the jurisdictions in the County with a local police force. Middleville, Rutland Charter Township, and Hastings Township have a separate contract with the County. The Barry County Sheriff's Department serves the remainder of the County.

The Barry County Sheriff's Department has 29 full-time officers that patrol the entire County. The Hastings base station houses these officers, as there are no remote deputy locations anywhere in the County. Also in Hastings is post #58 of District 5 of the Michigan State Police.

The City of Hastings Police Department patrols within the corporate limits of the City and employs approximately 15 full-time officers. The

Village of Middleville has 3 full-time officers on staff. Barry and Prairieville Townships are each serviced by two full-time police officers. Nashville has two full-time officers that patrol the Village, but will provide assistance in the surrounding Townships if requested by the Barry County Sheriff's Department. The Freeport department provides two part-time officers and one reserve. One officer and one reserve serve Woodland Township.

## FIRE

The Hastings Fire Department provides protection services for a 135 square mile radius, which includes the City of Hastings and Rutland Charter Township, Hastings Township, and Baltimore Township. One-half of Carlton Township and one-quarter of Irving Township are serviced by the Hastings Fire Department as well. The City of Hastings and the BIRCH (Baltimore, Irving, Rutland, Carlton, and Hastings) Association operate the department. Employed are 1 full-time Fire Chief, 3 full-time drivers, and 20 on-call members. The department handles approximately 250 calls per year.

Member municipalities jointly operate the Barry-Prairieville-Hope Fire Department. Seventeen on-call volunteers serve these Townships, with a fire hall in Delton.

**Multi-jurisdictional cooperative arrangements characterize fire protection services in Barry County.**

Middleville's fire hall is located on High Street near downtown, and offers services jointly with Thornapple and Yankee Springs Townships. Thornapple Township Emergency Services incorporates another station, in Yankee Springs, which is brand new.

Fire protection is provided to Freeport through a contract with a non-profit entity. A fire chief and 25 other personnel serve the Village. Woodland Township has one fire chief and approximately 20 personnel.

Separate services provide protection to the Hickory Corners and Pine Lake areas, Johnstown Township, the Woodland area, and the Nashville area. Finally, the Orangeville Fire Department serves the 36 square mile Township, and retains 24 people, all of which are volunteer, paid-per-call employees.

## HOSPITAL

Pennock Hospital's primary facility, located on West Green Street in Hastings, began in 1916, and has since evolved into a first class general



acute care facility. Pennock Hospital remains a key feature in the community, providing competent health care services, and serving as a vital employer for the region with over 600 full time staff.

The full-service facility has over 90 beds and provides outpatient services to Barry and neighboring counties, and has physician (family practice) offices in Delton, Clarksville, Lake Odessa, Hastings, Middleville, Nashville, and Wayland.

In 2002, the hospital saw 3,259 surgical procedures and operating revenue of \$69,276,000.<sup>37</sup> The hospital maintains Pennock Village, a retirement community consisting of 38 apartments. Also, the hospital operates the Health and Wellness Center, a state-of-the-art gym facility.

**The hospital presently sits on 5 acres, which is inadequate to accommodate the expansion necessary to serve a growing population.**

The facility is presently being expanded for the following improvements: the conference center will be larger, the cafeteria will be larger, and the emergency walk-in clinic will be larger and more attractive. In addition, a new outpatient services center has been constructed that houses the outpatient medical program, radiology, outpatient x-ray and laboratory, and all billing functions for the hospital. The new outpatient facility is open later hours, assists in easing parking congestion, and allows continued growth of the hospital by freeing up space for expansion in the foreseeable future.

Important to note are plans for even more improvements. The hospital purchased the 33-acre Howard Ferris Farm, near M-43 and M-37 in Rutland Charter Township, for long-range growth. Due to estimated population growth in the area the hospital is considering a 20-year plan that would relocate the facility to this site. The hospital presently sits on 5 acres, which is inadequate to accommodate the expansion necessary to serve a growing population. The hospital also believes the location of the 33-acre farm is better situated to serve the growth areas in the County.

<sup>37</sup> Pennock Hospital



## CHAPTER 6. UTILITIES

Public utilities are an important element in a growth management plan. Through the delivery of reliable and plentiful water and the safe and efficient disposal of wastewater, communities can achieve an improved quality of life for local residents. Utility systems also have the potential to aid in growth management by enabling greater densities in selected locations. Finally, and most importantly, public utility systems give the community the ability to provide effective stewardship over such important natural features as groundwater and surface water features.

### PUBLIC WASTEWATER SYSTEMS

#### CITY OF HASTINGS

The City of Hastings sewer system currently serves approximately 2,700 homes and businesses and currently treats approximately 900,000 gallons per day (GPD). In 1998, the wastewater treatment facility was improved from a one million GPD maximum to a maximum treatment capability of two million GPD, indicating a significant additional capacity. The sewer system is capable of treating industrial wastewater, with specific limitations.



**City of Hastings Treatment Plant**

According to the City of Hastings website,<sup>38</sup> the Water Supply and Sewage Disposal Department is responsible for providing an abundant, high quality supply of potable water to the citizens and businesses in Hastings and the surrounding area, and for collection and treatment of the wastewater generated by these individuals and businesses. The department maintains the water and wastewater treatment plants and the water distribution and sanitary sewer collection mains. The department provides funds for development, extension and improvement of facilities required to carry out its duties.

---

<sup>38</sup> [www.hastings.mi.us](http://www.hastings.mi.us)

The department employs full time staff at the water and wastewater treatment plants and utilizes personnel from the Department of Public Services for maintenance of the water distribution and wastewater collection mains. The City of Hastings has developed the following summarized goals for maintaining and improving the water and sewer services:

Goal 1: To provide a high quality potable water supply in adequate quantity to the citizens and businesses in the City of Hastings and surrounding area.

Goal 2. To provide potable water at consistent and adequate pressures necessary to conduct normal business and personal practices.

Goal 3. Promote the City's water treatment and distribution system to encourage new customers and to increase demand for water from existing customers.

Goal 4. To provide the most competent, knowledgeable and courteous staff possible.

Goal 5. To provide sufficient water and wastewater collection, distribution and treatment capacity to accommodate existing and future demand.

Goal 6. To maintain the wastewater collection system in a manner which assures continuous wastewater removal from sensitive buildings and facilities to the fullest extent practical.

**The Hastings sewer system serves the dense development in the central city and also has limited services extending beyond the City limits.**

The Hastings sewer system serves the dense development in the central city and also has limited services extending beyond the City limits. Current extensions serve development in Rutland Charter Township west along Green Street and M-37 extending west to Wal-Mart at the M-37/43 – Heath Road intersection. The service area extends west along M-37/43 to the Tanner Lake Road intersection. The current agreement between Rutland Township and the City of Hastings allows the Township to convey up to 100,000 GPD of wastewater to the City system. Negotiations are currently underway with Hastings Charter Township to extend sewer lines to specific dense developments in the Township.<sup>39</sup>

<sup>39</sup> Jeff Mansfield, City Manager, City of Hastings, MI.

### **GUN LAKE SEWER DISTRICT**

The Gun Lake Sewer District is located in western Barry County and provides public sewer services around the shoreline of Gun Lake, Barlow Lake, Cobb Lake, and Payne Lake. The sewer system was built in 1980 with funding primarily from the EPA and the cooperation all of the Townships that contain a portion of Gun Lake, including Yankee Springs, Orangeville in Barry County and Martin and Wayland Township in Allegan County. Approximately two thirds of the customers connected to the system are located in Yankee Springs Township.

Serving approximately 2,367 homes, the Gun Lake Sewer District is currently treating an average of about half of the 1.2 million gallon capacity. Waste volumes are generally larger in the summer due to the seasonal transient population. There are currently no plans for expansion, although common maintenance is performed on a regular basis. The sewer district is governed by the Gun Lake Area Sewer and Water Authority, which is comprised of representatives from all four Townships utilizing the system.

### **VILLAGE OF MIDDLEVILLE**

Middleville has had a few different sewer systems ranging back to the 1930's. A lagoon system was developed in the 1960's and abandoned in 1994 when the existing mechanical treatment facility was constructed on the northeast side of town.

The Village wastewater system serves approximately 2,000 residents with approximately 893 sewer line connections. The capacity of the treatment plant is approximately 500,000 gallons per day (GPD) and the plant currently treats an average of approximately 325,000 GPD, illustrating that extensions of the system are possible. The plant utilizes a groundwater effluent discharge system. Expansion plans for the facility will likely begin when the plant reaches a 400,000 GPD average. The sewer district is governed by the Village Council and does not serve any properties outside of the Village boundaries.<sup>40</sup>

---

<sup>40</sup> Steve Williams, PE, Williams & Works, Inc., Grand Rapids, MI.

### SOUTHWEST BARRY COUNTY WATER AND SEWER AUTHORITY

Constructed in 1993, the Southwest Barry Sewer Treatment facility was established to serve Wall Lake, Pine Lake, Fine Lake, Crooked Lake, Fair Lake and the Delton business district. Trustees from the system's four townships oversee an authority contract and sewer ordinance that outlines user guidelines and costs.<sup>41</sup>

The Barry County Department of Public Works originally sold 17-year sewer authority bonds totaling \$12 million. Each Township pays the County for its share with money from system operations, such as new connection fees and sewer assessments. The amount owed by each Township is determined by a formula based on what share of the system is used by that Township.

**Significant efforts are being made by the Southwest Barry County Water and Sewer Authority to bring the plant into full compliance.**

The treatment plant is north of Osborne Road in Barry Township, due south of Delton in the Crooked Lake drainage area. The total capacity of the treatment facility is approximately 420,000 GPD they are currently treating an average of approximately 220,000 GPD, illustrating the potential for future connections. The system is made up of various types of sewer designs including Septic Tank Effluent Pump sewers (STEP), pressure feed, grinder pumps and gravity feed. STEP and Pressure systems are reliant upon electrical pumps to keep the effluent flowing through the pipes while gravity fed systems are designed to flow on a downhill grade. One problem that can, and has occurred with this system, is the loss of electrical power to the pumps for various reasons. When these pumps loose power, effluent may "back up" and overflow on site. This is an undesired result, although a reality when power outages occur.

According to the MDEQ office in Grand Rapids, the wastewater treatment plant was, at one time, not meeting all of the discharge criteria. Due to this situation, the DEQ recently halted new connections to the system until the effluent discharge could meet the state requirements. At the time of this writing, significant efforts have been and are being made by the Southwest Barry County Water and Sewer Authority to resolve these issues and bring the plant into full compliance with the State of Michigan. A new two-year discharge permit is currently being drafted by the DEQ for the facility and it is anticipated that all discharge concerns will be resolved.

<sup>41</sup> Augusta Creek Watershed Association website, 2003.

### **GULL LAKE SEWER AND WATER AUTHORITY**

The Gull Lake Sewer and Water Authority serves the community surrounding Gull Lake, in Barry and Prairieville Townships, and also extending into Kalamazoo County. This system experiences an estimated existing flow of 431,200 GPD, while the system's design permits a maximum of 705,050 GPD, leaving 273,850 of unused capacity at present. The system currently serves 1,083 homes.

### **VILLAGE OF WOODLAND**

The Village of Woodland is served by the Lakewood Wastewater Authority, which also serves portions of Woodland Township, the Village of Lake Odessa, and Odessa Township in Ionia County and homes surrounding Jordan Lake. Created in 1984, the system currently serves approximately 1,400 homes. The treatment plant is rated as 750,000 GPD facility, and currently treats an average of 500,000 GPD with a maximum treatment potential of 3 million GPD on an occasional basis. There are also seasonal fluctuations due to agricultural practices such as string bean processing that produce a large amount of wastewater.

Although it appears that there would be room for more connections to the wastewater system, the small treatment lagoons and heavy agricultural practices limit any new connections to the system at this time. Property has been purchased to construct an additional lagoon, which would increase capacity. The Little Thornapple River serves as the treated discharge point for the facility south of Jordan Lake.

### **THORNAPPLE TOWNSHIP**

In 1990, Thornapple Township residents located on the east side of Duncan Lake passed a referendum to create a special assessment district to construct a new sewer system. The residents initiated this district because many of the old individual septic systems were deteriorating the water quality of Duncan Lake. The west side of Duncan Lake is not served by the facility as it is less densely developed.

The wastewater system is a Septic Tank Effluent Pump (STEP) system, which pumps liquid effluent out of each individual septic system into sewer mains to carry it to the treatment facility. The treatment plant consists of a series of lagoons, which eventually discharge the processed effluent into a remote location on Duncan Creek.

There are approximately 145 current customers connected to the system with the capacity to allow 160, or 15 more households. While there has been growth pressure in the general area of Duncan Lake and requests to hook up to the system, the Township gives new homes located on the lake priority, as the primary purpose of the facility is to protect the water quality of the lake.

#### VILLAGE OF NASHVILLE

The Village of Nashville currently serves approximately 740 homes with sewer and water services. The sewer treatment facility consists of series of three lagoons that total about 16 acres in area, which eventually discharges treated effluent into the Thornapple River. Currently, the system treats an average of 110,000 to 115,000 GPD with a maximum treatment of 200,000 GPD. There are no plans at this time to expand the sewer system, although regular maintenance and improvements to the existing system occur on a regular basis. All new development within the Village is required to connect to the system and sewer services currently do not extend outside the Village boundaries.

#### LAKE DOSTER

**A small portion of the Plainwell is system serves about eight homes in Prairieville Township**

Lake Doster, which is primarily located in Gun Plain Township, is served by sanitary sewer with a small portion of this system serving eight homes in Prairieville Township. The Gun Plain Township sewer system, which serves Lake Doster, is an extension of the City of Plainwell sewer system. The agreement between Gun Plain Township and the City of Plainwell allows a total of 150,000 GPD of sewage to be distributed to the Plainwell system, while the current flow averages approximately 70,000 GPD.

