

2011

# Green Lake Township Master Plan



The Green Lake Township Master Plan was adopted by resolution of the Green Lake Township Board on May 9, 2011 under the Michigan Zoning Enabling Act, Michigan Public Act 110 of 2006, as amended. This Master Plan was amended by resolution adopted February 11, 2013; the amendment incorporated the Village of Interlochen Gateway Master Plan as a component of the Master Plan.

This Master Plan was developed under the guidance of the current and past Township Planning Commission members, the leadership of the Township Board, and with assistance of Township staff and consultants.

**Planning Commission**

Chris Hintz, Chair  
Pat McDonald, Vice Chair  
Liz Disbrow, Secretary  
Sara Kopriva, Secretary  
Gerry Jackowski  
Hugo Karle  
Sara Kopriva  
Dave Pennington  
Jon Schuster  
Colin Schworm

**Township Board**

Paul Biondo, Supervisor  
Rita Dinger, Clerk  
Sue Schroeter, Treasurer  
David Bieganowski  
Pat McDonald  
Marvin Radtke  
Sherry West

Krysti Baker, Zoning Administrator  
Leslie Sickterman, Township Planner

in memory of  
Liz Disbrow and Narda Hughson-Adams

Cover Art by Gibbs Planning Group, 2011  
*a rendering depicting a future concept for the Interlochen gateway*

## Table of Contents

Introduction .....	1
General Township Goals and Objectives .....	3
Village Area Goals and Objectives.....	10
Future Land Use Plan.....	17
Map 1: Future Land Use.....	21
Map 2: Village Area Plan .....	22
Zoning Plan & Implementation Plan.....	23
Regional Profile .....	2
Existing Land Use Profile.....	30
Table 1: Land Use Summary.....	31
Map 3: Existing Land Uses .....	32
Map 4: Village Area Current Uses .....	33
Map 5: Existing Public Uses .....	37
Natural Features Profile .....	38
Map 6: Regional Topography .....	38
Map 7: Topography .....	39
Map 8: Prime Farmlands .....	41
Map 9: Soil Series.....	42
Map 10: Soil Characteristics .....	43
Table 2: Special Natural Features.....	46
Map 11: Biodiversity.....	47
Map 12: Wetlands & Hydrology.....	48
Map 13: Woodlands.....	49
Map 14: Green Infrastructure .....	51
Population Profile .....	52
Figure 1: Grand Traverse County Population 1970-2000 .....	52
Table 3: Grand Traverse County Population Changes 1970-2000 .....	53
Figure 2: Populations Projections 2008-2030.....	54
Table 4: Green Lake & Grand Traverse County Population Projections, 2000-2030..	55

GREEN LAKE TOWNSHIP MASTER PLAN 2011

Table 5: Age/Life Cycle Distribution and Trends 1980-2000..... 56

Table 6: Age/Life Cycle Distribution and Trends 1980-2000..... 57

Table 7: Household Profiles, 2000 ..... 57

Economic Profile ..... 59

Table 8: 2000 Income Statistics ..... 59

Figure 3: Distribution of Households by Household Income, 2000 ..... 59

Table 9: Household Income, 2000..... 60

Table 10: Comparative Rates of Poverty, 1979-1999..... 60

Table 11: State Equalized Value, 1997 & 2009 ..... 61

Table 12: Employment by Sector..... 62

Table 13: Labor Force and Unemployment Rate Comparisons 1990-2008..... 63

Figure 4: Annual Unemployment Rate..... 63

Figure 5: Labor Force Trends..... 63

Table 14: Comparative Employment by Industry, 2006 ..... 64

Table 15: Employment Forecast by Major Occupational Category - 2004 - 2014 –  
Northwest Michigan MWA ..... 65

Table 16: Annual Job Openings by Major Occupational Category - 2004 - 2014 –  
Northwest Michigan MWA ..... 65

Housing Profile..... 66

Table 17: 1980-2000 Type of Housing Structure - Green Lake Township..... 66

Table 18: Housing Tenure Profile, 2000..... 67

Table 19: Comparative Age of Structure, 2000..... 68

Table 20: Recent Residential Construction Activity, Green Lake Township..... 68

Table 21: Comparative Distribution of Housing Values, 2000 ..... 69

Table 22: Comparative Housing Value Trends..... 69

Table 23: Estimated Housing Unit Requirements..... 70

Transportation Profile ..... 71

Table 24: County Primary Roads in Green Lake Township..... 71

Map 15: Transportation System ..... 72

Map 16: Village Area Roads ..... 73

Table 24: Annual Average 24-Hour Traffic Volumes State Roads in  
Green Lake Township ..... 75

Table 25: 24 Hour Traffic Counts Green Lake Township..... 75

## Introduction

This document is the Master Plan for Green Lake Township, located in Grand Traverse County Michigan. This Master Plan was designed and adopted in conformance with the requirements of the Michigan Planning Enabling Act, as amended.

### Understanding the Master Plan

A Master Plan, especially the Future Land Use component, represents the desired pattern and intensity of land uses and the hoped-for overall character of the Township. The Master Plan does not restrict uses already provided for under zoning. Zoning is regulatory – the law. The Master Plan is the justification to make changes to the law, whether it is an individual rezoning, or comprehensive changes to the general requirements within the zoning code.

State law now requires townships to update their master plans (or at least review them) every five years. In the past, master plans had very long term time horizons; usually 20 or more years. The shorter time frame of current master plans in Michigan allows them to be much more sensitive to current economic and regional trends, and makes for clearer decision making.

### Components of the Master Plan

The Green Lake Township Master Plan is broken into three main components:

- ❖ The plan; and
- ❖ Background data and analysis; and
- ❖ The Village of Interlochen Gateway Master Plan (a stand alone special area plan).

In this Master Plan, the plan components are found in the front of the document. This allows the reader to quickly get to the most important information. The plan components includes:

- ❖ Goals and Objectives. These are statements summarizing by topic all of the core goals of the Township. Under the goal statements are found objectives and strategies, further explaining the preferred direction the Township would like to take and what form implementation may take – whether it is to develop a program, update regulations, or apply for a grant. Sometimes, the Planning Commission needs to make a judgment regarding an action not clearly reflected in the Future Land Use Map or other parts of the plan. The broad statements in the Goals and Objectives can help to establish reasoning to make these judgment calls. This Master Plan includes two sections of Goals and Objectives, one general section covering the whole Township in general; and other section specific to the Interlochen Village area.

- ❖ Future Land Use Plan. The Future Land Use Plan includes both a Future Land Use Map and descriptions of the Future Land Use Districts expressed on the Map. The Map represents the specific desired land use pattern and zoning pattern for the Township. The Map includes Plan District categories that are designed to primarily follow existing property lines or other logical boundaries. The Plan Districts boundaries are based primarily on current zoning designations and current uses of property, with some exceptions where changes are desired. Descriptions of each plan districts are included in this Section. The character of the district, the expected density, and the desired uses are detailed for each district. In addition to the Future Land Use Map, this Plan includes a Village Area Plan Map. This is a detail of Plan Districts for the village area, along with call outs of several plan components (such as proposed Activity Centers and future road extensions.)
  
- ❖ The Zoning and Implementation Plan is a new required element of a master plan in Michigan. The Zoning Plan details which zoning categories correspond to each plan district. In some cases, it is acceptable to rezone properties in a particular Plan District to any of several Zoning Districts. The Implementation Plan details specific action items to be done upon adoption of the Master Plan. These primarily include zoning ordinance changes in the text and the zoning map and any timing recommendations.

The second component of the Master Plan includes the analysis and data that helped to inform the decisions of the Plan component of the Master Plan. This includes both physical data and analysis and demographic and economic data and trend analysis. This data and analysis component begins with the Regional Profile on page 28.

The third component of the Master Plan is a special area plan, the Village of Interlochen Gateway Master Plan. The Gateway Master Plan is a stand-alone document that includes an analysis of existing physical and market conditions as well as a detailed development plan and recommended zoning implementation.

It should also be noted that the Interlochen Development District Conceptual Enhancement Plan (2009) is a study that includes several recommendations regarding the development of the Interlochen village area. Several of the recommendations in the Enhancement Plan are incorporated in this Master Plan, but where there are conflicts, this Master Plan and the Gateway Master Plan prevail. The Enhancement Plan document was not adopted by Green Lake Township but informs this Master Plan. The Enhancement Plan shall in no way override the policies of the Master Plan or Gateway Master Plan. The Enhancement Plan is only a guide.

All components of this Master Plan reflect the policies of Green Lake Township.

## General Township Goals and Objectives

### « Natural Features

#### Goal:

Conserve the system of lakes, streams, wetlands and forests that define the unique year-round environmental character of Green Lake Township.

#### Objectives:

- ❖ Prevent the premature conversion of low density, rural areas to higher density, suburban uses.
- ❖ Promote the conservation of natural features and creation of a permanent open space network through local development policies.
- ❖ Encourage the establishment of agricultural uses and agribusinesses in appropriate locations.
- ❖ Consider the green infrastructure when making land use decisions.

#### Strategies:

- ❖ Encourage the establishment of conservation easements through the Farmland and Open Space act (PA 116), state forestry programs (Commercial Forest Act and Private Forest Act), land conservancy organizations and purchase of development rights programs.
- ❖ Require existing vegetation to be depicted on site plans and require that existing natural vegetation be retained or enhanced as necessary, when land is developed.
- ❖ Require performance guarantees as part of the local permitting process to ensure that environmental features are conserved during construction.
- ❖ Monitor and continue to update zoning standards relative to supporting agricultural uses and standards.
- ❖ Work with regional governments and adjacent communities to plan for an open space network.
- ❖ Promote clustered residential development with high quality naturalized areas set aside as permanent open space.
- ❖ Help to preserve the green infrastructure by encouraging clustered development with open space designed to protect green infrastructure; and by considering green infrastructure when approving rezoning requests and other land use decisions.

### « Environmental Quality

#### Goal:

Protect environmentally sensitive areas such as surface water (lakes, streams, wetlands), groundwater and the night sky from negative impacts associated with development.

**Objectives:**

- ❖ Maintain a high quality of surface water and groundwater.
- ❖ Maintain the darkness of the night sky and, consequently, the visibility of stars and stellar events.

**Strategies:**

- ❖ Require adequate development setbacks from lakes, streams, and wetlands and encourage the maintenance of natural vegetation along shorelines and adjacent to wetland areas.
- ❖ Review local zoning requirements to limit the extent of impervious surface area (land covered by paving and/or buildings).
- ❖ Explore the potential for regulations to require regular inspection and maintenance of wells and septic systems.
- ❖ Regulate the type and intensity of outdoor light fixtures installed as part of any development project.
- ❖ Ensure that all county, state, and federal environmental regulations are adhered to in the development of land.
- ❖ Adopt Low Impact Design Standards that are designed for local soil types and hydrologic conditions to protect the quality of storm water and ultimately groundwater and surface waters. Explore the potential to work cooperatively with other jurisdictions to create these standards.

**« Residential Development**

**Goal:**

Provide for a range of residential styles and densities that meet the needs of a changing population that are integrated with the natural environment and are compatible with existing adjacent residences.

**Objectives:**

- ❖ Plan for a variety of residential densities and prepare corresponding zoning districts to implement the Plan recommendations.
- ❖ Maximize open space conservation and natural features preservation in planned residential developments through the use of creative site planning, flexible zoning techniques, and other conservation mechanisms.
- ❖ Ensure that new residential developments are well integrated into the landscape and existing development pattern through local zoning and plan review requirements.

**Strategies:**

- ❖ Base residential densities on the capacity of the land and necessary public infrastructure to support such development.
- ❖ Encourage the incorporation of existing vegetation, water resources and topography in the design of new residential developments.
- ❖ Enact guidelines for cluster housing development that results in creative design and the retention of open space. Include development incentives, as necessary, to provide density bonuses and flexibility in dwelling unit types in exchange for open space set-asides.
- ❖ Promote the use of grassed swales and natural on-site retention, native vegetation preservation, and pathways made with natural materials within rural residential areas.
- ❖ Promote the use of landscaped retention areas, natural vegetation preservation, underground utilities and inclusion of pedestrian and bicycle paths within suburban residential areas.
- ❖ Require the layout of new residential development to be logical extensions of existing residential developments. This requirement includes the layout of streets, open spaces, and pedestrian/bicycle paths.
- ❖ Maintain the primarily single-family character of the township
- ❖ Encourage and guide the development of senior housing, adult foster care facilities, and other uses that provide housing options for the elderly and/or handicapped.
- ❖ Allow the establishment of compatible accessory uses and nonresidential uses based on the guidelines that consider the primary uses permitted in the vicinity.
- ❖ Promote the development of quality, affordable, housing on small lots in the Interlochen village area where efficiencies of infrastructure and public utilities can be achieved.

**« Commercial Development****Goal:**

Encourage commercial development that satisfies local market needs and provides a positive contribution to the local tax base without compromising the Township's rural character.

**Objectives:**

- ❖ Provide reasonable opportunities for the establishment of commercial uses that meet the demonstrated market needs of Township residents and visitors.
- ❖ Encourage commercial development to locate within or adjacent to Interlochen Village.
- ❖ Discourage strip commercial development along US 31.
- ❖ Ensure that the architecture, landscaping, and signs associated with commercial establishments is compatible with a rural environment.
- ❖ Promote and enhance the viability of businesses in the Interlochen village area.

**Strategies:**

1. Permit the establishment of small-scale seasonal or specialty markets, commercial recreation areas, agri-businesses, and lodging facilities such as bed and breakfast establishments in rural areas.
2. Contain commercial development along the US 31 corridor within established and well-defined locations with shared, controlled access.
3. Building massing – footprint and height – should be compatible with adjacent structures. Along US 31, the bulk of large buildings should be minimized through façade and roof variations, material and/or color changes and landscaping.
4. Encourage the use of side and rear yard parking for required parking. Where front parking is unavoidable, encourage the use of parking lot landscaping, screening, and berms to soften the visual impact along the right-of-way.
5. Reduce parking space sizes and requirements to minimize paved areas, and set limits on the amount of impervious surfaces permitted on site.
6. Require transitional uses and/or landscape screening between commercial and residential uses, including planned open space areas. Use vegetative windbreaks and visual screens in place of man-made materials like fencing and concrete.
7. Encourage the use of native plant species and naturalized landscape designs, where appropriate, to enhance the community’s rural character.
8. Regulate signs to minimize clutter, confusion, and aesthetic degradation while permitting reasonable opportunities for announcement of products and services. Monument and other low profile signs shall be encouraged. Internally lighted signs shall be discouraged in all locations.
9. Work with the Interlochen Improvement District Authority (IIDA) to complete projects called for under its Development Plan including: facilitate needed public infrastructure improvements, improve walk-ability, and promote a high quality of site development in keeping with the desired “upscale rustic” and artists’ community character for the area.
10. Create separate development standards for the Interlochen corners area that will promote planned development of large parcels of land with access control, architectural guidelines, and site improvements that are consistent with the Interlochen Improvement District Authority’s planning efforts. Specifically, encourage a development pattern that will be pedestrian-friendly and that will primarily consist of small footprint buildings and storefronts.
11. Revise zoning standards to restrict the types and amount of commercial development that may occur outside of the Interlochen village and Interlochen corners area.
12. Continue to limit the footprint, scale, and intensity of commercial uses within the village area while encouraging a larger scale and more intense level of development within the Interlochen corners area.

13. Adopt and encourage a form-based code as a development option for properties in the Interlochen Corners area. Such code to be consistent with the Interlochen Gateway Master Plan.

## « Industrial Development

### Goal:

Encourage light manufacturing industries that provide a positive contribution to the local tax base and local jobs without compromising the Township's rural character.

### Objectives:

- ❖ Provide locations for light industrial uses that are adequately served by public infrastructure and services.
- ❖ Ensure that the architecture, landscaping, and signs associated with industrial establishments is compatible with the Township's rural character.

### Strategies:

- ❖ Discourage industrial development that will negatively impact environmentally sensitive areas or require substantial changes to natural systems.
- ❖ Utilize the design principles of planned industrial parks to guide access control, building and site design, and controlled signage and lighting.
- ❖ Building massing should be compatible with adjacent structures. Along US 31, the bulk of large buildings should be minimized through façade and roof variations, material and/or color changes and landscaping.
- ❖ Reduce parking space sizes and requirements to minimize paved areas, and set limits on the amount of impervious surfaces permitted on site.
- ❖ Regulate signs to minimize clutter, confusion, and aesthetic degradation while permitting reasonable opportunities for announcement of products and services. Monument and other low profile signs shall be encouraged. Internally lighted signs shall be discouraged in all locations.
- ❖ Require the establishment of transitional uses and/or landscape screening between industrial and commercial, residential, and planned open space land uses. Use vegetative windbreaks and visual screens in place of man-made materials like facing and concrete.

## « Public Infrastructure

### Goal:

Balance the rate of land development with the availability of public infrastructure and services.

### Objectives:

- ❖ Provide for the efficient location of public facilities and the timely delivery of public services.

**Strategies:**

- ❖ Work cooperatively with other public agencies to facilitate the improvement or construction of public infrastructure such as roads.
- ❖ Require that adequate public infrastructure be in place concurrent with the establishment with any new residential, commercial or industrial use that requires such infrastructure.
- ❖ Consider the construction or extension of public water and/or sewer facilities within the Interlochen village and corners area to provide for increased densities of residential and commercial uses in a concentrated part of the Township.
- ❖ Maintain the function and capacity of roads in the Township through local access management provisions.
- ❖ Guide and review the location of proposed private roads and access easements to provide for logical road extensions and efficient property development.
- ❖ Work cooperatively with the IIDA to develop, through a variety of means, sidewalks, or multi-use pathways in appropriate locations within private developments and in public locations in the village area.
- ❖ Establish a public services boundary where future sewer and water service may be extended.

**« Regional Planning**

**Goal:**

Promote and participate in cooperative planning relationships with other governmental units in the Grand Traverse Bay Region.

**Objectives:**

- ❖ Participate in multi-jurisdictional planning efforts to assure representation of Township interests in regional decision-making.
- ❖ Coordinate planning activities with the neighboring townships of Blair, Long Lake, Grant and Inland and the Interlochen Center for the Arts.

**Strategies:**

- ❖ Include reports on regional or county planning efforts as a regular planning commission agenda item. Invite representatives of these efforts to make presentations to the Planning Commission.
- ❖ Where practical, implement and plan in conjunction with the proposed policies of the region's vision document, The Grand Vision.
- ❖ Cultivate opportunities for joint planning with adjacent communities, particularly for the development of updated soil erosion standards, low impact design standards, site engineering standards, updated private road standards, and regional trail planning; taking advantage of funding sources and lowering the cost for each community to develop individual standards.

## « Recreational Planning

### Goal:

Provide for a range of recreational facilities to promote healthy lifestyles and access to natural areas for the Green Lake Township community.

### Objectives:

- ❖ Provide local and regional multi-use pathways in areas that will serve local residents and provide access for regional recreational visitors.
- ❖ Further develop existing and new recreation facilities to serve the Green Lake Township community.

### Strategies:

- ❖ In cooperation with the Recreation committee, maintain an updated Recreation Plan for the Township.
- ❖ With new development, require through zoning standards set-aside of easements for regional multi-use pathways in locations consistent with regional trail plans.
- ❖ In locations consistent with local recreation planning, require development of integrated trail systems with new residential development.
- ❖ Where opportunities exist, work with the regional land conservancy and similar groups to secure the permanent protection of important natural areas on an on-going basis.
- ❖ Work cooperatively with the Interlochen Improvement District Authority, the Recreation Committee, and the Planning Commission to identify areas for small parks within the village area, plan for a means to acquire, develop, and maintain these parks consistent with the IIDA's development and streetscape plans.

## Village Area Goals and Objectives

### « Background

In 2005, Green Lake Township began a process to create a village area plan for the unincorporated village area of Interlochen. Some of the issues prompting a need to plan for the village area included:

- ❖ The lack of future planning for streets in the village area (how and whether they should be developed and upgraded);
- ❖ Struggling businesses and vacant commercial buildings in the village area;
- ❖ Lack of safe pedestrian circulation for elementary school students and for Interlochen Center for the Arts campers and students;
- ❖ Some dilapidated housing in the village area;
- ❖ Consideration of future public utilities (such as water and sewer);
- ❖ Near-term need for new or updated township offices, library, and fire hall.

The Township formed a Steering Committee made up of a range of citizens, business owners, and members of the Planning Commission to study the issues and to make recommendations to the Planning Commission. Among the recommendations were specific ideas regarding the future development of the village area and a recommendation to explore the creation of a Downtown Development Authority to help implement the many ideas for the future of the village area.

Since the original Village Area Plan was adopted in November 2007, the Township has formed the Interlochen Improvement District Authority (IIDA) under Public Act 197 of 1975, the Downtown Development Authority Act. In December of 2007, the IIDA adopted a Finance and Development Plan as required under law. In 2009, the IIDA began collecting tax increment to fund its activities.

The activities called for under the Development Plan included the creation of a streetscape enhancement plan for the M-137 corridor. In early 2009, the IIDA accepted proposals from several qualified firms and hired a consultant to prepare an enhancement plan. The Interlochen Development District Conceptual Enhancement Plan was adopted by the IIDA in early 2010.

The following goals and related objectives were developed for the Interlochen village area. These plan objectives are more detailed than the general Goals and Objectives found later in this plan, but are consistent with the general Goals and Objectives. The objectives below have been modified from the original Village Area Plan as appropriate as conditions have changed.

« **Circulation Goal:** Enhance pedestrian, non-motorized, and vehicular circulation throughout the village area to promote businesses, increase safety, enhance residences, offer alternative transportation options, and promote healthy lifestyles.

#### **Pedestrian Circulation Objectives:**

- ❖ Provide safe, welcoming pedestrian circulation throughout the village, particularly in the commercial area, for people of all ages and abilities
- ❖ Provide pedestrian/non-motorized connections between commercial and residential areas
- ❖ Provide pedestrian/non-motorized connections between institutional (library, ICA, school, park), residential areas, and commercial areas
- ❖ Provide easy cross access between businesses for pedestrians and vehicles
- ❖ Promote and provide regional trail connections through the village

#### **Strategies:**

- ❖ Develop sidewalks and pathways along M-137
- ❖ Develop pathways along East Railroad and Depot Roads
- ❖ Improve walkability of Interlochen Shopping Center
- ❖ Develop a loop trail around village plat
- ❖ Develop walkways between new residential areas and commercial services in the village
- ❖ Improve crosswalks at Interlochen corners (north-south and east-west)
- ❖ Construct pedestrian trails or sidewalks between any new municipal centers and existing institutions
- ❖ Develop cross walk and safe walking area between Interlochen Elementary School and the Interlochen Public Library
- ❖ Improve bike lane for safe pedestrian access to the township park, ICA, new municipal center and Interlochen Corners
- ❖ Develop sidewalk or bikepath along the north side of US 31 approximately ½ mile east and west of Interlochen Corners
- ❖ Develop an access plan for business areas along M-137 employing shared driveways, shared parking areas, rear parking and alley access, or cross access easements
- ❖ Work with regional trail authorities to secure easements and funding to develop a regional trail connection along the railroad grade

**Vehicular Circulation Objectives:**

- ❖ Improve vehicle circulation through the village
- ❖ Plan for a road system hierarchy and identify means to continue road improvements on existing and platted roads within the village
- ❖ Promote and plan for access to regional transit

**Strategies:**

- ❖ Improve at least one continuous north-south road on the east side of the village plat
- ❖ Work with property owners of undeveloped properties on the east side of the village plat to construct an alternate access to US 31 through Tonawanda
- ❖ Design and develop a road along Railroad east to Tonawanda
- ❖ Prohibit future right-of-way vacations within the village plat
- ❖ Pursue a special assessment to improve all existing developed but non-paved roads within the village plat
- ❖ Require construction of public roads within village road rights-of-way for future residential development in the village plat
- ❖ Work with regional chamber's transportation committee to identify potential for light rail and to maintain needed rights-of-way

**« Physical Enhancements Objective:**

Plan for and provide public and private improvements to enhance businesses, increase community pride, enhance property values, enhance the pedestrian and visitor experience, and physically unify the village.

