



2014-2018 RECREATION PLAN

WHITE LAKE TOWNSHIP “The Four Seasons Playground”

Prepared by
White Lake Township
Parks and Recreation Committee

Assisted by
Clearzoning, Inc.
www.clearzoning.com

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CHAPTER 1 - INTRODUCTION & DESCRIPTION OF RECREATION PLANNING PROCESS

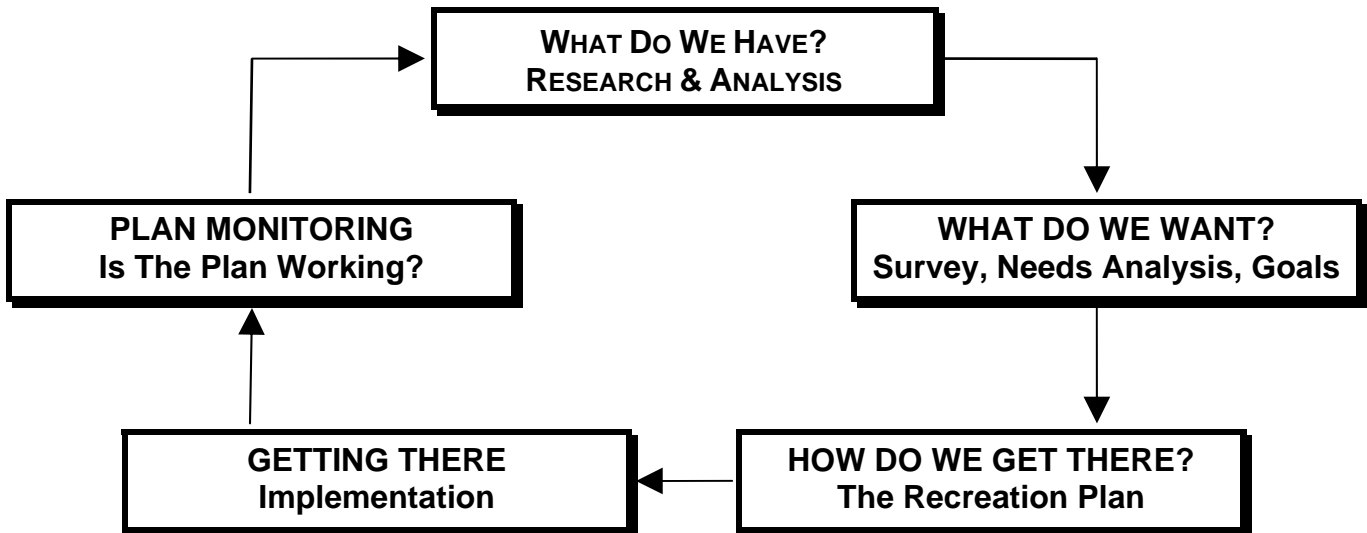
INTRODUCTION

This Recreation Plan has been prepared by the White Lake Township Parks and Recreation Committee and adopted by the White Lake Township Board of Trustees. The Plan is intended to guide future Township parks and recreation programs, services, operations and maintenance for the five year term of the Plan. In addition, the Plan is intended to form the basis for future application for recreation grant funding from the Michigan Department of Natural Resources and other granting agencies and foundations.

DESCRIPTION OF RECREATION PLANNING PROCESS

The recreation planning process in White Lake Township is intended to involve residents from a broad cross-section of the Township's population. Responsibility for recreation planning rests with the Parks and Recreation Committee, Planning Commission (through the Master Plan) and Township Board. The Township Board, as the legislative body, maintains ultimate authority for recreation planning and budgeting in the Township. The Township receives assistance in recreation and general planning matters from a planning consultant.

The recreation planning process followed this 5-step general framework:



WHAT DO WE HAVE?

With the assistance of the Community Development Department and the Township's planning consultant, the Township Parks and Recreation Committee analyzed the basic demographic characteristics and natural features of the Township. They then reviewed an inventory of existing recreational programs and facilities within the Township and region. Finally, this information was used to form a comparison of existing recreational facilities with projected needs based on recreation standards.

WHAT DO WE WANT?

The above information was then used to provide the basis for an understanding of the types of recreational facilities currently serving the Township's residents and what future needs will be based on population projections. In order to gather public input the Community Development Department held a Public Visioning Workshop for Township residents to solicit feedback on desired recreational facilities (results are detailed in the Public Input Chapter 10) this was done along with an Online Parks and Recreation Survey. The survey was available for approximately thirty (30) days and was geared toward both residents and visitors of White Lake. This information, along with the comments of the Township Parks and Recreation Committee and Township Board, were then synthesized into a series of goals and objectives for the Recreation Plan.

HOW DO WE GET THERE?

The Goals and Objectives formed the basis for the five-year Recreation Plan. There is a direct link between the community survey, needs assessment, Parks and Recreation Committee, Township Board, public comments, and the Recreation Plan. The Community Development Department prepared a suggested five-year Recreation Plan framework for consideration by the Township based upon the goals and objectives. The Parks and Recreation Committee then finalized a draft Recreation Plan for consideration and adoption by the Township Board after proper notice and public hearing. (See Appendix for public hearing notices and minutes of meetings).

GETTING THERE

This phase will involve the implementation of the Recreation Plan. Included will be consideration of funding alternatives such as Township general fund monies, application for State recreation grants as well as other grant opportunities where appropriate.

PLAN MONITORING

This phase will occur periodically, at least every five years. It is intended to review the goals and objectives of the Recreation Plan as well as to determine the Township's progress in achieving the five-year action plan.

CHAPTER 2 - ADMINISTRATIVE STRUCTURE & BUDGET

ADMINISTRATIVE STRUCTURE

RECREATION PLANNING

The ultimate responsibility for expenditure of funds to provide recreational facilities, programs, and maintenance in White Lake Township rests with the White Lake Township Board of Trustees. Funding for parks and recreation comes from the Parks and Recreation Fund. The Township Board has created a Parks and Recreation Committee. This Committee is charged with determining public need for various types of recreational facilities and formulating plans for their development and operation. The Parks and Recreation Committee and the Community Development Department are responsible for the development of this Recreation Plan.

The Planning Commission is also responsible for recreation planning and acts in an advisory capacity to the Board, which maintains long-term recreation policy and programming responsibility. The Planning Commission's statutory authority is provided by Public Act 33 of 2008, The Michigan Planning Enabling Act. The Planning Commission has adopted the Township Master Plan which includes a recreational component based on the findings and recommendations of this Plan. Throughout development of both plans a key goal is to coordinate goals, objectives and analysis in order to ensure compatibility, where appropriate.



TOWNSHIP RECREATION FACILITIES AND MAINTENANCE

The Township currently has several recreational facilities, including the Judy Hawley Memorial Field, Hidden Pines Park, Bloomer Park the Vetter Memorial Field and Dublin Senior Center, the Old Township Hall site, and the historic Fisk Farm. In addition, the Hess-Hathaway Park, which is located within Waterford Township (immediately east of White Lake Township), was a bequest to the Waterford and White Lake communities. The park is a part of the Waterford Township park system, but White Lake Township has one representative on the Hess-Hathaway Park Committee. These facilities are discussed in more detail in the Recreation Inventory and Analysis chapter below.

The Township's current recreation budget expenditures are associated with the maintenance and improvement of these facilities. The Township is furthering the recreation planning process through development of this Recreation Plan in order to develop a recreation program that meets the current and future recreation needs of Township residents.



TOWNSHIP PARKS & RECREATION BUDGETS

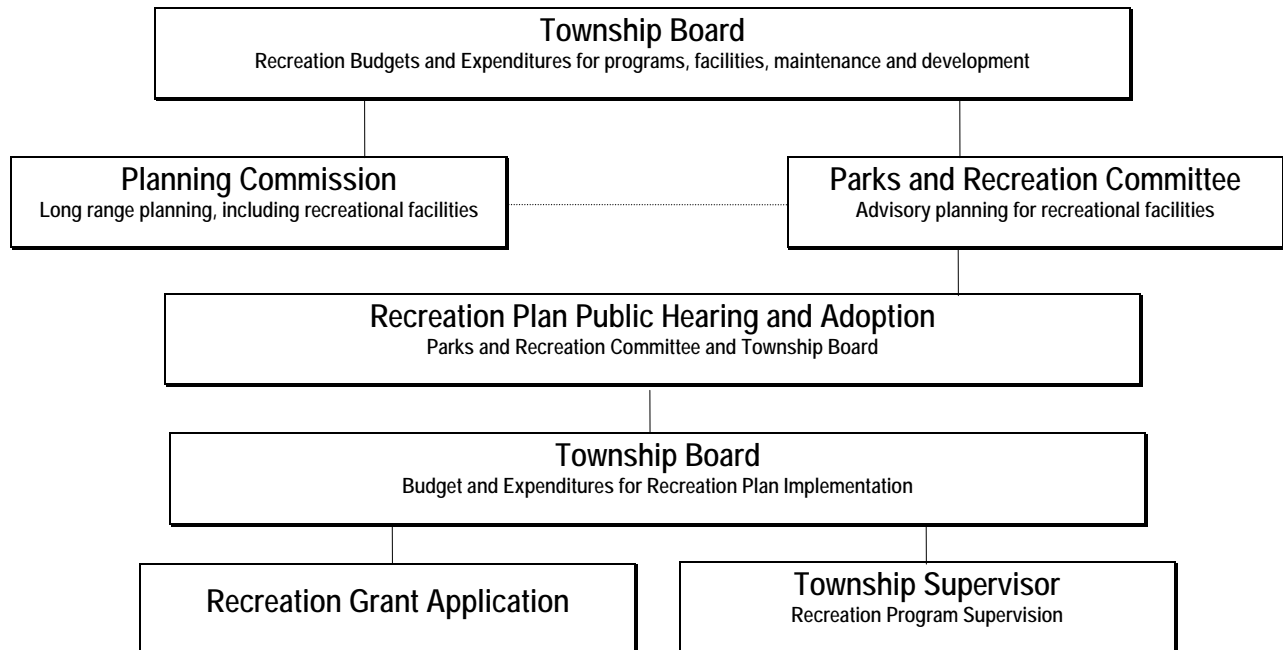
Prior to 2007, Parks and Recreation revenues and expenditures were accounted for under the general fund. In 2006, a millage was passed that created a new, separate parks and recreation fund beginning in 2007. The last year of collection for the Parks Mileage was 2011 which is illustrated in Table 2-1 below. The Parks and Recreation fund currently generates revenue from rental fees for the use of Township park facilities and from interest collected on prior revenue. Currently, no general fund money is used for parks and recreation purposes. Table 2-1 below details White Lake Township's recent revenues and expenditures for parks and recreation services.

Table 2-1
Parks and Recreation Fund Revenue and Expenses 2009-2012

	Revenue	Expenses
2009	\$385,641	\$68,722
2010	\$370,641	\$35,269
2011	\$310,671	\$238,591
2012	\$15,257	\$543,176

RECREATION ADMINISTRATIVE STRUCTURE - ORGANIZATIONAL CHART

The following flow-chart outlines the administrative structure for recreational services and programs in White Lake Township:

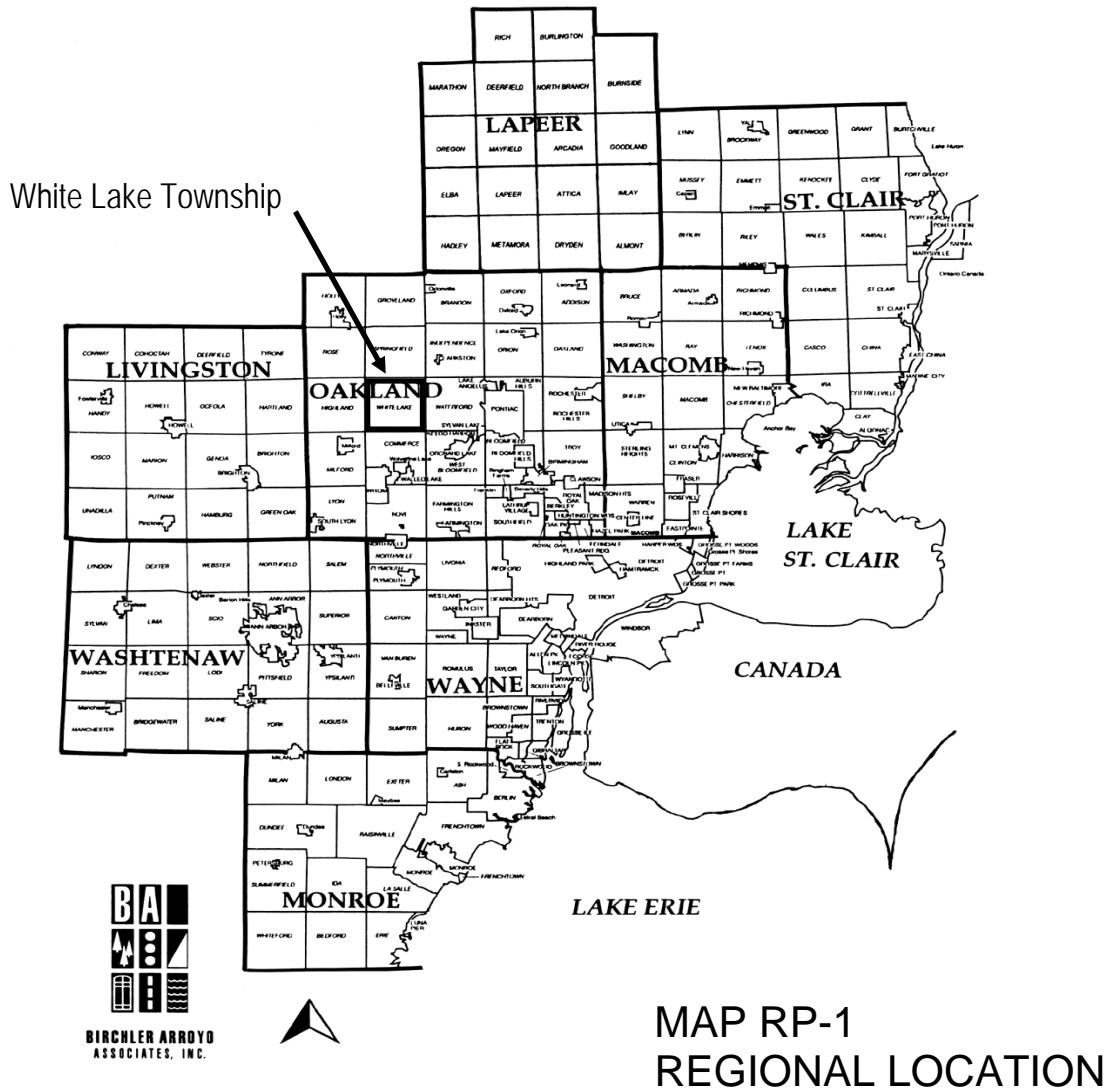


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CHAPTER 3 – COMMUNITY DESCRIPTION

REGIONAL LOCATION

White Lake Township is located in west Oakland County, along the M-59 corridor between Lansing and Pontiac. The Township is bordered by Springfield Township to the north, Waterford Township to the east, Commerce Township to the south and Highland Township to the west. White Lake Township is approximately 30 miles northwest of downtown Detroit, 40 miles east of Lansing, 30 miles south of Flint, and 30 miles north of Ann Arbor. (See Map RP-1)



POPULATION

The population of a community is a basic ingredient in recreation planning. Population trends can be used in various ways to illustrate current and future needs. Proper planning of future community recreational services and facilities must take into consideration the composition and characteristics of the current and future population of the Township.

The Township’s population, Recreation Plan and Master Plan are interrelated. The Recreation Plan must be formulated to accommodate the community’s expected population, while the future population is somewhat governed by the community’s long-range goals and objectives as detailed in the Master Plan. Numerous forces work to determine the total population at any given time. The location of jobs, regional road network, housing supply, local amenities, and available land are just a few of the forces that can affect a community’s population growth, both positively and negatively. The consequences of change in population make its study an important part of planning for White Lake Township’s future.

POPULATION GROWTH

Table 3-1 shows a comparison of population change from 2000 to 2010 for White Lake Township and several surrounding communities. During this time period White Lake Township experienced very low growth along with the majority of the other surrounding communities. This trend is also visible when looking at Oakland County as a whole whose population remained largely unchanged. The State of Michigan was one of only three States in the Country to loose population in the period from 2000-2010. This low growth rate in population can be attributed to social and economic factors that occurred during this time period including loss of jobs in the manufacturing sector of the economy, and the aging of the population in general.

