



**Bingham Township  
Comprehensive Plan**

Adopted June 1999  
RE-Adopted, JANUARY 2005

2010

PLANNING COMMISSION  
RESOLUTION 2 OF 2005

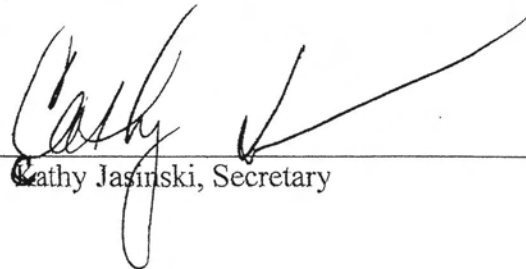
It is the intent of the Bingham Township Planning Commission to amend Resolution 1 of 2004 by adding the following language in order to clarify the intent of the Agricultural area designated on the Future Land Use Map.

WHEREAS, It is the intent of the Planning Commission that the "Agricultural" area designated on the Future Land Use Map be designated as the official "Agricultural Preservation " area;

THEREFORE, the Planning Commission has met its obligation according to Public Act 168 of 1959, by reviewing the existing Master Plan and hereby determined the existing Master Plan continues to meet the Township's goals and objectives including the future development of the Township and the area designated as "Agriculture" on the Future Land Use Map is intended to be designated as "Agricultural Preservation" and the map which is hereby modified.

Approved and effective this 1<sup>st</sup> of September, 2005.

  
Robert Gregory, Chairperson

  
Cathy Jasinski, Secretary

**BINGHAM TOWNSHIP PLANNING COMMISSION**  
**Regular Meeting Minutes**  
**August 5, 2010**

**1. Call to Order -**

Mike Park, Chairman, called the Bingham Township Planning Commission Meeting to order on Thursday, August 5, 2010, at 6:30 p.m at the Bingham Township Hall, 7171 S. Center Highway, Traverse City, MI.

**Roll Call -**

Present: Mike Park, Will Bunek, Mary Bush, Cathy Jasinski, Midge Werner  
Absent and excused: Dennis Grant, Bob Gregory  
Staff Present: Kathy Egan, Planner; Steve Patmore, Zoning Administrator

**2. Agenda Approval -**

***Cathy Jasinski/moved, Mary Bush/supported, PASSED, to approve the Agenda as presented.***

**3. Approval of Minutes**

**May 6, 2010 -**

***Midge Werner/moved, Will Bunek/supported, PASSED, to approve the May 6, 2010 Minutes as amended-CORRECTED at this meeting as follows: Pg. 1 - showed the trees on the site plan; New Conditions - Retail or other sales shall be clearly incidental and directly related to the conduct of the home business. Hours of retail sales shall not be earlier than 10:00 a.m. nor later than 8 p.m. Pg. 6 - not land which is accessible.***

**June 3, 2010 -**

***Will Bunek/supported MOVED, Midge Werner/supported, PASSED, to accept the June 3, 2010 Minutes as presented.***

**4. Public Comment**

Marita Somero indicated she has reviewed the Suttons Bay Township noise and junk ordinances, and is asking that the Township not follow Suttons Bay Township's ordinances. Administration of such ordinances increases costs to the Township, creates discord among the community and the possibility of litigation.

**5. Conflict of Interest** There were no conflicts of interest.

**6. Items for Consideration**

**a. Master Plan Review**

Kathy Egan requested that the Commission discuss whether or not the master plan needs updating (amendments), needs to be replaced (a new plan), or is still current and adequate. Comments from the Commissioners - wait a year until census information (demographics) is available, consider updating the plan which is 12 years old, need a survey, request that the Township Board add monies to the budget to update the master plan, and through the Grand Vision, monies may be available to update the master plan.

***Will Bunek/moved, Midge Werner/supported, PASSED, to indicate the Planning Commission has reviewed the comprehensive land use plan, and although there are areas that could be updated, the Commission finds that the basic conclusions and goals in the plan are still valid.***

**b. Rural Residential Map**

Steve Patmore indicated approval has been given to purchase a rural residential map for \$100.00.

**c. Zoning Ordinance re-organization update**

Kathy Egan provided the Commissioners with a copy of the newly reprinted Zoning Ordinance. The Township's attorney has reviewed the Zoning Ordinance Re-organization amendment and noted that the land division and subdivision ordinance provisions for the township should be updated.

**d. New Designs for Growth**

Kathy Egan indicated the Commissioners will be provided a copy of the New Designs for Growth Guidebook, further she is requesting that a dvd subscription of educational topics for the Commission Members be purchased.

**7. Communications and Reports**

**a. Chairman** - No report was submitted from the Chairman.

**b. Zoning Administrator**

Steve Patmore, Zoning Administrator, submitted written reports for June and July 2010. Mr. Patmore indicated Barb Coye mailed information regarding Lawrence Lake to the Planning Commission which will be retained in the file. Mr. Patmore provided a comparison of private road standards - Leelanau County, and Bingham Site Plan Review Applicability for the Commission's review.

**c. Planner**

Kathy Egan indicated the new reorganized Zoning Ordinance will be put on the County's website.

**d. Township Board** - The May 17, 2010 Township Board Minutes were provided to the Commission.

**e. Commissioners** - There was no report from Commissioners.

**8. Items for Consideration for the September 2, 2010 Meeting**

Items for consideration - rural residential, private roads, and site plan review.

**9. Public Comment**

There was no public comment.

**10. Adjournment**

***Cathy Jasinski/moved, Midge Werner/supported, PASSED, to adjourn the meeting at 7:30 p.m.***

Respectfully submitted,  
Marge Johnson, Recording Secretary  
Reviewed by staff 8-16-10  
Approved as corrected 9-2-10

**COMPREHENSIVE PLAN**  
**Bingham Township**

**Prepared for:**

**TOWNSHIP OF BINGHAM**  
**Traverse City, Michigan**

**June 1999**  
**Project No. E14877**

**Prepared by:**

**GOVE ASSOCIATES INC.©**  
**1601 Portage Street**  
**Kalamazoo, Michigan**

**Bingham Township  
Comprehensive Plan**

**Planning Commission**

Ross Ard, Chair  
Don Kiessel, Vice Chair  
Midge Werner, Secretary  
Bill Grant  
Dorothy Petroskey  
Bob Gregory  
Cathy Jasinski  
Diane Kiessel, Recording Secretary

**Board**

Harry F. Sanborn, Supervisor  
Carol L. Groesser, Clerk  
Judy Petroskey, Treasurer  
Ronald Collins, Jr.  
Midge Werner

---

<b>Table of Contents</b>
--------------------------

**INTRODUCTION**

The Planning Process .....	i
Summary of Document .....	ii

**PART I - COMMUNITY PROFILE****Physical Features**

Location .....	1-1
Natural Features.....	1-2

**Social Features**

Introduction .....	2-1
Population Trends .....	2-1
Migration .....	2-1
Age Composition .....	2-2
Household Occupancy and Composition .....	2-3
Value of Housing .....	2-5
Education and Occupation .....	2-6
Location of Employment.....	2-8
Income .....	2-9

**Community Facilities**

Introduction .....	3-1
Fire Protection .....	3-1
Schools .....	3-1
Parks and Recreation .....	3-1
Library .....	3-2
Utilities .....	3-2
Transportation .....	3-2

**Existing Land Use**

Introduction .....	4-1
Land Use Classifications .....	4-1
Trends and Analysis .....	4-2
Subdivision of Land .....	4-4

---

<b>Table of Contents</b>
--------------------------

**PART II - PLAN**

**Goals**

Community Survey.....5-1  
Citizen Planning Committees .....5-1  
Issue Identification.....5-1  
Goals and Objectives.....5-2

**Future Land Use**

Introduction .....6-1  
Population and Housing Projections .....6-1  
The Future Land Use Plan .....6-3  
Future Land Use Distribution .....6-8  
Build-Out Analysis of the Future Land Use Map.....6-9

**Implementation**

Introduction .....7-1  
Implementation Schedule.....7-2

- APPENDIX A – Survey Results / Citizen Planning Committee Reports  
APPENDIX B – Population Projections  
APPENDIX C – Design Standards



## Introduction

### The Planning Process

The purpose of a community plan is to provide guidance to public and private decision makers with regard to future changes in land use and the allocation of resources.

A comprehensive plan contains information about physical and social features, community facilities, existing land use and economic trends. The plan identifies key planning issues and then establishes goals and actions to address the issues. A future land use plan also becomes part of the recommendations section and guides local officials when making future zoning and land development decisions.

The Planning Commission is the body responsible for developing and adopting the comprehensive plan. It is suggested, but not required, that the Township Board also consider adopting the plan. Amendments to the adopted plan are also the responsibility of the Planning Commission.

#### What is a Comprehensive Plan?

- Assessment of existing conditions and future needs
- Guide to Planning Commission, Township Board, other decision makers
- Guide for future land use, traffic circulation, community facilities
- Informational resource
- Listing of community goals
- Document that considers land uses and factors beyond municipal borders

#### Why Plan?

- Ensure compatibility of different land uses
- Provide necessary public utilities and facilities
- Provide open spaces and natural resources
- Provide safe traffic circulation
- Expand economic opportunities
- Provide areas for quality housing options
- Prepare for new private developments
- Guide future development

The Plan for Bingham Township was prepared in 1998-1999, with the assistance of many individuals and groups from throughout the community. Citizen Planning Committees in conjunction with the Planning Commission, Township Board, and Township Staff worked with a planning consulting firm in preparing the Plan. This Plan is not a zoning ordinance but will guide future changes to the Township Zoning Regulations.

As the community develops and matures, Bingham Township will need to update its goals and recommendations for future development and redevelopment. It is sug-

**The Comprehensive Plan is not . . . . .**

- Permanent - it should be reviewed every 5 to 10 years
- Inflexible - it can be amended
- A law
- A zoning map - it is a guide for future zoning decisions
- A basis for property tax assessment

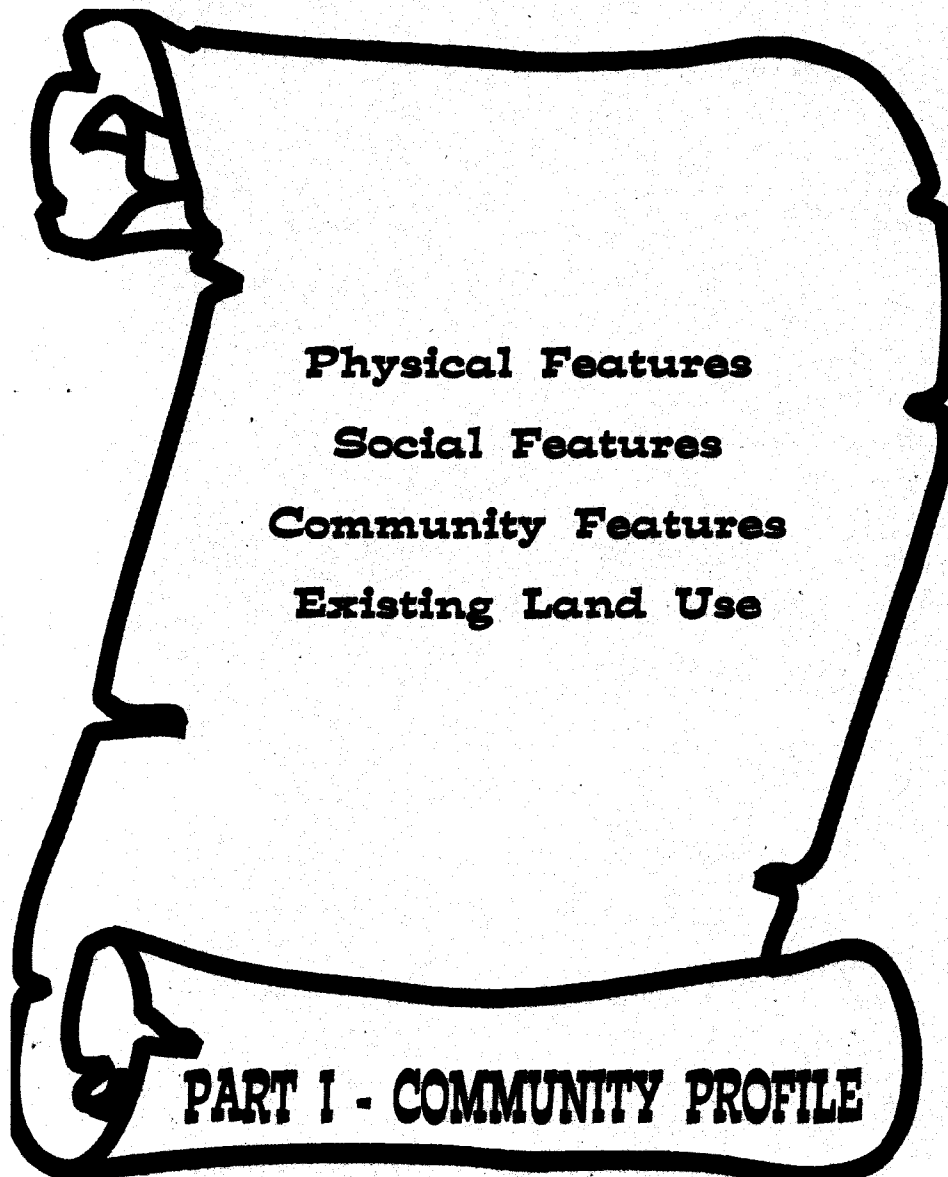
gested that a comprehensive plan be updated every five years in a fast growing community and every 10 years for slower growth areas.

**How to Use this Plan**

The Bingham Township Comprehensive Plan is broken into two parts. Part I - Community Profile, includes four sections: Physical Features, Social Features, Community Facilities and Existing Land Use. These sections focus on current community statistics and trends. Part II - Plan and Implementation has three sections: Issues and Public Input, Goals and Objectives, Land Use Plan, which discuss the community vision and goals for the future and sets forth specific land use needs.

This Plan is to be used as a guide for future decisions by the Planning Commission, Township Board, Township Staff, business people, residents, nonprofit organizations and developers. The governmental boards and staff should be familiar with the goals and objectives defined in Section 5, and the details of the future land use proposals in Section 6. They should also develop and follow a "reasonable" work program, using the Implementation Program Schedule, to identify the particular actions that are deemed of highest priority for the given budget year.

Nongovernmental groups or individuals also should be knowledgeable of the contents of the Plan. Businesses, in particular, should attempt to make decisions about capital investment and future development based upon the guidelines of the Plan. It is important for the welfare of the Township, however, that both businesses, private individuals and groups provide constructive feedback to the Planning Commission on issues of development. This communication will assist Bingham Township assess the current needs of the Community.



**Physical Features**

**Social Features**

**Community Features**

**Existing Land Use**

**PART I - COMMUNITY PROFILE**



**Physical Features**

---

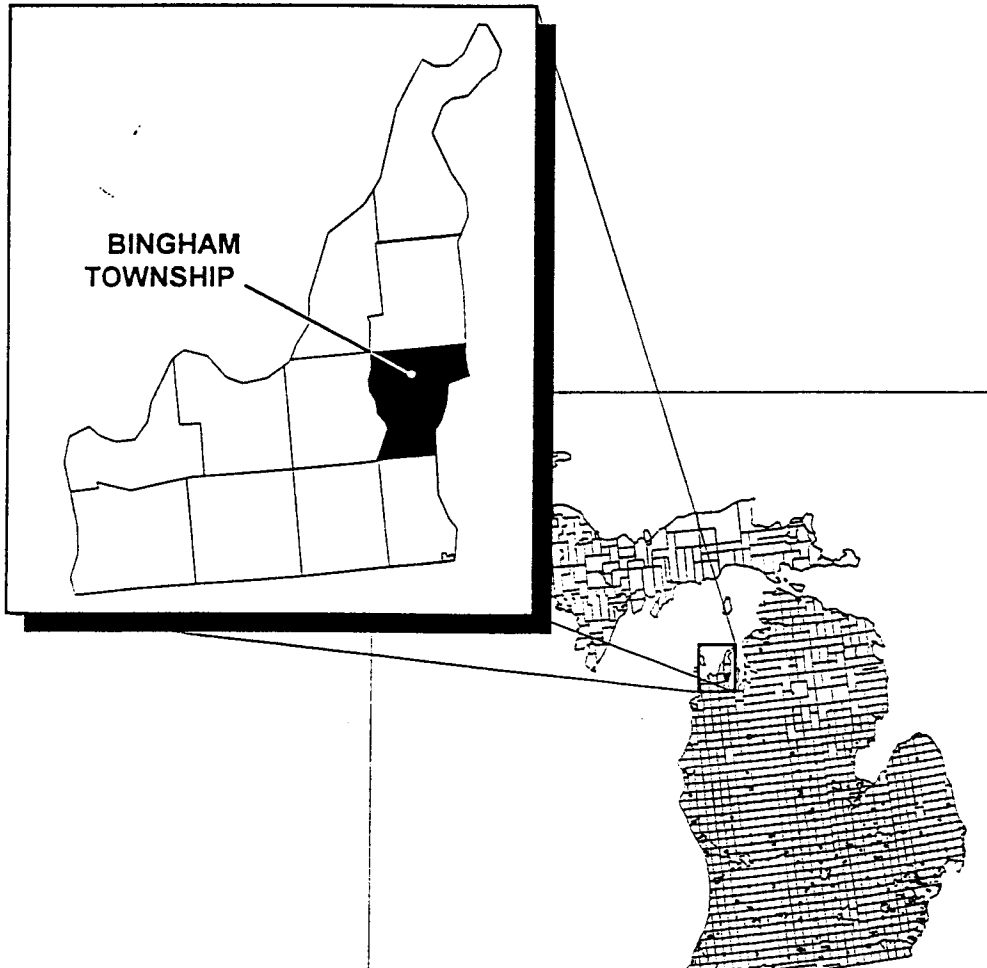
## Section 1 – Physical Features

### Location

Bingham Township is located in eastern Leelanau County, bordered by Lake Leelanau in the west and Grand Traverse Bay in the east. The Township shares borders with three surrounding townships, including Centerville Township to the west, Suttons Bay Township to the north, and

Elmwood Township to the south. The Village of Suttons Bay is one and one-half mile north of the northern border of the Township. The county seat, in the Village of Leland, lies eight miles northwest of the Township. Traverse City is the dominant metropolitan center of the region and lies seven miles to the south.

MAP I-1 - LOCATION  
LEELANAU COUNTY



## Section 1 – Physical Features

### Natural Features

Bingham Township is located in a region that is rich in the quality and quantity of its natural resources. The general climate of the area, the composition of local soils, the predominant vegetation, and the quality and extent of both surface and groundwater all determine the ability of the Township to maintain a healthy environment. Unplanned development of the Township will place increasing pressures on these resources. Because of the importance of these natural resources to the region's economy, future development needs to be sensitive to potential impacts upon the environment. The following describe these natural elements, so that they may be taken into consideration as the Township grows.

*Because of the importance of these natural resources to the region's economy, future development needs to be sensitive to potential impacts upon the environment.*

**Topography** - As with much of the Great Lakes Region, glaciation has formed the landscape of Bingham Township. The glaciers have piled up rocks, gravels and sediments to form hills, called moraines. These moraines dominate the central portion of the Township, sloping down toward the east and west. Over one-third of the Township has slopes greater than 12 percent (See Map 1-3). Steep terrain can

provide significant challenges to traditional development.

**Vegetation** - Most of Bingham Township was originally covered by a mixture of deciduous and coniferous forests. The area was heavily lumbered in the late nineteenth century depleting much of the original forest cover. Various species of hardwoods still exist throughout the area including Beech, Sugar Maple, Ash, Walnut, Hickory and Oak.. Woodlots are primarily second growth areas and are generally located on poorly drained, mineral soils, or on steeply sloped areas. The woodlands are an important resource for the Township, providing habitats for wildlife and contributing to the rural character of the area.

**Wetlands/Water Resources** - Bingham Township is split between two minor watersheds: the Lake Leelanau Watershed on the west and the Grand Traverse Bay Watershed to the east. Lake Leelanau, which forms the western border of the Township, is divided north and south by the "narrows" at the Village of Lake Leelanau. The southern

*A watershed is the land area that contributes runoff to a stream, river or lake.*

portion of the lake is the largest, comprising nearly 5,400 acres. The lake flows south to north through the narrows, ultimately draining into Lake Michigan. The lake currently has high water quality as

## Section 1 – Physical Features

characterized by clear water and low amounts of algae and aquatic plant growth. Water quality is showing signs of deterioration in recent years, however, due to an increased amount of nutrients running off of the land. Human activity and land use have a direct affect on the type and amount of nutrients that are delivered to the lake.

***Human activity and land use have a direct affect on the type and amount of nutrients that are delivered to the lake.***

The eastern border of the Township is defined by the West Arm of Grand Traverse Bay. Grand Traverse Bay is one of the few remaining oligotrophic (high water quality) bays in the Great Lakes. It has a length of 32 miles and a maximum width of 10 miles. The bay has over 130 miles of shoreline, which contain numerous public parks and beaches.

Wetlands, as defined by the National Wetlands Inventory and the Michigan Resource Information System, are found throughout the Township but are particularly concentrated around the area's rivers and lakes (see Map 1-3). Both Lee and Mebert Creeks have large wetland complexes along their channels. Additional wetlands are found

***Wetlands clean water by settling out sediments and braking down nutrients and other contaminants.***

along the Bay shore and Lake Leelanau shore. Wetlands contribute significantly to the health and vitality of the environment. Wetlands clean water by settling out sediments and breaking down nutrients and other contaminants. They also serve as important habitats for a variety of wildlife and native vegetation.

**Soils** - Soils are the building blocks that define the types of activities that can be sustained on the land. Soils determine the types of vegetation and drainage that occur naturally.

They also delineate the types of crops that can be planted and the location and density of buildings, roads and other man-made structures. Soil classifications (made up of a mixture of basic soil types) have been identified and mapped by the Soil Conservation Service in the Soil Survey of Leelanau County, Michigan.

There are 24 different soil types within the Township. Each of these types has their own unique characteristics, including limitations for development, recreation and agriculture. These soil types are a part of the one of three soil associations: the East Lake-Eastport-Lupton association, Emmet-Leelanau association, or the Leelanau-Mancelona association. For the most part, these associations are characterized by well-drained, sandy soils.

---

## Section 1 – Physical Features

Map 1-2 shows areas classified as prime farmland by the U.S. Department of Agriculture. Prime farmland soils are defined as those best suited to produce food, feed, forage, fiber and oilseed crops. These soils have properties that are favorable for production of sustained high yields of crops.