**Objectives:**

- ❖ Develop, secure funding, and install a streetscape design for the village's commercial area
- ❖ Develop, secure funding, and install a streetscape design for the village's residential areas
- ❖ Provide general design standards and financial assistance for individual property owners to improve building facades, landscaping, parking areas, and signage
- ❖ Devise area zoning and design standards to limit square footage and regulate building design for all commercial uses, especially national big box stores
- ❖ Design and install village gateway markers (signs/landscaping/monuments/others)
- ❖ Work with ICA to create program for student designed and constructed business signs
- ❖ Create and enforce residential building and site design standards

**« Business Development Goal:**

Recognizing the importance of the success of the village's businesses to village area property values, quality of life, convenience to residents, service to visitors and opportunities for local business owners; enhance and promote business development in the village area.

**Objectives:**

- ❖ Identify challenges to the village's business community and devise appropriate strategies to address these challenges
- ❖ Restrict US 31 commercial growth to encourage village commercial growth
- ❖ Create and promote a marketing strategy for the village
- ❖ Help to bring together potential tenants and owners of vacant spaces
- ❖ Develop and coordinate means to help advertise village area businesses
- ❖ Identify obsolete or unusable vacant buildings and redevelop them utilizing public and private resources
- ❖ Develop a "way finding" program to help visitors and customers more easily identify and access businesses and other community facilities

**« Residential Enhancements Goal:**

Promote the development, redevelopment, and enhancement of new and existing residences in the village area to improve property values, enhance the quality of life for residences, and improve safety, all within a wide range of housing types and costs.

**Objectives:**

- ❖ Identify barriers (regulatory, financial, infrastructure, etc.) to the further development of quality and affordable housing in the village area, if any, and identify means to counter these barriers
- ❖ Identify dangerous, vacant residential buildings in the village area and take steps to remove and redevelop them or otherwise improve these structures
- ❖ Develop residential landscaping (or driveway, building design, etc.) standards and identify financial assistance sources for individual home owners to make improvements
- ❖ Work with residents to identify safety concerns and suggest enhancements to the neighborhood watch program, or development of other means to enhance safety
- ❖ Work with ICA to identify their needs for housing in the village area (for staff/visitors/faculty) and devise a means to develop this housing in a way that will benefit the business community, the Academy, and the village as a whole

« **Public and Institutional Uses Goal:**

Plan for and develop public uses and services to be centrally accessible community assets that contribute to the convenience and quality of life in the village area. Coordinate with other private and semi-private institutions to similarly benefit the village area as a whole in a way that also benefits the institutions.

**Objectives:**

- ❖ Create a public and institutional improvement plan identifying the future locations of all public buildings in the village (i.e., Village Center with Township offices, library, recreation pace near school if possible)
- ❖ Work with private institutions to locate and design their facilities in coordination with the village area goals and plans
- ❖ Identify programs and other means to enhance the interaction between the private intuitions in the village area and the residents and businesses in the village to their mutual advantage
- ❖ Identify joint commercial ventures that could benefit both the village residents and businesses and the area's private institutions
- ❖ Further study traffic and safety on M-137

« **Placemaking Enhancement Goal:**

The Village of Interlochen Gateway Master Plan and the Interlochen Development District Conceptual Enhancement Plan (the Enhancement Plan) call for several strategies for creating a unique character for Interlochen.

**“Avenue of the Arts” Branding Objective**

Physically reflect the character-defining asset of the Interlochen arts community as detailed in the Enhancement Plan.

**Strategies**

- ❖ Integrate public art into corridor design as landmarks, wayfinding and street furniture elements
- ❖ Create organizational body for administration of public art projects.
- ❖ Consider a “percentage for the Arts” program.
- ❖ Develop a holistic “Avenue of the Arts” strategy including physical improvement, community organization, promotion, and economic development components.
- ❖ Coordinate and incorporate elements of the Gateway Master Plan and the Enhancement Plan into the Master Plan.

## Interlochen Gateway Objective

Enhance the Interlochen Corners area to create a welcoming gateway reflective of all that Interlochen has to offer visitors and its residents.

### Strategies

- ❖ Coordinate with MDOT for improvements within the public right-of-way
- ❖ Install highway scale public art installation at the Interlochen Corners as suggested in the Enhancement Plan and the Village of Interlochen Gateway Master Plan.
- ❖ Encourage development of the Interlochen corners intersection in keeping with the Village of Interlochen Gateway Master Plan, specifically reflecting the following:
  - ❖ Create walkable neighborhoods offering a variety of housing types and civic spaces
  - ❖ Expand the Interlochen business gateway to all corners of the US 31-M137 intersection
  - ❖ Create a range of civic squares, parks and greens that can accommodate future civic buildings
  - ❖ Preserve and expand upon the area's natural character
  - ❖ Replicate the character of Interlochen State Park and the Center for the Arts by incorporating a park like character in the Gateway area
  - ❖ Add on-street parking to the east side of M137 south of US 31 to promote walkability and future retail
  - ❖ Provide a variety of commercial venues for artists, work-at-home and incubator employment centers.
- ❖ Enforce a form-based code that requires a development pattern, use types, and street layout for new construction in the Gateway area to be consistent with the Interlochen Gateway Master Plan.

## Activity Centers Objective

Create a purposeful commercial and recreational environment in the Village area by enhancing walkability and the pedestrian scale through the development of activity centers as called for in the Enhancement Plan and the Village of Interlochen Gateway Master Plan.

### Strategies

- ❖ Develop an Historic Rail Center in the area of Depot Street and the railroad corridor integrated with a regional non-motorized trail and including a public green. Create as a long-term strategy to facilitate the scale and overall design for this center as called for in the Enhancement Plan through careful zoning and design guidelines.
- ❖ Develop an Historic Village center in the area of 10<sup>th</sup> Street and M-137. Create a long-term strategy to allow this and update zoning accordingly.

- ❖ Establish an Arts and Culture Center south of the Village plat as called for in the Enhancement Plan. Develop pathway that includes public art to connect the Village to the Interlochen Center for the Arts.
- ❖ Develop a Village Business Corridor between the Historic Village Center and the Gateway area as described in the Enhancement Plan. Create incentives and standards to maintain key characteristics such as tree canopy, gravel parking areas, small scale buildings, eclectic and rustic architectural style.

#### « Recreation Goals:

Plan for and develop recreational opportunities within the village meeting the needs of all its residents and visitors to enhance the quality of life, and the health of the village's residents and visitors.

#### Objectives:

- ❖ Work with the Township Recreation committee to revise the Township Recreation Plan to better reflect the unique recreation needs of the village area and the trail improvements proposed
- ❖ Identify and develop public or private recreation opportunities for the village area residents and visitors that also enhance property values, enhance existing businesses in the village, and enhance safe pedestrian circulation
  - ❖ Pave railroad grade from Tonawanda to Riley
  - ❖ Develop a nature walk along the Little Betsie River and through platted but undeveloped roads in the Plat of the Village of Interlochen.
  - ❖ Develop Bicentennial Park
  - ❖ Develop a township park in the southern part of the village area close to the community center to the benefit of all businesses, residents, and visitors to the village.

## Future Land Use Plan

The following describes the planned land uses for Green Lake Township by land use classification.

### « Conservation

The Conservation areas include state forestland and parkland, large landholdings adjacent to state lands, other public lands such as Green Lake Township's Memorial Park and the Rotary Camp. Development within these areas will negatively impact the use and enjoyment of state forestlands, fragment natural habitats and resource lands, and create conflicts with the recreational and resource-based uses that currently occupy the land.

Generally acceptable land uses include resource management (agricultural, forestry) and conservation uses (game preserves), public and private facilities that require land tracts of open land (campgrounds, airport landing fields) and residential development at an average development density of no more than one dwelling unit per ten acres.

### « Residential 5 Acre

The Residential 5 Acre area incorporates large parcels adjacent to lands planned for Conservation mostly in the eastern part of the Township. This land use classification is intended to allow residential land uses within a predominantly rural environment. Development within the Residential 5 Acre area should be kept to a minimum. Generally acceptable land uses will include residential development with an average development density of one dwelling unit per five acres, agriculture and forestry, private and commercial recreation facilities (riding stables, golf courses, campgrounds, etc.) Home based businesses may also be permitted under controlled conditions. Planned residential developments that incorporate the concepts of open space conservation and clustered housing units are encouraged.

### « Open Space 1 Acre

The Open Space 1 Acre area includes land that is easily accessed by US 31 and located along the fringe of the core development areas. This land use classification is intended to encourage residential development that includes planned open spaces that will provide a suitable transition between the rural portions of the Township and the core development area. Generally acceptable land uses include residential development at an average development density of one dwelling unit per acre and other neighborhood-oriented uses such as day care and adult foster care facilities, schools, churches, as well as public and private recreation facilities such as golf courses. Again, planned residential developments that incorporate the concepts of open space conservation and clustered housing will be encouraged.

### « Suburban Residential

The Suburban Residential area includes land areas that poses few constraints to development and lies within the core development area. Most of the land planned for Suburban Residential has already been developed in a suburban-style development pattern. Generally acceptable land uses include residential

development at an average development density of one dwelling unit per acre and other neighborhood-oriented uses such as day care and adult foster care facilities, schools, churches, as well as public and private recreation facilities such as golf courses.

#### « Lake Residential

This classification includes all of the small lot development along the Township's lakefronts. The lakefront areas planned for Cedar Hedge Lake, Duck Lake, Green Lake, Long Lake, and Bass Lake are mainly platted residential lots. Lakeside residential development poses many environmental concerns such as water pollution from yard chemicals and on-site septic systems, shoreline erosion and sedimentation, and intensive boating activities. The lakefront areas planned Suburban Residential should be included in separate zoning district or an overlay district to include the zoning restrictions necessary for lake water quality protection. Densities and uses for the lakefront areas are the same as the rest of the Suburban Residential district, however, lake resort uses such as summer resorts, and bed and breakfast inns may be permitted with strict controls.

#### « Commercial

A Commercial area is planned along both sides of US 31. Commercial uses typically serve the local and regional market, are automobile-oriented, and benefit from highway visibility and accessibility. Commercial uses generate large volumes of traffic and require large parcels. Generally acceptable uses in the General Commercial area include large retail centers, warehouse outlets, home and garden improvement centers, building material yards, furniture and appliance stores, boat, recreational vehicle and motor vehicle sales, supermarkets, automobile service stations, hotels and motels, and mini-storage facilities.

The design of the uses in this district should, to the extent practical and where consistent with other Objectives of this plan, be consistent with the regional development guidebook. Open storage of materials is not permitted for newly established businesses unless the storage is fully screened from public view. Display areas along the highway are also generally not acceptable. Parking and loading areas should be designed to be obscured from the roadway. Buildings and site design should be consistent with the natural and residential nature of the township -- trash receptacles, site lighting, building design, and the like must be carefully planned. US 31 is a very visible part of the Township and presents an image to the region. This corridor must be managed as a gateway to the Interlochen village area and the natural resources of the Township.

An area now zoned Office is found in a small area on the north side of US 31 between Tonawanda and Ellis Lake Roads. This area contains a series of small lots that directly front on US-31 and are bounded by the Pere Marquette State Forest to the north. The parcels were initially developed for residential uses. This district is now planned for Commercial. Not all uses in the Commercial district are appropriate for this location. An overlay district or some other means of restricting the potential uses here will address several issues including: the desire the limited office uses to the Gateway and Village Commercial districts; the small lot sizes; existing uses; and the limited sight distances making heavy traffic uses dangerous. These properties should provide for shared access where possible, landscape screening, and parking located to the side or rear of buildings. The buildings themselves should retain a

residential character through architectural details associated with the roof line, placement of windows and doors, façade variation, and restricted signage.

« Gateway Commercial

This Interlochen corners area (the intersection of US 31 and M 137) are planned as the Gateway Commercial area. The district is planned to provide a mix of commercial and office uses serving the needs of Township and area residents, to enhance and not compete with the Village Commercial plan district. The site design for this area should be carefully planned to promote easy pedestrian and vehicle access to the village area while providing a logical transition from the highway. The buildings in this area are generally part of a planned development or shopping center with managed access and shared parking. Although single planned developments may be on large parcels (20 or more acres) individual buildings and tenant spaces should be generally limited to 5,000 square feet and overall building size should be limited to 15,000 square feet. Pedestrian scaled buildings and a comfortable pedestrian network are important for this area to function as part of the Village area while serving as a transition from the highway and providing needed services.

« Village

The Village area includes land platted within the Village of Interlochen. The Village area is intended to provide a location for high density residential uses such as multiple-family structures, in addition to single-family dwellings on small lots. Generally acceptable land uses include residential development at an average development density of four dwelling units per acre and other neighborhood-oriented uses such as day care and adult foster care facilities, churches, schools and public buildings.

Creation of neighborhood park space and pedestrian paths are an important design component for neighborhoods within the Village Residential area. Carefully planned commercial uses, live-work units, and other mixed use developments are acceptable within this district at a scale that is compatible with adjacent residential uses.

« Village Commercial

The Village Commercial district is planned along the frontage of M-137 within the platted Village area. The Village Commercial area is planned to provide a mix of commercial and office uses serving the needs of the year round resident population, seasonal visitors and tourists. Public offices should be encourage to locate within or adjacent to the Village Commercial district so that it also serves as the civic center of the community.

Generally acceptable uses within the Village Commercial district include retail uses, professional offices, including clinics, business service uses, hospitality uses (restaurants, hotels, motels), personal service establishments, and entertainment establishments. New development and uses in the district should match the scale of existing development, preferably with individual businesses no greater than 5,000 gross square feet and commercial structures for multiple tenants being no larger than 15,000 gross square feet. New construction that provides for more than one building story may incorporate residential uses above the ground floor.

The Village and Village Commercial districts also include the planned activity centers as detailed in the Interlochen Development District Conceptual Enhancement Plan (Enhancement Plan).

« Manufacturing

The Manufacturing area includes the existing light industrial development located on the south side of US 31 near Grawn. The Manufacturing area is intended to provide locations for industrial land uses that do not necessarily require public water or sewer to support their operations.

Generally acceptable land uses in the Manufacturing areas include warehousing and distribution centers, recreational vehicle storage, contractor yards, saw mills, parts assembly, packaging, tool and die shops, processing facilities, small scale manufacturing operations, and auto body and heavy equipment repair.

The design of uses in the Manufacturing district should be consistent with the recommendations of the New Designs for Growth Development Guidebook.

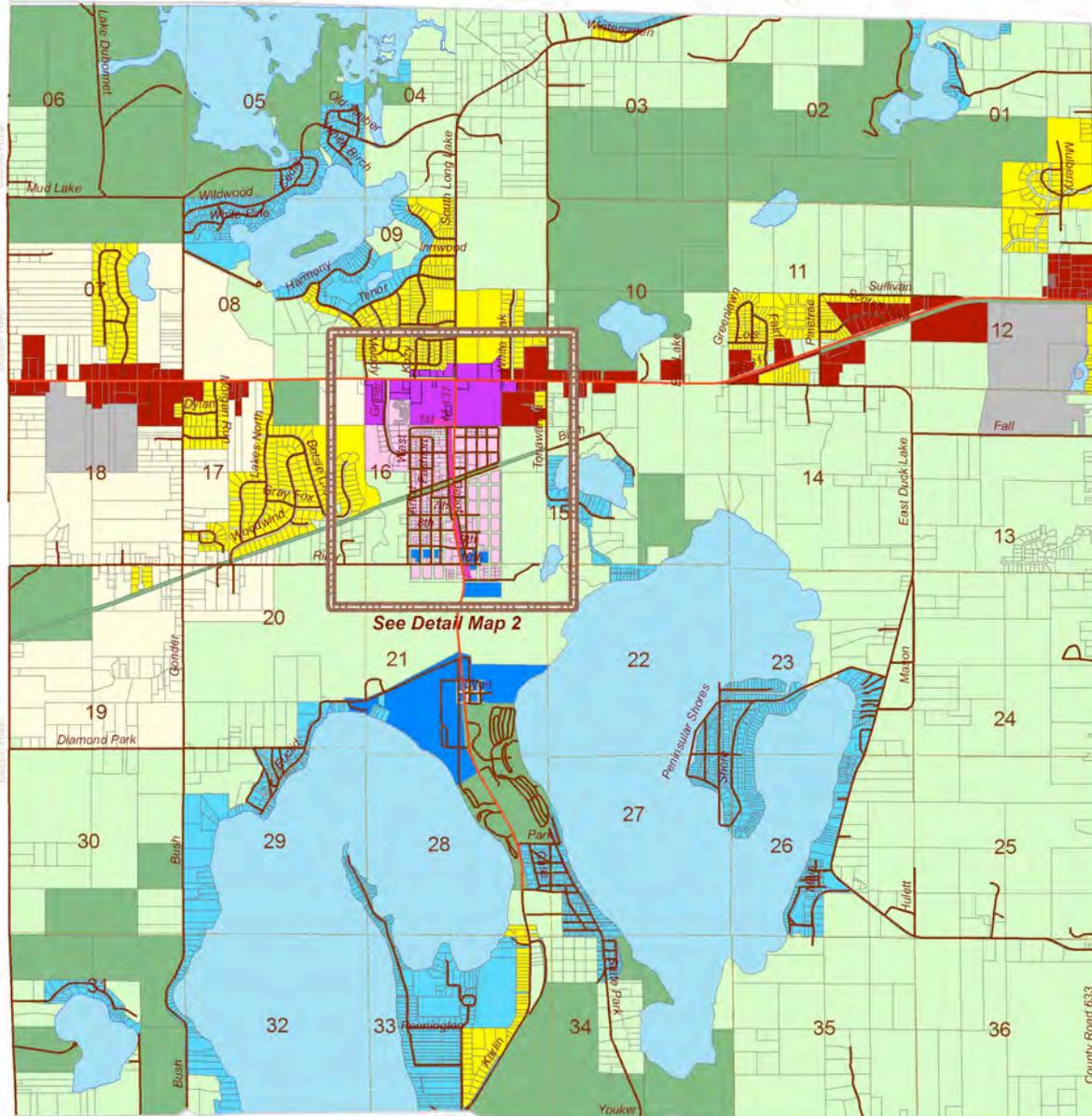
« Public /Institutional

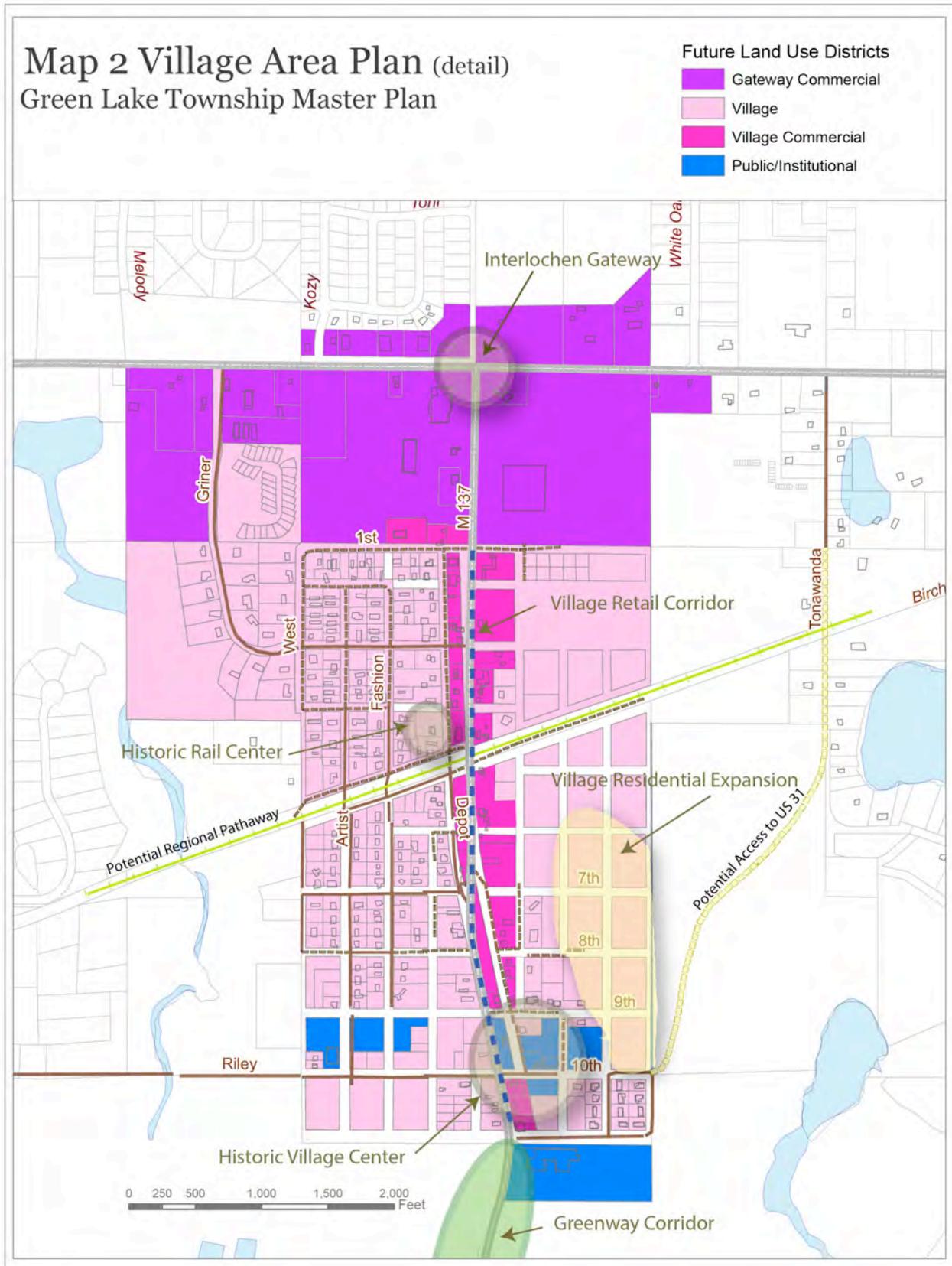
The Public/Institutional district includes lands within the Interlochen Center for the Arts (ICA) school facility and immediately adjacent properties as well as Township, Federal and school properties. Some of the wetland and lowland forest areas within the ICA property boundaries have been included with the Conservation district; ICA holdings within the Village plat area is planned Village; and other areas are planned in accordance with the other properties in the area. Generally accepted land uses within the Public/Institutional areas include governmental offices, public and private educational facilities, public assembly and performance spaces, and dormitories.