The existing City of Plainwell treatment facility was constructed in 1980 and several major improvements have occurred since that time. The overall capacity of the system is 1.3 million GPD of flow, with an average of approximately 500,000 GPD. There are current plans to begin improvements to the biosolid treatment portion of the plant in the near future. The treated effluent is discharged into the Kalamazoo River in the City of Plainwell.<sup>42</sup>

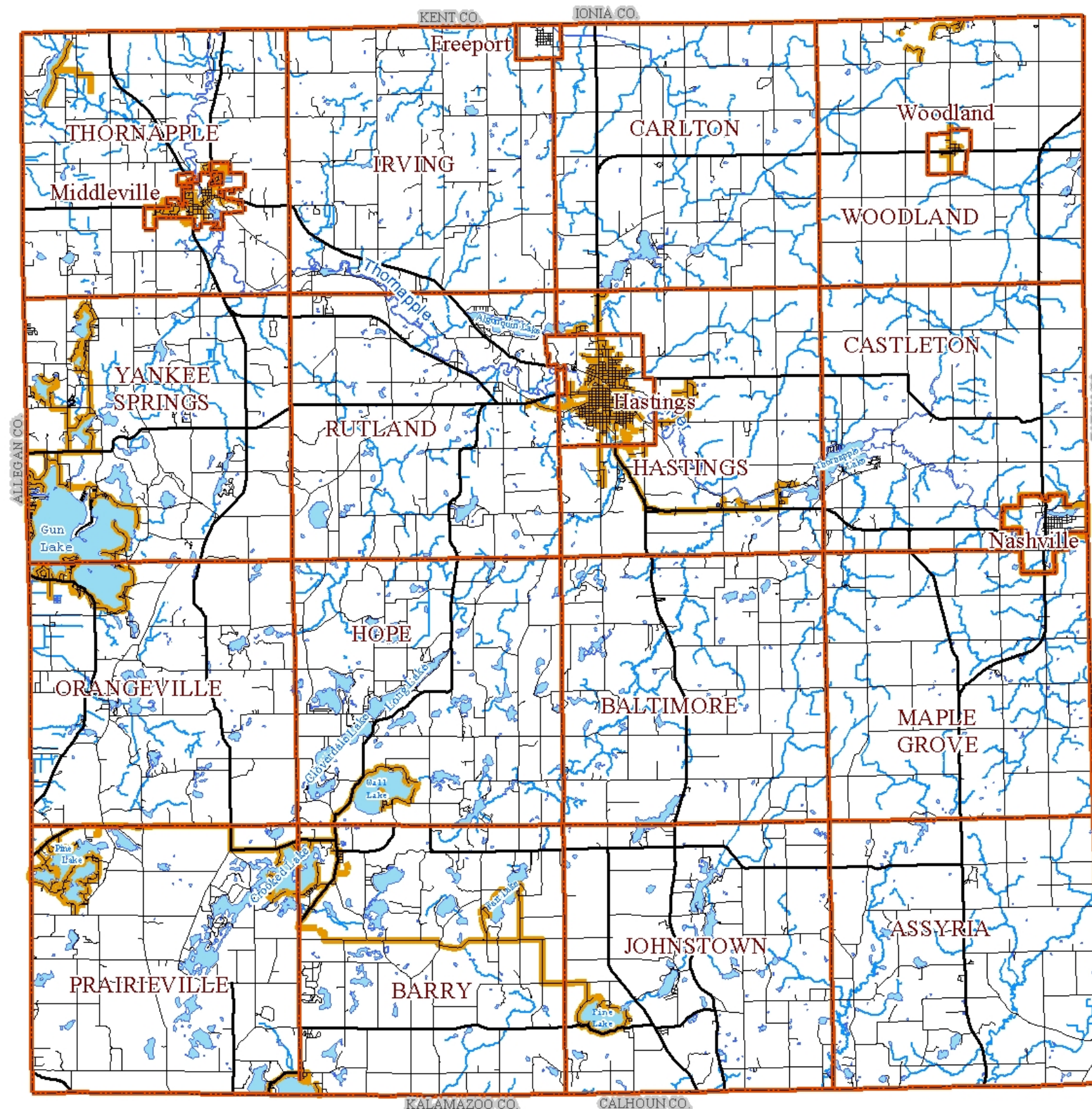
---

<sup>42</sup> Brian Pond, City of Plainwell Department of Public Works.



# Barry County, Michigan

## Map 7 Sanitary Sewer



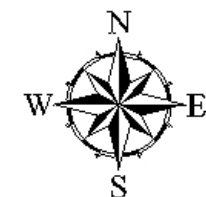
### Legend

- Political Boundary
- Roads
- Key Routes
- Open Water
- Streams
- Sanitary Sewer

Municipal water and sewer service is also available in the Village of Nashville, but detailed mapping information is not currently available.

**Williams & Works**  
engineers • planners • surveyors

616.224.1300 phone • 616.224.1301 fax  
549 Ottawa Avenue NW • Grand Rapids, MI 49503



Source: Barry County Land Information Services  
November 19, 2003

Back of Map 7

## PUBLIC WATER SYSTEMS

Public water systems are located in the population centers of the County including the City of Hastings, Village of Middleville, Village of Nashville, Village of Freeport, Yankee Springs Township, and in the unincorporated Delton area in Barry Township. The benefits of having a public water distribution system include fire safety, daily water quality monitoring, pressurized high volume water supply for intense uses such as schools and industrial applications and constant and consistent water pressure.

**In today's environmentally aware climate, more and more local communities and their residents are becoming aware of surface and subsurface contamination.....**

In today's environmentally aware climate, more and more local communities and their residents are becoming aware of surface and subsurface contamination, and the potential impacts these may have on their health and safety. For a community that relies solely, or partially, upon groundwater as their water resource, these concerns become paramount to the safety and reliability of such water supplies, and certainly limit growth potential.

In 1986 the United States Environmental Protection Agency (EPA) responded with amendments to the Safe Drinking Water Act (SDWA) requiring each state to establish a Well Head Protection program. Each program defines groundwater that supplies wells and well fields that contribute drinking water to public water supply systems. The typical wellhead protection program will consist of seven elements. These are:

- 1) Specify roles and duties of the program managers, local and state agencies.
- 2) Delineate the wellhead protection areas for each well.
- 3) Identify sources of potential or existing contamination within the wellhead protection area.
- 4) Develop management approaches to protect the water supply.
- 5) Develop contingency plans for each supply system.
- 6) Site new wells to minimize potential for impact.
- 7) Ensure public participation.

Wellhead protection planning will aid communities by answering the seriousness and distribution of preventable contamination problems in their area, and allow them to plan land use accordingly. But perhaps most of all, they will have the ability to focus on the needs and goals to ensure a safe drinking water supply for their community.

Local health departments and the State of Michigan monitor and water systems and report to the EPA under the Safe Drinking Water Act (SDWA). The EPA has compiled the following summary of the different types of water systems in Barry County<sup>43</sup>:

- ◆ Community Water Systems that serve the same people year-round (e.g. in homes or businesses): 18
- ◆ Transient Non-Community Water Systems that do not consistently serve the same people (e.g. rest stops, campgrounds, gas stations): 158
- ◆ Non-Transient Non-Community Water Systems that serve the same people, but not year-round (e.g. schools that have their own water system): 16

Water systems are classified by the State of Michigan into a series of “types.” A Type 1 system serves more than fifteen units or 25 residents on a year around basis, which is often, but not required to be, owned and operated by a public entity. A Type 2 system serves less than 15 units on a year around basis and is often privately owned. This can include large commercial facilities and churches. Each type is subject to regulation by the State of Michigan, although the standards are higher for a Type 1 system due to its generally extensive service area.

#### CITY OF HASTINGS

The City of Hastings Type 1 water system is supplied by groundwater from four wells located within the City limits. Three of the four wells are in excess of 290 feet deep and supply quality water. During the year 2002, the City of Hastings distributed 349 million gallons of water or an average of 956,000 GPD. Water is distributed to approximately 2,700 sites including residential, commercial and industrial development. The water system is rated at a maximum output of 4 million GPD with an expandable maximum output of 6 million GPD.<sup>44</sup>

**In 2002, the Hastings water system distributed 349 million gallons of water or an average of 956,000 gallons per day.**

<sup>43</sup> A detailed description of each individual water system is available on the EPA website ([www.epa.gov](http://www.epa.gov)).

<sup>44</sup> Jeff Mansfield, City Manager, City of Hastings.

## VILLAGE OF MIDDLEVILLE

The Village of Middleville has a stand-alone, or independent, Type 1 water system that includes its own supply, storage and distribution components. The supply is derived from four groundwater wells that provide water to customers within the Village. The distribution system is divided into three pressure districts; a western high-pressure district serving customers above an elevation of 800.00 feet along West Main Street/Green Lake Road, an eastern high-pressure district serves customers at higher elevations between State Road and Irving Road, and a low-pressure district serving the remainder of the Village. A booster station is associated with each of the high-pressure districts and two storage tanks provide storage capacity to the low-pressure district.

**The Village of Middleville completed a Wellhead Protection Program in 2002 to educate the public and protect the groundwater source areas of their wellfields.**

The existing Village of Middleville water system includes four groundwater wells, however, it is currently only supplied by three wells (Wells 1, 3, and 4). The fourth well (Well 2) is not used at this time due to water quality concerns. It is available for emergency situations. The Village of Middleville completed a Wellhead Protection Program (WHPP) in September of 2002 to educate the public and protect the groundwater source areas of their wellfields located east and west of the Village. The basis of the WHPP is the delineation of the wellhead protection area for Production Wells PW-1, PW-3 and PW-4.

The Middleville water system currently has two storage tanks, the Green Lake Road steel elevated storage tank (200,000 gallons) and the Irving Road concrete ground storage tank (175,000 gallons). The water system distributes an average of approximately 405,900 GPD with a maximum of 930,000 GPD.

The relationship between the Village and surrounding Thornapple Township is important to note. When proposed developments in Thornapple Township are of sufficient density to warrant utility service, are contiguous to the Village, and lands are not serviced by utilities, the Village has historically annexed the land. Parcels neighboring these proposed developments have also been absorbed into the Village from time to time, to “square up” the Village boundaries. Therefore, extension into Thornapple Township is driven by development, and follows a no services without annexation approach.

### VILLAGE OF NASHVILLE

Similar to the sewer system in Nashville, the water system in the Village serves almost all of the residential, commercial and industrial developments for approximately 740 water service leads in the Village. The water system typically distributes 100,000 GPD utilizing an elevated water tower and three wells. The Village wells have been equipped with iron removal technology and they are protected with a wellhead protection plan. No expansion is currently planned at this time, although about 85% of the water mains in the Village were replaced and upgraded in 2002.<sup>45</sup>

### BARRY TOWNSHIP

Portions of the Delton area in Barry Township are served by a Type 1 water supply and distribution system. The system is pressurized by a hydro-pneumatic tank, is served by three production wells, and approximately 15,500 lineal feet of water main ranging from 6 to 12 inches in diameter. The existing system serves approximately 90 water customers.<sup>46</sup> Discussions in the Barry Township Sanitary Sewer, Municipal Water, and Storm Sewer Study indicate that one of the primary forces which would drive improvements to the water system is fire protection. In order to provide the constant high water pressure needed to fight a large fire, an elevated storage tank would need to be constructed. Other recommend improvements include looping the system, which improves water quality by preventing stagnant water in dead end mains.

**Freeport prepared a Water System Preliminary Engineering Report in December of 2002 to describe the existing system conditions, provide an analysis of alternatives, and recommend a specific course of action**

### VILLAGE OF FREEPORT

The Village of Freeport water system serves most of the residential structures in the Village limits. In 2002, there were a total of 184 users, or hook ups, to the system, which required an average of 39,550 gallons to be distributed daily. Currently, two wells and a water tower serve the system.<sup>47</sup>

<sup>45</sup> Darrel Clements, Village of Nashville, DPW Director.

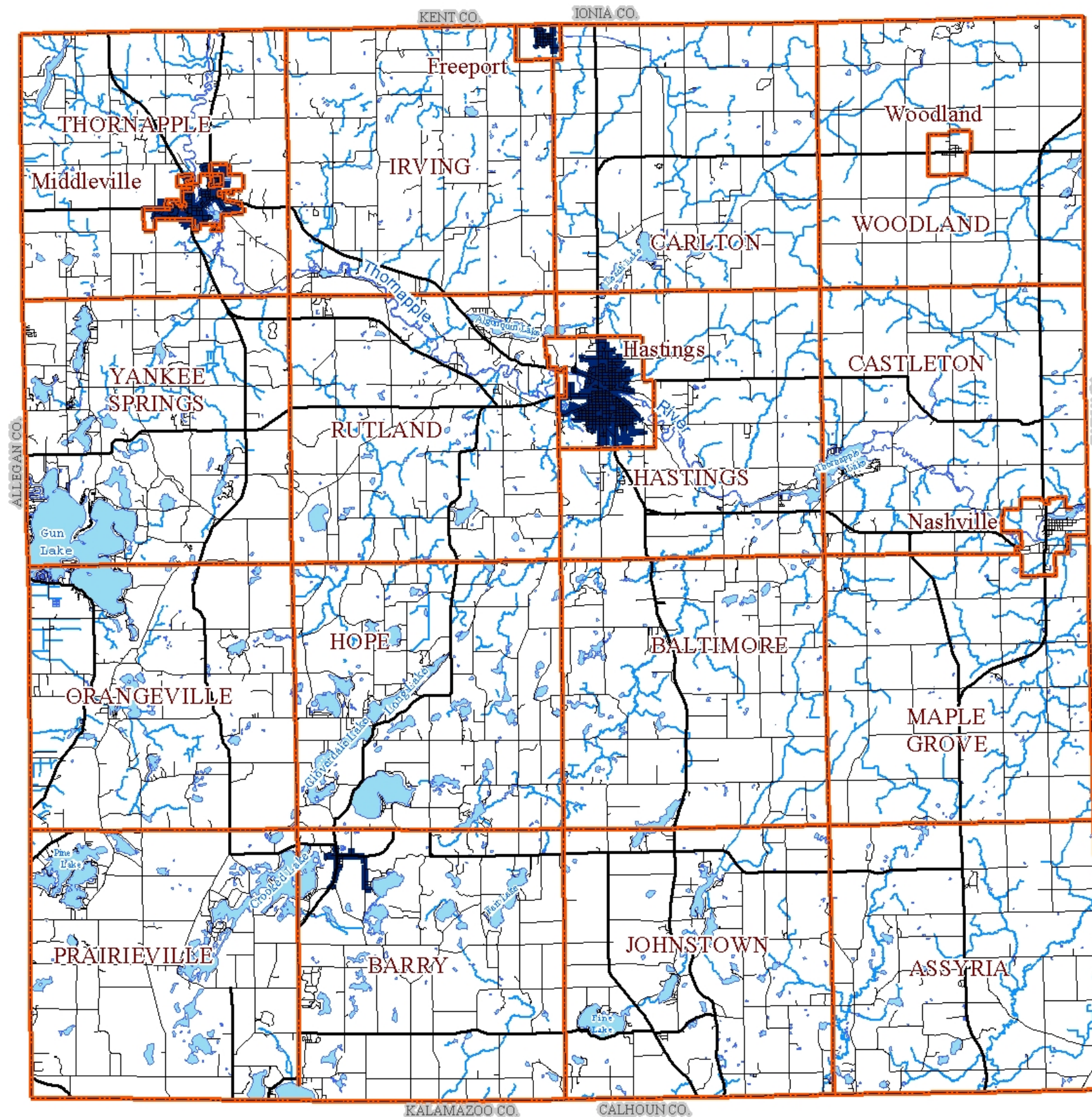
<sup>46</sup> Barry Township Sanitary Sewer, Municipal Water, and Storm Sewer Study, September, 2003.

<sup>47</sup> Village of Freeport Water System *Preliminary Engineering Report*, December 2002.



# Barry County, Michigan

## Map 8 Municipal Water



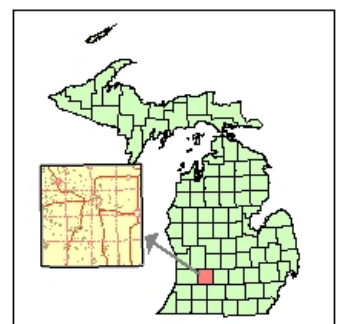
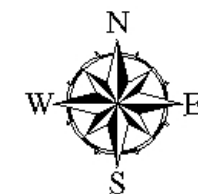
### Legend

- Political Boundary
- Roads
- Key Routes
- Open Water
- Streams
- Municipal Water

Municipal water and sewer service is also available in the Village of Nashville, but detailed mapping information is not currently available.