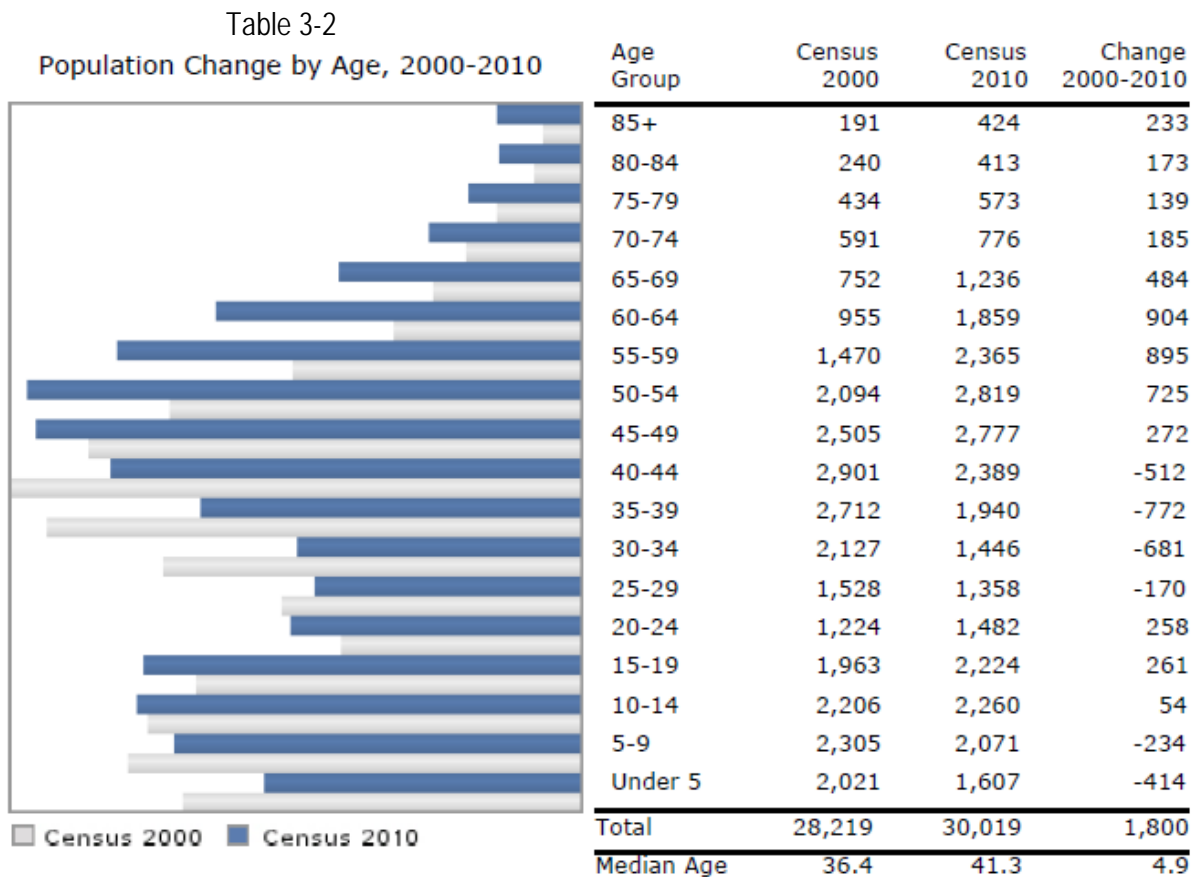
Table 3-1
Population Comparison, 2000-2010
White Lake Township and Selected Adjacent Communities

Community	2000	2010	% Change
White Lake	28,219	30,019	6.3%
Commerce Township	34,764	40,186	15.5%
Highland Township	19,169	19,202	0.1%
Independence Township	32,581	34,681	6.4%
Springfield Township	13,338	13,948	4.5%
Waterford Township	73,150	71,707	-1.9%
Oakland County	1,194,156	1,202,362	0.6%
State of Michigan	9,938,444	9,883,640	-0.5%

Source: US Census Bureau

POPULATION AGE

Table 3-2 below illustrates the population change by age from 2000-2010. This table highlights the fact that Children in the age range from infants to the age of nine years old have decreased along with family formation aged adults between the ages of 25 and 44 years of age. These statistics illustrate that younger aged residents have moved out of the Township and relocated to either new communities or out of the State of Michigan. Also, this table illustrates the population increase in older adults between the ages of 50 and 69 years of age. This trend is a national trend as the baby boom generation, those born between 1946 and 1964, begin reaching the age of retirement. These trends will have a significant impact on the recreational needs of the Township over the next five to ten years. White Lake will need to provide for the recreational needs of retirement age residents and seniors while providing opportunities that will attract and retain family aged adults.



Age groupings generally define several social categories. The preschool group includes those less than five years of age. Those from age 5-14 make up the elementary/middle school age group, while the high school sector includes those between 15 and 19 years. The bulk of the work force is found between age 20 and 64, with the 31-44 year age group representing family formation years. Individuals from 45 to 64 years of age represent mature families and persons 65 and up represent the retiring population.

HOUSEHOLDS AND HOUSEHOLD TYPES

The 2010 Census indicated that there are 11,262 households in White Lake Township. The average

household size in White Lake Township is 2.66 persons per unit, which is a continued decrease from the 2000 figure of 2.77. Oakland County's average household size dropped from 2.51 persons per unit in 2000 to 2.46 persons per unit in 2010. A combination of factors is behind the shrinking of the American household. The "Three F's" Family, Freedom, and Finance can explain the smaller household. With more widely available transportation options and changing social norms, more young adults leave the home sooner and older adults remain on their own and independent from their children after retirement. The ability to move about the country more freely has contributed to the work force age population following employment and putting off family formation until later in life. Better wages and higher income have helped to make this freedom and mobility possible. Other social factors that may contribute to the decrease in household size include delaying marriage, having fewer children, and single parent households. **Table 3-3** illustrates the fact that in White Lake many seniors over the age of 65 years are living alone, and that those households with two or more persons without children are more prevalent than homes with children.

Table 3-3

Household Types	Census 2000	Census 2010	Pct Change 2000-2010
With seniors 65+	1,524	2,520	65.4%
Without seniors	8,568	8,742	2.0%
Two or more persons without children	4,133	4,965	20.1%
Live alone, 65+	450	882	96.0%
Live alone, under 65	1,329	1,406	5.8%
With children	4,180	4,009	-4.1%
Total Households	10,092	11,262	11.6%

PERSONS WITH DISABILITIES

The 2009-2011 American Community Survey Statistics (US Census) figures indicate that approximately 3,080 Township residents over the age of 5 are disabled (work, mobility or self-care). This constitutes 10.3% of the population. It is important to note that among the population over age 65, 26.6% have identified as being disabled. 3,080 is a reduction of about 908 people identifying as being disabled in the Township since 2000 which reported 3,988 disabled people. The reduction can likely be attributed to the increase in the number of medical treatment centers throughout Southeast Michigan, better overall care being provided to patients, and a renewed societal emphasis on healthy living.

FUTURE PROJECTIONS

It is important to have a good estimate of the future population so that planning activities for recreation services and facilities can occur within the context of both current and future populations. The Southeast Michigan Council of Governments (SEMCOG) is a regional planning agency that provides population and economic data for its membership including White Lake Township. SEMCOG produced a document in April 2012 titled "Southeast Michigan 2040 Forecast Summary". The document states that Southeast Michigan including White Lake will see modest growth in households and jobs between the periods of 2010-2040. However, the population will grow very little over this same time period only 0.8%. Job growth will be modest over the next 30 years as the manufacturing sector of Michigan is reorganized and new jobs are created in the medical sector to respond to the aging population. **Table 3-4** shows only a 1.03% change in the population of White Lake over the next 30 years. The table again illustrates the loss of younger school age residents between the ages of 5-17 and very little growth in the amount of working aged adults those aged 25-34. **Table 3-5** highlights the aging of the White Lake population by focusing on the senior and youth population.

Table 3-4
Forecasted Population by Age,
2010-2040

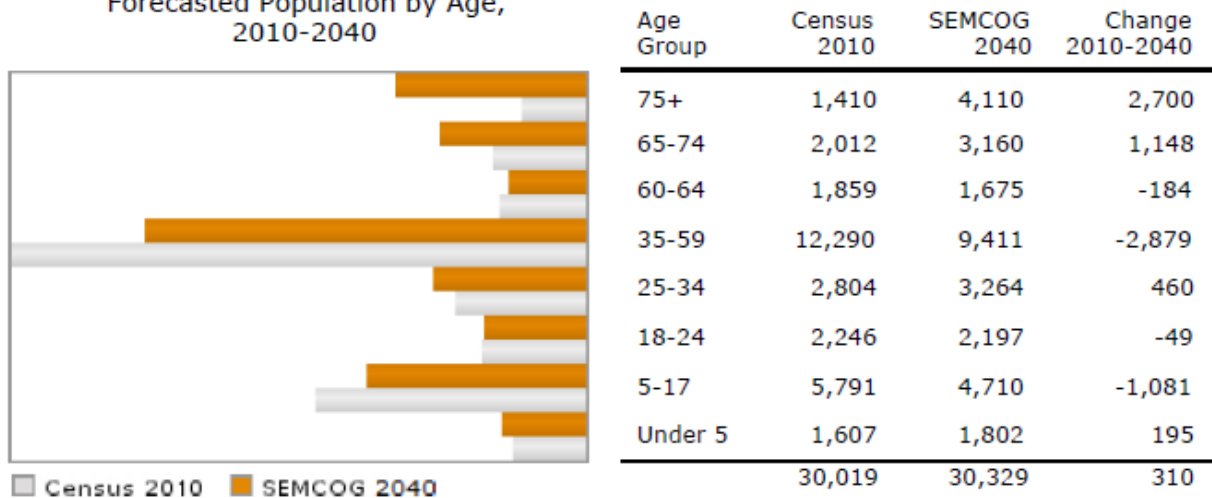


Table 3-5

Senior and Youth Population	Census 2000	Census 2010	Pct Change 2000-2010	SEMCOG 2040	Pct Change 2010-2040
65 and over	2,208	3,422	55.0%	7,270	112.4%
Under 18	7,807	7,398	-5.2%	6,512	-12.0%
5 to 17	5,786	5,791	0.1%	4,710	-18.7%
Under 5	2,021	1,607	-1.5%	1,802	12.1%

Note: Population by age changes over time because of the aging of people into older age groups, the movement of people, and the occurrence of births and deaths.

Tables 3-2, 3-3, 3-4, 3-5 used by permission from SEMCOG

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CHAPTER 4 – EXISTING LAND USE AND ZONING DISTRICTS

EXISTING LAND USE

The existing use of land was evaluated in order to accurately provide a base from which to make current and long-range planning recommendations. The following information is based on an existing land use survey carried out by Oakland County, supplemented with evaluation by Township staff and consultants. Map RP-2, Existing Land Use 2009, illustrates the current land use patterns in the Township.

LAND USE CLASSIFICATIONS

The following is a description of the various land use classifications used in the survey.

Vacant - Land that is presently unused, idle or agricultural land lying fallow.

Agriculture - All land area used for crops and permanent pasture land. If the parcel appeared to have been farmed in the last few years, though not within the last growing season, it was included in this classification.

Single Family Residential - Areas containing single-family dwelling units and accessory structures.

Multi-Family Residential - Included in this category are all apartments and multi-plex type of units where two or more separate residential units occupy a single building on a lot.

Mobile Home Park - Planned mobile home parks and their related accessory buildings.

Commercial / Office - Land areas where retail sales and service establishments are found. Includes professional and business offices.

Industrial - Uses with or without buildings where materials are processed, fabricated, assembled, or manufactured; or where equipment, materials, or wastes are stored out-of-doors.

Public/Institutional - Public uses include public schools, libraries, cemeteries, and government buildings. Institutional uses include churches, private lodges or clubs, and meeting halls.

Park/Recreation - Land areas that are used as public and private parks.

Utilities – Include electric substations, high-voltage electric transmission corridors, and other like uses.

Road and Rail Road Right-of-Way – Those areas that are improved for rail systems and train traffic, or being used for vehicular transportation.

LAND USE ANALYSIS

In order to more fully understand the composition of White Lake Township land uses, the amount of acreage in each category of land use has been calculated. These figures are based upon the land use data base provided by Oakland County and refined by the Township's Community Development Department. The following table depicts how much of each land use is found in the Township.

Table 4-1
Land Use Inventory 2009
White Lake Township

Land Use	Acres	Percent of Total Land
Agricultural	664.3	2.8%
Single-Family Residential	8,221.0	34.7%
Multiple Family	134.0	0.6%
Mobile Home Park	340.0	1.4%
Commercial / Office	404.5	1.7%
Industrial	158.9	0.7%
Public / Institutional	381.6	1.6%
Recreation / Conservation	6,019.5	25.4%
Transportation / Utilities	161.0	0.7%
Extractive	NA	NA
Vacant	3,017.7	12.7%
Water	2,582.7	10.9%
Railroad Right -of-Way	NA	NA
Road Right-of-Way	1,630.3	6.9%
Total	23,716.5	100.0%

Source: Oakland County Planning and Economic Development

The existing land use patterns are significant when considering their impact on recreational needs and options for the Township. The following paragraphs describe the land use patterns found throughout the Township.

Agricultural and Vacant

The Township's land use inventory identified only 664 acres of agricultural land in the Township. Many Township residents continue to farm their property, although nearly all are part-time or "gentleman" farming operations today. Much of the community's remaining agricultural uses are principally conducted as a pleasurable pursuit, for example residents who keep horses for pleasure riding purposes. Vacant Land in the Township is about 12.7% and the majority of the land is found in the western portion of the Township.

Single-Family Residential

The Township has an extensive amount of single family residential development. The largest concentration of single-family development is south of M-59, particularly in the southeast portion of the Township, although there is significant residential development in the northwest corner of the Township as well.

Multiple-Family Residential

There are several multi-family complexes, most of which are located along the eastern edge of the Township. Lakeshore Hilltop Apartments are located on M-59 near Elizabeth Lake Road and Hillview Village Apartments is on Williams Lake Road south of Elizabeth Lake Road. The remaining multi-family complexes are in the Pontiac Lake area.

Mobile Home Park

White Lake Township has five mobile home parks. Pontiac Lake Mobile Home Park is located on Pontiac Lake Road near the junction of M-59. Two parks are located off Fisk Road on the north side of M-59. The White Lake Mobile Home Park fronts on Fisk Road, and Chateau Cranberry adjoins it to the west. Cedar Brook Estates is located south of M-59, west of Bogie Lake Road. Meadow Lake Estates is located in the far northwest corner of the Township off Eagle Road. There are around 1,600 mobile home units in White Lake Township, or about four (4%) percent of all the residential property in the Township.

Commercial

The majority of the commercial land uses are concentrated along the M-59 corridor. These commercial uses provide a variety of goods and services to the White Lake Township residents; however, the majority of the existing development is oriented toward daily convenience needs.

Industrial

Several industrial uses exist along M-59 in the area around Teggerdine Road. In the northeast portion of the Township, off White Lake Road, there is a plant which manufactures precast concrete structures.

Public & Institutional

Public land uses are scattered throughout the Township. They consist of the Huron Valley Educational Complex on Bogie Lake Road, Brooks Elementary on Hill, Oxbow Elementary on Oxbow Lake Road, Dublin Elementary on Sandyside Street, and Douglass Houghton Elementary on Elizabeth Lake Road. Municipal buildings, including the Town Hall, Police Department, Fire Hall #1, and Library are located on Highland Road. Fire Hall #2 is located on Round Lake Road and Fire Hall #3 is located on Ormond Road. St. Patrick School is located on Union Lake Road at Hutchins.

Recreation & Conservation

Recreational facilities and uses are detailed specifically in the following Recreation Facilities Inventory and Analysis chapter.

There are three major recreation areas within the Township limits: Highland State Recreation Area located on the western border and extending into Highland Township, Pontiac Lake State Recreation Area in the northeast section of the Township, and Indian Springs Metropark on the northern border and extending into Springfield Township.

Several Township parks are located within the Township as well. Included in this designation are the Judy Hawley Memorial Field, located behind the Township Hall on Highland Road, and the Ferdinand C. Vetter Memorial Field on Union Lake Road. Bloomer Park located on McKeatchie Road, and Hidden Pines Park on White Lake Road. These facilities will be detailed specifically in the following Recreation Facilities Inventory and Analysis chapter. White Lake Township has three golf courses, including the Indian Springs Metropark Golf Course off of White Lake Road, Brentwood Golf and Country Club on Havenwood, and White Lake Oaks Golf Course, operated by Oakland County. The privately-owned Alpine Valley Ski Area, located on M-59, provides recreational activities during the winter months.



ZONING DISTRICTS

The placement of the following Zoning Districts is illustrated by Map RP-3, Zoning, which appears at the end of this chapter.

AGRICULTURAL

The Agricultural District is established as a district in which the principal use of land is for farming, dairying, forestry operations and other agricultural activities. The intent of this article is to protect land needed for agricultural pursuits from encroachment by untimely and unplanned residential, commercial or industrial development. Most of the Agricultural zoning is located in the west-central part of the Township.

SUBURBAN FARMS

The Suburban Farms District is created to establish areas of the Township for single family residences in a rural environment characterized by low densities and significant open spaces. Suburban Farms zoning is interspersed with AG zoning in the west-central part of the Township.