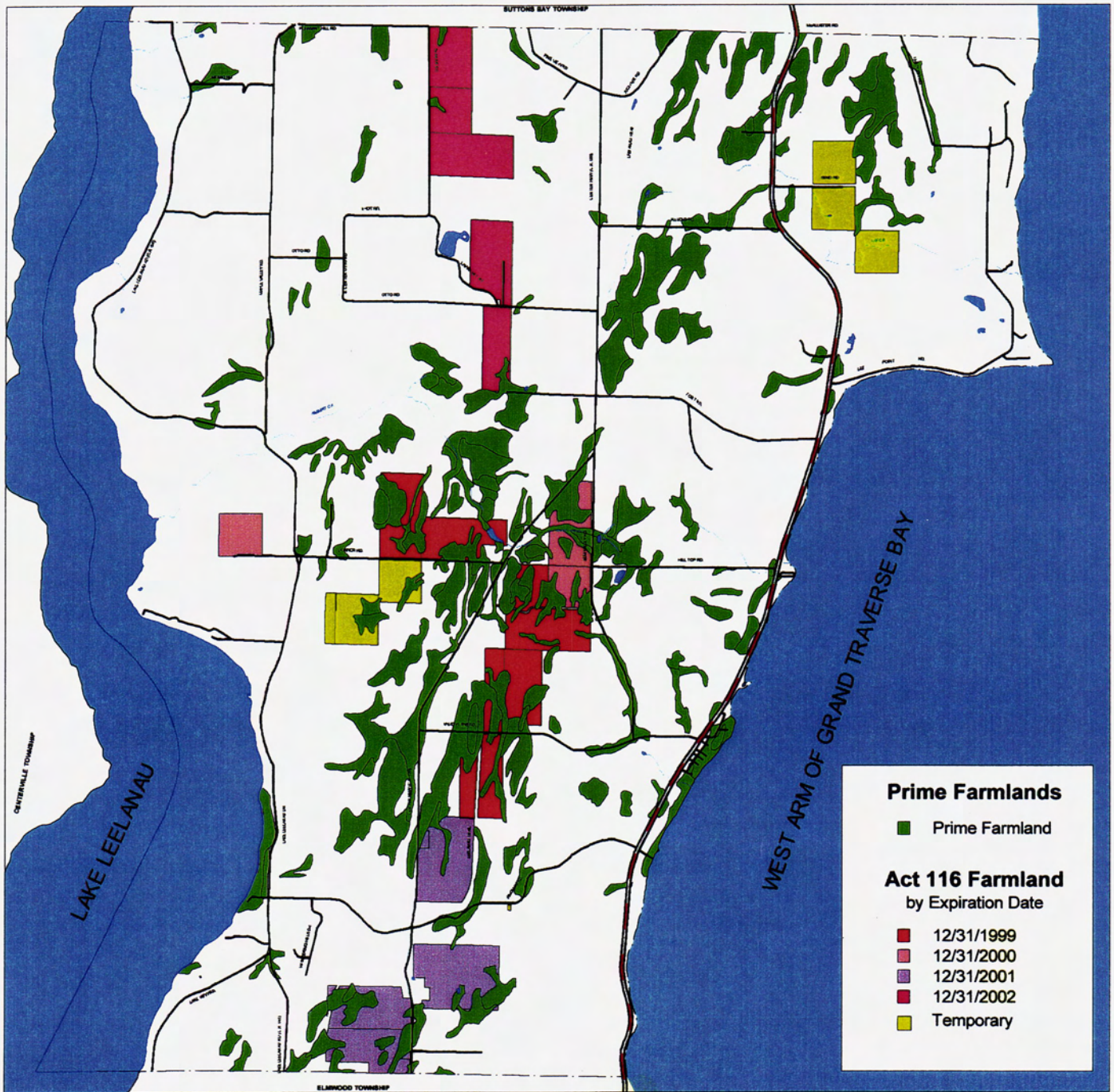
This designation is based solely on soil type and topography.

Map 1-2 also shows Act 116 farmland. Public Act 116, known as the Farmland and Open Space Preservation Act, creates a set of incentives for landowners to keep farmland in production while discouraging further development. According to the Department of Natural Resource's Real Estate Division, Bingham Township has over 1,600 acres currently under the program.

Map 1-3 show areas in the Township where soil and topography may impact development. This impact comes from a variety of sources, such as the presence of wetlands, poor permeability of soils, and improper engineering properties for building development. These classifications are intended for general planning purposes only. Decisions on the uses of specific tracts of land should refer to the original source material: Soil Survey of Leelanau County, Michigan, Soil Conservation Service, 1973.

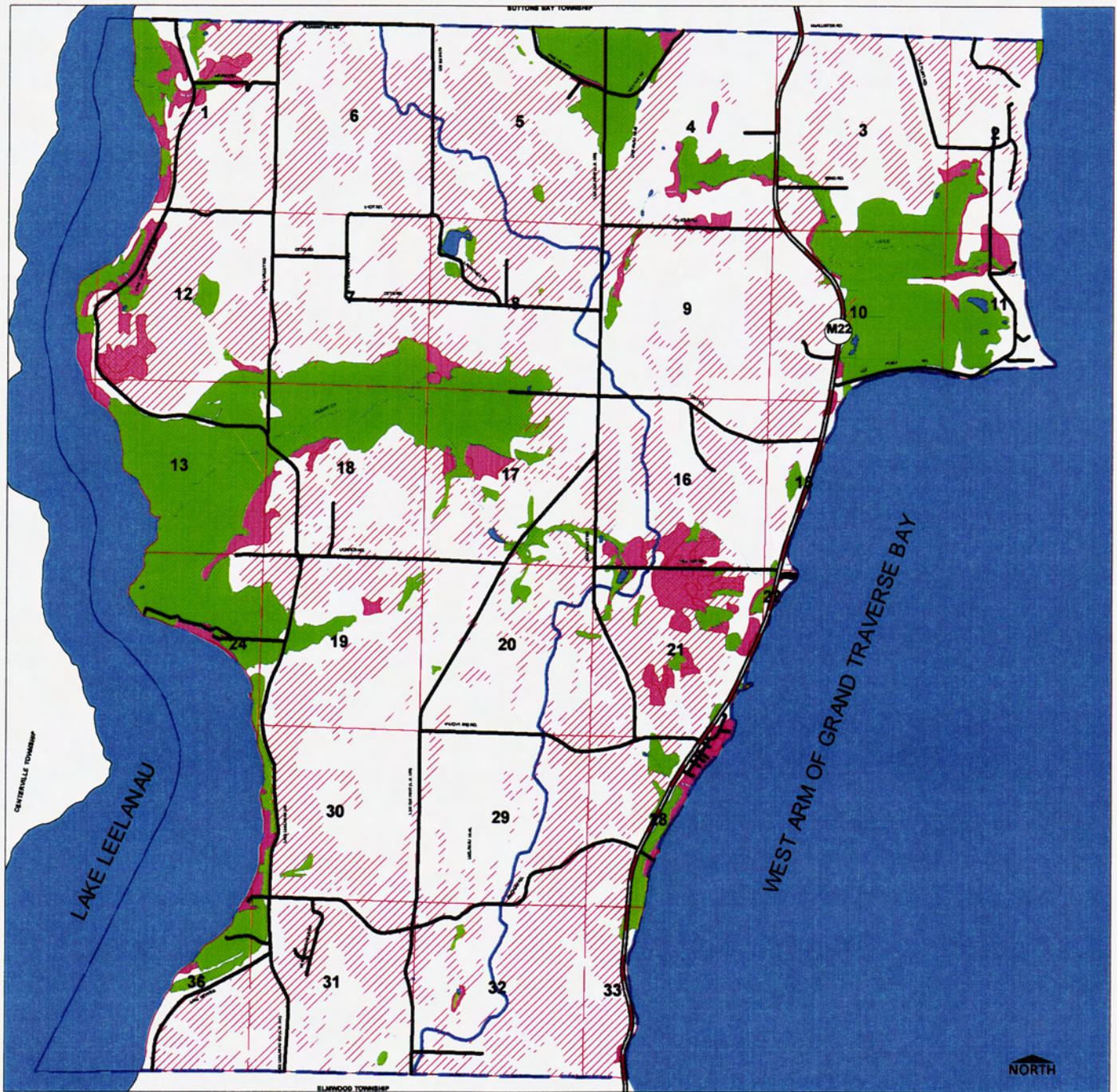


MAP 1-2 Prime Farmland Soils and Land Protected under Act 116







SOURCE: Soil Survey of Leelanau Co., USDA Soil Conservation Service, 1973  
Act 116 Farmland from MI DNR Real Estate Division

MAP 1-3 Development Limitations Due to Soils, Slope, or Presence of Wetlands



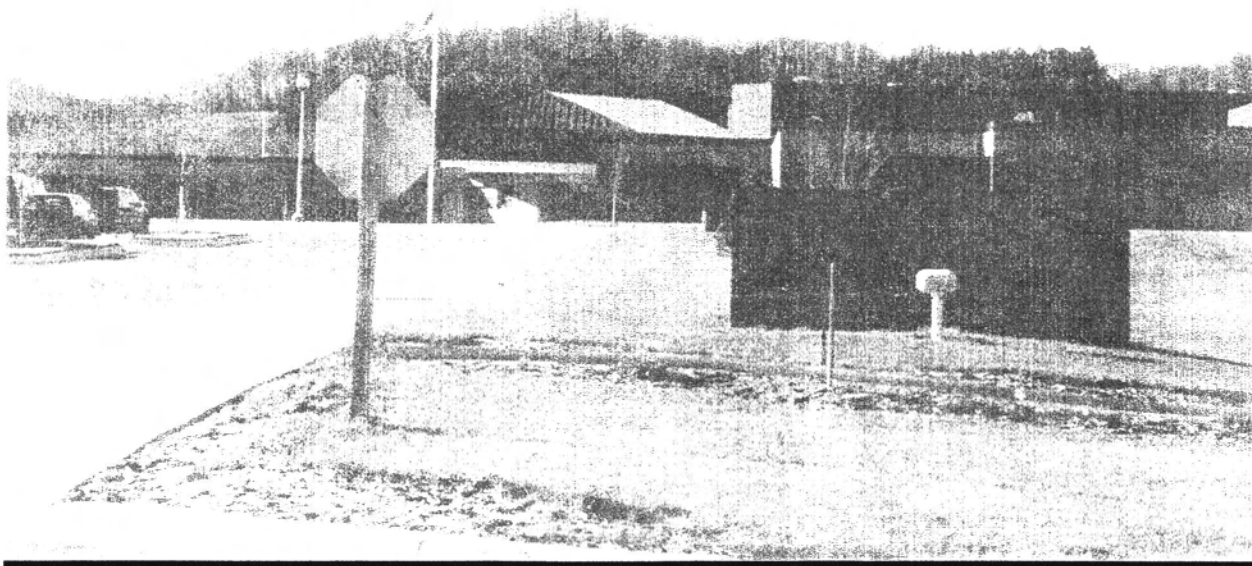
**LEGEND**

-  Slopes greater than 12%
-  Composite Wetlands
-  Soil Limitations on Septic Fields
-  Watershed Boundary

Slopes and Septic Field Limitations are derived from the USDA Natural Resources Conservation Service as compiled by the Northwestern Michigan Council of Governments. This map should be used for general planning purposes only

Wetland information is compiled from three sources:  
 1) National Wetland Inventory  
 2) U.S. Soil Conservation Service Soil Survey of Leelanau County—hydric soils and soils with hydric inclusions and/or components  
 3) Michigan Resource Information System (MIRIS) Land Cover interpretation from 1990 aerial photographs

All other map features produced by MIRIS (1978)  
 PLEASE NOTE: This map has not been field checked and should be used for planning purposes only.



---

**Social Features**

---

## Section 2 – Social Features

### Introduction

This section of the Comprehensive Plan provides information about the population, housing, social and employment characteristics of Bingham Township. By examining these factors for the Township and the surrounding communities, a clear picture of demographic conditions will emerge. Understanding these conditions provides a valuable insight into future needs in housing and land development.

### Population Trends

Table 2-1 shows the historic population trends for Bingham Township and Leelanau County from 1940 to 1994. Table 2-1 shows that the Township grew a total of 268 percent over the period, over twice the rate of Leelanau County. In fact, the Township experienced the largest population change in Leelanau County between 1980 and 1990. Figure 2-1 shows graphically the change in population in the Township during this period and shows the proportion of the County population the Township represents. Both

the County and the Township underwent rapid growth after 1940, but the Township's population has steadily increased its percentage of the total county population, particularly since 1960. The Township continued to grow through the 1980s as indicated by the 1990 census. However, the 1994 population estimate released by the Bureau of the Census showed that Bingham Township's population growth has slowed during the early 1990s.

*After 1940 the County and the Township both underwent rapid growth, but the Township's population has steadily increased in percentage of the total County population, particularly since 1960.*

### Migration

Migration is the rate that the population moved into and out of the Township. Table 2-2 shows migration in Bingham Township between 1985 and 1990, the most recent data available. During this

TABLE 2-1 - HISTORIC POPULATION TRENDS

	1940	1950	1960	1970	1980	1990	1994	% Change
Bingham Township	564	563	625	916	1,546	2,051	2,073	268
Leelanau County	8,436	8,647	9,321	10,872	14,007	16,527	18,122	115

SOURCE: 1940-1990 U.S. Census of Population

## Section 2 –Social Features

TABLE 2-2 - MIGRATION (1990 BY PLACE OF RESIDENCE IN 1985)

Residence in 1985	Bingham Township		Leelanau County	
	#	% of Total	#	% of Total
Persons 5 Years and Older	1,866	100.0	15,280	100.0
Lived in Same House	1,103	59.1	8,553	56.0
Lived in Different House				
In Leelanau County	295	15.8	2,511	16.4
Different County in Michigan	376	20.1	3,249	21.3
Different State	86	4.6	896	5.9
Outside of United States in 1985	6	0.3	71	0.5

SOURCE: 1990 U.S. Census of Population

period, nearly 60 percent of the population remained in the same location. Of the 40 percent that did move, 15.8 percent moved within the County, with the remaining 20 percent moving from outside the County. Of the new residents moving to the Township, nearly 5 percent come from out-of-state. Overall, residential migration out of the Township is less than the County, reflecting a greater stability and propensity for long-term residency among Township residents.

### Age Composition

The needs and lifestyles of individuals differ among age groups, and the demands for retail goods and services as well as public or institutional programs change in concert.

Table 2-3 shows the composition of the population by age group for the Township, County and the State. Leelanau County has an older population overall, with a higher percentage of residents who are over 55 years of age and a higher median age. Bingham Township, however, showed lower percentages in these age groups, having more residents in the younger age groups. The Township can expect a rise in the median age, however, over the next 10 years. The increase in median age follows a national trend, as members of the "baby boom" generation age toward retirement early next century.

***The Township can expect a rise in the median age over the next 10 years.***

## Section 2 –Social Features

TABLE 2-3 - AGE DISTRIBUTION (Bingham TOWNSHIP AND Leelanau COUNTY)

Age Group	Bingham Township	Leelanau County	State of Michigan
Under 5 Years	185	1,247	702,554
% of Total	9.0	7.5	7.6
5-17 Years	436	3,089	1,756,211
% of Total	21.2	18.7	18.9
18-20 Years	50	469	449,966
% of Total	2.4	2.8	4.8
21-24 Years	62	595	554,561
% of Total	3.0	3.6	6.0
25-44 Years	725	5,172	2,980,702
% of Total	35.3	31.3	32.1
45-54 Years	190	1,764	948,119
% of Total	9.3	10.7	10.2
55-64 Years	177	1,724	794,723
% of Total	8.6	10.4	8.5
65+ Years	226	2,467	1,108,461
% of Total	11.0	14.9	11.9
Total	2,051	16,527	9,295,297
Median Age	34.2	36.5	32.6

SOURCE: 1980/1990 U.S. Census of Population

### Household Occupancy and Composition

The number and type of households within the Township influence the social and economic dynamics of the Township and consequently impact the quantity and character of land development. Households are the standard unit of measurement for evaluating and projecting the number of housing units, retail sales and community facilities and services. Table 2-4 shows the number of households in Bingham Township from 1980 to 1990. During the 1980s, households in the Township increased at an average annual rate of 3.3 percent, which matches the population growth during this period. The

annual household growth has remained the same during the 1990s, with the number of estimated housing units nearing 1,300. Average household size also has remained steady during this period, with 2.02 persons per unit.

Most year-round Township residents (82.5%) live in the homes they own, a slight drop from 1980 levels. This indicates stability in the housing stock of Bingham Township, since residents currently living in or moving to the Township prefer to own their homes. Thirty percent of households in the Township are not occupied year-round, however, reflecting the recreational nature of the region. The proportion of

## Section 2 – Social Features

TABLE 2-4 - HOUSING UNITS 1980 - 1998

	1980	1990	1998*
Total Units	765	1,017	1,274
Occupied (Year-round) Units	533	718	NA
% of Total	69.7	70.6	
Owner-Occupied	457	590	NA
% of Occupied	85.7	82.5	
Renter-Occupied	76	128	NA
% of Occupied	14.3	17.8	
* Building Permit Data from Bingham Township: 1990-1998			

SOURCE: 1980/1990 U.S. Census of Housing and Social Characteristics

renter-occupied units increased between 1980 to 1990.

The composition of a household depends upon the number of people living within a residence as well as the relationship between them. A household may consist of a married couple with or without children, a single parent with children, two or more unrelated people living in a dwelling and sharing household responsibilities, or a person living alone.

Table 2-5 depicts the composition of households in the Township and the County, and reflects a number of characteristics and trends that should be considered in planning for the future.

In general, the Township appears to be a family-oriented community. This is reflected in the higher percentage of family

and married couple households compared to the County.

The number of married couple families with children under 18 years of age is also proportionally higher, further supporting the trend. The Township has a lower proportion of single parent households than the County, however, a higher percentage of these households have children under the age of 18.

***In general, the Township appears to be a family-oriented community. This is reflected in the higher percentage of family and married couple households compared to the County.***

## Section 2 –Social Features

TABLE 2-5 - HOUSEHOLD COMPOSITION

	Bingham Township	Leelanau County
Number of Households	732	6,312
Family Households	595	4,797
% of Total Households	81.3%	76.0%
Married Couples	534	4,148
% of Families	89.7%	86.5%
With Children Under 18	278	1,779
% of Married Couple Families	46.7%	42.9%
Female Head of Household	39	464
% of Families	6.5%	9.7%
With Children Under 18	28	298
% of Female Household Families	71.8%	64.2%
Nonfamily Households	137	1,515
% of Total Households	18.7%	24.0%

SOURCE: 1990 U.S. Census of Population

### Value of Housing

The median market value of owner-occupied homes is a good indicator of both housing quality and demand. Table 2-6 shows the median value in the Township and County for 1980 and 1990.

In 1980, the median value of a home in the Township was about 9 percent greater than the median housing value in the County. By 1990, the proportion had been cut in half, indicating housing values in the Township are not increasing as rapidly as other areas of the County.

TABLE 2-6 - BINGHAM TOWNSHIP MEDIAN OWNER-OCCUPIED HOUSING VALUE

	1980	1990	% Change
Bingham Township	\$53,100	\$76,300	43.7
Leelanau County	\$48,600	\$73,100	50.4

SOURCE: 1980, 1990 U.S. Census of Housing



## Section 2 - Social Features

Although rental housing comprises only 18 percent of the housing stock, it nonetheless contributes to the perception of housing quality in the Township. While contract rent is another indicator of housing quality, it is also indicative of the availability of supply and the extent of local demand for rental units. Table 2-7 depicts the median contract rents paid to landlords in the Township and County in 1980 and 1990.

As Table 2-7 indicates, rents in the Township are considerably higher than in the County. County and Township rents have risen over 30 percent after adjusting for inflation during this ten year period. This increase implies that the supply of rental housing in the region is not keeping pace with demand.

### Education and Occupation

Among the factors that define the ability of an individual or a household to be financially productive and contribute to the quality of life in their community, are formal education and occupation. Typically, a person's occupation is related, directly or indirectly, to the level and type of his or her formal education. Table 2-8 lists the educational characteristics of Township and County residents. The level of education in the Township was generally higher than in the County, with a higher percentage of residents having college and graduate degrees.

TABLE 2-7 - MEDIAN MONTHLY CONTRACT RENT

	1980	1990	% Change
Bingham Township	\$245 (\$414*)	\$543	31.2
Leelanau County	\$183 (\$309*)	\$414	34.0
*Rent in 1990 dollars.			

SOURCE: 1980, 1990 U.S Census of Housing

## Section 2 – Social Features

Occupational characteristics are closely associated with educational levels. The higher a person's formal education, the more likely he or she is to be employed in higher paying professional or executive/managerial occupations.

Table 2-9 compares the occupational characteristics of the Township and the County. The higher educational levels in the Township are reflected in the distribution of occupations.

A higher percentage of the population are employed in executive, administrative, managerial, and professional occupations. Farming occupations make up less than 5 percent of those employed in the Township, however the County has a larger proportion of farming occupations overall.