# Map 1 Future Land Use

## Green Lake Township Master Plan

- |   |                      |   |                      |
|---|----------------------|---|----------------------|
|  | Conservation 10 Acre |  | Gateway Commercial   |
|  | Residential 5 Acre   |  | Village              |
|  | Open Space 1 Acre    |  | Village Commercial   |
|  | Suburban Residential |  | Manufacturing        |
|  | Lake Residential     |  | Public/Institutional |
|  | Commerical           |   |                      |





## Zoning Plan & Implementation Plan

### « Zoning Plan

Section 33, (2), (d), of the Michigan Planning Enabling Act (Act 33 of 2008) requires that Master Plans adopted after September 1, 2008 include a Zoning Plan to explain how the future land use categories in this Plan relate to the zoning districts incorporated in the Township's Zoning Ordinance. The following table relates the more general future land use categories with the zoning districts and discusses features and factors to be considered in reviewing requests to rezone lands in the Township consistent with this plan.

<b>Future Land Use District</b>	<b>Compatible Zoning District</b>	<b>Evaluation Factors</b>
Conservation 10 Acre	C-10 Conservation	The Conservation district is intended for properties that are held by the State, County, or Township or otherwise are limited through conservation easements from future development.
Residential 5 Acre	R-5 Rural Residential	Large portions of the Township, especially in the south and eastern parts of the Township are planned and zoned R-5 Residential. In addition to residential uses, land extensive uses are allowed here including agri-business and landscaping contractors.
Open Space 1 Acre	R-2 Residential	Open Space 1 Acre is planned for large areas in the western part of the Township, particularly Sections 7, 17, 18, 19 and 20. Much of this area is now zoned R-2 Residential (one acre zoning). Clustered development is encouraged in this district.
Suburban Residential	R-1 Residential	Suburban Residential is planned for one acre residential use in existing residential developments.
Lake Residential	LR Lake Residential	Where parcels are immediately adjacent to surface waters, they should be zoned Lake Residential unless planned differently.
Commercial	C – Commercial O – Office R-5 – Rural Residential PC – Planned Commercial	Commercial is planned for the areas along US 31 that are currently zoned Commercial or Office, exclusive of the new Gateway Commercial District. Many areas, especially along US 31, which are now zoned Commercial or Industrial but remain undeveloped, may be rezoned to R-5 Rural Residential if the land and economic conditions support this change in zoning.
Gateway Commercial	C – Commercial	Areas within the Interlochen corners area now zoned Commercial are planned for Gateway Commercial. Very minor extensions of this zoning district to areas not now zoned Commercial may be permitted where planned developments require additional lands to achieve compliance all site standards of the district.
Village	Village Residential Village Commercial	Village is planned primarily for the areas now zoned Village Residential and residential development adjacent to the Interlochen village plat. Zoning to Village Commercial may be considered for areas adjacent to or one block off of M-137 now zoned Village Residential.

Future Land Use District	Compatible Zoning District	Evaluation Factors
Village Commercial	Village Commercial Village Residential	Village Commercial is planned for all areas now zoned Village Commercial. Residential uses are permitted in the Village Commercial district, so requests for downzoning to Village Residential is not expected, but would be acceptable and consistent with the expectation for mixed uses in the village area.
Manufacturing	M – Industrial R-5 Residential PC – Planned Commercial	Areas now zoned M- Industrial may be rezoned to R-5 Residential to allow limited land extensive uses and residential uses.
Public/Institutional	I – Institutional	The Public/Institutional plan district is intended primarily for the I Institutional district for the Interlochen Center for the Arts. In addition, some lands that are owned by the Township for public services, public schools, and religious institutions are planned Public.

« Implementation Plan

1. Eliminate the R2.5 Zoning District
2. Create a new zoning district, the Gateway Commercial District. This district should allow for the development and redevelopment of mixed uses within a pedestrian scaled and walkable context Consistent with the Village of Interlochen Gateway Master Plan. Existing buildings may be reused under current zoning; new construction should be required or encouraged to develop in accordance with the Village of Interlochen Gateway Master Plan.
3. Amend the Village Commercial zoning district, and related regulations such as the sign regulations, to be consistent with the goals of the village area plan and related plans adopted by the Interlochen Improvement District Authority (IIDA).
4. Revise the zoning ordinance to be consistent with the Right to Farm Act.
5. Revise regulations to encourage or require road network connections.
6. Amend the Village Commercial and Village Residential districts regulations to be more consistent with the goals of the Enhancement Plan and to create the overlay districts that would allow the development patterns suggested in the Enhancement Plan.
7. Limit uses in the Commercial District (restaurants, small offices and professional services) such that these areas do not compete with the Gateway Commercial and Village Commercial districts.
8. Eliminate the Office zoning district and zone these parcels Commercial. Create an overlay for the area formerly zoned Office that would allow some commercial uses that are suitable for the area given the limited sight distances, the small parcel sizes, and the current uses.
9. Review regulations to ensure that there are adequate development setbacks from lakes, streams, and wetlands and to encourage the maintenance of natural vegetation along shorelines and adjacent to wetland areas.

10. Explore potential regulations to require regular inspection and maintenance of wells and septic systems.
11. Regulate the type and intensity of outdoor light fixtures installed as part of any development project.
12. Adopt Low Impact Design Standards that are designed for local soil types and hydrologic conditions to protect the quality of storm water and ultimately groundwater and surface waters. Explore the potential to work cooperatively with other jurisdictions to create these standards.
13. Enact guidelines for cluster housing development that results in creative design and the retention of open space. Include development incentives, as necessary, to provide density bonuses and flexibility in dwelling unit types in exchange for open space set-asides.
14. Create separate development standards for the Interlochen corners area that will promote planned development of large parcels of land with access control, architectural guidelines, and site improvements that are consistent with the Interlochen Improvement District Authority's planning efforts. Specifically, encourage a development pattern that will be pedestrian-friendly and that will primarily consist of small footprint buildings and storefronts.
15. Revise zoning standards to restrict the types and amount of commercial development that may occur outside of the Interlochen village and Interlochen corners area.
16. Review and revise the standards in the commercial zoning districts in conformance with the Objectives and Strategies for Commercial Development stated in this plan. Especially related to the following:
  - ❖ Objective: Ensure that the architecture, landscaping, and signs associated with commercial establishments is compatible with a rural environment.
  - ❖ Strategies:
    - Reduce parking space sizes and requirements to minimize paved areas, and set limits on the amount of impervious surfaces permitted on site.
    - Regulate signs to minimize clutter, confusion, and aesthetic degradation while permitting reasonable opportunities for announcement of products and services. Monument and other low profile signs shall be encouraged. Internally lighted signs shall be discouraged in all locations.
    - Revise zoning standards to restrict the types and amount of commercial development that may occur outside of the Interlochen village and Interlochen corners area.
    - Continue to limit the footprint, scale, and intensity of commercial uses within the village area while encouraging a larger scale and more intense level of development within the Interlochen corners area.
17. In locations consistent with local recreation planning, require development of integrated trail systems with new residential development.

## Existing Land Use Profile

This chapter profiles the community character and existing land use pattern of Green Lake Township. Data used in this section was derived from assessing records in 2008.

### «Community Profile

Green Lake Township's development pattern has been influenced by the cultural and natural resources present in the community. In the heart of the Township is the Interlochen Center for the Arts (ICA), an internationally known educational and cultural arts institution. The ICA is located south of the Village of Interlochen, between Green Lake and Duck Lake, the larger lakes in the Township.

Other community facilities are also centrally located in Township. Green Lake Township hall and fire hall, the United States post office, Interlochen Public Library, and the Interlochen Elementary School all are located in the southern part of the unincorporated Interlochen village.

The lakes, wetlands and forests of Green Lake Township are the defining environmental features. In addition to Green and Duck Lakes, a number of smaller lakes are scattered throughout the northern and western portions of the Township. The Township's inland lakes have attracted significant seasonal and year-round housing development. The Township's lakes are connected through a network of streams. The lakes and streams are flanked by pockets of wetland. These water features are within forest cover. State land holdings in the form of a state park land, forest areas, and boat access sites provide the public access to the Township's forests, wetlands and lakes.

Residential development has traditionally been concentrated around the Township's lakes. Many of the Township's residences are seasonal units. The oldest residential developments were platted with very small lots. The resulting development pattern in these areas has been uneven with some areas being intensively developed while others are undeveloped.

The newest planned residential developments are found away from the lake areas. These developments occurred in areas with easy access to the Interlochen village area and to the US-31 corridor. These developments include Betsie Creek Crossing, Morgan Run, and Elizabeth Town in Section 17; Glacier Ponds in Section 13; and Round Lake Estates in Section 7.

Nonresidential development is concentrated along the US-31 corridor and along M-137 in the area of the Village of Interlochen. Commercial and industrial development stretches intermittently along the US-31 corridor. The commercial uses along US-31 are land intensive and of a general commercial nature. A concentration of industrial development is emerging at the intersection of Sullivan Road and US-31. Other industrial uses are found along the western segment of US-31, between Gonder and Betsie River Roads.

The Village of Interlochen and properties along M-137 stretching north to US-31 contain a mixture of small-scale retail shops, restaurants and office establishments that serve both the local market and tourist needs. Commercial recreation establishments are primarily found along US-31, while commercial resorts are found on Duck Lake.

Historically, agricultural land was generally limited to the southeast corner of the Township. No lands in the Township are now taxed as farmsteads.

Table 1: Land Use Summary

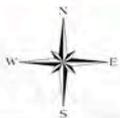
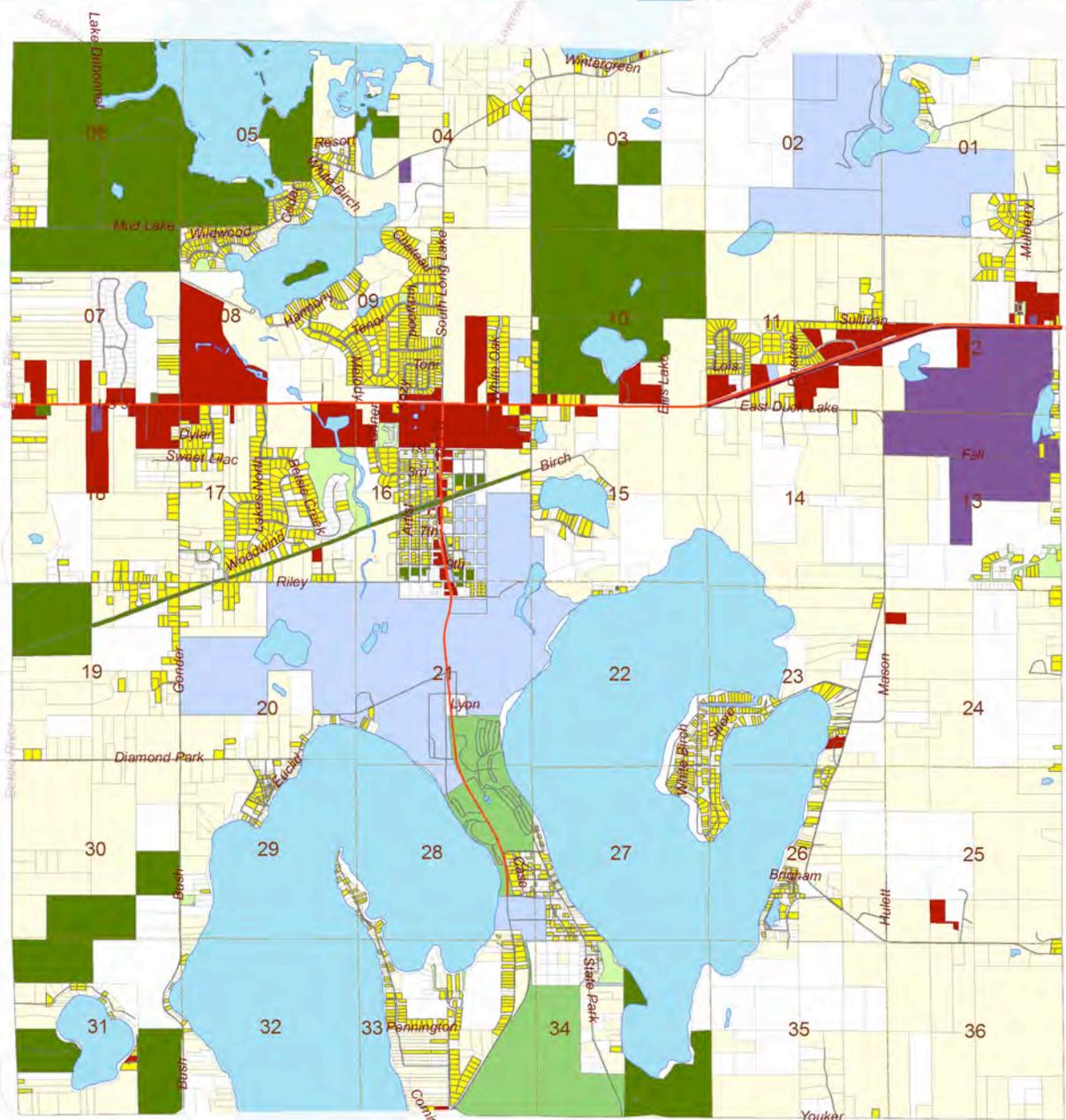
Current Use	# of Parcels		# of Acres	
Residential	2,979	74.9%	9,354	51.7%
Commercial	178	4.5%	737	4.1%
Industrial	8	0.2%	480	2.7%
Institutional	13	0.3%	1,493	8.3%
Roads & Lakes	94	2.4%	10	0.1%
Parks (Public)	3	0.1%	480	2.7%
Parks (Private)	26	0.7%	119	0.7%
Public (Other)	24	0.6%	1,712	9.5%
Utilities	1	0.0%	2	0.0%
Vacant	U649U	16.3%	U3,699U	20.5%
<b>Total</b>	<b>3,975</b>	<b>100.0%</b>	<b>18,085</b>	<b>100.0%</b>

Current Use	# of Parcels		# of Acres	
- Small Parcel Residential (<2 acres)	2,414	60.7%	1,647	9.1%
- Large Parcel Residential (>2 acres)	565	14.2%	7,707	42.6%
All Other Parcels	996	25.1%	8,731	48.3%
<b>Total</b>	<b>3,975</b>	<b>100.0%</b>	<b>18,085</b>	<b>100.0%</b>

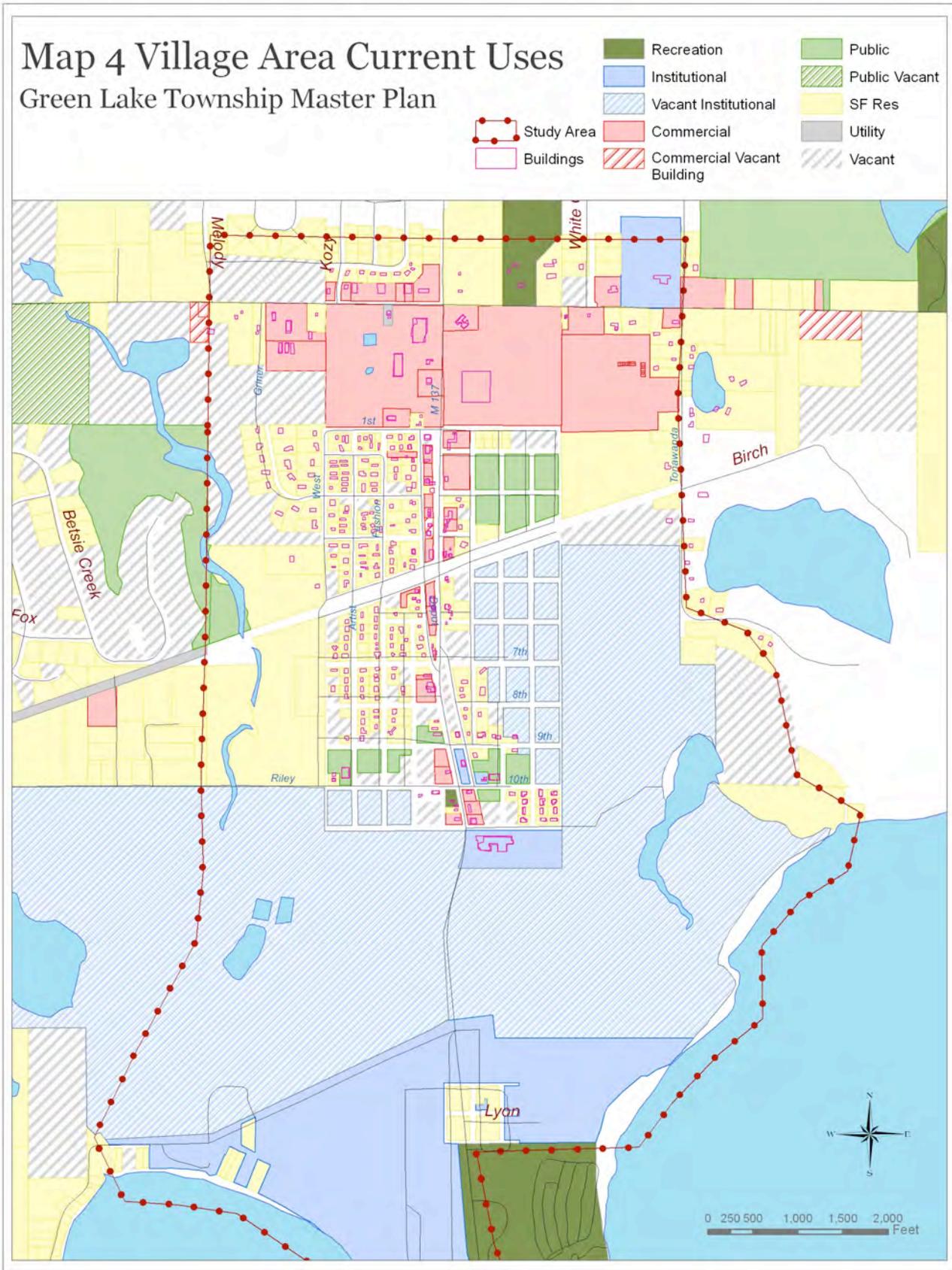
# Map 3 Existing Uses

## Green Lake Township Master Plan

- |   |                        |   |              |
|---|------------------------|---|--------------|
|  | Residential (<2 acres) |  | Public Park  |
|  | Residential (>2 acres) |  | Private Park |
|  | Commercial             |  | Public       |
|  | Industrial             |  | Utility      |
|  | Institutional          |  | Vacant       |



0 0.5 1 2 Miles



#### «Land Use Considerations

In the process of developing and evaluating land use policies for Green Lake Township, potential development problems and opportunities must be examined. A number of these are discussed below.

##### ❖ Land Use Conflicts

Historically, the US-31 corridor has been a combination of commercial uses and single family residential homes with direct access to US-31. When zoning was initially adopted in the Township, this situation was permitted and encouraged to continue. In many ways, this situation negatively impacts the residential uses and the viability of the scattered commercial uses.

These areas contain a mix of land use types (residential, commercial, industrial) which are currently separated by open space or undeveloped parcels. As the remaining properties are developed, careful attention should be paid to the land use transitions which are provided between residential and nonresidential uses. Depending on the future land use recommendations for some of the more rural portions of the Township, some of the commercial and industrial uses permitted in those areas may create conflicts with new residential development.

In the Interlochen village area, a mixture of uses allow for a vibrant town center. However, careful controls over the commercial uses and their impacts must be in place to protect the quality of life for Village area residents.

##### ❖ Sprawl Development

Sprawl is the uncontrolled growth of urban development into previously rural areas. Sprawl development tends to follow the path of least resistance, with development decisions favoring short-term, individual economic benefits over long-term, community benefits. Sprawl development has resulted in strip commercial development along state and county highways and strip residential development along County primary roads. The costs of this type of development, which include the loss of road capacity, open space, and natural resources, have been well-documented. Development along the US-31 corridor can be characterized as sprawl development. Though the development in this area does not exhibit the characteristics of strip commercial development, the development pattern has been allowed to extend along the highway rather than being concentrated at key locations.

Limiting driveway access to US-31 and coordinating future developments will help minimize the negative impacts of the highway strip development. Residential sprawl has been somewhat limited in Green Lake Township. The attractive nature of the lakes has resulted in residential development and the presence of large areas of wetland has concentrated in specific areas rather than spread evenly across the Township.

#### ❖ Poor Parceling and Land Fragmentation

Poor parceling is characterized by the subdivision of land into long and narrow strips that provide inadequate road frontage and/or width typically along section line roads. These parcels may eventually require private roads and/or long drives to service development placed off the roadway. In some cases, the portion of the parcel that has been developed prevents access to the balance which remains vacant. Without adequate land assembly, such vacant acreage will remain inaccessible and undevelopable. Efficient parcel division, even in very low density areas, is an important consideration in the creation of a coordinated development pattern and the conservation of usable open space and natural features.

The subdivision of large parcels of agricultural or forest land may negatively impact natural features (woodlands, slopes, water resources, wildlife habitat) and the community's unique environmental character. As parcel size decreases, agricultural and forest lands become less productive or fall out of use as productive lands. In addition, subdividing forest areas tend to result in the interruption of wildlife habitats and may reduce the diversity of wildlife found in the Township.

Administratively approved clustered land divisions may provide an attractive alternative to property owners wishing to divide land. This option may help to limit curb cuts, create contiguous areas of protected open spaces.

#### ❖ Accessibility

The location and use of US-31 and M-137 as regional highways is an important factor to consider when planning for future land development in Green Lake Township. The Township's lakes and wetlands have resulted in a discontinuous road system. US-31, a state highway, provides the only continuous east-west route through the Township. It divides the northern third of the Township from the southern two-thirds. M-137 provides the only north-south route which passes through the Township and connects to the road system in an adjacent community. M-137 divides the Township approximately in half and provides an alternate route to M-37.

County Road 633 and Betsie River Road also provide north-south connections. County Road 633 only extends two-thirds the length of the Township and passes through the agricultural portions of Green Lake and Blair Townships. Betsie River Road extends the length of Green Lake Township; however, the northern segment terminates into a seasonal road which passes through the Pere Marquette State Forest. The southern portion passes through a rural portion of the Township.

This confined road system limits the impact of pass through traffic for much of the Township's roads and further supports centralizing community facilities in the M-137 corridor, including commercial and community services.

❖ Utilities

Sanitary sewer and public water supply systems are important not only from a public health and safety standpoint, but also permit higher density development. Utilities also allow for a greater range of nonresidential uses to be built and a better overall use of land. Increased densities in the Interlochen village area may allow for more affordable housing, increased market for local retailers, and the other economies of a walkable community. Green Lake Township is currently working with a local retailer to install the first phase of a limited public water system to serve the Interlochen corners. Proposals for a public sewer system have also been explored recently. Any such public systems and future expansions should be located to serve the Interlochen village area for both commercial and eventually residential users.