R1-A THROUGH R1-D

The Single-Family Residential Districts are established as districts in which the principal use of land is for single family dwellings, located in neighborhoods that include open space and that preserve sensitive natural environmental features. Minimum lot sizes vary within these districts. The major residential district in the Township is the southeast quadrant. Other residential districts tend to be clustered around the lakeshores.

MOBILE HOME PARK

The Mobile Home Park District is for areas of the Township suitable for mobile home parks. Mobile home parks are located on M-59 at Fisk Road; M-59 at Ford Road; off Eagle Road on the northern edge of the Township; and at the intersection of Pontiac Lake Road and M-59.

RM ATTACHED SINGLE FAMILY

The Attached Single-Family Residential District is designed to permit various attached single-family dwellings including row or townhouse dwellings and two-family or duplex dwellings. Most of the Township's RM-1 districts are in the higher density residential southwest quadrant, with a few other districts along M-59.

RM-2 MULTIPLE FAMILY RESIDENTIAL

The Multiple-Family Residential District is designed to permit a more intensive residential use of land with various types and sizes of multiple-family dwellings, two-family dwellings, apartments and convalescent or nursing homes. These districts occur in a few places throughout the Township.

NEIGHBORHOOD OFFICE

The Neighborhood Office District permits those office and service uses which are compatible in intensity and character with nearby residential areas. These smaller districts are located along M-59 and along Union Lake Road.

LOCAL BUSINESS

The Local Business District is intended to permit retail business and service uses which are needed to provide for the day-to-day needs of the nearby residential areas. These districts occur throughout the Township.

RESTRICTED BUSINESS

The Restricted Business District should contain diverse types of retail and office business, but it is not intended that the district become an intensive, high-volume commercial strip. This district is located at the very southeast corner of the Township.

GENERAL BUSINESS

The General Business District, as established in this article, is intended to permit business uses that would serve the entire community and patrons outside the community, generate larger volumes of vehicular traffic, need more off-street parking and loading, and require more detailed planning to provide an appropriate transition between such districts and adjacent residential areas. Most General Business districts are located along M-59.

PLANNED BUSINESS DISTRICT

The PBD Planned Business District is primarily a commercial district intended to permit, with Township approval, private and/or public development in a coordinated and cohesive arrangement which may be more difficult to achieve under more conventional, piecemeal development designed to conform with standard zoning requirements. To that end it becomes possible to permit greater flexibility in the types of land uses, land use arrangements and development requirements than would otherwise apply. Most Planned Business Districts are located along M-59.

PLANNED DEVELOPMENT DISTRICT

The PD, Planned Development District is intended to provide for the location and various types of planned land use on large parcels held in common ownership and includes such alternate terms as cluster zoning, planned development, community unit plan, planned residential development and other similar terminology. Uses planned may include single-family detached housing, single-family attached housing, multiple-family housing, local commercial business, office uses, and similar activities. The PDD is intended to result in a unique, planned development that includes such techniques as open space preservation. The three areas of Planned Development are located in the northwest quadrant of the Township.

RECREATION AND OPEN SPACE

The Recreation and Open Space District is intended to provide areas for the development of public and private outdoor recreation facilities and open space preservation uses. The intent of the Recreation and Open Space District is: to encourage recreational uses of an outdoor nature that will take full advantage of the land in its natural state; and to encourage those large outdoor recreation uses that could not easily be provided in the already urbanized portions of White Lake Township and the metropolitan area. There are many large Recreation areas throughout the Township. They are detailed in other parts of this Plan.

LIGHT MANUFACTURING

The LM, Light Manufacturing District is established as a district in which the principal uses allowed are light manufacturing, fabrication, processing, wholesale activities or warehousing activities. In LM Light

Manufacturing Districts principal permitted uses are those which are characterized by less intensive activities of a smaller size and scale than typically found in heavy industrial, general manufacturing areas. Light industrial uses are anticipated to locate in industrial park types of settings where uses are conducted within totally enclosed buildings with little or no outside activities permitted. LM districts are located along M-59 and in the northeast corner of the Township.

RESEARCH OFFICE PARK

The Research Office Park District is designed so as to provide a community of research facilities and to exclude therefrom such incongruous uses as residential, business and heavy industrial. The Research Office Park District is located at M-59 and Porter Road.

PONTIAC GATEWAY

The Pontiac Lake Gateway sub-district is intended to create a unique gateway into White Lake Township, enhancing the views of Pontiac Lake and White Lake Oaks Golf Course and reinforcing the appeal of the Township as a "four season's playground." Properties located in this area, adjacent to the state trunk line, may accommodate greater height and more intense land activity than elsewhere in this otherwise low density community. This district will allow flexibility in there development of property along Highland Road (M-59), encourage pedestrian oriented design, provide a unique identity to this region of the Township, and be compatible with existing residential, institutional, and recreational uses.

NEIGHBORHOOD MIXED USE

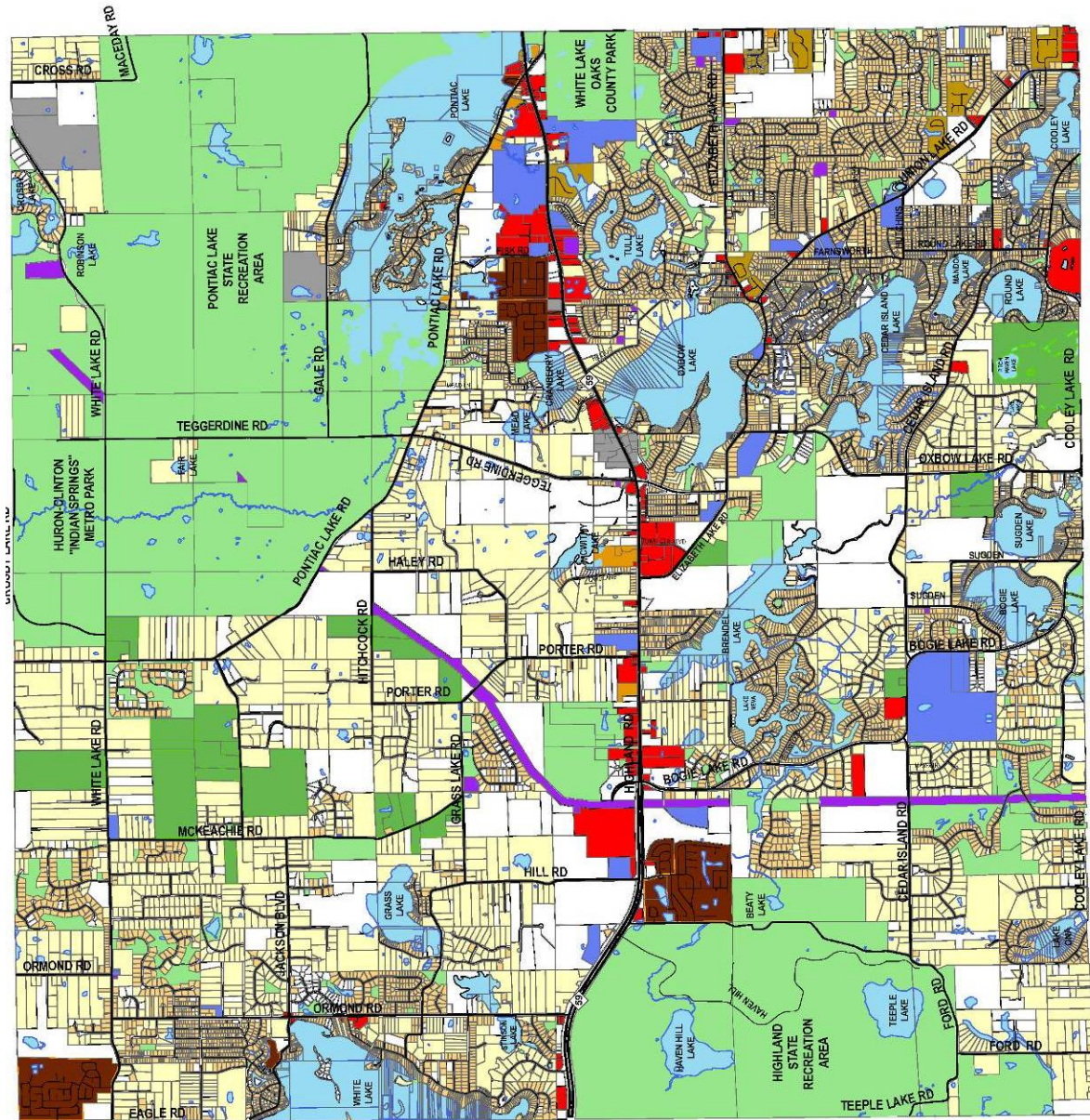
The Neighborhood Mixed Use Districts are intended to create small centers of neighborhood life that encourage a mix of compatible retail, service, office and residential uses in a walkable environment that features access via all forms of motorized and non-motorized transportation. Buildings of two to three stories and small stores and offices not larger than 6,000 square feet will reinforce the intimate, residential character of the neighborhoods.

TOWN CENTER (LAKES TOWN CENTER / FOUR TOWNS)

Lakes Town Center sub-district is intended to create a compact and unique center of civic life for White Lake Township. New development and redevelopment of properties will be laid out in a pedestrian oriented manner that reflects a traditional town form, featuring a mix of residential, retail, and office uses. Primary roads will function as the main streets and secondary roads will support the grid network. Parking will be provided on street and in shared parking areas. Alleys or back streets will provide access to service and parking areas. **Four Towns sub-district** is intended to allow flexibility in the redevelopment of property along Cooley Lake Road, a historically mixed use area. It is also offered as a model to encourage our three neighbor communities to expand the concept into a true town center. This sub-district will encourage pedestrian oriented design, provide a unique identity to this historical place, and complement existing residential, institutional, and recreational uses.

EXISTING LAND USE - 2009
WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MICHIGAN
 MAP RP-2

- Agricultural
- Recreation/Conservation
- Single Family, Acreage parcel
- Single Family, Small lot
- Single Family, Attached
- Multiple Family
- Mobile Home Park
- Commercial/Office
- Industrial
- Public/Institutional
- Transportation/Utility/Communication
- Vacant
- Water



Sources: Oakland County Planning and Birchler Arroyo
 October 20, 2010

- AG AGRICULTURAL
- SF SUBURBAN FARM
- R1-A SINGLE FAMILY RESIDENTIAL
- R1-B SINGLE FAMILY RESIDENTIAL
- R1-C SINGLE FAMILY RESIDENTIAL
- R1-D SINGLE FAMILY RESIDENTIAL
- RM-1 ATTACHED SINGLE FAMILY RESIDENTIAL
- RM-2 MULTIPLE FAMILY RESIDENTIAL
- MHP MOBILE HOME PARK
- LB LOCAL BUSINESS
- GB GENERAL BUSINESS
- NB-O NEIGHBORHOOD OFFICE
- RB RESTRICTED BUSINESS
- PB PLANNED BUSINESS
- ROS RECREATION & OPEN SPACE
- LM LIGHT MANUFACTURING
- PD PLANNED DEVELOPMENT
- ROP RESEARCH OFFICE PARK
- PG PONTIAC GATEWAY
- NMU NEIGHBORHOOD MIXED USE
- TC TOWN CENTER
- WELLHEAD PROTECTION OVERLAY

ZONING MAP

WHITE LAKE TOWNSHIP

OAKLAND COUNTY, MICHIGAN

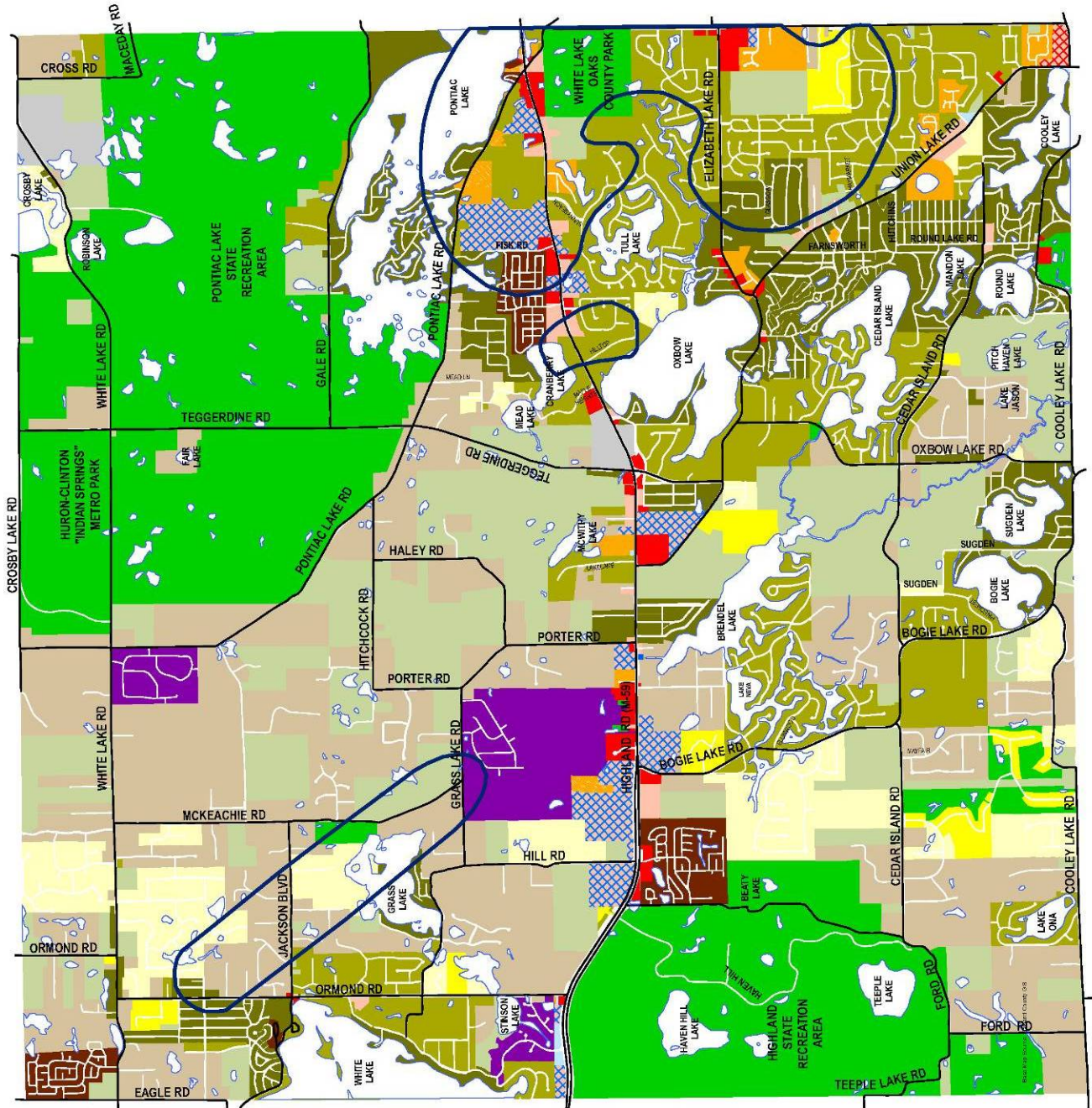
MAP RP-3

WHITE LAKE TOWNSHIP PLANNING COMMISSION

Originally Adopted: April 15, 2003

Effective: June 6, 2003

Updated: June 6, 2012



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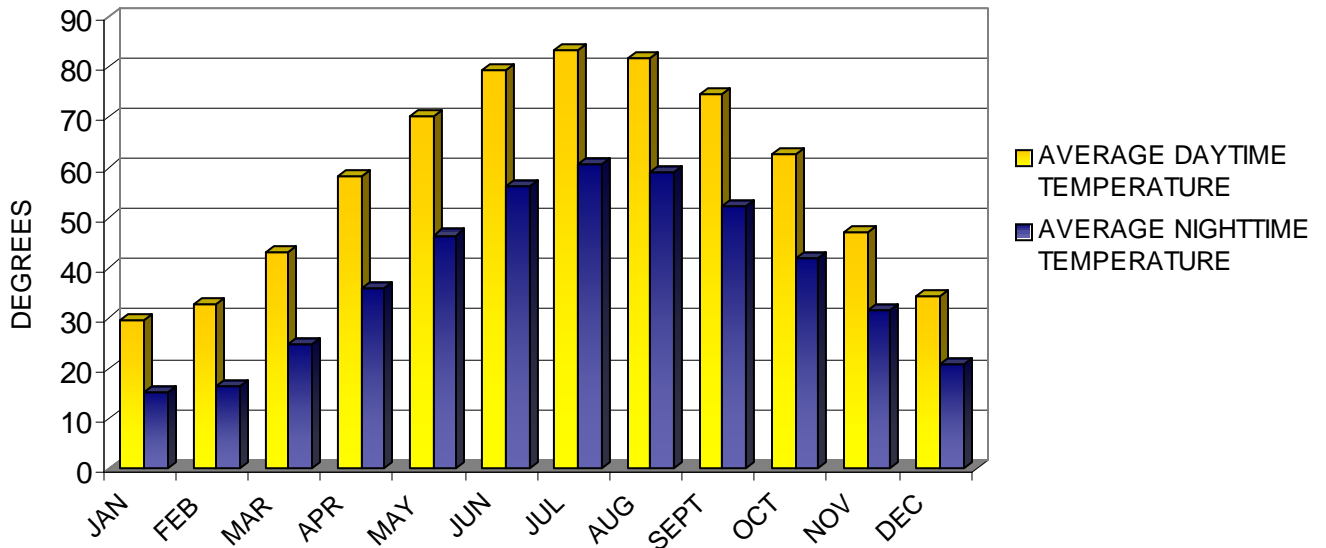
CHAPTER 5 – NATURAL FEATURES

The identification of the natural features that presently exist in a community is an important step in the recreation planning process. With such knowledge, recreation decisions can be more informed and based on the appropriate preservation, protection and utilization of the Township's natural resources for recreational purposes.