TABLE 2-8 - EDUCATION ATTAINMENT - PERSONS 25 YEARS AND OLDER

Highest Educational Level Attained	Bingham Township	Leelanau County
Less than 9th Grade % of Total	65 4.9	634 5.7
9-12 Grade/No Diploma % of Total	107 8.1	1,024 9.2
High School Graduate % of Total	417 31.6	3,532 31.7
Some College or Associate Degree % of Total	383 29.5	3,251 29.2
Bachelors Degree % of Total	218 16.5	1,767 15.9
Graduate/Professional Degree % of Total	128 9.7	919 8.2

SOURCE: 1980/1990 U.S. Census of Population - General Social and Economic Characteristics

## Section 2 – Social Features

TABLE 2-9 - OCCUPATIONS

	Number of Persons Employed	Percent of Total
Executive, Administrative, Managerial	125	880
% of Total	12.4	11.4
Professional Specialty	179	1,153
% of Total	17.8	15.0
Technicians and Related Support	27	209
% of Total	2.7	2.7
Sales	134	977
% of Total	13.3	12.7
Administrative Support	159	1,025
% of Total	15.8	13.3
Private Household Services	0	51
% of Total	0	0.7
Protective Services	5	49
% of Total	0.5	0.6
Other Service Occupations	108	900
% of Total	10.7	11.7
Farming/Forestry/Fishing	47	437
% of Total	4.7	5.7
Precision Production/Craft and Repair	113	1,092
% of Total	11.2	14.2
Machine Operators, Assemblers, Inspection	44	406
% of Total	4.4	5.3
Transportation and Material Moving	41	271
% of Total	4.1	3.5
Handlers, Equipment Cleaners, Laborers	23	251
% of Total	2.3	3.3

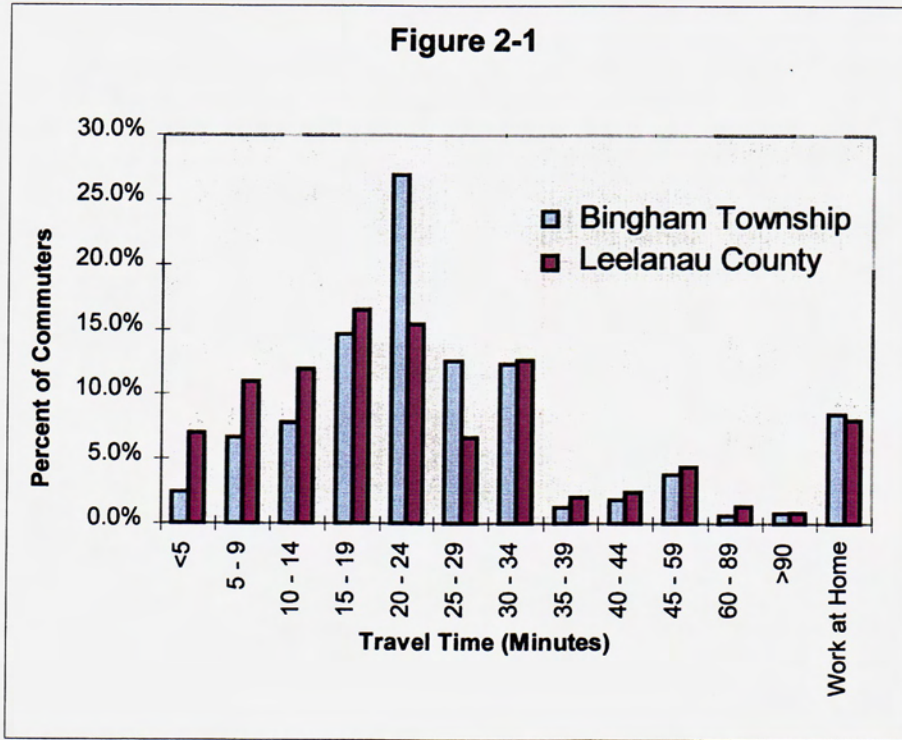
SOURCE: 1990 U.S. Census of Social and Economic Characteristics

### Location of Employment

Beyond the type of work residents do, the location of employment also contributes to the character of the Township. If most residents leave the area to work, then the area can be classified as a "bedroom" community. Half of commuting Township residents work within 20 to 30 minutes of

the Township, as shown in Figure 2-1. This greatly exceeds the County average, implying that many of the jobs outside of the Township reside in neighboring municipalities, particularly Traverse City.

**Section 2 –Social Features**



**Income**

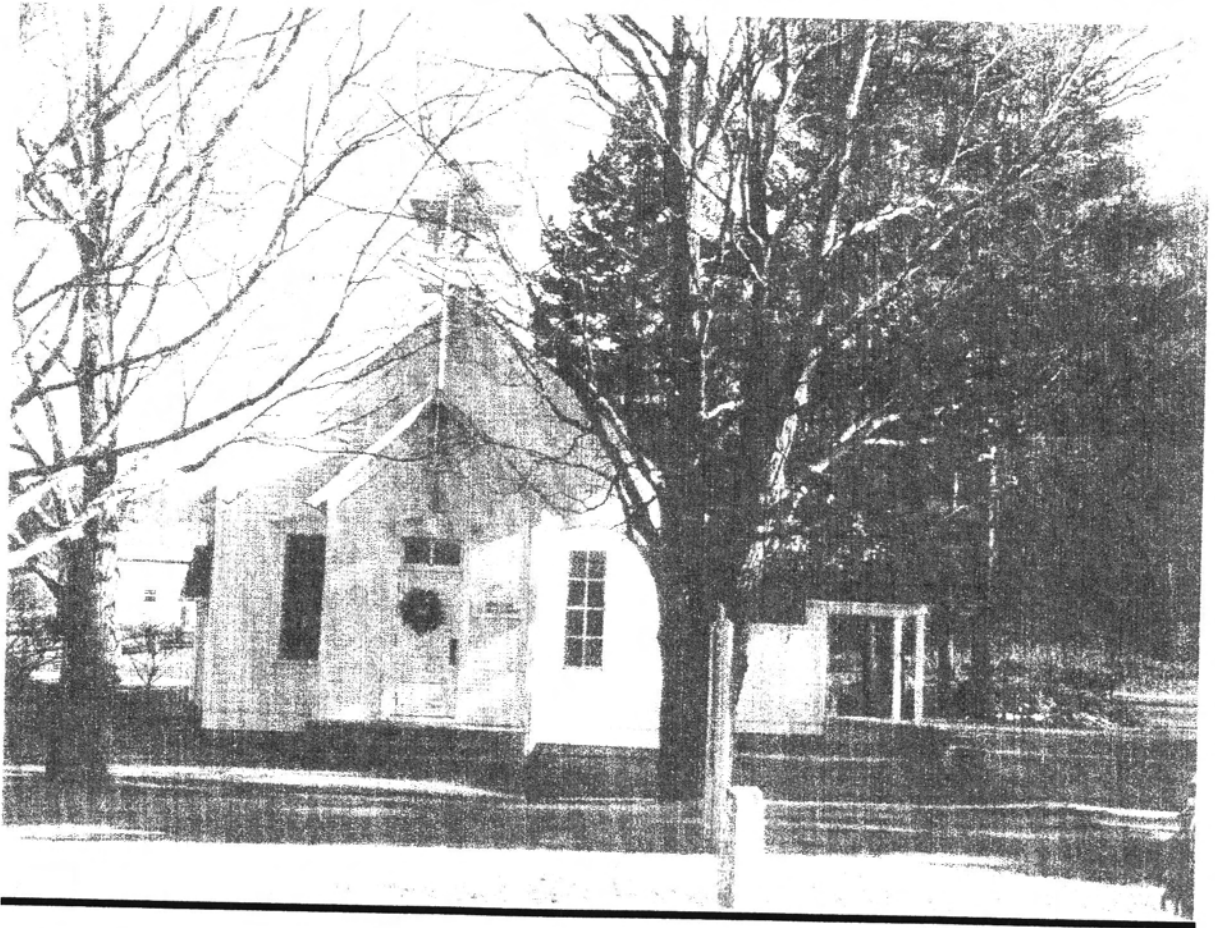
Household income is an important measure of the economic well being of Bingham Township. Households are the basic social unit of any community, so the amount of income these households earn determines the quality and quantity of retail goods and service purchases both within

the Township and the Region. Table 2-10 lists the median household income for the Township and Leelanau County and shows that household income in the Township is higher than the County. This is correlated to the higher salaried occupations shown in Table 2-9

TABLE 2-10 - MEDIAN HOUSEHOLD INCOMES: 1990

	1990
Bingham Township	\$32,372
Leelanau County	\$28,589

SOURCE: 1990 U.S. Census STF3A



**Community Facilities**

## Section 3 – Community Facilities

### Introduction

Bingham Township is a General Law Township with a Supervisor, Clerk, Treasurer and Trustees. The Township Hall is located on the corner Center Highway (CR 633) and Bingham Road. As a General Law Township, Bingham Township has only those powers granted to them by state statute. Those include the ability to hire a manager, assessor, police or fire chief, superintendent and other necessary personnel. Townships are mandated to administer assessments, hold elections, and collect taxes. They are also required to be responsible for financial administration, including budgets, accounting, investments and deposits. In addition, townships may enact and enforce ordinances, including zoning. Land use decisions are made under the Bingham Township Zoning Ordinance, which is administered by the Township's Zoning Administrator.

### Fire Department

Fire and ambulance/rescue services are provided. Six full-time advanced life support staff serves Bingham and Suttons Bay Townships, based in the Village of Suttons Bay. Fire services are provided by volunteer staff. A Fire Substation is located in the Township, adjacent to the Township hall.

### Schools

The Suttons Bay Public School District includes Bingham and Suttons Bay Township. It offers a kindergarten through Grade 12 program. Recent expansion has kept pace with enrollment and should serve the two townships for some years. Further expansion of the elementary school at its present site will have to be weighed against the advantages of a second elementary school at a new site closer to the future student population.

### Parks and Recreation

There are currently seven public facilities in the Township. The Michigan Department of Natural Resources has two public boat launching sites, one on west Grand Traverse Bay near the intersection of M-22 and Hill Top Road, and the other on Lake Leelanau at the east end of Bingham Road.

The Township has an 3-acre park on the Bay, on the east end of Bingham Road. This park has beach access, picnic facilities and playground equipment. The Township has an additional picnic area on the Bay at Hendryx Park on Lee Point Road. Groesser Park is a small Township park located adjacent to the Department of Natural Resources launch site on M-22. Two additional Township parks are located on Lake Leelanau. Bingham Park is a small 2-acre park located two miles north of Bingham. The Mebert Creek Natural Area is

## Section 3 – Community Facilities

a 140 acre site with 4,000 feet of Lake shoreline, and is the largest undeveloped parcel remaining in Bingham Township. The area is designated as "a unique wetland community" by the Michigan Natural Features Inventory, possessing a variety of unique plant and animal species.

### Library

Bingham Township contributes funds to the Suttons Bay Area Public Library. The library was built in 1984 and has over 12,000 volumes. Township residents also use the Traverse City Library without charge.

### Utilities

Bingham Township, as a rural township, does not provide public water and sewer service. The primary electrical service provider is Consumers Energy, with some areas in the Township getting electric service from Cherryland Electric Cooperative. Gas service is available in the Township from Michigan Consolidated Gas Company. Cable Michigan provides Cable TV service to some areas of the Township.

### Transportation

Automobile traffic tends to be concentrated on certain roadways, because of their location, their physical conditions, and the overall land-use of an area. On an average, 80 percent of travel is done on about 20 percent of the roads. In order to set

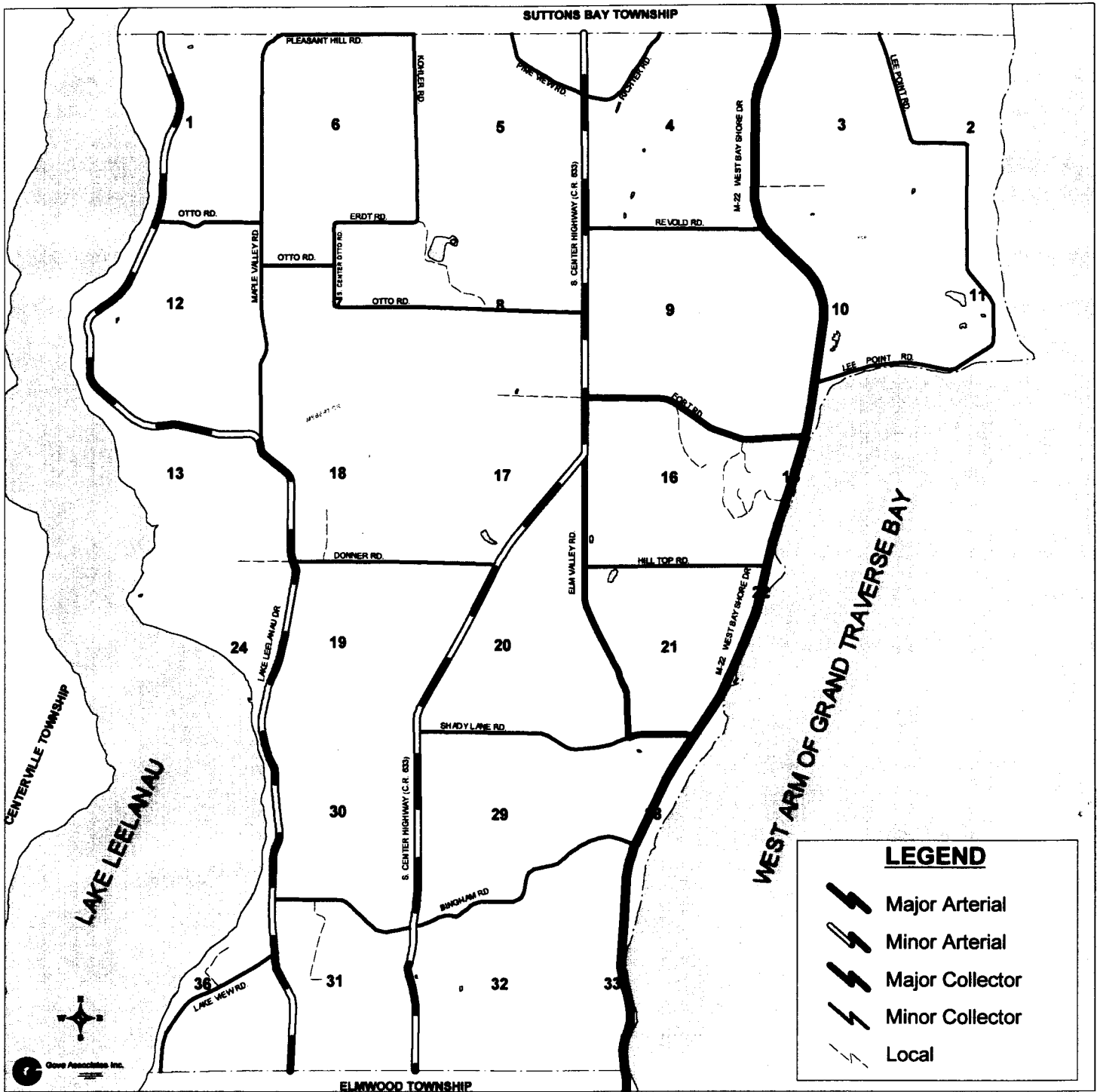
priorities for funding certain roads with the highest volume, transportation planners have established a road classification system.

Although there is some variation in the classification of roadways, they are typically divided into roadways that carry local traffic and those that carry through traffic. Through roadways are further divided according to their function. The classification of roadways within Bingham Township, shown on Map 3-1, are as follows:

**Major Arterial:** The function of a major arterial is to convey traffic between municipalities and activity centers, and to provide connections with intrastate and interstate roadways. Significant community, retail, commercial and industrial facilities may be located along major arterial. Major arterials are intended to accommodate higher speeds and levels of service, not to provide access. Therefore, access management is desirable for preserving capacity. The state trucklines of the County serve as major arterials. Non-motorized traffic should be limited, if not prohibited on major arterials.

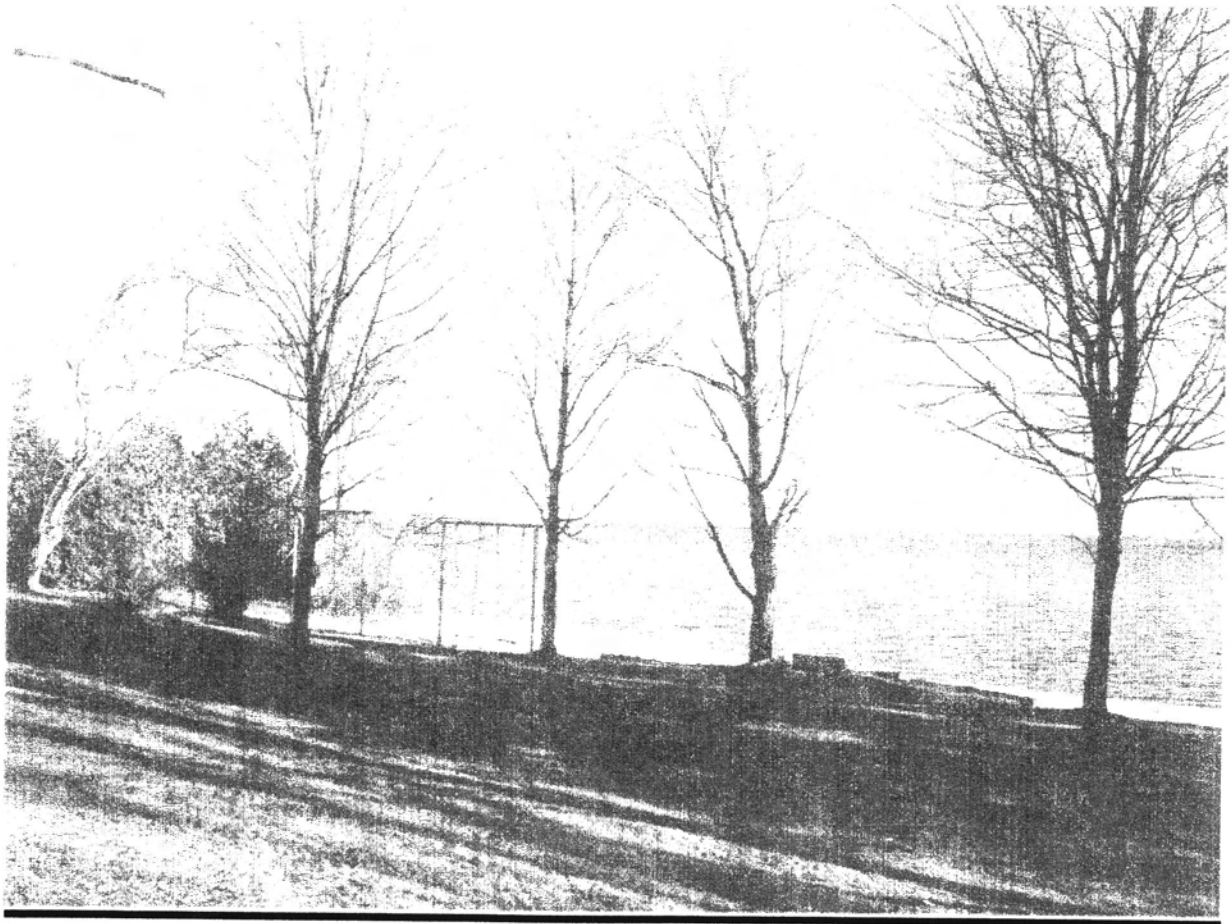
*Eighty percent of travel is done on about 20 percent of the roads on an average.*

# MAP 3-1 TRANSPORTATION: FUNCTIONAL CLASSIFICATION



SOURCE: The Leelanau General Plan: Policy Guidelines for Managing Growth on the Leelanau Peninsula, 1994





**Existing Land Use**

---

## Section 4 – Existing Land Use

### Introduction

An existing land use inventory shows the existing distribution and location of land uses within the Township. The inventory helps the community to identify patterns of land use and plan for the future use of land. The Existing Land Use Map (page 5-5) is based upon the interpretation of aerial photographs taken in the spring of 1995 and a "windshield" survey of the Township completed in December 1998. Below are the classifications used in the land use inventory.

### Land Use Classifications

**Single-Family Residential** - one detached or attached (duplex) dwelling unit on a single parcel. All units in this subcategory are built on foundations or basements using traditional building methods.

**Multiple-Family Residential** - One or more buildings containing three or more dwelling units each. All units in this subcategory are built on foundations or basements using traditional building methods.

**Commercial** - an area or facility used for the sale of retail or wholesale goods or the provision of personal or business services. The subcategory includes structures, adjacent land and parking areas dedicated for the use of employees and customers.

**Commercial Recreation** - An area or facility used for recreation activities, including private parks, water parks and golf courses. The subcategory includes structures, adjacent land and parking areas dedicated for the use of employees and customers.

**Industrial** - An area where raw or unfinished materials or commodities are used to produce a product or service. This can also include wholesale business activities.

**Public** - An area or facility used by a Township, City, County, School District or State agency to meet the needs of the community. This includes city and township offices, schools, public-meeting spaces, parks, public parking lots and other public uses.

**Public Utility** - An area or facility not generally accessible to the public but used to provide services to the community, such as water towers, wastewater treatment areas, electrical substations, and water pumping stations.

**Quasi-Public** - An area or facility used by a limited number of persons with particular interests and nonprofit organizations, such as churches, day care centers, private schools, commercial recreation and related activities.

**Cemetery** - An area used for the burial and memorial of the deceased. Facilities for memorial services may also exist on the site.

## Section 4 – Existing Land Use

**Mining** - Open pits that are being actively mined or excavated, including access roads.

**Agricultural** - This category may consist of croplands, permanent pasture or orchards. Agricultural lands include the farmstead occupying the land.

**Open Space/Forested Land** - Areas that are covered with deciduous and coniferous species of trees or shrubs. This category includes abandoned agricultural fields and flood plains. Lands in this category consist of both suitable and unsuitable areas for development.

**Wetland** - Area that is inundated or saturated to the surface for a sufficient time to foster the growth of a particular plant communities that thrive in wet conditions. Wet or hydric soils also are use to designate wetlands. The wetland areas shown are a partial delineation from Map 1-3, which were delineated by the National Wetlands Inventory, the Michigan Resource Information System, and the U.S. Soil Conservation Service.

### Trends and Analysis

Bingham Township has an area of approximately 16,675 acres or 26 square miles. The Township is dominated by agricultural uses, primarily in the central "highlands", with open space/forested land found in areas with steep slopes. In all,

these two land use categories make up 70 percent of the Township.

Table 4-1 compares land use change from 1990 to 1998. The 1990 inventory is based on the statewide MIRIS (Michigan Resource Information System) land use/cover data. The 1998 inventory uses the MIRIS base map coupled with parcel information provided by Leelanau County. Comparisons between these two inventories must be taken with care, since the 1990 data do not take roadways or parcels into consideration and may over estimate some of the land uses. Table 4-1 shows an increase in residential growth over the eight-year period, with a concurrent decrease in agricultural uses. This reported increase in residential land use is supported by building permit data shown in Section 2 (Table 2-4), which show an additional 250 single family homes were built during this period.

Table 4-1 and Figure 4-1 both show that agriculture remains the predominant land use in the Township. The majority of the small lot, residential is located on the two coasts of the Township. Additional clustered residential development is occurring, as seen on Fort and Bingham Roads. Commercial uses, such as retail businesses and offices, are primarily found along M-22 or on Bingham Road, west of Center Highway (C.R. 633). An industrial use is found in only one area in the Township, on the corner of Revold Road and M-22, and consists of a fruit processing plant.