The Interlochen Center for the Arts has its own utility system. The closest public utility system is the Blair Township water system. Expanding the Blair Township system for use in the Interlochen village area appears at this time to be excessively costly.

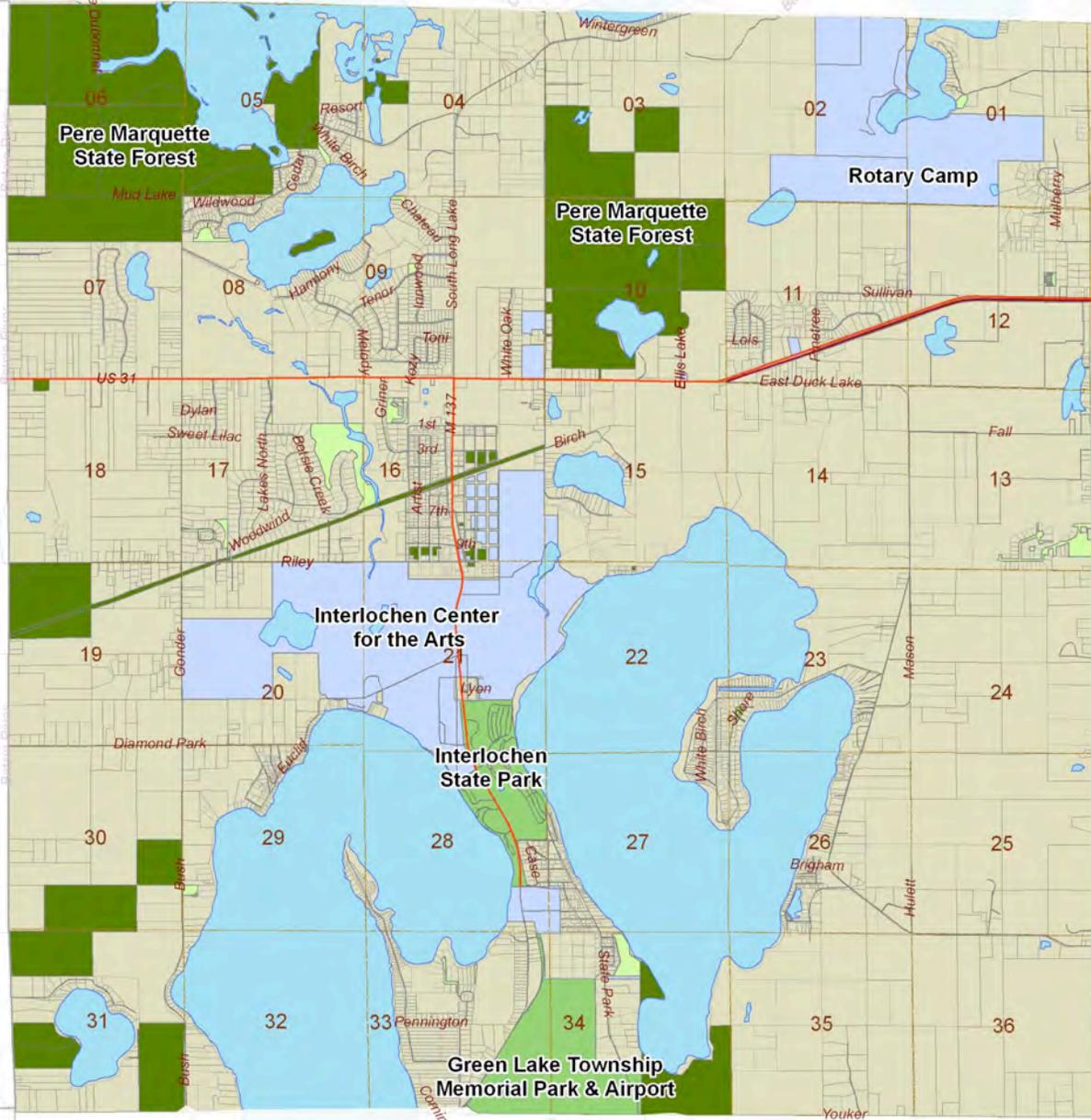
❖ State Landholdings

The State of Michigan owns approximately 2,378 acres of land in the Township which is managed as part of the Pere Marquette State Forest, the Interlochen State Park, and public boat access sites. The state land holdings have both positive and negative influences on Township land development. On one hand, the state land provides permanent open space. On the other, conflicts may arise between Township property owners and visitors to the state facilities. Also, the land does not generate any local property tax revenues.

# Map 5 Existing Public Uses

## Green Lake Township Master Plan

- Public Park
- Private Park
- Public
- Institutional



## Natural Features Profile

This chapter profiles the environmental features of Green Lake Township. The natural features inventoried are topography, soils, hydrological features, and woodlands. A discussion on threatened or endangered species is also presented below. From this inventory, the areas of the township most suitable for development will be identified, as well as those which should remain undeveloped to conserve their natural function.

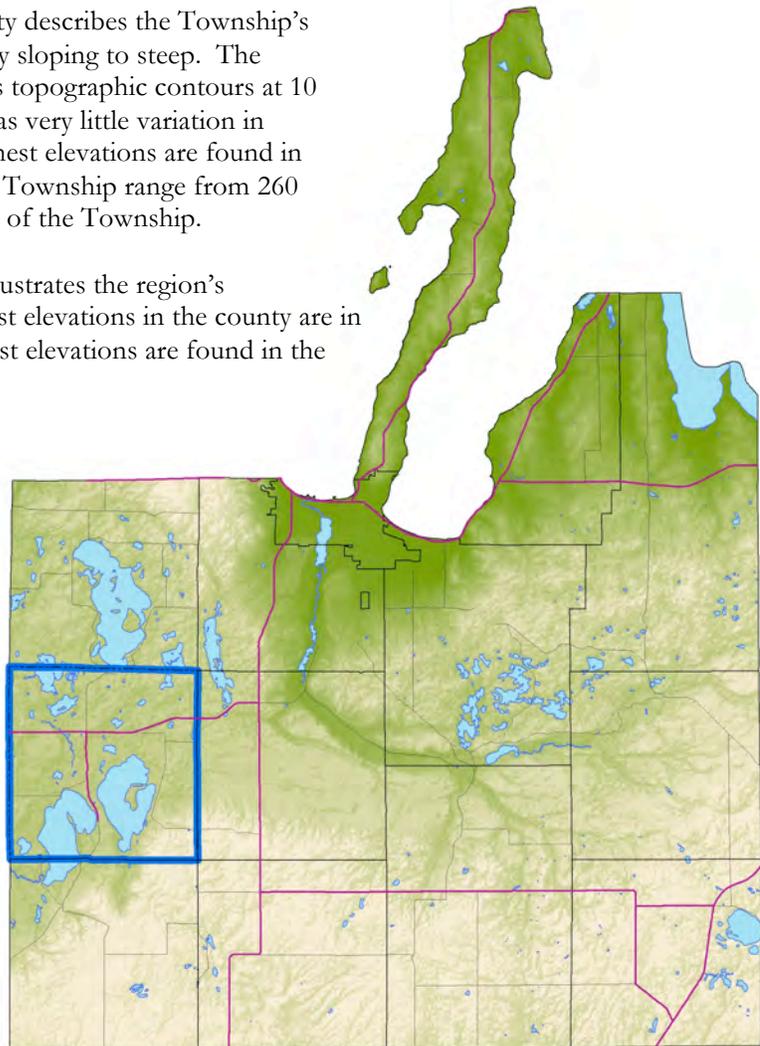
### « Topography

The topography of Green Lake Township, and Grand Traverse County as a whole, was formed as the last ice sheet of the Wisconsin glacial period retreated. As the glaciers receded, four major landforms were created: moraines, ground moraines, glacial lake plain, and outwash plains and spillways. The Port Huron Moraine extends into the southeast quadrant of Green Lake Township. The remainder of the Township is classified as outwash plains and spillways.

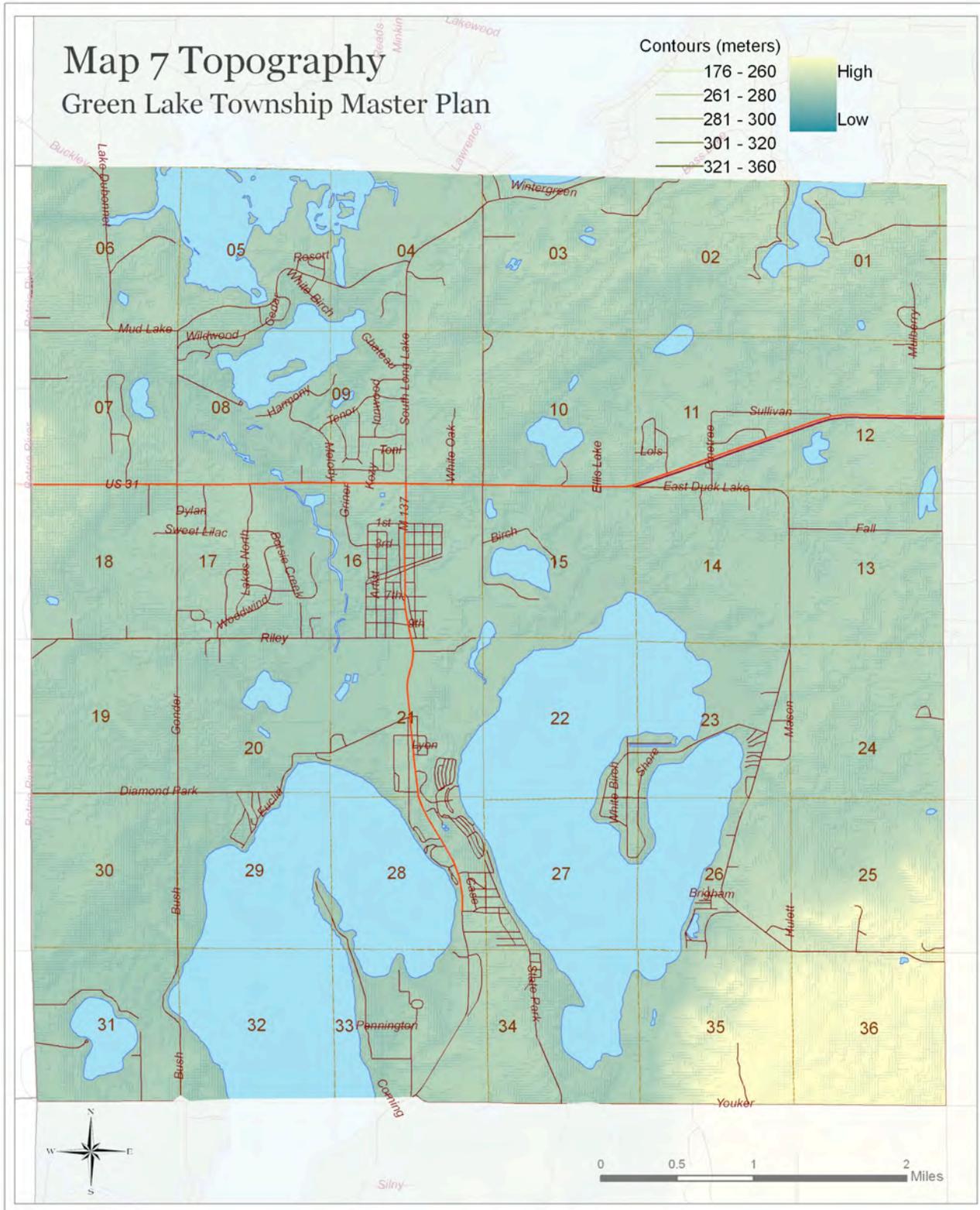
The Soil Survey of Grand Traverse County describes the Township's topography as ranging from level to gently sloping to steep. The following topography map, Map 6 depicts topographic contours at 10 meter intervals. Most of the Township has very little variation in topography. The steepest slopes and highest elevations are found in Sections 25, 35 and 36. Elevations in the Township range from 260 meters to 340 in the southeastern portion of the Township.

The Regional Topography Map, Map 3 illustrates the region's topographic profile. Generally, the highest elevations in the county are in the southern tier of townships. The lowest elevations are found in the northern part of the County and follow the Board River valley.

Topography provides a practical guide for land development decisions. For example, a structure located on a hilltop may be susceptible to wind damage while a structure located at the base of a hill may be subject to flooding. Construction on steep slopes may increase the risk of soil erosion and slope failure. Most hillside construction guidelines emphasize the need to minimize construction on slopes with inclines greater than 12 percent should be limited and road construction should parallel slope contours.



Map 6 Regional Topography  
Green Lake Township Master Plan



#### « Soil Characteristics

The following Soil Series Map, Map 5 details the locations of 10 predominant soil series found throughout the Township.

- ❖ A majority of the soils in the central and western part of the Township are sandy, excessively drained soils in the Rubicon soil series. These areas do not include any prime agricultural lands and are level or moderately sloped.
- ❖ The low areas of the Township which follow streambeds and attach the open water areas pass through this predominant Rubicon soil series forming wetlands, including a variety of mucks, peats, and some open marshland.
- ❖ The high sloping area of the township in Sections 25, 35, and 36 include soils in the Menominee, Richter, Uby and Montcalm Series. These soils are generally coarse loamy sands and coarse loamy mixed soils that are well drained. In most of this area, there are prime farmland soils and farmland of local importance.
- ❖ Soils in the Kalkaska series are found in the east central part of the Township. These soils are excessively drained loamy sands.

The characteristics of specific soils within these associations define the capacity of the land to support certain types of uses. Soils most suitable for development purposes are well-drained and not subject to a high water table. Adequate drainage is important to minimizing storm water impacts and to ensure the efficient operation of septic drain fields. Adequate depth to the water table is necessary to prevent water contamination from septic systems. A high water table may also limit the construction of basements. Through civil engineering techniques can be employed to improve drainage and maintain adequate separation from the water table, such techniques are expensive to construct and maintain.

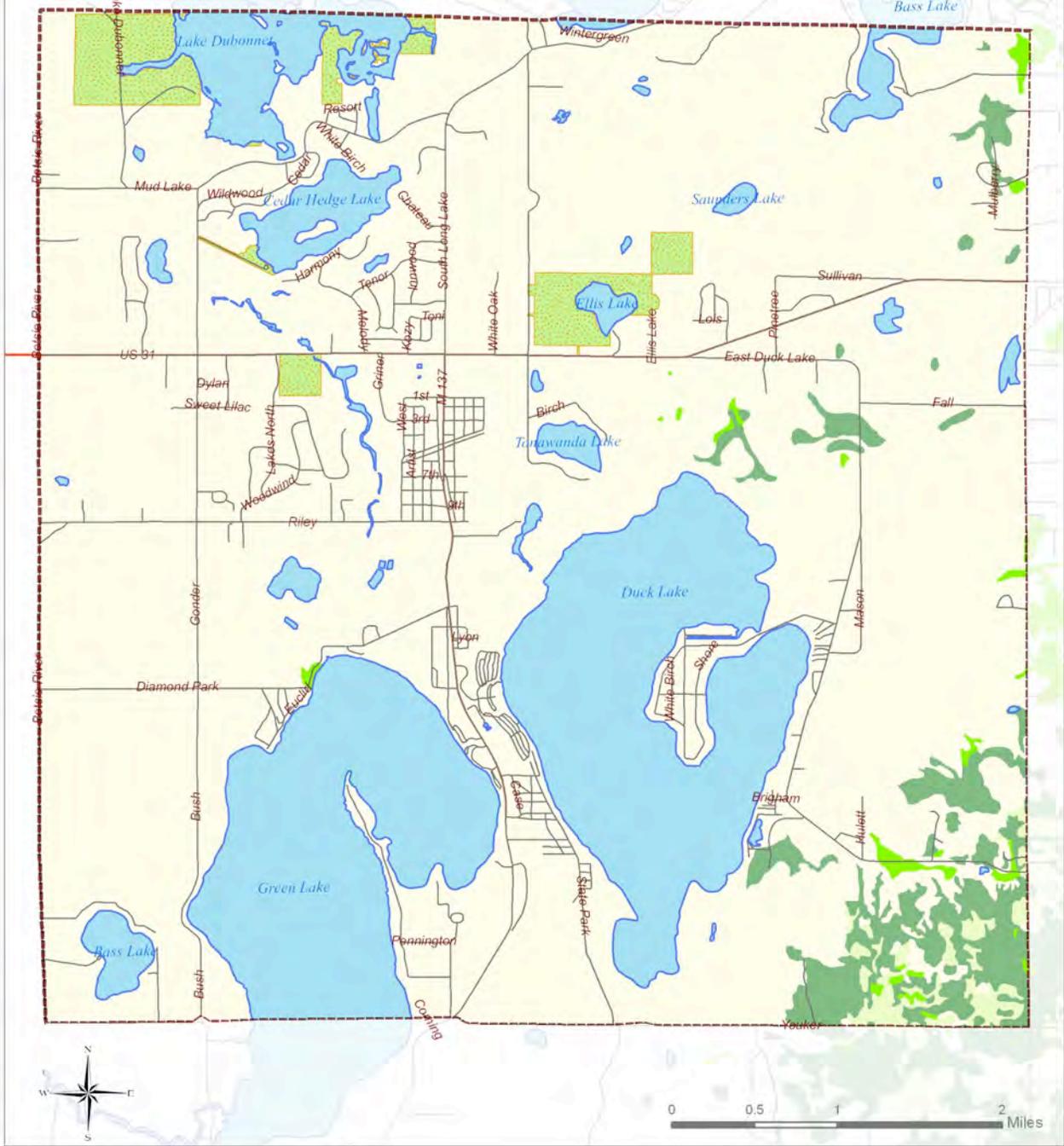
The vast majority of soils in the Township pose severe constraints to the development of on-site septic disposal systems. The primary difficulties are poor filtering capacity and wetness/flooding. A majority of the soils which overlay the Township pose slight to moderate constraints to the construction of residential structures. Severe constraints to construction are primarily due to slopes in excess of 12 percent and wet soils. It should be noted that “severe constraints” does not mean that the land is unbuildable. Rather, that the cost of development is likely to be higher due to engineering requirements. The environmental cost may also be higher due to the environmental risks such as impaired water quality.

The soil survey identifies soils that are well or uniquely suited to crop production. When considering future land use decisions, it is important to consider the value of certain soils for agricultural purposes. Once a soil is developed or used for a non-agricultural purpose, it is permanently altered and its utility for agricultural production is greatly diminished, if not destroyed. Although the agricultural industry is in decline, the Township should carefully consider any development proposal which threatens this non-renewable resource. Soils which are considered prime for agricultural use have been identified in Map 6. Prime agricultural soils have limited coverage in Green Lake Township.

# Map 8 Prime Farmland

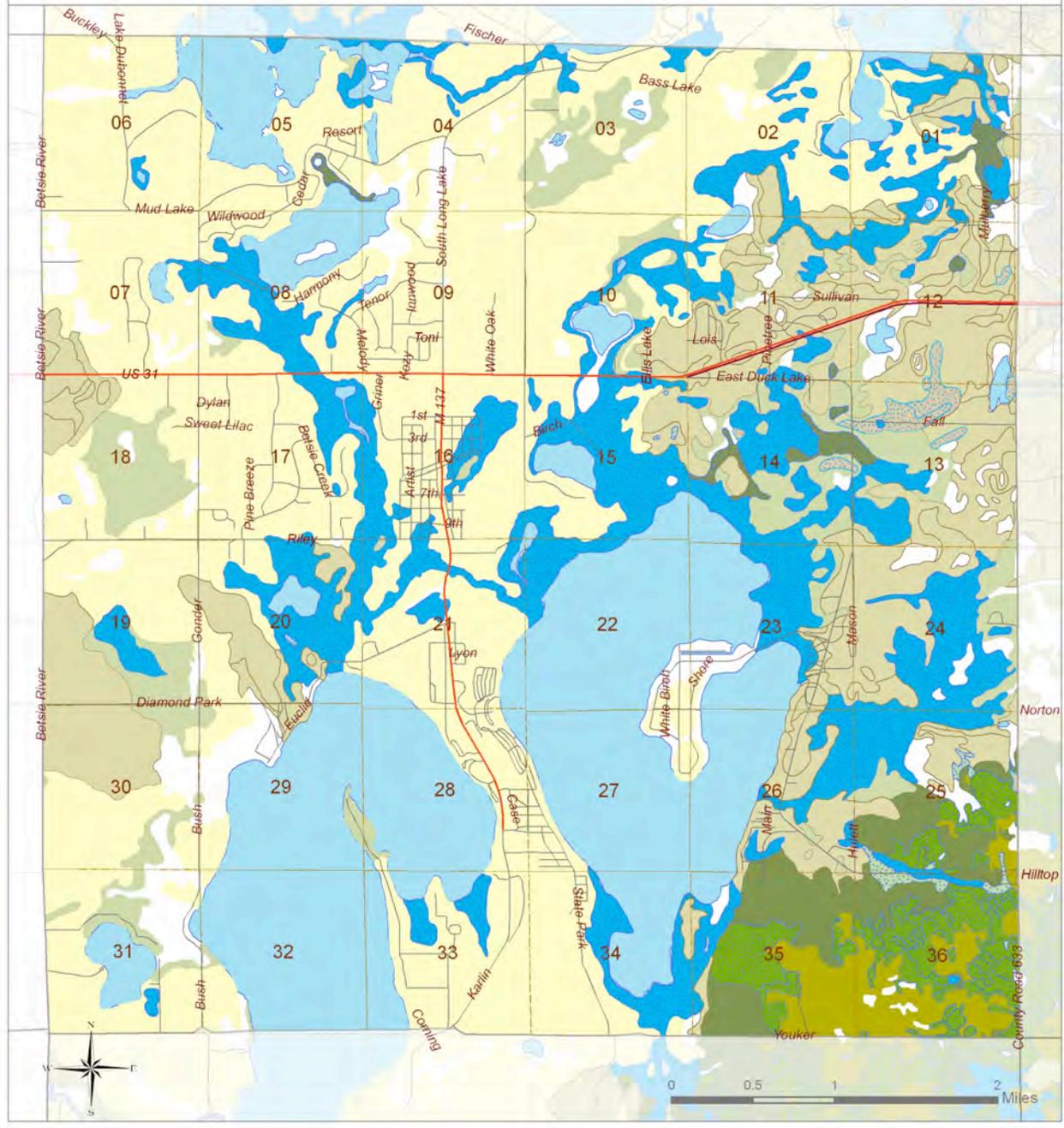
## Green Lake Township Master Plan

-  All areas are prime farmland
-  Farmland of local importance
-  Prime farmland if drained
-  Assessed as Agricultural



# Map 9 Soil Series Green Lake Township Master Plan

- |   |   |  |   |
|---|---|--|---|
|  | Rubican Series: Sandy mixed soils, excessively drained  |  | Menominee Series: Sandy over loamy well drained, some farmlands of local importance, steeply sloped |
|  | Kalkaska Series: Loamy sands excessively drained  |  | Montcalm Series: Coarse loamy mixed well drained, steeply sloped some farmlands of local importance |
|  | Mancelona Series: Gravelly sandy loam somewhat excessively drained some farmlands of local importance |  | Richter Series: Coarse loamy mixed somewhat poorly drained, prime farmland if drained               |
|  | Uby Series: Coarse loamy mixed excessively drained, moderately sloped Some prime farmland             |  | Roscommon Series: Mucky loamy sand poorly drained, some farmlands of local importance               |
|  | Croswell Series: Loamy sands moderately well drained, level   |  | Mucks, peats, or marshland  |



