

Montague Township
Master Plan

August 13, 1997

*West Michigan Shoreline Regional
Development Commission*



Montague Township Master Plan

August 13, 1997

Prepared by:

The Montague Township Planning Commission
Ben Bennett, *Chairperson* (to June 1997)
Jim Cousino, *Chairperson*
Dave Francis, *Vice Chairperson*
Tracy Korthase, *Secretary*
Bill Van Frank
Jim Lorenz
Stuart Scholl (from June 1997)

In conjunction with:

The West Michigan Shoreline Regional Development Commission

Prepared for:

The Montague Township Board of Trustees

Dedicated to:

Ben Bennett, whose commitment to Montague Township was expressed by his diligent service to the Montague Township Planning Commission from April 11, 1983 through June 1, 1997.

West Michigan Shoreline Regional Development Commission
137 Muskegon Mall, P.O. Box 387
Muskegon, Michigan 49443-0387
(616) 722-7878 Fax: (616) 722-9362
e-mail: wmsrdc@wmsrdc.org

TABLE OF CONTENTS

I.	Introduction	1
	A. Overview of the Planning Process	1
	B. Function of the Plan	3
	C. Legal Basis and Development	4
II.	Historical Summary	5
III.	Community Profile	8
	A. Geographic Context	8
	B. Climate	12
	C. Transportation	14
	D. Natural Features	17
	1. Topography	17
	2. Forest Land	18
	3. Water Features	19
	a. Wetlands	19
	b. Groundwater	20
	4. Soils	22
	a. Prime Farmland	23
	b. Erosion	25
	c. Septic Suitability	27
	d. Flooding	29
	E. Population Characteristics	31
	1. Population Trends and Projections	31
	2. Racial Characteristics	34
	3. Age Distribution	34
	F. Educational Characteristics	40
	G. Housing Characteristics	42
	H. Income Distribution	48
	I. Local Economy and Employment	50
	J. Township Government	53
	K. Local Ordinances and Public Safety	54
	L. Parks, Recreation Facilities, and Public Open Spaces	54
	M. Current Land Use / Cover	55
	N. Zoning in Montague Township	57
IV.	Goals, Objectives, and Implementation Strategies	58

V. Montague Development Concepts 64
A. Basic Assumptions 64
B. Growth Management 64
C. Settlement Patterns 65

VI. Recommended Future Land Use Districts 66

VII. General Implementation Tools and Techniques 71
A. Zoning Ordinance 71
B. Subdivision Control 72
C. Open Space 73
D. Flood Control 76

VIII. Conclusion 76

Bibliography 77

MAPS

Map 1	Muskegon County, Michigan	8
Map 2	Montague Township and Other Muskegon County Townships	9
Map 3	Montague Township, Muskegon County	11
Map 4	Montague Township Roads: 1992	16
Map 5	Montague Township Topography	18
Map 6	Montague Township Prime Farmland Soils	24
Map 7	K Factor Erosion Potential	26
Map 8	Montague Township Flood Frequency	30
Map 9	Montague Township 1992 Land Cover	56
Map 10	Montague Township Future Land Use	70

TABLES

Table 1	City of Muskegon Climatic Data	13
Table 2	City of Grand Rapids Climatic Data	13
Table 3	Montague Township Generalized Building Site and Septic Limitations	28
Table 4	Racial Composition of Muskegon County and Selected Townships	34
Table 5	Age Distribution: Muskegon County and Selected Townships	36
Table 6	Median Age of Muskegon County and Selected Townships	39
Table 7	Age of Montague Township Housing Stock	43
Table 8	Montague Township Length of Residency	46
Table 9	Montague Township Building Permits	47
Table 10	Per Capita Income	49
Table 11	Montague Township Budget Summary	53

FIGURES

Figure 1	Muskegon County Townships: Estimated 1996 Population	31
Figure 2	Montague Township: Population Change, 1950-2020	33
Figure 3	Montague Township Age Distribution	37
Figure 4	Muskegon County Age Distribution	37
Figure 5	Montague Township Age Cohorts	39
Figure 6	Montague Township Educational Attainment: Persons 18 Years and Over	41
Figure 7	Montague Public School District Educational Attainment: Persons 20 Years and Over	41
Figure 8	Montague Township Housing Stock: Year of Construction	43
Figure 9	Montague Township Housing Types	44
Figure 10	Muskegon County Townships: Occupancy of Housing Units	45
Figure 11	Montague Township: Median Household Income	48
Figure 12	Muskegon County: Employment by Sector	52
Figure 13	Montague Township: Employment by Industry, 1990	52

I. Introduction

This document, the Montague Township Master Plan, is intended to guide the future actions and decisions of the local elected officials. This plan encompasses more than what is ordinarily contained in a "land use plan". However, the land use component is the core of this plan. This plan gives citizens the opportunity to play a key role in determining the future of their community by incorporating their recommendations and comments. The Master Plan shall serve as a guide for the adoption and amendment of applicable township ordinances.

Because Montague Township is a part of the greater West Michigan area, a regional approach to presenting information is provided. The decisions and actions of a community must be made with the knowledge that their affect will be felt beyond the community's immediate boundaries. When making governing decisions, and especially those involving land use issues, it is not difficult to focus decisions around individuals and current situations. However, it is imperative that decisions be based upon the community's vision (i.e. the Master Plan) for the future. This will ensure that decisions made will consider the impact on the township as a whole for years to come.

A. Overview of the Planning Process

In 1996, Montague Township contracted with the West Michigan Shoreline Regional Development Commission for the purpose of developing a master plan. Every effort has been made to present information that is current and accurate. The Montague Township Planning Commission and the West Michigan Shoreline Regional Development Commission shall not be held liable for any errors of omissions related to this Plan. This Plan is a general document, therefore, a thorough investigation with original research materials should be undertaken before proceeding with any specific implementation decisions.

Citizen input is paramount in discerning the issues facing Township residents as a whole. The planning process is most effective when all sectors of the citizenry provide input into the future of their community. The opportunity for input was provided through Town Meetings, Planning Commission meetings, and public hearings. Notices of these meetings were published in the White Lake Beacon and/or the Muskegon Chronicle newspapers. The planning process strives to combine the needs and desires of the citizenry with the land's suitability and capability for sustaining those uses, balanced with the township's ability and desire to provide public services throughout its jurisdiction.

Planning deals with the interaction between people and their environment, both the natural and built environments. The social aspect of planning (i.e. people) considers the activities of people in their daily lives. Places to live, work, attend school, recreate, etc. need to be planned. The physical aspect of planning (i.e. environment) considers the preservation and development of natural resources such as water, soil, and forests. The built environment, which includes buildings, roadways, and utilities needs to be planned to ensure the natural environment isn't degraded while the needs of people are being met. These various aspects combined with public opinions, contributions from appointed and elected officials, and data pertaining to the Township are all combined to form the framework of this document, the Montague Township Master Plan.

B. Function of the Plan

This particular plan is intended to serve as a guide to future Township decisions and actions. **It is not intended to establish precise boundaries for different types of land uses. Its function is to guide growth using long-range goals and objectives and to generally indicate the location of land uses.**

The following are specific objectives of this Plan:

- ◆ To provide a means for township residents to participate in determining the future of their community, thereby promoting the interests of the entire community.
- ◆ To establish long-range goals and objectives to be used as guides for future land use decisions.
- ◆ To outline implementation strategies that can assist in assuring future development is consistent with the goals and objectives.
- ◆ To provide a detailed study of the character of the land, and its past and current uses so as to assist decision-makers with development decisions.
- ◆ Designate suitable areas for different types of land uses, minimize land use conflicts and inappropriate land uses, while encouraging the preservation and conservation of natural resources.
- ◆ To instigate a search for ways in which to preserve and enhance the community's character in a manner consistent with the community's goals.
- ◆ To provide a broad framework within which to review proposed land use changes.
- ◆ To establish land use policies that promote the health, safety and general welfare of the community.
- ◆ To provide a frame of reference and goals for the Montague Township Zoning Ordinance.
- ◆ To prepare a plan that is consistent with the Township Planning Act, Public Act 168 of 1959, as amended.

C. Legal Basis and Development

This plan is enabled by Michigan law, but does not carry the power of statutory law or ordinance. Its principles are derived from the Township Planning Act (Public Act 168 of 1959) which states, in part that:

Sec. 2. The purpose of plans prepared pursuant to this act shall be to promote public health, safety, and general welfare; to encourage the use of resources in accordance with their character and adaptability; to avoid the overcrowding of land by buildings or people; to lessen congestion on public roads and streets; to facilitate provision for a system of transportation, sewage disposal, safe and adequate water supply, recreation and other public improvements; and to consider the character of each township and its suitability for particular uses judged in terms of such factors as the trend in land and population development.

Sec 3. (1). The township board of any township may create, by resolution, a township planning commission with power to make, adopt, extend, add to or otherwise amend, and to carry out plans for the unincorporated portions of the township as provided in this act.

The process of developing a comprehensive plan began with an analysis of Montague Township's natural resources, population and housing characteristics, economy, existing land uses, etc. Where appropriate, historical trends were analyzed to provide insight as to what the future may hold.

Once this information inventory was completed, public input was sought. Two New England-style "Town Meetings" were held on January 6 and 27, 1997 to solicit information pertaining to the issues, concerns, and opportunities facing Montague Township. All citizens were invited and encouraged to take part in the meetings. Small groups were randomly established to discuss and develop a list of problems and advantages for their community. By developing the small group's consensus, each individual has the opportunity for input and that input is taken into consideration by all participants.

The activities that follow this process are of great importance. The input from the Town Meetings helped to form future goals and objectives. These goals and objectives should be implemented and monitored based on their feasibility, effectiveness, and context within the development plans for Montague Township. The status of these goals and objectives should be reviewed on a regular basis, and when appropriate, this plan should be modified to reflect changes of a physical nature or those of general public sentiment. This comprehensive process should be repeated at least every ten years to ensure an accurate and timely reflection of the needs and desires of the citizens.

II. Historical Summary

Local American Indians had at least two names for the local river, one of which was the Waubish-sippi, meaning a river whose water is white. Thus, French maps designated the river as "La Rivierre Blanche." It was named such because the mouth of the river was underlaid with marl-white clay, and as running water eroded the clay, it gave the water a whitish color.

Other than French fur traders, the White Lake area saw its first permanent European settler in 1817. Job Sargent chose the White Lake region of Michigan to establish a new home after serving in the War of 1812. Until the 1840's when the lumbering era began, the area was sparsely populated. There were a few established areas of population, one of which was known as the Trading Post. In the 1830's, Charles Johnson built a large cabin where a person could eat, sleep, drink, and buy supplies. The Trading Post, located at the confluence of the White River and Carleton Creek approximately where Weesies Road dead ends, blossomed into a small community for a time.

On March 24, 1874, Montague Township was organized out of Oceana and White River Townships. The configuration of Montague Township has changes somewhat over time and is currently comprised of sections 1-12, 15-19, fractional section 21, sections 30, 31 and fractional section 6 of Township 11 North, Range 17 West. The first township meeting occurred shortly thereafter on April 10, 1874. The community of Montague was platted as a Village in 1865 and held its first Village Council meeting on May 21, 1883. In 1935, the Village of Montague decided to withdraw from the township and incorporate as a City.

The early settlers of Michigan told stories of its vast pine forests with straight White Pines 150 feet tall and 5 feet in diameter, perfect for ship masts and containing thousands of board feet in just a few logs. These stories did not fall on deaf ears. A general store operator in Paw Paw, Michigan heard them and decided, at the age of 23, to see them for himself. His name was Charles Mears and in 1837 he built one of the area's first sawmills. Soon numerous mills began operating in the White Lake area, harkening the beginning of the area's prosperous lumbering era.

At first, the community known as The Mouth (at the mouth of White Lake on the old channel) served as the primary port for lumber shipments. However, the loading docks were not sufficient for the increasing volume of lumber. In 1870, the U.S. Government cut through the narrows separating White Lake from Lake Michigan and constructed a deep water channel and lighthouse. About this same time the timber at the lower end of White Lake had been exhausted. Thus, lumber activities and its supporting population base shifted to the head of White Lake to take advantage of the swifter current and adjacent timbered land. As the new communities of Montague and

Whitehall at the base of White Lake blossomed, The Mouth community slowly withered.

Another community's tragedy, the Chicago fire of 1871, was West Michigan's boon. "Lumber from Western Michigan largely rebuilt the huge city, and the process of supplying the demand made fortunes for the shrewd, the lucky, and the unscrupulous" (100 Years: Whitehall, Michigan 1860-1960 3). At the peak of the lumbering era in 1882, a million feet of logs a year were being cut and processed. Three years later, most of the lumbermen were out of business because the seemingly endless timber had been depleted.

After the timber was depleted, the area's economic base shifted to farming, fruit growing, some manufacturing, and summer tourism. The area's first summer cottages were built in 1883 in the Sylvan Beach area. "By 1890 the farmers who had been taking in 'summer boarders' were already beginning to realize they could make a lot more profit from the tourist crop than from any other they could scabble out of the sandy soil" (1867 Montague 1967 55). Cottage building abounded around White Lake and the summer resort boom began. To this day, the White Lake area continues to be a popular tourism destination.

At the 1893 Columbian Exposition in Chicago, there appeared a very charismatic and motivating speaker named John Alexander Dowie. According to one historian, "depending on whether you were a critic or a fan, Dowie was surely a saint or else one of the smoothest con men to ever trod the Windy City's sod" (The White Lake Area Historical Society 4). The self-proclaimed 'First Apostle' founded the Christian Catholic Apostolic Church whose aim was to get rid of alcohol, tobacco, and sex. In 1901, he founded the religious community of Zion, Illinois located on Lake Michigan approximately forty miles north of Chicago. About the same time he purchased the James and Peter Dalton Estate on White Lake as a summer home and promptly renamed it Ben Mac Dhui. John Alexander Dowie was probably Montague Township's most colorful personality. One weekend a summer Dowie would ship his white robed choir and uniformed band from Zion's tabernacle to his summer home. Thousands would gather on the grounds of Ben Mac Dhui to witness the spectacle and hear Dowie's message. After several years, there was an uprising within Dowie's ranks and his little religious empire was overtaken by another follower. He died not long after in 1907. His wife and son stayed at Ben Mac Dhui for a while longer, but then left the area permanently.

Rural Montague Township was predominately used for agricultural purposes early on. Apples, wheat, and potatoes were major crops shortly after the turn of the century. Red kidney beans became the cash crop between the World Wars followed by peas, dairying and finally cucumbers in the 1960's. According to the authors of the centennial book 1867 Montague 1967, forty years ago (i.e. approximately 1927) very few non-farmers lived in Montague Township and today (i.e. 1967) more than 400 homes dot the township "whose owners are not engaged in farming, but who choose to

live out where there is more 'elbow room'" (106). According to the 1990 U.S. Census of Population and Housing, there are only 15 persons in farms residences (residences located on more than one acre of land and from which \$1,000 or more of agricultural products were sold in 1989) in Montague Township. Thus a tremendous shift in the township's economic base has occurred within the last sixty years.

Beginning in the early 1950's, several manufacturers began locating in the White Lake area. The following is an example of how one particular manufacturer came to the area. As early as the 1850's it was known that Muskegon County was underlain with salt deposits, but the machinery of the day was not sufficient to tap it. In fact, Hiram Hulbert and his sons from Grand Rapids had tried drilling for salt in 1844 twelve miles up the White River from White Lake. Failing, they built a sawmill instead. The Hooker Electrical Chemical Company was successful in drilling for salt a little more than a century later. Using the salt and the cooling waters of White Lake, it began the production of chlorine, caustic soda, and hydrogen in 1954 (1867 Montague 1967 106). Production ceased more than ten years ago at the Hooker plant. Two other manufacturers established themselves to the west in White River Township, E. I. DuPont and Union Carbide. Both used byproducts from the Hooker Electrical Chemical Company in their processes.

The White Lake area, including Montague Township, has seen the rise and fall of several major economic forces and their accompanying workforces. However, the Township continues to thrive 123 years after its beginning as an autonomous township.

III. Community Profile

The following information provides detailed descriptions of the physical, demographic, and economic characteristics of Montague Township. It is important that the current status of these characteristics be inventoried and analyzed in order to provide a foundation on which to set the goals and objectives.

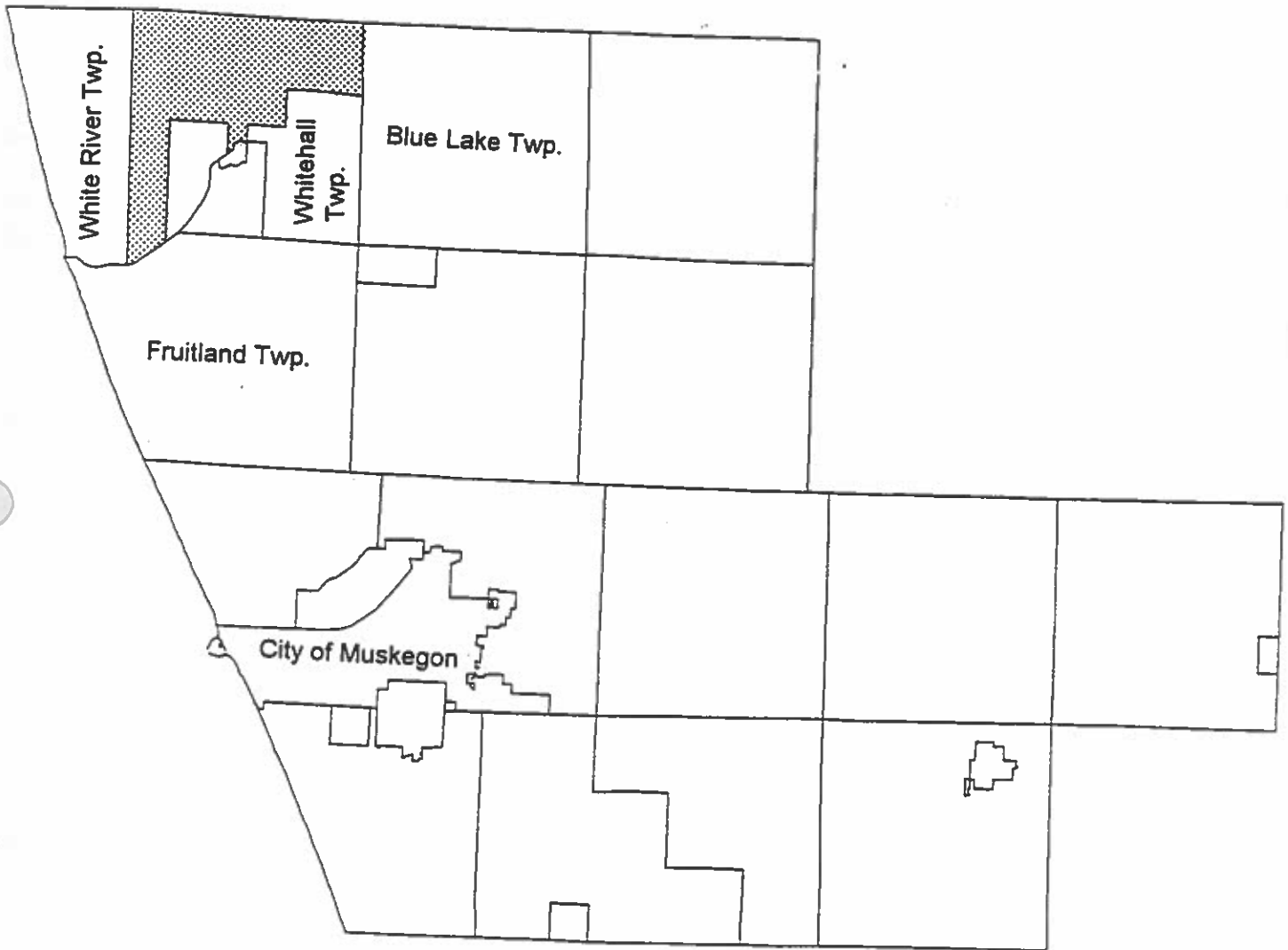
A. Geographic Context

Muskegon County, home of Montague Township, is located along the shore of Lake Michigan half way between the Indiana border and the Grand Traverse Bay (Map 1). Montague Township is a rural-suburban, forested and farmed area, located in the northern portion of Muskegon County (Map 2). Montague Township predominately lies within the northwest portion of Township 12 North, Range 17 West. A few acres are located within the extreme northwest corner of Township 11 North, Range 17 West.