CLIMATE

Like the rest of Southeast Michigan, White Lake Township's climate consists of cold winters and warm summers. The average daytime temperature during the summer months (June through September) is approximately 79.8 degrees Fahrenheit. The average daytime temperature during the winter months (November through March) is approximately 37.4°. Average annual precipitation in Michigan is about 31 inches.¹

Figure 5-1
30-Year Average Daily Temperatures,
Northern Oakland County



Source: Michigan State Climatologist's Office, Pontiac Station Data.

¹ Source: USGS. <http://mi.water.usgs.gov/fdgenclim.php>

TOPOGRAPHY

White Lake Township is characterized by rolling terrain. The land surface of the Township varies by approximately 211 feet from its lowest point to its highest point, as indicated on the Topography Map. (See Map RP-4). In general, the lowest elevations occur in the south central portion of the Township and rise as one moves to the north. Brendel Lake, at 933 feet above National Geodetic Vertical Datum (NGVD), is at the lowest elevation in White Lake Township. The highest elevation is 1144 feet NGVD, in the northwest portion of the Township adjacent to the access road for the radio tower in Springfield Township.

GEOLOGY

The Quaternary Geology Map (Map RP-5) shows the geological features of the surface of White Lake Township. A significant portion of the Township, particularly south of M-59, is classified as glacial outwash sand and gravel and postglacial alluvium. This area was formed from flowing glacial melt water as the glaciers retreated during the end of the last ice age. The majority of the County's lakes and wetland areas are located within the outwash plain.

Moraines, composed of gravel and sand deposited as the retreating glaciers melted in place, were formed throughout the Township, especially north of M-59. The largest moraine follows a general diagonal from the southwest corner of the Township to around the midpoint of the Township's northern boundary on either side of Pontiac Lake Road.

SOILS

The General Soils Map (Map RP-6) shows the locations of various soil types throughout White Lake Township. These soil associations are areas with distinctive patterns of soils. Of the eight soil associations found in Oakland County, three can be found in White Lake Township.



Prairie Warbler (*Dendroica Discolor*)

The majority of the eastern half and a small area in the northwest corner of the Township is characterized by the "Urban land-Spinks-Oshtemo" soil association. This association is composed of well-drained sandy soil, located on nearly level to rolling topography. Urban land consists of soils that have been so altered by development that it is no longer possible to determine the original soil type. The "Oshtemo-Spinks-Houghton" soil association is located in a band running from the southwest corner to the northeast corner of the Township. It is found on nearly level to hilly terrain, and is composed of well drained to very poorly drained loamy, sandy and mucky soil. The northern border of the Township and a small area in the southwest corner are made up of the "Fox-Oshtemo-Houghton" association. It is an area of nearly level to steep topography. This soil association is also a well drained to very poorly drained sandy and mucky soil.

LIMITATIONS FOR SEPTIC SYSTEMS

The Soil Suitability for Septic Use Map (Map RP-7) shows locations where there are severe, moderate, and slight limitations for septic uses. The map is general in nature, and is meant for overall planning of land use. On-site investigation is still necessary for individual sites. In general, however, the map accurately

portrays those areas of White Lake Township that are best able to absorb new development that must rely on septic tank disposal systems, including potential recreational facilities.

Septic system development in the Township is limited by its extensive network of water bodies. The wetlands, lakes and river areas are identified as unsuitable for septic uses. Most of the Township, in fact, is not considered suitable for septic uses, although there are small areas scattered around the Township designated as marginally suitable. While some of the areas with moderate or severe limitations may be suited for septic use, many of them will probably require larger tile field areas. Also, it should be noted that under heavily saturated conditions, the marginally suitable soils may behave as unsuitable soils. The Township is in the process of extending sanitary sewers to serve most of the area south of M-59.

FLOODPLAINS

The Floodplains Map (Map RP-8) illustrates the land that lies within the 100 and 500-Year Flood Plains. The areas within the flood plain boundaries in White Lake are generally associated with existing lakes and portions of the Huron River and its tributaries. In several sections of the Township, there are residential areas which are located in the 100-Year Flood Plain. Site specific analysis is necessary to determine the limitation placed on parcels due to floodplain restrictions.



Snuffbox Mussel
(*Epioblasma Triquetra*)

GROUNDWATER

White Lake Township relies upon a system of wells to provide domestic water for its residents. There are 11 community wells in the Township, and at last count there were approximately 2500 individual domestic wells. The number of individual wells may have increased since this count was taken. Map RP-9 shows the community wells, most of which are located in the southeast portion of the Township, and groundwater vulnerability in the Township. Many areas of the Township have high soil permeability and therefore high groundwater vulnerability. Many other areas of the Township are categorized as having moderate groundwater vulnerability. These characteristics indicate that protecting groundwater from pollution is vital for the safety of the water supply and the health of Township residents.

WATERSHEDS

Map RP-10 shows watersheds and subwatersheds in White Lake Township. The great majority of the Township lies in the Huron River Watershed. Most of Section 1 and parts of Section 25 fall into the Clinton River Watershed. Within the Huron River Watershed there are three subwatersheds. Runoff from the northwest corner of the Township flows into Pettibone Creek, then into the Huron River; water from the southeast corner of the Township flows into Hayes Creek, then into the Huron River; and water from the central portion of the Township flows directly into the Huron River.

WOODLANDS

Despite White Lake Township's residential and commercial growth and development during the last several decades, there are still many woodland areas scattered throughout the Township. The vast majority of the trees are upland hardwoods. The Highland State Recreation Area and the Pontiac Lake State Recreation Area both have large stands of protected upland hardwoods. White Lake also has a few small areas of upland conifers dispersed throughout the Township. These wooded areas are a resource to both the residents and the wildlife in the Township. (See Map RP-11).

WETLANDS

White Lake Township has significant wetlands acreage, as shown on Map RP-12. This includes a significant percentage of open water, as well as scrub/shrub, emergent growth, and forested. While wetland areas are found throughout the Township, their greatest concentration is south of M-59 and adjacent to the Huron River. These wetlands provide a valuable environmental resource, including habitat for wildlife, flood control, filtration of potential contaminants of the local aquifers, and aesthetic appeal for the residents. To protect these fragile areas, wetlands of five acres or more, or smaller wetlands hydrologically connected to large wetlands, are under the jurisdiction of the Michigan Department of Natural Resources. In addition, wetlands of two acres or more fall under the protection of White Lake's own Wetlands Ordinance.

WILDLIFE

The Michigan Natural Features Inventory (MNFI) has identified a variety of state-protected plant and animal species within White Lake Township. The plant and animal species listed in Table 5-1 with "Endangered" (E) and "Threatened" (T) classifications are protected under state law (Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection). While the specific locations of these protected species are not released for protection purposes, the general distribution of these plants and animals in the Township is identified in the tables by Section number.

An endangered species is defined as any species of fish, plant life, or wildlife that is in danger of extinction throughout all or a significant part of its range. A threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

There are many other species in White Lake Township that fall into the category of "Special Concern." While these species are not protected under state law, they have been identified as rare or of uncertain status. Many of the species classified as of "Special Concern" are noted as such because of their declining populations in the state. Should these species continue to decline, they would be recommended for "Threatened" or "Endangered" status in the future.



American Chestnut
(*Castanea Dentata*)

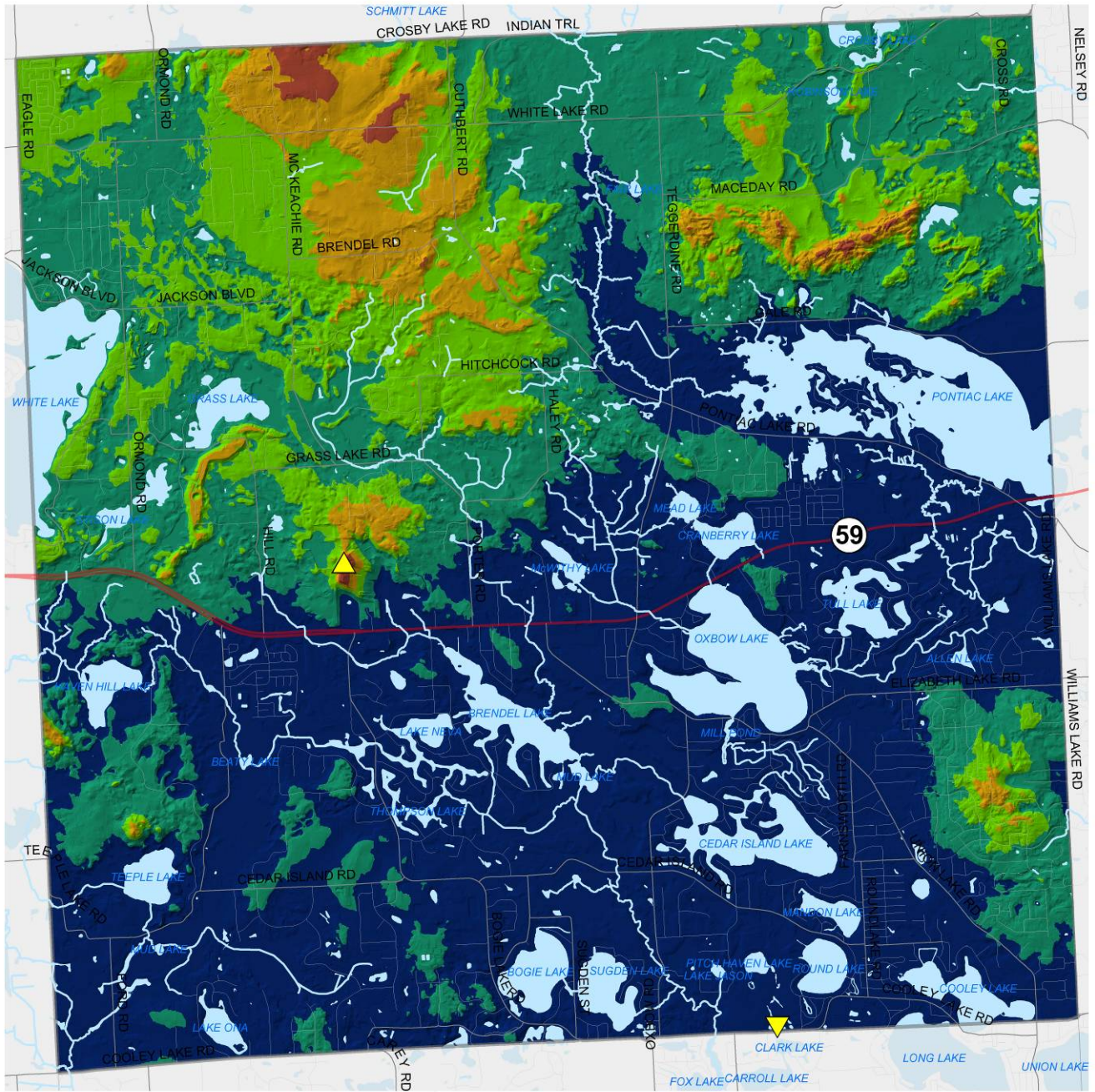


Copperbelly Water Snake
(*Nerodia erythrogaster neglecta*)

**Table 5-1
Endangered and Threatened Species,
White Lake Township, 2004**

Scientific Name	Common Name	Year Last Observed	State Status	Section
<i>Buteo lineatus</i>	Red-shouldered Hawk	1980	T	34
<i>Castanea dentata</i>	American Chestnut	1980	E	19
<i>Cypripedium candidum</i>	White Lady-slipper	1999	T	21, 27, 32
<i>Dendroica discolor</i>	Prairie Warbler	2003	E	26
<i>Epioblasma triquetra</i>	Snuffbox (mussel)	1996	E	15, 33, 20
<i>Galearis spectabilis</i>	Showy Orchis	1958	T	19
<i>Hydrastis canadensis</i>	Goldenseal	2001	T	19, 25
<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	1995	T	15, 28
<i>Nerodia erythrogaster neglecta</i>	Copperbelly Watersnake	1963	E	28
<i>Oarisma poweshiek</i>	Poweshiek Skipperling	1999	T	27
<i>Panax quinquefolius</i>	Ginseng	1985	T	19
<i>Potamogeton vaseyi</i>	Vasey's Pondweed	1939	T	27
<i>Silphium laciniatum</i>	Compass-plant	2003	T	10
<i>Trichostema dichotomum</i>	Bastard Pennyroyal	1916	T	9
<i>Villosa fabalis</i>	Rayed Bean (mussel)	1995	E	33





Elevation in Feet

- 1125.1- 1210
- 1077.1- 1125
- 1042.1 - 1077
- 985.1 - 1042
- 930 - 985

SOURCE: OAKLAND COUNTY

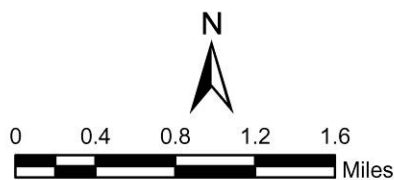
▲ Highest point in Township
(Alpine Valley Ski Area, 1210')

▼ Lowest point in Township
(Ivory Farms, 930')

TOPOGRAPHY

WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-4



BIRCHLER ARROYO
ASSOCIATES, INC.



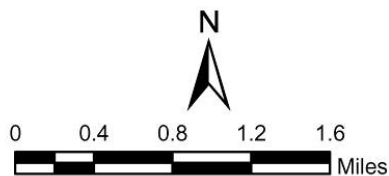
- End Moraine: Till
- Esker: Stratified Sand and Gravel
- Ground Moraine: Till
- Kame: Stratified Sand, Gravel and Debris Flow Deposits
- Outwash Plain, Glacial Channel, Recent Alluvium: Stratified Sand and Gravel

QUATERNARY GEOLOGY

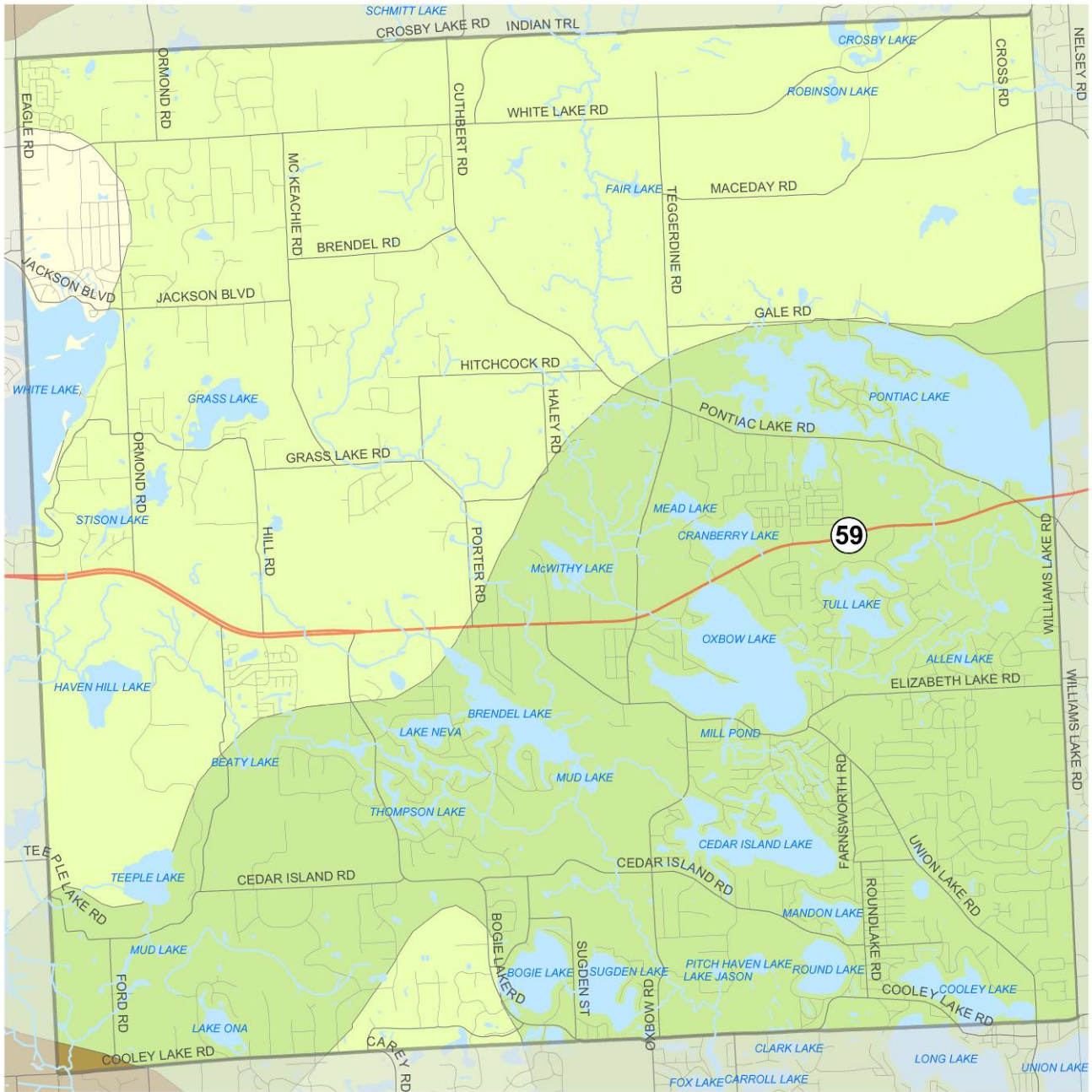
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-5

SOURCE: OAKLAND COUNTY



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ASSOCIATES, INC.