# Map 10 Soil Characteristics

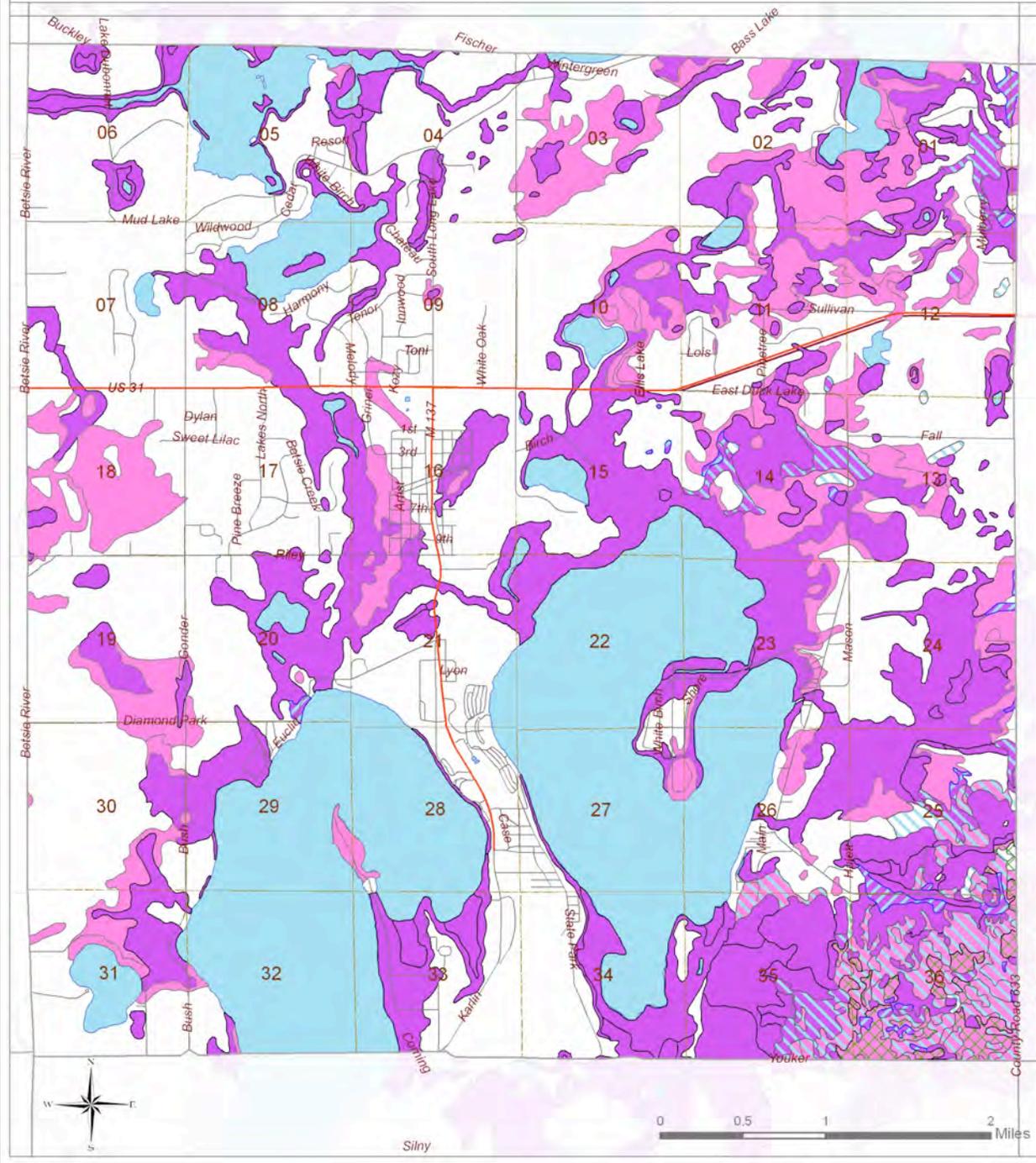
## Green Lake Township Master Plan

### Farmland Soils

-  All areas are prime farmland
-  Farmland of local importance
-  Prime farmland if drained

### Construction of Dwellings with Basements

-  Somewhat limited
-  Very limited



## « Hydrological Features

Green Lake Township's drainage system consists almost entirely of a natural system which includes lakes, streams, and wetlands. The location of these hydrological features is depicted on Map 12.

Two large lakes, Green and Duck Lakes, are located in the southern portion of the Township. In the northwestern portion of the Township, two smaller lakes, Lake Dubonnet and Cedar hedge Lake are found. Smaller lakes are scattered throughout the remainder of the Township. The majority of the Township is located within the Betsie Watershed. A small portion of the southeastern corner of the Township is a part of the Manistee Watershed. The northern border of the Township is a part of the Platte and Boardman River Watersheds.

To protect the public's right to boat, fish, swim, and enjoy inland lakes, the State regulates construction activities within inland waters under the Inland Lakes and Streams Act. This statute applies to any natural or artificial lake or pond greater than five acres and any stream or creek with defined banks and continued flow or regular occurrence of flow. Without a permit, the following activities are prohibited on the bottomlands of a lake or stream:

- ❖ Construction of a structure or the operation of a marina;
- ❖ Creation or modification of an inland lake or stream
- ❖ Interference with the natural flow of a stream or lake; and
- ❖ Dredging or filling of a stream or lake.

Activities permitted without a permit include installing a seasonal, noncommercial dock, and the reasonable sanding of beaches.

The Soil Erosion and Sedimentation Control Act protects lakes and streams from sedimentation. The Act requires a permit for any new construction within 500 feet of a lake or stream or any major construction that will open up more than one acre of land. Grand Traverse County, through the County Drain Commissioner, applies more conservative construction standards to control soil erosion and sedimentation.

Wetlands are complex ecological systems that function in a number of beneficial ways. Wetlands reduce flood hazards by providing additional storm water storage. Wetlands that overlay groundwater recharge areas improve groundwater quality by filtering the water as it percolates through the soil. Wetlands located along a watercourse protect surface water quality by filtering surface water run-off. Finally, wetlands are highly productive ecosystems that provide an essential habitat to much of Michigan's fish and wildlife at sometime in their life cycle.

The Michigan Natural Resources and Environmental Resources Act protects wetlands by restricting their use to certain activities (such as fishing and farming, among others) while permitting other activities only after approval by the Michigan Department of Environmental Quality (MDEQ). Permits are approved based on a review of an environmental assessment filed by the petitioner and upon the finding that the activity is in the public interest. Under the Act, the following wetlands are protected:

- ❖ Those that are contiguous to an inland lake, pond, river, stream or similar natural watercourses, or one of the Great Lakes; and
- ❖ Those that are five acres or larger.

Though wetland areas are scattered throughout the entire Township, most are found adjacent to a stream or lake. Map 12 depicts the location of wetlands in Green Lake Township. Development within wetland areas should be avoided. The filling of wetlands as part of development plans should also be avoided, or at least minimized. Ideally, structures should be set back from wetlands and a natural vegetative buffer strip maintained within the setback area.

#### « Woodlands

Map 13 shows the location of deciduous and coniferous woodlands. As shown on this map, the majority of the Township is wooded. The majority of the trees are deciduous with the coniferous woodlands being dispersed through the mid-section of the township.

At the time of settlement, almost all of Green Lake Township was forested. The three major groups of trees were:

- ❖ Sugar maple, beech, elm and other hardwoods on loams and limy soils;
- ❖ White pine and red pine stands on low fertility soils; and,
- ❖ White cedar, balsam fir, and black spruce in wetland areas.

As in most of northern Michigan, much of the timber resources of Green Lake Township were exploited by the forest products industry during the mid to late 19<sup>th</sup> century. Additional timber was cleared in an attempt to farm the area's generally sandy soils. After the timber resources were exhausted and the farming operations failed, some of the tax delinquent parcels were acquired by the state of Michigan and made a part of the Fife Lake State Forest which is now the Pere Marquette State Forest. Subsequently, through natural reseeding, deforested lands were replanted with stands of aspen, oak, and pin cherry, among other species. The Township does not have significant aspen or white birch coverage as is common in other northern Lower Peninsula Townships. Aspen and white birch are pioneer species; usually the first trees to reforest an area. The low incidence of these trees is indicative of the maturity of the Township's forest land.

Woodland areas are complex ecological systems and, consequently, provide multiple benefits to the environment and its wildlife and human inhabitants. Woodlands play a role in flood protection by slowing the flow of surface run-off to allow for greater storm water infiltration. Woodlands also reduce air pollutants by absorbing certain air borne pollutants. In addition to providing wildlife habitats, forest vegetation moderates the effects of winds and temperatures while stabilizing and enriching the soil. For human inhabitants, forested areas offer a visual and audio barrier which is considered aesthetically pleasing and offer unique opportunities for recreation and relaxation.

Woodland resources contribute greatly to the Township's environmental quality. The conservation of woodlots will play a positive role in maintaining and enhancing the future environmental character of the Township. Woodland areas should be conserved, as possible. Trees which are removed through development actions should be replaced. Of special concern will be the fragmentation of woodland areas through parcel divisions in and adjacent to wooded areas.

#### « Special Natural Features

The Michigan Natural Features Inventory (MNFI) database is part of the natural Heritage Program of the MDNR-Wildlife Division. The MNFI inventories the location of special natural features such as Michigan's endangered or threatened plant and animal species or special natural plant communities. The MNFI identified the following special natural feature areas in Green Lake Township.

Table 2: Special Natural Features

Location	Species	Status
Sections 5,8,10,15,22,27,29	Common Loon ( <i>Gavia Immer</i> )	Threatened species
Section 4,5,12	Osprey ( <i>Pandion haliaetus</i> )	State threatened
Section 21	Wood Turtle ( <i>Clemmys insculpta</i> )	Special concern
Section 20	Hardwood Conifer Swamp	Natural plant community

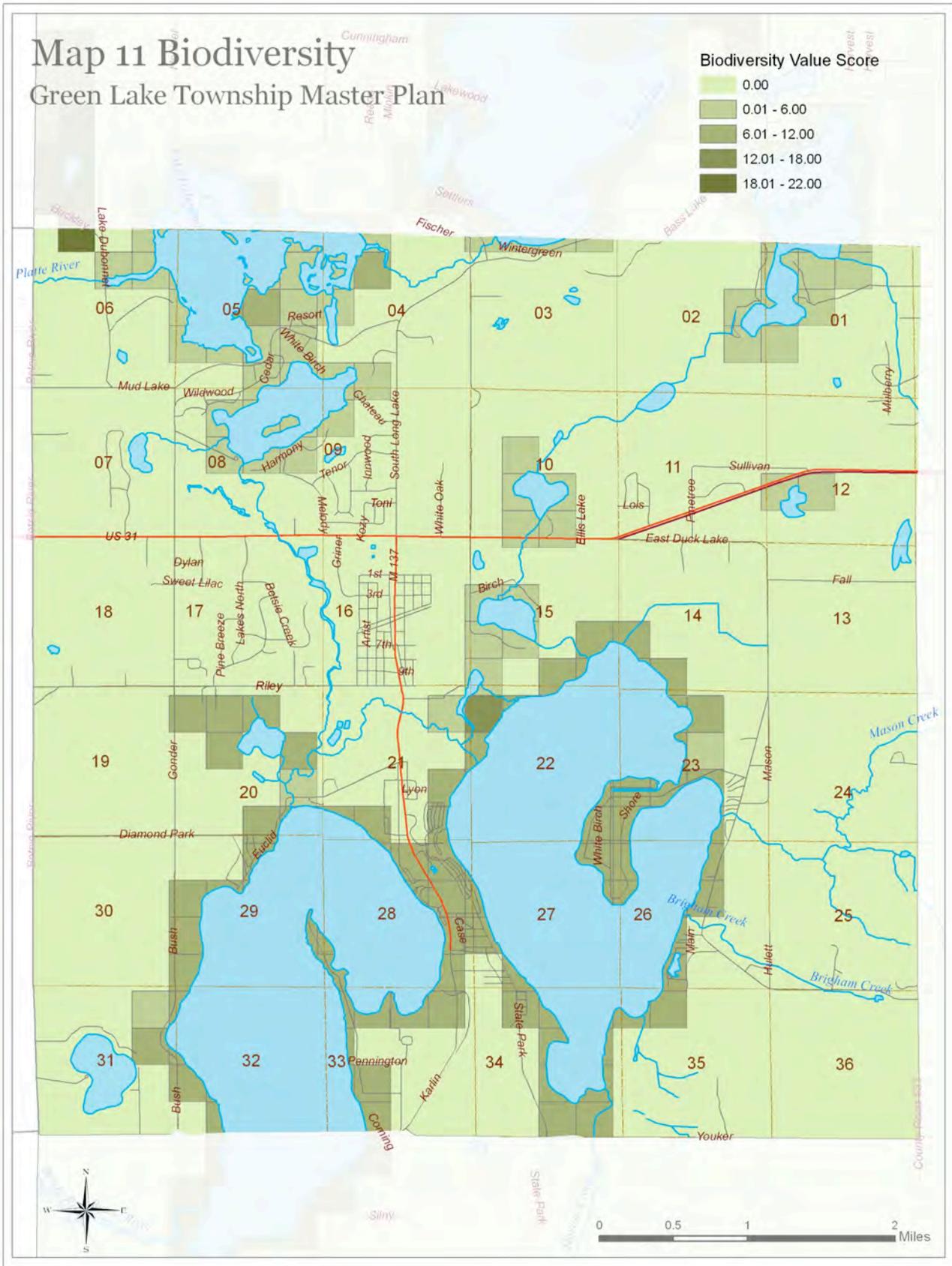
Source: Michigan Natural Features Inventory, Department of Natural Resources

The common loon is normally seen in inland lakes, bogs, and marshes. Loons are sensitive to human disturbance during the breeding season. Application of herbicide to control aquatic vegetation should only be conducted outside the nesting season on lakes where loons nest, particularly on small lakes.

Historically, ospreys nested only in trees or snags or on cliffs but they have adapted to use some man-made structures such as utility poles and towers. Preferred nest sites are above or near water. Human activity near nesting birds may interfere with nesting success. Snags should be left standing along shorelines whenever safety permits, as they are utilized both for nesting and perching while hunting.

The wood turtle is often found in swamps, bogs, streams, and wet meadows. Maintaining good water quality, controlling sedimentation, restricting pesticide use near waterways, and leaving buffer zones along streams during timbering operations can help preserve Wood Turtle habitat.

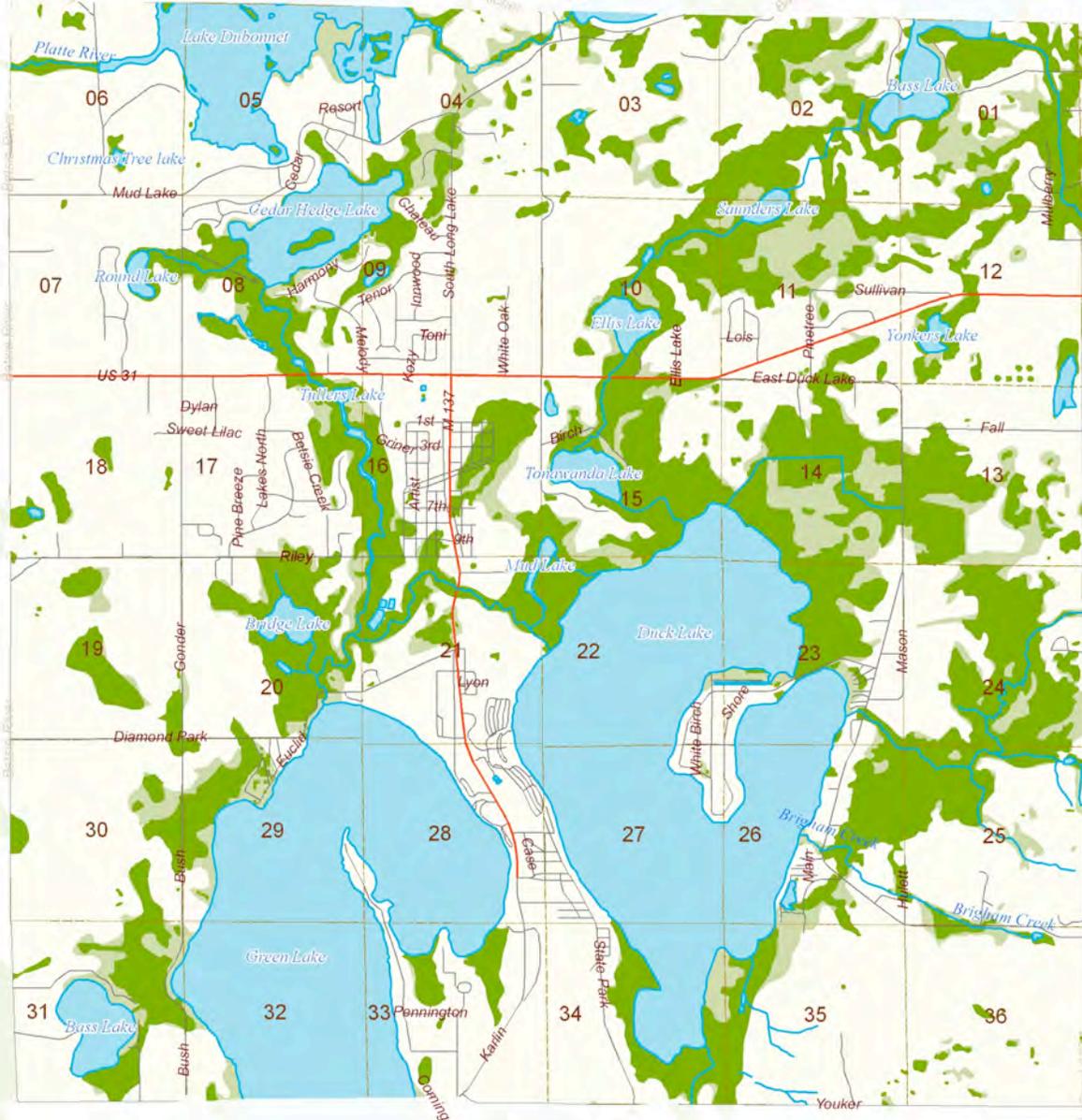
Map 11 which follows is a 40 acre grid of locations in the Township with a high probability of rare species or high quality natural communities. This represents a composite value based on a probability model and the biological rarity index as developed by the MDNR. Base data used for this evaluation comes from the Michigan Natural Features Inventory.

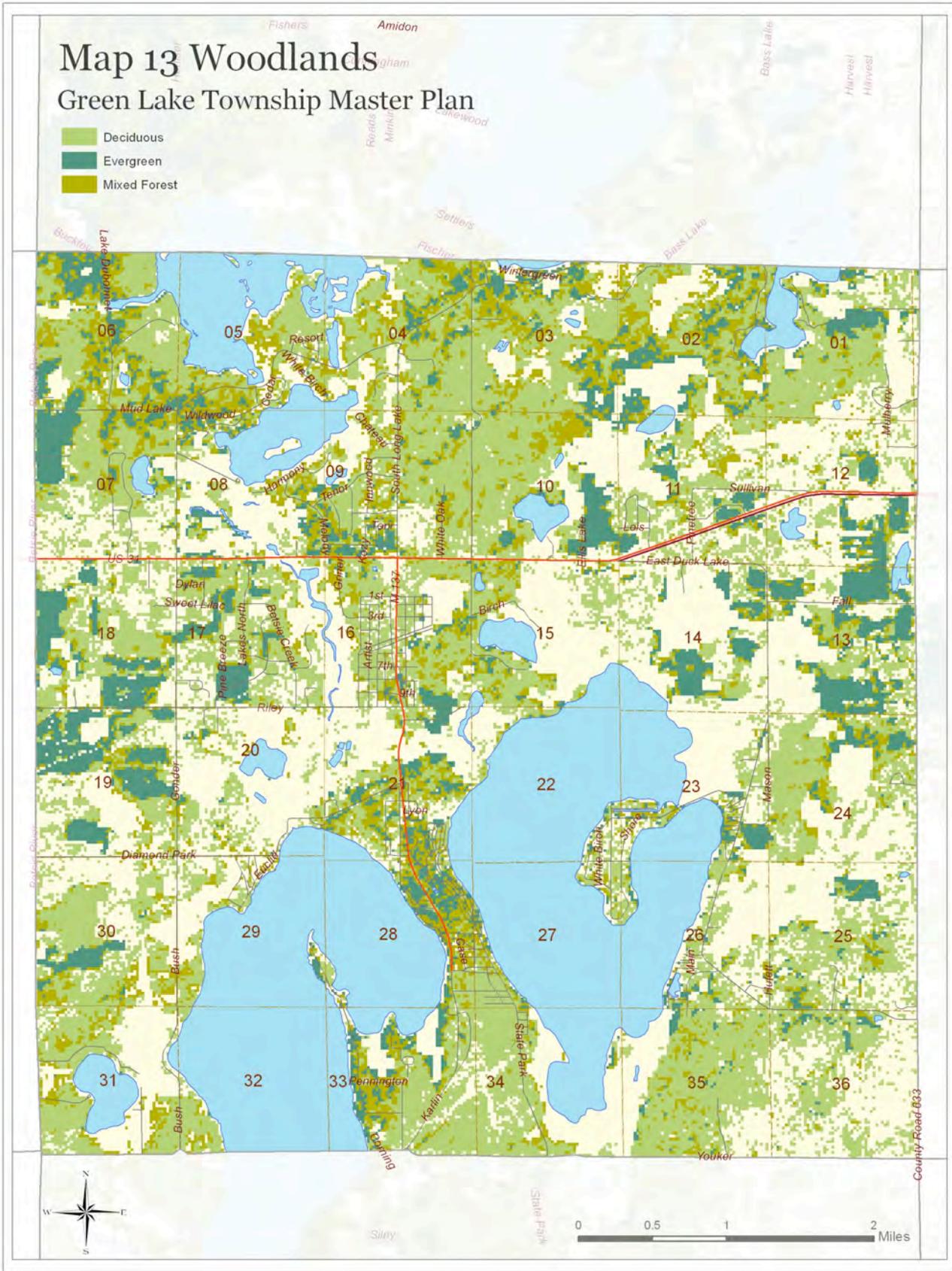


# Map 12 Wetlands & Hydrology

## Green Lake Township Master Plan

- Potential Wetland Restoration Areas
- DEQ Wetlands Inventory





« Green Infrastructure

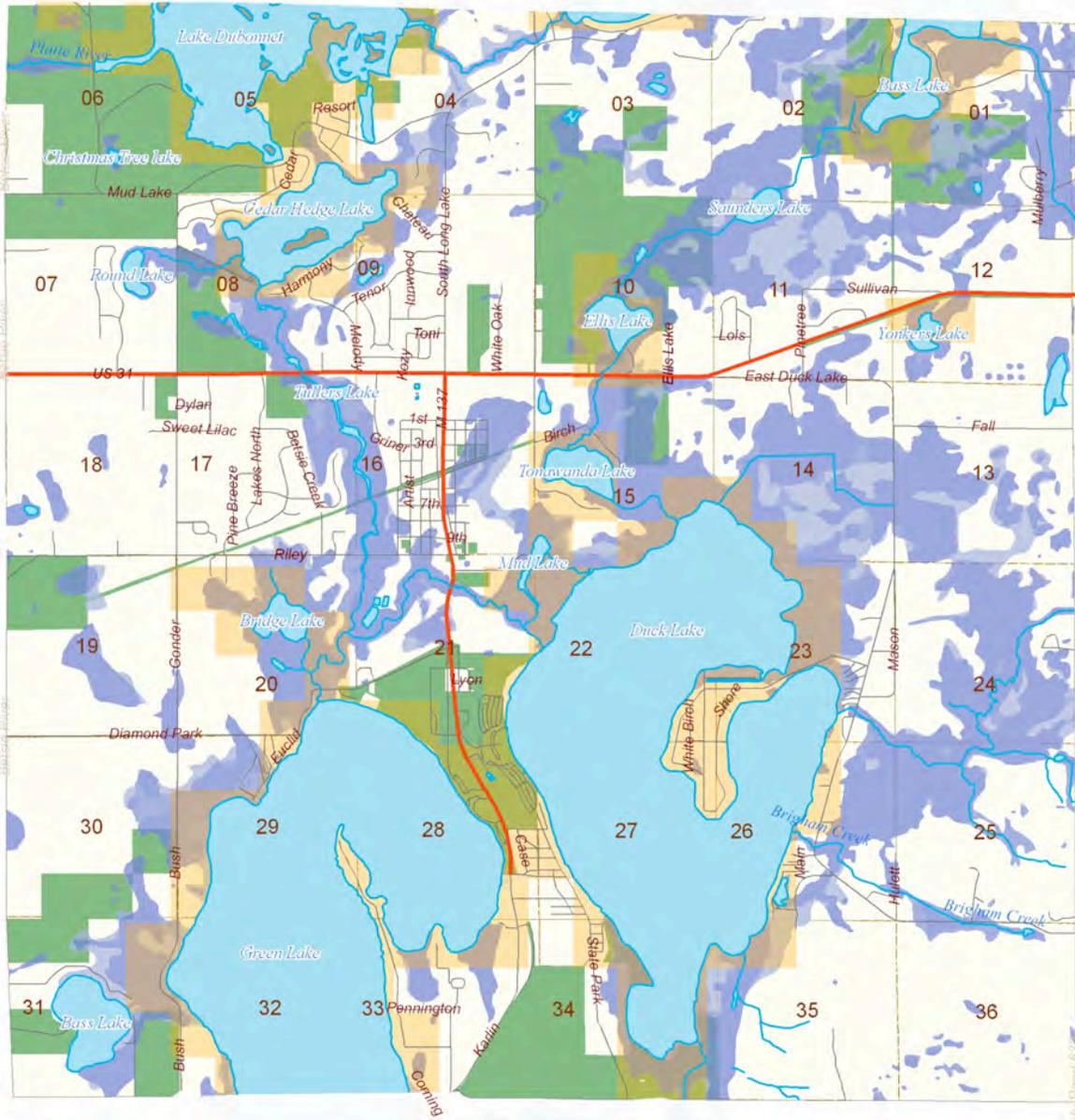
The Environmental Protection Agency defines green infrastructure as “an adaptable term used to describe an array of products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services”.