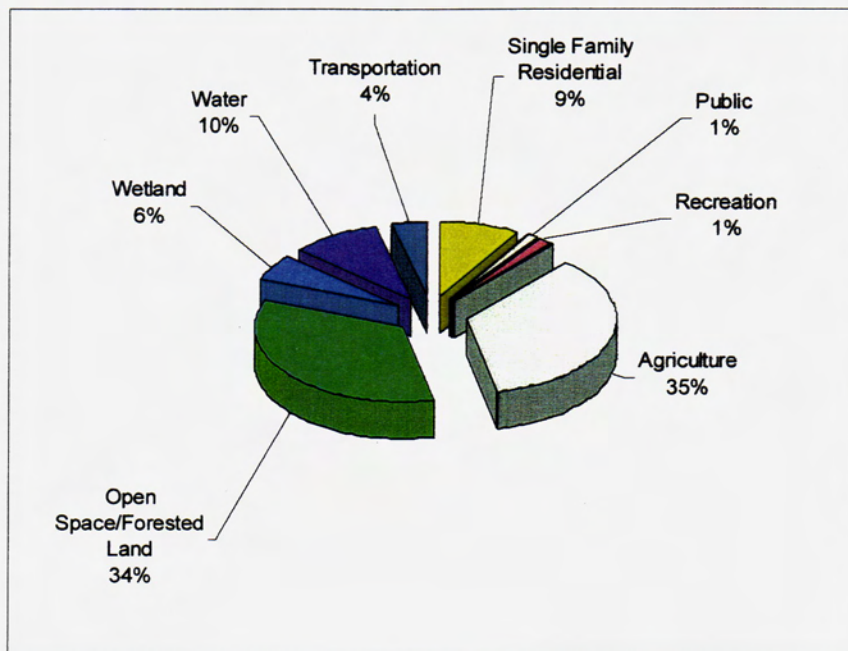
## Section 4 – Existing Land Use

TABLE 4-1 – GENERAL LAND USE BY TYPE

Land Use	1998 Land Use		MIRIS Land Use (1990)	
	Acres	%	Acres	%
Single Family Residential	1,427.3	8.6%	927.2	5.6%
Multiple Family Residential	13.2	0.1%	9.1	0.1%
Public	171.6	1.0%	23.6	0.1%
Public Utilities	1.2	<0.1%	1.6	0.0%
Quasi-Public	8.2	<0.1%	N.A.	0.0%
Cemetery	4.6	<0.1%	5.2	0.0%
Commercial	21.8	0.1%	5.2	0.0%
Commercial Recreation	205.7	1.2%	N.A.	N.A.
Industrial	31.1	0.2%	40.8	0.2%
Mining	8.6	0.1%	14.3	0.1%
Agriculture	5,881.0	35.3%	6,261.0	37.6%
Open Space/Forested Land	5,693.6	34.1%	7,389.2	44.3%
Wetland	928.1	5.6%	367.2	2.2%
Water	1,618.0	9.7%	1,618.0	9.7%
Transportation	661.0	4.0%	N.A.	0.0%
Total	16,675.7	100.0%	16,662.4	100.0%

SOURCE: Gove Associates Inc.; Michigan Resource Information System

Figure 4-1 Major Land Uses in Bingham Township by Type (1998)



## Section 4 – Existing Land Use

### Subdivision of Land

The number and size of parcels will also determine the possible future land uses in a township. A township with many small parcels and few large parcels will find it difficult to support future agricultural and other open space dependent activities. The number and distribution of parcel size for Bingham Township can be seen in Table 4-2 and Figure 4-2.

Parcels in Bingham Township range from under 1 acre to 144 acres in size. Of the over 1,300 parcels recorded by the County's Equalization Department, 40 percent, or 529, are under 2 acres in size. As noted above, and seen in Figure 4-2, the majority of these small parcels are located along the two coasts. A significant number, however, are located along County roads.

In contrast, the number of parcels over 20 acres in size make up only 18 percent, or 135, of the total number of parcels. These parcels use nearly 75 percent of the total

land area, however, and are strongly correlated to agricultural uses. As seen in Figure 4-2, the majority of these large parcels lie in the central portion of the Township.

*The number of parcels over 20 acres in size make up only 18 percent, or 135, of the total number of parcels. These parcels use nearly 75 percent of the total land area, however, and are strongly correlated to agricultural uses.*

Trends throughout the state and within Leelanau County show that the proliferation of parcel splits will continue within the Township. This increased division of large, agricultural parcels encourages higher density, linear residential development along county roads. Land use conflicts between the new residents and the neighboring farmers is often the result, as well as increased road hazards from higher traffic volumes.

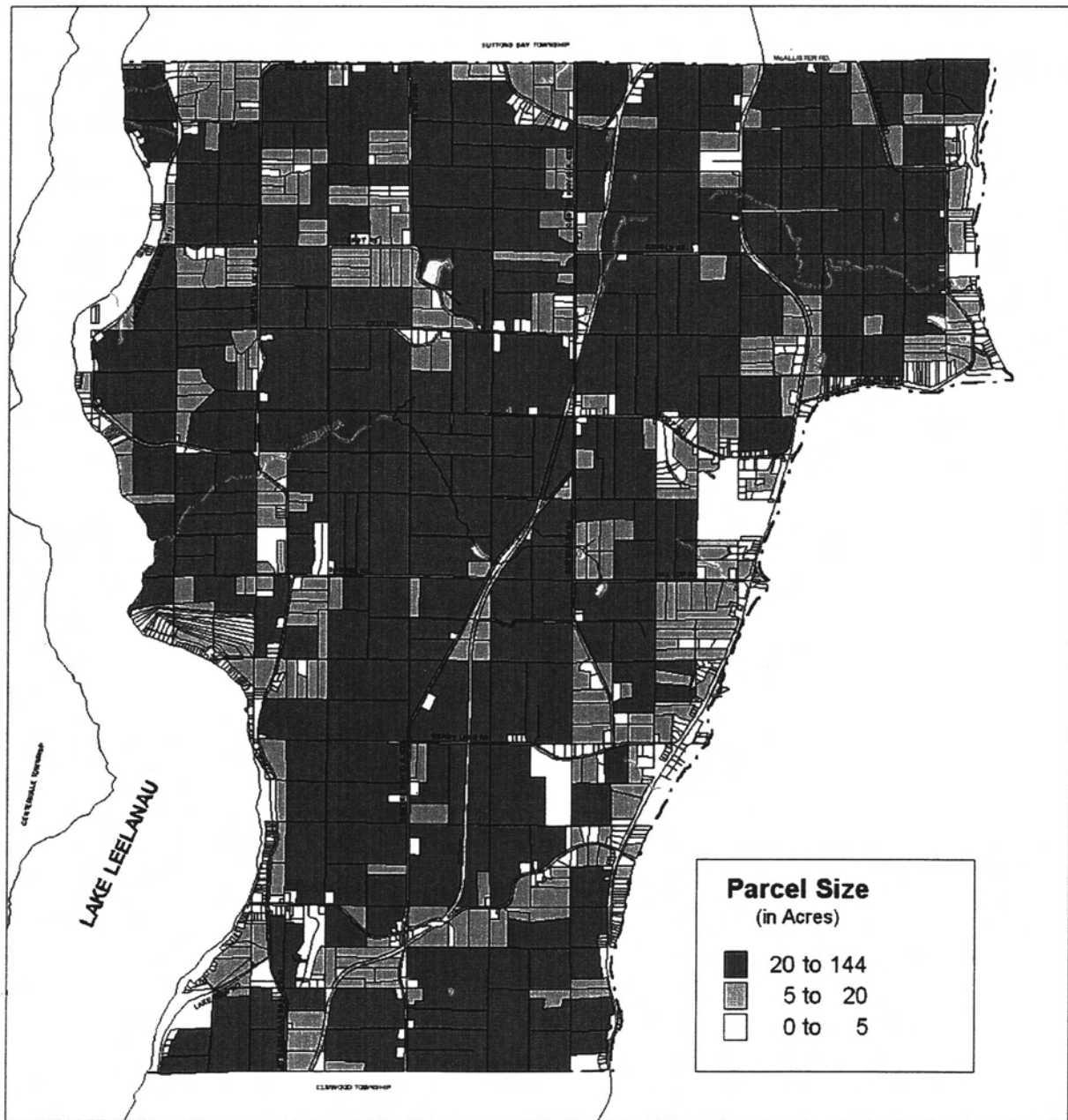
TABLE 4-2 PARCEL SIZE IN BINGHAM TOWNSHIP

	Parcel Size (Acres)					
	0-1.99	2-4.99	5-9.99	10-19.99	20-39.99	40+
Number of Parcels	529	263	146	137	120	115
Total Acres	292	677	990	1,698	3,457	6,737
%	2.1	4.9	7.1	12.2	25.0	48.6

SOURCE: Leelanau County Planning Department; Gove Associates Inc

## Section 4 – Existing Land Use

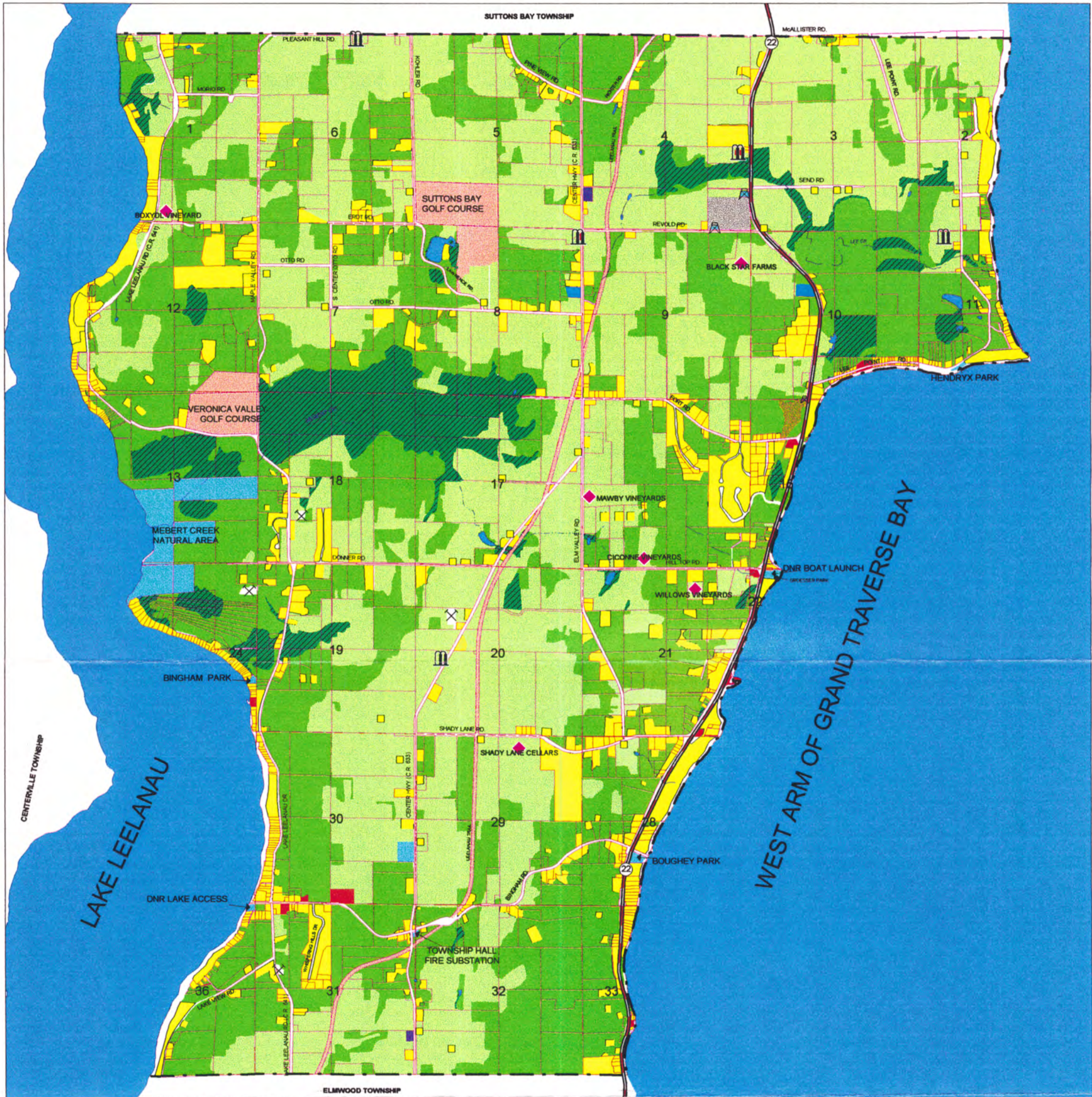
Figure 4-2 Distribution of Parcel Size in Bingham Township


















# BINGHAM TOWNSHIP

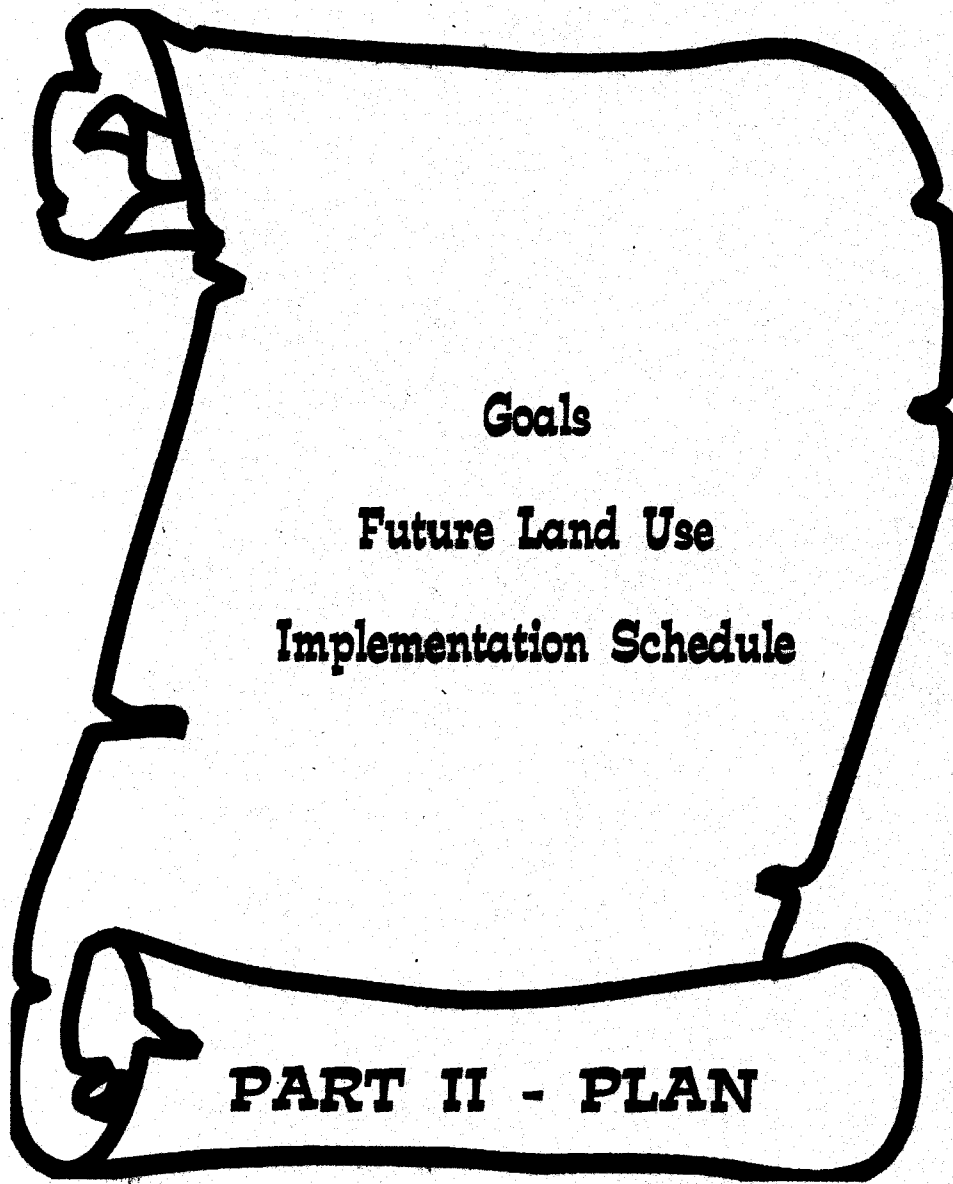
## Leelanau County, Michigan

### EXISTING LAND USE MAP



### LEGEND

- |   |                               |   |                   |
|---|-------------------------------|---|-------------------|
|  | Single Family Residential     |  | Quasi-Public      |
|  | Multiple Family Residential   |  | Cemetery          |
|  | Commercial                    |  | Mining            |
|  | Commercial Recreation         |  | Agricultural      |
|  | Industrial                    |  | Open Space        |
|  | Public / Institutional        |  | Wetland           |
|  | Public Utilities              |  | Vineyard / Winery |
|  | Agricultural Support Business |   |                   |



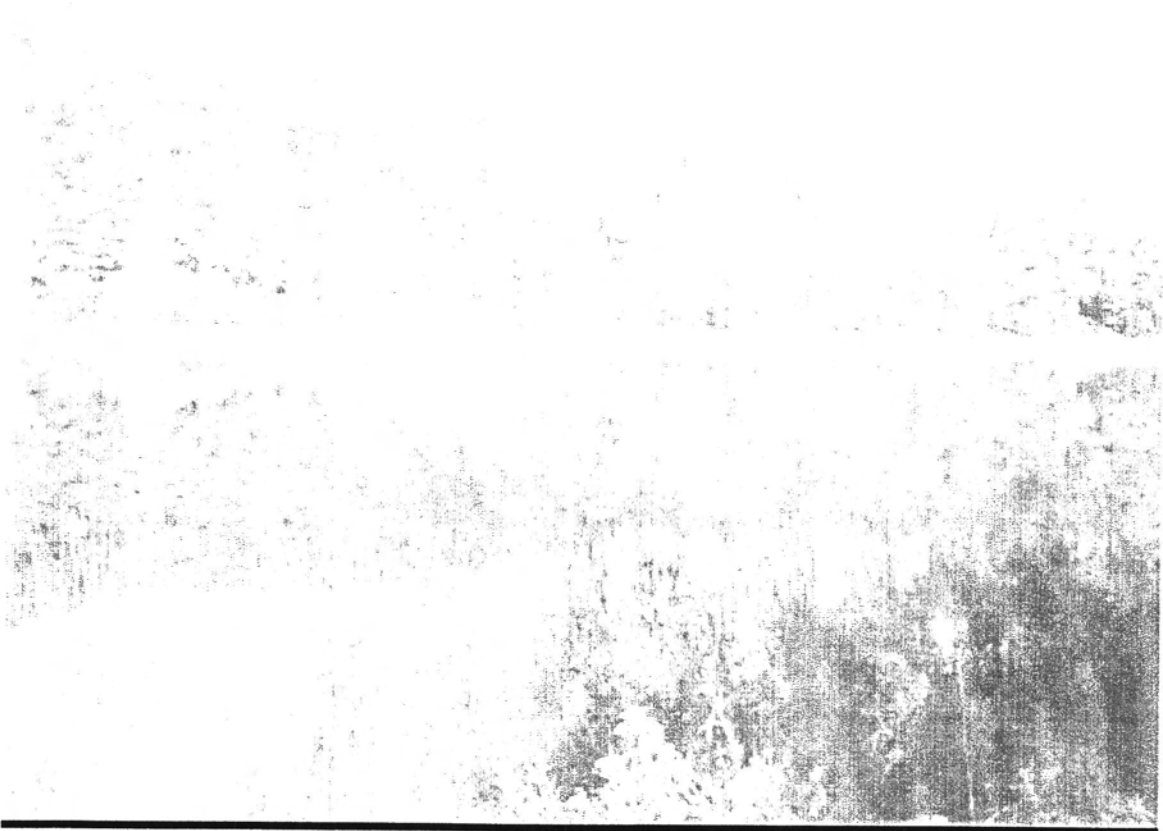
**Goals**

**Future Land Use**

**Implementation Schedule**

**PART II - PLAN**





---

**Goals**

---

### Community Surveys

Citizen involvement occurred on several levels during the creation of this plan.

*A good master plan reflects the aspirations of the citizenry by involving them in the planning process.*

Two surveys were taken during 1997, one of the general population and the other of large parcel land owners, to gather the residents' opinions on a range of topics, including the future use of land.

In the Spring of 1997, the Center for Business and Industry at Northwestern Michigan College conducted a survey for Bingham Township to determine views and opinions of the residents on a variety of Township issues.

A mail survey was undertaken with a randomly selected sample of property owners and registered voters within Bingham Township. Based upon a combined population of approximately 1,500, a sample size of 306 was necessary for a 95% confidence level and a confidence interval of +/- 5%. The mailing was conducted with 1,200 residents with a projected response rate of approximately 25%. Results were based on the analysis of 538 completed surveys. Survey results are reviewed in Appendix A.

In the Fall of 1997, members from the Landscape Architecture Department of Michigan State University surveyed 36 large parcel landowners. This survey was sponsored by both the Township and the Leelanau Agricultural Alliance. A summary of the results of this survey is provided in the Appendix A.

### Citizen Planning Committees

Three citizen planning committees were also formed that focused on three areas of concern: residential development, infrastructure, and agriculture.

The citizen planning committees submitted final reports to the Planning Commission, which are included in full format in the Appendix A.

### Issue Identification

A public meeting was held on December 3th, 1998 with members of both the Planning Commission and the citizen planning committees. The purpose of the meeting was to share ideas about the future of the Township and identify key issues to be addressed in the Plan. The issues that were identified during the meeting are listed in Appendix A.

## Section 5 – Goals

### GOALS

The goals are guides to help Bingham Township achieve its preferred future. The goals were developed by the community as discussed above and in the Appendix. A series of objectives are designed to guide the Township toward each goal. The Plan's objectives are the basis for the Implementation Section (see Section 7).

### Goals and Objectives

#### Residential

**GOAL:** Guide and control residential development and population densities and distribution in order to maintain a rural atmosphere, ecological balance, open space, high levels of sanitation and low levels of pollution.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- control population density in such a manner that overall high density does not take place.
- higher density (clustered development), particularly on main transportation thoroughfares in selected areas.
- maintain the rural atmosphere of the township.

- control township development standards, code enforcement and administration through the Plan and the Zoning Ordinance.
- encourage balance of housing types.
- residential development will depend on independent well and septic systems.

#### Agricultural

**GOAL:** To preserve and protect agriculture land and uses, retaining a viable agricultural community within the Township.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- encourage preservation through PDR/TDR/LDR/other innovative preservation technique.
- identify areas for cluster development.
- educate public on differences between agricultural and open space.
- provide for buffers between agricultural and residential.
- develop incentives for agricultural protection.

**Commercial**

**GOAL:** To maintain neighborhood commercial services for residents of the township, keeping in line with population growth within the township.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- development of any new commercial facilities in such a way as to minimize conflict with other land uses.
- creation of development and design standards that embrace and/or encourage the village concept or Planned Unit Developments.
- improvement of existing commercial areas, both aesthetically and functionally, to serve their neighborhoods
- adequate access for fire and rescue services for all commercial locations.
- that commercial facilities do not require public water and sewer facilities.