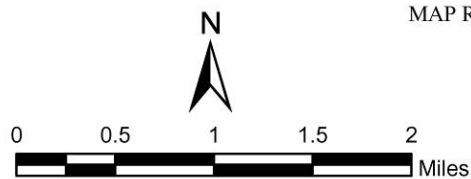
- COLOMA-SPINKS-OSHTEMO
- MIAMI-MARLETTE-LAPEER
- SPINKS-HOUGHTON-BOYER
- URBANLAND-SPINKS-OSHTEMO

GENERAL SOILS

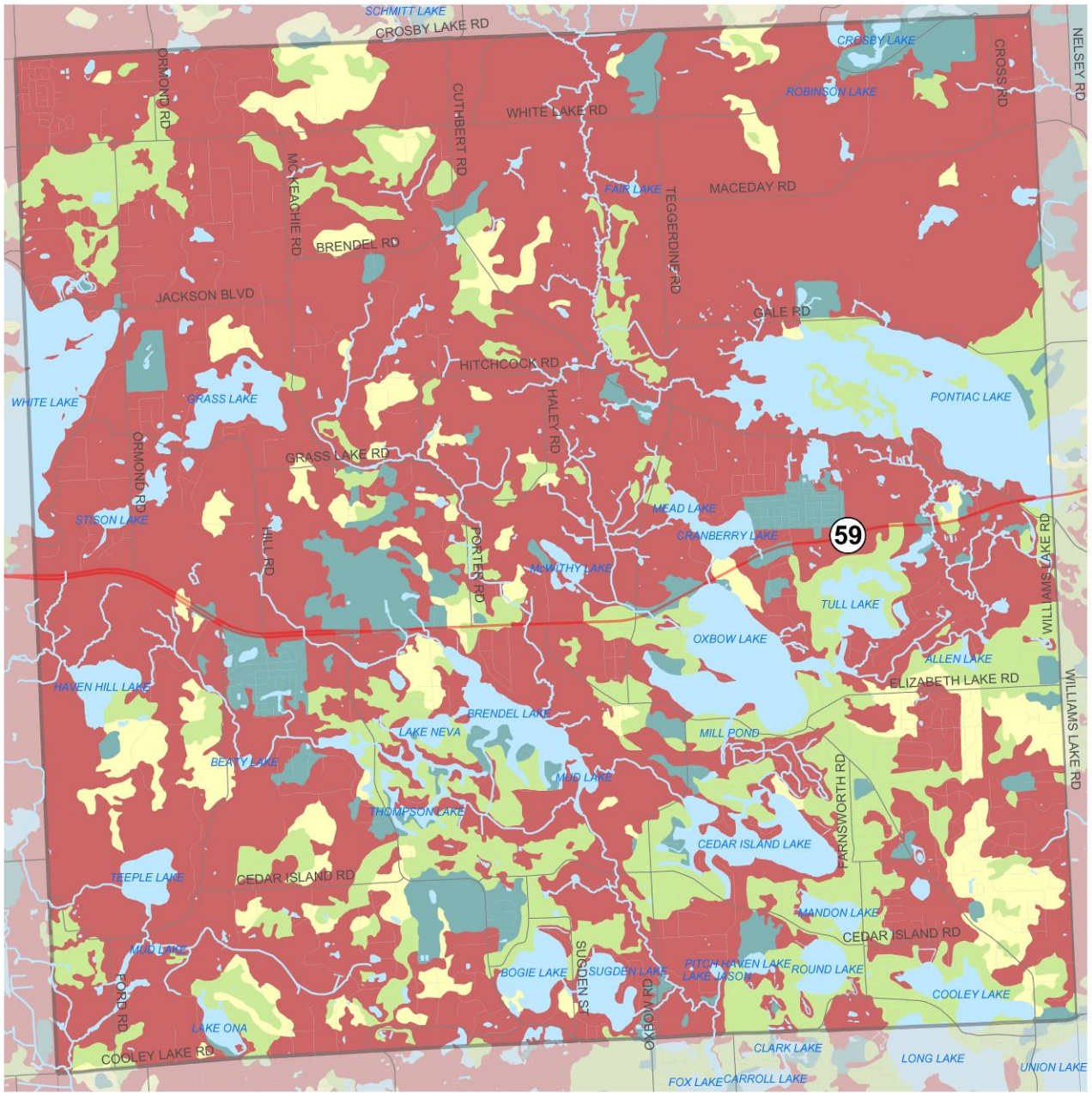
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-6

SOURCE: EPA



BIRCHLER ARROYO
ASSOCIATES, INC.



Septic Suitability Limitations

- Severe
- Moderate
- Slight
- Unknown
- Variable
- Water

SOURCE: OAKLAND COUNTY

LIMITATIONS FOR SEPTIC FIELDS

WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-7

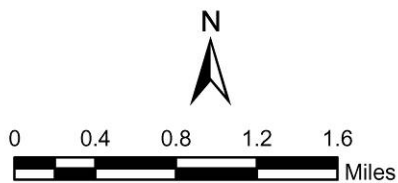


BIRCHLER ARROYO ASSOCIATES, INC.



- 100 Year Floodplain
- 500 Year Floodplain

SOURCE: OAKLAND COUNTY



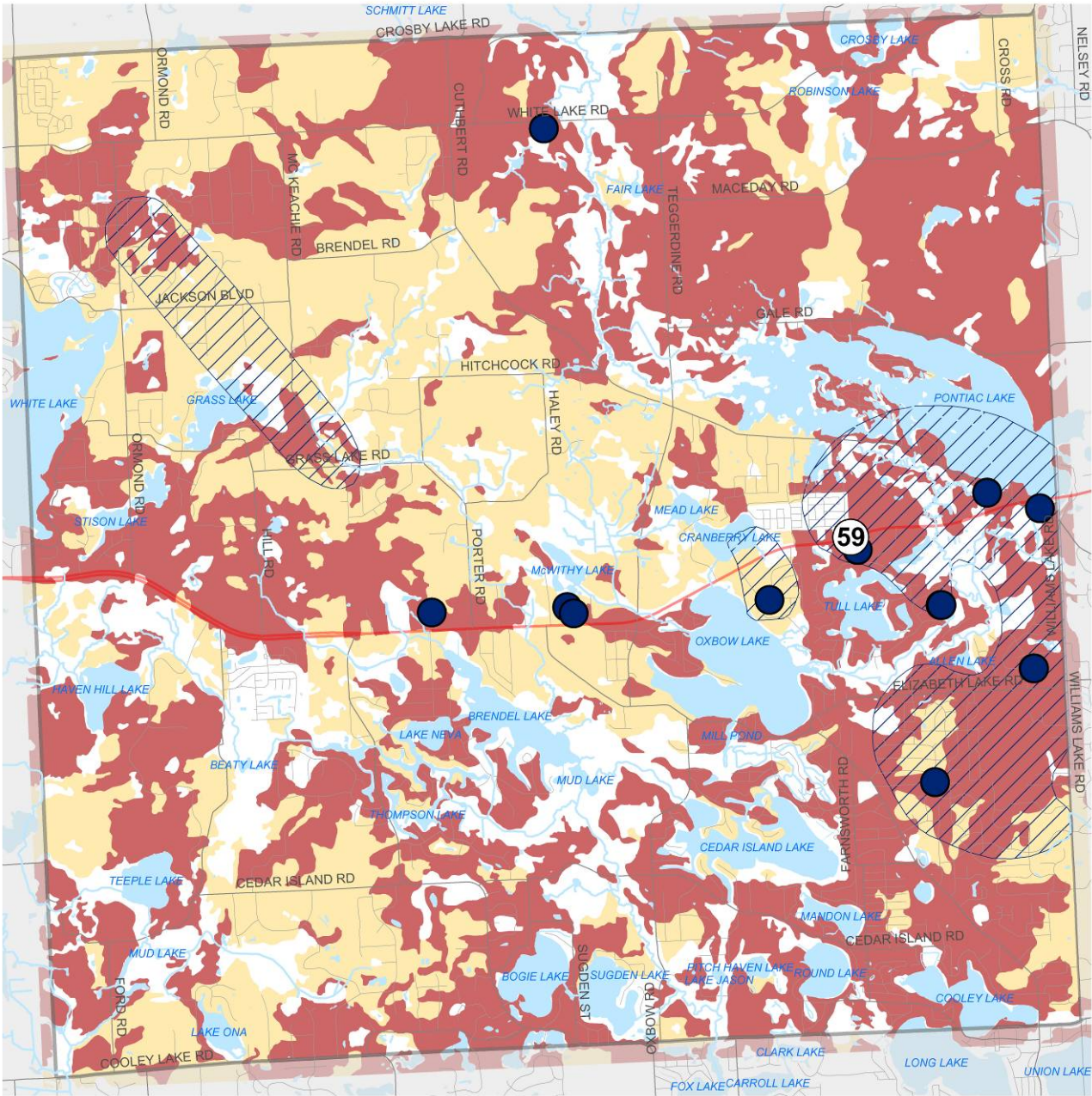
FLOODPLAINS

WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-8



BIRCHLER ARROYO
ASSOCIATES, INC.



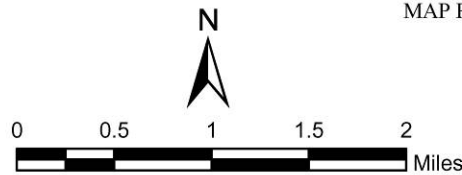
- Community Well
- Wellhead Protection Area
- Moderate Groundwater Vulnerability
- High Groundwater Vulnerability

GROUNDWATER VULNERABILITY






WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-9

SOURCE: OAKLAND COUNTY





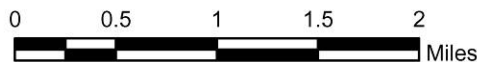
-  Major Watershed Boundary
- Subwatersheds**
-  Clinton River
-  Hayes Creek
-  Huron River
-  Pettibone Creek

SOURCE: OAKLAND COUNTY

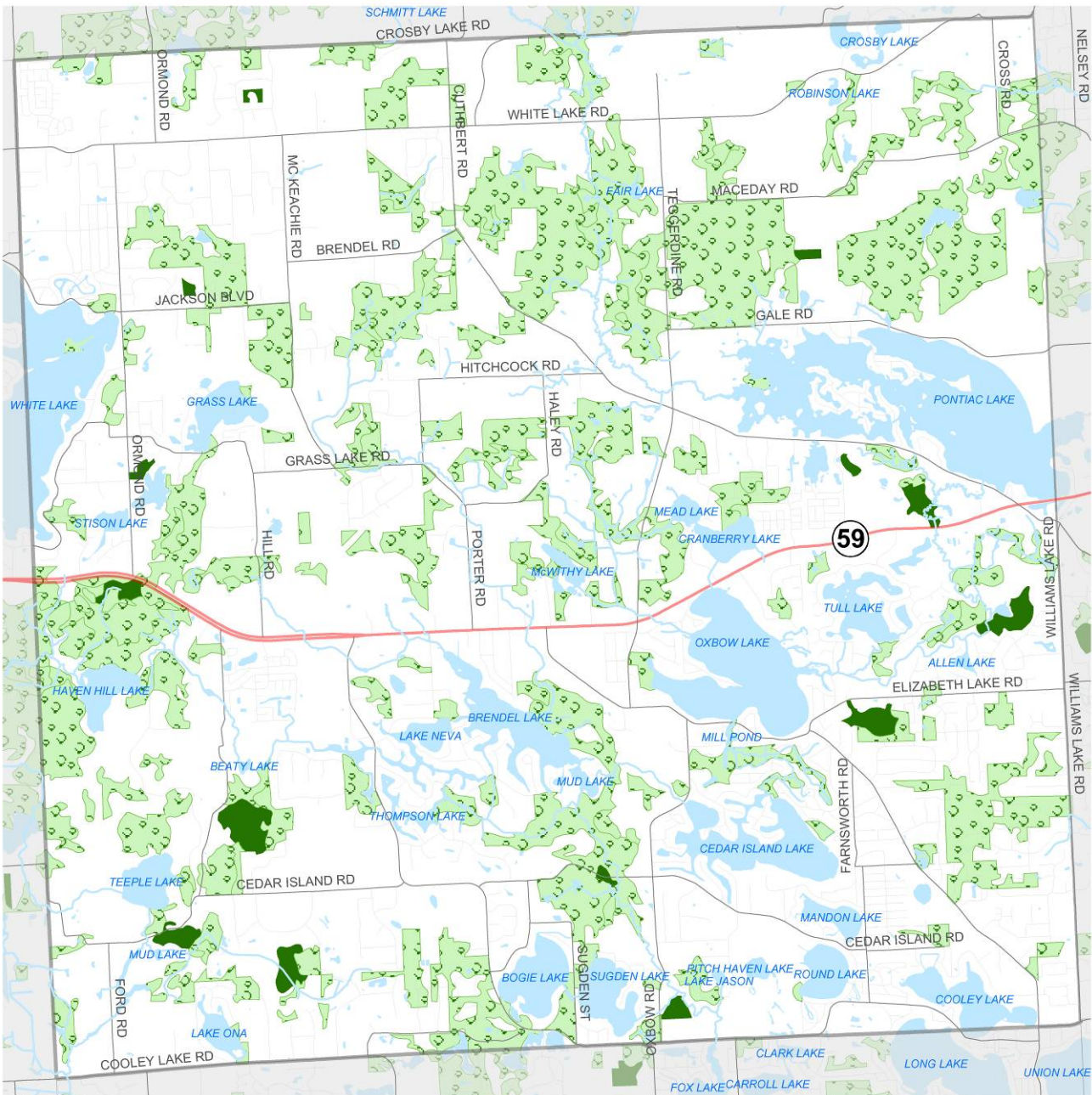
WATERSHEDS AND SUBWATERSHEDS

WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-10



BIRCHLER ARROYO
ASSOCIATES, INC.