Map 1 Muskegon County, Michigan



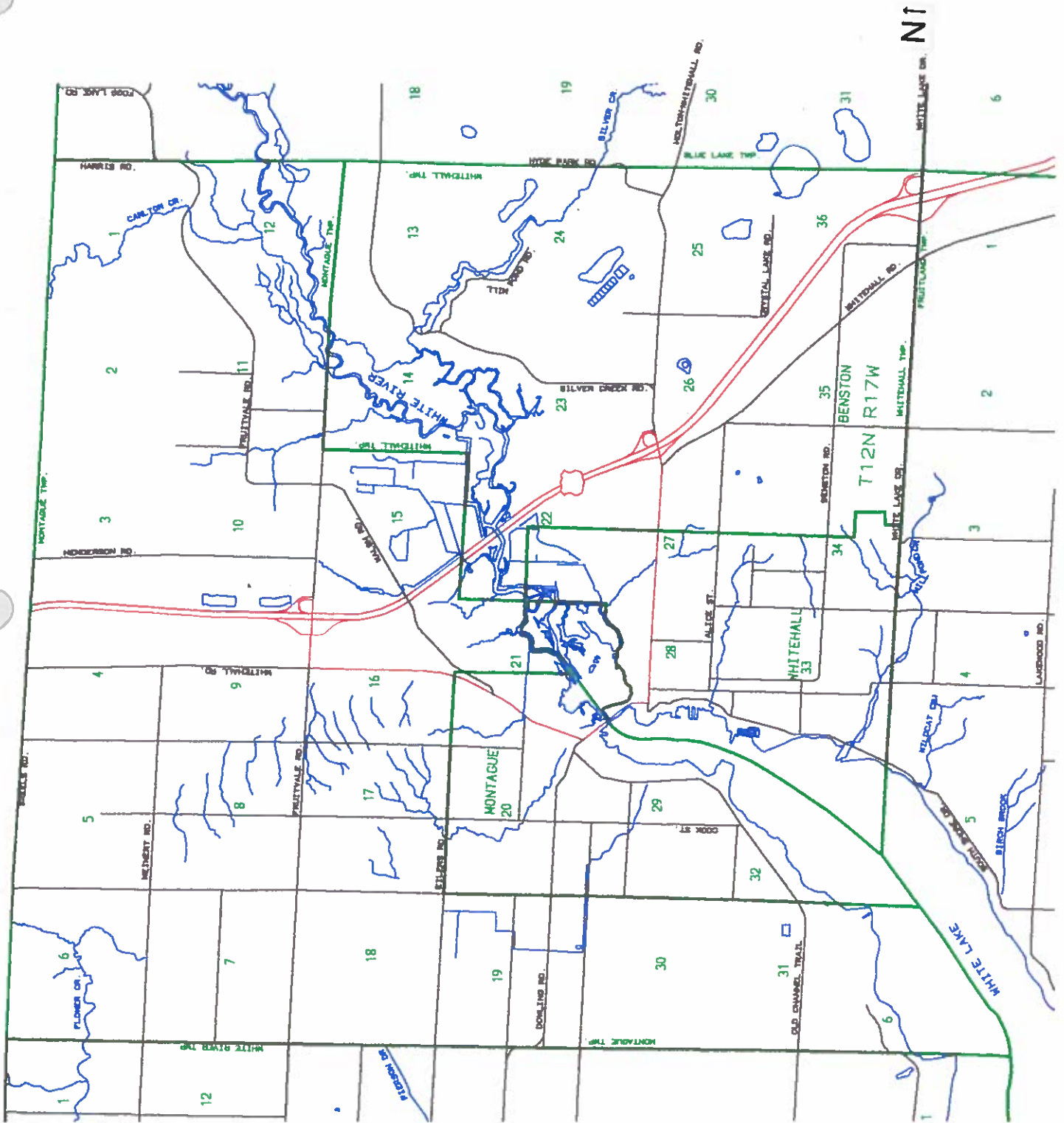
Map 2 Montague Township (shaded) and other Muskegon County Townships



Montague Township is a civil (political) township comprised of approximately 19.5 sections of land, which is approximately 19.5 square miles. The township is bordered by Grant Township to the north, Blue Lake Township to the east, the Cities of Montague and Whitehall to the southeast, Fruitland Township to the south, and White River Township to the west. Montague Township is a part of what is known as the "White Lake Area". The Area is comprised of Montague, Whitehall, Blue Lake, Fruitland and White River Townships and the Cities of Montague and Whitehall. The county seat, the City of Muskegon, is located approximately 20 miles to the south.

In addition to its position between rural and urban areas, Montague Township has a few other notable features. The White River flows through the township from the northeast to the southwest into White Lake, and U.S. Route 31 traverses the township north to south (Map 3).

Map 3 Montague Township, Muskegon County



B. Climate

Due to its proximity to Lake Michigan, Montague Township experiences unique climatic conditions. Lake Michigan has a moderating affect on the climate. For instance, summers are cooler and winters are milder along the lakeshore than they are inland. The difference is noticeable when comparing average daily temperatures between the cities of Muskegon, located along the lakeshore, and Grand Rapids, approximately 40 miles inland. Available data for the two cities illustrates that during the summer months Grand Rapids experiences between a one and two degree higher average daily maximum temperature than Muskegon. During the winter months, the City of Muskegon experiences between a two and three degree higher daily minimum temperature than Grand Rapids. These climatic differences are illustrated in Tables 1 and 2. The data reflects normals based upon the 1961-1990 record period of the National Climatic Data Center for the cities of Muskegon and Grand Rapids, Michigan.

The presence of Lake Michigan also causes a climatic phenomenon known as "lake effect" snow. As cold air passes over Lake Michigan's warm water, the air is warmed and gains moisture from lake evaporation. The warmed, moisture-laden air rises, forms clouds, and produces snow along the colder shoreline of Lake Michigan as far as 40 miles inland. Climatologists have identified a snowbelt along the lakeshore counties of Muskegon, Ottawa, Allegan, and Van Buren whose average seasonal snow fall is over 90 inches (Eichenlaub 117).

Michigan's winter climate is dominated by cold Continental Polar or milder Pacific air masses. They are fairly dry air masses because they have either formed over a landmass or have lost moisture due to orthographic uplift. On occasion, tropical air masses dominate Michigan's summer climate. Tropical air masses are moist and account for Michigan's humid summer weather (Eichenlaub 4). Montague Township's climate is further shaped by the presence of Lake Michigan. When the prevailing westerly winds cross Lake Michigan, Montague Township's climate has semi-marine modifications to it. Marine climates are characterized by milder temperatures, increased precipitation, and higher and more sustained wind speeds. The aforementioned modifications are the "lake effects" Montague Township residents are familiar with.

Precipitation is fairly well distributed throughout the year. The growing season, May through September, receives an average of 2.87 inches per month. September is the wettest month with 3.88 inches of precipitation, while February is the driest with 1.49 inches. The highest temperature ever recorded (during the 1949-1995 record period) in Muskegon was 99 degrees Fahrenheit in August of 1964 and the lowest was -15 degrees in December of 1976 (U.S. Dept. of Commerce, 1995 Local Climatological Data: Annual Summary with Comparative Data, Muskegon, Michigan 3).

Table 1 City of Muskegon Climatic Data

CITY OF MUSKEGON CLIMATIC DATA Normals for 1961-1990													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<i>Average Daily Maximum (F)</i>	28.8	30.8	41.2	54.5	66.6	75.6	80.3	78.1	70.8	59.0	46.0	33.7	55.5
<i>Average Daily Minimum (F)</i>	17.7	18.0	25.4	35.4	45.1	54.4	60.2	58.8	51.5	41.5	32.7	23.3	38.7
<i>Average Total (water equivalent in inches)</i>	2.34	1.49	2.51	2.90	2.60	2.35	2.10	3.41	3.88	2.80	3.15	3.03	32.56

Source: United States Department of Commerce, National Oceanic and Atmospheric Administration. 1995 Local Climatological Data: Annual Summary with Comparative Data, Muskegon, Michigan.

Table 2 City of Grand Rapids Climatic Data

CITY OF GRAND RAPIDS CLIMATIC DATA Normals for 1961-1990													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<i>Average Daily Maximum (F)</i>	29.0	31.6	42.8	56.6	69.3	78.7	82.8	80.5	72.0	59.8	45.8	33.5	56.9
<i>Average Daily Minimum (F)</i>	14.7	15.8	25.4	35.4	45.6	55.3	60.4	58.4	49.9	39.1	30.2	20.7	37.6
<i>Average Total (water equivalent in inches)</i>	1.83	1.42	2.63	3.37	3.13	3.68	3.19	3.57	4.24	2.81	3.32	2.85	36.04

Source: United States Department of Commerce, National Oceanic and Atmospheric Administration. 1995 Local Climatological Data: Annual Summary with Comparative Data, Grand Rapids, Michigan.

C. Transportation

The transportation system is often described as the physical and operational infrastructure which accomplishes the movement of people and goods from place to place. Transportation systems are broken into a number of subsystems known as *modes* (such as highway, rail, air, pedestrian, waterborne, biking, etc.) and involve different types of vehicles and routes.

Like many rural and suburban areas, the primary mode of transportation in Montague Township is vehicular traffic (Map 4). For ease of planning, engineering, maintenance, and funding, roadways are classified according to their function. The following is a list of basic roadway classifications:

Highways	Move large numbers of people and vehicles long distances at high speeds and volumes
County Arterials	Similar to highways except they have lower speeds and volumes and cover shorter distances
Local Roads	Provide access to resources, farms and residences for short distances at low speeds

The highways in Montague Township, U.S. Route 31 and U.S. Business Route 31, do indeed move large numbers of people. According to the Michigan Department of Transportation, in 1995 the annual average 24-hour traffic volume for U.S. Route 31 between the Colby Street and Fruitvale Road exits was 15,000 vehicles. The 1995 annual average 24-hour traffic volume for U.S. Business Route 31 from the bridge in the City of Montague to its intersection with U.S. Route 31 was 4,700 vehicles.

Montague Township has approximately 53.89 miles of local roads. Of the 53.89 miles of road, 8.03 miles (15%) are not paved (as of December 31, 1995). As the township develops and traffic increases, the choice of material used to maintain these roads (asphalt, gravel, etc.) should be evaluated.

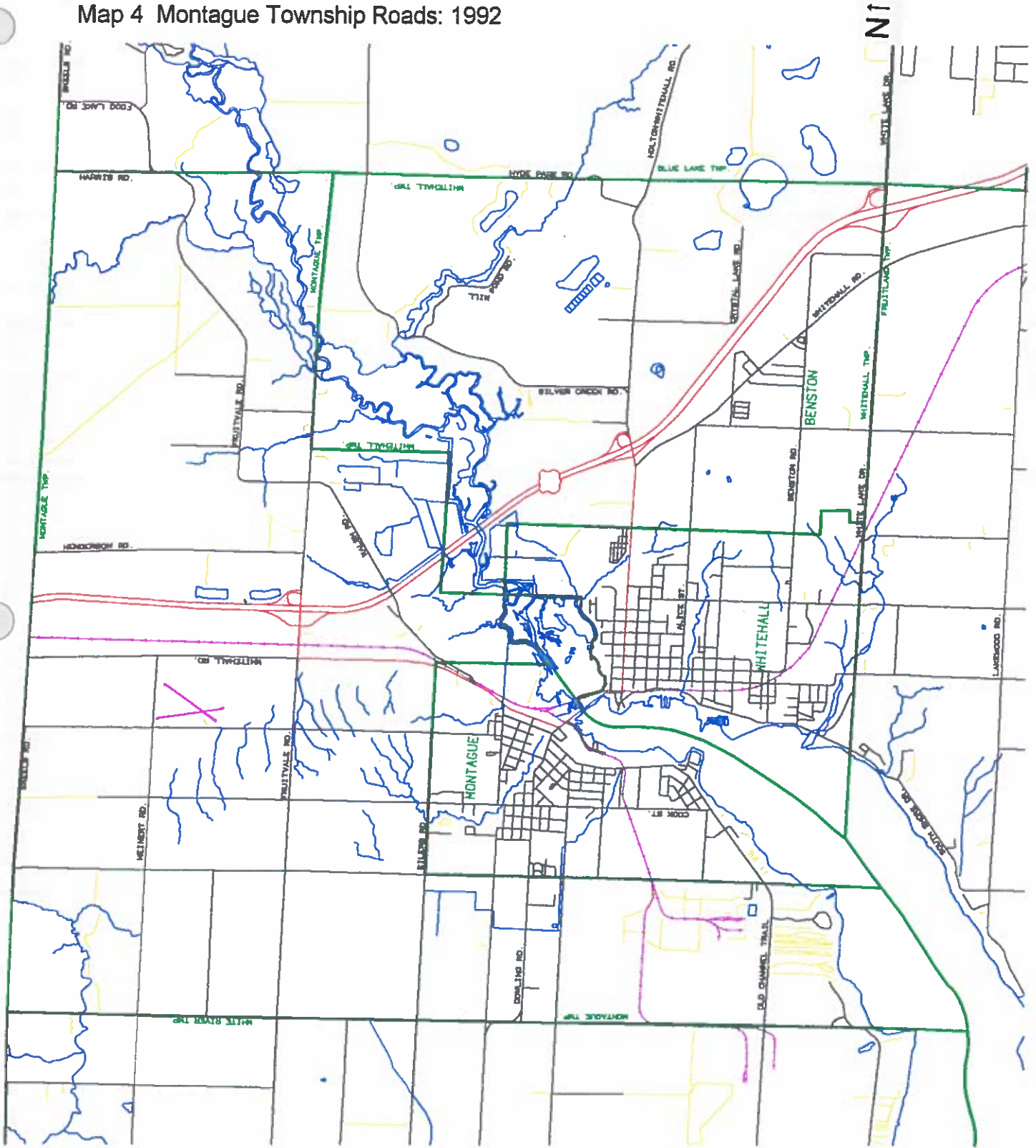
The location of roads (or lack of them) is a key factor in determining where future development of land will occur because there is an important link between transportation and development. Land use, and thus land use controls such as zoning and future land use plans, affect transportation service. Conversely, transportation service affects land use. Various land use characteristics have very marked effects on transportation facilities. These include type, intensity, and location of development; site design; and location of access. These and other factors help determine the nature and amount of traffic generated in the area, which is the principal determinant of the adequacy of the surrounding

transportation facilities. These facilities, and especially highways, have a substantial impact on surrounding development and land use.

This mutual interdependence has often resulted in a transportation facility and land use cycle of development. Overburdened transportation facilities prompt the construction of new and improved facilities. This creates better access, which prompts more intensive use of the surrounding land. More intensive use generates more traffic. This added traffic causes the premature obsolescence of the new transportation facilities. Therefore, the success of the new transportation facility in creating new access has often elicited its own obsolescence.

The problem of balancing transportation facility development and the proper and efficient use of land could be addressed by controlling major traffic generators and overall traffic generation from a larger area. This is done by controlling the type, intensity, and location of land uses. The prime objective is the control of traffic levels and traffic load characteristics for such areas, so as to be compatible with the characteristics of the transportation system in the area.

Map 4 Montague Township Roads: 1992



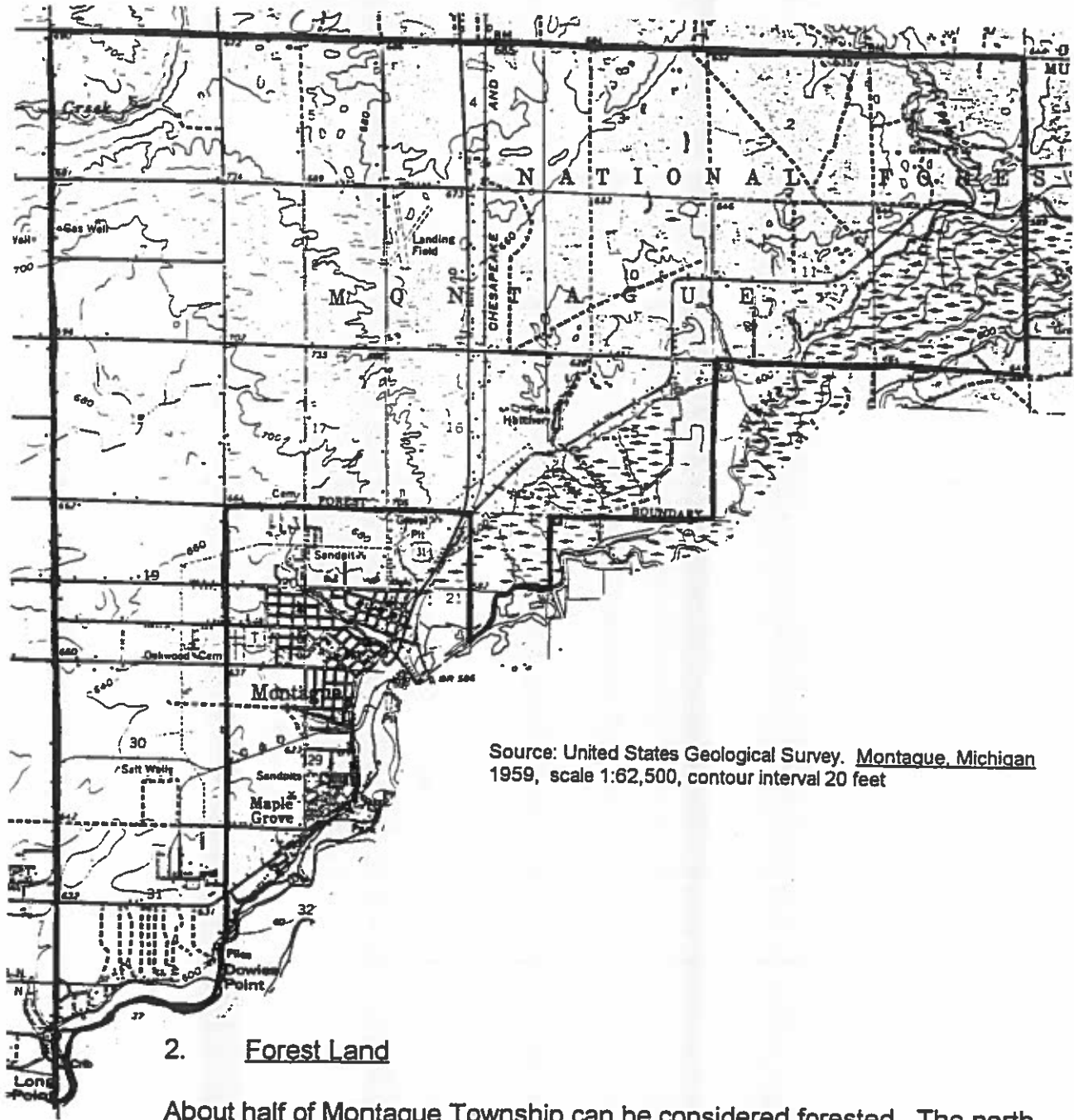
D. Natural Features

The natural features that comprise Montague Township's natural environment are important factors in the planning process because they aid in determining the land's suitability for different types of development. Natural features are often cited as being one of the important reasons people choose to live in the rural-suburban area of Montague Township. They are important because they significantly contribute to a positive quality of life for residents. But these enticing natural features can be lost due to uncontrolled growth and improper site planning. The ecological functions these natural features perform can also be destroyed or altered to such an extent as to severely retard their proper functioning if growth isn't controlled and site planning is not done properly.

1. Topography

The topography of Montague Township is the result of complex glacial processes. The Wisconsin glacial ice sheet, and more specifically its Lake Michigan Lobe, covered this portion of Michigan approximately 8 to 12 thousand years ago. The White River and its accompanying tributaries flow from the northeast to the southwest through the township. River bottom land predominates the eastern portion of the township, while the western portion is characterized by higher ground. Elevation within the township ranges from 585 feet to 748 feet above mean sea level (Map 5). Any alterations to the natural topography effects natural drainage systems, therefore where possible, all development should integrate the natural topography to reduce costly storm water management systems and construction methods to control drainage and sedimentation.

Map 5 Montague Township Topography



About half of Montague Township can be considered forested. The north-central and eastern portions along with the southwestern portion of the township contains the majority of the forest land. And Sections 1-5, 8-12, and 15-17 of Montague Township are designated as being within the Manistee National Forest. Forest land provides a diverse habitat for wildlife, recreational opportunities for township residents, retards soil erosion, and stores stormwater.

3. Water Features

Montague Township has several surface water features, two of which are White Lake and a pond within the Henderson Lake Nature Center. The White River, Flower, Carleton (Landford), and Carlton Creeks traverse Montague Township. The White River is the main drainage course for Montague Township and surrounding areas. Harmful materials from roads, lawn care chemicals, farms, and residential sewage can pollute surface runoff within the White River drainage basin. In addition, siltation and eutrophication are harmful effects of erosion and polluted runoff that also impact waterways. In 1975, the Natural Resources Commission designated portions of the White River and its tributaries as a *Country-Scenic River* in accordance with the Natural River Act (Public Act 231 of 1970). *Country-Scenic Rivers* are defined as rivers in an agricultural setting with pastoral borders and a few readily accessible homes. The Natural River Act of 1970 is intended to identify rivers that need their natural qualities protected from unwise use and development (Michigan Department of Natural Resources, Michigan's Natural Rivers Program). A Natural River Plan was adopted at the time of designation in 1975. Montague Township administers the Natural River zoning of the White River, Carleton (Landford) Creek, and Carlton Creek within Montague Township (Michigan Department of Natural Resources, White River Natural River Zoning). These zoning regulations are the local controls to carry out the recommendations of the Natural River Plan.

a. Wetlands

Wetlands are another important water resource. Wetlands are areas where water is present either in or on the land. They are defined by the interaction taking place between land and water, and more specifically, by the biological activity which takes place. Wetlands provide needed habitat for many organisms and serve as a filter for water as it seeps into the groundwater supply. This filtering process includes removing many pollutants from precipitation of surface water, a vital function in maintaining a healthy water supply. The filtered water then recharges groundwater supplies. Small pockets of wetlands are found adjacent to the White River and elsewhere throughout the township.

b. Groundwater

Most Montague Township residents depend upon groundwater as their only source of potable water. Therefore, the protection of groundwater and surface water features should be an environmental priority for Montague Township. There are a couple of known contaminated sites in the region (Michigan Department of Natural Resources, Michigan Sites of Environmental Contamination, vol. 1), therefore, groundwater contamination should be a critical concern of Montague Township residents. The potential for groundwater contamination depends upon the type of soil present. For example, sand is very permeable and thus allows for a greater amount of infiltration of surface water into the groundwater supply, whereas clay is very impermeable and retards contamination. However, if clay is near enough to the surface, it will cause water to puddle or runoff to more permeable soils.