**Home Based Business**

**GOAL:** To allow residents of the township to work out of their home, providing a service to the community, and maintaining the residential nature of the community.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- minimal impact on the residential neighborhood.

**Home Occupation**

**GOAL:** To allow residents to operate a non-intrusive enterprise that has no significant impact on the residential community.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- minimal impact on the residential neighborhood.
- a service to the community is provided for.

**Industrial**

**GOAL:** Limited light industrial development.

**OBJECTIVES:** To provide opportunities, methods or controls to assure

- that any new industrial facilities are developed in such a manner that there is minimum conflict with other land uses.
- that a tract of land is provided, suitable for selected light industrial development, with provision for adequate transportation access and utilities to serve their needs.

- that industries do not require public water and sewer facilities and that they have their own on site treatment.

### Public Utilities and Facilities

**GOAL:** Cooperate with and assist public and private entities to provide utilities and public services to the residents of the township.

**OBJECTIVES:** Provide opportunities, methods or controls to assure

- highest quality facilities and services necessary to guide and maintain orderly future development.
- limitation of all development unless appropriate health and safety standards are complied with and services provided.

### Public Services

**GOAL:** Provide adequate and appropriate public services for the benefit of the people of the township.

**OBJECTIVES:** Provide opportunities, methods or controls to assure

- interdepartmental cooperation and coordination of police, fire and rescue services to achieve township-wide coverage and availability.

### Transportation

**GOAL:** To provide for the efficient and safe movement of traffic through and within the township, while preserving the present road system to the extent that it meets the needs of the community with a minimum of environmental or ecological damage to the township.

**OBJECTIVES:** Provide opportunities, methods or controls to assure

- maintaining wherever possible, the natural character of the roads and surrounding areas
- maximum use of major thoroughfares and discourage traffic through the rural residential roads.
- utilization of highway facility improvement as a positive guide to direct or enhance land use relationship.
- coordination in planning the township transportation system with adjacent townships, the county, the region and the state.
- safe use of roads for pedestrian and non-motorized activities.

## Section 5 – Goals

### Recreation

**GOAL:** To provide an adequate range of recreation opportunities for residents of the township.

**OBJECTIVES:** Provide opportunities, methods and/or controls to assure

- orderly development of commercial recreation in such a manner that there is optimum utilization of appropriate locations with minimum conflict with adjoining land uses.
- reservation of sufficient recreation lands to serve desired population growth with both active and passive recreation potentials.
- where possible, multi-functional use of recreation areas for open space, forestry, floodplain or water resource conservation and historical preservation.

### Open Space

**GOAL:** Encourage open space and natural areas, and protect the scenic beauty of the Township.

**OBJECTIVES:** Provide opportunities, methods or controls to assure

- non-development of public and privately owned lands with open space.

- promotion of dual land uses (e.g. agriculture/open space) which encourage and enhance private ownership of non-developed lands.
- protection of unique natural areas, swampland, forests and watercourses from Urban types of development.
- encouragement of open space, appropriately located in all land use areas.

### Natural Resources

**GOAL:** Optimum utilization of land, water, air and natural resources, including their preservation and conservation.

**OBJECTIVES:** Provide opportunities, methods or controls to assure

- continued and future use and conservation of natural resources by preventing inappropriate development of conflicting land uses.
- development of flood and erosion controls to minimize flood damage and maintain water quality levels.
- preservation of unique natural areas which cannot be replaced if destroyed, misused or neglected.

---

## Section 5 – Goals

- non-pollution of soil, water and air resources by any segment of the community be it governmental, industrial, agricultural, or private.
- a pattern of land use to shape and guide development away from ecologically sensitive areas.
- encouragement of open space, appropriately located, in all land use areas.
- participation in regional efforts to improve and protect water quality.



---

**Future Land Use**

---



## Section 6 – Future Land Use

### Introduction

Up to this point, the Plan has documented the physical and social aspects of Bingham Township and has outlined the goals to be achieved over the next 20 years. In order to be an effective land use tool, however, a Plan must go farther than this. A Plan must both anticipate and direct future growth in order to protect current property owners, the economic base of the Township and the environment, while supporting sustainable development.

The Bingham Township Master Plan is a community effort. The ideas and goals presented have come directly from the citizens of the Township through the use of surveys, public meetings and citizen planning committees. The concerns expressed by residents have been varied, but have focused on the preservation of the rural lifestyle of the area and the retention of the high quality natural resources.

This section will present estimates of future population growth and land use patterns for Bingham Township. It will present population and housing projections to the year 2020, which will assist decision-makers anticipate future land use needs. A future land use map will be presented that shows potential patterns of development over the next 20 years and beyond.

### Population and Housing Projections

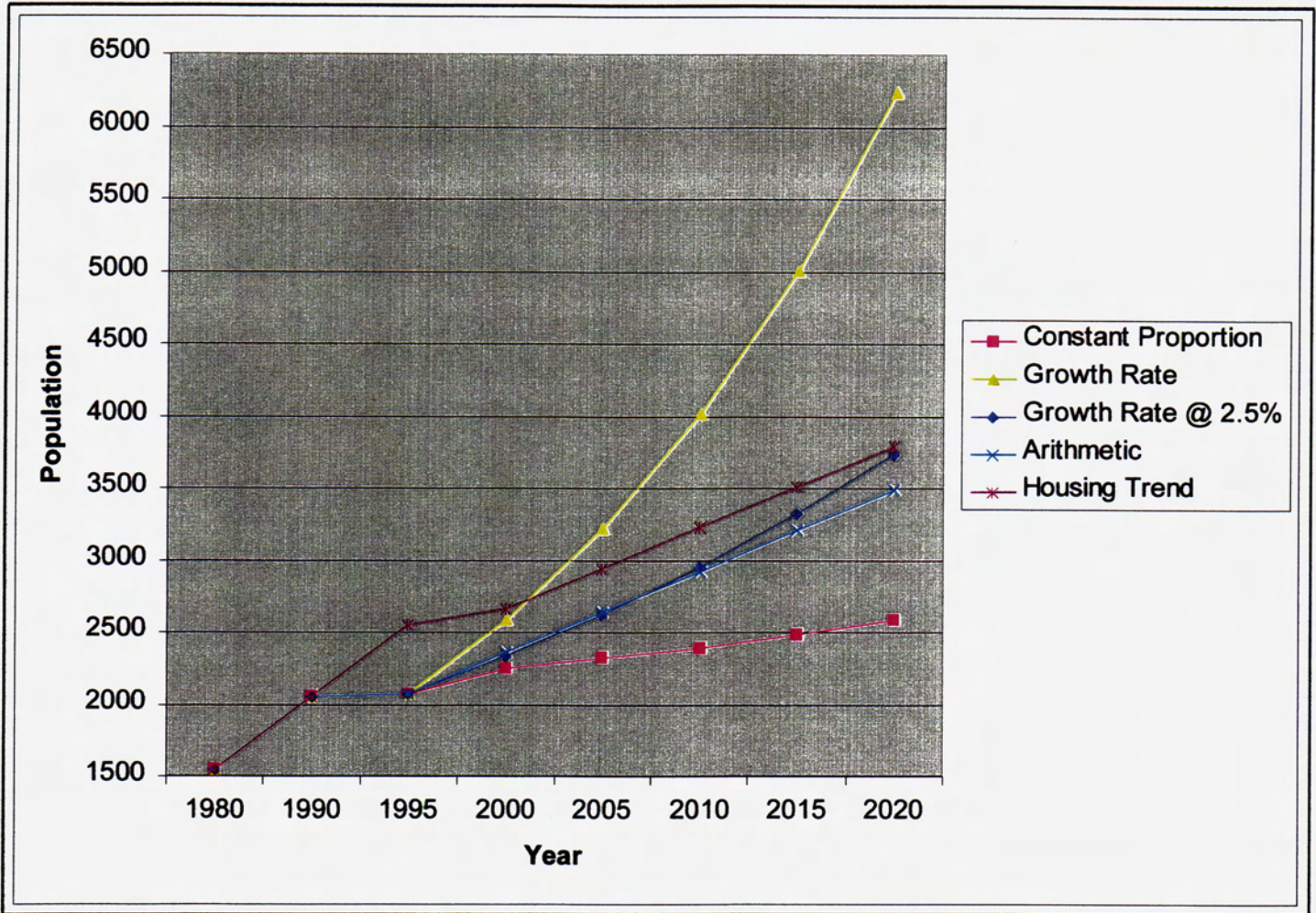
In order to prepare for the next 20 years, it is necessary to project the number of people that may be living in the Township by the year 2020. Population projections are, in essence, educated guesses based on past trends. By their very nature, therefore, population projections are not always accurate, but they do give some guidance to the potential future needs of the Township.

Figure 6-1 shows a series of population projections using different methods (see the Appendix). The figure shows that the potential population for the year 2020 range between 2,500 and to over 6,000 persons. During a Township meeting, participants chose a population target for the year 2020 of 3,000 people. The citizen planning committees chose a 2.5 percent growth rate, with a 2020 population of approximately 3,700 people. These targets represent a population increase from 40 to 75 percent from the 1994 population estimate. These target populations will potentially increase year-round housing units to 460-800, assuming an average of 2.0 persons per housing unit.

***Participants during a Township meeting chose a population target for the year 2020 of 3,000. The citizen planning committees chose a 2.5% growth rate, with a 2020 population of approximately 3,700 people.***

## Section 6 – Future Land Use

FIGURE 6-1 Population Projections for Bingham Township to the Year 2020



## Section 6 – Future Land Use

### THE FUTURE LAND USE PLAN

#### Agriculture

The largest threat to agriculture is expanded residential development. The pressure exerted by residential development on land values, land use conflicts, and traffic, contribute to a cycle of conversion that ends in a low-density, homogenous residential community, devoid of many of the rural elements that originally made the community an attractive place to live. Once this cycle has progressed significantly, it is difficult, if not impossible, to regain these agricultural lands.

Bingham Township has a long tradition of agriculture. Indeed, the character of the Township is in many ways defined by farming. Both the community and large lot owner surveys (Section 5) showed that residents are committed to retaining this character and way of life. The Plan promotes the preservation of agricultural land within the framework of the projected residential growth of the area.

***Preservation of agricultural Land is promoted within the framework of projected residential growth of the area.***

The lands proposed to remain in agriculture are located primarily in the central portion of the Township. The proposed agricultural areas were chosen based upon the designation of prime farmland soils by the

Soil Conservation Service, the presence of existing large lot agricultural land, and the presence of working farms. A full listing of the criteria used to select the agricultural area is outlined in the Appendix and described in Section 5, Citizen Planning Committee (page 5-4).

Currently, there are two widely available options to preserve current farmlands: zoning and development rights. These options are discussed in detail in a number of local publications, including the Leelanau General Plan (Chapter 5 - Growth Guidelines and Decision Maps) and the Agricultural Land Conservation Toolkit (in preparation, Tab 4 - Tools).

***There are two widely available options to preserve current farmland: zoning and development rights. The most widely used within the set of land use controls currently available, is zoning.***

There is no panacea or "magic" ordinance that a community can adopt to protect farmland. The options that work for one Township may not work for another, since the physical conditions and community sentiments vary widely between jurisdictions. Generally, combinations of these options can be used to optimize a Township's farm preservation program; but which ever strategy is utilized to protect farmland, it is important to the citizens of

## Section 6 – Future Land Use

Bingham Township that the strategy is fair and equitable to all landowners.

Within the set of land use controls currently available, the most widely used is zoning. There are several zoning concepts that are applicable to preservation of large agricultural areas. Those options include the following:

**Agricultural Protection Zoning**, in which nonfarm residents are not allowed and properties may be split into larger parcels of at least 40 acres or more;

**Quarter-Quarter Zoning**, which allows for one nonfarm residential dwelling for each 40 acres of land;

**Sliding Scale Zoning**, whereby the number of allowable nonfarm residences increases as the size of the parent parcel increases; however, proportionally fewer dwellings are allowed the larger the parent parcel. This helps concentrate development on smaller parcels. For example, one dwelling may be allowed for the first 10 acres, another for the next 20 acres, a third for the next 30 acres, a fourth for the next 40 acres, etc.

**Point/Numerical Zoning**, which requires a proposed lot to meet objective standards for approval; such standards are defined on a point system and the proposed lot must accumulate a minimum number of points. Standards may consist of variables such as distance from

a county road, availability of public utilities, fire protection, existing density of development, etc.

**Agricultural Buffer Zone**, an agricultural/residential zone is created between higher density residential development and large tracts of agricultural land. This buffer, or transition, zone allows for a rural residential lifestyle while protecting farming operations from the problems associated with residential development.

When a local municipality adopts a specific set of land use controls to protect farmland, it may involve combinations of the above concepts in order to address local needs and concerns. For example, the local zoning ordinance may allow owners of large lots to develop parcels of no less than three-quarter acres and no greater than two acres, for dedicated residential development. These residential lots may be allowed in the agricultural zone as long as they do not consume more than a designated amount of the parent parcel (e.g. 80%). This type of land use control will accomplish the goal of preserving farmland, while also giving landowners a way of recovering the development potential of their land.

Another set of agricultural preservation tools deal with the development rights of landowners. When a person purchases property, they purchase a set, or bundle, of rights related to that land. For example, landowners have the right to control access,

## Section 6 – Future Land Use

to develop, and to bequeath the land to their descendents. These rights are not unseparable, however, as easements and development rights can be sold, leased or donated, while the other rights of the land are retained. Some of the ways the separation of development rights can be used to protect a community's agricultural lands and open space are listed below:

**Donation of Development Rights**, also termed the donation of a conservation easement, the development rights of the land are donated to a conservation organization or a government entity. This is a voluntary agreement that permanently limits future development on the parcel, thus conserving productive agricultural lands and open space.

**Purchase of Development Rights (PDR)**, a voluntary agreement where the owner is paid by a government entity or a conservation group for the value of development on the land. The result is the retention of the property in perpetuity for agriculture or other uses.

**Leasing of Development Rights (LDR)**, another voluntary agreement with the land owner, where the owner is paid to not develop the land for the term of the lease. Since LDR is a temporary agreement, the terms of payment would be less than with PDR.

**Transfer of Development Rights (TDR)**, where the development rights are purchased from one parcel (the sending zone) and are transferred, via a private market mechanism, to another parcel (receiving zone). The receiving zone can develop at a higher density than the zoning ordinance would normally allow, and the sending zone would be preserved for agriculture. In Michigan, TDR can only be used within a township, which restricts its usefulness in many cases.

A number of funding mechanisms and tax incentives can be used to assist a development rights program in a township. Under Act 233 of 1996, the Michigan Department of Natural Resources can purchase easements on farmlands. Funds are supplied by the U.S. Department of Agriculture and the Michigan PA 116 Farmland and Open Space Preservation Lien Fund. Landowners must apply through their local government in order to be considered for these funds. Another source of funding is through local property tax assessment, as was done in Peninsula Township. Property owners within a township agree to assess themselves to finance the purchase or lease of agricultural lands or other lands that the public wishes to protect.

**Additional programs and funds will become available, both on the local and national levels, as agricultural preservation becomes more of an issue.**

## Section 6 – Future Land Use

Other sources of funds may come from private foundations, conservation groups, state and federal government, and private donations. As agricultural preservation becomes more of an issue, both on the local and national levels, additional programs and funds will become available. If a development rights option is considered as an element in the Township's agricultural preservation program, it is important that the Township investigate these diverse funding sources.

### Residential

Residential development has traditionally been concentrated on both the lake and bayfront. These homes were both year-round and seasonal dwellings and typically sat on small lots. As waterfront property has become less available, and more expensive, residential development has turned inland. As noted above, the over-development of these interior lands threatens the agricultural character that defines the Township.

As part of the Leelanau General Plan, a build-out analysis was performed based upon the current zoning ordinance and map (Chapter 12 - Land Use). The population at build-out is a theoretical limit that is directly dependent upon the number of houses built within the township. The Township's housing density is determined by the local zoning code which specifies the minimum lot sizes of homes in each residential zone. The final population in these zones is calculated

by multiplying the average number of persons per housing unit as determined by the U.S. Census Bureau. The number of homes at build-out is also affected by natural constraints, such as soil types, topography and the presence of wetlands. A complete build-out analysis will include all of these factors in order to determine the ultimate build-out population.

Using all of the above factors and subtracting undevelopable land and rights-of-way, the Leelanau General Plan estimates that the build-out population of the Township would be 18,793, an 800 percent increase over the 1990 population. Although it is highly unlikely that this level of development would ever occur, it does show how zoning ordinances can encourage homogenous, residential growth. Traditional rural zoning, in particular, tends to support linear residential development along major thoroughfares.

As an alternative to the traditional linear development, "clustered" open space developments are suggested. This form of development essentially concentrates housing at higher densities and provides for public open space within a designated project area. It is more efficient and environmentally sensitive than the standard subdivision, which typically allocates the entire development to private lots and easements for streets and sidewalks. A clustered open space project also contains streets and private lots, but also includes

## Section 6 – Future Land Use

large open spaces that are allocated to recreation, trails, the protection of unique environmental features, or other natural areas. The same number of units can be built in a clustered development as a traditional subdivision, because the developer is allowed to decrease the lot size as defined in the zoning ordinance, thereby increasing the density of the developed portion of the project and creating open/natural/recreation space in the balance of the project.

Although the development rights of open space on a parcel approved for rural clustering will have been permanently retired, the land can still be actively farmed, used for woodlots, nurseries, pasture, or recreation. Ownership typically remains with a property owner's association or the open space can be transferred to a conservancy or the community. The Township currently has a clustered development ordinance in effect, however, the geographic distribution of these cluster developments are not based upon criteria that impact development. Major factors to determine the placement of these clustered developments should be the retention of agriculture and open space, capacity of the soils to sustain development, the potential need to be served by public utilities (fire and police) and access by existing primary roads.

The Future Land Use Map (Map 6-1) concentrates higher-density residential development on both coasts and on key Township transportation corridors, such as

Fort Road, Lake View Road and Maple Valley Road. Rural Residential development acts as a buffer zone or transition between the higher density development and agriculture. This lower density agriculture/residential district includes both agricultural and rural residential uses.

***Higher-Density residential development is concentrated on the Future Land Use Map on both coasts and on key Township transportation corridors***

The Agriculture/Residential area should provide for significant buffers between intensive agriculture and single family homes. The buffer may be part of the open space of a clustered development, or part of a private lot, but should be present to reduce "nuisance" complaints from residential land owners.

### **Commercial**

Over 100 acres of land is designated for commercial development on the Future Land Use map. The majority of this land is located on Bingham Road in an area already designated for commercial development. Ample land currently exists in this area to provide for future growth of businesses. The goal of commercial development in the Township will be to provide services to local residents, while not requiring public services such as sewer and water.

## Section 6 – Future Land Use

### Recreation

Bingham Township is a prime recreational area. Significant land has been set aside for recreational uses, including nearly 210 acres in private recreation (primarily golf courses) and another 170 acres in parks and other public land.

*Nearly 210 acres in private recreation (primarily golf courses) and another 170 acres in parks and other public land have been set aside for recreational uses.*

The presence of the privately owned Leelanau Trail also adds a recreational amenity to the Township. Given the importance of recreation to the local economy, additional land could be sought to further increase recreational opportunities, as long as they do not interfere with existing surrounding land uses.

### Industrial

Forty acres of land have been designated for industrial use. The future land use plan calls for no increase in industrial uses within the Township during the planning horizon.

### Wetlands/Environmentally Sensitive Land

Wetlands are an extremely important asset in the protection of water quality in the both Grand Traverse Bay and Lake Leelanau. Wetlands, as identified by the National

Wetlands Inventory and by State of Michigan wetlands experts, are shown on the Future Land Use map. A map showing steep slopes and other development limitations is shown in Section 1 (Map 1-3). Development occurring in these environmentally sensitive areas must be especially aware of the impact of construction and human activity on the environment. Development standards are suggested for these areas in the Appendix. Further standards may be found in the Grand Traverse Bay Region Development Guidebook.

### Future Land Use Distribution

Table 6-2 shows the distribution of land uses on the accompanying Future Land Use Map.

TABLE 6-2 – LAND USE DISTRIBUTION

Land Use Type	Acreage	% of Total
Residential	1,914	11.4
Rural Residential	4,959	29.6
Commercial	110	0.6
Industrial	40	0.2
Public/ Institutional	9	0
Recreation (Public/Private)	376	2.2
Agricultural	7,084	42.4
Water	1,618	9.6
Transportation	661	4.0
TOTAL	16,771	100.0



## Section 6 – Future Land Use

### Build-Out Analysis of the Future Land Use Map

A build-out analysis was conducted to determine the number of houses and people that could potentially be supported within the Township using the Future Land Use map. In order to carry out this analysis, many of the natural constraints, such as wetlands and lakes, were subtracted from the total acreage of each land use type. In addition, currently developed residential and public land were taken from the land use total acreage.

The results of this analysis are shown in Table 6-3. Residential development can occur in Agricultural, Rural Residential and Residential areas in the Township. It was assumed that the areas designated as "Agricultural" on Map will be more intensively farmed, and will discourage high levels of residential development. Therefore, only 10 percent of the land in the Agricultural areas were assumed to be used for residential development. Areas on the Map designated as "Rural Residential" are considered

to be transition zones between the residential and the agricultural areas of the Township. Therefore, 30 percent of the land in these areas were assumed to be used for residential development. Minimum lot sizes were set according to those observed in the Township (see Figure 4-2).

With these assumptions, it was found that the Future Land Use map would allow for an additional 3,400 housing units, or an additional population of 6,800 people. This is certainly much greater than the target population of up to 1,000 additional residents by 2020. Of this total, 60 percent of the new residential growth will be in the high density area. In addition, the build-out analysis assumes that all land available for development will be developed, which is rarely the case. Additional acreage needs to be available to provide for greater choices of location for future development. Other natural constraints, not taken into consideration in this analysis, may also impede the development of some sites.