- Broadleaved Forest (Generally Deciduous)
- Coniferous Forest

WOODLANDS
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

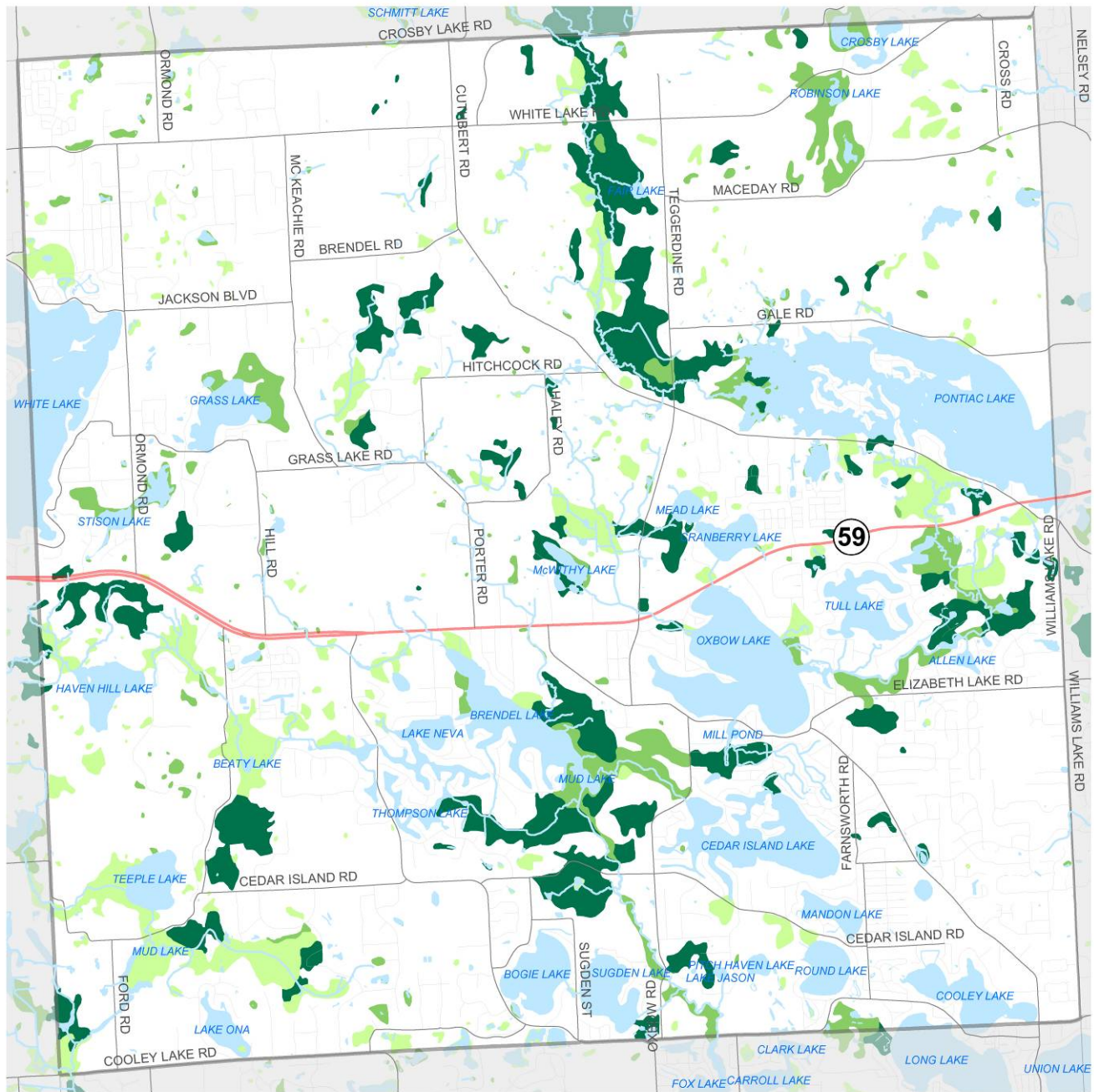
MAP RP-11



SOURCE: LAND USE/LAND COVER, MIRIS, 1978



BIRCHLER ARROYO
ASSOCIATES, INC.



- Emergent
- Scrub-Shrub
- Forested

WETLANDS
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-12



SOURCE: NATIONAL WETLANDS INVENTORY



BIRCHLER ARROYO
ASSOCIATES, INC.

CHAPTER 6 – TRANSPORTATION NETWORK

White Lake Township's topography and natural features pose a constraint to developing an efficient transportation system with a set of well-defined east-west and north-south corridors. The necessity of building a system of roadways around the lakes, wetlands, and hills has resulted in a somewhat discontinuous thoroughfare system which limits the ability of people and goods to be transported directly to their destination. Despite these natural constraints, there are several defined east-west and north-south corridors that assist in transporting people and goods throughout the region. These corridors are shown graphically on Map RP-13 that follows.

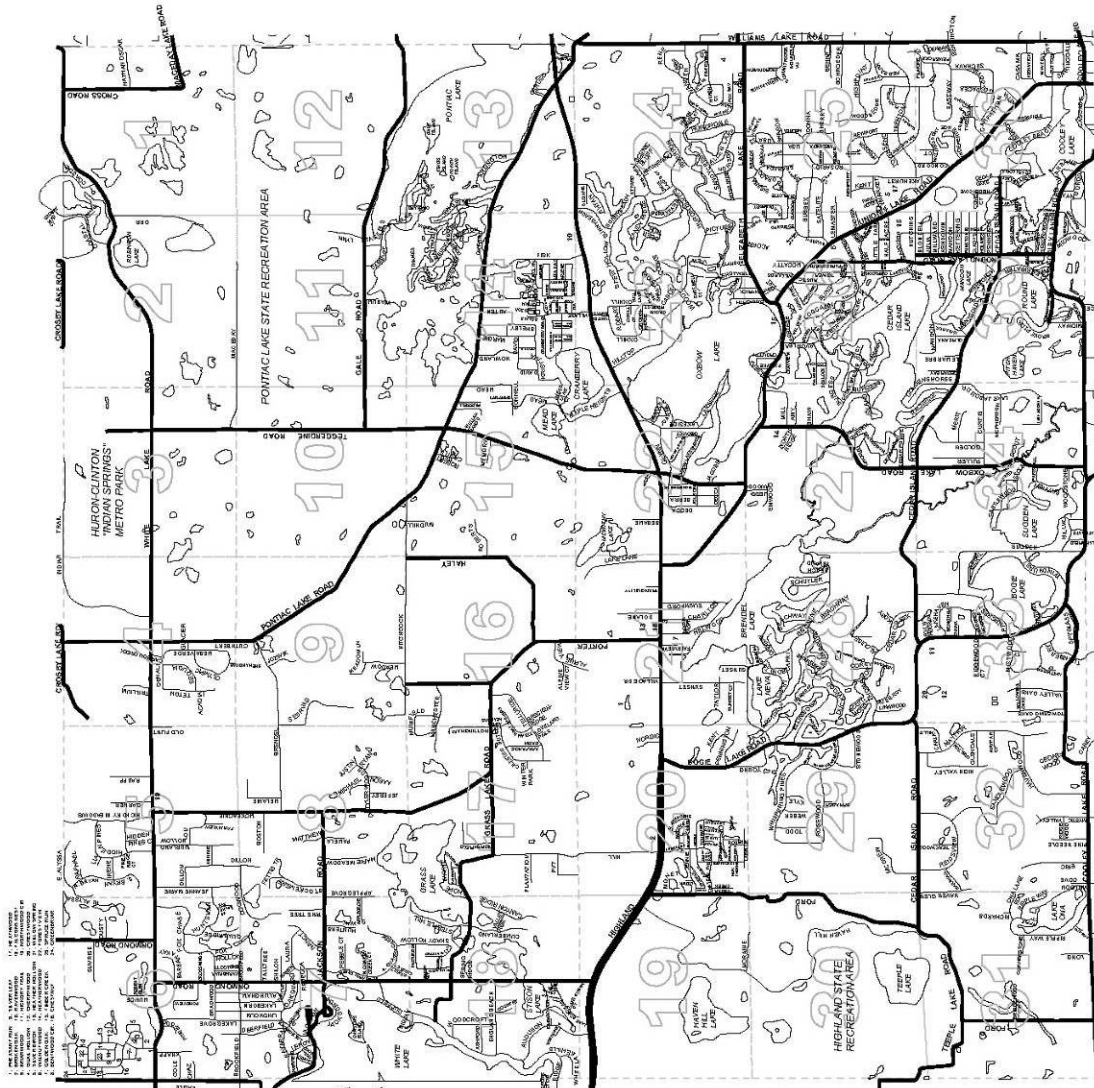
EAST-WEST CORRIDORS

The major east-west corridor in the Township is Highland Road (M-59), which is a five lane thoroughfare that runs through the center of the Township. This is the only thoroughfare in White Lake Township with more than two lanes. Highland Road provides direct access to US-23 to the west and Telegraph Road and I-75 to the east. Consequently, it carries a high volume of through traffic in addition to traffic generated within White Lake Township. The average daily traffic volume on this roadway is 35,600 vehicles, according to 2001 traffic counts by the Michigan Department of Transportation.

The other major east-west corridors are White Lake Road, Cooley Lake Road, and Elizabeth Lake Road. White Lake Road provides the best east-west access for those living in the northern end of the Township. The road provides access to I-75 through Springfield Township. The third east-west corridor is Cooley Lake Road, at the southern end of the Township. Cooley Lake intersects with Union Lake Road at the very southeastern corner of the Township. Finally, Elizabeth Lake Road is another significant east-west corridor. Elizabeth Lake Road intersects with Highland Road on the south side of the roadway, before curving to the southeast and then continuing to the east through Waterford Township. While speed limits along Elizabeth Lake Road are low due to the high density of residential development along the road and its sinuous nature, once the roadway enters Waterford it provides direct access to a variety of destination uses.

NORTH-SOUTH CORRIDORS

There are three major north-south corridors in White Lake Township: the Ormond-Bogie Lake corridor on the west side of the Township, the Teggerdine-Oxbow Lake Road corridor near the center of the Township, and the Union Lake Road-Williams Lake Road (Haggerty Road) corridor on the east side. At the present time, the Union Lake Road-Williams Lake Road corridor provides the best access to the highways to the south, including I-275, I-696, and I-96. However, none of the corridors form a direct north-south route. At some point, both the Ormond-Bogie Lake corridor and the Teggerdine-Oxbow Lake corridor require a commuter to drive an east-west roadway before continuing back in the north-south direction.



**TRANSPORTATION
NETWORK
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI**



**B.A. BRICKER ARBUTIO
ASSOCIATES, INC.**



MAP RP-13

CHAPTER 7 – INVENTORY AND ANALYSIS

INTRODUCTION

It is important for White Lake to provide a variety of parks for its residents, in order to ensure that people of all ages and abilities are able to pursue recreational opportunities. Neighborhood parks are critical to provide recreational facilities, especially for young children, within close proximity to their homes. Neighborhood playfields draw users from a wider geographic area, and serve to fulfill the recreational needs of both children and adults.

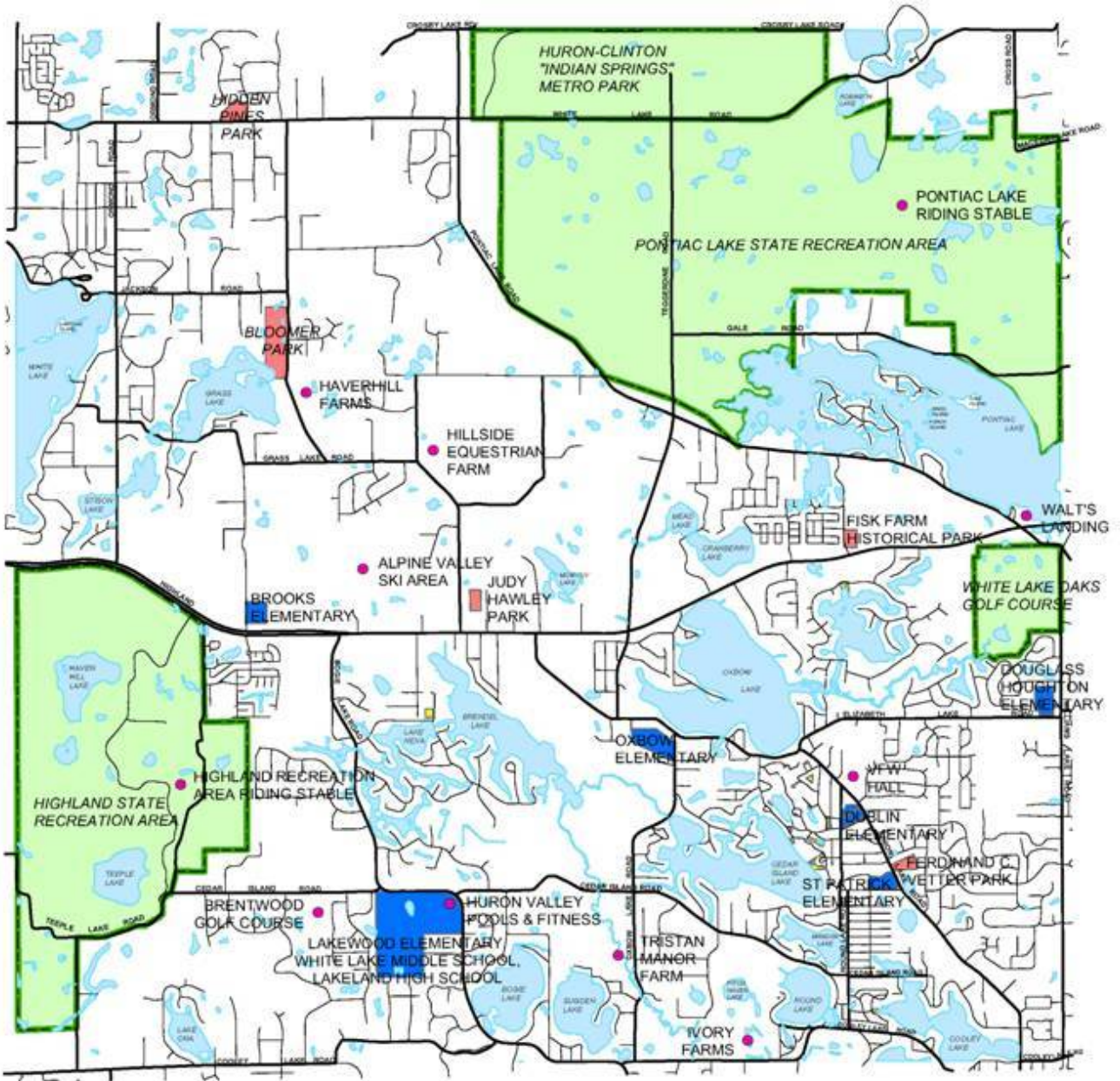


Community-wide parks provide a greater range of activities and facilities, including nature centers, trails, ballfields, and playground equipment for a variety of ages that serve the community at large.

White Lake operates four (4) Township parks, Ferdinand C. Vetter Park, Judy Hawley Park, Hidden Pines Park, and Bloomer Park. Hess-Hathaway Park, located within and operated by Waterford Township, can be utilized and reserved by White Lake residents as if they are Waterford Township residents. In addition to the Township-owned parks, the public and parochial schools in White Lake provide recreation opportunities. Specific facilities range from playground equipment and outdoor athletic fields to indoor gymnasiums and pools. The location of the Township parks and schools are on Map RP-14, and the inventory is summarized in the pages below.

There are a wide variety of regional recreation areas within Oakland County and southeastern Michigan that are accessible to White Lake residents. These regional recreation areas are summarized below, and include parks and recreation areas operated by the State of Michigan, Oakland County, and the Huron-Clinton Metropolitan Authority. Also, public golf courses within Oakland County were included in the inventory. The recreation areas within White Lake Township operated by the State of Michigan are Pontiac Lake State Recreation Area and a portion of Highland State Recreation Area. Of the 11 recreation facilities operated by Oakland County, the White Lake Oaks Golf Course and banquet center is located within the Township. Lastly, a portion of Indian Springs Metropark, which is one of the 13 regional parks operated by the Huron-Clinton Metropolitan Authority (HCMA), is located within White Lake Township.

The chapter concludes with a barrier-free analysis of the facilities at Ferdinand C. Vetter Park, Judy Hawley Park, Hidden Pines Park, and Bloomer Park. Also included is a report on all grant assisted recreation projects.



- STATE, COUNTY, & REGIONAL PARKS
- SCHOOLS
- TOWNSHIP PARKS
- PRIVATE RECREATION LAND
- PRIVATE/COMMERCIAL RECREATIONAL FACILITIES

EXISTING PARKS, SCHOOLS, AND PRIVATE/COMMERCIAL RECREATIONAL LAND AND FACILITIES

WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-14



BISLER ARROYO
ASSOCIATES, INC.

BASE MAP SOURCE: OAKLAND COUNTY

TOWNSHIP RECREATION INVENTORY

The inventory of existing facilities is an essential step in the creation of a quality plan for recreation. This section inventories and describes the existing local, State, County, and regional recreational facilities that are available to White Lake residents.

TOWNSHIP PARKS



Bloomer Park, 28 acre community-wide park.

Located on McKeachie Road between Grass Lake and Jackson Road.

- Nature Trails (Aggregate Pathways)
- Picnic Pavilion
- Scenic Grass Lake Viewing Platform
- Interpretive Signage
- Improved Parking Area



Judy Hawley Park, 12 acre community-wide park.

Located behind the Township Hall on Highland Road.

- 1 Full-sized soccer field (irrigated)
- 2 Half-sized soccer fields (irrigated)
- Pavilion with 5 picnic tables
- Playstructure / Swing Set
- Paved path (2200')
- 2 Basketball courts with 4 hoops
- Sand volleyball court
- 8 Horseshoe pits
- 2 Portable toilets
- Maintenance building
- Barrier-free rating 2





Ferdinand C. Vetter Park, 6.2 acre community-wide park located behind the Dublin Community Senior Center on Union Lake Road.

- Baseball Field (Irrigated)
- Shelter with picnic tables
- Concession / Utility Building
- Paved path
- Portable Toilet
- Playstructure
- Center with kitchen (capacity of 125 people)
- Barrier-free rating 3



Grant Project Number CM 99-049:	Ferdinand C. Vetter Park, a community-wide facility
Service Area:	South half of White Lake Township
Grant Project :	Ball fields restoration, paved pathway, shelter with picnic tables, play structure
Grant Status:	Successfully closed out in 2008
Park Status:	All work funded by CM 99-049 is complete and facilities are being well-maintained



Old Township Hall, 0.5 acre community-wide facility.
Located on the south side of Highland Road, across from the Township Hall.