**Williams & Works**  
engineers • planners • surveyors

616.224.1300 phone • 616.224.1301 fax/mile  
549 Ottawa Avenue NW • Grand Rapids, MI 49503



Source: Barry County Land Information Services  
November 19, 2003

Back of Map 8



The Michigan Department of Environmental Quality (DEQ) has determined that the current Village's water system is "severely deficient." In an effort to correct this situation, the Village prepared a Water System Preliminary Engineering Report in December of 2002 to describe the existing system conditions, provide an analysis of alternatives, and recommend a specific course of action. In summary, this engineering report listed the following items as primary concerns and recommended resolutions regarding the existing water system:

- ◆ Wells: Construct two new wells and a new well control building to replace the existing wells that are not providing adequate flow.
- ◆ Distribution System: Construct new distribution infrastructure where necessary to meet the current and future water needs of the Village. This includes, but is not limited to, looping the water system and increasing the diameter of water mains.
- ◆ Storage Improvements: Replace the interior coating of the existing water tank.

The preliminary engineering report will be used to support a loan application to the United States Department of Agriculture (USDA) Rural Utilities Service for funding to complete the recommended improvements. In addition to the to this funding, the Village has been awarded a Community Development Block Grant for \$350,000 for water system improvements related to the expansion of Munn Manufacturing, which will be creating an associated 35 new jobs.

#### **YANKEE SPRINGS**

The Yankee Springs Township water system currently serves 150 units, including residential and commercial customers, and is located primarily along the north shore area of Gun Lake in section 19 of Yankee Springs Township. This system was developed in the early 1990s due to water contamination, likely caused from past land uses landfill.

The Township has recently obtained a loan for \$650,000 through Barry County that will finance the construction of an elevated water storage tank to provide sufficient system capacity and enhance reliability. The system currently utilizes 2 pneumatic pressure tanks with two wells.

Another water system in Yankee Springs Township serves a residential development named Yankee Springs Meadows. This is a manufactured home community that utilizes a private water system that serves approximately 200 units.

## UTILITIES AND GROWTH MANAGEMENT

Utilities can be an effective tool for growth management if coordinated with other land use procedures and policies within a community. As discussed above, if water and sewer facilities are available to a particular site or area, a variety of development options can be contemplated. In many cases, it may be in the interest of a landowner to maximize the potential of a site and, if water and sewer services are available, it is likely that this may result in increasing the residential density or applying heavy commercial and industrial land uses.

Clearly, water and sewer facilities can be, and should be, part of the equation when determining future land uses. For example, if a community decides that an area should be preserved for agriculture, it would obviously be counterproductive to encourage the extension of water and/or sewer into this designated area. Thus, decisions to extend water and sewer services need to be carefully coordinated with the Master Plan and the Zoning Ordinance to be most effective.

The above paragraphs describe the capacities of all the water and sewer districts in Barry County. They have been summarized as follows:

<b>Table 9. Barry County Area Sewer District Capacities Gallons Per Day (GPD)</b>		
<b>Sewer System</b>	<b>Average GPD</b>	<b>Maximum GPD</b>
City of Hastings	900,000	2,000,000
Gun Lake	550,000	1,200,000
Village of Middleville	325,000	500,000
Southwest Barry	220,000	420,000
Lakewood (Woodland)	500,000	750,000
Thornapple Township	36,250	40,000
Village of Nashville	115,000	200,000
City of Plainwell (Lake Doster)	500,000	1,300,000
Gull Lake	431,200	705,050

Note: All average and maximum capacity figures are estimates only. Maximum capacity figures do not necessarily indicate that the sewer treatment facility is designed to treat this amount of sewage on a daily basis over an extended time period.

## INDIVIDUAL SEPTIC SYSTEMS AND WELLS

Barry County has several water distribution and sewer collection systems that serve the densely populated areas, although a majority of the population in the suburban and rural areas of the County utilize on site individual septic tank and drainfield systems and individual household wells. The 1990 Census data indicated that of the 20,887 housing units in the County, approximately 22% were served with a public or private water system and 32% were served with a public sewer system. Clearly, a majority of the homes in 1990 are dependent upon on site systems.

The Census did not survey water and sewer services in 2000, but the total number of housing units increased by 2,999 units, for a total of 23,876 units for the year 2000. Utilizing the same percentages reported in 1990 for homes with public sewer systems (32%) would indicate that there are approximately 16,000 homes served by on site septic systems in Barry County. The Barry-Eaton District Health Department estimates that a three-bedroom home produces about to 325 GPD of wastewater, which would equate to over 5 million GPD of sewage being discharged into on site septic systems throughout the County. While these figures are estimates based on past data, it is clear that water quality protection in Barry County, in part, is dependent upon the proper functioning of thousands of on site systems.

Overall, the County has “vulnerable aquifers,” meaning that the aquifers have minimal geologic protection from surface impacts and are, therefore, vulnerable to human activities on the surface. Direct correlations of ground water degradation and land use are difficult to formulate due to the complexity of geological formations, although there is some evidence that intense, dense, or potentially toxic land uses can directly impact water resources.



### HOME HEATING UTILITIES

Consumers Energy and Battle Creek Gas Company provide natural gas services to the populated regions in Barry County, which include, but are not limited to, all of the villages, city, and developed lake areas.

Battle Creek Gas Company primarily serves the areas of Baltimore and Johnstown Township. The following chart describes the number homes and type of fuel utilized:

**Table 10. Home Heating Fuel Usage**

House Heating Fuel	Number of Homes	%
Utility Gas	10,180	48.4%
Bottle, tank, or LP	6,492	30.9%
Electricity	1,029	4.9%
Fuel Oil, Kerosene	2,170	10.3%
Coal or Coke	0	0.0%
Wood	1,034	4.9%
Solar Energy	3	0.0%
Other	98	0.5%
No fuel Used	29	0.1%

Source: U.S. Census, 2000

## PLANNING IMPLICATIONS

With eight public wastewater treatment systems serving the County and with an available capacity of over 3 million gallons per day, wastewater service offers a unique growth management tool. The effort to update the Master Plan creates an opportunity to use these major public investments to aid the growth management process. Some communities in the County are clearly capable of extending sewer services while others are not. For those communities with available capacity, new land uses will likely be defined, in part, by the availability of sewer service. It is also important to note that there are existing areas of dense development in the County that may desire to have sewer services extended in an effort to correct existing groundwater issues. Such expansions must be carefully considered because they may also foster further growth and development while addressing groundwater impacts. Further, as existing systems are improved to have more capacity, clear priority areas for new service should be defined within a plan.

## CHAPTER 7. TRANSPORTATION

Major transportation elements in Barry County include state highways, County primary roads, County local roads, municipal roads, and private roads. The Hastings City/Barry County Airport is also located within the County, along with railroads and one public transit entity. Sidewalks, safety and bicycle paths, and other pedestrian oriented forms of transport have less of an influence on land use and social interaction in Barry County.

The Barry County Road Commission operates 1,069 miles of roadways. The Michigan Department of Transportation is responsible for maintaining the state trunk lines in the County, and these state highways serve as the main connectors to metropolitan regions through southwest Michigan. Eight state highways travel through Barry County at some point: M-50, M-37, M-79, M-43, M-66, M-179, M-78, and M-89.

M-37 provides transport to and from metropolitan Grand Rapids and Battle Creek, and connects Middleville and Hastings, the County's two most densely populated areas. M-37 is the county's most heavily traveled roadway. M-179 and M-79 connect Allegan County with Eaton County, and provides linkage between Hastings and Nashville. M-43 connects Kalamazoo with Hastings, and continues into Eaton County and Lansing. M-43 is the County's second most heavily driven roadway. M-66 extends virtually the length of the Lower Peninsula and it provides connection for eastern County residents to I-94 and I-96.

### NEW ROAD PLANS

The Barry County Road Commission performs on average between 70 and 100 miles of road sealing per year, and between 5 to 10 miles of asphalt paving per year. Planned roadway improvements for the upcoming years include the repair of 2 bridges – both on Charlton Park Road. Both bridges are on the Critical Bridge Fund, and repair is contingent on funds being made available.

In Leighton Township (Allegan County), 142<sup>nd</sup> Avenue will be extended to Patterson Road, the boundary between Allegan and Barry County. At the time of this writing, environmental assessments have been submitted to the Michigan Department of Transportation (MDOT) and the Federal Highway Administration (FHA) for the 142<sup>nd</sup>

Avenue extension. Approved by MDOT and pending FHA approval, the Allegan County Road Commission foresees road improvement completion in 2005. The Barry County Road Commission is considering a complimentary improvement and extension of Finkbeiner Road from Patterson Road to M-37, which would include paving Finkbeiner Road from Cherry Valley Road to Patterson Road. Since 142<sup>nd</sup> Avenue has an interchange with U.S. 131, this roadway improvement will create an important new linkage between U.S. 131 and M-37 north of Middletown. At time of writing, the Barry County Road Commission was waiting on federal approval of funding to begin the project.

The Michigan Department of Transportation (MDOT) develops a Five Year Road and Bridge Program for each region of the state. Barry County is within the Southwest Region, which includes 9 counties, and falls within the Marshall Transportation Service Center. In 2005, MDOT plans to overlay M-79 between Barryville Road to just west of Nashville, a 3.4-mile project in Castleton Township. In 2006, M-66 (Main Street) will be resurfaced and slightly widened from Assyria Road to Frances Street, a 4.5-mile project in Maple Grove Township. And in 2007, M-43 (Grove Street) will be resurfaced and slightly widened from Bush to Delton, a .5-mile project in the Delton area.

## TRAFFIC VOLUME

Increased traffic congestion is usually a direct result of a growing population. The Michigan Department of Transportation performs traffic counts for all the state highways throughout Michigan. This is helpful data when assessing future roadway capacity, and when determining when certain roadway enhancements need to be done. Table 11 and Map 9 illustrate traffic counts on state trunk lines within Barry County between 2002 and 2003. Counts include traffic traveling both ways.

Table 11 – State Highway Daily Volume		
From	To	Count
<b>M-179</b>		
West County Line	JCT M-43	4,175
<b>M-37</b>		
South County Line	JCT M-79	5,566
JCT M-79	South Hastings Limit	8,362
South Hastings Limit	Green & Hanover	9,018

<b>Table 11 – State Highway Daily Volume (continued)</b>		
Green & Hanover	East JCT M-43	16,323
East JCT M-43	West Hastings Limit	16,952
West Hastings Limit	Green Street	13,857
Green Street	West JCT M-43 & M-179	13,837
West JCT M-43 & M-179	South Middleville Limit	9,537
South Middleville Limit	Edwards Street	11,665
Edwards Street	North Middleville Limit	11,021
North Middleville Limit	North County Line	12,682
<b>M-43</b>		
South County Line	Bush Rd in Delton	3,926
Bush Rd in Delton	West JCT M-37 & M-179	4,149
East JCT M-37	West Thorne Street	14,005
West Thorne Street	Woodland (Broadway) Street	15,971
Woodland (Broadway) Street	North Hastings Limit	8,250
North Hastings Limit	Broadway & Carlton Ctr.	5,478
Broadway & Carlton Ctr.	West Woodland Limit	2,559
West Woodland Limit	East Woodland Limit	2,632
East Woodland Limit	South JCT M-66	2,530
<b>M-50</b>		
North County Line	JCT M-66, M-43, E CL	4,124
<b>M-66</b>		
South County Line	South JCT M-79	3,003
South JCT M-79	South Nashville Limit	4,151
South Nashville Limit	North JCT M-79	4,960
North JCT M-79	Brumm Road	6,952
Brumm Road	North Nashville Limit	3,184
North Nashville Limit	South JCT M-43	2,862
South JCT M-43	North JCT M-43, M-50	3,368
North JCT M-43, M-50	North County Line	4,597
<b>M-78</b>		
Calhoun Line	West Bellevue Limit	5,073

<b>Table 11 – State Highway Daily Volume (continued)</b>		
<b>M-79</b>		
JCT M-37	East of Barryville Road	3,855
East of Barryville Road	West Nashville Limit	2,619
West Nashville Limit	West JCT M-66	3,223
East JCT M-66	East County Line	2,431
<b>M-89</b>		
West County Line	27 <sup>th</sup> Street	5,603

The Barry County Road Commission keeps updated traffic counts on all County roads. The following are the 5 roadways within the County, other than state trunk lines, that have an average daily traffic (ADT) count of greater than 5,000 vehicles per day. Counts include traffic traveling both ways.

<b>Table 12 – 5,000 ADT Roadways</b>		
<b>Roadway</b>	<b>Count Location</b>	<b>Count</b>
West State Road	West of Woodruff	5,370
North Broadway Road	South of Sisson	5,646
Green Street	West of Cook	6,177
Briggs Road	South of Chief Nooday	7,649
Delton Road	West of M-43	5,108

Most two-lane roads have the capacity to carry 20,000 vehicles per day, if designed properly. Nonetheless, as growth slowly continues throughout the County, there will be a greater demand placed on roadways. This will be due to more people commuting to work, commercial development often being far from residences, and the 9.55 vehicle trips per day generated by each single family home<sup>48</sup>. Additional demand can strain the capacity of a roadway and can stress roadway quality.

## REGIONAL TRANSPORTATION PLANS & INFLUENCES

Of the state highways navigating through the County, one has been analyzed to discover solutions to pedestrian circulation, economic development issues, and aesthetics, and one is currently being studied in a regional perspective. The Southwest Barry County Development

<sup>48</sup> Institute of Transportation Engineers, *Trip Generation*, 6<sup>th</sup> Edition, 1997



**The Southwest Barry  
County Development  
Team initiated an  
analysis of M-43 for the  
“Needs Assessment  
Study”, written in 2001.**

Team initiated an analysis of M-43 for the “Needs Assessment Study”, written in 2001. In addition, a corridor analysis is being conducted for M-37 through the efforts of Barry County and the Michigan Department of Transportation.

Barry, Hope and Prairieville Townships studied M-43. The objectives of the M-43 corridor analysis were economic development oriented. The analysis depicted aesthetics and pedestrian safety along the corridor, and focused on the Delton area. The document concluded that the Southwest Barry County Sewer and Water Authority and electrical utilities adequately serviced the area, and that future commercial and light industrial growth should be encouraged.

It is important to note that zoning decisions can potentially contribute to land use fragmentation and traffic capacity issues. Each Township zoning for industrial development in pockets could lead to consumption of large tracts of farmland. A centralized industrial facility would best serve these communities while preserving outlying farms away from M-43. In addition, planning for “strip” commercial development – or zoning for commercial activity on both sides of a roadway – creates long-term traffic capacity problems and becomes repellent for pedestrians. Commercial development occurring in quaint clusters, or at intersections, is typically more desirable.

The following transportation considerations relating to M-43 in southwest Barry County were acknowledged in the “Needs Assessment Study”, prepared by The Southwest Barry County Development Team:







1. Identify locations for new or expanded road systems that will more effectively service through traffic as well as function as collector streets.
2. Develop access limits/control for all arterial, major and secondary streets.
3. Identify necessary street improvements and budget for such improvements within a Capital Improvement Program.
4. Coordinate street improvements with water, sanitary sewers, storm sewers, bicycle lanes, sidewalk improvements, street lighting, street trees, etc.
5. Higher density residential areas within Delton and around the lakes that are lacking sidewalks should be identified and an annual sidewalk construction program developed.