Montague Township is comprised of rural forested, developed suburban, and agricultural lands and has experienced moderate development pressures. Therefore, there is less of a potential for groundwater contamination from residential septic systems at this time. This is not to say there is no potential. The following discussion concerns the several major sources for groundwater contamination (Libby and Kovan):

Waste: As water passes through decomposing waste it can transmit organic and inorganic pollutants into an aquifer. Outflow from a conventional system or land disposal system for municipal waste or even a private residential septic system can carry harmful nitrates into the water supply. Indiscriminate dumping and junk storage also contribute to groundwater contamination. According to the book; Michigan Sites of Environmental Contamination, vol. 1, there are at least one site of environmental contamination in Montague Township. This list is compiled by the Michigan Department of Natural Resources' Environmental Response Division pursuant to the Michigan Environmental Response Act (MERA), Public Act 307 of 1982, as amended. The list identifies the Hooker Chemical Company (now the Occidental Chemical Corporation) within section 31 of Montague Township as being contaminated.

Farms: Potential contaminants from farms include nutrients, pesticides, salt, and other toxic organic and inorganic materials. Nutrients like phosphates and nitrates are residuals of fertilizers and have the potential to contribute to eutrophication. Nitrates can also be leached from concentrations of animal waste or decomposing organic material.

Gasoline Storage: An increasingly bothersome source of groundwater contamination are underground storage tanks found throughout Michigan. Some of these tanks are abandoned, but continue to leak water-soluble contaminants. By the sheer number of contaminated sites, underground gasoline storage tanks are the most troublesome contamination source in Michigan. The water supply of 50,000 persons can be critically contaminated by a gasoline leak of a gallon a day (Miller 538).

The most promising methods of groundwater protection are proper land use management, pollution regulation, and land acquisition. Land use management is the first step in the process of protecting groundwater resources. Defensive regulation or control must be built on the base of logic and foresight contained in a master plan. By itself, planning does not sufficiently protect sensitive groundwater areas but does provide the basis for land development controls such as zoning which can assist in groundwater protection.

4. Soils

For the majority of rural Michigan, *soil*, and the type of development it allows or restricts, is a key factor in determining where future development will occur. The suitability of soils for roads, foundations, wells, and septic systems is critical in determining the location and intensity of development. Since a small portion of Montague Township has sewer utilities available for use, the septic suitability of the soil is not a constraint for development in these few areas. Various soil characteristics such as depth, permeability, wetness, shrink-swell potential, erosion potential, slope, and weight-bearing capacity are all factors that make a soil suitable or not for a given use. Often, the soil characteristics that create development limitations can be overcome by appropriate design and management.

Soil surveys assist in determining the extent of flood prone areas, access to aquifers, erosion and sedimentation potential, ability to site septic tanks and absorption fields, and the limitations for construction. Soil information is important in the planning process because it can graphically depict areas which should or should not be developed in a particular manner based upon the soil's suitability. In some cases, mitigation measures can be used to alleviate some or all of the limitations for a particular soil type. However, these measures are often costly, both to the developer/owner, and to society at large (via the natural environment). Therefore, soil maps often become an important guide for siting future development.

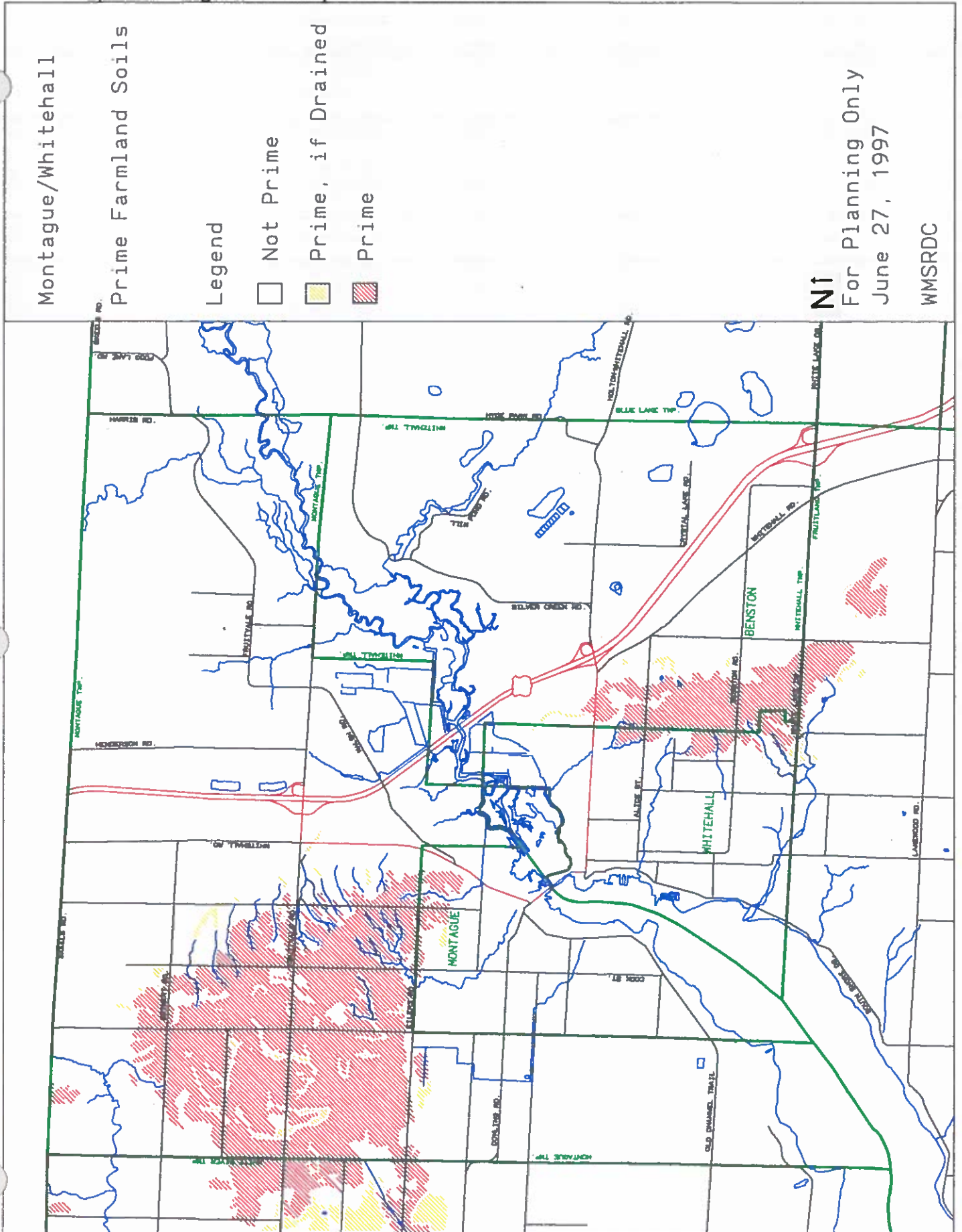
There are five dominant soil series located within Montague Township according to the Soil Survey of Muskegon County, Michigan. They are the Au Gres, Croswell, Kerston, Nester, and Rubicon soil series. Au Gres series soils are somewhat poorly drained sandy soils. They are common in the wetter portions of outwash and lake plains or near rivers and lakes. Au Gres series soils are located in the northeastern portion of Montague Township. Croswell series soils are predominately found in the northeast corner of the township. They are moderately well-drained soils with high sand content and very rapid permeability. Kerston series soils are located adjacent to the White River and are very poorly drained and consist of alternate layers of sand and muck. The water table is at or near the surface year-round and, because they are located adjacent to waterways, are prone to flooding. Nester series soils typically occupy hilly areas on glacial till plains or moraines. In Montague Township, they are found on the hilly ground in the west-central portion of the township. Nester soils have moderately slow permeability and are very fertile. Finally, Rubicon series soils are well-drained, deep, and sandy. The

soil's acidity and lack of nutrients make this soil unsuitable for crops and more suitable for forest products. In Montague Township, Rubicon soils are located in the northern tier of sections and the extreme southwest sections of the township.

a. Prime Farmland

The Natural Resources Conservation Service has identified eleven different soils that, under slightly varying conditions, are considered to be prime farmland in Muskegon County (Natural Resources Conservation Service's soil analysis for Muskegon County, Michigan). The United States Department of Agriculture defines prime farmland soils as soils that are suited for food, feed, forage, fiber, and oilseed crops. Prime farmland soils do not include built-up or water areas, but can include areas that are not currently being cultivated. If well managed, prime farmland soils are able to produce a sustained high yield of crops economically (U.S. Dept. of Agriculture, Natural Resource Conservation Service and Forest Service. Soil Survey of Oceana County, Michigan. 177). For a more detailed definition of prime farmland, contact the local Natural Resources Conservation Service office. If development of prime agricultural soils occurs, the soil's productivity is lost forever and the viability and integrity of remaining agricultural activities is threatened. Map 6 indicates that prime farmland soils are predominately located in the west-central portion of the township.

Map 6 Montague Township Prime Farmland Soils



Note: These soils are considered to be prime farmland soils under slightly varying conditions

b. Erosion

One indicator as to whether or not an area is suitable for development is the tendency for "sheet and rill" erosion by water. Sheet and rill erosion is characterized by trenches that form in the soil following a period of relatively intense precipitation. This type of erosion is considered the most damaging. One of the erosion factors in the Universal Soil Loss Equation (USLE) that indicates a soil's susceptibility to sheet and rill erosion is known as K Factor (U.S. Dept. of Agriculture, Soil Survey of Oceana County, Michigan 197). The USLE uses the K Factor to measure the average annual rate of soil loss in tons per acre per year caused by sheet and rill erosion. The estimates are calculated on the percentages of sand, silt, and organic matter, as well as soil structure and permeability. The higher the K Factor value, the higher the potential for soil erosion. The type of soil also plays an important role in whether or not sheet and rill erosion will occur. Soils composed of large percentages of sand or silt are more probable to erode than are soils composed of large percentages of clay or gravel.

Montague Township is dominated by a low K Factor erosion potential (Map 7). Natural plant cover prevents wholesale soil loss because roots hold soil in place, even during heavy rainfalls. The fact that half of Montague Township possesses natural plant cover predominately explains the township's overall low K Factor. The areas identified on Map 7 as having moderate potential for soil erosion are predominately those areas currently in crop production. The soil is more exposed in these areas and therefore erodes more easily.

A change in land use patterns will often create substantial changes to the balance between natural plant cover and impervious surfaces. The more impervious surfaces there are, the greater the probability that soil erosion will occur. The following items are some general principals regarding soil erosion.

- ◆ The amount of sediment-laden runoff generated is dependent upon the type of soil and the kind of land uses prevalent in a given area.
- ◆ Natural areas, where vegetation remains intact, are almost always better equipped to absorb and retain water than are areas in either agricultural or urban use

Map 7 K Factor Erosion Potential

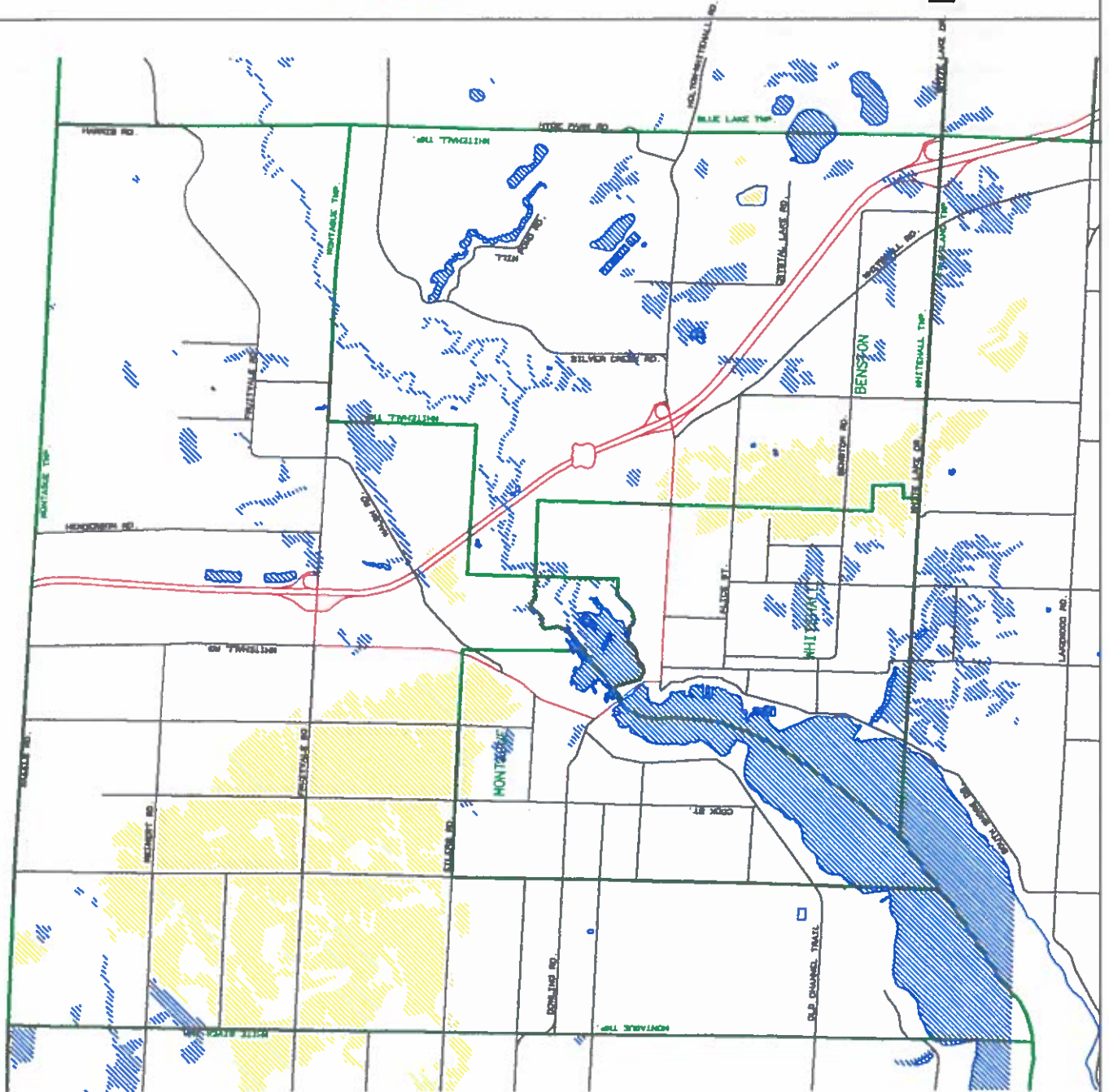
Montague/Whitehall

K Factor

Legend

- Low
- Moderate
- High
- No Data

N↑
 For Planning Only
 April 17, 1997
 WMSRDC



- ◆ Those areas best able to absorb and retain rainfall include forests and other areas of dense vegetation.
- ◆ Those areas which have the greatest impact on the amount of runoff created include urban lands with high percentages of impervious surfaces, and agricultural lands in row crops.

c. Septic Suitability

The location of soils suitable for septic systems to properly function is critical in determining the extent and location where development can occur without public utilities. Soil is not considered to be suitable for septic systems if it has excessively high or low permeability, if the slope is excessive, or the water table is too near the surface. The permeability and coarseness of a soil has a direct impact on its ability to properly filter toxins (i.e. septic material) as they pass through the soil. The majority of the soil in Montague Township is highly permeable (U.S. Dept. of Agriculture, Soil Survey: Muskegon County, Michigan 56-61). This is an important concern because toxin-laden water may pass too quickly through the soil to be properly filtered, causing groundwater contamination.

Table 3 highlights the general soil limitations for septic systems along with building site limitations. Depending on local conditions the limitations for septic systems will vary. For instance, septic tanks may operate safely and effectively during a dry summer but the very same tanks may malfunction or flood during an extraordinarily rainy spring. The limitations for septic systems listed are all severe because of the high sand content, and therefore high permeability, of the soils in Montague Township.

The main concern with septic suitability is the pollution of groundwater. Areas which have a high flood frequency are not generally considered to be appropriate locations for septic systems. When ground becomes saturated, toxins are removed from septic tanks and flow into groundwater or surface water supplies. Septic systems contain materials such as household cleaners, bacteria and other toxic nuisances that are more hazardous than human waste. Therefore, when a septic system fails, many different pollutants are released.

In order to reduce the amount of pollution released from septic tanks, citizens should refrain from disposing of household chemicals such as ammonia, bleach or other hazardous substances into septic systems and perform routine proper septic maintenance. Septic tanks should be maintained on a regular schedule by adding necessary chemicals, cleaning, and using them only to capacity.

Table 3

Montague Township Generalized Building Site and Septic Limitations				
Soil Series	Soil Type	Building Site Limitations		Septic Limitations
		Local Roads	Dwellings with Basements	Septic Tank Absorption Fields
Au Gres	Au Gres-Saugatuck sands 0-6% slopes	<i>severe</i>	<i>severe</i>	<i>severe</i>
Croswell	Croswell and Au Gras sands 0-6% slopes	<i>moderate-severe</i>	<i>severe</i>	<i>severe</i>
Kerston	Kerston muck	<i>severe</i>	<i>severe</i>	<i>severe</i>
Nester	Nester-Kawkawlin loams 2-6% slopes	<i>severe</i>	<i>moderate-severe</i>	<i>severe</i>
	Nester-Ubly sandy loams 2-6% slopes	<i>severe</i>	<i>moderate</i>	<i>severe</i>
Rubicon	Rubicon sand 0-6% slopes	<i>slight</i>	<i>slight</i>	<i>severe</i>

slight - soil properties or site features are generally favorable for the indicated use and limitations are minor and easily overcome
moderate - soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations
severe - soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required

Source: United States Department of Agriculture, Soil Conservation Service. Soil Survey of Muskegon County, Michigan. and the Natural Resource Conservation Service's soil analysis for Muskegon County, Michigan.

d. Flooding

The following map (Map 8) depicts another important element of soils, flood frequency. This factor is perhaps most important in terms of residential development, since direct and expensive property damage can occur from either frequent, or prolonged, flood events. Flooding is much more difficult to control than other soil related issues.

Flood frequency is determined by how often an area is inundated with water. For example, a floodplain which is regularly inundated would have a frequent classification. Floods are caused when the ground becomes saturated beyond its absorption capacity or when precipitation is too intense for quick absorption. The less permeable the soil and the higher the water table, the more prone an area is to flooding.

Areas that have a high probability of flooding should not be developed extensively. This helps prevent extensive and expensive property damage when a flood occurs. As an example, parks are an appropriate land use in areas prone to flooding because they can absorb more flood waters than a developed area and structural damage to picnic shelters, playgrounds, etc. is not as costly as it would be in a completely built area. Open space adjacent to flood prone areas is an ideal land use.

Flooding often transmits pollutants from streets, parking lots, and soils into surface water resources. Because there isn't a large amount of impervious surfaces (i.e. large parking facilities, paved roads, and structures) in the township, there is a lesser risk of surface water contamination. The potential for property damage caused by flooding is also relatively slight, with the exception of underground structures such as basements. Flooding can also cause severe soil erosion. In the case of Montague Township where most of the natural plant cover remains in flood prone areas, there is a low probability of severe soil erosion occurring because root systems retard soil erosion.

In conclusion, the potential for any toxic substance to enter into the water supply through the process of surface flood is rather minimal. On the other hand, the potential for groundwater contamination from septic system failures or improper agricultural management techniques is a threat. This is the case in most rural townships where there is limited or no public sewer systems.