In Green Lake Township, the significant elements of the so-called “green infrastructure” are wetlands, surface waters and waterways, publicly held properties, and areas of significant biodiversity. These areas naturally serve to enhance the environmental quality and diversity of the Township and neighboring areas. Continued protection of these areas should be considered as the Township makes land use decisions in the future.

# Map 14 Green Infrastructure

## Green Lake Township Master Plan

- Waterways
- Water
- High Biodiversity Areas
- Wetland Potential Restoration areas
- Wetland areas
- Public/Institutional Properties



## Population Profile

The purpose of this chapter is to document the characteristics of Green Lake Township's population, identify historical patterns, and project future trends. Where appropriate, data described in this chapter is benchmarked to County and state demographics.

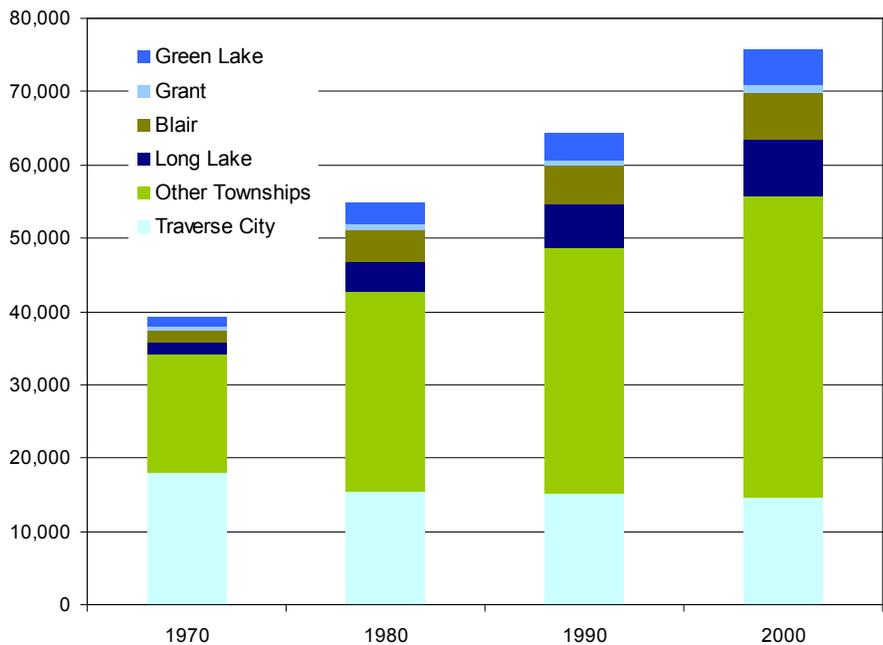
### « Population Trends

According to the 2000 US Census, the population of Green Lake Township was 5,009 permanent residents. The Township's mid-decade census, conducted in 2005 found that the population had increased 6.5% to 5,332.

Population trends for permanent residents of Green Lake Township and Grand Traverse County from 1970 to 2000 are shown in Table 3. A significant increase occurred from 1970 to 1980 when the population increased by 148.5% (1,791 persons) in the township and 40.1% (15,724 persons) in the County overall. Both the Township and County experienced less dramatic growth between 1980 and 1990, 22.7% (680 persons) and 17.1% (9,374 persons), respectively.

Traverse City made up 46% of the county's population in 1970 and only 19% in 2000. Green Lake's population went from 3% of the county's overall population to 6% during this time period. As a comparison, Long Lake Township increased from 4% to 10% of the county's population, Blair Township increased from 4% to 8%, and Grant Township remained at 1% of the county's population over this period.

**Grand Traverse County Population 1970-2000**



The 2000 Census reported a population density of 170 persons per square mile for the Township. This population density can be compared to 1,728.7 person per square mile for Traverse City, 175 person per square mile for the state of Michigan, and 167 persons per square mile for the county.

Table 3: Grand Traverse County Population Changes 1970-2000

	1970	1980	Increase 1970-80		1990	Increase 1980-90		2000	Increase 1990-200	
			Number	%		Number	%		Number	%
Grand Traverse County	39,175	54,899	15,724	40.1%	64,273	9,374	17.1%	77,654	13,381	20.8%
Acme	1,662	2,909	1,247	75.0%	3,447	538	18.5%	4,332	885	25.7%
Blair	1,667	4,613	2,946	176.7%	5,249	636	13.8%	6,448	1,199	22.8%
East Bay	3,356	6,212	2,856	85.1%	8,307	2,095	33.7%	9,919	1,612	19.4%
Fife Lake	638	1,056	418	65.5%	1,318	262	24.8%	1,051	(267)	-20.3%
Garfield	4,917	8,747	3,830	77.9%	10,516	1,769	20.2%	13,840	3,324	31.6%
Grant	507	676	169	33.3%	744	68	10.1%	947	203	27.3%
Green Lake	1,206	2,997	1,791	148.5%	3,677	680	22.7%	5,009	1,332	36.2%
Long Lake	1,584	3,823	2,239	141.4%	5,977	2,154	56.3%	7,648	1,671	28.0%
Mayfield	651	806	155	23.8%	968	162	20.1%	1,271	303	31.3%
Paradise	1,434	2,117	683	47.6%	2,508	391	18.5%	2,722	214	8.5%
Peninsula	2,642	3,833	1,191	45.1%	4,340	507	13.2%	5,265	925	21.3%
Union	57	185	128	224.6%	281	96	51.9%	417	136	48.4%
Whitewater	796	1,409	613	77.0%	1,825	416	29.5%	2,467	642	35.2%
Fife lake Village	274	n.a.	n.a.	n.a.	359	359	n.a.	466	107	29.8%
Kingsley Village	632	n.a.	n.a.	n.a.	730	730	n.a.	1,469	739	101.2%
Traverse City	18,048	15,516	-2,532	-14.0%	15,116	(400)	-2.6%	14,532	(584)	-3.9%
Michigan	8,875,068	9,262,078	387,010	4.4%	9,295,297	33,219	0.4%	9,938,444	643,147	6.9%

In discussing the population of Green Lake Township, it is important to note that the Census does not reflect the number of people residing in or visiting the township during the summer months. This seasonal flux in population can be significant and can impact the Township's land use needs. There are three major sources of seasonal population shifts in the township: seasonal housing, the Interlochen Center for the Arts, and the Interlochen State Park.

Census data indicate that more than 18 % of the total housing units are listed as seasonal, recreational or occasional use homes. An average of 2.58 people live in each of the Township's year-round housing units. If the same average is applied to the seasonal units, and all those units were occupied throughout the summer months, then the Township's population could increase by 1,161 persons.

The Interlochen Center for the Arts accommodates more than 2,500 campers each summer during the months of June through August. In addition, the fine arts boarding high school has an enrollment of approximately 457 students during the school year from 41 states and Puerto Rico and 26 other countries.

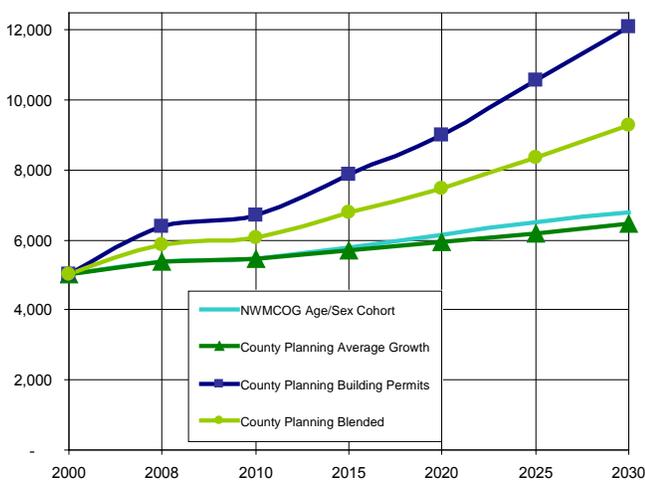
« Population Projections

Green Lake Township grew by 36% or an average of 3.6% annually between 1990 and 2000. The Northwestern Michigan Council of Governments has estimated that the Township grew by only 5.9% between 2000 and 2007, or less than 1% per year. The estimate for Grand Traverse County overall was 9.6% during this timeframe, or 1.4% annually.

If the current trend were to continue, Grand Traverse County Planning has projected that Green Lake's population would reach 6,465 by 2030. This represents an annual increase of just under 1%. Using a method based on recent trends in building permits for new dwellings in the Township, the County projects that population may grow to 12,098, or an average of 4.7% per year. Similarly, the County projects that overall Grand Traverse County population may increase by 42% (1.4% annually) between 2000 and 2030, or 97% (3.2% annually) based on building permit trends.

Based on the age and sex cohort survival methodology, the Northwestern Michigan Council of Governments projects that countywide population will increase by 40% or 1.3% annually between 2000 and 2030. Extending this projected growth rate to Green Lake's population, the township would grow to a population of 6,806 by 2030.

**Green Lake Township  
Population Projections 2008-2030**



**Grand Traverse County  
Population Projections 2008-2030**

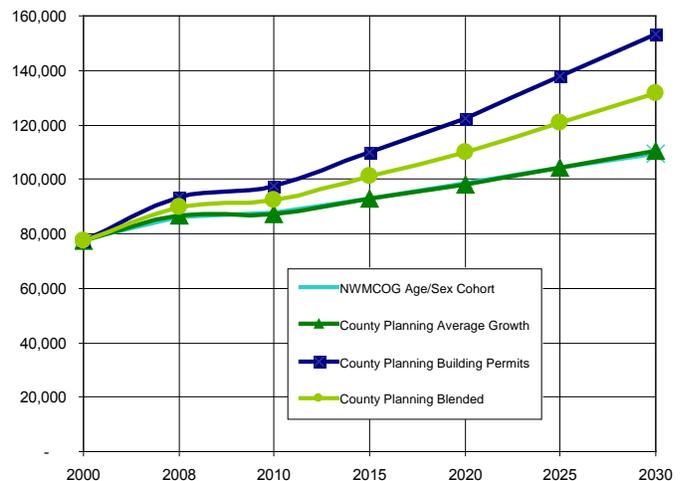


Table 4: Green Lake & Grand Traverse County Population Projections, 2000-2030

	2000	2008	2010	2015	2020	2025	2030
Projection Method	Grand Traverse County						
County Planning Building Permits	77,654	93,426	97,369	109,729	122,090	137,588	153,087
County Planning Blended	77,654	89,953	92,366	101,277	110,188	120,828	131,831
NWMCOG Age/Sex Cohort	77,993	86,384	87,997	92,880	98,505	104,275	109,324
County Planning Average Growth	77,654	86,479	87,363	92,824	98,286	104,069	110,574
Projection Method	Green Lake Township						
County Planning Building Permits	5,009	6,378	6,721	7,869	9,017	10,557	12,098
County Planning Blended	5,009	5,876	6,089	6,785	7,481	8,378	9,281
NWMCOG Age/Sex Cohort	5,009	5,378	5,478	5,782	6,133	6,492	6,806
County Planning Average Growth	5,009	5,374	5,457	5,701	5,945	6,200	6,465

Excepting the building permit growth projection method, the various projection methods yield similar future population estimates.

- ❖ The Average Growth projection by County Planning uses the average annual growth between 1990 and 2008 and extends this average out to 2030.
- ❖ The Building Permit projection by County Planning estimates future population by using the average number of residential building permits between 2000 and 2008 multiplied by the average population per household.
- ❖ The County’s blended projection simply average the results of both the building permit projection and the average growth projection.
- ❖ Northwestern Michigan Council of Government’s Age/Sex Cohort projection method breaks down the population in the county by age and gender groupings (females aged 0 to 4, for example), “ages” this group in a time model, applying known survival rates and migration rates to each group as it ages.

« Age/Life-Cycle Distribution

Data in the following table describe the age distribution of Township residents. For the purpose of this analysis, age levels are categorized according to life cycle states. In this analysis, five life-cycles are examined:

- ❖ Preschool (less than 5 years)
- ❖ School age (5 to 20)
- ❖ Young adult (21 to 44)
- ❖ Older Adult (45 to 64)
- ❖ Older (65 plus)

Both Green Lake Township and the County populations were younger at the time of the US Census in 1980 than in 1990 or 2000. The median age in the Township increased by 10.6 years during this period and by 9.9 years in the County overall. In both cases, the increase in median age is due to the decrease in the proportion of the population in the school age group and an increase in the share of total population in the older population groups. In the County, there was a large increase in the older adult age category (age 45 to 64).

Table 5: Age/Life Cycle Distribution and Trends 1980-2000

Green Lake Township

	1980		1990		2000		1980-2000 Change	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Preschool	288	10%	323	9%	328	9%	+40	14%
School Age	919	31%	989	26%	1,158	26%	+239	26%
Family formation	1,153	38%	1,461	39%	1,846	39%	+693	60%
Older Adult	374	12%	605	16%	1,142	16%	+768	205%
Older	263	9%	390	10%	535	10%	+272	103%
Total	2,997	100%	3,768	100%	5,009	100%	+2,012	67%
Median Age	25.2		31.3		36.5			

In Green Lake Township, although overall population grew by 67% the older adult category grew by 205% during this time period and the older age group grew by 103%. This is very similar to the changes in this time period in Grand Traverse County. The difference is found in the younger age cohorts, where Green Lake Township experienced a slightly larger increase in populations than Grand Traverse County experienced.

Median ages continue to be younger in Green Lake Township than the County overall.

Table 6: Age/Life Cycle Distribution and Trends 1980-2000

Grand Traverse County

	1980		1990		2000		1980-2000 Change	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Preschool	4,243	9%	4,857	8%	4,723	6%	480	6%
School Age	14,988	33%	15,486	24%	18,763	24%	3,775	25%
Family formation	20,416	44%	25,094	39%	25,397	33%	4,981	24%
Older Adult	9,352	1%	10,946	17%	18,627	24%	18,275	195%
Older	5,900	13%	7,890	12%	10,144	13%	4,244	72%
Total	45,899	100%	64,273	100%	77,654	100%	31,755	69%
Median Age	28.8		33.2		37.7			

« Household Characteristics

Census data from 2000 show that Green Lake Township had an average of 2.58 persons per household – a decline from 2.75 in 1990. The figure for Grand Traverse County and the State overall also declined over this time from 2.62 to 2.49 and from 2.66 to 2.56, respectively.

Table 7: Household Profiles, 2000

	Michigan		Grand Traverse County		Green Lake Township	
	Number	Percent	Number	Percent	Number	Percent
Family households	2,575,699	68%	20,726	68%	1,419	73%
- Married-couple family	1,947,710	51%	16,917	56%	1,197	62%
- Other family households	627,989	17%	3,809	13%	222	11%
1-person households	993,607	26%	7,608	25%	397	20%
- Male householder	437,371	12%	3,023	10%	198	10%
- Female householder	556,236	15%	4,585	15%	199	10%
Other nonfamily households	216,355	6%	2,062	7%	126	6%
Total	3,785,661	100%	30,396	100%	1,942	100%

The Township's average household size has moved closer to the average of the County and the State over this time. The makeup of households in the three areas remains varied, however. The Township's households are made up of more family households, and specifically married-couple families, and fewer one person households than the County or the State.

« Racial & Ethnic Composition

Racial make up of Green Lake Township's population is relatively homogeneous. Of the 5,009 residents in the community in 2000, the vast majority, 96.9 percent or 4,856, were white and identified themselves as being of one race only. The remaining 153 persons were from minority ethnic and racial population groups. The largest minority group reported by the Census was persons considered to be American Indian or Alaskan Native alone, comprising 61 individuals or 1.2% of the population. The next largest ethnic group was Asians alone which comprised 0.4 percent of the Township's population in 2000. The Census reported that only 1 Township resident was black alone; 3 were Native Hawaiian or Pacific Islander alone; and 14 were some other race alone. In total, 53 residents or 1.5 percent were of two or more races. This racial homogeneity is relatively consistent with the racial profiles for the Township reported in both the 1980 and 1990 US Censuses.

« Disability Status

In reporting disability status, the US Census divides the population into three age categories: school age (5 to 15), working ages (16 to 64) and post working ages (65 and up). Of the total population in the Township, 24.9 percent were reported as having a disability of any kind. This compared to 25.9 percent in the County and 30.1 percent in the State overall.

Of all people with disabilities in the Township, 10.8 percent (135 people) were between the ages of 5 and 15; 59.7 percent (745 people) were between the ages of 16 and 64; and 29.4 percent (367 people) were over the age of 65.

« Educational Attainment

Education is an important factor in analyzing the capabilities of the local work force and in the economic vitality of a community. Educational attainment is tracked by the US Census. Statistics from the 2000 Census indicate that 90.8 percent of Green Lake Township residents aged 25 years or older are high school graduates or higher (compared to 78.2 percent in 1990). In Grand Traverse County, the figure was 89.3 percent in 2000 and 84.9 percent in 1990; in the State overall, 83.4 percent in 2000 and 76.8 percent in 1990.

Those with a bachelor's degree or higher amount to 22 percent of the population over 25 in the State overall, 26 percent in Grand Traverse County, and 20 percent in Green Lake Township.

## Economic Profile

The purpose of this chapter is to document the characteristics of the community's income, real property values, and economy, to identify historical patterns and project future employment needs. Where appropriate, the data is benchmarked to County and state demographics.

### « Income

Data in the following table illustrate three measures of income: per capita, median household and median family income for the Township, County, and the State. Income statistics reported in the 2000 Census reflect information from the 1999 calendar year. By the median household income measure, the Township earned more than the county and the state. Family income and per capita income, however, were lower in the Township than in the State or the County. Overall, the Township's income levels have moved closer to that of the County and the State since 1990.

Table 8: 2000 Income Statistics

Place	Median Household Income		Median Family Income		Per Capita Income	
	1990	2000	1990	2000	1990	2000
Green Lake Township	\$26,502	\$45,884	\$27,480	\$50,183	\$11,148	\$19,594
Grand Traverse	29,034	43,169	33,373	51,211	13,289	22,111
Michigan	36,652	44,667	31,020	53,457	14,154	22,168

Data on the distribution of households by income levels is presented in the graph and table below.

**Distribution of Households  
by Household Income, 2000**

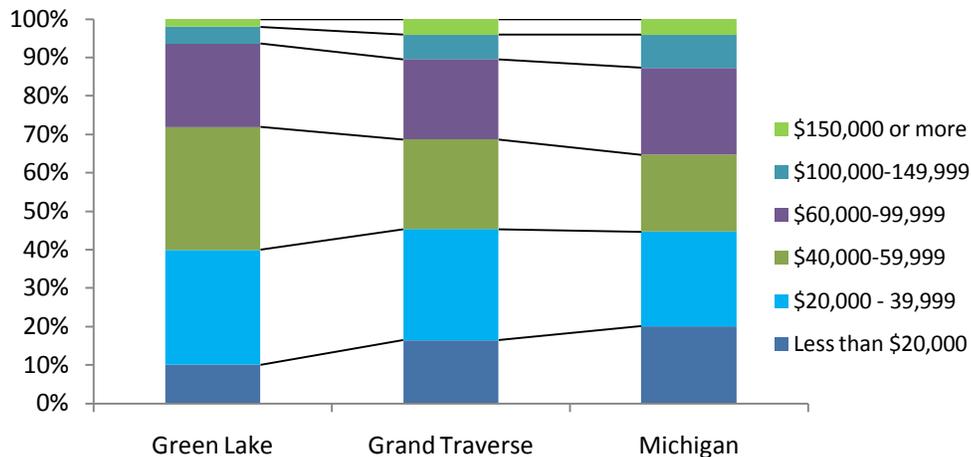


Table 9: Household Income, 2000

	Green Lake Township		Grand Traverse County		Michigan	
Total	1,918		30,486		3,788,780	
Less than \$10,000	77	4%	1,652	5%	313,905	8%
\$10,000 to \$14,999	63	3%	1,545	5%	219,133	6%
\$15,000 to \$19,999	54	3%	1,823	6%	227,379	6%
\$20,000 to \$24,999	172	9%	2,142	7%	241,721	6%
\$25,000 to \$29,999	120	6%	2,045	7%	236,089	6%
\$30,000 to \$34,999	150	8%	2,366	8%	234,330	6%
\$35,000 to \$39,999	130	7%	2,239	7%	219,661	6%
\$40,000 to \$44,999	158	8%	2,104	7%	214,406	6%
\$45,000 to \$49,999	179	9%	1,901	6%	190,259	5%
\$50,000 to \$59,999	276	14%	3,118	10%	353,430	9%
\$60,000 to \$74,999	255	13%	3,587	12%	425,325	11%
\$75,000 to \$99,999	161	8%	2,782	9%	432,681	11%
\$100,000 to \$124,999	58	3%	1,286	4%	222,789	6%
\$125,000 to \$149,999	27	1%	659	2%	102,177	3%
\$150,000 to \$199,999	7	0%	578	2%	79,291	2%
\$200,000 or more	31	2%	659	2%	76,204	2%

Data in the following table illustrates comparative rates of poverty. The poverty threshold for the 2000 was set at \$17,029 for a family of four and \$8,501 for a single person household. In 1999, 4.5 percent of all Green Lake Township residents lived below the poverty level, a decrease of 6.3 percent from 1989. Green Lake Township's rate of poverty was well below that of the County, State, or nation in 1999.