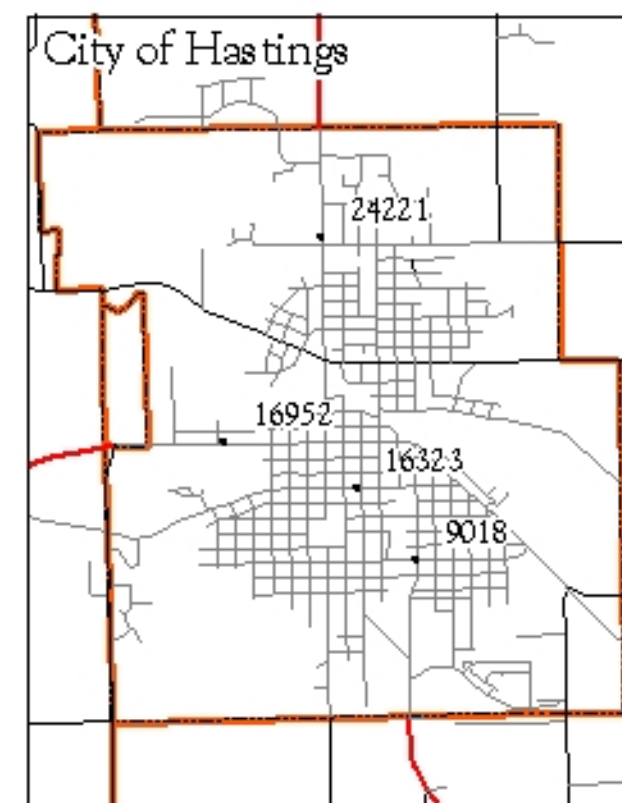
6. Identify streets suitable for designation as bicycle routes and provide extra lane width for bicycles to link key community activity areas for pedestrian and bicycle travel.
7. In conjunction with all Townships, develop an area-wide trailway plan.

# Barry County, Michigan

## Map 9 Traffic Counts on State Roads

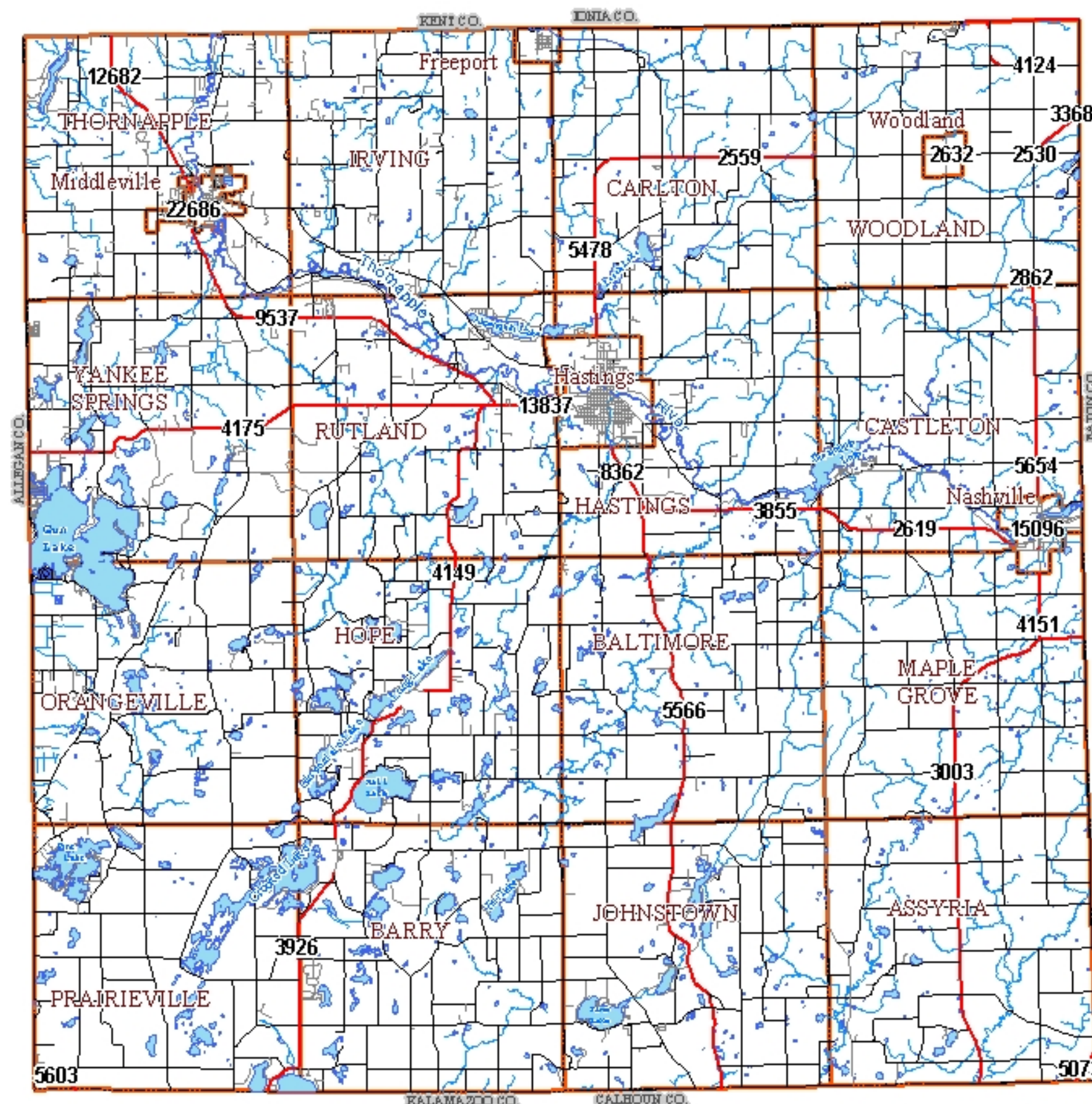
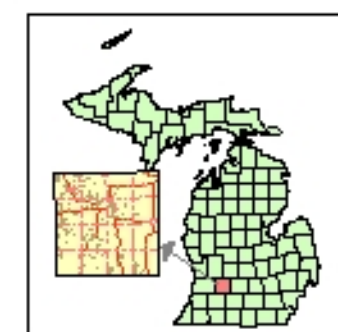
### Legend

-  Political Boundary
-  State High ways
-  Lake
-  Major Roads
-  Streams
-  Local Roads



**Williams & Works**  
engineers • planners • surveyors

4100 E. 10th Street • 49615-1000  
616.254.1000 • Fax 616.254.1001



Source: Michigan Department of Transportation (MDOT)

Back of Map 9

**The completion of the new Paul Henry Expressway (M-6) will provide greater accessibility to northwestern Barry County.**

The M-37 study area begins at the north County line in Thornapple Township, and continues through the Village of Middleville, Yankee Springs Township, Rutland Charter Township, the City of Hastings, Hastings Township, and Baltimore and Johnstown Townships. M-37 traverses the more populous areas in the County, and therefore abuts more intense land uses.

M-37 is a non-expressway state trunk line that connects metropolitan Grand Rapids with Battle Creek. In the City of Hastings the roadway is up to 5 lanes, however, principally M-37 is a rural two-lane road. The majority of traffic is seen north of Hastings, where the bulk of the County's population lives.

Sprawl from metropolitan Grand Rapids is heading toward Middleville as evidenced in the rapid growth in Caledonia and Gaines Townships, which grew by 46% and 38%, respectively, between 1990 and 2000. The completion of the new Paul Henry Expressway (M-6) will provide greater accessibility to northwestern Barry County. M-37 has an intersection with the new M-6, making Barry County readily available to people wishing to move to an exurban location. Therefore, more development is anticipated north of Hastings along the M-37 corridor.

Given the likelihood of more traffic and access along M-37, several Barry County communities and the Michigan Department of Transportation have initiated the creation of an Access Management Plan. The M-37 Access Management Plan will provide strategies to successfully implement access management measures on a regional scale throughout these jurisdictions. The goals of this plan are to improve traffic safety, preserve the flow of traffic, prevent crashes, preserve existing road capacity, and preserve investment in roads through management of the type, location, and design of access points (curb cuts) along the corridor. The Access Management Plan is anticipated to be completed in February 2004. The final deliverables of this study are an access management plan, an overlay ordinance, and other associated plans and documents.

In addition, there are regional influences that affect roadways in the County. It is important to note that U.S. 131 and Interstate 96 are within 6 miles of the western and northern County border, respectively. Further, a casino has been proposed by the Gun Lake Band of the Potawatomi Indians, at 129<sup>th</sup> Street and U.S. 131 in Wayland Township. Such a proposal, if developed, would likely result

in increased east-west traffic volume through the County, especially along M-179.

## PUBLIC TRANSIT

Barry County Transit (BCT) was initiated in 1982 and services the entire County door-to-door. According to the Michigan Department of Transportation website, in 2002 BCT had serviced 79,908 people. In addition, residents of the City of Hastings and the Village of Middleville can take advantage of the “quickie bus”, a demand response door-to-door service. All 14 vehicles are lift equipped. Approximately 15 employees run BCT from 5:30 A.M. to 5:30 P.M.

## AIR TRANSPORTATION

Hastings City/Barry County Airport is the only facility providing general aviation services within the County. Located in northeast Rutland Charter Township, the airport predominantly services corporate and recreational aviation needs. The airport has one asphalt runway, which is 3,900 feet by 75 feet, and two turf runways: one is 2,567 feet by 200 feet, and the other is 2,400 feet by 190 feet. Twin-engine aircraft, small business jets, ultra light activity, and sports such as parachuting and skydiving are some of the operations at the airport, which is owned jointly by the City and the County. Generally, the land uses in the immediate area adjacent to the facility are residential, with some commercial and light industrial activity.

Plans for expansion at the Hastings City/Barry County Airport include the expansion of the terminal aprons north and east, airfield pavement parking, and a new automobile parking lot, all for 2006. An environmental assessment for one runway and eventually realignment and extension, and the pavement and extension of another are anticipated for 2007 and 2008. Also planned for 2008 is the installation of a new taxiway. These improvements are reflective of the growth in the immediate Hastings region, and throughout the County.

Commercial passenger air service is available through the Gerald R. Ford International Airport, the Kalamazoo-Battle Creek International Airport and Capital City Airport. The Gerald R. Ford International Airport is Michigan’s second busiest commercial airport, offering 12 passenger airlines that serve 5,000 travelers each day. Both facilities

provide daily service to regional hubs throughout the Midwest. Capital City Airport, 4 miles north of downtown Lansing, is the third busiest airport in Michigan, and offers a full range of commercial and general aviation services.

The Wayland Area Pilots Association owns Calkins Field Airport, situated in Leighton Township (Allegan County), formerly operated by the City of Wayland. Ultra-light aircraft use the facility's turf runway that extends about 1,875 feet. Limited general aviation using single-engine aircraft also use the facility.





## SECTION III: FUTURE LAND USE

This section of the Plan builds on the Community Profile presented in Section II and extends the Community's vision into the future. The Future Land Use Plan begins with the broad policy foundation upon which the Plan is formed. This foundation is found in Chapter 8, which includes the goals of the County and the objectives or milestones that support them.

Based on the goals and objectives of the County, the future land use plan is presented in Chapter 9. That section includes the Future Land Use Map (Map 9), and a description of the general land uses planned for the County. Finally, this section concludes with the plan of action, or Implementation Strategies, that outline achievements to realize the vision of this Plan.

The Master Land Use Plan is general in scope. It is not, in most cases, intended to establish precise boundaries of land use or exact locations of future uses. The timing of a particular land use is dependent upon a number of factors, such as availability of public utilities, provisions for adequate roadways, effect on public services, and the demand for a particular land use based on market forces. Additional factors must be considered when reviewing a request for rezoning a parcel of land.

### THE RELATIONSHIP OF PLANNING TO ZONING



**Citizen input and involvement is key to forming a master plan that will enjoy broad support.**

The relationship between land use planning and zoning is an important one. Planning is guiding land uses from a policy standpoint, while zoning is the act of regulating the use of these lands by law or ordinance. The laws of the State of Michigan require that a community engage in land use planning activities, including the preparation of a comprehensive plan or Master Plan, prior to the initiation of a zoning ordinance in a community.

Planning at the County level must be carried out from a fairly general perspective.

**Barry County has a unique opportunity and responsibility since most communities rely on the County Master Plan and Zoning Ordinance to regulate growth and development.**

Without zoning authority, County land use plans are, at best, advisory in nature assisting to guide local decision-making. Barry County, however, has a unique opportunity and responsibility since most communities rely on the County Master Plan and Zoning Ordinance to regulate growth and development. This creates the opportunity to foster and maintain a regional perspective in guiding growth. But without a balanced and effective approach that is at once regional in perspective but locally responsive, the local communities may face political pressure to even further fragment its planning and zoning activities.

The following narrative provides a better understanding of the terms planning and zoning.

### LAND USE PLANNING

Land use planning is the process of guiding the future growth and development of a community. Generally, the Master Plan addresses the various factors relating to the growth of a community. Through the processes of land use planning, it is intended that a community can preserve, promote, protect and improve public health, safety and general welfare. Additional considerations include comfort, good order, appearance, convenience, law enforcement, fire protection, preventing overcrowding of land, facilitating the adequate and efficient provision of transportation, water, utilities, conservation, and utilization and protection of natural resources within the community.

### ZONING

Zoning is one of the instruments, along with capital improvements programming and the administration of local subdivision regulations, which implements the goals and policies of a Master Plan. The enactment and administration of the Zoning Ordinance are legislative and administrative processes conducted by local units of government relating to the implementation of the goals and policies of the Master Plan. Zoning ordinances accomplish the separation of land uses and dissimilar building forms or a planned mixing of uses by creating different zoning districts within a community. Each zone district has a listing of standards that usually include setbacks, lot coverage standards, permitted and special uses, lot size requirements and structural standards. A zoning ordinance also includes general requirements pertaining to parking, site plans, special processes, general land use rules, and landscaping.

### NEIGHBORING JURISDICTIONS

The planning and zoning jurisdiction of Barry County includes eleven of the County's sixteen Townships. The City of Hastings, the Villages of Middleville, Freeport, Woodland and Nashville and the Townships of Yankee Springs, Hope, Rutland, Thornapple and Prairieville have opted to undertake local planning and zoning. Therefore, this plan provides a strong regulatory basis for the planning and zoning decisions within about 70% of the County's land area. However, since this Plan has been prepared in cooperation with all of the jurisdictions in the County, it can serve as a useful policy guide for planning and zoning decisions in the remainder areas, as well.

In addition, to the extent possible, the future land use plan found in this Master Plan has been formed to be consistent and supportive of local jurisdiction plans. It is possible that some minor inconsistencies will emerge as disparate land use decisions are made, however, if local decision makers take this plan into account in their planning activities, such minor inconsistencies should not undermine the broad policy impact of the Plan.



## CHAPTER 8. GOALS AND OBJECTIVES

As a part of the effort to develop this Plan, Barry County undertook a community-wide effort to establish a broadly held consensus about the preferred future of the community. The result of the community involvement activities is a series of broad goal statements each supported by more specific objectives. This Plan is founded on the policies outlined in the following statements. The goals are intended to describe a desirable end state or condition of the County about twenty-five years into the future. They are intentionally general but all are felt to be attainable through concerted effort. The objective statements tend to be more specific and may be regarded as milestones in the journey to achieve the larger goal.

The goals statements are the policy foundation for this Master Plan and they define the values and visions the Plan must support and achieve. As such, goal statements need to be as clear as possible and stated in compelling terms to inspire action. The most effective goal statements will:

- ◆ Define a desired end;
- ◆ Be stated in positive terms;
- ◆ Be bold, but realistic; and,
- ◆ Reflect a consensus.

Barry County has crafted the following goal statements with these standards in mind, and in consideration of significant public input.