Map 8 Montague Township Flood Frequency

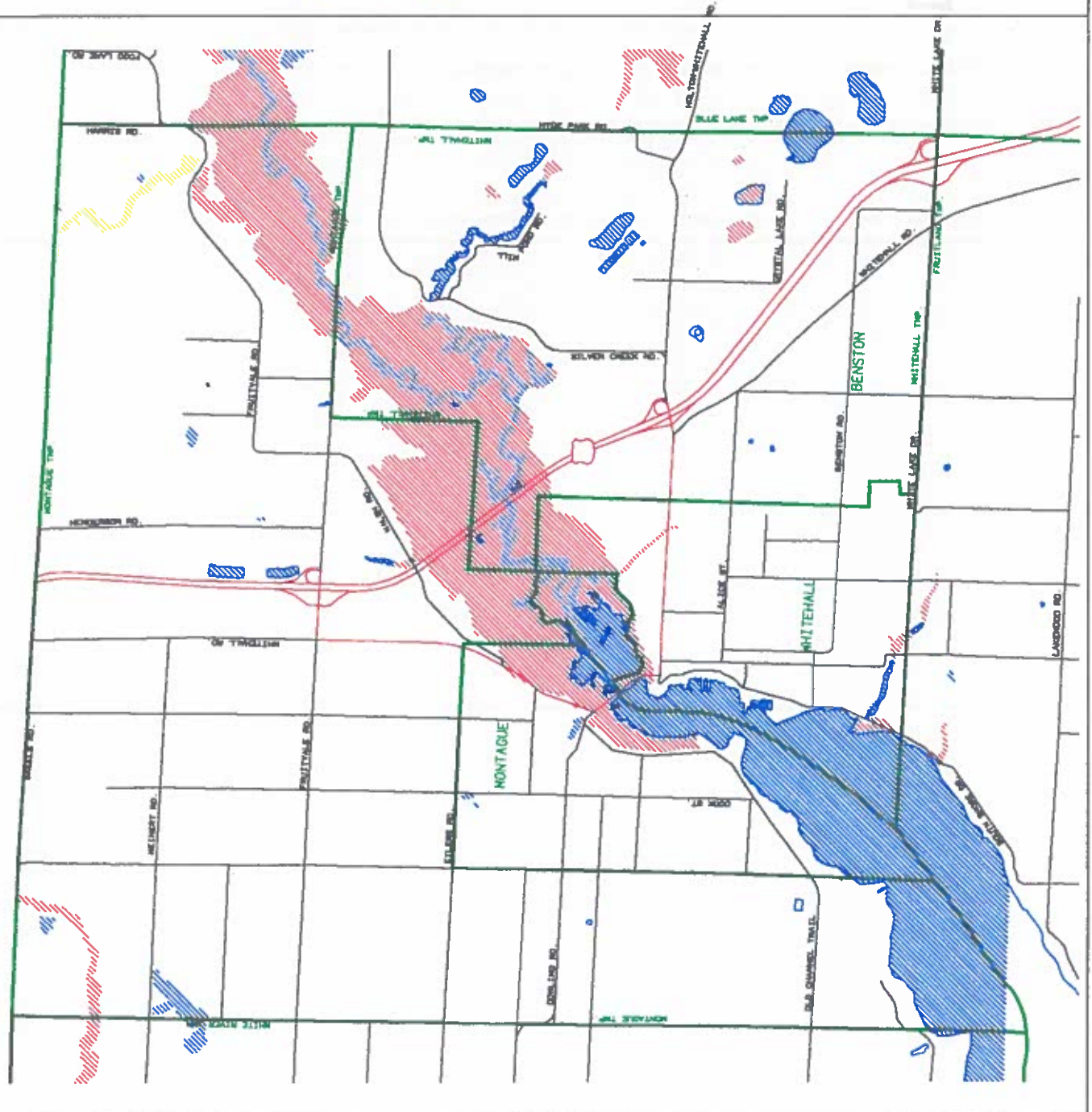
Montague/Whitehall

Flood Frequency

Legend

- None
- Common
- Frequent
- No Data

N1
 For Planning Only
 April 17, 1997
 WMSRDC



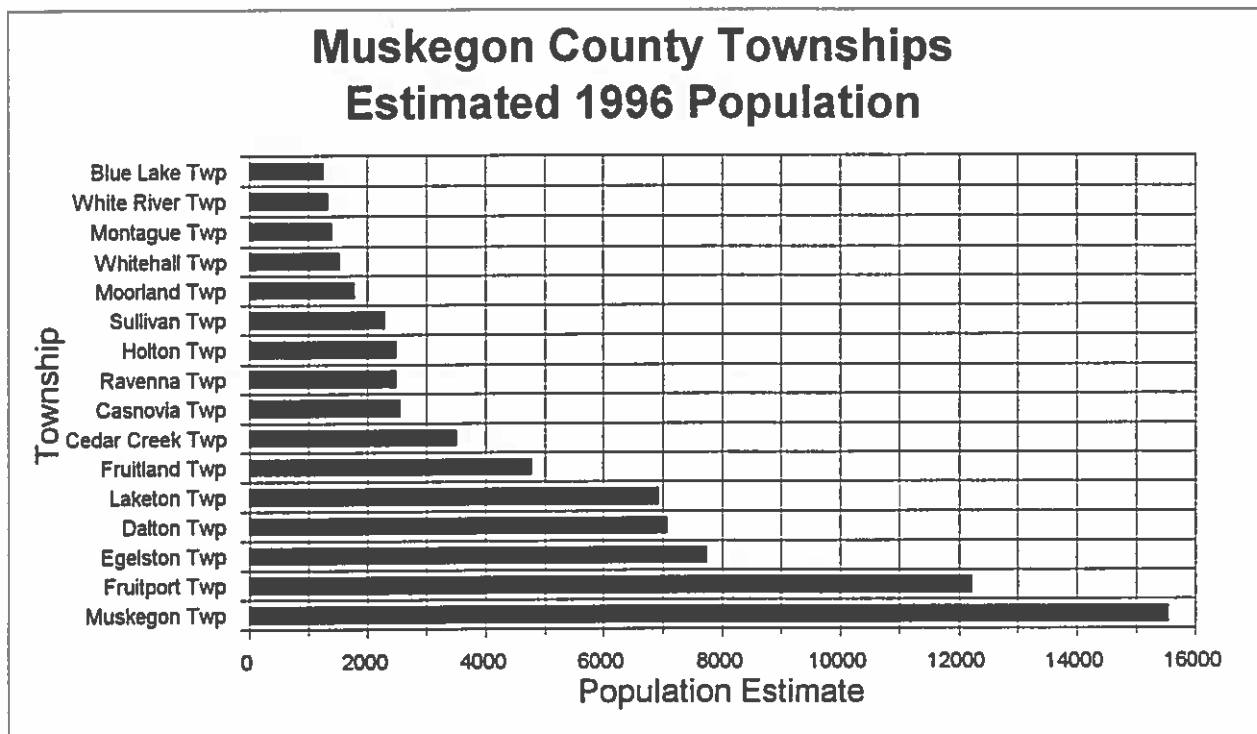
E. Population Characteristics

Planners attempt to make projections based on past patterns, for items such as growth, age distribution, income, and educational characteristics. The analysis of these factors help provide a clearer picture of the future in regards to population. These next sections will look closely at the population as primarily described in the 1990 U.S. Census of Population and Housing.

1. Population Trends and Projections

Figure 1 depicts the estimated 1996 population of Muskegon County townships. Montague Township is projected to be the third least populated township in Muskegon County in 1996. However, Montague Township is the third smallest township in Muskegon County in terms of area.

Figure 1



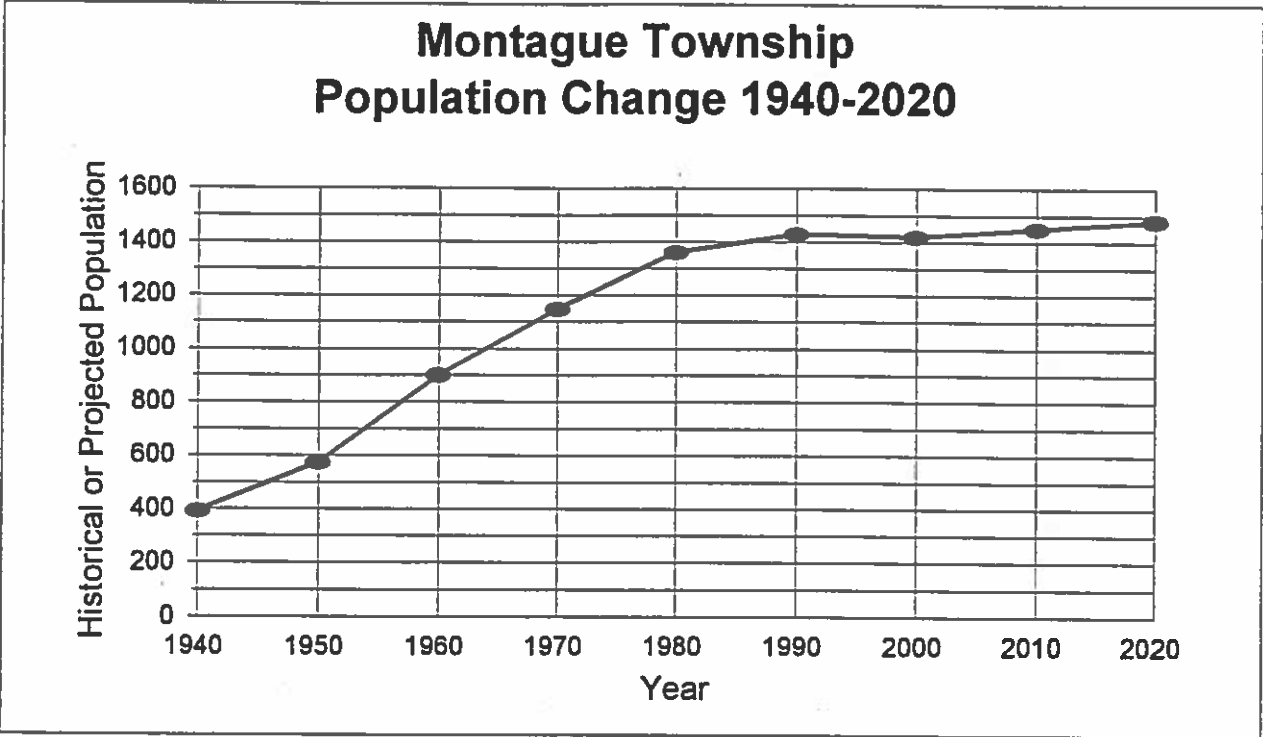
Source: 1990 U.S. Census of Population and Housing and WMSRDC

In 1970, Montague Township had a population of 1,147 persons. By 1980, the Bureau of the Census reported the population had increased 18.5%, to 1,359 persons. The population increased again by 1990 to 1,429 persons. According to the population projections of the West Michigan Shoreline Regional Development Commission, this trend is consistent with that found in other rural townships which form the nearest ring surrounding the Muskegon Urbanized Area. These forecasts are based on Census Bureau historical information which includes an analysis of births, deaths, and migration rates.

The aforementioned population projections indicate that Montague Township's 1996 population was approximately 1,396 persons, and will reach 1,420 by the turn of the millennium. Additional population forecasts are less reliable, but the prediction is for a total of 1,543 persons before the year 2020. When looking at these figures, it should be recognized that portions of the land in Montague Township is publicly owned by Montague Township or are unsuitable for development for various reasons. Thus the buildable area available is reduced, and the true population density is higher than a straight calculation would indicate.

Figure 2, *Montague Township: Population Change, 1940-2020*, illustrates the changes predicted to take place with the township's population during the next twenty years or so. These numbers can be used to predict other elements which are often associated with population growth, such as the need for additional dwelling units. For instance, in 1990 there were 2.66 persons per dwelling unit in Montague Township, which is slightly higher than Muskegon County's figure. With the township's projected additional 114 persons by the year 2020, the township will need at least 42 dwelling units to house them at 2.66 persons per dwelling unit. *At least*, because according to national figures, the average number of persons per dwelling unit is steadily decreasing and the proportion of dwelling units used for seasonal, recreational, or occasional use may be on the increase. However, the number of persons per dwelling unit in Montague Township has remained fairly constant since 1980. And the percentage of seasonal, recreation, or occasionally used dwelling units in Montague Township has decreased from 3.3% in 1980 to 3.0% in 1990. Therefore, if population and housing trends between 1980 and 1990 continue, Montague Township should not experience a large increase in the demand of additional housing.

Figure 2



Source: 1990 U.S. Census of Population and Housing and WMSRDC

Montague Township: Population Change, 1940-2020									
Year	1940	1950	1960	1970	1980	1990	2000	2010	2020
Persons	392	574	899	1,147	1,359	1,429	1,420	1,480	1,543

2. Racial Characteristics

Table 4, *Racial Composition of Muskegon County and Selected Townships*, shows that the racial distribution within Montague Township and its neighbors differs markedly from the county at large. Muskegon County can be said to have a fairly diverse racial distribution, while Montague Township is quite homogenous with only 1.9% of its residents being non-white persons. While the population has increased since 1990, it is likely that the population's racial composition has not changed significantly during the last several years.

Table 4

RACIAL COMPOSITION OF MUSKEGON COUNTY AND SELECTED TOWNSHIPS						
	White	Black	Indian	Asian	Other	Total Persons
Montague	1,402 (98.1%)	7 (0.4%)	9 (0.6%)	8 (0.6%)	3 (0.2%)	1,429
Whitehall	1,414 (96.6%)	24 (1.6%)	18 (1.2%)	2 (0.1%)	6 (0.4%)	1,464
Blue Lake	1,013 (82.0%)	197 (16.0%)	21 (1.7%)	2 (0.2%)	2 (0.2%)	1,235
White River	1,229 (98.3%)	2 (0.2%)	16 (1.3%)	3 (0.2%)	0 (0%)	1,250
Muskegon Co	133,974 (84.3%)	21,513 (13.5%)	1,454 (0.9%)	707 (0.4%)	1,335 (0.8%)	158,983

Source: 1990 U.S. Census of Population and Housing

3. Age Distribution

It is useful to note an increase or decrease in certain population groups, specifically the school and the retirement age populations. These population groups can indicate whether or not there is an increased need for capital and service expenditures.

As can be seen by the following table and figures, two indices are significant when making this kind of analysis. The first is age distribution. In Muskegon County, the pattern of age distribution among the various local units of government is not significantly different from place to place. As Table 5, *Age Distribution: Muskegon County and Selected Townships* shows, there are a few age groups in Montague Township with larger number of persons in them. In Montague Township, the largest age groups include 5-19, 25-29, and 35-44 year olds. The 10-14 and 35-39 age groups have the largest number of persons in them with 122 persons each. In the county, the largest age groups include birth-9 and 25-34 year olds. Montague Township's distribution indicates that the largest

age groups contain either a school-age child or is most likely that child's parent. Therefore, there is a large school age population presently, and the potential for a great many more pupils in the near future. Montague Township's age distribution might be partially explained by its status as a "commuter" community. Table 5 also indicates the age distribution for the remainder of the comparison group, and shows that the pattern varies only slightly for the townships surrounding Montague Township.

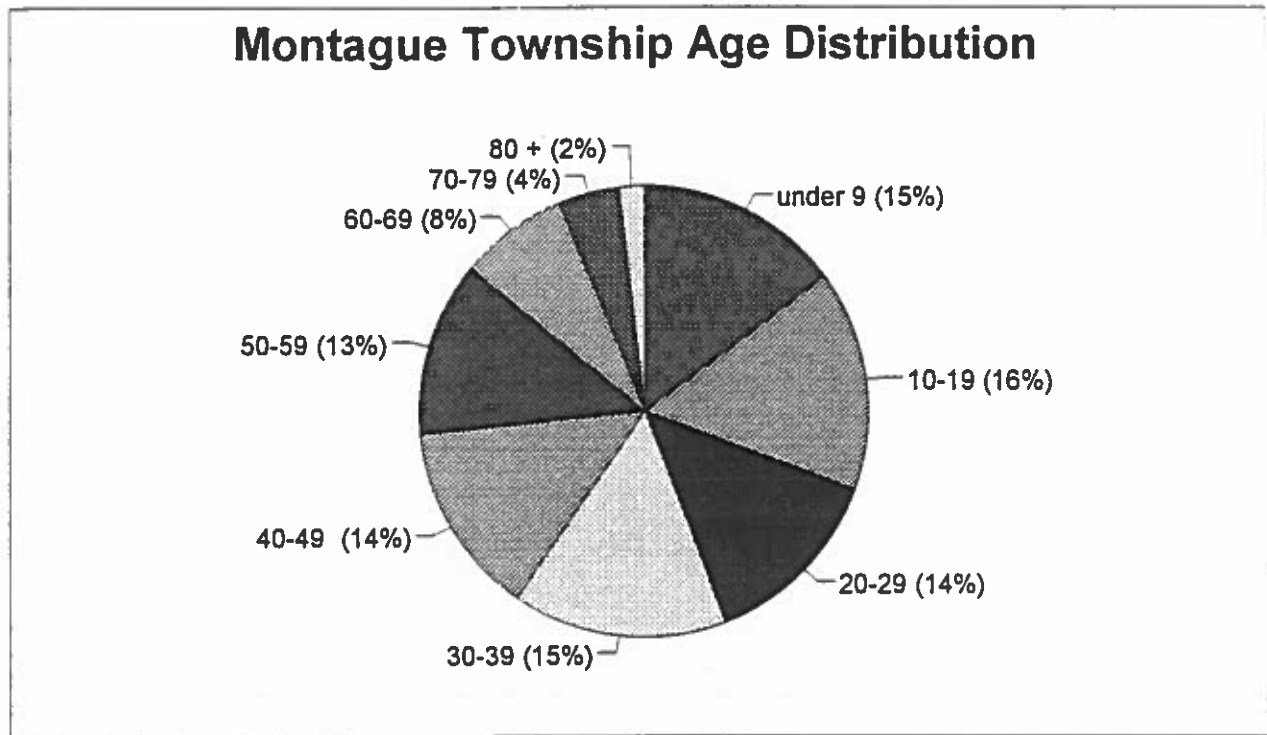
The two comparison figures, *Montague Township Age Distribution* and *Muskegon County Age Distribution*, affords a broader view of age distributions since their age categories are of ten years in length. Montague Township exhibits a fairly even age distribution from birth to age 59. With slight variations, Muskegon County also exhibits a fairly even age distribution from birth to age 49. Overall, the age distributions in Montague Township and Muskegon County are dominated by individuals under 19 years of age and between 30 and 39 years of age.