- Center with kitchen (capacity of 125 people)
- Barrier-free rating 2



Fisk Farm – 5 acre community-wide facility operated by White Lake Historical Society
Located on the northwest corner of Highland Road and Fisk Road

- Facilities accommodate school groups and may be rented
- Barrier-free rating 3



Hess-Hathaway Park, 165 acre community-wide park located in Waterford Township on Williams Lake Road.

- Historic farm house
- Lone Cedar Farm Barn with out buildings and farm animals
- Community building
- Two storage buildings
- Two pavilions, tables, grills, drinking fountain
- Natural ponds
- All Kids Playground
- Two volleyball courts
- Four horseshoe pits
- Nature trails for hiking or cross-country skiing
- Gazebo
- Softball
- Barrier-free rating is the responsibility of Waterford Township



Hess-Hathaway Park is located within Waterford Township and is maintained by the Waterford Township Park system. White Lake residents have access to park facilities for the same cost as Waterford residents. The fifteen-member park committee has 3 designated positions for White Lake Township residents. Barrier-free status is the responsibility of Waterford Township.



Hidden Pines Park, 9 acre community-wide park located on White Lake Road in White Lake Township just west of Hidden Pines Trail.

- Baseball / Softball Field
- Semi-Improved Parking Area
- Storage Building
- Barrier-free rating 2

Hidden Pines Park is the newest Township Park being improved and designated in 2012. White Lake Township has established a park master plan for Hidden Pines. The master plan for Hidden Pines Park calls for the development of a kid's playground, picnic pavilion, walking track, and improved parking facility.

SCHOOLS LOCATED WITHIN WHITE LAKE TOWNSHIP

The following schools provide recreational facilities within White Lake Township:



Oxbow Elementary – 100 Oxbow Lake Road

- 5 Swing sets
- 2 Baseball fields
- 1 Soccer field
- 1 Kickball court
- 3 Baseball nets
- 3 Playstructures
- Small, fenced playground with 3 swings and climbers



Brooks Elementary - 1000 Hill Road

- 2 Swing sets
- 1 Slide
- 1 Playstructure
- 1 Large Climber
- 2 Small Climbers
- 1 Soccer Field
- 2 Basketball Nets
- 1 Baseball field



Lakewood Elementary - 1450 Bogie Lake Road

- 2 Swing sets
- 1 Soccer field
- 1 Playscape
- 1 Baseball diamond
- 1 Basketball court
- Natural study area



Dublin Elementary - 9260 Sandyside

- 2 Swing sets
- 1 Softball field
- 2 Playscape
- 1 Soccer field
- 1 Baseball
- 4 Basketball nets
- 1 Football field





White Lake Middle School - 1450 Bogie Lake Road

- 1 Baseball field
- 1 Soccer field



Lakeland High School - 1630 Bogie Lake Road

- 1 Varsity baseball field
- 1 Varsity softball field
- 1 JV baseball field
- 1 JV softball field
- 2 Physical education fields
- 8 Tennis courts
- 1 Football Field & 1 Football practice field
- Running track
- Cross-country track (around complex)
- Competitive and community pools
- Fieldhouse to accommodate three sporting events simultaneously
- Fitness Center with weight and aerobic equipment
- 1/9-mile indoor walking/running track
- Natural study area



Douglass Houghton Elementary - 8080 Elizabeth Lake Road

- 4 Swing sets
- 2 Baseball fields
- 2 Tennis courts
- 1 Playscape
- 1 Soccer field
- 2 Basketball nets
- Climbing equipment



St. Patrick's Elementary School - 9040 Hutchins Road

- 1 Swing set
- 2 Tire swings
- 1 Bouncer
- 1 Softball field
- 2 Basket ball nets
- 1 PlayScape

PRIVATE/COMMERCIAL RECREATION FACILITIES



Huron Valley Pools and Fitness

Competitive and community pool, 5,000-square foot fitness center with weight and aerobic equipment, 1/9-mile indoor track, field house for three sporting events.



Brentwood Golf Course, 113 acres

18-hole golf course with club house and restaurant have homes surrounding the course. Located at West Cedar Island Lake Rd. off of Bogie Lake Rd.



Alpine Valley Ski Area, 111 acres

Snow skiing resort with a wide range of downhill skiing opportunities.



Walt's Landing, 2 acres

Canoe and boat rental; camping. Located at Highland and Pontiac Lake Roads.



Haverhill Farms, 21 acres

English riding lessons, summer riding day camps, boarding & training, pony parties, competitions. Located at 2986 McKeatchie



Hillside Equestrian Farm

Horseback riding. Located at 2444 Porter



Tristan Manor Farm

Horseback riding. Located at 1050 Oxbow Lake Road



Pontiac Lake Riding Stable

Horseback riding stable with hourly rentals, trail riding, pony rides, hay rides, lessons and scout program. Located in Pontiac Lake Recreation Area.



Highland Recreation Area Riding Stable

Horseback riding stable with hourly rentals, trail riding, hay & sleigh rides, lessons, scout program, summer camp, petting farm.



VFW Hall, 8 acres

Social Hall, baseball, outside shelter, and a bar. Located at 321 Union Lake Rd.



Stan Palick Park, 41 acres (for sale)

Canoe rental and camping area. Located off Elizabeth Lake Rd.



Ivory Farms, 153 acres

Horseback riding stable and boarding facility. Located on Cooley Lake Road.



Fisk Farm

Accommodations for school groups and rental facility. Located on Highland Road.

STATE PARKS AND RECREATION AREAS



Highland State Recreation Area, Livingston and Oakland Counties

This park covers 5,903 acres in total, of which 1624.51 acres is in White Lake Township

- Dodge 10 unit, located off Pettibone Lake Road at the western end of the park, provides a quiet setting for many activities. A picnic shelter is available for rent between April 1 and October 15.
- Teeple Lake, with its clear water and surrounding wooded hills, is located in the southeastern section of the park. Available for use: swimming beach, modern toilet building, horse shoe courts, volleyball net, picnic area with grills, picnic shelters for rent and a boat launch.
- Goose Meadow has the following: nature trails, picnic areas with grills, picnic shelter for rent, horseshoe court, and ball diamond.
- Rustic Campground with 30 sites, is available to campers with or with out Horses. Access to the Horse trails are nearby.
- Rustic Cabin, Bass Lake Cabin is available for rent year round.
- Boating and fishing access provided to Alderman, Teeple, Moore and Lower Pettibone Lakes within the park.
- Hunting allowed in designated areas
- Approximately 17 miles of hiking and cross country ski trails
- 16 miles of mountain biking trails
- 12 miles of bridle trails
- Horse staging area
- Dog field trial area
- Wildlife viewing area
- Snowmobiling in designated area
- Youth organization campground
- Highland Recreation Area riding stable, trail riding, pony rides, western riding lessons, summer horse camp, scout merit badge



Pontiac Lake State Recreation Area, Oakland County

This park covers 3800 acres of which 3536.56 acres are located in White Lake Township.

- Camping – 176 sites, rustic sites for equestrians, youth organizational camps
- Hunting
- Beach and Picnic area; picnic shelters rentals; fishing dock; volleyball nets; soft ball diamonds; basket ball; horseshoe pits; playground
- Concession area
- Boat launch
- Mountain bike trails
- Hiking

- Rifle Range
- Snowmobiling
- Cross country skiing
- Bridle trails and staging area
- Michigan Explorer Program
- Riding Stable that has trail riding, pony ride, sunset ride, hay ride, scout badge program and western riding lessons
- Remote control club



REGIONAL FACILITIES INVENTORY

STATE PARKS AND RECREATION AREAS



Metamora-Hadley State Recreation Area, Lapeer County

This 723-acre park has 214 modern campsites and 2 mini cabins. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing and hiking.



Ortonville Recreation Area, Oakland County

This 5,400-acre park has 25 rustic and equestrian camping sites, an organization camp, and cabins. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, cross-country skiing and horseback riding.



Lakeport State Park, St. Clair County

This 565-acre park has 284 modern campsites including an organization camp and mini cabins. Facilities include picnicking, playground and a beach house. Activities include swimming, fishing and hiking.



Bald Mountain State Recreation Area, Oakland County

This 4,637-acre recreation area includes an organization camp and cabins. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking and cross - country skiing.



Wetzel State Park, Macomb County

This 900-acre park offers no camping and limited facilities and is used primarily for open space. Activities include hunting, snowmobiling and hiking.



Algonac State Park, St. Clair County

This 1,450-acre park offers 296 modern campsites and an organization camp. Facilities include picnic equipment, playground and a boat launch. Activities include hunting, fishing and hiking.



Dodge - No 4 State Park, Oakland County

This 139-acre park does not offer camping facilities but does have picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, fishing, and snowmobiling.



Sterling State Park, Monroe County

This 1,000-acre facility has 256 modern campsites. Facilities include picnicking, playgrounds, a beach house and a boat launch. Activities include swimming, fishing and hiking.



Proud Lake State Recreation Area, Oakland County

This 4,700-acre recreation area has 130 modern campsites, an organization camp, mini cabins and tent rentals. Facilities include picnic equipment, playgrounds, a beach house, a concessions area, and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, cross-country skiing and horseback riding.



Island Lake State Recreation Area, Livingston County

This 4,000-acre area offers an organization camp and 2 mini cabins. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling and hiking.



Maybury State Park, Oakland County

This 944-acre park offers no regular camping but has an organization camp. Facilities include picnic equipment, playgrounds and a visitor center. Activities include fishing, hiking, cross-country skiing and horseback riding.



Waterloo State Recreation Area, Jackson and Washtenaw Counties

This 20,500-acre recreation area has 350 campsites including modern sites, rustic sites, horseman's facilities, an organization camp and cabins. Facilities include picnic facilities, playgrounds, a beach house, a boat launch and a visitor center. Activities include swimming, hunting, fishing, snowmobiling, hiking, cross - country skiing and horseback riding.



Pinckney State Recreation Area, Livingston and Washtenaw Counties

This 11,000-acre recreation area has 316 campsites including modern, rustic facilities and an organization camp. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, cross-country skiing and horseback riding.



Brighton State Recreation Area, Livingston County

This 4,947-acre area offers 222 campsites including modern and rustic sites, horseman's facilities, and cabins. Facilities include picnic equipment, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, cross-country skiing, horseback riding, and the Michigan Explorer Program.



Seven Lakes State Park, Oakland County

This 1,434-acre site has 71 modern camping sites. Facilities include picnic equipment, playgrounds, canoe rental, concessions, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, mountain biking, and cross-country skiing.



Holly State Recreation Area, Oakland Counties

This 7,817-acre area has 159 modern campsites, an organization camp, 1 cabin, and 2 mini cabins. Facilities include picnic, playgrounds, a beach house, and boat launch. Activities include swimming, hunting, fishing, snowmobiling, mountain biking, hiking, skiing, Michigan Outdoor Explorer Program, and horseback riding.



Sleepy Hollow State Park, Clinton County

This 2,678 acre park offers 181 modern campsites an organization camp and tent rentals. Facilities at the park include picnic facilities, playgrounds, a beach house and a boat launch. Activities include swimming, hunting, fishing, snowmobiling, hiking, and cross-country skiing.

OAKLAND COUNTY PARKS



Addison Oaks, Addison Township

794-acre park; mountain biking, picnicking, boating, camping, swimming, hiking, fishing, 6 miles of cross-country ski trails, ice fishing and ice skating, banquet and conference center



Glen Oaks, Farmington Hills

18-hole golf course, banquet facilities, formal garden



Groveland Oaks, Holly Township

360-acre park; campground, playground, picnicking, waterslide, swimming, boat rentals, winter sports



Independence Oaks, Clarkston

1,088-acre park; picnicking, hiking, fishing, swimming, camping, cross-country skiing, ice skating, ice fishing, ball field, sand volleyball courts, playground equipment, horseshoes pits; boat launch (non-motorized boats) and rowboat, canoe, and pedalboat rentals; 10 miles of nature and ski trails; 2.5-mile paved hike, bike, and blade pathway; Nature Center



Lyon Oaks, Lyon Township

1024-acre park with 800 acres of preserved wetlands, 13-acre "Bark Park" for dogs and owners, 18-hole golf course, hiking, picnicking, archery deer hunting, nature center, banquet facilities



Orion Oaks, Orion Township

27-acre park; 10 miles of hiking, mountain biking, and cross-country skiing trails; fishing; 7-acre "Bark Park" for dogs and owners

**Red Oaks, Madison Heights**

Water Park with children's water playground, toddler water play area, "River Ride," waterslide, wave-action pool, picnicking, playground, 9-hole executive golf course

**Rose Oaks, Rose Township**

620-acre undeveloped park; hiking, fishing

**Springfield Oaks, Davisburg**

18-hole golf course; banquet facilities, exhibit hall, outdoor arenas

**Waterford Oaks, Waterford Township**

145-acre park; platform tennis courts, tennis courts, sand volleyball courts, children's play equipment, toboggan run, BMX track, picnicking, 4 miles of hiking trails, banquet facilities; water park with water playground, raft rides, wave-action pool, and waterslide

**White Lake Oaks, White Lake Township**

18-hole golf course; banquet facilities; clubhouse; pro shop

HURON-CLINTON METROPOLITAN AUTHORITY PARKS**Delhi**

53-acre park with picnicking, playgrounds, canoeing, fishing, softball diamonds

**Dexter-Huron**

122-acre park with picnicking, playgrounds, canoeing, fishing, softball diamond

**Hudson Mills**

1,549-acre park with disc golf, picnicking, fishing, camping, cross-country skiing; courts for tennis, basketball, volleyball, and shuffleboard; 18-hole golf course, baseball / softball diamonds, playgrounds, hike-bike trail, nature trail; Activity Center with natural exhibits, interpretive programs, and rental equipment

**Huron Meadows**

1,540-acre park with picnicking, fishing, ice fishing, cross-country skiing, boat rental, hiking trails, 18-hole golf course

**Indian Springs**

2,215-acre park with cross-country skiing, picnicking, sledding, "tot lot" playscape, paved hike-bike trail, 18-hole golf course, Environmental Education Center

**Kensington**

4,357-acre park with disc golf, picnicking, bird-watching, canoeing, cross-country skiing, fishing, ice fishing, camping, horseback riding, swimming, sledding and tobogganing, 18-hole golf course, nature center, farm learning center, beaches with boat rentals, paved hike-bike trail, fitness trail



Lake Erie

1,607-acre park with bird-watching, fishing, ice fishing, hiking, picnicking, sledding; basketball, tennis, and volleyball courts; wave action swimming pool, 18-hole golf course, museum and nature center, boat launches and marina, children's play area with a child-sized town



Lower Huron

1,258-acre park with fishing, camping, canoeing, cross-country skiing, picnicking; ice skating, basketball, tennis, and volleyball courts; golf course, swimming pool with waterslide, hike-bike trails, self-guided nature trails



Metro Beach

770-acre park with hiking, biking, bird-watching, fishing, ice fishing, cross-country skiing, ice skating and ice hockey, picnicking; tennis, shuffleboard, and volleyball courts; fitness trail; swimming at 1000 foot-long beach with bathhouse, beach shop, and food bar; spray park, boat launch and marina, boat shows, activity center, nature center



Oakwoods

1,756-acre park with hiking, biking, bird-watching, fishing, horseback riding, canoeing, picnicking, nature center



Stoney Creek

4,461-acre park with hiking, biking, disc golf, fishing, ice fishing, ice skating, swimming, sledding, snowboarding, tobogganing, cross-country skiing, picnicking, canoeing, bird-watching, nature center, boat launch, fitness trail, 18-hole golf course



Willow

1,531-acre park with hiking, biking, cross-country skiing, disc golf, fishing, ice fishing, ice skating, sledding, tobogganing; basketball, tennis, shuffleboard, and volleyball courts; swimming pool, tot lot, 18-hole golf course, boat rental



Wolcott Mill

2,625-acre park with camping, hiking, horseback riding, 18-hole golf course, historic grist mill, farm learning center, activity building and picnic pavilion

OAKLAND COUNTY GOLF COURSES

COURSE NAME	TOWNSHIP/CITY	NUMBER OF HOLES
Fieldstone	Auburn Hills	18
Bald Mountain	Lake Orion	27
Beach Woods	Southfield	9
Beacon Hills	Commerce	18
Beaver Creek	Oakland	27
Blackheath	Rochester Hills	18
Boulder Point	Oxford Township	27
Bramblewood	Holly	18
Brentwood	White Lake	18
Cattails	South Lyon	18
Clarkston	Clarkston	9
Copper Creek	Farmington Hills	9
Copper Hills	Oxford	18
Devil's Ridge	Oxford	18
El Dorado	Walled Lake	18
Evergreen Hills	Southfield	9
Glen Oaks	Farmington Hills	18
Glenlore	Commerce Township	18
Hampton	Rochester Hills	9
Heather Highlands	Holly	27
Hickory Hills	Wixom	9
Highland Hills	Highland	18
Independence Green	Farmington Hills	18
Indian Springs Metropark	White Lake	18
Kensington Metropark	Milford	18
Lincoln Hills	Birmingham	9
Links at Pinewood	Walled Lake	18
Links of Novi	Novi	27
Mulberry Hills	Oxford	18
Mystic Creek	Milford	18
Normandy Oaks	Royal Oak	9
Oxford Hills	Oxford	18
Pebble Creek	South Lyon	18
Pine Knob	Clarkston	18
Pine Trace	Rochester Hills	18
Pontiac Country Club	Waterford	18
Pontiac Municipal	Pontiac	18
Rackham	Huntington Woods	18
Red Oaks	White Lake	9
Rochester Hills	Rochester Hills	18
Royal Oak	Royal Oak	9
Salem Hills	Northville	18
San Marino	Farmington Hills	9
Shenandoah	West Bloomfield	18
Silver Lake	Waterford	9
Spring Lake	Clarkston	18
Springdale	Birmingham	9
Springfield Oaks	Davisburg	18
Sylvan Glen	Troy	18
Tanglewood	South Lyon	18
Twin Lakes	Oakland	18
Union Lake	Commerce Township	18
Westbrook	Novi	18
White Lake Oaks	White Lake	18

BARRIER-FREE ANALYSIS AND TRANSITION PLAN

A critical component in planning for recreation facilities is providing barrier-free access in order to accommodate the needs of physically challenged visitors. Barrier-free access includes, but is not limited to, ensuring that adequate barrier-free parking spaces, sidewalks, trails, picnic tables, and playground equipment are provided for renovated or new recreational facilities. Standards from The Accessibility Checklist, a guidebook founded upon the Uniform Federal Accessibility Standards (UFAS) and the codes and standards of the Americans with Disabilities Act (ADA), were used to verify barrier-free compliance.