**If a goal may be thought as a desired destination, objectives may be thought of as key milestones along the way to the destination.**

Objectives support goals. If a goal may be thought as a desired destination, objectives may be thought of as key milestones along the way. They are essentially the key tasks and accomplishments that must be achieved to reach the goal. However, since goals are by nature general statements of desired policy accomplishments, it is natural that some objectives support more than one goal. Therefore, in the following pages, some of the objectives described are repeated with a parenthetical reference if they duplicate previous statements.

The following statements set forth the fundamental goals of the Master Plan and they describe the community that Barry County seeks to become in the next twenty to twenty-five years.

## A. NATURAL FEATURES AND OPEN SPACE

1. A predominate characteristic of Barry County will be its natural woodlands, prairies, wetlands, lakes and streams and wildlife habitat with a minimum of 120,000 acres<sup>49</sup> permanently preserved and protected. A comprehensive understanding of the green infrastructure of the County and an ethic of natural area protection will underlie policy decisions related to land use, utilities and transportation.

### OBJECTIVES:



- a. Create a detailed inventory of the key natural features located outside of areas of significant development and agriculture. Such an inventory will become a critical regulatory and guidance resource in the preservation of the County's key features and character.
  - b. Develop and implement feasible approaches to acquire and/or protect important natural areas. Such approaches may include concerted efforts to raise funds from public and private sources, universities, conservancies, and may include locally-voted taxes.
  - c. Expand the County parks program to serve more areas of the County and to provide a broader range of services for recreational and athletic facilities.
2. Existing and future development in the County will include natural and open areas in harmony with, and connected to, permanently preserved natural environments coordinated with plans for larger, contiguous greenways and waterways.

### OBJECTIVES:

- a. Adjust the Zoning Ordinance to provide for open space development patterns as the preferred use by right with traditional subdivision forms to be treated as special land uses.

---

<sup>49</sup> The area of the Yankee Springs State Park, and the Barry and Middleville State Game Areas currently is about 25,000 acres. The MDEQ regulates and protects about 31,450 acres of contiguous wetlands in the County. This goal seeks to double the acreage permanently protected by the State.

- b. Develop regulatory structures to promote non-contiguous Planned Unit Developments as a means to promote open space preservation.<sup>50</sup>
- c. Develop and implement joint open space planning between jurisdictions to include transfers of development rights.
- d. Establish a detailed greenways plan which coordinates non-motorized pedestrian and bike trails and recreational trails with public and private open space areas and that connects the County's communities.
- e. Establish a detailed waterways plan, which identifies access sites, shoreline preservation and access site maintenance mechanisms, and development strategies to create inviting and protected water features.

## B. WATER RESOURCES

- 3. The surface water features of Barry County, including its lakes, wetlands, streams and rivers, will be clean and healthy, supporting a balance of native and natural plant and wildlife communities and a sustainable level of human use.



### OBJECTIVES:

- a. Maintain the existing coverage of filter/buffer requirements of 100' to protect most streams and wetlands in the County and develop techniques for ensuring these buffer areas continue to act as filters for natural areas.
- b. Expand and strengthen storm water management standards to reduce the quantity and velocity of runoff, and increase the quality runoff.
- c. Implement a program of surface water quality monitoring to develop trend line data for analysis and to serve as a basis for intelligent surface water regulation.

<sup>50</sup> In December 2003, Public Act 229 was signed by the Governor, which amended the County Zoning Act to allow the approval of PUDs in which the required open space is not contiguous to the development. This objective seeks to develop zoning provisions to authorize and regulate such an open space preservation mechanism.

- d. Define the environmental carrying capacity of the lakes in the County and employ the resulting analysis to guide land use decisions.
- 4. Groundwater in Barry County will be clean and plentiful with recharge areas protected and development techniques that are attentive to the preservation of this key resource.

**OBJECTIVES:**

- a. Inventory wetlands and identify groundwater recharge areas, and evaluate and implement appropriate standards to protect wetland areas of less than five acres and recharge areas.
- b. Complete a hydro-geological analysis of groundwater movements in developing areas served by private wells to identify key threats to ground water.
- 5. Storm water management, low impact development and water resources protection will be fundamental decision-making criteria in land use decisions.

**OBJECTIVES:**

- a. Evaluate and implement a program of time-of-sale inspections for septic tank drainfields.
- b. Expand and strengthen storm water management standards to reduce the quantity and velocity of runoff, and increase the quality runoff. (repeat of B, 3, b)

**C. AGRICULTURE**

- 6. Barry County will have the infrastructure and economic base to support at least 100,000 acres of profitable and sustainable farming. This will include a strong partnership between agriculture, industry and local government to identify and make the most of advanced agriculture techniques and innovative agricultural businesses while protecting natural resources and quality of life for County citizens.

**OBJECTIVES:**

- a. Establish a Transfer of Development Rights and Purchase of Development Rights program through the established Agriculture Preservation group.



**...limit private roads in  
any agriculture district  
to areas that do not  
have agricultural  
potential.**

- b. Establish a mining and extraction ordinance with an extraction fee to support the purchase of farmland development rights.
- c. Develop and strengthen a county-wide (or broader) partnership between agriculture and industry to encourage self-sustaining and viable economic activity for both.
- d. Revise the Zoning Ordinance to establish an Agriculture/Industrial zoning classification to accommodate both types of land uses, to encourage synergistic economic activity and assure appropriate transportation infrastructure.
- e. Establish an exclusive agriculture zoning classification as the location for intensive livestock operations.
- f. Revise the County private road standards to limit private roads in any agriculture district to areas that do not have agricultural potential.
- g. Establish a sliding scale for building permit fees for new housing such that in certain districts intended for very low intensity development, the further houses are located from county roads the greater the fees.
- h. Adjust the Zoning Ordinance to provide for open space development patterns as the preferred use by right with traditional subdivision forms to be treated as special land uses. (repeat of A, 2, a)
- i. Explore mechanisms for, and the feasibility and extent of, “small farms” advocacy, which would encourage and support the continuation of smaller, independent agricultural enterprises.
- j. Establish provisions, which would work in concert with the Department of Agriculture and the Right to Farm Act and regulate practices and activities on agricultural property to protect neighboring landowners from potential objectionable impacts.

#### D. ECONOMIC DEVELOPMENT

- 7. The vitality of Barry County will be assured through the growth of existing businesses and the addition of new business. Profitable and sustainable industrial development will be located in proximity to appropriate infrastructure

and services, including services to foster local ownership and entrepreneurship.

**OBJECTIVES:**

- a. Develop and implement standards for home occupations, home-based businesses, and agricultural enterprises that balance the economic development and entrepreneurship goals of the community with residential objectives.
  - b. Identify and prioritize areas for redevelopment and strengthen programs to make them productive.
8. Barry County will host a diverse range of commercial and public destinations for arts, museums, entertainment and recreation that foster a positive community image and build a unique and attractive identity for the area.

**OBJECTIVES:**

- a. Develop and implement a program to promote the Barry County tourism businesses focusing on nearby metropolitan areas.
- b. Develop a “Barry County Brand” to express the unique identity of the community and draw visitors.

## **E. UTILITIES**

9. Utility services in Barry County, including water and wastewater services, will be extended strategically to encourage growth and development that is consistent with local and county land use goals and objectives. The community will be served with abundant clean water, power, fuel and communication linkages to support the requirements of a vibrant and active community.

**OBJECTIVES:**

- a. Develop cooperative and coordinated utility policies to assure that public utilities may be readily available in areas planned for more intense growth and to prevent utility improvements that foster intense growth where it is not planned.
- b. Develop and implement policies to regulate the installation and operation of private community

wastewater systems such that these systems advance rather than undermine the County's land use policies.

- c. Establish a long-term infrastructure finance plan.
- d. Work with other units of local government to obtain state authority to recover impact costs of development.

## F. HOUSING AND NEIGHBORHOODS

- 10. Barry County will host a broad range of quality housing opportunities located throughout the community and intended to serve the needs of all segments of the population.

### OBJECTIVES:

**...provide for open  
space development  
patterns as the  
preferred use by  
right...**

- a. Adjust the Zoning Ordinance to provide for open space development patterns as the preferred use by right with traditional subdivision forms to be treated as special land uses. (repeat of A, 2, a).
- b. Develop and implement standards for new residential neighborhoods to promote a range of housing styles, both in terms of architecture and size.

- 11. The County's residential neighborhoods will be formed in safe, compact and walkable patterns consisting of a range of housing types and offering services and recreational amenities to support healthy and diverse communities.

### OBJECTIVES:

- a. Development and implement standards for the layout of new residential neighborhoods to promote pedestrian connections and inter-connectivity.
- c. Establish a Transfer of Development Rights and Purchase of Development Rights program through the established Agriculture Preservation group. (repeat of C, 6, a)

## G. CITIES, VILLAGES AND HAMLETS

- 12. The settlements of Barry County will each have a unique identity, including clean and inviting shopping areas,

attractive neighborhoods and a welcoming, small town personality. New development will be appropriate in form and scale to each existing community, with convenient and walkable linkages to shopping, recreation and entertainment facilities, and other neighborhoods.

**OBJECTIVES:**

- a. Develop and implement zoning stipulations to preclude “sprawling” commercial development adjacent to the County’s city, villages, and hamlets, and that direct context-sensitive commercial growth into existing downtowns and hamlets.
- b. Develop and implement a plan to augment streetscape design in existing downtowns and hamlets, and develop and implement zoning standards promoting specific architectural styles in the city, villages, and hamlets.
- c. Establish a detailed greenways plan which coordinates non-motorized pedestrian and bike trails and recreational trails with public and private open space areas and that connects the County’s communities. (repeat of A, 2, d)
- d. Develop and implement standards for new residential neighborhoods to promote a range of housing styles, both in terms of architecture and size. (repeat of F, 10, c)
- e. Develop and implement a program to promote the Barry County tourism businesses focusing on nearby metropolitan areas. (repeat of D, 8, a)
- f. Survey historic buildings and sites and amend ordinances and seek viable methods to protect them.

## **H. TRAFFIC AND TRANSPORTATION**

13. A safe, efficient, aesthetically attractive and well-maintained system of roadways will serve the businesses and residents of the portions of the County planned for growth, providing effective linkages between and among neighborhoods, shopping and employment areas and within the larger south-central Michigan region.

**OBJECTIVES:**

- a. Complete an analysis of the viability of a land use regulatory structure based on paved and unpaved roads. Implement if feasible.
  - b. Establish and maintain better ties of communication and coordination between the Planning Commission and the County Road Commission.
  - c. Develop and implement standards for access management along existing and planned future arterials.
  - d. Develop and implement standards to preserve the rural road aesthetics of key County roads.
14. The residents of Barry County will enjoy a network of trails, pathways and sidewalks between neighborhoods and services and inviting connections to local and regional natural areas and recreation facilities.

**OBJECTIVES:**

- a. Develop and implement standards for the layout of new residential neighborhoods to promote pedestrian connections and inter-connectivity. (repeat of F, 11, a)
- b. Establish a detailed greenways plan which coordinates non-motorized pedestrian and bike trails and recreational trails with public and private open space areas and that connects the County's communities. (repeat of A, 2, d)



15. A reliable, efficient and safe system of public transportation will operate within the County with services that are expandable to meet shifting demand.

**OBJECTIVES:**

- a. Within areas of the County planned for more intense growth, implement standards to accommodate the needs of those that are or may become mobility challenged.
- b. Work closely with the Hastings City/Barry County Airport Authority and Rutland Charter Township to; assure appropriate land uses adjacent to the airport; and adequate infrastructure to serve the airport functions.

**I. CODE ENFORCEMENT AND MUNICIPAL COORDINATION**

16. Planning and land use decisions and enforcement will be conducted in a fair, efficient, consistent and transparent manner in support of the growth management policies of the County.

**OBJECTIVES:**

- a. Develop and implement civil infraction standards for enforcement of the County Zoning Ordinance.
  - b. Expand printed and electronic information exchange to disseminate consistent and useful information on County and regional land use issues.
  - c. Strengthen communication and ties with surrounding Townships, Cities, Villages, and Counties to enhance cooperation and coordination on key local and regional issues.
  - d. Work cooperatively among units with local zoning to make definitions and dimensional standards as uniform as possible.
17. Barry County will play a leadership role with the State of Michigan in promoting coordination among local units of government and within the larger region.

**OBJECTIVES:**

- a. Organize intra-county discussions and workshops among local officials to develop consensus and achieve additional support for Transfer of Development Rights and Purchase of Development Rights programs in Barry County.
- b. Organize discussions and workshops with neighboring Counties and communities to develop consensus and achieve additional support for Transfer of Development Rights and Purchase of Development Rights programs in Michigan.
- c. Partner with local communities and neighboring Counties to petition the State legislature for clear authorization of Transfer of Development Rights programs.

**J. INFORMATION AND EDUCATION**

18. The citizens of Barry County will have a basic understanding of land use and planning issues and the need to maintain a balance between competing goals.

**OBJECTIVES:**

- a. Develop and disseminate model ordinances for the use of local units.
- b. Strengthen the role of the County Planning Commission in sponsoring training for citizens and local planners in effective land use, planning techniques, and environmental concerns.
- c. Expand printed and electronic information exchange to disseminate consistent and useful information on County and regional land use issues. (repeat of I, 16, b)
- d. Develop and promulgate a local government curriculum and educate public school students on planning issues and government processes.





## CHAPTER 9. FUTURE LAND USE PLAN

The Barry County Master Plan establishes general patterns of land use to guide growth and development for the next twenty to twenty-five years. This Plan constitutes a viable and integrated approach to accommodate the impacts of growth suggested by the implications of existing growth patterns. The over-arching intent is to foster efficient patterns of development that preserve the community's important natural features and rural character while accommodating, and even encouraging, certain types of growth in specific areas.

**The community selected a land use framework that preserves open space, protects stream and water quality, preserves the rural aesthetic, and provides recreation areas; while accommodating desirable development where appropriate.**

Each of the many communities that comprise the fabric of Barry County has unique challenges and aspirations. Many of the residents of Barry County have indicated that they are content to remain a “bedroom community” and above all, desire to retain the natural rolling landscape that offers serene views, wildlife habitat, and a beautiful rural atmosphere. Others indicate an increasing need to foster healthy economic development and to focus this growth to existing and emerging town centers. To honor these values, the community selected a land use framework that preserves open space, protects stream and water quality, preserves the rural aesthetic, and provides recreation areas; while accommodating desirable development where appropriate. Therefore, this Plan seeks to make Barry County a better community to live for now and into the foreseeable future.

The overall purpose of the future land use designations described in this chapter is to foster the protection of natural features while offering fair, and in some cases, value-enhancing opportunities for development. These designations are based on expressive community input, information disclosed in the Community Profile, and the goals and objectives of the County. The following section describes the future land use designations as illustrated on Map 9 on the following page.<sup>51</sup>

<sup>51</sup> Note that regulated wetland areas may fall within any future land use designation and while those lands are protected by regulation, for the purpose of this Chapter, the area they represent is included in the respective future land use district.

## PRESERVED LANDS

Barry County is currently home to over 61,800 acres of protected lands. These include lands incorporated in the Barry and Middleville State Game Areas, in Yankee Springs State Park, lands in privately-controlled preserves and regulated wetlands. In addition, the County is blessed with large, rolling tracts of woodlands and meadows including groundwater recharge areas, wildlife habitat, and recreation areas. These lands are a vital element of the County's rural identity and an over-arching focus of this Plan is to preserve such features so that future generations may continue to enjoy the benefits of a well-preserved natural environment. The lands designated as Preserved Lands represent 35,776<sup>52</sup> acres of Barry County, or about 10% of total land area. That area includes either State or County-owned lands, lands in permanent conservation easements or lands protected by other mechanisms. These lands include lakeshore areas, regulated wetlands, steep slopes, ridgelines, lowland forests, old growth forests, critical habitat areas, creeks and streams, and natural meadows. Where considerable or vulnerable wildlife populations are identified, a key objective of the Preserved Lands designation is the maintenance of sufficient healthy habitats to sustain a thriving and diverse range of native wildlife.