Table 5

AGE DISTRIBUTION: MUSKEGON COUNTY AND SELECTED TOWNSHIPS					
	Montage Twp.	Whitehall Twp.	Blue Lake Twp.	White River Twp.	Muskegon Co.
0-4	96	87	97	90	12,791
5-9	117	132	122	99	13,145
10-14	122	137	148	86	11,973
15-19	103	126	96	91	11,307
20-24	76	79	80	61	10,047
25-29	118	89	75	86	12,698
30-34	97	110	113	69	13,769
35-39	122	179	97	110	12,265
40-44	112	124	87	114	10,853
45-49	86	118	73	64	8,322
50-54	95	83	76	58	7,299
55-59	84	56	36	78	6,667
60-64	68	61	38	77	7,086
65-69	45	62	41	69	6,930
70-74	42	37	20	36	5,514
75-79	20	34	17	32	4,128
80-84	9	5	4	20	2,367
85+	17	4	13	10	1,822
Totals	1,429	1,464	1,235	1,250	158,983

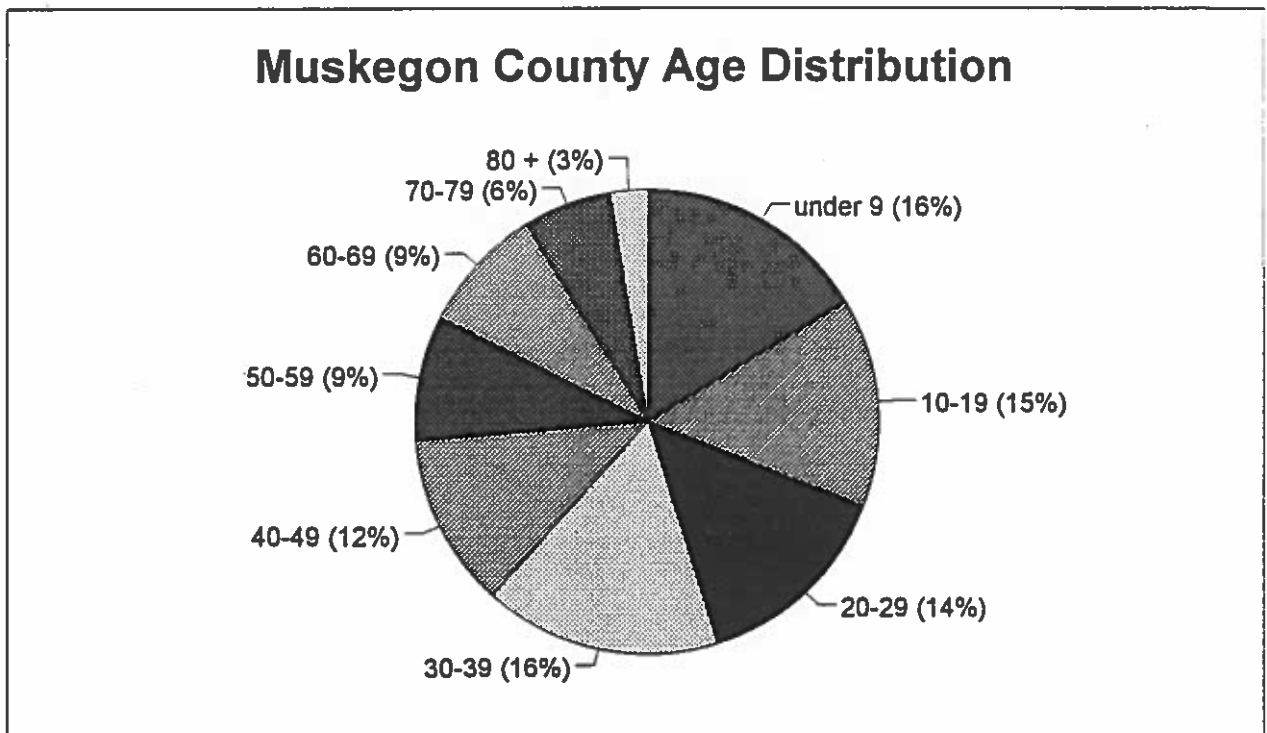
Source: 1990 U.S. Census of Population and Housing

Figure 3



Source: 1990 U.S. Census of Population and Housing

Figure 4



Source: 1990 U.S. Census of Population and Housing

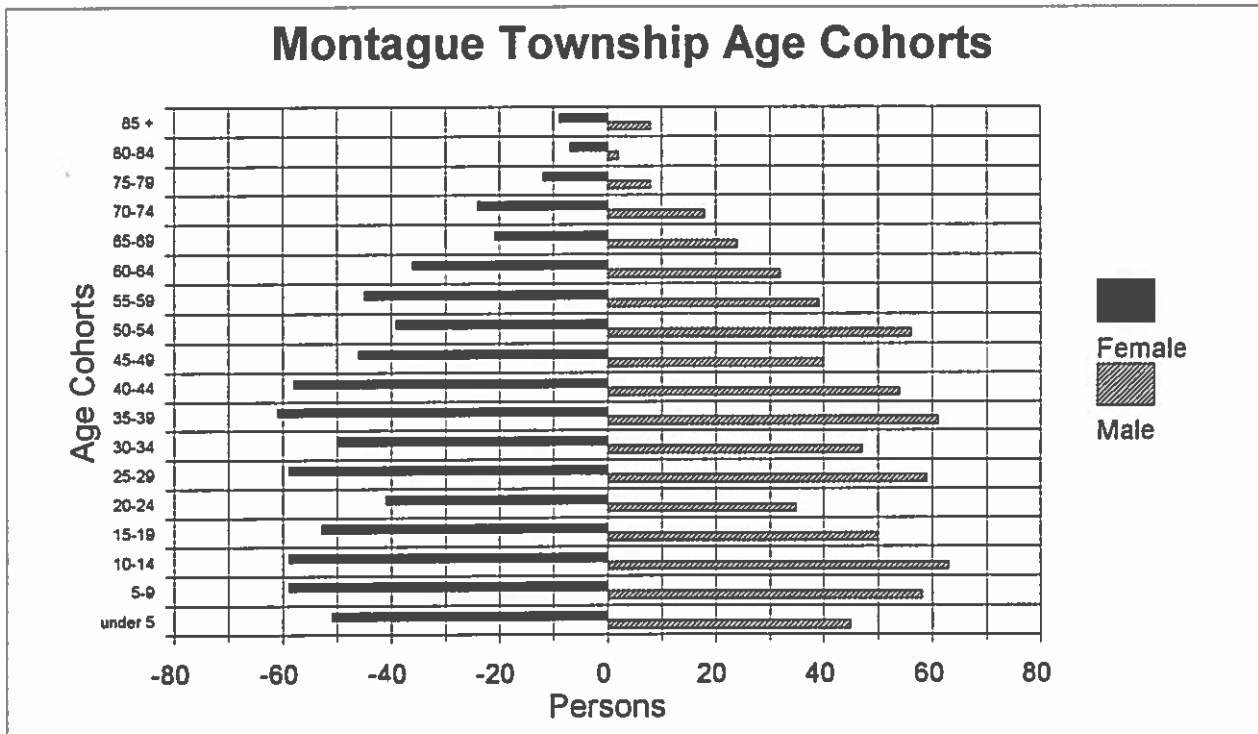
Also of significance is the information contained in Table 6, *Median Age of Muskegon County and Selected Townships*. An unexpected rapidly increasing median age is indicative of an influx of older citizens, or an outflow of school age children. A gradually increasing median age could be explained simply by an aging population. Figure 5, *Montague Township Age Cohorts*, illustrates that Montague Township's population is dominated by children and "middle-aged" adults. If there has not been significant migration or an unusual decrease in death rates, an increased median age is explained by an aging population. Other indications Figure 5 provides is that the age distribution in Montague Township is very well balanced between males and females. This is reflective of a stable population. The fact that the majority of the largest age groups are of childbearing age or will be within the next ten years forewarns that these age groups have the potential to have a great impact on the township's future.

Table 6

MEDIAN AGE OF MUSKEGON COUNTY AND SELECTED TOWNSHIPS					
	1950	1960	1970	1980	1990
Montague Township	NA	NA	24.2	30.5	34.3
Whitehall Township	NA	NA	26.2	27.3	33.8
Blue Lake Township	NA	NA	21.3	22.8	29.1
White River Township	NA	NA	25.0	29.9	37.2
Muskegon County	28.4	26.1	25.7	28.9	32.7

Source: U.S. Census of Population and Housing

Figure 5



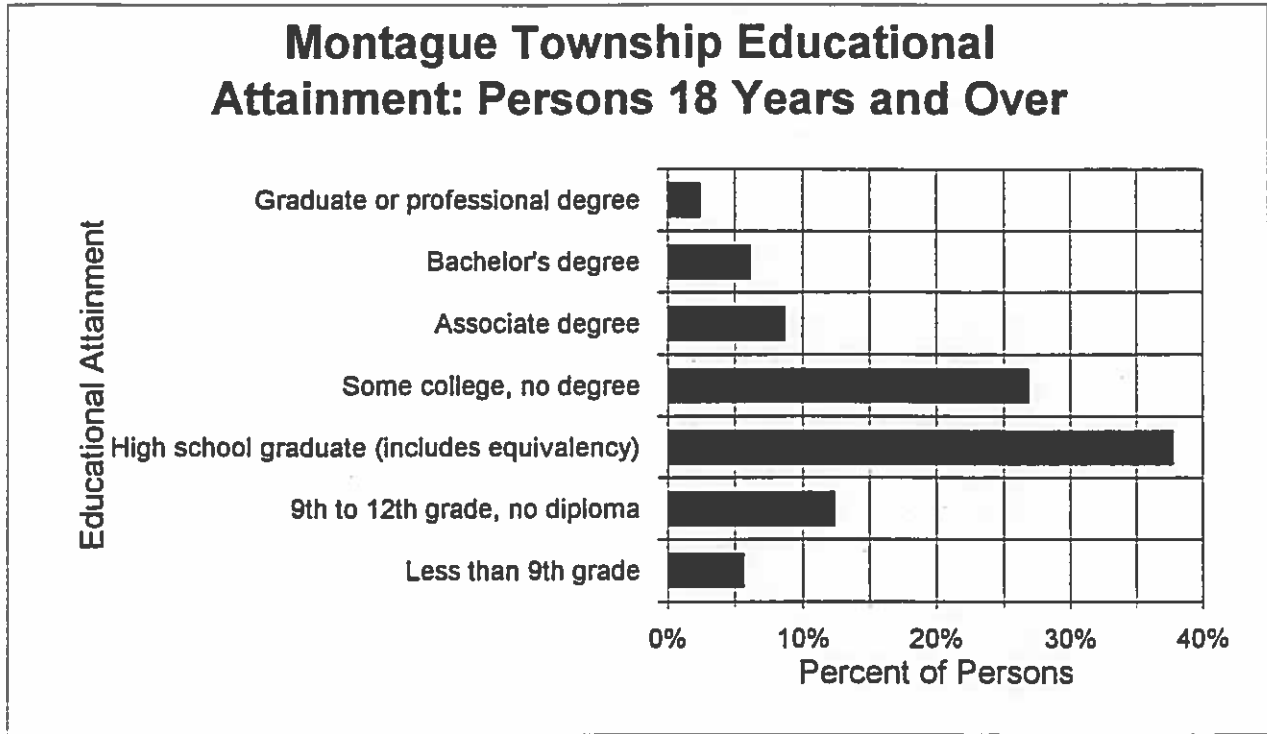
Source: 1990 U.S. Census of Population and Housing

F. Education Characteristics

Montague Township lies within the Montague Area Public School District in Muskegon County. The Montague School District encompasses Montague and White River Townships in Muskegon County and most of Claybanks and Grant Townships along with about a third of Otto Township in Oceana County. Figure 6 illustrates the various levels of education which adults at least 18 years of age at the time of the 1990 U.S. Census have attained. Note that the information illustrated is from Montague Township only. The educational attainment of adults at least 20 years of age at the time of the 1990 U.S. Census for the entire Montague School District is indicated in the Figure 7. The school district figures are from the School District Data Book compiled by the National Center for Educational Statistics, U.S. Department of Education. The fact that the vast majority of the adults in Montague Township are at least high school graduates or its equivalent is a testament to the quality of the school district. In addition, many residents have had some college education after high school.

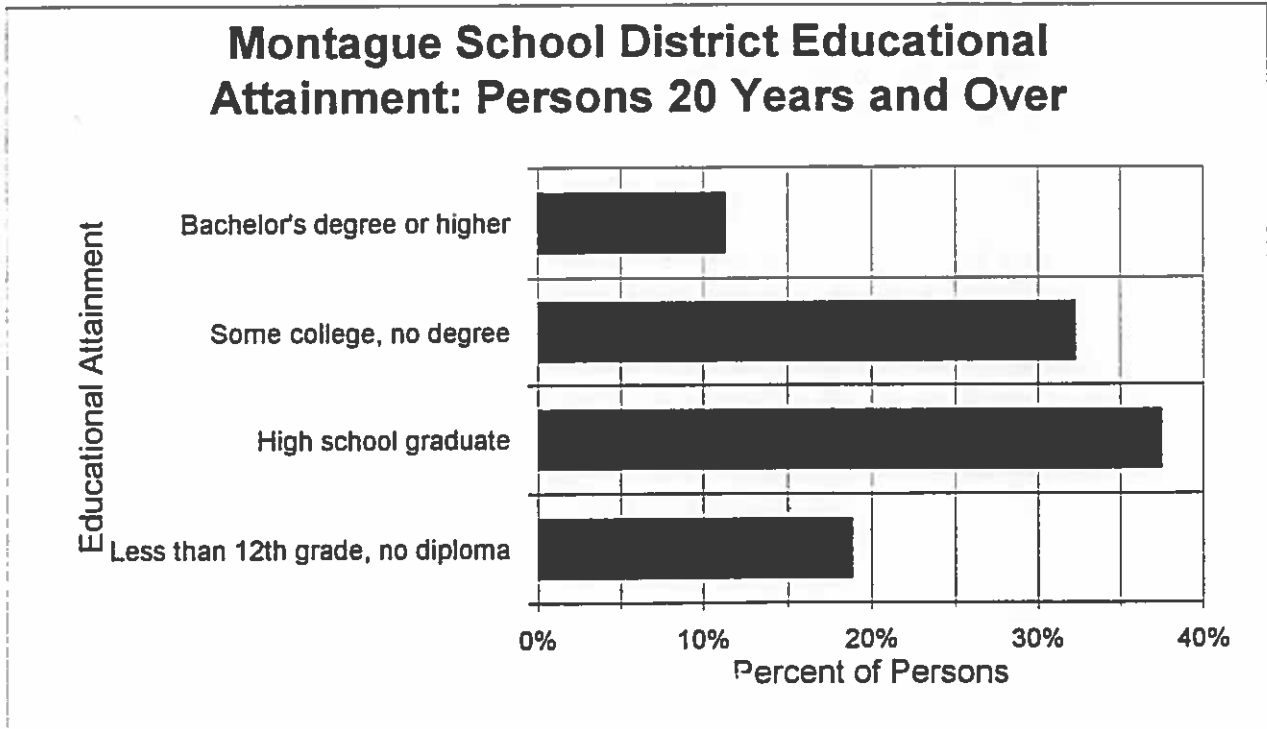
Two other indicators that can be used to assess the Township's educational characteristics are the *graduation rate* and the *drop-out rate*. The Montague School District had a graduation rate of 84.2% and a drop-out rate of 4.2% for the 1994-1995 school year. The graduation rate is defined as a four-year rate indicating the percentage of 9th graders who will complete their senior year of school and graduate. The drop-out rate is a one-year rate indicating the percentage of students who left during the year and did not return. It applies to grades 9-12 only. By way of comparison, the average of all Muskegon area school districts was a 75.0% graduation rate and a drop-out rate of 5.2% for the 1994-1995 school year (Michigan Department of Education). Note that each individual school district is responsible for reporting accurate information to the Michigan Department of Education, thereby creating the potential for differences in reporting methods among the various school districts.

Figure 6



Source: 1990 U.S. Census of Population and Housing

Figure 7



Source: U.S. Department of Education, National Center for Educational Statistics

G. Housing Characteristics

Housing, and its associated uses occupy the most significant proportion of all land uses in terms of the amount of land utilized. Generally, significant changes with an area's housing stock, be it the number of housing units, the percentage of different housing types, or the number of building permits issued, etc. are important factors which affect planning decisions. Changing trends related to housing stock are often the first indications that important changes are taking place with the population base and land uses. These are important changes to be aware of.

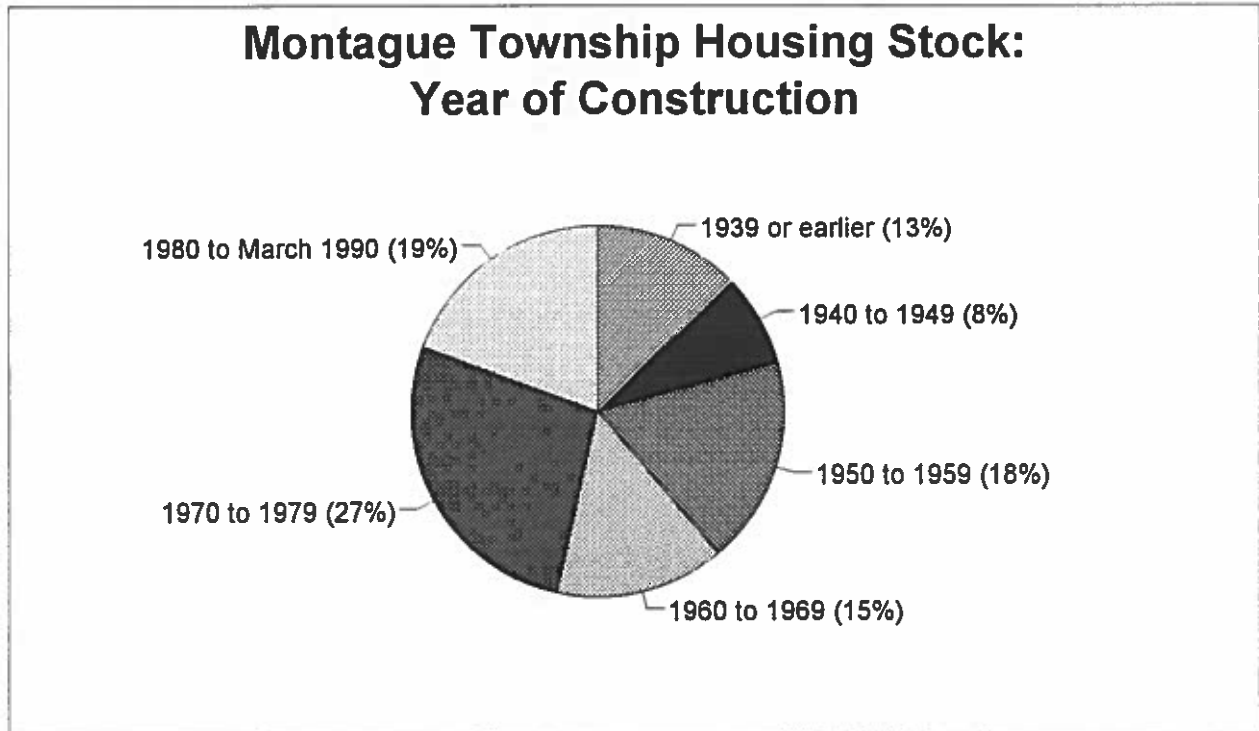
The housing characteristics of Montague Township are based upon the 1990 U.S. Census of Population and Housing summary data and thus does not reflect changes since then. Looking at Table 7 and Figure 8, it can be seen that the largest single group of housing units were built during the 1970's. This is fairly recent, and should indicate healthy housing stock. Note that the percentage of housing built since 1970 is approximately 46%. The age of the housing stock should not be an issue as long as the older housing stock is being replaced at current rates or slightly faster. However, if building in Montague Township were to cease for an extended period of time, the general quality of the housing stock might decline.

Table 7

AGE OF MONTAGUE TOWNSHIP HOUSING STOCK		
Year Structure Built	Number of Housing Units	Percentage of Total
1939 or earlier	69	12.8%
1940-1949	43	8.0%
1950-1959	97	18.0%
1960-1969	79	14.7%
1970-1979	146	27.1%
1980-1984	50	9.3%
1985-1988	49	9.1%
1989-March 1990	5	0.9%
Total Units	538	

Source: 1990 U.S. Census of Population and Housing

Figure 8

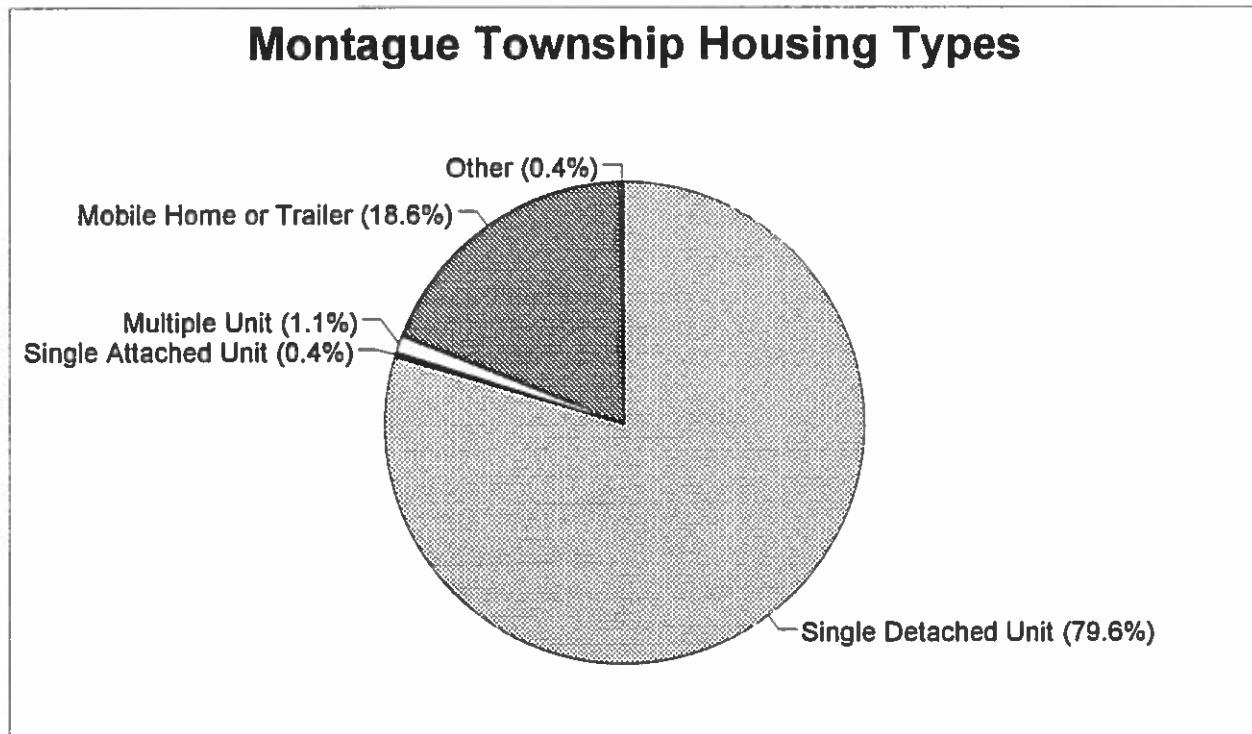


Source: 1990 U.S. Census of Population and Housing

Another important aspect of housing stock to consider is variety of housing types present, i.e. traditional single-family home, duplex, mobile home, etc.. Having a variety of housing types contributes to affordable housing opportunities for township residents. Figure 9 depicts Montague Township's housing types.