TABLE 6-3 – BUILDING ANALYSIS OF FUTURE LAND USE MAP (WETLANDS, ROADS, LAKES AND CURRENT DEVELOPMENT SUBTRACTED FROM TOTAL ACREAGE)

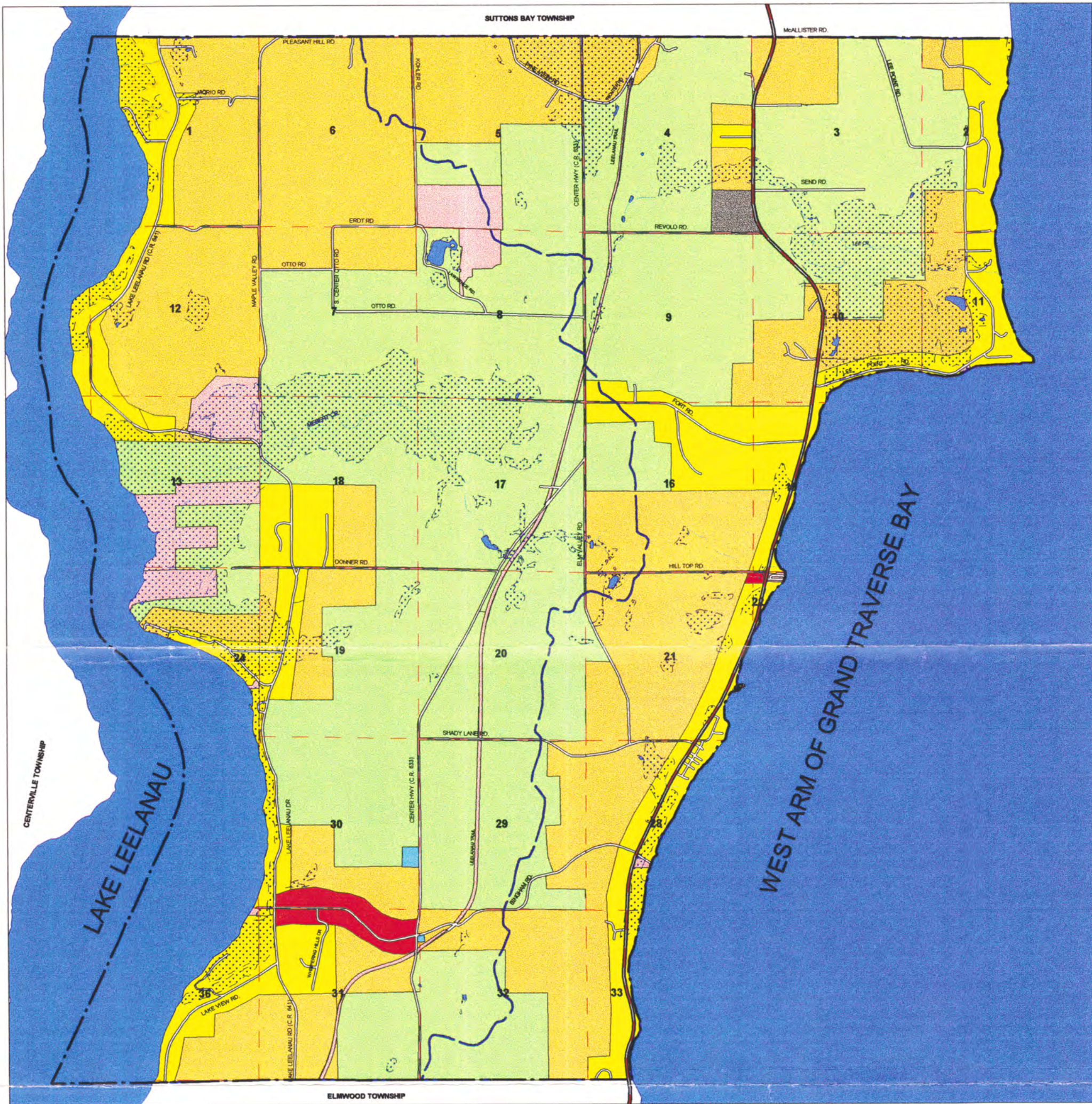
Land Use	Areas (Acres)	Minimum Lot Size (Acres)	# Building Lots	# Units/Lot	# of Units	2020 Population*
Agriculture	5,933.4					
Farm (90%)	4,746.72	20	237	1	237	475
Residential (10%)	1,186.68	5	237	1	237	475
Rural Residential	3,939.5					
Farm (70%)	2,757.65	10	276	1	276	552
Residential (30%)	1,181.85	2	591	1	591	1,182
Residential	1,033.2					
SFR	466.00	0.5	932	1	932	1,864
TOTAL					3,408	6,816
* Assumes 2.0 Persons/Unit						

SOURCE: Gove Associates Inc.










# BINGHAM TOWNSHIP

## Leelanau County, Michigan

### FUTURE LAND USE MAP



#### LEGEND

- |   |                                      |   |                      |
|---|--------------------------------------|---|----------------------|
|  | Residential (11.4%)                  |  | Agricultural (42.4%) |
|  | Rural Residential (29.6%)            |  | Wetland              |
|  | Commercial (0.6%)                    |  | Watershed Boundary   |
|  | Industrial (0.2%)                    |   |                      |
|  | Public / Institutional (<0.1%)       |   |                      |
|  | Recreation (Public / Private) (2.2%) |   |                      |



---

## **Implementation Schedule**

---

## Section 7 - Implementation

### Introduction

This section of the Plan presents the tools and processes that are currently available to Bingham Township to help make this Plan a reality. It also contains a schedule that depicts the activities that should be undertaken along with the recommended parties, timing, and funding sources to secure success.

The following approaches are viable in terms of being implemented under current state enabling legislation and federal programs.

**Cooperation** between the Township and other public and quasi-public entities is also critical to the success of the Plan. These entities play a key role in the use of land within the Township and communication needs to be maintained to enable the Township and each entity to properly plan for the future. The Leelanau County Government, the County Road Commission, the Regional Council of Governments and numerous State Agencies, all have legal authority and responsibilities for programs and projects that occur in, and impact upon, the development of the Township. Coordination between these bodies and the Township is important for planning and programming needs to be maintained, and to accomplish the goals set forth in this Plan.

Finally, the activities occurring within surrounding townships, particularly those related to land use planning, zoning, and other development controls can have a direct impact upon planning, particularly along the perimeter of the Township. Coordination and communication should be ongoing among these jurisdictions.

Plans and programs from these surrounding communities and Bingham Township should be shared in order to facilitate coordinated land use planning.

**Information and education** are fundamental to the implementation of this Plan. Without the consensus of residents, businesses and developers, the Plan will not be successful.

To help garner that consensus and contribute to the success of the Plan, the Township needs to institute information and education programs. These can include sending a small flyer, or tri-fold, that briefly describes the main components of the Plan and possibly include a small copy of the future land use map.

The Township should consider establishing a design standards manual that could be distributed to developers that explain and clarify in more detail some of the broad-based concepts identified in this plan, such as cluster/open space development. This manual would be used as a guide to promote certain design and development standards and also help educate developers about the components and associated benefits of "state-of-the art" concepts. The

## Section 7 - Implementation

manual can be periodically updated to reflect new standards and concepts.

The Township might also consider conducting an annual or bi-annual community survey informing residents of recent developments and asking for impressions, attitudes, and opinions about specific issues related to current or proposed developments. This will help keep residents abreast of development activities in the Township while providing a forum for Township officials to better understand the opinions of those residents.

### Implementation Schedule

This Section complements the Plan's Goals and Objectives in Section 5. The Implementation Schedule groups the Objectives of each of the Goals with the participants responsible for completing the actions and identifies timing and potential funding sources for each action. The Implementation Schedule quickly identifies time frames and permits comparisons between the many actions identified in the Plan.

This list is not a comprehensive list of all actions needed over the next 20 years, but it is a list of the primary actions needed to accomplish the Plan's goals. Funding sources often change as time passes, as do organizations and priorities. The Township should regularly review the schedule to ensure actions are accomplished and goals are met.

The Implementation Schedule lists participants that include local and state agencies or groups. Quite often an action has several participants marked due to the team effort required to accomplish many actions. The Schedule identifies primary and secondary participants.

The Schedule's timing section identifies actions as short-range/ongoing actions (one to three years), medium-range actions (three to ten years) or long-range actions (ten years or more). Actions often take a considerable length of time to complete, so the schedule identifies two or three time periods.

The funding portion of the Schedule identifies potential sources.

Table 7-1 identifies the Implementation Program established in the Plan.

## Section 7 - Implementation

### Schedule Categories

#### Participants

- Township Board
- Township Planning Commission
- Township Staff
- Non-Profit Organization
- Neighboring Communities
- Local Merchants
- Public School District
- County
- Michigan Department of Transportation
- Michigan Department of Natural Resources
- Michigan Department of Environmental Quality
- Outside Assistance
- Citizen Committees / Volunteers
- Other / Private Sector

#### Timing (Years)

- 1-3 (Short Range, Ongoing)
- 4-10 (Medium Range)
- 10+ (Long Range)

#### Funding

- General Revenues
- Tax Increment Financing
- Special Assessment District
- Revenue Bonds
- CDBG
- MDNR / MDEQ
- MDOT (ISTEA and Other)
- Other Federal or State Funds
- Michigan State Housing Development Authority (MSHDA)
- Foundations, Grants, Contributions
- Private and Other





ARCHITECTS  
ENGINEERS  
PLANNERS  
SURVEYORS

**GOVE ASSOCIATES, INC.**

1601 PORTAGE STREET  
KALAMAZOO, MICHIGAN 49001  
(616) 385-0011

**Bingham Township**

**IMPLEMENTATION SCHEDULE**

PARTICIPANTS: PRIMARY ■ SECONDARY □	TIMING (Years)	FUNDING: PRIMARY ● SECONDARY ○																					
		Township Board	Township Planning Commission	Township Staff	Non-Profit Organization	Neighboring Communities	Local Merchants	Public School District	County	MDOT	MNR / MDEQ	Outside Assistance	Citizen Committees / Volunteers	Other / Private Sector	General Revenues	Tax Increment Financing	Special Assessment District	Revenue Bonds	CDBG	MNR/MDEQ	MDOT (STEA & Other)	Other Federal or State Funding	MSHDA

**ACTIONS:**

ACTIONS:	Township Board	Township Planning Commission	Township Staff	Non-Profit Organization	Neighboring Communities	Local Merchants	Public School District	County	MDOT	MNR / MDEQ	Outside Assistance	Citizen Committees / Volunteers	Other / Private Sector	1-3 (Short Range, Ongoing)	4-10 (Medium Range)	10+ (Long Range)
<b>RESIDENTIAL GROWTH</b>																
Identify areas for cluster development																
Higher density (cluster) development will be located on main transportation thoroughfares																
Minimize residential development on prime agricultural lands through appropriate zoning standards																
Control township development standards, code enforcement and administration through the Plan and the Zoning Ordinance																
Encourage a balance of housing types in the Township																
All new residential development in the Township will depend on independent well and septic systems																

**ACTIONS:**

ACTIONS:	Township Board	Township Planning Commission	Township Staff	Non-Profit Organization	Neighboring Communities	Local Merchants	Public School District	County	MDOT	MNR / MDEQ	Outside Assistance	Citizen Committees / Volunteers	Other / Private Sector	1-3 (Short Range, Ongoing)	4-10 (Medium Range)	10+ (Long Range)
<b>AGRICULTURE</b>																
Identify existing farmland to promote as preservation areas																
Encourage farmland preservation through PDR, TDR, LDR, or other innovative preservation techniques																
Educate the public on the differences between agriculture and open space																
Provide for buffers between agricultural and residential uses																
Develop incentives for agricultural protection																

**ACTIONS:**

ACTIONS:	Township Board	Township Planning Commission	Township Staff	Non-Profit Organization	Neighboring Communities	Local Merchants	Public School District	County	MDOT	MNR / MDEQ	Outside Assistance	Citizen Committees / Volunteers	Other / Private Sector	1-3 (Short Range, Ongoing)	4-10 (Medium Range)	10+ (Long Range)
<b>COMMERCIAL/INDUSTRIAL</b>																
Ensure development of new commercial facilities will minimize conflicts with other land uses																
Adopt and apply development and design standards that embrace and encourage the village concept or Planned Unit Developments																



ARCHITECTS  
ENGINEERS  
PLANNERS  
SURVEYORS

**GOVE ASSOCIATES, INC.**

1601 PORTAGE STREET  
KALAMAZOO, MICHIGAN 49001  
(616) 385-0011

**Bingham Township**

**IMPLEMENTATION SCHEDULE**

Adopt and apply site design and sign standards for both permitted and special commercial and industrial land uses  
Encourage the improvement of existing commercial areas, both aesthetically and functionally, to serve their neighborhoods  
Provide for adequate access for fire and rescue services for all commercial and industrial locations  
Ensure that commercial and industrial facilities do not require public water and sewer facilities  
Ensure that home based businesses and occupations have minimal impact on residential neighborhoods  
Ensure that new industrial facilities are developed so as to minimize conflict with other land uses  
Ensure that new industrial development is located near transportation and utility facilities that are adequate for the development's needs

**ACTIONS:**

**PUBLIC FACILITIES/UTILITIES/SERVICES**

Continue and encourage cooperation with neighboring jurisdiction to provide quality public services and facilities  
Ensure that all development complies with health and safety standards and provides necessary services  
Encourage interdepartmental cooperation and coordination of police, fire, and rescue services to achieve township-wide coverage and availability  
Ensure the orderly development of commercial recreation to reduce conflict with adjoining land uses  
Use the future land use elements of the Plan as a guide for the location of future community recreation sites  
Use MDNR standards as a "triggering" mechanism to determine the timing and character of additional parks  
Maintain an up-to-date Recreation Plan to state the recreation goals of the community  
Encourage the multi-functional use of recreation areas for open space, forestry, floodplain or water resource conservation and historical preservation

PARTICIPANTS:	PRIMARY			SECONDARY			FUNDING:							TIMING (Years)			PRIMARY							SECONDARY						
	Township Board	Township Planning Commission	Township Staff	Non-Profit Organization	Neighboring Communities	Local Merchants	Public School District	County	MDOT	MDNR / MDEQ	Outside Assistance	Citizen Committees / Volunteers	Other / Private Sector	1-3 (Short Range, Ongoing)	4-10 (Medium Range)	10+ (Long Range)	General Revenues	Tax Increment Financing	Special Assessment District	Revenue Bonds	CDBG	MDNR/MDEQ	MDOT (STEA & Other)	Other Federal or State Funding	MSHDA	Foundations, Grants, Contributions	Private & Other			
Adopt and apply site design and sign standards for both permitted and special commercial and industrial land uses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Encourage the improvement of existing commercial areas, both aesthetically and functionally, to serve their neighborhoods	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide for adequate access for fire and rescue services for all commercial and industrial locations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that commercial and industrial facilities do not require public water and sewer facilities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that home based businesses and occupations have minimal impact on residential neighborhoods	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that new industrial facilities are developed so as to minimize conflict with other land uses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that new industrial development is located near transportation and utility facilities that are adequate for the development's needs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continue and encourage cooperation with neighboring jurisdiction to provide quality public services and facilities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that all development complies with health and safety standards and provides necessary services	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encourage interdepartmental cooperation and coordination of police, fire, and rescue services to achieve township-wide coverage and availability	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure the orderly development of commercial recreation to reduce conflict with adjoining land uses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the future land use elements of the Plan as a guide for the location of future community recreation sites	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use MDNR standards as a "triggering" mechanism to determine the timing and character of additional parks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintain an up-to-date Recreation Plan to state the recreation goals of the community	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encourage the multi-functional use of recreation areas for open space, forestry, floodplain or water resource conservation and historical preservation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



PARTICIPANTS: PRIMARY ■ SECONDARY □ FUNDING: PRIMARY ● SECONDARY ○

**GOVE ASSOCIATES, INC.**  
 1601 PORTAGE STREET  
 KALAMAZOO, MICHIGAN 49001  
 (816) 385-0011

**Bingham Township**  
 IMPLEMENTATION SCHEDULE

TOWNSHIP BOARD	TOWNSHIP PLANNING COMMISSION	TOWNSHIP STAFF	NON-PROFIT ORGANIZATION	NEIGHBORING COMMUNITIES	LOCAL MERCHANTS	PUBLIC SCHOOL DISTRICT	COUNTY	MDOT	MDNR / MDEQ	OUTSIDE ASSISTANCE	CITIZEN COMMITTEES / VOLUNTEERS	OTHER / PRIVATE SECTOR	TIMING (Years)			FUNDING						
													1-3 (Short Range, Ongoing)	4-10 (Medium Range)	10+ (Long Range)	General Revenues	Tax Increment Financing	Special Assessment District	Revenue Bonds	CDBG	MDNR/MDEQ	MDOT (STE & Other)

**ACTIONS:**

**TRANSPORTATION**

Maintain, where possible, the natural character of roads and the surrounding area

Encourage the use of the major thoroughfares, while discouraging through traffic on rural residential roads

Utilize highway facility improvements as a positive guide to direct or enhance the land use relationship

Coordinate transportation planning with adjacent jurisdictions, the county, the region and the state.

Ensure the safe use of roads for pedestrian and non-motorized activities

**ACTIONS:**

**OPEN SPACE/NATURAL RESOURCES**

Identify areas suitable for certain types of land uses and the development limitations of these sites

Discourage private development of wetlands, floodplains and watercourses

Promote dual land uses (e.g. agriculture/open space) which encourage and enhance private ownership of non-developed lands

Encourage cluster development that protects sites containing wetlands, forest, wildlife habitats or water resources

Discourage inappropriate development that will interfere with the continued use and conservation of important natural resources

Develop and institute appropriate flood and erosion controls to minimize flood damage and maintain water quality

Identify unique natural areas

Develop land use guidelines to protect and preserve unique natural areas

Participate in regional efforts to improve and protect water quality

---

**Appendix A**  
**Community Surveys and Citizen Planning Committee Reports**

---

**COMMUNITY SURVEY (1997)**

(Conducted by Northwestern Michigan College)

When asked whether the Township should consider a local "purchase of development rights" program...The majority of respondents (65.6%) reported that they either somewhat or strongly agreed with this statement, while 19.8 percent were undecided and 14.5 percent disagreed.

***An overwhelming majority of respondents agreed to some degree that farmland is an important element of the township's character (95.7%) and that farming activities should be encouraged (92.3%).***

The majority of respondents (66.4%) disagreed to some extent with the suggestion that development of duplexes and townhouses should be supported. Similarly, the majority of respondents indicated that they disagreed to some extent with the suggestion that development of apartment complexes (76.7%) and mobile home parks (85.5%) should be supported.

***The majority of respondents (62.3%) agreed to some extent that new housing developments should cluster homes on part of the parcel and leave the remainder in open space.***

With regard to encouragement of shared access driveways along Center Highway, the largest single group of respondents (32.1%) was undecided as to their level of agreement. Slightly more than one-quarter of respondents were also undecided with regard to shared access driveways along Lake Leelanau Drive, although 47.8% agreed to some extent that shared access driveways should be encouraged in this area. Finally, the majority of respondents (52.7%) agreed to some extent that shared access driveways along West Bay Shore Drive should be encouraged, while 25.3 percent disagreed, and 22.0 percent were undecided.

The majority of respondents (62.3%) agreed to some extent that new housing developments should cluster homes on part of the parcel and leave the remainder in open space, while 21.1 percent disagreed to some extent and 16.6 percent were undecided.

With regard to new businesses, 56 percent of respondents disagreed to some extent with location these establishments along M-22, while 28.7 percent agreed to some extent, and 15.4 percent were undecided. Approximately 62 percent of respondents agreed to some extent that new businesses should be located in the existing commercial area, while 24.5 percent disagreed to some extent and 13.9 percent were undecided. The majority of

respondents (55.2%) disagreed to some extent that additional land area should be designated for industrial use, while 24.4 percent tended to agree with the statement and 20.3 percent were undecided.

***Bingham Township's respondents (81.7%) strongly agreed that visual open areas are an important element of the Township's character.***

With regard to Bingham Township's natural features, 81.7 percent of respondents strongly agreed that visual open areas are an important element of the township's character, while 2.3 percent of respondents disagreed to some extent with this

statement. The majority of respondents (90.1%) also strongly agreed that water bodies are an important element of the township's character, while 2 percent disagreed. Eighty percent of respondents strongly agreed that the pollution of township water bodies should be a main concern of the township.

***Respondents (80%) strongly agreed that the pollution of Township water bodies should be a main concern.***

The majority of respondents (68.3%) either somewhat or strongly agreed that existing recreational facilities and programs met their needs, while 19.9 percent did not feel that current facilities/programs met their needs, and 11.8 percent were undecided. Slightly over one-quarter of respondents strongly disagreed with a statement suggesting that the township should consider purchasing and developing additional park lands, while remaining respondents were relatively evenly split between other levels of agreement. Finally 66.6 percent of respondents indicated that they either somewhat or strongly agree that bicycle paths should be provided along existing roadways, while 21.9 percent indicated that they somewhat or strongly disagree, and 11.5 percent were undecided.

Over 50 percent of respondents agreed that hiking trails, picnic areas, and bicycle paths should be expanded or added in Bingham Township. Fifty percent or more of respondents disagreed with expansion and /or addition of snowmobile trails, ice skating rinks, and boat launch/access sites. It should be noted, however, that a number of respondents were undecided with regard to expansion and/or addition of any of the above recreational facilities.

**LARGE PARCEL LANDOWNER SURVEY (1997)**

(Conducted by Department of Landscape Architecture, Michigan State University)

The majority of those surveyed were the primary managers of the farm, and indicated they would continue to farm for the next 10 years. The respondents indicated that property taxes, agricultural markets/ economics, land use regulations, development pressure and government regulations were all important factors affecting future farming. The majority of those surveyed indicated that they would not sell some or all of their land, and would prefer the land to remain in agriculture.

The survey participants were asked about their understanding and opinion about three zoning options for rural preservation. These options included large lot zoning, density zoning, and rural clustering. The respondents were asked to rate their understanding of each zoning concept and rate the effectiveness of these options toward the goal of preserving agriculture in the Township. Rural Clustering received the greatest support both in terms of being understood by the participants and the options ability to improve the ability to farm. Large lot zoning received the lowest level of support.

Survey participants were asked to rate four development rights options: Purchase (PDR), Leasing (LDR), Donation (DDR) and Transfer (TDR) of development rights. Survey results indicate that the greatest support was for a PDR program, followed by TDR, DDR, and LDR programs. It was noted, however, that though there was support for many of these options, there was a large difference in opinion among respondents. In general, the survey indicated that long-term residents with a tie to the land through tenure or birthright tended to favor PDR, while newer residents with a more business oriented relationship to the land favored LDR.

*The survey indicated that in general the long-term residents with a tie to the land through tenure or birthright tended to favor PDR, while newer residents with a more business oriented relationship to the land favored LDR.*

Other protection strategies for agriculture were also surveyed. These strategies included an impact fee for agriculture-to-residential conversion; a farmland exemption from cap removal when property transfers within a family; a tax differential with farmland without structures being taxed at a different rate than farmland with structures; and the creation of a voluntary agricultural security zone. Of these options, the cap removal was rated strongly acceptable, the tax differential and the agricultural security zone were rated acceptable, and the impact fee option was found to be unacceptable.