**The County is blessed with large, rolling tracts of woodlands and meadows including groundwater recharge areas, wildlife habitat, and recreation areas.**

With much of the Preserved Land area in public or quasi-public ownership, efforts should be directed to protect and provide for additional public stewardship. Parts of the lands not in public ownership may experience very low-density development integrated with the key natural features, although a fundamental tenet of this plan is that in the case of lands with significant natural areas, the preservation of those areas for current and future generations will constitute a reasonable use of the property. Nevertheless, where public acquisition is not possible, low intensity and sensitive development may be considered. Conservation design mechanisms should be utilized as development occurs with conservation easements encouraged to assure

<sup>52</sup> About 19,165 acres of regulated wetlands may be assumed to be preserved, even though the surrounding land area may fall into another future land use designation.

the perpetual protection of key natural areas and significant farmlands. Public utilities are not anticipated in the area. Furthermore, Preserved Lands in private ownership will be considered a Transferable Development Rights (TDR) sending area.

## RURAL CONSERVATION

**A central goal of this Plan is the practical protection of those lands that serve as habitat for the wildlife**



**Ecological corridor areas may include steep slopes, ridgelines, wetlands, lowland forests, old growth forests, undeveloped shoreline, upland openings, critical habitat areas, creeks and streams, and natural meadows.**

Like the Preserved Lands, lands in the Rural Conservation designation host many unique wildlife and ecological corridor areas and these are key to the character of the County. A central goal of this Plan is the practical protection of those lands that serve as habitat for the wildlife. The Rural Conservation designation covers about 32,505 acres of the County, or almost 9% of total land area. It identifies lands that include key ecological or aesthetic features, which support the rural character of the county. Where possible, public acquisition may be desirable and when this can be accomplished, these lands may eventually shift to the Preserved Lands designation. However, in many instances it is recognized that some low intensity development may be included in Rural Conservation areas. As development occurs, it is expected that prime ecological corridor areas will be preserved. Key ecological corridor areas may include steep slopes, ridgelines, wetlands, lowland forests, old growth forests, undeveloped shoreline, upland openings, critical habitat areas, creeks and streams, and natural meadows. Where considerable or vulnerable wildlife populations are identified, this Plan seeks to connect wildlife habitats and potential corridors to prevent isolation and fragmentation, which ultimately threatens a species.

Uses in the Rural Conservation areas may include single-family dwellings, resource conservation and resource-based production, and natural resource based recreation. In addition, environmentally friendly agricultural activities that do not permanently and negatively modify the natural landscape of the area may be permitted. As of the preparation of this Plan, an estimated 951 residences are located in the area designated as Rural Conservation areas. Therefore, the current residential density overall is about one unit per 28 acres. Over the life of this Plan, the County will seek to achieve an overall density within this area of less than one unit per 14 acres. However, individual parcel sizes may be larger or smaller and pockets of greater density are likely,

depending on local conditions. The primary consideration when considering proposals for development within the Rural Conservation future land use area will be the degree such proposals advance and support the objectives of this Plan. Thus, measures to protect and enhance wildlife habitat, natural features, ecological corridors and rural character are more important than simple residential densities.

Public utilities are not anticipated in the area, although small community systems may be employed where needed to serve the purposes of the district. The Rural Conservation area will be considered a TDR sending area.

## COUNTRY RESIDENTIAL



**Farming activities in this area may continue to reflect the County's agricultural heritage**

This is one of the broadest future land use districts and it has been established in recognition of the transitional nature of parts of the County. As currently vacant land and areas dedicated for crop production on a year-by-year basis convert to residential development, the character of the County will change. The purpose of this district is to anticipate and facilitate that transition in an orderly and sequential fashion while preserving the key characteristics of Barry County. Areas designated Country Residential represent about 177,980 acres, or approximately 48% percent of total area.

Lands in the Country Residential designation may range from current farmlands, to fallow fields, to areas bordering on suburban development. The primary goal of this designation is to foster the rational development of portions of the County already significantly impacted by emerging growth patterns, while maintaining rural aesthetics and lifestyle. Land uses within the Country Residential designation may include lands utilized for crop production, low-density residential development, recreational land uses and small-scale commercial uses where appropriate to serve surrounding lands. In addition, this designation may witness a gradual reduction of agricultural uses as development occurs and/or a shift to agri-retail and agri-tourism uses, such as farm markets, riding stables, retail nurseries and garden supply stores. However, farmland preservation and



continued agricultural activities in these areas are the preferred land use.

Within the country residential designation, residential densities may vary significantly. The existing pattern of one- to two-acre lots on County roads will likely prevail in many areas while greater densities may be anticipated where conservation design techniques are used to preserve rural features or in developments where public utilities are provided. Thus, provision of public or private utility systems will directly impact densities and should be contemplated when needed to enable protection of rural features. Developments occurring on lands classified as Country Residential should have direct access to a paved roadway, and should accommodate community utilities. Innovative storm water runoff detention and treatment will be encouraged to protect water quality and features.

## LAKEFRONT RESIDENTIAL

A significant portion of the existing lakefront areas of the County are developed in relatively high-density patterns to take advantage of the rural and recreational character of the area. Nevertheless, it is likely that further lakefront development will result as some seasonal homes are replaced with year-round structures and as additional lakefront areas become available. Furthermore, in some areas the scale of nearby development may impact lake water quality such that public wastewater collection systems are required. Such systems will likely result in



**Some lakes in the County retain a pristine and relatively untouched character while others have experienced intense development to capitalize on their recreational potential. Effective land use regulations must understand the varying character of each water body.**

further development pressures on the many lakes in the County. Areas designated as Lakefront Residential comprise approximately 5,484 acres, or about 1.5% percent of total area.

Waterfront development within the district should be scaled appropriately for the particular body of water, taking into account the health of the lake or stream. It is clear that some lakes have experienced significant development and are likely to remain attractive places for additional building and recreation. On the other hand, some of the smaller lakes and streams retain a pristine and relatively untouched character. In the former case, development regulations should recognize and encourage existing patterns of development, while applying intelligent and realistic standards that support the long-term viability of the lake. In the latter case, the County has the opportunity to preserve some of the pre-settlement characteristics of the lake or stream and development regulations may be established to protect native vegetation and wildlife and minimize human impact. Such undeveloped areas would be included as TDR sending areas.

**The County has the opportunity to preserve some of the pre-settlement characteristics of the lake or stream.**

The Lake Residential future land use designation will include a range of uses reflective of current patterns. Thus, existing developed lakes may see additional growth at a scale and intensity appropriate for the lake, while undeveloped lakes will be protected from large scale growth. This will likely entail at least two zoning designations with residential densities ranging from up to 4 dwellings per acre where public utilities are available to as low as one unit in two acres, or less on undeveloped lakefront areas. In both instances, site design and landscaping techniques that encourage the retention of areas of native vegetation and discourage artificial fertilization should be incorporated.

## LOW DENSITY RESIDENTIAL

The Low Density Residential future land use designation is intended to provide areas for suburban scale development consisting primarily of single-family detached homes. This designation will normally be found where utilities are or may be available in the near term to enable densities of one to three units per acre. Most Low Density Residential uses will likely be found in and adjoining the Urban Planning Areas discussed below. In fact, as this Plan evolves over its life, some of these areas may be considered a part of those Urban Planning Areas. Low Density Residential developments should be formed in open space conservation designs, where important features or amenities may be

preserved for the use or enjoyment of residents and the public. In addition, some portions of the Low Density Residential designation may be treated as a TDR receiving area, effectively encouraging greater densities and helping to create a market for TDRs.

As indicated, most low density areas will be found near or adjoining existing or emerging suburban and urban areas. In a few instances, Low Density Residential areas may be found adjoining Lake Residential development of similar density. Low Density Residential areas comprise about 2,057 acres, or less than 1% of the total area.

While the primary land use within the Low Density Residential area will be single-family detached housing, some mix of uses may be appropriate to serve nearby population areas. Compatible uses may include institutional land uses (e.g., schools and churches) low-intensity office or commercial uses, recreational uses and small-scale multiple family uses.

## MODERATE DENSITY RESIDENTIAL



**Playgrounds and sitting areas to provide recreational opportunities should be incorporated in new development**

The Moderate Density Residential designation is intended to accommodate residential options for people of varying age and income levels formed in inviting communities. For example, this designation is expected to serve as a catalyst for high-amenity senior living arrangements and more affordable single-family homes on smaller lots that are incorporated into the area's natural features. The primary locations for Moderate Density Residential development are found within and adjoining population centers in Hastings and Middleville Urban Planning Areas and in the Delton center (see below). One exception to this may be manufactured housing communities.

Where public utilities or licensed community systems are not available, the overall permitted density in this area should not exceed two dwelling units per acre. Development may be formed in detached or attached structures. Density may be increased up to five units per acre if utilities are available and up to eight units per acre when TDRs are

used. Therefore, development types may include senior living facilities, single-family detached homes or multi-unit buildings developed in clusters, depending on the availability of utilities. Within this relatively intense development form, flexible conservation design mechanisms will be encouraged, as appropriate, to establish open space preserves and neighborhood recreational facilities.

Playgrounds and sitting areas to provide opportunities for recreation and social interaction should be incorporated in new development. Developments should include pedestrian walkways and street layouts should be designed to connect with future developments as they occur. Pedestrian facilities should be incorporated into new developments and should be positioned to join with walkways within future developments. Moderate Density Residential areas should be TDR receiving areas.

## CENTERS

Barry County is experiencing a steadily growing population, which is expected to continue and likely accelerate through the life of this Plan. In addition to a demand for new residential areas, this growth results in an increased need for commercial and professional services. While it is the goal of the County to direct heavy population growth and commercial concentrations or development patterns to areas with the existing infrastructure to support them, modest scale, carefully contained development centers are desired. Such centers reduce the need for some automobile trips to the city and may offer walkable living and shopping opportunities when residential areas are linked to commercial areas with safe pathways and sidewalks. This Plan seeks to establish and strengthen nine mixed-use and small-scale centers, accounting for 2,429 acres, or less than 1% of the County's area, as follows:

- ◆ Assyria
- ◆ Barryville
- ◆ Cloverdale
- ◆ Dowling
- ◆ Fine Lake
- ◆ Hickory Corners
- ◆ Maple Grove



- ◆ Orangeville
- ◆ Prarieville

Smaller than the incorporated villages of Woodland, Freeport and Nashville, most of these “places” currently exist in some form. However, it is not intended that these centers would evolve into incorporated villages or cities during the life of this plan. This plan recognizes their historic importance as minor convenience centers and centers of commerce and it seeks to build on that status. Within these centers, uses may be higher density residential, small-scale commercial,



**The centers will be designed to compliment existing natural vegetation and features**

or a mixture of the two. These service areas will generate less automobile traffic than a conventional strip commercial form; structures and buildings will be designed and oriented toward the pedestrian rather than the automobile. Such uses as fast-food and drive-through commercial establishments will not be encouraged. A vital element of these centers will be safe and convenient pedestrian access. Residential uses in the Centers will be similar to that described in the Low and Moderate Density Residential descriptions. Examples of uses include coffee shops, beauty shops, community banks, restaurants, single-family detached homes developed in clusters or in multi-unit buildings, and farm markets. Individual stores will generally not be greater than 5,000 square feet in floor area. These

areas may be recognized as modest TDR receiving areas, though this plan seeks to preserve the small-scale function and aesthetic of the centers.

**A vital element of the centers will be safe and convenient pedestrian access.**

These centers will become gathering places in the community. Uses, facilities and activities that may encourage neighbor interaction, such as a pavilion for a farmers market or other outdoor events, sidewalks, bicycle parking, and a landscape theme, are highly encouraged. These facilities will assist in defining the community and will foster “quaint” commercial and residential structures.

In addition, the centers will offer another residential alternative for senior citizens and young families. They will anchor existing developed areas of the County and provide convenient services and other low volume destinations to serve the growing population and visitors to the community. The centers will be designed to compliment existing

natural features. Design guidelines for each of the centers should be developed to stipulate that new construction and improvements to existing structures reflect local and County goals.

## AGRICULTURAL AREAS

Agriculture is an important component of the heritage of Barry County. Furthermore, the County is home to some of the best agricultural soils in the region and this plan seeks to encourage a continuation of economically viable, modern agricultural land uses where appropriate. About 85,173 acres have been included in the Agricultural future land use designation, or about 23% of the County's



**Barry County is home to some of the best agricultural soils in the region**

land area. In addition, of course, farming activities are also contemplated in the Resource Conservation and County Residential land use districts discussed above. The Agricultural district, however, recognizes the changing characteristics of modern farming.

As farming practices have evolved in response to international market trends, modern agricultural practices have become more intense and generally less compatible with concentrations of nearby residential development. Thus, it is a goal of this Master Plan to establish and maintain large tracts of quality farmlands intended primarily for agriculture and agricultural processing activities. These will include field crops, orchards, vineyards and livestock operations. In addition, uses and activities necessary to support viable agriculture may also be included in this district. This may include such uses as equipment sales, granaries, feed operations, processing, packing and shipping operations. Processing operations may also include farm products, byproducts or waste.

Land divisions for residential purposes (other than farm homesteads) should be located on existing county roads and private road development should be very limited in the Agricultural area to permit access to areas that do not have agricultural potential by Special Land Use.

Where residential development is contemplated, parcel sizes should be limited to no more area than necessary to support a single-family residence with on-site water and wastewater systems.

## URBAN PLANNING AREAS

This Master Plan recognizes the need for detailed future land use descriptions in five planning areas. These include three currently urbanized areas around the City of Hastings and the Villages of Middleville and Nashville, and the area immediately surrounding them. In addition, emerging urbanizing areas in the Delton and Gun Lake communities require precise and careful planning. Of these five areas, only the Delton area falls exclusively in the jurisdiction of the Barry County Master Plan. The urban planning area around Middleville and Thornapple Township has been addressed in a joint planning exercise by those two jurisdictions. The joint planning activity in the Hastings community would involve the City of Hastings and Rutland Charter Township, both of which have assumed responsibility for local planning and zoning, while Hastings Charter Township remains subject to County planning and zoning. The



**A key objective of this plan is to strengthen the role of the City of Hastings as the primary core of Barry County.**

Village of Nashville is responsible for its own planning and zoning, although the County has jurisdiction in Maple Grove and Castleton Townships. The Gun Lake community includes a portion of Orangeville Township, which is subject to County planning and zoning, as well as a portion of Yankee Springs Township, which utilizes local planning and zoning. In addition, this area may extend into the eastern portions of Wayland and Martin Townships in Allegan County.

These Urban Planning areas account for a total of about 25,740 acres, or about 7% of the County's area. They have individual and unique needs and this County Master Plan must recognize those needs and respond accordingly. However for those urban area plans to be effective, they will require significant local input. This County Master Plan should offer regional guidance so that the locally developed plans correspond well to the larger regional pattern. However, some of the local jurisdiction planning work has yet to be undertaken as this plan is being developed. Therefore, the following paragraphs are intended to outline a set of planning objectives for each of the five urban planning areas with the understanding that as those plans are developed they will be incorporated into this plan to the extent they correspond to these objectives.