It is obvious that the traditional single-family home predominates in Montague Township. This is perhaps due to several factors. Among them might be a lack of suitable building sites for other types of homes. For example, multiple housing units often work best with water and sewer utilities. Another reason is a zoning ordinance which, reflecting the desires of the community, favors this type of dwelling unit. The second most common housing type in Montague Township are mobile homes or trailers. This is partially due to a specific zoning district in Montague Township for such housing types.

Figure 9

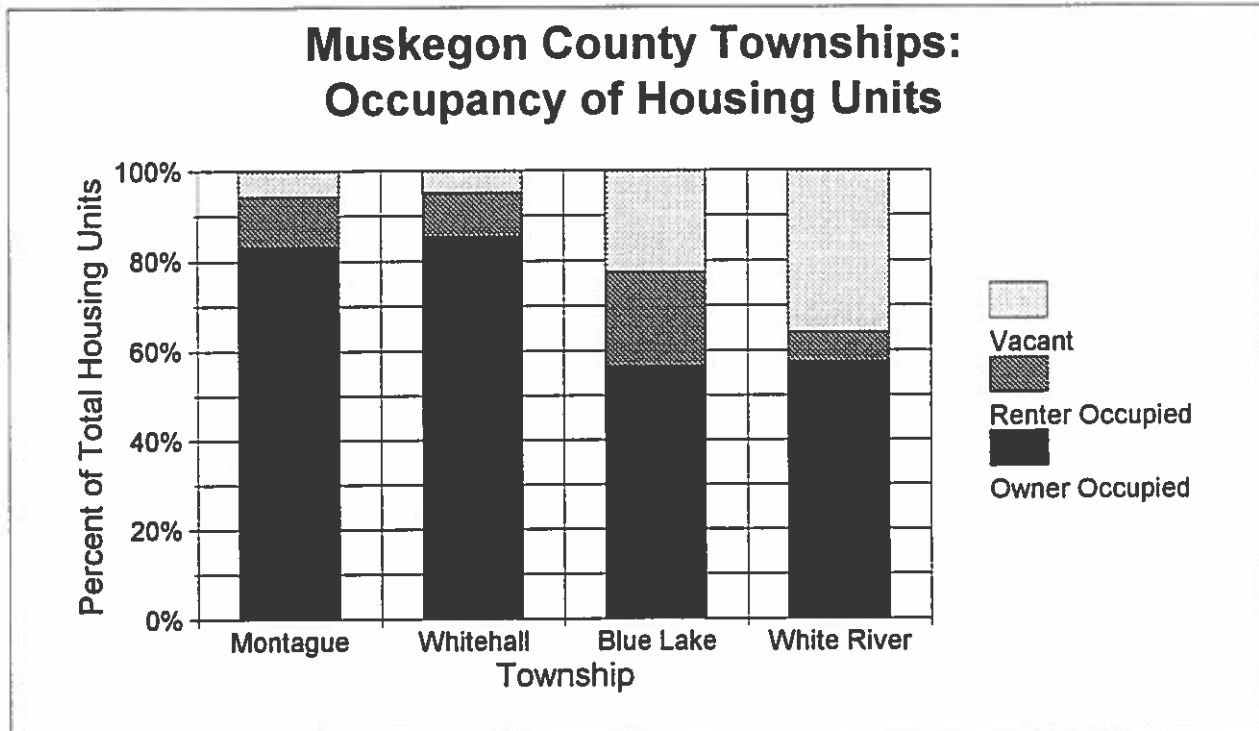


Source: 1990 U.S. Census of Population and Housing

Figure 10 illustrates other factors regarding this situation. Approximately 11% of Montague Township's housing units are rental units. An appropriate balance between renter and owner-occupied housing units needs to be struck in order to provide housing for all segments of the population and to maintain housing stock values. The number of rental housing units in Montague Township seems to indicate an appropriate balance.

The township has a very low vacancy rate for housing units. Some of the vacant housing units are seasonal in use. In 1990, 3% of all housing units were seasonal, recreational, or occasionally used as defined by the U.S. Bureau of the Census. This is important to the township because it represents a form of economic activity and presents the possibility that these units may be converted into permanent residences in the future. Montague Township is most like its neighbor Whitehall Township in terms of the amount of seasonal, recreational, or occasionally used housing units with 2%. Montague Township's other neighbors; White River, Fruitland, and Blue Lake Townships; have approximately 33%, 19%, and 19% respectively.

Figure 10



Source: 1990 U.S. Census of Population and Housing

Another indicator of the adequacy of the housing supply is the length of residency. As Table 8 illustrates, approximately 55% of the township's householders (generally defined as the head of a household) moved into their homes since 1980. This seems to suggest that like the nation as a whole, Montague Township is experiencing increased population movement.

Table 8

Montague Township Length of Residency by Householder				
Year Moved into Housing Unit	Number		Percent	
1989-March 1990	60	278	11.8%	54.7%
1985-1988	136		26.8%	
1980-1984	82		16.1%	
1970-1979	115		22.6%	
1960-1969	51		10.0%	
1959 or earlier	64		12.6%	

Source: 1990 U.S. Census of Population and Housing

Other general characteristics of Montague Township's housing stock include the number of bedrooms, plumbing facilities, source of water, and means of sewage disposal. According to the 1990 U.S. Census of Population and Housing, of the 538 housing units, 411 have either two or three bedrooms and all have complete plumbing facilities (piped water, flush toilet, and a bathtub or shower). Most residents (507) have an individual well, while 31 are connected to a public or private system. Most residents (532) have a septic tank or cesspool for sewage disposal. The remainder of the housing units are serviced by public sewer (4) or by some other means (2). Only 174 housing units are served by utility gas for heat. The next two largest sources used for heat are bottled, tank, or LP gas (156) and wood (103). Therefore, approximately 20% of the township's housing units use wood, a figure similar in the wooded townships of Blue Lake and Fruitland.

The following information concerns Montague Township building permits for new site-built homes and mobile homes from 1990 through 1996.

Table 9

Montague Township Building Permits Issued								
Year	1990	1991	1992	1993	1994	1995	1996	Total
Site-Built Homes	6	6	6	4	4	7	7	40
Mobile Homes	6	3	2	4	6	4	4	29
Modular Homes	1				1			2
Total permits	13	9	8	8	11	11	11	71

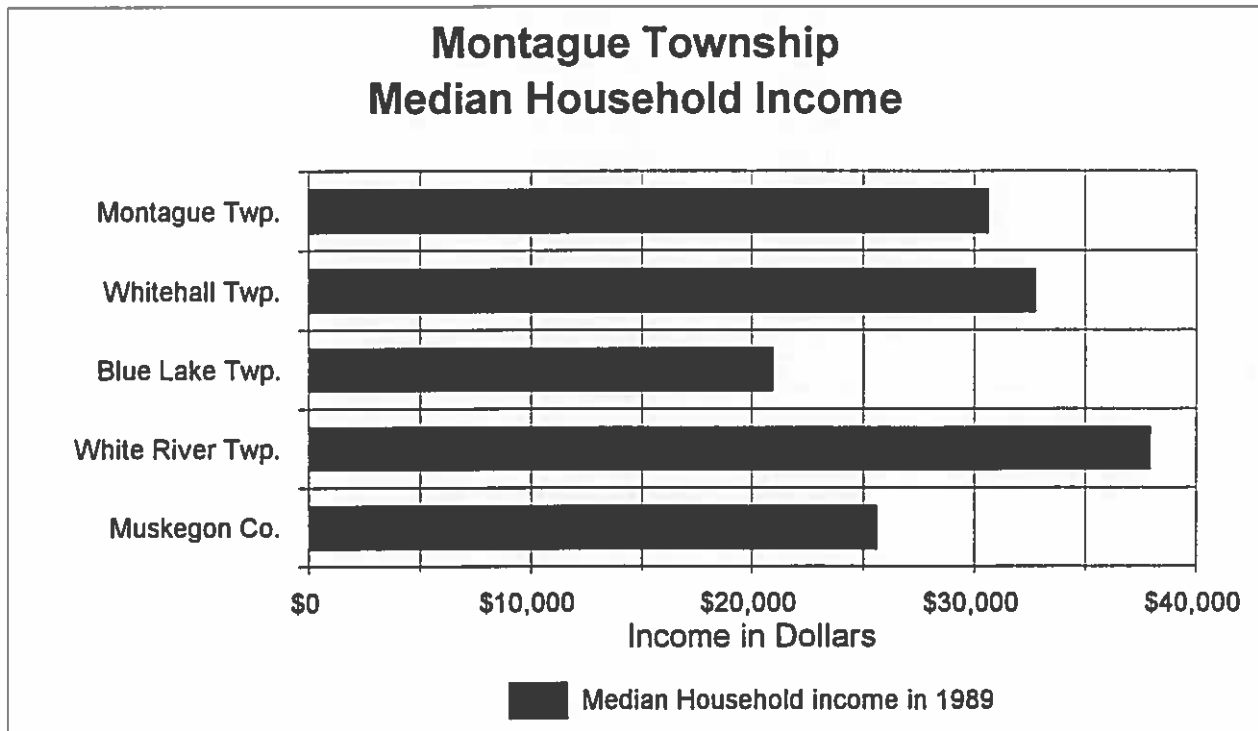
Source: White Lake Building Authority

Although no pattern of growth can be discerned, it can be seen that during the past seven years, there was on average approximately 10 building permits issued each year. It is fair to say that approximately the same number of building permits for new dwelling units will be issued during the next year or two. Making the assumption that all the above building permits were issued for single dwelling units, the Township's housing stock increased from 538 dwelling units in 1990 to 609 dwelling units in 1996. The Township is estimated to have lost 33 persons and is known to have gained 71 homes (barring fire, demolition, etc.) during the last seven years. Which is approximately a 2.3% decrease and a 13.2% increase respectively.

H. Income Distribution

By looking at the relative change in personal income, on a household and per capita basis, it can be seen which areas are or are not keeping pace with the region or country. In addition, an idea of where resources may need to be devoted in order to best assist lower income areas can be discerned by examining poverty figures. At the time of the 1990 U.S. Census, 5.2% (75 persons) of Montague Township's residents were living below the poverty level. This is similar to the surrounding townships except Blue Lake and Grant Townships, which have a high percentage of their residents living below the poverty level. Income distribution becomes clearer when looking at Figure 11, *Montague Township: Median Household Income*. It can be seen that Montague Township's median household income in 1989 was comparable to the surrounding area and higher than the Muskegon County's. However, of the sixteen townships in Muskegon County, the 1989 median household income in Montague Township was the sixth highest at \$30,660.

Figure 11



Source: 1990 U.S. Census of Population and Housing

Table 10 illustrates Muskegon County's significant increase in per capita income (PCI) throughout the 1980's and the degree to which select townships kept pace or lost ground with the County and State averages. Montague Township's 1989 per capita income surpassed Muskegon County's by \$745. However, Montague Township's 1989 per capita income was \$2,064 below that of the state's.

Table 10

Per Capita Income		
	1979	1989
Montague Township	NA	\$12,090
Whitehall Township	NA	\$12,711
Blue Lake Township	NA	\$8,689
Fruitland Township	NA	\$13,647
Muskegon County	\$6,358	\$11,345
Michigan	\$11,696	\$14,154

Source: U.S. Census of Population and Housing

I. Local Economy and Employment

With information pertaining to the local economy and general employment, strengths and weaknesses in Montague Township's economic conditions can be addressed. Montague Township businesses are predominately located on U.S. Business Route 31 (Whitehall Road) from the City of Montague's boundary north to Fruitvale Road. Overall, there are very few employment opportunities available within Montague Township itself, therefore, residents must work elsewhere. Typically, residents commute to their jobs which are most likely somewhere in Muskegon County. Approximately 89.4% of Montague Township's workers work in Muskegon County (1990 U.S. Census). Therefore, a discussion of Muskegon County's economy is appropriate to begin with.

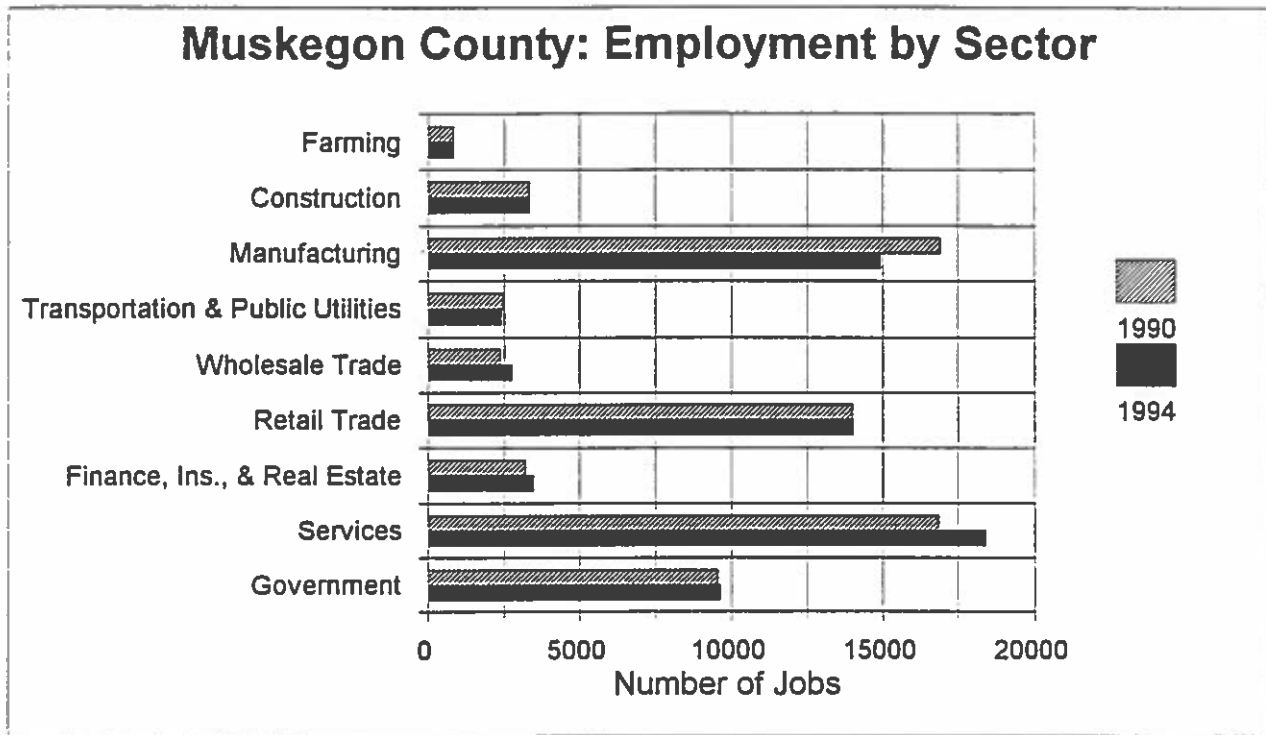
It is important to note here that there are a number of different sources that report labor statistics. Several are presented here. In 1990, Muskegon County had an employed labor force of 65,424 persons as determined by the 1990 U.S. Census. This means that 65,424 persons living in Muskegon County were employed somewhere. During the same time period, the Michigan Employment Security Commission (MESC) reported an annual average employed labor force, living in Muskegon County, of 66,525 persons. And the U.S. Department of Commerce, Bureau of Economic Analysis reported that there were 69,973 *jobs* in Muskegon County in 1990. The last statistic does not take into account where those persons lived. These various statistics are presented here to indicate the different ways of approaching the same topic, and to illustrate the caution with which comparisons must be made.

In recent years, the employment picture has been changing rapidly in Muskegon County. By March 1997, the MESC reported that the employed labor force (by place of residence) had increased to 76,400. The Bureau of Economic Analysis reported that the total number of *jobs* between 1990 and 1994 also increased, to 70,247. In other words, the population of Muskegon County was having success at finding work and the actual number of jobs located in the county increased slightly. According to employment projections issued in January 1997 by the West Michigan Shoreline Regional Development Commission, that trend continues.

It is important to note the change which is occurring in the makeup of Muskegon County employment. The most significant change is in sectors of employment. Muskegon County has long been thought of as an "industrial area," and for much of the last half of the 20th century it was. But, beginning in the late 1970's and continuing until the late 1980's, the county lost thousands of manufacturing jobs. In the 1990's, those jobs are being replaced and will soon be surpassed by service sector jobs. In 1986, the county had approximately 18,700 jobs in the manufacturing sector and approximately 16,000 in the service sector. It was

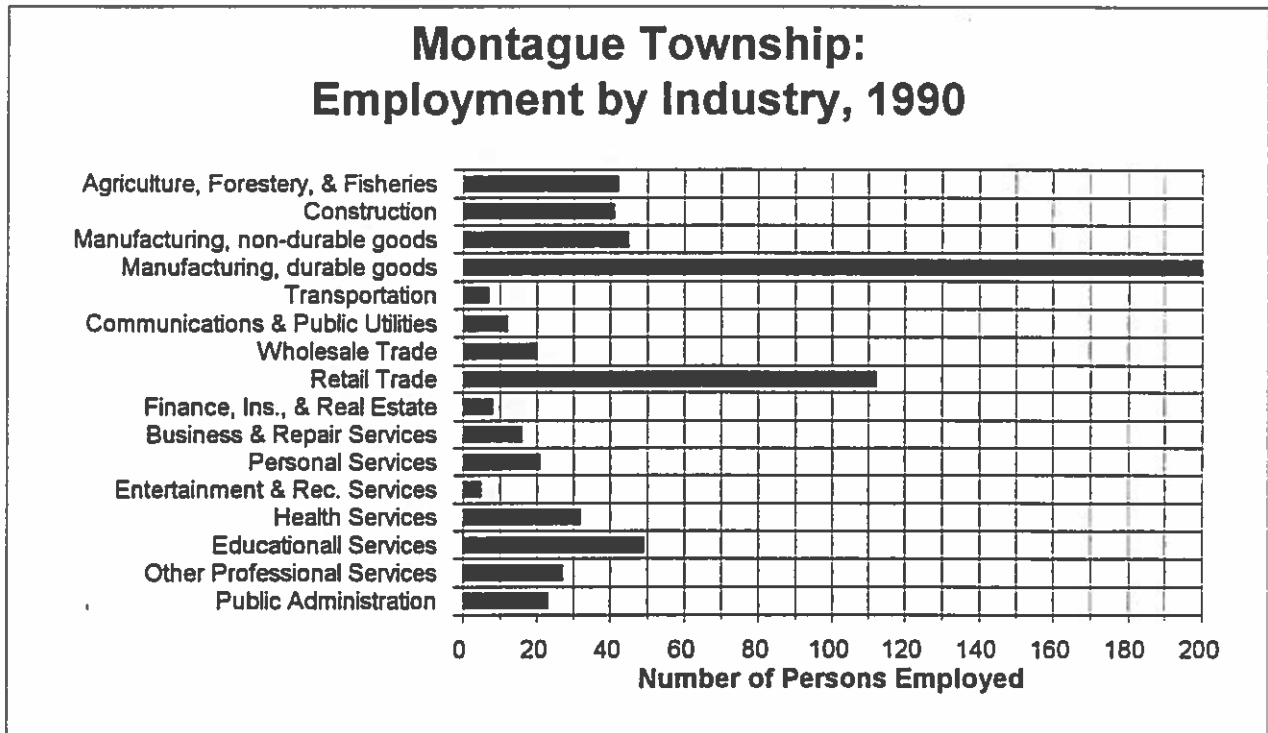
projected that by 1996, manufacturing had declined to under 16,000, while services had risen to nearly 20,000. This would be occurring while moderate growth in areas such as construction and retail trade was projected to continue unabated. These trends are occurring at the state and national levels as well.

Figure 12



Source: U.S. Department of Commerce, Bureau of Economic Analysis

Figure 13



Source: 1990 U.S. Census of Population and Housing

J. Township Government

Montague Township is governed by an elected township board consisting of two trustees, a supervisor, a clerk, and a treasurer that are elected to four year terms. The township also has a paid assessor and zoning administrator in addition to other services provided on a contract basis. The Township's fiscal year begins on July 1st and ends on June 30th. The following table summarizes the township's budget for the last five fiscal years. Each dollar figure represents the township's income for that fiscal year and the expenditures for that same fiscal year. Budgets are balanced by drawing on the township's reserve funds to cover any possible shortfalls.

Table 11

Montague Township Budget Summary					
Fiscal Year	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997
Budget Figure	\$270,506	\$154,930	\$238,951	\$162,820	\$190,971

Source: Montague Township Treasurer

The six-member Montague Township Planning Commission is appointed by the Montague Township Board of Trustees. The Planning Commission meets four times a year as required by law and at the call of the chairperson when there is additional business to attend to. The commission is primarily a recommending body, reporting directly to the Township Board.

The three-member Montague Township Zoning Board of Appeals decides questions concerning the administration of the Montague Township Zoning Ordinance and makes decisions on variance requests as allowed by the enabling legislation for township zoning. This board meets on the call of the chairperson when there is business to attend to, which is usually several times a year.