**CITIZEN PLANNING COMMITTEES**

**Agricultural Committee**

LAND EVALUATION AND SITE ASSESSMENT FACTORS  
PRIME, UNIQUE AND VALUABLE FARMLAND PARCEL RANKING SYSTEM

OVERVIEW

Land Evaluation and Site Assessment (LESA) is an analytical tool to help local officials make decisions. It in itself is not a farmland protection program but a systematic and objective procedure to rate and rank sites for agricultural importance. The procedure is designed to take into account both soil quality and other site factors that influence agricultural productivity or measure development pressure. The land parcel is considered the site for this process. All farmland parcels greater than or equal to 40 acres in size will be evaluated in the Township.

SITE ASSESSMENT FACTORS (SAI) – These factors measure non-soil site and regional characteristics that could directly affect potential agricultural productivity or farming practices.

1. Determine the percent of area in residential land use directly adjacent (perimeter) to the farmland parcel.

*Rationale:* Land uses adjacent to farms can affect the ability of a farmer to conduct normal farming practices. Complaints can arise from residential property owners when normal farming practices cause side effects such as excessive smell, dust, or noise. Therefore, this factor measures the amount of potential conflicting land use occurring along the property boundary of the farmland parcel.

*Procedure:* The percent of conflicting residential land use is measured by calculating the proportion of the farmland parcel's perimeter that is adjacent to residential properties. The measure needs to account for both the length of perimeter and density of conflict. To do this, count the number of residential parcels (improved and vacant), multiply by the average length of the shortest side of the residential parcel(s) boundary. Then divide by the length of the perimeter of the farmland parcel. The resulting number, expressed as a percent, measures conflicting residential land use.

Percent	Points	Percent	Points
0	100	51-60	40
1-10	90	61-70	30
11-20	80	71-80	20
21-30	70	81-90	10
31-40	60	91-100	1
41-50	50		

- Determine the proportion of area in urban or developed land use within a .5 mile buffer of the farmland parcel.

*Rationale:* Land uses in the immediate vicinity to farms can also affect the ability of a farmer to conduct agricultural operations. Livestock operations, spraying activities or night operations could potentially cause problems with an area that is developed. An assumption that is made with this factor is, the larger the farmland parcel, the higher relative degree of conflict from the surrounding area it can absorb. Therefore, this factor measures the amount of potential conflicting land use (i.e. residential, commercial, industrial, recreational or other developed land uses) occurring within a .5 mile buffer of the farmland parcel.

*Procedure:* The percent of conflicting land use is measured by counting the number of parcels of a conflicting land use within or intersecting the .5 mile buffer. This number is then divided by the size (in acres) of the farmland parcel being assessed. The resulting number, expressed as a ratio, measures conflicting land use in the area.

Ratio of number of conflicting Parcels to farmland parcel size	Points	Ratio of number of conflicting Parcels to farmland parcel size	Points
0-.10	100	.61-.70	40
.11-.20	90	.71-.80	30
.21-.30	80	.81-.90	20
.31-.40	70	.91-1.0	10
.41-.50	60	> 1.0	0
.51-.60	50		

SITE ASSESSMENT FACTORS (SA2) – These factors measure development pressures that could impact a farm parcel's continued agricultural use.

- Determine the zoning districts adjacent to the farmland parcel.

*Rationale:* Areas zoned as agriculture is to be predominantly used for agricultural purposes. While single family detached dwelling units are allowed in this zone, it is intended to keep the unique agricultural character of the area intact. This factor measures the amount of land zoned for agricultural use around the perimeter of the farmland parcel. If land adjacent to the farmland parcel is zoned to something other than agriculture, development could arise as a result.

*Procedure:* Assess the surrounding zoning information for the farmland parcel by identifying the adjacent properties' zoning categories.

<u>Adjacent zoning</u>	<u>Points</u>
Zero sides completely or partially zoned for non-agricultural use	100
One side completely or partially zoned for non-agricultural use	75
Two sides completely or partially zoned for non-agricultural use	50
Three sides completely or partially zoned for non-agricultural use	25
Four or more sides completely or partially zoned for non-agricultural use	0

4. Determine the number and size of parcels that intercept a .5 mile buffer around the farmland that are registered under P.A. 116.

*Rationale:* Properties in close vicinity to the farmland parcel being assessed provide some protection from development if they are registered under P.A. 116, the Farmland and Open Space Preservation Act. The greater the number of properties protected and the more acreage that is protected in this .5 mile buffer, the more protection from development the farmland parcel receives.

*Procedure:* To measure how much protection is being provided by the properties surrounding the farmland parcel determine how many parcels are registered under P.A. 116 that are intercepted by the .5 mile buffer. Then determine the deeded acreage of the parcels and assign factor points based on the table below.

<u>P.A. 116 Registered Sites</u>	<u>Points</u>
0 sites registered:	0
1-5 sites registered:	
>300 acres	60
200-299 acres	50
<200 acres	40
6-10 sites registered:	
>400 acres	80
300-399 acres	70
<300 acres	60
More than 10 sites registered:	
>500 acres	100
400-499 acres	90
<400 acres	80



5. Determine if the farmland parcel is presently registered under P.A. 116, the Farmland and Open Space Preservation Act. If so, determine how many years are remaining on the agreement.

*Rationale:* If the farmland parcel being assessed is registered under P.A. 116, the Farmland and Open Space Preservation Act, the parcel is protected from being developed to non-agricultural use. The longer the enrollment is in effect, the more protection from development the parcel receives.

*Procedure:* Determine if the parcel being assessed has a P.A. 116 agreement and determine how many more years the parcel is enrolled for.

SITE ASSESSMENT FACTORS (SA3) - These factors measure public values of a site supporting agricultural use. The factors tend to reflect a broader view of farmland in the landscape. Values such as scenic or historic importance are intangible factors that contribute to the overall quality of life in an area.

6. Is the farmland parcel a centennial farm?

*Rationale:* A centennial farm is a working farm of 10 or more acres that has been continuously owned by the same family for at least 100 years. This strong family tie to the land may impart a feeling among its owners that the best use of the parcel is to remain undeveloped.

*Procedure:* Determine if the farmland parcel is a centennial farm.

<u>Is the parcel designated?</u>	<u>Points</u>
Yes	100
No	0

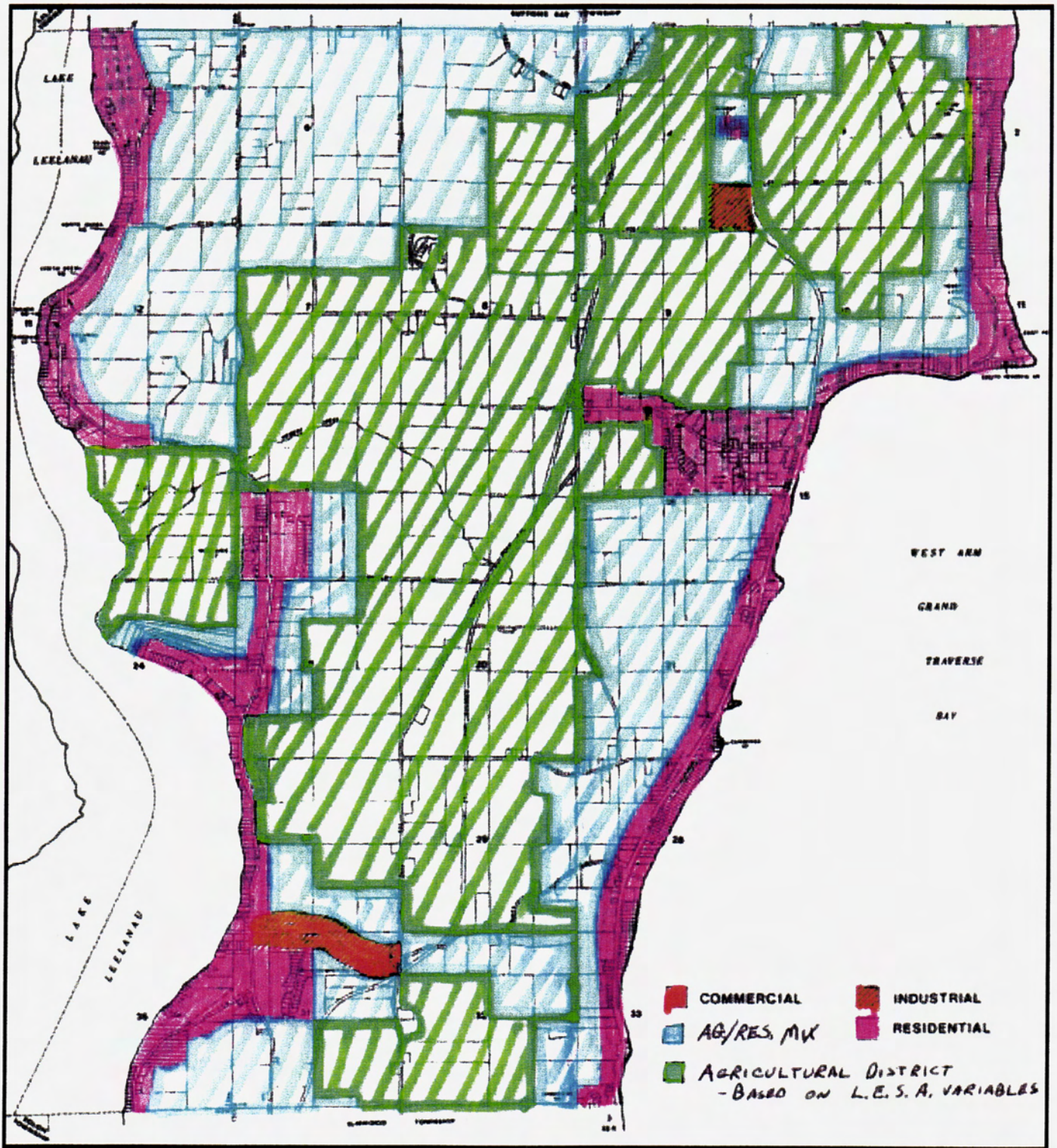
7. Does the farmland parcel provide scenic visual value to the rural landscape? Is the parcel visible from a major highway corridor?

*Rationale:* A farmland parcel that provides scenic value along the major transportation corridors in the Township is a critical component to maintaining the rural character of the Township. Parcels that exhibit good scenic quality will be given a higher score.

*Procedure:* Determine which scenic value category exists on the property. For a property to be assessed it must be visible from a major highway or primary county roads such as: 1) Fruit Ridge Ave., 2) 4 Mile Road, 3) 6 Mile Road, 4) 7 Mile Road, 5) 10 Mile Road, 6) Alpine Ave. and 7) M-37.

<u>Scenic value category</u>	<u>Points</u>
5	100
4	80
3	60
2	40
1	20
0	0 not visible from a major highway corridor

**FARMLAND AREAS BASED ON L.E.S.A. VARIABLES MAP**



Source: Agricultural Committee, 1998

## Residential Committee

Given that Bingham Township is primarily an agricultural community, and that a recent survey of large parcel landowners strongly favor it remaining primarily agricultural and that this committee concur in that opinion and believe that the majority of residents concur, we recommend the following:

- That the purpose of this master plan be to maintain the agricultural base of Bingham Township.
- That the residential portion of the plan accommodate an annual population growth rate of 2.5%.
- That current zoning be eliminated in favor of overlay districts.
- That existing natural areas in the township along West Grand Traverse Bay and along South Lake Leelanau which have primarily a residential and transportation usage should be designated as the residential overlay districts of the township. They are describe as follows:
  1. South Bayfront Residential District - from the south border of the township to Lee Point Road and from the water's edge to the first ridge to the west (in other words land within site of M-22).
  2. North Bayfront Residential District - from Lee Point Road to the northern boundary of the township and from the water's edge to the western boundary of the current residential zone.
  3. Southern Lake Leelanau Residential District - from the southern boundary of the township to one mile north of Donner Road and from the water's edge to the eastern boundary of the current residential zone.
  4. Northern Lake Leelanau Residential District - from section 13 to the northern boundary of the township, same as the current residential Zone.
- The Residential Committee requests help in analyzing the above described new residential overlay districts and accompanying map as follows;
  - Data gathering -- all missing information from the current county tax records including but not limited to per parcel information on acreage, fronting length, zoning, and vacant or built.
  - Help in more clearly defining the non-waters edges of these overlay districts.
  - Legal help in defining the overlay districts
  - Help with design standards

Infrastructure Committee

COMMERCIAL

GOAL: To maintain neighborhood commercial services for residents of the township, keeping in line with population growth within the township.

OBJECTIVES: To provide opportunities, methods or controls to assure

- development of any new commercial facilities in such a way as to minimize conflict with other land uses.
- creation of development and design standards that embrace and/or encourage the village concept or Planned Unit Developments
- improvement of existing commercial areas, both aesthetically and functionally, to serve their neighborhoods
- adequate access for fire and rescue services for all commercial locations.
- that commercial facilities do not require public water and sewer facilities.

HOME BASED BUSINESS

GOAL: To allow residents of the township to work out of their home, providing a service to the community, and maintaining the residential nature of the community.

OBJECTIVES: To provide opportunities, methods or controls to assure

- minimal impact on the residential neighborhood.

HOME OCCUPATION

GOAL: To allow residents to operate a non-intrusive enterprise that has no significant impact on the residential community.

OBJECTIVES: To provide opportunities, methods or controls to assure

- minimal impact on the residential neighborhood.
- a service to the community is provided for.

## INDUSTRIAL

GOAL: Limited light industrial development.

OBJECTIVES: To provide opportunities, methods or controls to assure

- that any new industrial facilities are developed in such a manner that there is minimum conflict with other land uses.
- that a tract of land is provided, suitable for selected light industrial development, with provision for adequate transportation access and utilities to serve their needs.
- that industries do not require public water and sewer facilities and that they have their own on site treatment.

## RECREATION

GOAL: To provide an adequate range of recreation opportunities for residents of the township.

OBJECTIVES: Provide opportunities, methods and/or controls to assure

- orderly development of commercial recreation in such a manner that there is optimum utilization of appropriate locations with minimum conflict with adjoining land uses.
- reservation of sufficient recreation lands to serve desired population growth with both active and passive recreation potentials.
- where possible, multi-functional use of recreation areas for open space, forestry, flood plain or water resource conservation and historical preservation.

## TRANSPORTATION

GOAL: To provide for the efficient and safe movement of traffic through and within the township, while preserving the present road system to the extent that it meets the needs of the community with a minimum of environmental or ecological damage to the township.

OBJECTIVES: Provide opportunities, methods or controls to assure 0 Maintaining wherever possible, the natural character of the roads and surrounding areas.

- maximum use of major thoroughfares and discourage traffic through the rural residential roads.

- utilization of highway facility improvement as a positive guide to direct or enhance land use relationship. coordination in planning the township transportation system with adjacent townships, the county, the region and the state.
- safe use of roads for pedestrian and non-motorized activities.

#### PUBLIC UTILITIES AND FACILITIES

GOAL: Cooperate with and assist public and private entities to provide utilities and public services to the residents of the township.

OBJECTIVES: Provide opportunities, methods or controls to assure

- highest quality facilities and services necessary to guide and maintain orderly future development.
- imitation of all development unless appropriate health and safety standards are complied with and services provided.

#### PUBLIC SERVICES

GOAL: Provide adequate and appropriate public services for the benefit of the people of the township.

OBJECTIVES: Provide opportunities, methods or controls to assure

- interdepartmental cooperation and coordination of police, fire and rescue services to achieve township-wide coverage and availability.

#### OPEN SPACE

GOAL: Encourage open space, scenic and natural areas.

OBJECTIVES: Provide opportunities, methods or controls to assure

- non-development of public and privately owned lands with open space potential.
- promotion of dual land uses (e.g. agriculture / open space ) which encourage and enhance private ownership of non-developed lands.

- protection of unique natural areas, swampland, forests and watercourses from Urban types of development.
- encouragement of open space, appropriately located in all land use areas.

## NATURAL RESOURCES

GOAL: Optimum utilization of land, water, air and natural resources, including their preservation and conservation.

OBJECTIVES: Provide opportunities, methods or controls to assure

- continued and future use and conservation of natural resources by preventing inappropriate development of conflicting land uses.
- development of flood and erosion controls to minimize flood damage and maintain water quality levels.
- preservation of unique natural areas which cannot be replaced if destroyed, misused or neglected.
- non-pollution of soil, water and air resources by any segment of the community be it governmental, industrial, agricultural, or private.
- a pattern of land use to shape and guide development away from ecologically sensitive areas.
- encouragement of open space, appropriately located, in all land use areas.

## POPULATION DENSITY

GOAL: Guide and control population densities and distribution in order to maintain a rural atmosphere, ecological balance, open space, high levels of sanitation and low levels of pollution.

OBJECTIVES: To provide opportunities, methods or controls to assure

Control population density in such a manner that overall high density does not take place.

- Higher density in selected areas.



- Maintain the rural atmosphere of the township.
- Rationally control township development standards, code enforcement and administration.

#### LAND USE PLAN

COMMERCIAL development in Bingham Township is serves the local neighborhood.

INDUSTRIAL expansion is not expected to be significant. Further industrial expansion should be light industry and "industrial park" oriented.

#### AREAS OF CRITICAL CONCERN

The most critical portion of the planning of environmentally sensitive areas involves defining what environmental factors or conditions warrant protection. Although this listing is not intended to be all-inclusive, it represents the principal environmental factors considered:

- \*excessive slope areas
- \*dune formation and major sand areas
- \*areas with other soil limitations
- \*marshland areas
- \*riverine areas
- \*Grand Traverse Bay and inland lake shorelines.

These critical areas do not dictate land use, but demand additional restrictions be considered prior to an appropriate use being developed. It is clear that these areas extend through much of the land already under development, but any new development must be built in such a manner as to minimize its impact on the environmental quality of the area. In this regard, regulations must be strict, but not unreasonable. The protection of certain areas does not require non-development, but merely conformance with certain performance standards.

In development of the plan, however, environmental concerns have dictated, to a certain degree, the type of land use recommended for specific areas. Some of these areas are already under some degree of control because of State and Federal legislation.

PUBLIC/SEMI PUBLIC USES: Consideration should be given to public land, buildings, and recreation sites.

TRANSPORTATION PLAN: Transportation planning is a continuous process that is necessary if the movement of people and goods is to be managed effectively in the township. Planning for the township road system must consider not only local traffic, but also the regional movement of vehicles.

RECREATION PLAN: The recreation plan is concerned with not only provisions of additional facilities for residents and the vacationing public, but the protection and, if possible, enhancement of any area that is considered for recreational use.

The structure of the recreation plan is largely dictated by the distribution of existing recreational attractions, natural recreation potentials, the objectives of the federal, state and local agencies, and of the citizens of the township. The latter were expressed through the Citizens Advisory Committee recommendations and the county-wide public attitude survey.

Private and Commercial Facilities: These facilities have manifested themselves in Leelanau County in the typical range of activities associated with higher cost or where the public is willing to pay for the privilege of participation. These have included campgrounds, trailer parks, and more recently large scale recreation communities which have included multiple recreational uses as the focal point or nucleus for a residential development.

In any such development in Bingham Township the greatest care should be taken to prevent individual and natural conflicts of misuse. Because any such endeavor is necessarily a profit making operation, problems arise from over development by competing organizations. The point is neither to eliminate competition nor to stifle enterprise, but to make them responsive not only to the vacationing public, but to the needs of the township, the resident population and the natural environment as well.

GOALS AND OBJECTIVES: These have been expressed already in the comprehensive plan as goals and objectives for recreation and for open space. They emphasize the importance of open space and concern for the natural environment. Publicly owned facilities should not be expanded beyond their present size and activity, or that already planned and made public. Commercial recreation needs should be met through improvement of present facilities, and appropriate guidance and control of all new developments.

#### General Recommendations

1. Care should be taken to protect adjoining property owners.
2. Recreation uses should not endanger lands well adapted to agriculture or residential use.
3. Recreation uses should not infringe upon the quality of open space, forest, hills, bluffs, orchards, lakes, shorelines or embayments, but should protect the natural environment.
4. Recreation sites should be planned so that the uses have minimal conflict with the neighbors and with the environment.

5. Conservation areas around lakes and along rivers and streams should be preserved.
6. Commercial recreation uses should be placed, like public facilities, to lessen disruptive effects on the environment or surrounding uses.
7. School-supplied recreation should be encouraged in the total township recreation program.
8. The township should participate in the planning and placement of all recreation facilities.
9. Any signing and marking should be unobtrusive.

**COMMUNITY SERVICES AND FACILITIES PLANS:** Community services and facilities are necessities in the operation of the township. They are provided by the township or other local taxing unit and serve all the people in its jurisdiction.

**Public Buildings and Facilities:**

The needs of the township for public buildings and facilities are modest but critical.

The township hall and offices need to be expanded as the community needs grow.

Fire protection and ambulance/rescue services are provided by a volunteer unit serving Bingham and Suttons Bay townships, based in Suttons Bay.

The library in Suttons Bay is also supported by Bingham Township funds. Residents may use the Traverse City Library without charge.

**Schools:**

The Suttons Bay Public School District includes Bingham Township. It offers a K through 12 program. Recent expansion has kept pace with enrollment and should serve the two townships for some years.

Further expansion of the elementary school at its present site will have to be weighed against the advantages of a second elementary school at some other site closer to the student population being served.

Utilities:

Bingham Township, as a rural township, should not need to provide public water and sewers.

Solid waste disposal is provided for by the county-operated sanitary landfill, a 40 acre site fully equipped to bury all refuse in the county. It is expected to serve the county's needs for 20-40 years.

Garbage collection is available from several private operators.

---

**Public Meeting Issues Identification December 1998**

1. Population Target of 3,000 by 2020
2. Agriculture
  - a. Encourage preservation through PDR/TDR
  - b. Identify areas for Cluster Development
  - c. Educate public to outline differences between Agriculture and Open Space
  - d. Develop buffers between Agriculture and Residential
  - e. Tax Abatement or Incentives for Agriculture
3. Industry: No changes to current distribution
4. Residential:
  - a. Clustered,
  - b. Balance of housing types
  - c. Increase residential density near main arteries
5. Commercial:
  - a. Neighborhood/local commercial
  - b. Some expansion in reasonable areas
6. Coastal Zone
  - a. Participation in Regional efforts to protect or improve water quality
  - b. Preservation of existing wetlands
7. Transportation
  - a. Traffic problems on CR 641 and M-22
  - b. Keep traffic out of other parts of the Township
  - c. Reduce land uses that are too intensive for existing roads

---

**Appendix B**  
**Population Projections**

---

**CONSTANT PROPORTION METHOD:** This method assumes that Bingham Township will maintain the same percentage of Leelanau County's population in future years as it has in the past. Bingham Township made up an average of 12 percent of Leelanau County's total population between 1980 to 1994. Population projections for Leelanau County were generated by the Michigan Department of Management and Budget.