**The Hastings Community (approximately 12,964 acres).** The City of Hastings is the county seat, home to County offices and various supporting businesses. It is also the medical and social center for much of the County and it is one of two key commercial centers in the County. The City provides a full range of municipal services, including water and wastewater services. A key objective of this plan is to strengthen the role of the City of Hastings as the primary core of Barry County. Rutland Charter Township to the west of the City has experienced some development along the M-37/M-43 corridor, extending to the airport and fairgrounds. The Township includes an area of relatively dense residential development along Algonquin Lake. Hastings Township surrounds the City on the north, east and south. Less developed than Rutland Township, Hastings Township is seeing increasing pressure for suburban-scale residential land uses.

**A critical balance should be achieved that preserves the rural character of both the Township and Village.**

Planning objectives for the undeveloped portions of the area include coordinated and phased efforts to accommodate growth that is appropriately in scale with the roadway network and utility systems, while preserving a rural and small town aesthetic and character. The primary land use pattern will be low to moderate density residential land uses, with some neighborhood-scale commercial development. On the other hand, land uses in, and immediately adjacent to the City of Hastings, may include more intensely development residential, commercial and industrial uses. To accomplish this, cooperative arrangements for land use decision-making and the provision of roads and utilities will need to be developed.

**The Thornapple/Middleville Community (approximately 5,985 acres).** The Village of Middleville and Thornapple Township have cooperated in a joint planning exercise intended to define consistent land use patterns and areas to be served by water and wastewater services extended from the Village. This area is the nearest to the burgeoning Grand Rapids metropolitan area and its growth is driven by that proximity. Both jurisdictions have assumed responsibility for planning and zoning.

Planning objectives for the Village include preserving the small-town atmosphere while accommodating future growth. The undeveloped portions of Thornapple Township are generally anticipated for more rural land uses and agriculture. Growth in this community should be directed toward existing infrastructure and built-up lands to protect significant natural features from encroaching development. As development occurs, a critical balance should be achieved that

preserves the rural character of both the Township and Village. A key challenge facing these communities will be strong pressure for highway-oriented strip development patterns along the M-37 corridor.

**The Gun Lake Community (approximately 2,444 acres).** As one of the larger inland lakes in southern Michigan, Gun Lake itself is a regional recreational destination. Over the years, the influence of the lake and the Yankee Springs State Park has resulted in fairly intense levels of residential development in Yankee Springs and Orangeville Townships in Barry County and, to a lesser extent, Wayland and Martin Townships in Allegan County. In this context, local residents are exploring the steps needed to form a village covering some or all of the geographical area around the lake. Utilities have been extended from the Gun Lake area north to Thornapple Township, which may influence the boundaries of the potential village.

**Delton will be compact and pedestrian friendly, with emphasis on mixed-use and small-scale buildings.**

Establishing a village will certainly impact local land use decisions and potentially could result in greater uniformity within the more intensely developed portions of the community. Relatively dense lakeside residential and low to moderate density residential will be the predominant land use patterns around Gun Lake. Services and other non-residential growth should be limited and the overall development pattern should be designed to foster a rural aesthetic.

**The Delton Community (approximately 1,470 acres).** This is an emerging center formed along M-43, east of Crooked Lake in Barry Township. As such this area is subject to County planning and zoning. The proximity of this center to Crooked Lake and to nearby Wall Lake and Pleasant Lake and a trend to convert seasonal homes to year-round residences has helped to drive more intense land uses in this community. The presence of utilities and a new water tower offer the opportunity for growth management. As development occurs, public water infrastructure will be looped and this could help to define an area of more intense growth.

As Delton emerges into a central place in southwest Barry County, development will be compact and pedestrian friendly, with emphasis on mixed-use and small-scale buildings. Residential development will be varied and will include multiple-family and single-family dwellings and also units above commercial and office uses, where appropriate. Non-motorized transportation facilities will be encouraged, linking uses and developments for safety and recreation. Large-scale non-residential facilities are not anticipated in the Delton community.

**The Nashville Community (approximately 2,878 acres).** Nashville is located along the heavily traveled M-66 corridor and is centrally located within the Agriculture future land use designation. The community provides public water and wastewater service and hosts modest levels of commercial and industrial land uses. Located at the far eastern edge of the County, community orientation may be less toward Barry County and the Hastings area and more toward Lansing, Charlotte or Battle Creek.

To take advantage of the M-66 corridor, this plan encourages additional industrial land uses within the Nashville community. Such uses will be compatible with, and appropriate in scale to, existing surrounding development. Residential development in the area will be primarily in the form of owner-occupied single-family homes to balance the extent of existing rentals and to establish greater stability. All future growth in the Nashville community will be cognizant of the Thornapple River floodplain and as development and redevelopment occur, flooding hazards will be mitigated. A Hazard Mitigation Plan has been prepared for Barry County, and is included in this Plan as Appendix 1.

## INDUSTRIAL

**The Industrial designation is intended to provide for environmentally sustainable and context-sensitive land uses.**

The Industrial designation is intended to provide for environmentally sustainable and context-sensitive land uses. Outside of the Urban Planning Areas, land designated Industrial consists of about 1,232 acres, or less than 1% of the County's total land area, and is located in the northeast portions of the County. This area is designated Industrial to accommodate known and planned development, and this area is in proximity to critical infrastructure such as a main CSX freight rail corridor, I-96 and M-66. Additional portions of Barry County are not contemplated for industrial land uses. However, portions of the Urban Planning areas – such as Middleville, Rutland Township, and the City of Hastings – include industrial lands and these should be encouraged. Industrial areas provide employment and goods and services to serve the Barry County community.

Specific uses in the industrial area may include professional offices, manufacturing, processing, assembly operation, transportation, warehousing, similar uses, and limited heavy commercial and retail. Due to the intensity of uses, utilities should be provided to serve these

lands. In addition, this area may be amenable to high-intensity agricultural processing operations.

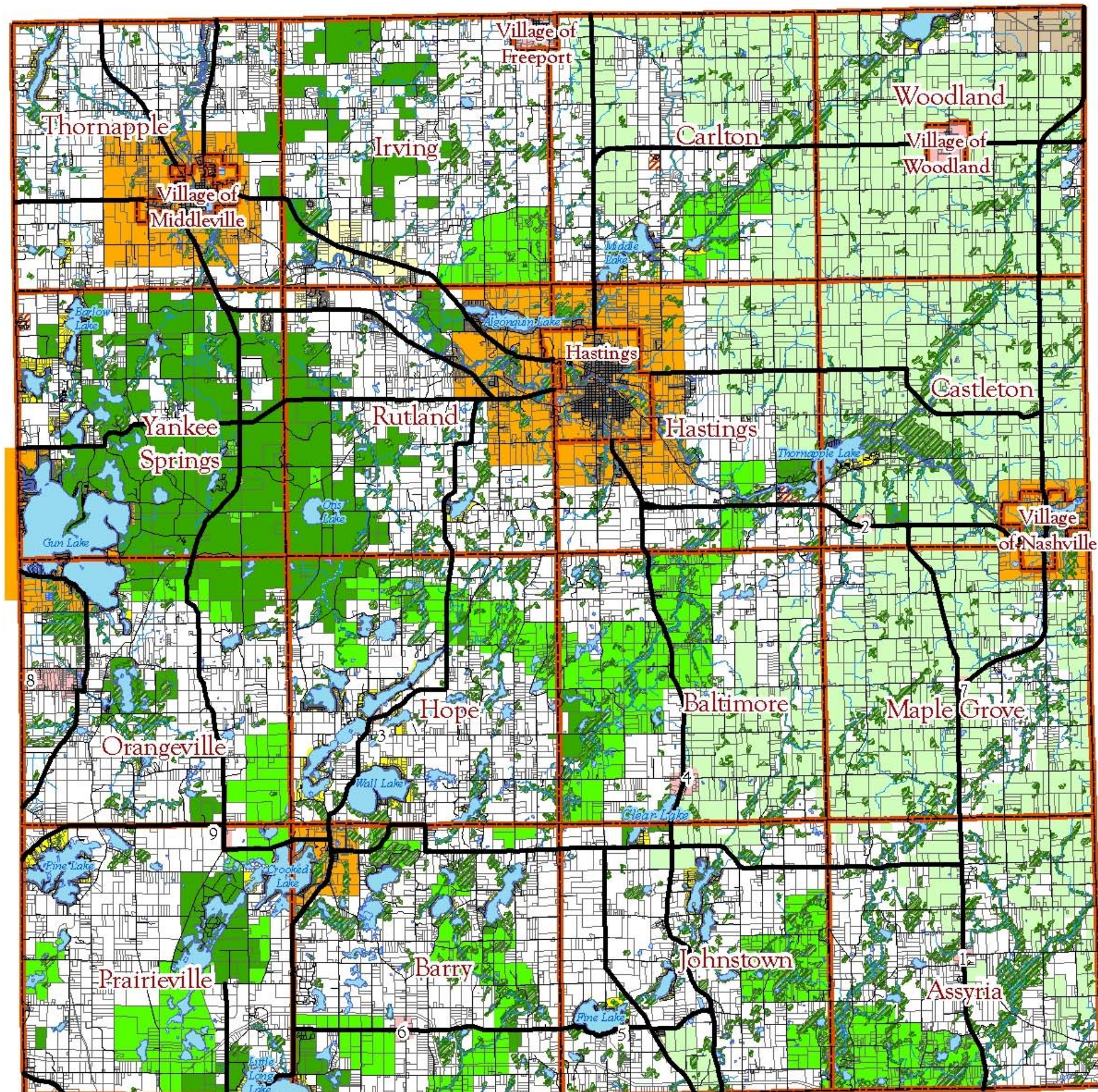
Design standards should be implemented to ensure functional and aesthetic developments. Site design criteria should include signage, landscaping, lighting, site utilization, access control, and building façade design. Extensive landscaping and buffering measures should be implemented. Buildings should be designed with high quality building materials such as stone, brick, and other natural materials.

















# Barry County

## Map 10 Future Land Use



### Legend

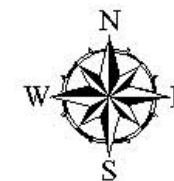
- |   |                              |   |                      |
|---|------------------------------|---|----------------------|
|    | Country Residential*         |    | Urban Planning Areas |
|    | Low Density Residential      |    | Agricultural Areas*  |
|    | Moderate Density Residential |    | Preserved Lands      |
|   | Lakefront Residential        |   | Rural Conservation*  |
|  | Centers                      |  | Industrial           |
|   |                              |  | Wetlands > 5 Acres   |
|   |                              |  | Key Route            |

### Centers:

- |              |                   |
|--------------|-------------------|
| 1 Assyria    | 5 Fine Lake       |
| 2 Barryville | 6 Hickory Corners |
| 3 Cloverdale | 7 Maple Grove     |
| 4 Dowling    | 8 Orangeville     |
|              | 9 Prairieville    |

The future land use designations are meant to be seen as general with indistinct edges. Along the margins, where two or more designations adjoin, either land use class may be appropriate.

\* Includes agriculture as important land use



**Williams & Works**  
engineers • planners • surveyors • a tradition of service

616.224.1500 phone • 616.224.1501 facsimile  
549 Ottawa Avenue NW • Grand Rapids, MI 49503





Back of Map 10

## CHAPTER 10. IMPLEMENTATION STRATEGIES

The following strategies are established to implement the goals and objectives and land use recommendations of this Plan. It is recognized that many strategies will be long-term in nature and that many entities in addition to Barry County will need to cooperate in order to fully implement this Plan. The County's role is that of facilitator for some of the strategies listed in this Chapter.

Primary responsibility for implementing the Plan rests with the Barry County Board of Commissioners, the County Planning Commission, and the County staff. In order for the Future Land Use Plan to serve as an effective guide for the continued preservation and growth in the County, it must be implemented. This is done through a number of methods, which are described in this chapter. Thus, this chapter serves as an initial plan of action for the County, and most of the implementation strategies will require significant public and private investment. All of the following statements are significant; as they contribute individual elements that will help build the overall vision expressed by the planning participants and expressed in this Master Plan.

### 1. PREPARE COUNTYWIDE WETLANDS INVENTORY

**This inventory will identify wetland areas, determine their function in the larger ecology of the region and rank their importance.**

**Description.** A key aspect of the County's Master Plan is the ideal of preserving natural beauty and significant natural features within the community. A critical component of preserving natural beauty and the intrinsic role of natural systems is recognizing the importance and benefits of wetlands. As described earlier in this plan, wetlands help to filter pollutants from groundwater and may help minimize flooding, among other functions. A key element of this strategy is the preparation of an inventory of wetlands and the identification of the likely trends or conditions that may threaten them. This inventory will identify wetland areas, determine their function in the larger ecology of the region and rank their importance. Significant natural features and valuable open spaces associated with wetlands and bodies of water should be documented, as well, to help identify preservation priorities. In addition, wetland and groundwater recharge areas and aquatic species and wildlife corridors should be delineated. This strategy would build on existing work documenting wetlands and associated natural features. A series of mapped exhibits defining wetlands and wildlife areas would be a product of this strategy.

**Responsibilities.** This strategy may be led by the County Planning Commission with Planning staff utilizing outside planning and environmental consultants, as needed, to complete field work and to identify wetland areas.

## 2. PREPARE WETLANDS PROTECTION ORDINANCE

**Description.** The preparation of a wetlands protection ordinance to reinforce state regulation of contiguous wetlands greater than five acres and to protect smaller wetlands is a fundamental step to preserving wetlands and related features in Barry County. This strategy is predicated on action item 1 in that the ordinance would apply to those wetlands identified in the wetlands inventory as significant for preservation.

This plan seeks to encourage private conservation mechanisms and grant-funded land acquisition to protect wetland areas. Because private conservation and grant funding may be limited or inadequate, the wetlands protection ordinance would regulate land use practices in and near contiguous wetlands less than five acres and recharge areas. The ordinance would ensure that the important wetlands identified in strategy 1 are protected from encroaching development, pollution and activities which may be problematic to the natural function of the water features.

**Responsibilities.** The County Planning Commission may lead this strategy with Planning staff providing support. Planning, legal and environmental specialists may be consulted to develop the ordinance.

## 3. PREPARE A NATURAL FEATURES INVENTORY

**Description.** Citizen input and extensive public participation clearly documents that the natural features are important to the residents and stakeholders of Barry County. To help identify those natural features that may or may not be currently recognized, the County will prepare a comprehensive inventory of natural features. The inventory would include identification and location of wildlife corridors, wildlife species, plant species, other substantial components of the natural environment, and would append and augment the wetlands inventory. The natural features inventory would also include a prioritization of

features to support judgments guiding development to the least sensitive portions of particular sites, within a regional context.

**The natural features inventory would also include a prioritization of features to support judgments guiding development to the least sensitive portions of particular sites, within a regional context.**

This strategy is anticipated to be longer term due to its scope, meaning that collection of information for the inventory may occur on an intermittent basis. Existing data pertaining to natural and environmental features should be reviewed and contemplated for inclusion into a mapped database of information that may serve as a foundation for the inventory. The County should work cooperatively with the myriad associations, agencies and jurisdictions that may have begun the process of inventorying aspects of the natural environment in Barry County. Such groups may include the Four Townships Water Resources Council, Pierce Cedar Creek Institute, and the Barry-Eaton Health Department, for example.