K. Local Ordinances and Public Safety

Montague Township's ordinances and codes are enforced through a variety of means. The township employs building, plumbing, electrical, and mechanical inspectors through the White Lake Building Authority based in the City of Montague in addition to an assessor and zoning administrator for these various duties. The Township depends on the efforts of the Muskegon County Sheriff's Department and the Michigan State Police post in Hart, Michigan for police protection.

Montague Township is serviced by the City of Montague Fire Department for fire protection. The Fire Department has equipment based in the City Hall complex of Montague and employs eighteen paid on-call volunteers. The White Lake Ambulance Authority services Montague Township with its four full-time and twenty-six part-time staff members. Its life support vehicles are based in Montague's City Hall complex.

L. Parks, Recreational Facilities, and Public Open Spaces

Montague Township has numerous outdoor active and passive recreation areas available for use. The Hart-Montague Bicycle Trail State Park opened in 1989 and is Michigan's first linear state park. The 22 mile paved trail is used for hiking, biking, roller blading, and snowmobiling. According to the Michigan Dept. of Natural Resources, between October 1, 1995 and September 29, 1996, approximately 63,355 people used the Hart-Montague Bicycle Trail State Park.

Montague Township owns approximately 600 acres of land scattered predominately in the north-central portion of the township. The land encompasses open space, woodland, parks, and the Township Hall. The Township Hall is located at 8915 Whitbeck Road. Near the Township Hall at the northwest corner of Hancock and Whitbeck Roads is the Montague Township Park with areas to play softball, tennis, basketball, volleyball, and shuffleboard along with restrooms, several picnic shelters, restrooms, and children's play areas. The approximate 100 acre Henderson Lake Nature Center provides several picnic shelters and walking paths that traverse the woods and circumvent the lake. It is located between U.S. Route 31 and Henderson Road, north of Fruitvale Road.

The small inactive Township cemetery is known as Sammis Cemetery (also known as Eiler's or Harmon Cemetery) is located on the north side of Eiler's Road between Whitbeck and Ochs Roads (Library of Michigan, [Michigan Cemetery Atlas](#)). All the aforementioned parks, recreational facilities, and open spaces make Montague Township an attractive focal point for recreational activities.

M. Current Land Use / Cover

As mentioned previously, the two major land uses in Montague Township are forest and agricultural lands. Forest land predominates in the northeastern and southwestern portions of the township. The White River cuts a wide swath through the extreme eastern portion of the township. Agricultural land occupies almost all of the west-central portion of the township.

The residential development in the township is located within section 19 along Dowling and Post Roads; within sections 4 and 9 in the area bounded by Skeels Road, U.S. Route 31, Fruitvale Road, and Sikkenga Road; and finally in sections 10, 11 and 15 along Fruitvale and Walsh Roads. New residential development is scattered throughout the township. Some of the aforementioned residential areas are also developed with manufactured and mobile homes. These areas are located along Parkwood Drive in section 11 and in the western half of section 4, predominately just south of Skeels Road.

Other than a few scattered commercial establishments, commercial uses are concentrated along U.S. Business Route 31 (Whitehall Road) from the township boundary northward to its intersection with Fruitvale Road. Heavy industrial uses are concentrated near the northwest corner of Old Channel Trail and Whitbeck Road.

Montague Township fits well into the regional land use pattern. White River, Grant, and Whitehall Townships have similar land uses to Montague Township in the areas where they abut Montague Township. The land uses abutting Montague Township's eastern edge are land uses that are expected to be found in urbanizing areas.

The information contained on Map 9 is from the Michigan Resource Information System (MIRIS). The original *land cover* database was created from 1978 aerial photographs and was partially updated in 1992 by the Water Resources Institute at Grand Valley State University. Note that the category of open space on the Land Cover Map is defined as being mostly absent of forest cover.

N. Zoning in Montague Township

Montague Township has been a zoned community since 1971. The original ordinance, dated July 24, 1971, was replaced on April 26, 1988 by a more comprehensive ordinance. It is the April 26, 1988 Montague Township Zoning Ordinance that the Township now operates under and enforces.

When the April 26, 1988 Montague Township Zoning Ordinance was being developed, great care was taken to provide rationale for zoning decisions and the geographic context within which they are to be made. Therefore, to the greatest extent possible, the Montague Township Zoning Ordinance was used to guide the process of developing future land use districts.

The April 26, 1988 Montague Township Zoning Ordinance provides for eleven zoning districts. They are as follows: Agricultural, three Residential, Mobile Home, Commercial, two Industrial, Forestry Recreational, Airport, and Natural River. These districts provide for a land use pattern which predominately fits the current character of the township by limiting development to low densities (via large lot sizes) in the majority of the township. The areas which are allowed higher densities (via smaller lot sizes) are those areas which have partially developed in a dense pattern and are near transportation facilities or the City of Montague's municipal limits.

The residential zoning districts provide for lot sizes ranging from 30,000 square feet (approximately 0.7 acre) in the "R-1" Residential district to 2 acres in the "R-3" Residential district. In certain instances, residences are allowed in the Agricultural, Forestry Recreational, Airport, and Natural River districts with minimum lot sizes varying from 1 acre to 20 acres. In general, the resultant density of each zone's lot size requirements is appropriate to the *level* of development capable of being supported. However, it is the *kind* of development, and the overall *pattern* of development that needs further attention.

Thus the changes which need to be addressed by the Montague Township Master Plan in relationship to the Montague Township Zoning Ordinance deal with both the details of the current implementation, and the new tools which are needed to bring about an area-wide change in development patterns. This includes stronger controls on development in certain locations, inducements for development in others, open space conservation, etc.

IV. Goals, Objectives, and Implementation Strategies

The identification of key community issues is a critical part of any planning process. It is through the identification of these community issues that goals and objectives are developed, thereby clarifying and organizing the tasks to be accomplished.

Goals are broad, long-range statements reflecting a general attitude or policy intent of the Township. They are often visionary. Objectives specify the courses of action that should be taken to accomplish the goals, and are short-range and measurable. Implementation strategies are specific courses of action to accomplish the goals and objectives.

As discussed earlier, the key issues, goals, objectives, and implementation strategies of Montague Township were formulated through input gathered from two public work sessions called Town Meetings and subsequent discussions with the Montague Township Planning Commission. These goals and objectives should be implemented and monitored based on their feasibility, effectiveness, and context within the development plans for Montague Township. The status of these goals and objectives should be reviewed on a regular basis, and when appropriate, the Plan should be modified to reflect changes of a physical nature or those of general public sentiment. This comprehensive process should be repeated at least every ten years to ensure an accurate and timely reflection of the needs and desires of the citizens.

Some items to note under the *Goals, Objectives, and Implementation Strategies* section:

- The Montague Township Master Plan shall hereby be referred to as "the Plan".
- Items with Arabic numeral headings (1,2,3..) are considered goals.
- Items with alphabet headings (a,b,c..) are considered objectives.
- Items with checkmark headings (✓) are considered implementation strategies.
- The goals, objectives, and implementation strategies are listed in no particular order.

Goals, Objectives, and Implementation Strategies

Protect the Quality of Natural Resources in the Township.

- a. Work in conjunction with local, county, regional, state and federal officials to monitor environmental issues.
- b. Preserve and protect existing conservation lands and open spaces within the Township, utilizing various mechanisms and regulatory techniques.
- c. Direct development to locations where there are minimal environmental constraints, thereby avoiding areas that are prone to flooding, have soil limitations, have unfavorable topography, or have other natural features likely to be harmful to the health, safety, or welfare of the community at large.
- d. Protect surface water and groundwater resources from contamination and degradation by minimizing the adverse impacts of development.
 - ✓ Establish a procedure for contacting appropriate monitoring agencies to address concerns about environmental issues.
 - ✓ Encourage techniques to preserve open spaces.
 - ✓ Encourage the transfer of development rights, conservation easements, or private contributions of environmentally sensitive properties to appropriate public or quasi-public organizations.
 - ✓ Revise the Site Plan Review criteria to encourage open spaces and other natural features in the design of developments.
 - ✓ Strictly enforce the White River Natural River zoning codes along the White River, Carleton (Landford) Creek, Carlton Creek, and other applicable waterways. This will help protect the flood storage and conveyance functions of flood prone properties.
 - ✓ Reduce soil erosion from construction and agricultural practices by considering the practices adopted by the Natural Resources Conservation Service.

Conserve Existing Agricultural Lands and Productive Agricultural Soils.

- a. Protect areas with soils considered to be prime farmland as defined by the United States Department of Agriculture, Natural Resources Conservation Service.
- b. Strongly discourage the fragmentation of agricultural lands, thereby conserving their viability.
- c. Encourage the conservation of agricultural lands by directing non-agricultural development towards areas that are not suitable or are marginally suitable for modern farming practices.
 - ✓ Identify and map prime agricultural soils and incorporate these areas into the "AG" Agricultural zoning district.
 - ✓ Establish a detailed definition of "farm" and "agriculture" within the zoning ordinance.
 - ✓ Establish criteria within the zoning ordinance to distinguish between non-agricultural residential development and agricultural residential development.
 - ✓ Critically review and revise the portion of the "AG" Agricultural zoning district that pertains to dwellings (both as a permitted use and as a conditional use), discouraging non-agricultural residential development within the agricultural zoning district.
 - ✓ Set a *maximum* acreage for non-agricultural uses in the agricultural zoning district.

Continue to Provide Diverse Recreational Opportunities to Township Residents.

- a. As needed, encourage the establishment of future recreational facilities.
- b. As the opportunity arises, continue to develop and expand a system of recreational trails within the Township.
 - ✓ Continue to maintain the quality and appearance of existing recreational facilities.
 - ✓ Explore acquiring land to construct a public boat launch on White Lake.
 - ✓ Encourage the linking of recreational trails to one another as the opportunity to do so within new developments or with public funds arise.
 - ✓ Work in conjunction with the Michigan Department of Natural Resources, the Michigan Department of Transportation, and other entities to develop and expand recreational trails. Utilize public lands, conservation easements, designated greenways within developments, flood plains, etc. to minimize the cost of a trail system.
 - ✓ Explore the possibility of creating a Recreation Board

Encourage and Preserve the Community's Character and Appearance, Both of Which Promote a High Quality of Life for Township Residents.

- a. Increase awareness of the rich history and culture upon which Montague Township, Muskegon County, and West Michigan are established.
- b. Continue to promote the enhancement and preservation of open spaces, visual aesthetics, and natural habitats for wildlife within the township.
 - ✓ Encourage the maintenance of private property by consistently and strictly enforcing building and zoning codes.
 - ✓ Strictly enforce the "Screening" section of the Montague Township Zoning Ordinance.
 - ✓ Control incompatible business uses in residential areas by strictly enforcing zoning codes.
 - ✓ Consider setting a maximum size, in square footage, for accessory structures in residential zoning districts.
 - ✓ When appropriate, utilize open spaces for buffers between incompatible land uses or in transitional areas between residential areas with different lot sizes.

Promote Orderly, Planned, Well Managed Growth within the Township.

- a. Provide adequate areas for growth and encourage the proper balance between different land use types (i.e. open space, agriculture, residential, commercial, governmental, etc.) which will meet the needs of the current and future residents.
- b. Encourage the adaptive reuse of underutilized industrial lands.
- c. Future development should be directed towards specific locations which appropriately consider constraints of the natural environment, which offer compatibility with surrounding land uses, and which are best suited to accommodate growth within the township.
- d. Manage the location, density, pattern, and type of residential development so as to minimize unnecessary public expenditures for infrastructure and other public services.
 - ✓ Utilize technical information, such as that contained in this Plan, to help establish future development locations consistent with the goals of the Township. Technical information should be reviewed periodically as circumstances warrant.
 - ✓ Encourage the placement of higher density developments where public infrastructure and services, such as water and sewer utilities, are available.
 - ✓ Review and revise the Site Plan Review criteria to ensure the type and quantity of open spaces, infrastructure development, lot sizes, utility specifications, etc. are appropriate. This will provide a structure with which to review all plans and ensure that they comply with the Township's goals and objectives and zoning ordinance provisions.
 - ✓ Review and revise the required items to be submitted with a conditional use application, such as requiring a detailed site plan of the proposed use, to ensure the request complies with the Township's goals and objectives and zoning ordinance provisions.
 - ✓ Consider expanding the circumstances in which a Site Plan Review needs to be done to include conditional uses in all zoning districts.

Maintain and Develop Adequate Infrastructure.

- a. Minimize unnecessary public expenditures for infrastructure and services by controlling the location and intensity of future development.
- b. Continue to develop and maintain roadway priorities through a working relationship with the Muskegon County Road Commission and other transportation agencies.
- c. Develop Site Plan Review standards that consider the effects of development on public infrastructure.

Advocate Cooperation and Communication with Neighboring Units of Government.

- a. Promote responsible community leadership, both in and out of government, which is accessible and responsive to the public.
- b. Continue to foster cost sharing for essential services with other units of government.
- c. Foster intergovernmental coordination between Montague Township and adjacent communities to coordinate land use decisions and planning projects.

Exercise Sound Planning Practices and Establish the Mechanisms to Enforce Them.

- a. Promote the use of and continuous review of the Montague Township Master Plan.
- b. Foster a decision-making process that is long-range and regional in scope and works in the best interest of all Montague Township residents.
 - ✓ Base all zoning and other land uses decisions upon the goals and objectives outlined in the Plan.
 - ✓ In addition to the Montague Township Planning Commission, identify groups or persons to implement the various segments of the Plan according to their interests and abilities.
 - ✓ Update the Montague Township Zoning Ordinance and accompanying Montague Township Zoning Map to ensure their consistency with the goals and objectives presented in the Plan.
 - ✓ Consistently enforce the Montague Township Zoning Ordinance.

V. Montague Township Development Concepts

Development concepts serve as a bridge between the Township's goals and objectives and the Recommended Future Land Use Districts and Map. Development concepts are the broad explanations of basic assumptions and supporting ideas that are used to develop the Recommended Future Land Use Districts and Map.

A. Basic Assumptions

Based upon the Township's goals and objectives, several assumptions about the growth and development of Montague Township were made:

- Growth will continue at a moderate rate, from 1,429 persons in 1990 to a projected total of 1,543 persons in the year 2020 (Figure 2).
- The Cities of Muskegon, Montague, and Whitehall will continue to be vital to the economic health of Montague Township. Tourism and recreational activities will continue to grow in economic importance in the greater White Lake Area.
- Montague Township will continue to serve as an attractive area for residential growth due to its close proximity to employment areas.

B. Growth Management

Growth, in terms of population and employment, changes land use patterns and the character of a community. The open spaces, lack of traffic congestion, perceived low crime rates, and general rural setting found in less developed townships often entices people to move to such areas. However, as growth occurs, often the very things that were enticements are lost after additional people and businesses locate in the township. The results of growth are often expensive (cost of infrastructure, new school facilities, etc.) and potentially harmful to environmental resources.

Because of Montague Township's diverse natural resources, low property costs, low taxes, and short commute to numerous employment centers, it is a desirable place to live. Therefore, there will most likely be increasing residential development pressure.

The citizens of Montague Township voiced their desires concerning growth throughout the development of this Plan. They stated that of the residential growth that is going to occur, they want to promote orderly, planned, managed residential growth. Therefore, there is a need for responsible growth

management to provide for orderly development while protecting the environmental resources and character of Montague Township. "Growth Management refers to the systematic attempt by a community to guide the type, rate, location, timing, public cost of, and often the quality and character of land (re)development" (Michigan Department of Natural Resources, Michigan Coastal Management Program 1). Montague Township supports this concept as a means of controlling future development.

C. Settlement Patterns

The manner in which a township develops (i.e. settlement pattern) has a tremendous impact upon the township's character, recreational opportunities, ability to support agriculture, ability to support wildlife, etc. For the most part, land is a finite resource and therefore must be used wisely. Once land is fully developed (residentially, commercially, industrially, etc.), it is difficult to revert the land back to its original natural state or agricultural usage. Therefore, conserving open spaces and areas of productive farming at the outset of development is imperative.

Local zoning and subdivision ordinances usually permit, and sometimes dictate, that an entire parcel of land be fully developed. This often results in large residential lots that are "too large to mow and too small to plow" (Arendt, "Conservation" 3). "Until now, the zoning regulations in most communities have established a 'one size fits all' approach to regulating lot sizes in each of their various districts, essentially creating a single standard size for new house lots, which frequently results in checkerboard layouts of nearly identical lots covering the entire parcel" (Arendt, "Creating" 3). Caution needs to be taken when controlling patterns of development primarily by use of minimum lot sizes. The resultant patterns of development after completely developing land according to minimum lot size requirements will be checkerboard development with lots of "elbow room" (i.e. yards) between houses and nothing else.

However, that is not the only method of development. By allowing flexible standards for lot size and frontage, full density can be achieved on a much smaller portion of the land, leaving the balance in permanent conservation. This open-space subdivision design approach allows the conservation of more than floodplains, wetlands, and steep slopes. It allows for the conservation of mature or healthy and diverse forest lands, meadows, wildlife habitats, historic buildings, scenic views, or whatever the township deems worth conserving to protect its character and environmental resources. By reducing the amount of land utilized by homes, development and infrastructure costs will also be reduced. The open-space subdivision design technique can be accomplished in Montague Township within a planned unit development or by incorporating density requirements within different future land use districts.

VI. Recommended Future Land Use Districts

The following recommendations should be used as a **guide** for growth and development in the Township. The following described Recommended Future Land Use Districts are the narrative explanations of the districts contained on the Future Land Use Map.

A master plan and a zoning ordinance are related. A zoning ordinance is the legal arm of a master plan. It is the most frequently used and effective regulatory tool to implement the master plan by regulating land use. The word "district" is often used in both kinds of documents, however, the term must be used carefully. Using similar terms for the various land use designations is one way to demonstrate the relationship between the two documents, and it helps to avoid confusion and translation difficulties. **It is also important to realize that a future land use map (Map 10) and a zoning map are not the same thing.** For example, the use of the term "Commercial" on a future land use map does not necessarily translate into specific numbers in terms of lot sizes and other elements of zoning. In some cases, a designated district on a future land use map might not "convert" into a particular zoning district at all, but rather should be utilized as a philosophical guide for the flexible interpretation of other zones. The following recommended future land use districts will have some overlap in purpose and implementation. Also see the discussion on the Zoning Ordinance under the section titled *General Implementation Tools and Techniques* on how to use this Plan and its Recommended Future Land Use Districts (and map) with the Montague Township Zoning Ordinance (and map).

Nine recommended future land use districts have been developed as a part of this planning process. These districts are the result of an analysis of current land uses, environmental suitability, the existence of or ability to provide services, and the compatibility with goals and objectives previously identified in the Plan. The nine districts are: Permanent Open Space, Transitional Open Space, Environmentally Sensitive, Forest Land / Open Space, Agricultural, Residential, Commercial, Light Industrial, and Airport.

Permanent Open Space

The Permanent Open Space district is intended for areas that need to be properly managed so as to protect the health, safety, and general welfare of residents. Lands within this district should remain in open space. The lands should be left undisturbed other than the possible activities and construction of structures for remediation purposes.

Transitional Open Space

Land within the Transitional Open Space district should be treated the same as land within the Permanent Open Space district until remediation is complete and the property is determined to be suitable for reuse.

Environmentally Sensitive

The Environmentally Sensitive district is intended to protect the fragile river and creek systems of Montague Township. These surface water features provide fish and wildlife habitats, aeration of water which improves its quality, scenic and aesthetic qualities, and recreational value. Their floodplains provide the service of floodwater storage and conveyance, acting as a buffer against flood hazards. These areas need protection because they can easily be degraded by careless development and land use practices

Rivers and creeks are natural corridors which could be used to link forest lands / open spaces and recreation areas together. Because areas surrounding rivers and creeks are environmentally sensitive (i.e. steep banks, prone to flooding, etc.), these areas ought not to be developed. Areas that are prone to flooding can be discerned by consulting with the Muskegon County Soil Survey and by contacting the Natural Resources Conservation Service (also see the *Flooding* and *Flood Control* sections). It is important to note that portions of the Environmentally Sensitive district are also a part of the Michigan Department of Natural Resources's Natural Rivers Program and are subject to additional regulations.

Forest Land / Open Space

The intent of this district is to preserve the rural character of the natural forest lands and open spaces of Montague Township. The Forest Land / Open Space district includes a diverse mixture of land uses, all of which provide or conserve to various extents, open space. It includes lands that are undeveloped (such as forest lands including managed forest lands, meadows, wetlands, etc.) or are minimally developed (such as recreational areas, very low density residential development, etc.), regardless of ownership.

Forest lands and open spaces include almost all critical and environmentally sensitive lands that contain unique characteristics and/or perform important natural functions. The critical and environmentally sensitive lands that are not included are river and creek systems. They are covered under the Environmentally Sensitive district. Because of the critical nature of these areas and their sensitivity to development, extensive consideration must be given in the determination of development policies and land use. These critical and environmentally sensitive lands include, but are not limited to wetlands, prime aquifer recharge areas, surface water, significant forest lands, meadows, endangered wildlife habitats, scenic views, historical significant areas, etc.