Table 10: Comparative Rates of Poverty  
1979-1999

Place	Percent of Population in Poverty		
	1979	1989	1999
Green Lake Township	6.4	10.8	4.5
Grand Traverse County	8.3	8.5	5.9
Michigan	10.4	13.1	10.5
United States	11.7	12.8	12.4

«State Equalized Value

Other characteristics of Township wealth can be obtained by an analysis of property values as measured by state equalized value (SEV) figures. By law the SEV, which constitutes a community's tax base, is equal to approximately one-half of the true market value of real property and certain taxable personal properties.

Data in the table below show the distribution of value among the different SEV categories for 2009, comparing Green Lake Township to Grand Traverse County as a whole. As data in the table demonstrate, the majority of the Township's taxable property is residential, as is the County's. There was no agricultural property value in the Township in 2009, compared to a very small amount in 1997. In the County overall, agricultural property makes up 2.6% of the property value in 2009. Commercial value is less than 6 percent in the Township and almost 19 percent in the County overall.

Table 11: State Equalized Value, 1997 & 2009

	Green Lake Township				Grand Traverse County			
	1997		2009		1997		2009	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Real Property								
- Agricultural	\$319,100	0.2%	\$0	0.0%	\$61,633,603	2.8%	\$151,345,590	2.6%
- Commercial	6,925,790	5.7	19,924,390	5.9	388,679,027	17.9	1,113,069,770	18.8
- Industrial	2,064,380	1.7	4,608,050	1.4	39,105,669	1.8	105,236,261	1.8
- Residential	104,072,120	85.5	302,752,740	89.9	1,501,381,964	69.1	4,283,832,904	72.4
- Timber Cutover	-0-	0.0	-0-	0.0	811,900	-0-	-0-	0.0
-Developmental	-0-	0.0	-0-	0.0	-0-	0.0	347,472	0.0
Total Real	11,3381,390	93.1	327,285,180	97.1	1,991,612,163	91.6	5,653,831,997	95.5
Personal	8,373,970	6.9	9,624,750	2.9	182,664,128	8.4	266,500,315	4.5
Total SEV	\$121,755,360	100.0	\$336,909,930	100.0	\$2,174,276,291	100.0	\$5,920,332,312	100.0

It is important to note that some large commercial development has recently occurred in the Township and will not be represented in the values shown above. In addition, the recent change in the economic value of land for residential development has made agricultural uses more attractive to land owners. It is expected that these values may begin to change significantly in 2010.

« Employment

The Michigan Department of Labor and Economic Growth publishes annual employment data. Data in the table below shows employment by sector for person residing in the eight county northwestern Michigan region.

Table 12: Employment by Sector  
North West Northern Michigan 2000-2007  
(Antrim, Benzie, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Wexford Counties)

	2000	2001	2002	2003	2004	2005	2006	2007	Change 2000- 2007	Percent Change
Total, All Industries	104,764	100,384	100,446	99,941	101,850	100,873	100,479	98,937	-5,827	-6%
Construction	9,028	8,610	8,573	8,253	8,439	8,393	7,913	7,144	-1,884	-21%
Manufacturing	21,070	18,895	17,517	17,285	17,181	16,883	16,386	15,884	-5,186	-25%
Retail trade	17,652	17,494	17,718	17,519	17,915	17,367	16,962	17,059	-593	-3%
Information	1,822	1,716	1,798	1,816	1,793	1,745	1,771	1,768	-54	-3%
Finance and insurance	2,870	3,039	3,419	3,575	3,631	3,635	3,755	3,659	789	27%
Professional and technical services	3,720	3,832	3,901	4,197	4,304	4,053	4,085	3,929	209	6%
Health care and social assistance	12,614	13,181	13,924	14,192	14,241	14,608	14,779	15,249	2,635	21%
Accommodation and food services	15,352	14,881	15,134	15,132	15,440	14,685	14,829	14,657	-695	-5%

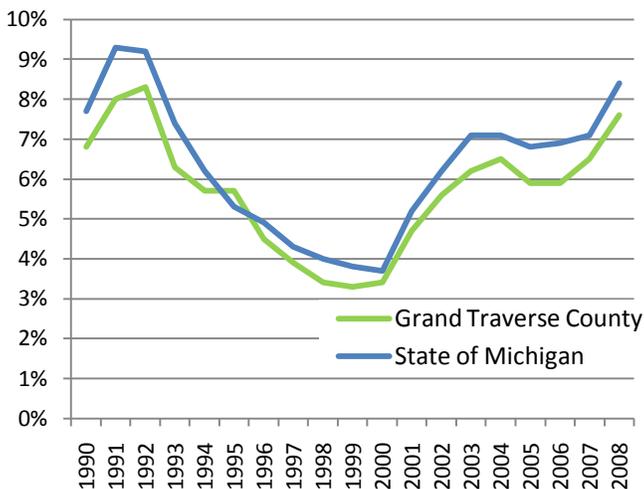
During the eight years examined the total number of employed person in the labor market declined by 6 percent. This overall rate of decline was due in large part to the lost in employment in the construction and manufacturing sectors. Employment in the healthcare and social assistance sector and the finance and insurance sector rose by 21 and 27 percent, respectively, during this time period.

The Michigan Department of Labor and Economic Growth also tracks labor force statistics. The table and graphs on the following page indicate that, generally, the labor force has increased during this time period in both the County and the State overall. Unemployment rates peaked in both locations in the early 1990's and has continually increased since a low in the late 1990's. Except for 1993, unemployment rates in the County lag those in the State overall by approximately 1 percentage point.

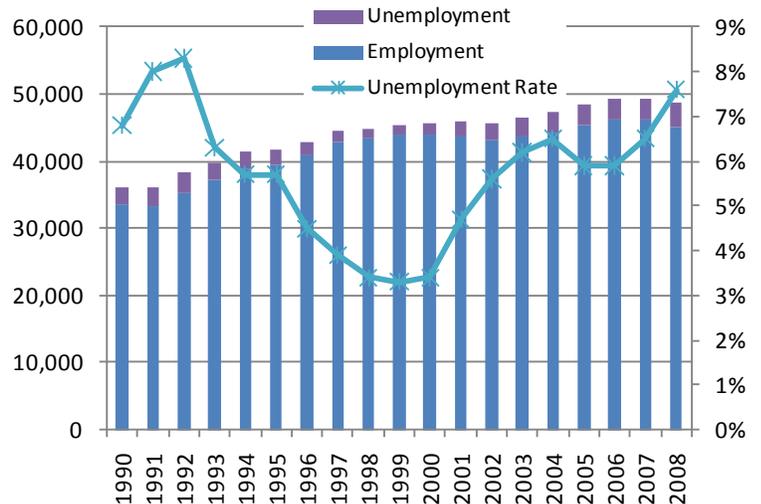
Table 13: Labor Force and Unemployment Rate Comparisons 1990-2008

Year	Grand Traverse County				Michigan (in thousands)			
	Labor Force	Employed	Unemployed		Labor Force	Employed	Unemployed	
			Number	Percent			Number	Percent
1990	36,055	33,601	2,454	6.8%	4,620	4,262	358	7.0%
1991	36,176	33,296	2,880	8.0%	4,589	4,162	427	9.3%
1992	38,326	35,130	3,196	8.3%	4,662	4,235	427	9.2%
1993	39,848	37,326	2,522	6.3%	4,712	4,365	347	7.4%
1994	41,390	39,031	2,359	5.7%	4,804	4,509	296	6.2%
1995	41,838	39,472	2,366	5.7%	4,835	4,577	258	5.3%
1996	42,733	40,802	1,931	4.5%	4,888	4,647	241	4.9%
1997	44,497	42,769	1,728	3.9%	4,963	4,749	214	4.3%
1998	44,804	43,274	1,530	3.4%	5,008	4,810	198	4.0%
1999	45,428	43,941	1,487	3.3%	5,089	4,897	192	3.8%
2000	45,549	43,997	1,552	3.4%	5,144	4,953	190	3.7%
2001	45,792	43,658	2,134	4.7%	5,144	4,876	268	5.2%
2002	45,577	43,020	2,557	5.6%	5,040	4,725	315	6.2%
2003	46,612	43,717	2,895	6.2%	5,033	4,676	358	7.1%
2004	47,418	44,338	3,080	6.5%	5,043	4,687	356	7.1%
2005	48,339	45,495	2,844	5.9%	5,065	4,718	347	6.8%
2006	49,224	46,299	2,925	5.9%	5,068	4,719	350	6.9%
2007	49,286	46,084	3,202	6.5%	5,024	4,667	357	7.1%
2008	48,734	45,010	3,724	7.6%	4,936	4,519	416	8.4%

Annual Unemployment Rate  
Grand Traverse & Michigan 1990-2008



Labor Force Grand Traverse County  
1990-2008



The US Census provides the most detailed employment information available at the Township level. The following employment industry estimates for 2006 indicate that Green Lake Township's residents share a similar employment profile with the County overall. The share of Green Lake Township residents employed in the Education and the Construction industries are slightly higher than the County; and the share in the Accommodation and Food Services industry is slightly lower in the Township than in the County.

Table 14: Comparative Employment by Industry, 2006

	Green Lake Township		Grand Traverse County		State of Michigan	
	Count	Share	Count	Share	Count	Share
Agriculture, Forestry, Fishing and Hunting	11	0.5%	137	0.4%	19,281	0.5%
Mining, Quarrying, and Oil and Gas Extraction	10	0.4%	242	0.7%	6,916	0.2%
Utilities	21	0.9%	231	0.6%	21,011	0.5%
Construction	184	7.6%	2,263	6.3%	164,972	4.2%
Manufacturing	272	11.3%	3,839	10.6%	668,103	17.0%
Wholesale Trade	77	3.2%	1,220	3.4%	170,519	4.3%
Retail Trade	344	14.3%	5,071	14.0%	440,304	11.2%
Transportation and Warehousing	41	1.7%	532	1.5%	98,979	2.5%
Information	31	1.3%	611	1.7%	67,001	1.7%
Finance and Insurance	105	4.4%	1,679	4.6%	152,023	3.9%
Real Estate and Rental and Leasing	31	1.3%	431	1.2%	52,504	1.3%
Professional, Scientific, and Technical Services	115	4.8%	1,791	4.9%	243,146	6.2%
Management of Companies and Enterprises	7	0.3%	118	0.3%	66,832	1.7%
Administration & Support, Waste Management and Remediation	75	3.1%	1,235	3.4%	234,360	6.0%
Educational Services	261	10.8%	3,665	10.1%	369,844	9.4%
Health Care and Social Assistance	440	18.3%	6,435	17.8%	509,441	13.0%
Arts, Entertainment, and Recreation	17	0.7%	328	0.9%	48,865	1.2%
Accommodation and Food Services	233	9.7%	4,070	11.2%	305,752	7.8%
Other Services	57	2.4%	971	2.7%	119,269	3.0%
Public Administration	78	3.2%	1,337	3.7%	163,820	4.2%

US Census Bureau

There is a significantly higher percentage of Green Lake residents employed in the Construction, Retail Trade, Health Care and Social Assistance industries than in the state overall. In the state overall, there is a significantly higher percentage of employment in the Manufacturing industry than in the township. The Public Administration, Administration & Support, Waste Management & Remediation, Professional, Scientific, and Technical Services, Transportation and Warehousing industries are all slightly stronger in the state overall than in the Township.

« Employment Projections

The Michigan Department of Labor and Economic Growth has projected that jobs in the region will grow by over 16,000 jobs over a ten year period beginning in 2004. It is expected that the largest growth will be experienced in the following occupational categories: Professional, Health Care, and Services.

Table 15: Employment Forecast By Major Occupational Category - 2004 - 2014 – Northwest Michigan MWA

Occupational Category	2004	2014	Employment Growth	
			Number	Percent
Total, All Occupations	141,360	157,755	16,395	11.6
Management	7,945	8,705	760	9.6
Professional	19,835	22,905	3,070	15.5
Health Care	12,065	14,620	2,555	21.2
Service	26,565	30,755	4,190	15.8
Sales	16,450	18,320	1,870	11.4
Administrative Support	19,155	19,965	810	4.2
Farming, Forestry, and Fishing	1,985	1,985	0	-0.1
Construction and Repair	14,990	16,870	1,880	12.5
Production	14,060	14,625	565	4.0
Transportation	8,305	9,010	705	8.5

Source: Michigan Department of Labor & Economic Growth Bureau of Labor Market Information and Strategic Initiatives

Table 16: Annual Job Openings by Major Occupational Category - 2004 - 2014 – Northwest Michigan MWA

Occupations	Total Openings	Growth	Replacement
Total, All Occupations	5,173	1,726	3,447
Management	211	81	129
Professional	687	308	381
Health Care	468	255	213
Service	1,251	420	830
Sales	742	190	552
Administrative Support	584	128	455
Farming, Forestry, and Fishing	56	4	52
Construction and Repair	503	190	313
Production	419	76	343
Transportation	255	76	179

Source: Michigan Department of Labor & Economic Growth Bureau of Labor Market Information and Strategic Initiatives

## Housing Profile

The purpose of this chapter is to profile the characteristics of Green Lake Township's housing characteristics. Where appropriate, the data described in this chapter is benchmarked to County and state demographics.

### « Type of Housing Structure

The following table shows that between 1980 and 2000, the US Census recorded an increase of 1,001 total housing units in Green Lake Township, an increase of 67%. Single family attached and detached units make up the majority of the housing units in the Township, 87%.

The greatest relative growth in type of housing structure was found among mobile homes, which increased by 164 over the 20 year period, or 138%. In absolute numbers, 1 unit detached or attached units increased by 923 units. The availability of multiple family units in the Township has decreased consistently over this time period. Very little multiple-family housing is found in the Township, most of these units are found at the Interlochen Center for the Arts campus.

Table 17: 1980-2000 Type of Housing Structure - Green Lake Township

Unit Type	1980	1990	2000	Number Change 1980-2000	Percent Change 1980-2000
1 unit detached or attached	1,261	1,809	2,184	923	73.2%
2-9 unit structures	92	37	30	-62	-67.4%
10 or more unit structures	31	5	7	-24	-77.4%
Mobile home	119	256	283	164	137.8%
Other	81	-	4	-77	-95.1%
Total	1,503	2,107	2,504	1,001	66.6%

Source: US Census

### « Housing Tenure

According to the US Census Bureau, the national rate of home ownership has grown from 55% of occupied homes in 1950 to 66% in 2000. In 2000, Green Lake Township's homeownership rate of over 86% of occupied homes exceeded the national rate by 20 points. With 77% percent, Grand Traverse County also surpassed the national homeownership rate in 2000.

As seen in the table below, 20% of all housing units in Green Lake are seasonal, compared to 9% in Grand Traverse County overall. Although this represents a relatively large percentage of all units in the Township, this has decreased substantially from the 1990 rate of 31%.

Out of the 1,925 year-round occupied housing units in Green Lake Township, 1,653 units or 86% are owner-occupied and 272 units or 14% are renter-occupied.

Among all vacant units in Green Lake Township, 30 units or 5% were for sale or rent in 2000. Countywide, 18% of the vacant housing units were for sale or rent in 2000.

Table 18: Housing Tenure Profile, 2000

	Green Lake Township			Grand Traverse County		
	Number	Percent		Number	Percent	
		Total Units	Occupied or Vacant Units		Total Units	Occupied or Vacant Units
Total Occupied Units	1,925	77%	100%	30,396	87%	100%
Owner occupied	1,653	66%	86%	23,494	67%	77%
Renter occupied	272	11%	14%	6,902	20%	23%
Total Vacant housing units	579	23%	100%	4,446	13%	100%
For sale or rent	30	1%	5%	816	2%	18%
For seasonal; recreational; or occasional use	507	20%	88%	2,983	9%	67%
Other vacant	42	2%	7%	647	2%	15%
Total housing units	2,504	100%		34,842	100%	

Source: US Census

#### « Age of Structure

Data in the following table compare the age of the housing stock in Green Lake Township, Grand Traverse County and Michigan. Generally, homes 50 years or older are considered candidates for demolition or major repair. At the time of the 2000 Census, about 8% of the Township's housing stock was built before 1949, as compared to 18% for the County and 28% for the State.

Approximately 32% of the Township housing stock was less than ten years old in 2000. In general, the Township housing is somewhat newer than in the County as a whole, and considerably newer than in the State. According to County Building Permit records, 533 new residential (including the placement of manufactured housing) permits were issued between 2000 and 2008.

The US Census in 2000 reported that the median year that residential structures were built in Green Lake Township was 1980, in the County the median year was 1977, and in the State, 1965.

Table 19: Comparative Age of Structure, 2000

Year Structure Built	Green Lake Township		Grand Traverse County		Michigan	
	Number	Percent	Number	Percent	Number	Percent
Total:	2,504	100%	34,842	100%	4,234,279	100%
Built 1999 to March 2000	86	3%	1,642	5%	91,872	2%
Built 1995 to 1998	394	16%	3,799	11%	272,594	6%
Built 1990 to 1994	314	13%	3,782	11%	259,389	6%
Built 1980 to 1989	438	17%	6,203	18%	446,197	11%
Built 1970 to 1979	573	23%	7,743	22%	722,799	17%
Built 1960 to 1969	267	11%	2,773	8%	602,670	14%
Built 1950 to 1959	230	9%	2,686	8%	706,799	17%
Built 1940 to 1949	93	4%	1,667	5%	416,500	10%
Built 1939 or earlier	109	4%	4,547	13%	715,459	17%

Source: US Census

« Recent Building Activity

Grand Traverse County building permit records from 2000 through 2008 indicate that a total of 533 new construction residential permits (including mobile homes) were issued during the 9 year period. This represents an annual average of 59 units per year.

It must be noted, however, that the pace of new housing construction has slowed considerably starting in 2007 throughout the region and most of the nation. In 2008, only 16 residential permits were issued. At this writing, the new home construction pace continues to be slow. Long term forecasts indicate more of the same due to high rates of unemployment in the State, higher standards for mortgage lending nationwide, a high incidence of residential foreclosures, high vacancy rates, and a net out-migration of residents in Michigan.

Table 20: Recent Residential Construction Activity, Green Lake Township

	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
Residential Building Permits	84	37	74	76	75	64	61	46	16	533

Source: Grand Traverse County

« Housing Values

Data in the following table shows that the median value of owner-occupied year-round housing in Green Lake Township was \$114,300 in 2000, \$16,100 less than the median housing value of \$130,400 for Grand

Traverse County and \$1,300 below the median housing value of \$115,600 for the State. In 2000, median rent in the Township was \$489, as compared to \$554 for the County and \$468 for the State.

Table 21: Comparative Distribution of Housing Values, 2000

	Green Lake Township		Grand Traverse County		Michigan	
	Number	Percent	Number	Percent	Number	Percent
Total:	1,320	100%	17,669	100%	2,269,175	100%
Less than \$50,000	16	1%	344	2%	224,603	10%
\$50,000 to \$99,999	455	34%	4,269	24%	711,648	31%
\$100,000 to \$149,999	467	35%	6,573	37%	603,454	27%
\$150,000 to \$199,999	165	13%	2,825	16%	339,716	15%
\$200,000 to \$499,999	217	16%	3,191	18%	356,123	16%
\$500,000 or more	-	0%	467	3%	33,631	1%
Median Value	\$114,300		\$130,400		\$115,600	
Total Contract Rent	227	100%	6,376	100%	933547	100%
Less than \$400	64	28%	1386	22%	328765	35%
\$300 to \$599	101	44%	2610	41%	361820	39%
\$600 to \$999	62	27%	2260	35%	209209	22%
\$1000 or more	0	0%	120	2%	33753	4%
Median Contract Rent	\$489		\$554		\$468	

Data in the following table compare housing value trends, and shows that the median Township housing value was also less than that of Grand Traverse County in 1990 and 1980 but that the gap was less than the rate of increase in median housing values and median rents was greater in Green Lake Township and the State overall.

Table 22: Comparative Housing Value Trends

Place	Median Value of Specified Owner-Occupied Housing Units				
	1980	1990	Percent Change 1980-1990	2000	Percent Change 1980-1990
Green Lake Township	\$40,500	\$57,500	42%	\$114,300	99%
Grand Traverse County	\$45,000	\$66,700	48%	\$130,400	96%
Michigan	\$39,000	\$60,600	55%	\$115,600	91%
Place	Median Value of Specified Renter-Occupied Housing Units				
	1980	1990	Percent Change 1980-1990	2000	Percent Change 1980-1990
Green Lake Township	\$192	\$320	67%	\$489	147%
Grand Traverse County	\$219	\$377	72%	\$554	47%
Michigan	\$196	\$343	75%	\$468	36%

« Housing Needs Assessment

Housing need is based upon the projected population for the planning period and the number of housing units needed to accommodate anticipated growth. Further, the population must be calculated based upon the average number of persons per housing unit and the percentage of housing that is seasonal or vacant for sale/rent.

In the chapter discussing the population of Green Lake Township, it was determined that in the planning year (2030) population would be approximately 6,806 persons (based on the projection performed by the Northwestern Michigan Council of Governments using a age/sex cohort model methodology). In 2000, the rate of persons per household was 2.58. This represented a significant decline from 1990, when the rate was 2.75 persons per household. It is expected that this rate will continue to decline, it is estimated here that by 2030, the rate of persons per household will be 2.3.

Using these factors, data in the following table reveal the projected growth in new, year-round and seasonal housing by 2030. It is expected that total housing stock will grow by 14.2 percent (423) to accommodate growth in year-round units (530). The seasonal vacancy rate is projected to decline by 23%. The decline in seasonal housing stock is based upon the assumption that many of the existing seasonal units will be either converted to year round units or will need to be demolished due to advanced age and poor condition during the 23 year period.