Population Projection - Constant Proportion

Year	County	Township
1980	14,007	1,546
1990	16,527	2,051
1994	18,122	2,073
2000	19,354	2,245
2005	19,991	2,319
2010	20,610	2,391
2015	21,407	2,483
<b>2020</b>	<b>22,240</b>	<b>2,580</b>

**GROWTH RATE METHOD:** This method projects future population growth based on the Township's rate of growth in the past. From 1960 to 1995 Bingham Township's population grew at an average rate of 4.9 percent annually. The first column shows the population if growth continues at the same rate. The second column show the population at a 2.5% growth rate.

Population Projection: Growth Rate

Year	Population	Population @ 2.5% Growth
1960	625	625
1970	916	916
1980	1,546	1,546
1990	2,051	2,051
1995	2,073	2,073
2000	2,584	2,332
2005	3,222	2,624
2010	4,017	2,952
2015	5,007	3,321
<b>2020</b>	<b>6,242</b>	<b>3,736</b>

**ARITHMETIC METHOD:** In the arithmetic method population growth is based on the average increase of persons per year from 1970 to 1990. Bingham Township gained an average of 56.8 persons each year.

Population Projection: Arithmetic Method

Year	Population
1970	916
1980	1,546
1990	2,051
1995	2,073
2000	2,357
2005	2,641
2010	2,924
2015	3,208
2020	3,492

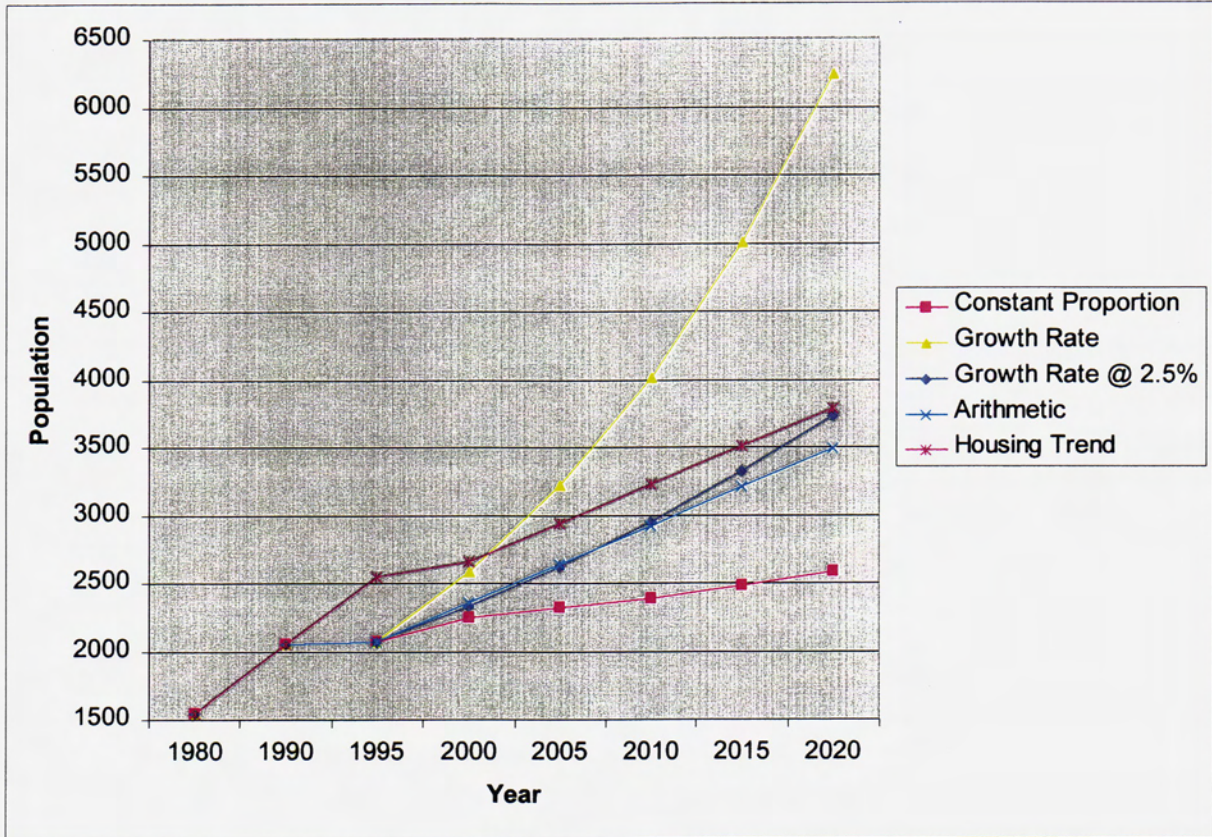
**HOUSING TREND METHOD:** This method uses past trends in housing construction to gauge future development trends in the Township. The development trend can then be used to estimate future population increases. From 1980 to 1998, 509 units were added in the Township. The average number of persons per housing unit was assumed to remain constant at the 1995 level of 2.0 persons/unit.

Population Projection: Housing Trend Method

Year	Housing Units	Population
1980	765	1,546
1990	1,017	2,051
1998	1,274	2,548
2000	1331	2,661
2005	1,472	2,944
2010	1,613	3,227
2015	1,755	3,509
2020	1,896	3,792



### Summary of Population Projections



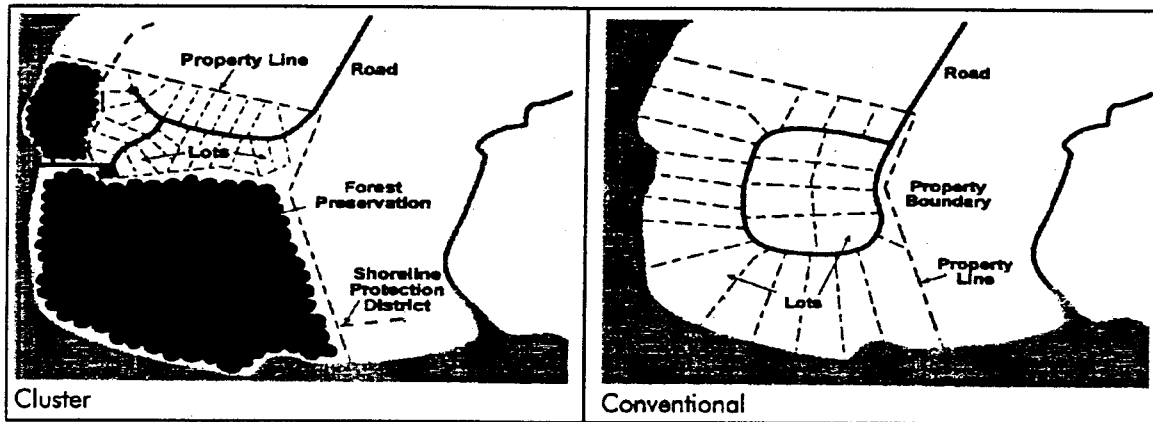
---

**Appendix C**  
**Design Standards**

---

This appendix contains suggested standards of design for future and existing development in Bingham Township. The standards are shown to help Township officials, developers, and the public understand ways in which development can be incorporated into the Township, while reducing the development's deleterious effects on the environment. The standards shown below are not meant to be exhaustive or exclusive of other innovative design approaches. Rather, they are presented as a guide, challenging future development to find approaches that are both economically viable and environmentally responsible.

**Cluster (Open Space) Development**



SOURCE: Better Site Design, Center for Watershed Protection, 1998.

Cluster development is an alternative to conventional subdivisions that concentrates housing at higher densities and provides for public open space within a designated project area. It is more efficient and environmentally sensitive than the standard subdivision, which typically allocated the entire development to private lots and easements for streets and sidewalks.

Perception	Facts, Case Studies, and Challenges
<p>1. Smaller lot sizes and compact development are perceived as less marketable</p>	<p>FACT: Many studies show that open space designs are highly desirable and have economic advantages including cost savings and higher market appreciation</p> <p>FACT: A survey of recent home buyers conducted by American Lives Inc. noted that 77% of the respondents rated natural open space as extremely important</p>

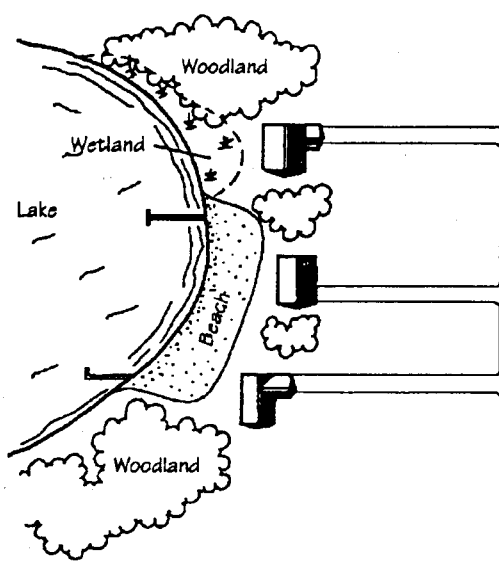
<p>2. Open space developments often require a special exception approval process</p>	<p><b>CHALLENGE:</b> Generally, additional time, public hearings, and special reviews are required to implement open space designs, even when the community has an open space ordinance. While developers are interested in reduced construction costs and market absorption rate, the total amount of time required for the project is a major driving force.</p>
<p>3. Open space developments are perceived as applicable only for upper income housing.</p>	<p><b>FACT:</b> There are many examples of moderate and lower income open space developments</p>
<p>4. Open space developments are perceived as incompatible with adjacent land uses and are often equated with increased noise and traffic</p>	<p><b>FACT:</b> Open space design allows preservation of natural areas, using less space for streets, sidewalks, parking lots, and driveways.</p> <p><b>FACT:</b> A good design utilizing buffers can help alleviate incompatibility with adjacent land uses and still maintain the character of the area</p> <p><b>FACT:</b> If the number of residential units built is kept the same as the non open space designs, traffic impacts on the surrounding area should be similar.</p>

SOURCE: Better Site Design, Center for Watershed Protection, 1998.

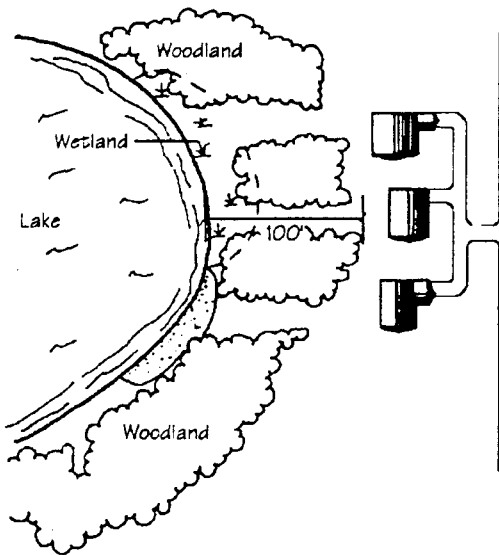
## Shoreline Management of Lakes and Streams

The shoreline is the area immediately adjacent to a lake or stream. These areas are extremely important to the health of the waterbody. Improper management of the shoreline can lead to degraded lake and streams, subsequently affecting the environment of the entire region. Below are some design considerations that will lead to proper management of the shoreline areas. Through these management strategies, it is possible to maintain the biological integrity of the area, while integrating individual parcel owner needs.

**Traditional lakeshore development**



**Preferred lakeshore development**



Two important tools for protecting shoreline areas from private development are setbacks of the primary structure from the shoreline and the establishment of natural vegetative buffers. Existing shoreline land owners and residents should be encouraged to be the stewards of these fragile and important natural areas. New development should follow best development practices for lakeshores. Some of the recommended practices include:

- Preserving the natural vegetation buffer adjacent to the waterbody
- Provide ample setbacks for septic tanks and drainfields
- Reduce the erosion and sedimentation potential
- Minimize tree cutting or thinning of trees adjacent to water bodies
- Direct stormwater runoff into lawn or garden areas, so they may filter the water before it enters the waterbody.
- Establish a compost pile for organic wastes, such as leaves and kitchen waste.
- Avoid the use of fertilizers.

- Gauge watering to plant requirements
- Consider alternatives to chemical use to control specific insects and weeds.
- Choose the right grass and plants for your site. Where possible, choose native plant species for you lakeshore and streamside greenbelts (see list below).

### NATIVE PLANT SPECIES

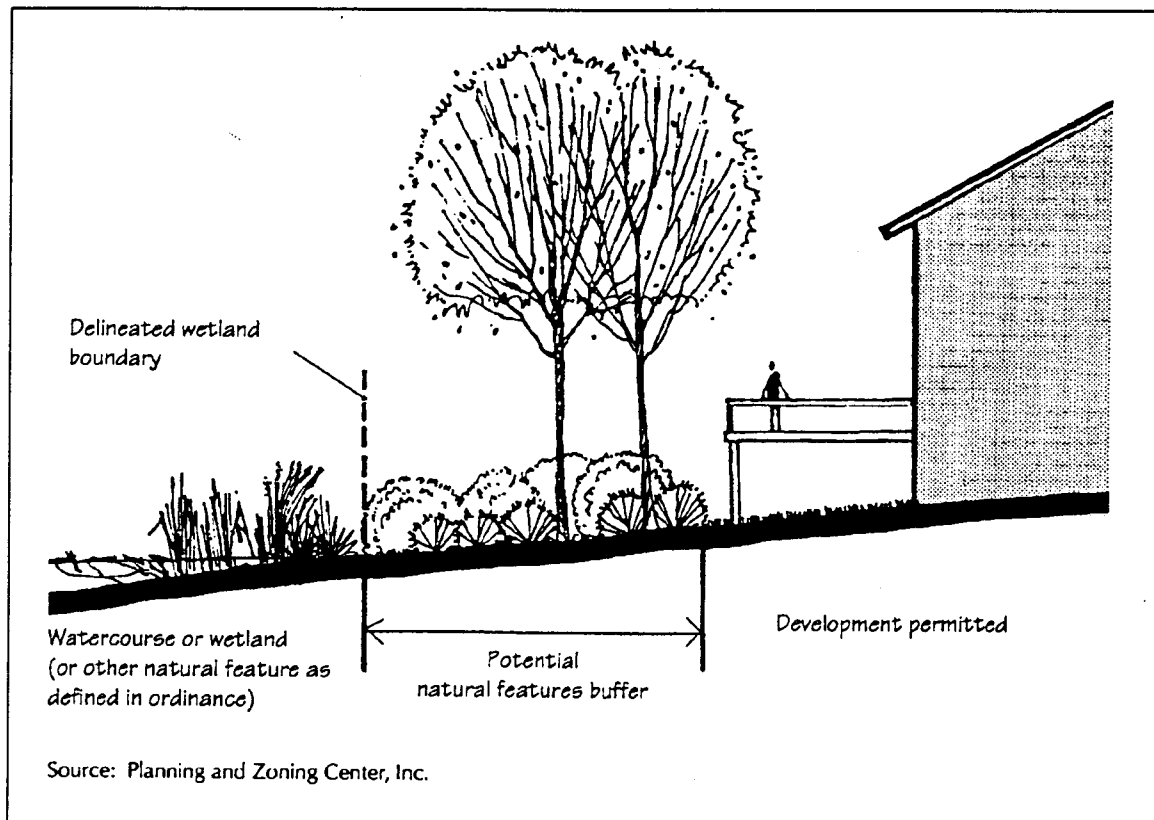
<b>Groundcovers:</b>	Turf grass Periwinkle Wintergreen Lily of the Valley Ostrich Fern Forget-me-Not
<b>Shrubs:</b>	Gray Dogwood Silky Dogwood Crab Apple Canada Yew Red Osier Dogwood Blueberry Highbush Cranberry Potentilla
<b>Trees:</b>	Red Maple Yellow Birch White Birch Sugar Maple American Beech White Pine Balsam Fir White Spruce Black Spruce White Ash American Basswood White Oak Black Willow White Cedar Black Ash Tamarack (larch)

Source: Lake Leelanau Landowner's Handbook

## Wetland Protection and Management

Wetlands are important natural areas in the landscape. They serve to buffer stormwater discharges and prevent flooding, filter runoff to reduce sedimentation of lakes and streams, prevent the release of harmful fertilizers and pesticides to other waterbodies, reduce streambank erosion, and provide a habitat for fish and wildlife. Because of the importance of these areas, regulations on the state level have been instituted. The Goemaere-Anderson Wetland Protection Act (Act 203 of 1979) is the primary law that governs wetlands. This act authorized more stringent and broader regulation by local governments.

Similar to the Shoreline management strategies above, the use of buffers provide the best protection for wetland areas. Natural vegetation should be maintained and native plant species only should be used for landscaping around these areas. The illustration below depicts a potential wetlands buffer.



## **On-Site Sewage Disposal**

All sewage in Bingham Township is treated on-site through the use of septic systems. For the most part, septic systems do a good job in treating waste and protecting surrounding waterbodies from nutrients. The systems do require maintenance and attention from the land owners to assure they are functioning properly. Below are some recommendations:

- Become familiar with the location and function of your septic system. Remember that you are responsible for the function of the system and must remain vigilant to potential problems.
- Where possible, keep septic systems 100 foot away from lakes, streams and wetlands. This prevents the leaching of nutrients into the lake, causing weeds and turbidity (unclear water).
- Keep Drainfields clear of trees. Root systems will clog and interfere with the drainfield.
- Watch for signs of septic system damage or failure. Foul odors, backed up plumbing, soggy ground or lush grass on the drainfield signal potential problems. Call a professional for analysis and repairs of these problems.
- Be careful what goes down the drain. Household chemicals and cleaners may kill the bacteria that breakdown the waste in the septic tank.
- Conserve Water. The more water that flows through the septic system, the faster nutrients will be released into the ground. Distribute laundry load throughout the week to avoid overloading the system.

## **Stormwater Management**

Impervious surfaces are those surfaces that do not allow water to penetrate, and include streets, parking lots, driveways, and rooftops. Impervious surfaces tend to collect harmful substances over time, such as oil and gasoline, so when it rains the rainwater "runs-off" these surfaces carrying the harmful substances with them, polluting local waterbodies. This type of pollution, termed "nonpoint source pollution", is one of the leading causes of water pollution in American today.

Since pollution from impervious surfaces does not come from one source, it is difficult to regulate and manage. Therefore, individual landowner have a special obligation to reduce the amount of runoff from their property in order to contribute to the health of the region's water resources. Shoreline property owners in particular need to be stewards of the water resources in order to enjoy the many benefits waterfront property bestows.

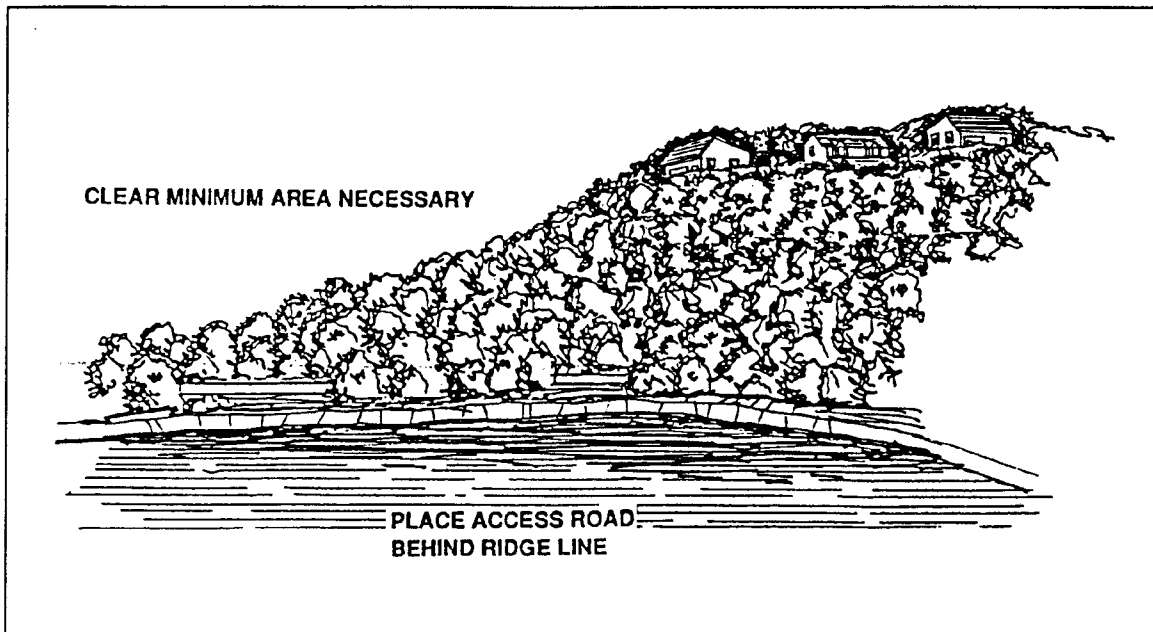


- In order to reduce stormwater runoff, consider following these simple guidelines:
- Divert runoff from driveways, roofs and roads away from waterbodies.
- Encourage runoff to flow shallowly over vegetated areas
- Divert runoff to on-lot swales and stormwater retention areas
- Design and landscape to minimize rainwater run-off

### Woodland and Slope Protection

Woodlands are important resources that provide recreational, aesthetic and environmental benefits. They also serve as important buffers between different land uses, filtering dust and noise, and protect steep slopes from erosion. New development currently has no incentive to protect existing woodlands. Below are some recommendations for protecting these areas:

- Trees should be cleared only in areas needed for development.
- Clusters of environmentally important woodlands should be conserved, and structures placed around designated tree clusters.
- Trees over six inches in diameter should be shown on site design and a given percentage of those trees should be preserved (e.g. 50-90 percent).
- More stringent tree protection standards should apply in areas with severe design limitations, such as steep slopes and highly erodible soils.
- Tree preservation areas should be established along front and side lot lines, particular in areas where different land uses are adjoining (e.g. agriculture and residential)



SOURCE: Grand Traverse Bay Region Development Guidebook, 1992

**References:**

Arendt, Randell, Rural by Design: Maintaining Small Town Character. American Planning Association, Chicago, IL 1994.

Arendt, Randell, Conservation Design for Subdivisions: A practical guide to creating open space networks. Island Press, Washington D.C. 1996.

Better Site Design: A Handbook for Changing Development Rules in Your Community. Center for Watershed Protection, Ellicott City, MD 1998.

Grand Traverse Bay Region Development Guidebook. Planning and Zoning Center, Lansing, MI 1992.

Land Use Tools and Techniques: A Handbook for Local Communities, Southeast Michigan Council of Governments, Detroit, Michigan 1994

Stone, Mark and Mary Taylor, The Leelanau Watershed Landowner's Handbook, Fen's Rim Publishers