Forest lands and open spaces provide the Township with wildlife habitat, scenic views, groundwater recharge areas, recreation areas, erosion protection with natural plant cover, etc.. Areas with surface water features (lakes, wetlands, creeks, rivers, etc.) need extra attention because they can easily be degraded by careless development and land use practices.

These forest land and open space areas, as designated on the Future Land Use Map, should remain undeveloped, reserved for recreational uses, or in exceptional instances **very** low density residential development in locations where there are minimal environmental constraints.

Agricultural

The Agricultural district is intended to encourage the preservation of farming. This district encompasses prime farmland as defined by the Natural Resources Conservation Service (see the *Prime Farmland* section) and other significant areas used for farmland, which might include some forest land and open spaces not suitable for farming. Agricultural activities are encouraged and the use of land for non-agricultural residential purposes is strongly discouraged. Clear parameters of what is and is not agricultural residential development ought to be established within the Montague Township Zoning Ordinance.

Residential

The Residential District is intended to provide appropriate areas for Montague Township residents to live in. The Montague Township Zoning Ordinance further identifies appropriate locations for residential development by having several residential zoning districts with different minimum lot size requirements.

It is the intent of this district that residential development only occur on land that is developable. Developable land is determined by subtracting those portions which possess floodplains, wetlands, steep slopes, poor soils, or other sensitive natural features which should be preserved.

Unless served by public sewer and water, residences should be located where there is suitable soil for private individual sewage disposal and water supply systems. Intensive residential development should be served by public sewage and water supply or in locations that can be reasonably served by these public services in the near future.

As much as soil conditions allow, open-space subdivision design of residential development is strongly encouraged in order to provide for the permanent conservation of open space. It provides land for residential growth without overtaxing either current services, or the land's ability to support human habitation. Grouping dwelling units together is less wasteful of land, reduces the amount of roadway needed, and often leaves the land which is least suitable for development, or most suitable for open space, available for conservation.

Commercial

The Commercial district is intended to service the public's general retail and other similar needs. Commercial development in Montague Township is intended to service the daily needs of the Township's residents and to a lesser extent, the needs of the traveling public.

It is expected that Montague Township will experience some residential development pressure, therefore additional commercial businesses will most likely establish themselves to service increased local daily service needs. Great care must be taken to ensure that developments around the highway interchange have safe and efficient access, and have strict design controls enforced through the Zoning Ordinance and within the Site Plan Review process.

Light Industrial

The Light Industrial district is intended to provide adequate space to meet the needs of Montague Township's economy for light industrial uses. Examples of appropriate uses include, but are not limited to light industrial parks, wholesaling, warehousing, and certain light manufacturing as long as the use does not jeopardize the health, safety, or general welfare of residents.

Because industrial uses usually need extensive infrastructure (i.e. all-season roads, public water and sewer, etc.), industrial uses should be limited to areas that currently have or soon will have the appropriate infrastructure. Adaptive reuse of underutilized industrially used lands is encouraged. All proposed industrial development should undergo strict environmental review and adhere to stringent design standards.

Airport

The Airport district is intended to provide an appropriate location for an airplane landing facility and accompanying supportive uses.

VII. General Implementation Tools and Techniques

The ultimate goal of a master plan is the implementation of the plan. Implementing the ideas generated through the planning process is the culmination of the analysis, goal setting, and interaction activities which took place during the creation of the plan. This portion of the Plan is designed to guide the community in taking the actions necessary to achieve its goals and objectives.

The Montague Township Master Plan is intended to be a working document that provides the Township's decision-makers with information and guidance regarding the goals of the community. The Plan should be consulted whenever policy issues arise, and especially those concerning land use decisions.

Successful implementation requires a continuous effort on the part of the Montague Township Planning Commission, elected officials, and the community at large. It is essential that each member of these groups understand the Plan, and know their own role as it relates to the Plan. The Montague Township Planning Commission should take the initiative in promoting implementation activities to the appropriate elected officials, agencies, community groups, and citizens.

The following described items are tools and techniques that Montague Township can utilize to implement the goals and objectives of the Montague Township Master Plan. The following list is certainly not an exhaustive list of tools and techniques, and some are more applicable than others to Montague Township. Although the described tools and techniques are listed under specific headings, many of them can be used for multiple purposes. Many different combinations can be used by Montague Township to achieve its goals and objectives. Creative approaches to reaching goals furthers efforts by reaching them sooner and more thoroughly.

A. Zoning Ordinance

As previously mentioned, Montague Township has a Zoning Ordinance which for the most part is consistent with the completed Montague Township Master Plan. However, some revisions will need to be made to the Montague Township Zoning Ordinance. All zoning district provisions should be reviewed and adjusted according to the Plan. First the important items addressed in this Plan should be adjusted, and the rest could be adjusted as the need arises.

When a proposal for a change in zoning, conditional use, subdivision, or other development is brought before the Montague Township Planning Commission, the Planning Commission needs to first consult the Montague Township Master Plan. Review what the Plan has to say about the particular proposal within the *Goals, Objectives, and Implementation Strategies* section, the *Recommended*

Future Land Use Districts section, and all other applicable sections. The decision to grant the request needs to be made by first determining if the request is consistent or inconsistent with the Montague Township Master Plan and then whether or it meets the intent and requirements of the Montague Township Zoning Ordinance.

A highly useful zoning tool within the Montague Township Zoning Ordinance is the planned unit development. The planned unit development (PUD) concept is utilized by many communities to encourage innovative and imaginative project design. As a development type, it permits flexibility in site design and usage. It allows buildings to be clustered, the mixing of uses such as residential and neighborhood shopping, and other benefits. It allows for better design and arrangement of open space, and the retention of such natural features such as forests, slopes, and floodplains. Most frequently, developers are encouraged to set aside open space in perpetuity in exchange for flexibility on the part of the Township with respect to zoning requirements. Planned unit developments are structured so that developers can obtain flexibility within the zoning ordinance *in exchange for* some other rational item deemed important to the Township and which the Township would normally not receive. However, the use of a PUD is at the discretion of a developer. Therefore, encouragement by township officials and incentives to use this technique is needed.

B. Subdivision Control

Townships are authorized to adopt ordinances and regulations pursuant to Public Act 246 of 1945, as amended and are given authority to regulate and control the subdivision of unincorporated land within their jurisdiction pursuant to Public Act 591 of 1996, the Land Division Act (formerly known as P.A. 288 of 1967, the Subdivision Control Act).

The Land Division Act became effective during the time this Plan was written. Because P.A. 591 of 1996 contains some major changes to the former Act, a close look at the Montague Township Zoning Ordinance is imperative to discern its ramifications. A thorough understanding of the Land Division Act must be had prior to creating a subdivision ordinance.

With the creation of a local subdivision control ordinance, the Township can have an important voice in the design and layout of subdivisions as well as set uniform standards for streets, utilities, and other improvements. A subdivision ordinance would require the conformance of plats with the Montague Township Zoning Ordinance and allow additional controls to assure that development occurs in an orderly manner. An initial step towards creating a subdivision control ordinance would be inserting subdivision design standards in the existing Montague Township Zoning Ordinance.

C. Open Space and Agricultural Protection

The conservation of open space must be well integrated into the planning and zoning process. Several elements of this plan reflect that philosophy, including many of the recommendations made in the goals and objectives and the recommended future land use sections. Open space is most clearly defined in the *Recommended Future Land Use Districts* section. Open space conservation is important because wildlife habitats and recreational areas need to be planned and provided for prior to complete development occurring. As an overview, there are several possible avenues to explore when considering a strategy to conserve open space. Among them are:

Farmland and Open Space Preservation Act The Farmland and Open Space Preservation Act, P.A. 223 of 1996, provides several tools to work with. The Act is commonly known as P.A. 116 of 1974. According to the Montague Township Supervisor, Montague Township has approximately 1,250 acres enrolled in this program. The Real Estate Division of the Michigan Department of Natural Resources briefly describes the Act's four tools as follows:

Farmland Development Rights Agreements - A voluntary temporary restrictive covenant which preserves farmland from development via tax credits and other incentives

Designated Open Space Easements - A voluntary temporary restrictive covenant which preserves State significant open space lands from development via property tax payments from the state to the local government

Local Open Space Easements - A voluntary temporary restrictive covenant which preserves locally significant open space land from development via a local reduction in property taxes

Acquisition of Development Rights - A permanent restrictive covenant which preserves State significant farmland and open space via purchase of the development rights of a parcel (Michigan Department of Natural Resources, Real Estate Division)

Purchase of Development Rights The purchase of development rights (PDR) entails compensating a property owner for the value lost in obtaining a property right that is severable from the land. The most widely known such property rights are easements and mineral rights. A property's development potential is another property right that is severable from the land. By selling all the development rights, a landowner obtains the development value and forfeits the right to ever physically develop the property (Planning and Zoning Center, Inc. 4). An example of PDR in Michigan is occurring in Peninsula Township, Grand Traverse County where the development rights of prime farmlands are being purchased.

Recently, three bills were signed into law which authorize the purchase of development rights by local units of government. The bills are now known as Public Acts 569, 570, and 571 of 1996. These Acts amend and change the names of the three existing zoning enabling acts. In it they authorize the creation of a PDR program to protect "agricultural land and other eligible land." "Other eligible land" is defined as "land that has a common property line with agricultural land from which development rights have been purchased and that is not divided from that agricultural land by a state or federal limited access highway." Therefore, the only "other eligible lands" that can be included in a PDR program under these Acts at this time are those that are contiguous to agricultural land (Planning and Zoning Center, Inc. 4). The Acts that have been amended are those as follows:

OLD NAME	NEW NAME
P.A. 207 of 1921, no name	P.A. 571 of 1996, City and Village Zoning Act
P.A. 184 of 1943, Township Rural Zoning Act	P.A. 570 of 1996, Township Zoning Act
P.A. 183 of 1943, County Rural Zoning Enabling Act	P.A. 569 of 1996, County Zoning Act

Open-Space Subdivision Design Open-space subdivision design is the open space conservation technique with the broadest application and the most flexibility. The technique can be used anywhere regardless of underlying zoning district, property ownership, or other strictures described in the above mentioned open space conservation techniques. Open-space subdivision design, sometimes referred to as conservation subdivision design, is described in this Plan as being applicable for residential developments. However, the technique can be used for other types of developments as well.

"Every year, ... residential subdivisions needlessly consume excessive amounts of farmland and woodland, converting them to standardized unimaginative checkerboards of house lots and streets" (Arendt, "Creating" 1). An open-space subdivision design combats checkerboard development, reduces infrastructure costs, and creates an open space network as envisioned in the Plan (also see the *Settlement Patterns* section).

The following four steps briefly describe the method of designing an open-space subdivision:

1. Identify Conservation Areas - both unbuildable areas (as a result of floodplains, wetlands, steep slopes, etc.) and unprotected areas that are locally significant features such as meadows, diverse forest lands, critical wildlife habitats, scenic views, historic buildings, etc.
2. Locate House Sites - close to the conservation open space areas both for quality-of-life and marketing reasons
3. Align Streets and Trails - logically connecting the homes for both vehicular traffic and non-vehicular traffic
4. Draw in the Lot Lines - last, thereby conserving scenic views, wildlife habitats, open spaces, etc. (The Natural Lands Trust 14).

The open-space subdivision design approach is intended to preserve the area's natural character while still allowing development to occur. It attempts to strike a balance. After identifying unbuildable areas, locally significant features (especially the various forms of open spaces) need to be identified and set aside. The unbuildable areas and areas of local significant features combined should represent a significant amount of a given parcel of land. Locally significant features are often prized for their contributions to an area's character, and therefore need to be protected. It is important to note that the maximum density of dwelling units on a given parcel of land is only based upon the buildable portions of land. House sites are located in the areas remaining after local significant features have been set aside for conservation, and are situated in such a manner as to take advantage of the conserved scenic views, etc. Therefore, house sites have to be small to accommodate the land area occupied by the locally significant features. The close proximity of the house sites greatly reduces the length of infrastructure, and therefore its costs. The resultant open spaces (both the unbuildable portions and locally significant features), are permanently protected by either a conservation easement, a homeowner's association, a land trust, or some other means.

Within the current Montague Township Zoning Ordinance, this technique appears to work best within a planned unit development (PUD), because a PUD allows for flexible zoning to obtain smaller lot sizes, street widths, etc. Incentives for developers to use this technique (within a PUD or other) need to be devised. To utilize this technique to a fuller extent, residential densities could be incorporated within this Plan or new zoning ordinance standards can be adopted to ensure open space conservation occurs.

D. Flood Control

The zoning of the land adjacent to the White River and select tributaries such as Carleton (Landford) and Carlton Creeks is administered by Montague Township. In 1975, the White River, including the portion in Montague Township, was designated a *Country-Scenic River* in accordance with the Natural Rivers Act (P.A. 231 of 1970). As such, those portions designated are subject to specific zoning regulations. Among them are stringent regulations regarding building close to the river, filling practices, and other items that would affect the floodplain's capacity to adequately handle a flood event without loss of life and major damage to property. Enforcement of those specific zoning regulations would certainly help prevent the loss of life and major damage to property when a flood occurs.

In addition, the Federal Emergency Management Agency (FEMA) through its National Flood Insurance Program (NFIP) map 100 and 500 year floodplain boundaries for those local governments who participate in their program. By participating in their program, local governments enable individual property owners the opportunity to purchase flood insurance. . But to participate, local governments must adopt and enforce floodplain management regulations.

VIII. Conclusion

If properly used, the Montague Township Master Plan will assist Montague Township in properly managing future development. The Plan is a guide for decisions, and should be consulted regularly, especially for land use decisions. The Plan should be updated as the local situation warrants, or every ten years.

BIBLIOGRAPHY

100 Years: Montague, Michigan 1860-1960. City of Montague, MI, 1960.

Arendt, Randall. "Conservation Subdivision Design: A Four-Step Process." Natural Lands Trust. February 1995: 1-8.

Arendt, Randall. "Creating Open Space Networks." Environment and Development. May/June 1996: 1-4.

Eichenlaub, Val, et al. The Climatic Atlas of Michigan. South Bend, IN: The University of Notre Dame Press, 1990.

Library of Michigan. Michigan Cemetery Atlas, Lansing, MI, 1991.

Libby and Kovan. Rural Groundwater Contamination: Impacts and Potential Benefits From Land Use Planning and Zoning. East Lansing, MI: Department of Agricultural Economics, Michigan State University.

Michigan Department of Education. Michigan School Report. Lansing, MI, April 11, 1996.

Michigan Department of Natural Resources, Environmental Response Division. Michigan Sites of Environmental Contamination, vol. 1. Lansing, MI, April 1995.

Michigan Department of Natural Resources, Land Resource Programs Division. Michigan's Natural Rivers Program. Lansing, MI, 1976.

Michigan Department of Natural Resources, Land and Water Management Division. White River Natural River Zoning. Lansing, MI, 1992.

Michigan Department of Natural Resources, Michigan Coastal Management Program. Growth Management Tools and Techniques. Lansing, MI, April 1995.

Michigan Department of Natural Resources, Real Estate Division. "Farmlands and Open Space Program." Lansing, MI, March 27, 1997.

Michigan Employment Security Commission, Information and Reports Section. Grand Rapids - Muskegon - Holland MSA: Civilian Labor Force Estimates by County 1995-1996. Lansing, MI, 1995.

Michigan Employment Security Commission, Information and Reports Section. Grand Rapids - Muskegon - Holland MSA: Civilian Labor Force Estimates by County 1996-1997. Lansing, MI, 1997.

Miller, Tyler Jr. Living in the Environment. 6th ed. Belmont, CA: Wadsworth Publishing, 1990.

Montague Township Zoning Ordinance. Montague Township, MI, April 26, 1988.

The Natural Lands Trust. "Open Space Design Offers Townships Fair Means to Preserve Rural Landscape." Pennsylvania Township News. August 1995: 10-15.

Planning and Zoning Center, Inc. Michigan Society of Planning Official's Community Planning Handbook: Tools for Guiding Community Change. 2nd ed., Lansing, MI, March 1992.

Planning and Zoning Center, Inc. "Purchase of Development Rights Legislation Signed." Planning and Zoning News. February 1997: 4.

United States Department of Agriculture, Natural Resources Conservation Service. Soil Analysis for Muskegon County, Michigan. From the Field Office Computer System (FOCS), printed June 14, 1995.

United States Department of Agriculture, Natural Resource Conservation Service and Forest Service. Soil Survey of Oceana County, Michigan. Washington D.C.: GPO, 1996.

United States Department of Agriculture, Soil Conservation Service. Soil Survey: Muskegon County, Michigan. Washington D.C.: GPO, 1968.

United States Department of Commerce, Bureau of the Census. 1970 Census of Housing. Volume I, Housing Characteristics for States, Cities, and Counties, Part 24: Michigan. Washington D.C.: GPO, August 1972.

United States Department of Commerce, Bureau of the Census. 1980 Census of Housing. Volume I, Characteristics of Housing Units, Chapter A, General Housing Characteristics, Part 24: Michigan. Washington D.C.: GPO, August 1982.

United States Department of Commerce, Bureau of the Census. 1980 Census of Population. Volume I, Characteristics of Population, Chapter C, General Social and Economic Characteristics, Part 24: Michigan, Sections 1 and 2. Washington D.C.: GPO, August 1983.

- United States Department of Commerce, Bureau of the Census. 1990 Census of Population and Housing. Washington D.C.: GPO, November 1992.
- United States Department of Commerce, Bureau of the Census. Census of Housing, 1950. Volume I, General Characteristics, Part 4: Michigan - New York. Washington D.C.: GPO, 1953.
- United States Department of Commerce, Bureau of the Census. Census of Population, 1970. Volume I, Characteristics of the Population, Part 24: Michigan. Washington D.C.: GPO, 1973.
- United States Department of Commerce, Bureau of the Census. Housing, 1940, Volume II, General Characteristics, Part 3: Iowa - Montana. Washington D.C.: GPO, 1943.
- United States Department of Commerce, Bureau of the Census. Population, 1940, Volume II, Characteristics of the Population, Part 3: Kansas - Michigan. Washington D.C.: GPO, 1943.
- United States Department of Commerce, Bureau of the Census. United States Census of Housing, 1960. Volume I, States and Small Areas, Part 5: Michigan - New Hampshire. Washington D.C.: GPO, 1963.
- United States Department of Commerce, Bureau of the Census. United States Census of Population, 1960. Volume I, Characteristics of the Population, Part 24: Michigan. Washington D.C.: GPO, 1963.
- United States Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, Regional Economic Measurement Division. Regional Economic Information System: 1969-1993. Washington D.C.: GPO, May 1995.
- United States Department of Commerce, National Oceanic and Atmospheric Administration. 1995 Local Climatological Data: Annual Summary with Comparative Data, Grand Rapids, Michigan. Washington D.C.: GPO, 1995.
- United States Department of Commerce, National Oceanic and Atmospheric Administration. 1995 Local Climatological Data: Annual Summary with Comparative Data, Muskegon, Michigan. Washington D.C.: GPO, 1995.
- United States Department of Education, National Center for Educational Statistics. School District Data Book. Washington D.C.: GPO, 1990.

Warbach, John and Mark A. Wyckoff. Growth Management Tools and Techniques.
Lansing, MI: Michigan Coastal Management Program, Michigan Department of
Natural Resources, April 1995.

West Michigan Shoreline Regional Development Commission. Children and Families
in Muskegon County. Muskegon, MI, January 1997.

The White Lake Area Historical Society. The White Lake Area Historical District.
Montague, MI, June 1, 1978.

MONTAGUE TOWNSHIP PLANNING COMMISSION
AUGUST 13TH, 1997

MEMBERS PRESENT: (ALL) JIM COUSINO, JIM LORENZ, DAVE FRANCIS, STU
SCHOLL, BILL VANFRANK, TRACY KORTHASE
VISITORS PRESENT: WES WEESIES, ROGER SIMON, JEFF KING

SUBJECT: FINAL ACCEPTANCE OF MASTER PLAN DRAFT

Meeting opened at 7:00pm.

Cousino relayed information from several days ago regarding a special meeting between Hooker Chemical people and the Township Board and Planning Board. He said they did not indicate any negative feeling regarding proposed zoning changes on their land. They did not like the wording "Permanent Open Space". Cousino suggested we change the wording to "Transitional Open Space", a new zoning class, except leave area immediately surrounding vault under "Permanent Open Space".

Remainder of meeting was spent going through with changes to the draft. Changes can be found on pages 1,3,54,59,66,70, and the enlarged map.

The Planning Board is asking West Michigan Shoreline Regional Development Center to provide us with a total of 30 Master Plans when completed. (Township Board, Planning Board, Zoning Board of Appeals, Zoning Administrator, County, neighboring city and township, and a few extra to keep on hand.)

Korthase made a motion to accept the Montague Township Master Plan Draft, pending enclosed changes in first draft dated July 3, 1997.

Lorenz seconded.

Roll call vote: Cousino - aye, Lorenz - aye, Francis - aye, Scholl - aye, VanFrank - aye, Korthase - aye.

No nays.

Master Plan Draft is accepted.

Meeting adjourned at 9:15pm.