If the growth in housing results from new construction, then an annual average of 18.3 units will be constructed during the period of 2008-2030. This is lower than the annual average of 59 new units annually between 2000 and 2008, but is more in line with the experience in 2008, when 16 permits for new housing units were issued.

Table 23: Estimated Housing Unit Requirements

	2000	2007 est.	Annual Rate Change 2000-2007	2030	Change 2007-2030	
					Number	Percent
Total Population	5009	5333	0.9%	6806	1473	27.6%
Persons per Household	2.58	2.4	-1.0%	2.3	-0.1	-4.2%
Total Occupied Year Round Units	1925	2432	3.8%	2959	527	21.7%
Vacancy Rate	2.9	2.9	0.0%	2.9	0	0.0%
Vacant for Sale/Rent	30	86	26.8%	99	12	14.2%
Total Year Round Units	1955	2518	4.1%	3048	530	21.0%
Seasonal Vacancy Rate	20.2%	15.4%	-3.4%	12.0%	-0.03	-21.9%
Vacant Seasonal Units	507	457	-1.4%	350	-107	-23.4%
Total Units	2504	2975	2.7%	3398	423	14.2%

## Transportation Profile

The chapter profiles the local transportation system. Data reviewed includes the functional hierarchy of Township roads, road surface condition, location of traffic control devices, safety issues, and traffic volumes. Information considered in this chapter was generated from data from the Michigan Department of Transportation, the Grand Traverse County Road Commission, and TC-TALUS.

### « Road Hierarchy

Township roads are classified according to a four level functional hierarchy: state trunk line, county primary, county local, and private.

State trunklines are maintained by the state and typically handle the highest volume of traffic within an area. The state trunklines in the community are US 31 and M-137. US 31 bisects the northern portion of the community from east to west and M-137 bisects Green Lake township from north to south. The length of these roads in the Township totals 9.2 miles. Both roads are paved and carry large volumes of traffic heading through the Interlochen area.

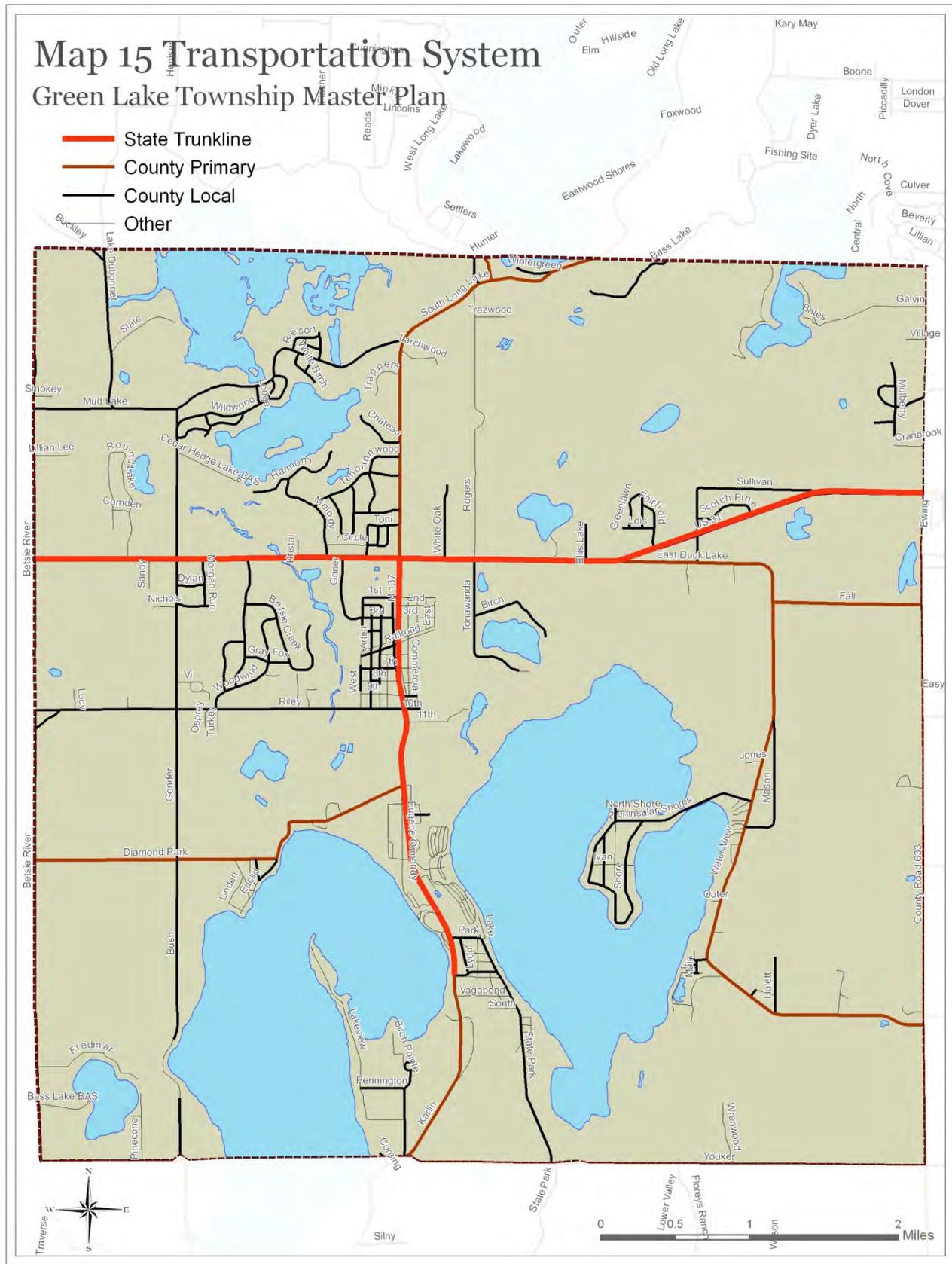
County primary roads are paved roads with traffic signals at heavily traveled intersections and stop signs at intersections that collect and distribute traffic to and from County local roads. In Green Lake Township, there are 17.99 miles of County primary roads. County primary roads are listed in the following table.

Table 24: County Primary Roads in Green Lake Township

Road	Location	Mileage
Betsie River Road	Benzie County Line to east	.89
Diamond Park Road	Benzie county line to M-137	2.71
E Duck Lake Road	County Road 633 to USE 31	5.32
W. Long Lake Road	South Long Lake Road to Township Line	0.17
Youker Road	County Road 633 to Karlin Road	3.23
Karlin Road	Township line to M-137	1.33
Fall Road	County Road 633 to E Duck Lake Road	1.01
County Road 633	Youker Road to east Township line	4.20

Local roads are designed to provide vehicular access to abutting properties and to discourage through traffic. Local roads may be paved or unpaved. Local roads are typically one of two types: residential or business. Examples of local residential roads are residential subdivision roads and the rural segments of section line roads. An example of a local business road is a business or industrial park road. In Green Lake Township, there are a total of 41.23 miles of local roads. Of the local roads, 21.21 miles are paved, 9.55 miles are gravel local roads, and 10.47 miles are unimproved. Some local roads are seasonal and are only open during the summer months.

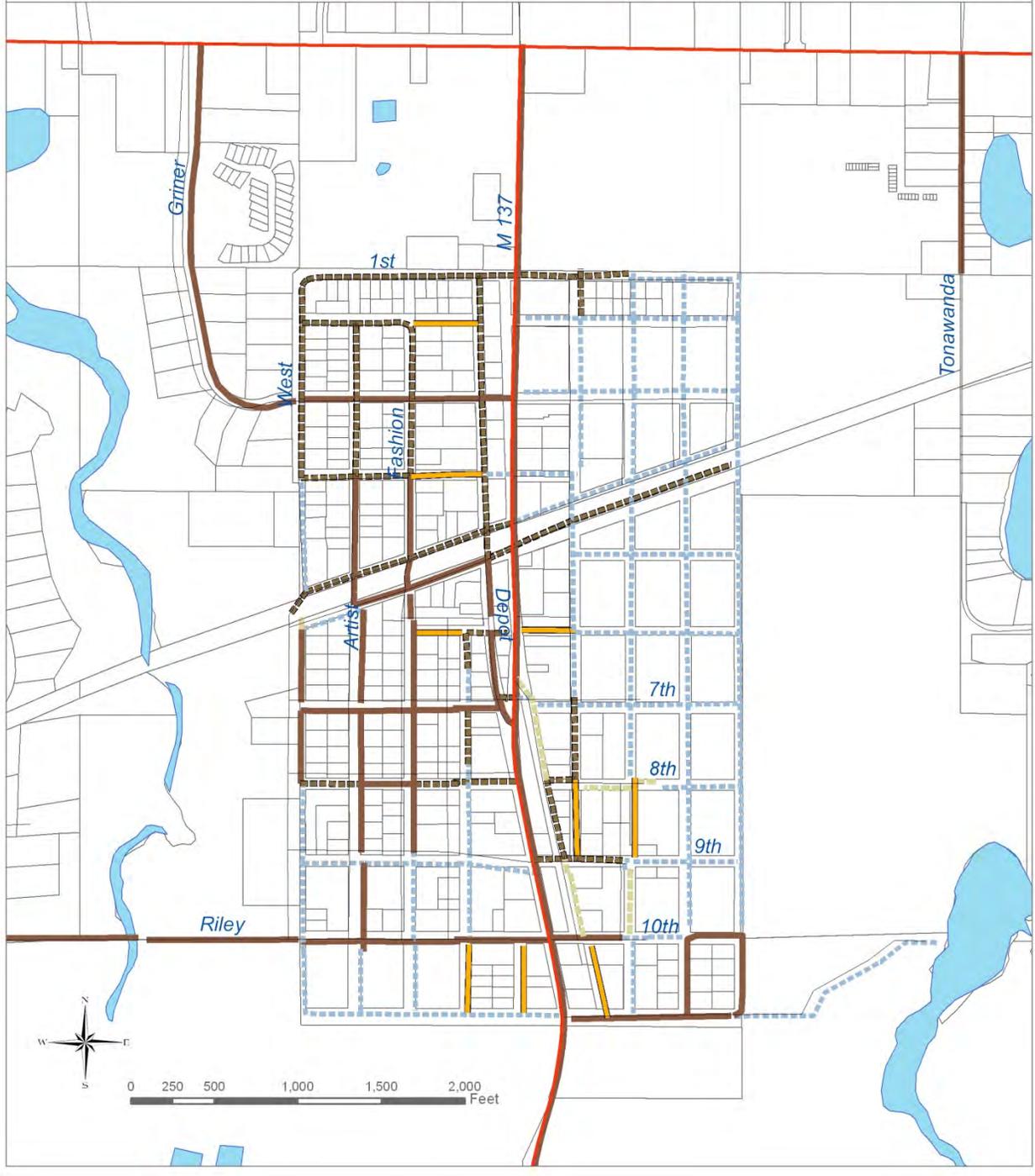
Numerous private roads also exist in Green Lake Township. These are maintained by private individuals and may be paved or unpaved. Some of these roads are also seasonal.



# Map 16 Village Area Roads

Green Lake Township Master Plan

-  State Highway
-  Paved Road
-  Gravel Road
-  Two Track
-  Undeveloped ROW
-  Abandoned ROW



« Traffic Control Devices

Traffic control devices include standard traffic signals with green, amber, and red lights, and flashing traffic signals with red and amber lights. The intersection of US31 and M-137 is a signalized intersection. Most other intersections are controlled using stop signs.

« Safety and Circulation Issues

Safety issues may be either existing problems or potential problems in the current road network. There are four main safety concerns: inadequate street offsets, excessive curb cuts, unsafe pedestrian crossings, and non-continuity of the road systems.

Inadequate street offsets occur when intersecting roads do not have proper alignment (they are not straight across or do not intersect at right angles at their intersection). Only two inadequate street offsets were noted.

Excessive curb cuts in areas where there are high speeds, such as US 31 are a significant safety concern. On county roads such as Karlin Road and Duck Lake Road where there are excessive curb cuts for private residential driveways may result in turning conflicts and is a concern. In the Interlochen Village area, excessive curb cuts may actually help to slow traffic and provide more visibility for businesses. The traffic calming benefits of the turning conflicts may be outweighed by the hazards for vehicles and pedestrians. Other means of slowing traffic and making drivers aware of activity areas along M-137 should be explored.

Pedestrian crossing at the Intersection of M-137 and US 31 is currently not safe and comfortable for the average pedestrian. There are other natural crossing points along M-137 that are not signalized at all. These are even more dangerous for pedestrians. It is important that the Township continue to work with MDOT and the Interlochen Improvement District Authority to find means to improve pedestrian safety in the Interlochen village area, especially at the intersection of US 31 and M-137.

Another issue of concern in the region is the lack of interconnectivity of local roads. Private roads are common in new residential developments. Because these roads are privately maintained by individual homeowner association, requiring interconnectivity raises is usually not well received. However, the lack of connectivity results in an inefficient circulation system that causes an over dependence on county roads, and poor access for emergency vehicles.

As shown on Map 16, the road system in the Interlochen village area is incomplete. This is due in large part to the presence of wetland in significant portions of the village's plat. Sections of Fashion, Artist, West, Seventh, and Eighth Streets were paved in 2005 through a special assessment.

« Traffic Counts

Traffic count data was obtained from the Michigan Department of Transportation for 1996 through 2008 for sections of US 31 and M-137. Counts decline in some cases from one year to the next, but over time, the traffic counts have increased overall during this time period on US 31 and have remained relatively steady on M-137.

Table 24: Annual Average 24-Hour Traffic Volumes State Roads in Green Lake Township

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
US 31 East of M-137	11,083	11,415	10,392	10,579	10,843	16,142	15,615	15,756	15,819	11,336	15,273	15,029	14,789
US 31 West of M-137	6,589	8,507	9,154	9,319	9,552	12,656	12,738	12,853	13,225	12,987	12,766	10,386	12,371
M-137 at Interlochen	6,262	7,090	5,366	5,457	5,512	6,333	4,907	4,824	4,819	6,372	5,257	5,115	4,818

The following are traffic counts performed by the Grand Traverse County Road Commission for county and State roads in the Township. Some of this data is more than 10 years out of date, but serves as a reference point. Of the counts available, South Long Lake Road, County Road 633 are the county roads with the highest amount of traffic (roughly 5,000 daily trips). Fall, Karlin, and Riley Roads have between approximately 1,000 and 2,500 trips per day. Diamond Park, East Duck Lake, Gonder, Mud Lake, Sullivan, and Wildwood Roads have less than 1,000 trips per day.

Table 25: 24 Hour Traffic Counts Green Lake Township

Road Name	Classification	Point (Location)	Count	Date
Co Rd. 633	Primary	1370' S Of Blair Townhall	3,159	8/9/96
Co. Rd. 633	Primary	250' S Of Vance	5,437	8/25/96
Co. Rd. 633	Primary	North Of Youker	4,885	8/13/01
Diamond Park	Primary	At Bridge	745	8/19/98
East Duck Lake Road	Primary	950' East From US-31 S	953	9/25/06
Fall Road	Primary	775' East From East Duck Lake Road	1,282	9/25/06
Gonder	Local Paved	Btw Wildwood & Cedar Hedge	840	9/1/97
Karlin Rd.	Primary	2650' South Of Vagabond Rd.	2,421	10/24/2008
M-137 (Karlin Rd)	State Hwy	North Of Youker	3,543	7/16/01
Mud Lake	Local Paved	W Of S Long Lake	383	9/1/97
Pine Tree	Local Paved	525' S Of Sullivan	217	8/21/96
Riley Road	Local Paved	1200' West Of M-137	2,212	9/23/2009

GREEN LAKE TOWNSHIP MASTER PLAN 2011

Road Name	Classification	Point (Location)	Count	Date
South Long Lake Road	Primary	500' N Of US-31	4,757	6/14/96
South Long Lake Road	Primary	1500' N Of US-31	5,671	8/1/97
South Long Lake Road	Primary	200' N Of US-31	5,913	6/23/03
South Long Lake Road	Primary	North Of US-31	6,513	7/16/01
South Long Lake Road	Primary	200' N Of US-31	5,145	4/30/02
South Long Lake Road	Primary	700' N Of US-31	5,797	6/21/04
South Long Lake Road	Primary	0.25 Miles North From Wintergreen Avenue	5,620	6/9/05
South Long Lake Road	Primary	0.2 Miles North From Mud Lake Road	7,213	6/9/05
South Long Lake Road	Primary	750' North Of US-31	5,761	6/13/05
South Long Lake Road	Primary	480' North From Wintergreen Ave., Speed, E. Side	5,121	8/9/05
South Long Lake Road	Primary	750' North From US-31 S	5,796	6/12/06
South Long Lake Road	Primary	750' North Of US-31	4,897	9/10/2008
South Long Lake Road	Primary	200' North Of US-31	5,802	9/8/2009
Sullivan	Local Unpaved	425' W Of US-31	329	8/21/96
US-31	State Hwy	East Of Gonder	15,450	7/16/01
Wildwood	Local Paved	E Of Cedar Trail	90	9/2/97



GREEN LAKE TOWNSHIP BOARD RESOLUTION #2-11-13

RESOLUTION OF ADOPTION OF THE SECOND AMENDMENT TO THE  
GREEN LAKE TOWNSHIP MASTER PLAN & ADOPTION OF THE  
INTERLOCHEN GATEWAY MASTER PLAN

WHEREAS, the Planning Enabling Act 33 of 2008, as amended, allows the Township Board to assert the right to approve or reject a master plan or amendment thereto and the Township Board has asserted this right; and

WHEREAS, the Green Lake Township Planning Commission held several workshops involving the Township Board members, Planning Commission membership, the Interlochen Downtown Development Authority, and many members of the general public during development of the Interlochen Gateway Master Plan; and

WHEREAS, the Planning Commission has drafted amendments to the Master Plan document to incorporate by reference the Interlochen Gateway Master Plan, a subarea plan; and

WHEREAS, the Planning Commission has submitted the proposed Master Plan amendment to the Township Board for review prior to distributing the Plan for comment as required under Section 41 of the Act; and

WHEREAS, the Planning Commission held a public hearing as required under Section 43 of the Act on January 28<sup>th</sup>, 2013.

THEREFORE, let it be resolved to

Approve and adopt the second amendment to the Green Lake Township Master Plan and the Interlochen Gateway Master Plan.

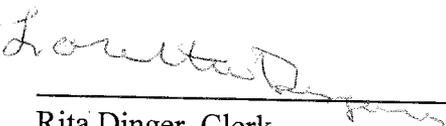
Moved: McDonald Supported: Radtke

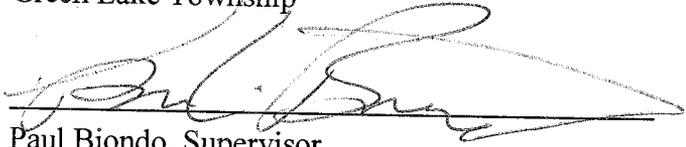
Yeas: 7

Nays: None

Absent: None

Resolution declared adopted February 11, 2013

  
\_\_\_\_\_  
Rita Dinger, Clerk  
Green Lake Township

  
\_\_\_\_\_  
Paul Biondo, Supervisor  
Green Lake Township

GREEN LAKE TOWNSHIP PLANNING COMMISSION  
RESOLUTION OF ADOPTION OF THE SECOND AMENDMENT TO THE  
GREEN LAKE TOWNSHIP MASTER PLAN & ADOPTION OF THE  
GATEWAY MASTER PLAN

WHEREAS, the Planning Enabling Act 33 of 2008, as amended, allows the Township Board to assert the right to approve or reject a master plan or amendment thereto and the Township Board has asserted this right; and

WHEREAS, the Green Lake Township Planning Commission held several workshops involving the Township Board members, Planning Commission membership, the Interlochen Downtown Development Authority, and many members of the general public during development of the Interlochen Gateway Master Plan; and

WHEREAS, the Planning Commission has drafted amendments to the Master Plan document to incorporate by reference the Interlochen Gateway Master Plan, a subarea plan; and

WHEREAS, the Planning Commission has submitted the proposed Master Plan amendment to the Township Board for review prior to distributing the Plan for comment as required under Section 41 of the Act; and

WHEREAS, the Planning Commission held a public hearing as required under Section 43 of the Act on January 28<sup>th</sup>, 2013.

THEREFORE, let it be resolved to

Approve the second amendment to the Green Lake Township Master Plan and the Interlochen Gateway Master Plan and recommend approval of same to the Township Board.

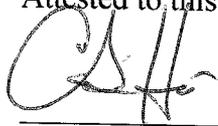
Moved: Kopriva                      Supported: Hintz

Yeas: Schuster, Jackowski, Karle, Hintz, Kopriva

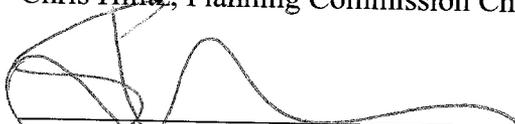
Nays: None

Absent: McDonald, Schworm

Attested to this 28<sup>th</sup> day of January, 2013



Chris Hintz, Planning Commission Chair



Sara Kopriva, Planning Commission Secretary

Green Lake Township  
Grand Traverse County, Michigan

A Resolution to Adopt  
Green Lake Township Master Plan 2011

WHEREAS, in the fall of 2009, Green Lake Township initiated a process to update its Master Plan for the future development of the Township in accordance with the requirements of the Michigan Planning Enabling Act ("the Act"), which is Public Act 33 of 2008 as amended; and

WHEREAS, this Master Plan is intended to be the plan as provided for in the Act, and incorporated into this Master Plan is the zoning plan referred to in the Act as the basis for the Township's Zoning Ordinance; and

WHEREAS, the purposes of this Master Plan are to promote public health, safety and general welfare; to encourage the use of resources in accordance with their character and adoptability; to provide for planned orderly land use and development; to avoid the overcrowding of land by buildings or people; to lessen congestion on public roads and streets; to ensure that land uses will be situated in appropriate locations and relationships; and to meet the needs of residents for places of residence, recreation, industry, trade, service and other uses of land; and

WHEREAS, on June 14, 2010, the Green Lake Township Board approved distribution of the draft Master Plan to Grand Traverse County Planning Commission and to other adjacent municipalities for their review and comment; and

WHEREAS, on August 23, 2010, the Planning Commission held a public hearing on the Master Plan after publishing a notice about the hearing and making copies of the Master Plan available for review by the public, and distributing the notice and plan to all required governmental entities; and

WHEREAS, on January 24, 2011, the Planning Commission referred the Plan to the Township Board for consideration and final approval in accordance with Section 43(3) of the Act and the adopted Township Board resolution asserting the right to approve or reject the Plan.

NOW, THEREFORE, BE IT RESOLVED that the Green Lake Township Board, in accordance with the Michigan Planning Enabling Act, hereby adopts the Green Lake Township Master Plan, 2011 for the future development of the Township and as the basis for the Township's Zoning Ordinance, and directs that copies of the adopted Master Plan be forwarded to all entities as required by Section 43(5) of the Act.

Moved by Bieganowski    Seconded by Radtke

Ayes:    West, Schroeter, Radtke, McDonald, Dinger, Bieganowski, Biondo.

Nays:    0

Attested by:

  
\_\_\_\_\_  
Rita Dinger, Township Clerk

Date: May 9, 2011