A product of the inventory will be a series of maps and recommendations for preservation areas, including methods for preservation for specific lands of the County. As the catalog of natural features is developed, it will begin to serve as an overlay for Planning staff. Planning staff will use the mapped inventory to relate development proposals and other site plans submitted by private property owners to the natural features in the County. In this process, the County will implement preservation goals throughout the County as each development proposal is reviewed.

**Responsibilities.** The Planning Commission may lead this strategy with ongoing support from Planning staff, who should work in conjunction with local and regional environmental groups and consultants in compiling the database.

#### 4. AMEND THE ZONING ORDINANCE

**Description.** The Zoning Ordinance is the primary implementation mechanism for the goals of this plan. This strategy contemplates a comprehensive evaluation of the entire Zoning Ordinance in connection with the County's goals, objectives and future land use plan. This will include a revision of the Zoning Map, as appropriate, to better support the future land use map, and a revision of some zoning classifications to better conform to the future land use descriptions in this plan. In addition, the Ordinance should be evaluated for flexibility to address innovative development techniques and for its ability to control inefficient development patterns. This strategy needs to be carried out carefully and this may be a long-term assignment.

Evaluating and revising the Zoning Ordinance should be achieved with broad community support, and developing consensus on certain matters may be a challenge for the County. The following paragraphs describe many of the changes that will be needed in the Zoning Ordinance to carry out the suggestions of this plan.

**Separate zoning districts should be created which reflect “tiers” of agricultural intensity or production.**

- a. **Agricultural Districts.** The Zoning Ordinance should be amended to reflect the County’s agricultural preservation goals. Separate zoning districts should be created which reflect “tiers” of agricultural intensity or production. Specifically, three agricultural districts should be established. The first would be the most development-restrictive and farming and related industries would be the dominant land use activities in that district. The second would be more accommodating to residential development, with low-density acreage or cluster development blended with farmland, though agriculture would still be the primary land use. Finally, the third would permit relatively intense agricultural production and processing of agricultural products, but would be limited to essentially Sections 1 and 2 of Woodland Township. The latter would be a hybrid “agri-industrial” district and would be appropriate to portions of the Industrial area identified on the Future Land Use Map.

These new districts should include zoning provisions that permit a broader range of agricultural enterprises, such as tree farming and agricultural support businesses, where appropriate.

- b. **Lakefront District.** At least two districts regulating lakeside development should be created to recognize the differences in types of lakefront environments. These districts would control development accordingly, with greater restrictions on rural and relatively natural lake areas.
- c. **Other Districts and Standards.** In addition to the above new zoning language, other existing districts may require updates or modification to better reflect the policies of this plan; and new districts may be required. Current standards regarding residential and open space development should be modified to permit open space development by right and conventional development as a special land use. Subdivision and condominium stipulations should be amended to reflect the objective of prohibiting such development in agricultural areas. Non-residential districts should be amended to permit more types of recreational facilities and art and entertainment-oriented land uses, such as museums. In addition, large and sprawling commercial facilities should be prohibited near the identified centers. New standards concerning

pedestrian interconnectivity among developments and mixed-use development in the centers should be incorporated into the Zoning Ordinance, as well.

- d. **TDR and PDR.** Language should be included in the Zoning Ordinance, which encourages transfer and purchase of development rights in Barry County. This language shall include agricultural areas, preserved lands, rural conservation and country residential as sending zones or preservation areas and urban planning areas as well as low and moderate density residential areas as receiving areas (see Map 10, Future Land Use).

The sending zones are areas where the preservation of farmland is critical. The process of identifying these areas was extensive. Initially, each parcel had to meet two criteria: 1.) The parcel must be greater than 50% prime or unique soils as defined by the USDA NRCS, and 2.) The parcel must be greater than 20 acres in size. A map was created that met these criteria. The County Agricultural Preservation Board then presented the map at 14 out of 16 Townships asking for input on where the preservation lands should occur. This information was then synthesized into the current future land use map by adding the areas where development is to be encouraged. This provides Barry County with a solid map identifying where the citizens want to preserve lands and where they want to encourage development.

- e. **Design Guidelines for “Centers.”** To realize the Centers as described in the future land use narrative, it will be appropriate to conduct an analysis of existing land use and development patterns in each particular village. Area residents and property owners should be consulted to determine the types and scale of land uses each respective community desires. These activities will be included in a separate strategy involving the development of Sub-Area Plans for each center (see strategy 7 below). A subsequent activity to the development of the plans, standards for the centers should be incorporated into the Zoning Ordinance and may include regulations for building architecture, site utilization, landscaping, fenestration, land uses and building form.

**Area residents and property owners should be consulted to determine the types and scale of land uses each respective community desires.**

- f. **Mining Reclamation.** Standards for the reclamation and mitigation of mined-out property should be included in the County Zoning Ordinance. Such standards should include provisions relating to traffic, safety, dust and environmental impacts during mining activities and flexible reclamation requirements that support the goals of this Plan.

- g. **Site Plan Requirements.** The section of the Zoning Ordinance which promulgates the procedures and required information for site plan submittals should be enhanced. The clearer, stronger site plan stipulations would require an applicant to place greater emphasis on environmental feature illustration on a site plan.

**Responsibilities.** The Planning Commission should lead this effort with support from Planning staff and the County Agricultural Preservation Board (CAPB), and possibly planning consultants. This is an extensive task with multiple elements that will require careful coordination with the public. Each element brings along a unique set of challenges that may require each activity to be addressed independently. Any resulting amendments to the Zoning Ordinance will require the review of the County's legal counsel and ultimately adoption by the County Board of Commissioners.

## 5. EXPAND FUNDING FOR COUNTY PLANNING

**The County's ambitious land uses goals as expressed in this Plan cannot be achieved without sustained additional investment.**

**Description.** An increase in financial resources for the Planning department will be necessary to successfully implement the recommendations of this Plan. Such a long-term financial commitment would enable the department to enhance staffing and thus provide the personnel essential to bring the goals and objectives of this plan to fruition. For example, soil erosion, building inspection, ordinance implementation and environmental specialization may be subject areas that the Planning department should expand. Mandating escrow accounts, contracting with consultants on an as-needed basis or increasing application fees for development and other applications could help offset or lessen additional costs General Fund burden. But it must be clearly understood that the County's ambitious land uses goals as expressed in this Plan cannot be achieved without sustained additional investment.

**Responsibilities.** This task would involve the County Board of Commissioners, the Planning Commission and Planning staff working cooperatively.

## 6. EXPLORE COUNTYWIDE TDR

**Description.** A key strategy to this plan is to explore the transfer of development rights (TDR) in Barry County. A first step to this strategy is to confirm that the legal authority exists to establish a countywide TDR program, as currently, any enabling legislation is unclear. If the



County determines that authorization is unsubstantiated or needs to be reinforced, the County will work with other interested units of government to mount a program of political support for TDR in Michigan. This pioneering effort will involve working collaboratively with local, regional and statewide agencies to promote TDR as a viable and effective means to preserve open space and foster redevelopment.

**This pioneering effort will involve work to promote TDR as a viable and effective means to preserve open space and foster redevelopment.**

Subsequent to confirming the legal authority for TDR programs, the County should develop a TDR ordinance. The ordinance would establish the administrative structure of a countywide TDR program. In addition, the Zoning Ordinance would likely need to be amended to reflect identified sending and receiving districts or areas.

The TDR ordinance would include a formula for regulating sending and receiving areas. The formula may be similar to that used in Montgomery County, Maryland, where zoning districts in receiving areas include two density limits: a “base” limit for developments not utilizing TDR and a slightly denser limit for those that do. In Montgomery County, the density increase granted to applicants utilizing TDR must be at least two-thirds the maximum permissible increase to guarantee efficient use of the receiving areas. Property owners in the receiving areas are allowed one more dwelling unit than would have otherwise been permitted for each development right purchased. As Barry County explores this preservation option, procedures and regulations that govern the transferring of rights will need to be adapted to meet local objectives. Criteria for establishing ratios for development rights in sending and receiving areas may be based on soil suitability, terrain, location, among others.

In Barry County, such a program may operate within a free marketplace where TDR buyers and sellers reach agreement on the value of TDRs on a case-by-case basis. It may also be appropriate to establish a County-sponsored “bank” into which developers would pay into the bank for additional density, allowing the County to use proceeds within the bank to acquire TDRs for either resale or as part of the PDR program. A further revenue source suggested to support either PDR or TDR efforts could be the establishment of mining extraction fees may be accomplished to help fund TDR and its process (and possibly the purchase of development rights, as well).

**Responsibilities.** The Planning Commission and the County Board of Commissioners – with legal counsel, Planning staff support and CAPB – should lead the effort in determining the legality of a countywide

TDR program. Engaging state lawmakers and regional agencies would also be the responsibility of the Planning Commission and Board. Developing a TDR ordinance would be lead by the Planning Commission with support from Planning staff, review by an attorney and adoption by the County Board.

## 7. DEVELOP SUB-AREA PLANS FOR “CENTERS”

**Description.** The County will develop Sub-Area Plans for each of the centers as identified in this plan. Development of the plans will likely involve several steps, including: documenting and evaluating existing conditions, such as land use, signage, design, parking and landscaping; and a consensus-building element, such as community visioning workshops. The Sub-Area Plans should make recommendations pertaining to land uses, facade styles, building materials and colors, building form, and theme or image development, among other elements. These recommendations would be used to craft sets of standards for each center that would ultimately be incorporated into the Zoning Ordinance. Standard guidelines would enable the Planning Commission to allow development to occur in the centers with continuity and consistency and with respect for local attitudes.

**Responsibilities.** The Planning Commission would guide the implementation of this task with support from Planning staff. In addition, urban planning, landscape architecture or architecture consultants may be retained to assist with analysis and design. The County will need to work in conjunction with local communities.

## 8. INSPECT AND REGULATE ON-SITE WASTEWATER TREATMENT

**Description.** Policies that regulate wastewater facilities are an important growth management tool and they may help to protect groundwater quality. The operation and maintenance of septic systems and related infrastructure should be regulated in those expansive areas of the County appropriate for septic system use.

The County should investigate the impacts and sustainability of current onsite wastewater treatment approaches. This analysis would define existing septic system conditions in the County. In addition, the analysis should identify areas threatened by a lack of public utility services, recommend improvements for such areas and identify feasible financial approaches for implementation. The County would likely work with the Barry-Eaton Health Department in determining existing

conditions. Based partly on that study, the County should develop a comprehensive system for inspecting and regulating onsite wastewater treatment.

**Responsibilities.** The Planning Commission and County Board should work jointly to implement this task, with engineering support and support from Planning staff. Additionally, work may involve a cooperative effort between the County and Health Department and environmental groups.



## BIBLIOGRAPHY

The following texts, reports, sources and websites were consulted and/or quoted in the preparation of this Community Profile Report. In addition, we gratefully acknowledge the assistance and cooperation of the Barry County Planning Department and the County's GIS Department. Also, a final note of gratitude for the photography assistance provided by Jim Alden in documenting the planning process

Allegan County, *County Master Plan*

Augusta Creek Watershed Association website, 2003

Barry County and City of Hastings, *Barry County Parks and Recreation Plan*, 1996

Barry County Agricultural Preservation Board

Barry County Conservation District

Barry County Drain Commissioner

Barry County Economic Alliance

Barry County Economic Development Alliance, *Barry County Business Plan for the Economic Development of the Region*,

Barry County Planning Commission, *Barry County Land Use Plan of 1997*

Barry Township, *Sanitary Sewer, Municipal Water and Storm Sewer Study*, September 2003

Brookings Institute, *Who Sprawls Most? How Patterns Differ Across the U.S.*, July 2001

Cevero, R., APA Journal, *Road Expansion, Urban Growth, and Induced Travel*, 2003

City of Hastings DDA, *City of Hastings, Downtown Development and Financing Plan*, 2001

City of Hastings Planning Commission, City of Hastings, *Master Plan*

Eaton County, *County Comprehensive Development Plan*,

Federal Emergency Management Agency

Focus Adolescent Services, 2000

Gaines Township, *Township Master Plan*,

Gove Associates, *Southwest Barry County Intermunicipality Committee By-Laws*

Gove Associates, *Southwest Barry County Needs Assessment Study*

Hastings Airport Board, *Hastings City/Barry County Airport Five-Year Plan*

Hope Township, *Township Master Plan*,

Institute of Transportation Engineers, *Trip Generation*, 6<sup>th</sup> Edition, 1997

Kildeer Countryside Wetlands Preserve Website, November 2003

Jackson County Michigan State University Extension, November 2004

Leighton Township, *Township Master Plan*

Lindberg, Michael. R., P.E., *Civil Engineering Reference Manual*, 1989

Lower Grand River Watershed Project Website, December 2004

LSL, Progressive AE, *Watershed Resource Papers: A Guidebook for the Four Townships*

LSL, Progressive AE, *Watershed Resource Regulations: A Regulatory Guidebook for the Four Township Water Resources Project*

McKenna, Davis Creek Watershed, Michigan Conservation Districts, *Natural Resources Inventory & Analysis, & Land Use Policy Evaluation: Pavilion Twp, Kalamazoo County*

Michigan Department of Natural Resources, *Gun Lake Status of the Fishery Resource 91-2*, 1991

Michigan Information Center, Office of the State Demographer

Michigan Land Use Leadership Council, *Michigan's land, Michigan's Future*, 2003

Michigan Natural Features Inventory website, October 2003

Midwestern Regional Climate Center website, and National Climate Data Center, 2001

Michigan State University Extension

National Agricultural Safety Database

National Oceanic and Atmospheric Administration

Pennock Hospital

Prein & Newhof, *Sanitary Sewer, Municipal Water, and Storm Sewer*

*Study: Barry Township*

Progressive AE, *Four Township Environmental Carrying Capacity Study*,

Rural Partners of Michigan, *Farmland Preservation in Barry County*

Rutland Township, *Township Master Plan*,

State of Michigan, Department of State Police, *Traffic Crash Data for Barry County*, 2002.

U.S. Census Bureau, *U.S. Census, Tables DP1 through DP4 – 2000*

U.S. Census Bureau, 1990 Census

U.S. Department of Agriculture, Natural Resource Conservation Service

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

U.S. Geologic Survey

USA Today, *Wide Open Spaces: The USA Today Sprawl Index*, February 21, 2001

Vermontville Township, *Township Master Plan*,

Village of Middleville, Thornapple Township, Thornapple-Kellogg Schools, *Thornapple Township Area Parks and Recreation Plan*,

Washington Business Journal, *In depth: Commercial Real Estate*, 2001

Williams & Works, *Village of Freeport Water System Preliminary Engineering Report*, December 2002

Wisconsin Department of Natural Resources Website, November 2004

Woods & Poole Economics, *Barry County, Michigan, County Data Pamphlet*, 2003

[www.bowensmills.com](http://www.bowensmills.com)

[www.campmanitou-lin.org](http://www.campmanitou-lin.org)

[www.delton-mi.com/bernard](http://www.delton-mi.com/bernard)

[www.gilmorecarmuseum.org](http://www.gilmorecarmuseum.org)

[www.hastings.mi.us](http://www.hastings.mi.us)

[www.northcountrytrail.org](http://www.northcountrytrail.org)

[www.thornappleriver.com](http://www.thornappleriver.com), 2003

[www.tornadoproject.com](http://www.tornadoproject.com)

YMCA Community Center – Rutland Charter Township



## APPENDIX 1

# BARRY COUNTY HAZARD MITIGATION PLAN

BOUND SEPARATELY