In order to provide barrier-free park improvements that will be the most beneficial to park users, a transition plan is developed. The transition plan provides for two stages of park upgrades. The first stage of barrier-free upgrades are the most critical to implement, because they include improvements to park accessibility, such as the installation of pathways and barrier-free bathrooms. The second stage would involve replacing those particular items that are not ADA-compliant, which may include such items as grills and playground equipment. Given the recent park improvements, the Township's existing facilities are in fairly close compliance with barrier-free standards.

BLOOMER PARK – Accessibility Rating 3



Bloomer Park is designed using the highest standards of universal accessibility. The trails and scenic overlook located at Grass Lake are designed to accommodate all users.



FERDINAND C. VETTER PARK – Accessibility Rating 3



Barrier-free improvements to walking path and parking area have been completed



JUDY HAWLEY PARK - Accessibility Rating 2

First Stage



Barrier-free access from pathway not provided to play structure



Barrier-free access from parking lot not provided to pavilion



Parking lot needs to be paved to meet barrier-free standards, which would increase access to barrier-free pathway



Second Stage



Signage should be provided to identify the walking path where it crosses the access drive

HESS-HATHAWAY PARK

First Stage



Pave road that leads to pathway to Pavilion II

Second Stage



Verify grades to Pavilion I meet barrier-free standards



(Although Hess-Hathaway Park is available for use of White Lake residents on a fee basis, it is located in neighboring Waterford Township and its accessibility rating and barrier-free improvements are the responsibility of Waterford Township Parks & Recreation).

HIDDEN PINES PARK – Accessibility Rating 2



Hidden Pines Park has a Park Master Plan that incorporates universal design elements, and will provide barrier free amenities for all user groups.

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CHAPTER 8 – STANDARDS, DEFICIENCIES, STRATEGIES

A community's demographics, land uses, and natural features are critical to consider when determining the quantity, type, and location of park facilities that should be offered to its residents. In addition, guidelines established by the National Recreation and Park Association and American Academy for Parks and Recreation Administration can assist communities during the recreation planning process in determining where potential recreational deficiencies exist. The following summarizes the national standards that are the most relevant to White Lake, and illustrates what the Township can do to alleviate potential recreational deficiencies in the community.

RECREATION STANDARDS

To begin the recreation planning process, it is helpful to establish a classification system for local recreation and open space facilities. Parks can range from a tiny tot lot up to a major special use park such as a golf course. The following includes a park classification system that is applicable to White Lake Township.

MINI-PARK

Specialized facilities that serve a concentrated or limited population, or specific groups such as tots or senior citizens. For example, suggested recreational facilities for an individual mini-park are a tot lot, 2 picnic tables and ½ acre open space.

Service Area: Less than ¼ mile radius
Desirable Size: 2,500 square feet - 1 acre
Acres/1,000 Population: 0.25 to 0.5 acre

NEIGHBORHOOD PARK/ PLAYGROUND

The neighborhood park / playground is the standard park unit in White Lake Township. Neighborhood parks should offer a variety of activities to accommodate a range of ages, physical abilities, and recreational interests. Therefore, it is recommended that neighborhood parks should be comprised of approximately 50% active uses (fields, courts, playgrounds, skating, etc.) and 50% passive uses (trails, picnic areas, etc.). It is recommended that a minimum of 7-10 parking spaces should be provided.

Service Area: ½ to 1 mile radius
Desirable Size: 5 - 10 acres
Acres/1,000 Population: 1.0 to 2.0 acres

COMMUNITY-WIDE PARK

Community-wide parks include larger parks with diverse environmental quality. A variety of passive and active uses are provided, including athletic fields, sledding hills, trails, picnic areas, and playgrounds. Typically, uses are separated by activity and age group to limit potential conflicts between different types of users.

Service Area: 2 - 3 mile radius, several neighborhoods.

Desirable Size: 20 - 50 acres

Acres/1,000 Population: 5.0 to 8.0 acres

CONNECTOR TRAIL

Connector trails would include a multi-use trail to give non-motorized access to parks and other uses throughout White Lake Township. Modes of travel include walking, biking, in-line skating, cross-country skiing, and canoeing. Active play areas may be included. These trails could be located in an independent right of way, such as along the ITC utility corridor (DTE electric lines), or within the road right of way, such as along Highland Road.

Service Area: No applicable standard

Desirable Size: Sufficient area to protect the resource and provide maximum use.

Acres/1,000 Population: Variable

SPECIAL USE PARK

Special use parks are generally areas for single purpose recreational activities, such as golf courses, nature centers, senior centers, zoos, conservatories, arboreta, display gardens, outdoor theaters, or areas that preserve, maintain, and interpret buildings, sites, and objects of historical significance.

Service Area: No applicable standard

Desirable Size: Variable depending on the specific activity or use

Acres/1,000 Population: Variable

NATURAL RESOURCE AREAS

These areas focus on protection and management of the natural/cultural environment with recreation use as a secondary objective.

Service Area: No applicable standard

Desirable Size: Sufficient to protect the resource

Acres/1,000 Population: Variable

Source: Recreation, Park & Open Space Standards & Guidelines National Recreation and Park Association; Roger A. Lancaster, Ed; 1983. *As adopted by Birchler Arroyo Associates, Inc.*
Park, Recreation, Open Space, and Greenway Guidelines, National Recreation and Park Association and the American Academy for Park and Recreation Administration; James D. Mertes, Ph.D., CLP and James R. Hall, CLP, Co-Task Force Chairs, 1996. *As adapted by Birchler Arroyo Associates, Inc.*

FACILITY DEVELOPMENT STANDARDS

Another important component in the analysis process is the application of development standards for a variety of facility types and specific activities. Table 8-1 below recommends space requirements and units per population for a variety of activities and/or facilities.

**Table 8-1
Suggested Facility Development Standards
White Lake Township**

ACTIVITY OR FACILITY	SPACE REQUIREMENTS	SERVICE RADIUS / LOCATION NOTES
BASKETBALL		
Youth	2,400-3,036 square feet	¼ to ½ mile
High School	5,040-7,280 square feet	
Collegiate	5,600-7,980 square feet	
TENNIS		
	Minimum of 7,200 square feet single court. (2 acres of complex)	½ to 1 mile
VOLLEYBALL		
	Minimum of 4,000 square feet	½ - 1 mile
BASEBALL		
Official	3.0-3.85 acres minimum	½ - 1 mile
Little League	1.2 acres minimum	
FOOTBALL		
	Minimum 1.5 acres	Within White Lake Township (15 – 30 minute travel time)
SOCCER		
	1.7 to 2.1 acres	1 – 2 miles
SOFTBALL		
	1.5 to 2.0 acres	½ - 1 mile
MULTIPLE RECREATION COURT (basketball, volleyball, tennis)		
	9,840 square feet	1 – 2 miles
GOLF		
Par 3 (18-hole)	50-60 acres	
9-hole standard	Minimum 50 acres	
18-hole standard	Minimum 110 acres	

Source: Park, Recreation, Open Space and Greenway Guidelines, National Recreation and Park Association and the American Academy for Park and Recreation Administration, 1996. *As adapted by Birchler Arroyo Associates, Inc.*

RECREATION DEFICIENCIES & STRATEGIES

The following discusses the deficiencies in recreational land that White Lake Township is projected to have in the years 2010 and 2020. The projected need is based upon population estimates generated for 2010 and 2020 as part of the White Lake Master Plan process. As discussed below, both Township-operated facilities and other public recreation facilities were considered when developing this analysis.

MINI-PARK

2010 Projected Need: 12 acres

2020 Projected Need: 15 acres

There are not any Township-operated recreational facilities that are classified as mini-parks. However, school sites could be used to help satisfy the need for local playgrounds for neighborhood children. Given that all the school sites are south of M-59, with the exception of Brooks Elementary, it is especially critical for the Township to consider possible sites for mini-parks north of M-59. Whenever feasible, parcels for mini-parks should be secured in growing areas of the Township, particularly areas in the southeastern portion of the Township that may not be properly served by the existing school and park facilities. Small park sites could be secured as elements of new residential developments. The preservation of private open space within a new residential community can assist in providing neighborhood-level recreation facilities for the residents. As the Township continues to develop and the population grows, it will be critical to set aside areas that could be developed and easily accessed by children in nearby developments.

NEIGHBORHOOD PARK/ PLAYGROUND

2010 Projected Need: 32 acres

2020 Projected Need: 42 acres

Vetter Park and Hawley Park are both classified as neighborhood park/ playground facilities. These parks typically serve as the fundamental park unit in a community, because they are smaller and easier to develop than a community-wide park, while having the facilities to meet a variety of recreation needs in the community. Since 2010 White Lake has developed two (2) new neighborhood parks with Bloomer Park and Hidden Pines Park for an addition of thirty seven (37) Acres of new park land. These two new neighborhood parks should satisfy the neighborhood park need for the next five to ten years.

COMMUNITY-WIDE PARK

2010 Projected Need: 55 acres

2020 Projected Need: 95 acres

White Lake Township does not operate any community-wide parks, however the Hess-Hathaway Park on Williams Lake Road in Waterford is a community-wide park that serves the White Lake population. While Indian Springs Metropark and the Highland and Pontiac Lake State Recreation Areas have facilities that serve a community-park need, the Township should pursue developing additional park facilities of its own that will serve a larger population than Vetter and Hawley parks, but at a much smaller scale than the Metroparks or State Recreation Areas that serve a regional population. The location of these facilities should be central, and therefore accessible to the entire White Lake community. Development of one large community-wide park within the five-year time frame of this plan (2014-2018) would serve the needs of the community.

CONNECTOR TRAIL

The implementation of the pathways component of this Recreation Plan will assist in meeting the needs of White Lake residents for a non-motorized method of travel. The pathways will provide a vital link between various recreation facilities and residential neighborhoods, which are currently not accessible except by car. This will provide greater access to recreational facilities by children, the elderly, and those who may be unable to drive.

SPECIAL USE PARK

Recreational facilities in White Lake that are classified in this category include the Dublin Community Senior Center, Old Township Hall (0.5 acres), Alpine Valley Ski Area (112 acres), and various horseback riding facilities (50 acres+) and White Lake Oaks County Golf Course. There is also a potential for additional park or recreation facilities on a former tree farm site on Hitchcock Road. While there is no particular standard for the acreage or number of special use parks that should be provided in a community, developing these facilities can provide a unique resource for residents and visitors alike. Given the vast natural resources within the Township, and the high rate of growth in the community, it is critical to preserve these areas for the benefit of current and future residents whenever feasible.

NATURAL RESOURCE AREAS

While White Lake Township does not control vast natural resource areas, the Township has over 5,700 acres of protected land maintained by the State of Michigan (Highland and Pontiac Lake State Recreation Areas) and the Huron-Clinton Metropolitan Authority (Indian Springs Metropark). Future preservation of natural resource areas will most likely occur as open space within developments, or perhaps land easements maintained by a nature conservancy. The Huron River corridor provides a prime resource for potential future preservation and public access.

Source: Recreation, Park & Open Space Standards & Guidelines National Recreation and Park Association; Roger A. Lancaster, Ed; 1983.
Park, Recreation, Open Space, and Greenway Guidelines, National Recreation and Park Association and the American Academy for Park and Recreation Administration; James D. Mertes, Ph.D., CLP and James R. Hall, CLP, Co-Task Force Chairs, 1996.



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CHAPTER 9 – MULTI-USE PATHWAYS PLAN

One element of many successful recreation plans is a pathways component. This non-motorized system of pathways provides a way for walkers, runners, bicyclists, in-line skaters, equestrians, and others to travel through the community without using a vehicle. A pathways system should be located in areas where there is high pedestrian activity, linking residential neighborhoods to each other and with commercial areas, municipal offices, parks, cultural facilities, churches, and schools. Pathway design and development should incorporate safety factors, including appropriate location, width, surfacing, and signage.

The Plan begins with background information, including a summary of the existing pathway system, public input results, and Goals and Objectives.

EXISTING PATHWAY SYSTEM

The existing White Lake pathway system is located along M-59, as shown on the Existing Pathways Map (Map RP-15). On the north side of M-59, an 8-foot wide asphalt pathway extends from the western border of the Township to the eastern border of the Meijer development, west of Nordic Drive. Also, an 8-foot wide asphalt pathway is located on the south side of M-59, from west of Bogie Lake Road to the eastern limits of the Township. With the exception of newer replacement sections of the pathway, such as those in front of Meijer, White Lake Marketplace, Lakes Town Center, Lower, Fisk Corners and several scattered business sites, the pathway is in poor condition. Since the majority of the pathway is located directly adjacent to the traffic lanes on M-59, it is less safe for pedestrian use than if there were a landscaped strip separating the pathway from the curb. This pathway has not been adequately maintained by MDOT and many segments are nearly unusable.

There are scattered parcels along the M-59 corridor that either have an older, 5-foot wide concrete sidewalk or a new 8-foot wide asphalt path. As development continues along M-59, the sidewalk will be replaced with a pathway and additional segments will be constructed. Ultimately, this will result in one continuous, safe pathway along M-59. Recent examples include Speedway, McDonald's, Fisk Corners, Woodside Bible Church and Tractor Supply Company.



GOALS AND OBJECTIVES

Following the public input session, the information generated by the survey and workshop participants was compiled into a set of Goals and Objectives. The Goals and Objectives give the Parks and Recreation Committee a clear target to assist in satisfying the recreation needs of the White Lake community.

GOAL 1: Maintain and improve existing pathway segments.

- Work with the Michigan Department of Transportation (MDOT) and adjoining land owners to ensure new and updated segments of the M-59 pathway are properly maintained.
- Collaborate with the Road Commission for Oakland County (RCOC) to confirm that pathway segments can be maintained by the Township along County roads.
- Replace the existing, worn M-59 pathway and relocate further from the curb.
- Require installation of new or updated pathway segments as road improvements are made.

GOAL 2: Acquire new pathway segments and establish connections between existing segments.

- Require developers to provide pathway segments along their frontage as part of plan approval.
- Pursue funding sources, including those noted in the Implementation section below, to assist with the installation of missing portions of the pathway system.

GOAL 3: Plan connections to Oakland County Trail System.

- Ensure appropriate transitions are provided between the Township path and the Oakland County Trail System.
- Incorporate signage to notify Township trail users of the regional connections available to the Oakland County Trail System.

GOAL 4: Non-motorized access to parks.

- Ensure pathways are planned and installed along major roads between residential neighborhoods and the Township parks (Vetter, Hawley, Bloomer Park and Hidden Pines).
- Develop a safe pedestrian route between Highland Recreation Area / Indian Springs Metropark and Pontiac Lake Recreation Area.
- Require interior connections between new residential neighborhoods and nearby parks and trails.

GOAL 5: Non-motorized access to a future Central Gathering Place.

- Verify all "quadrants" of the Township will have pedestrian access to the future Lakes Town Center.
- Provide necessary signage to direct visitors to the Lakes Town Center.

GOAL 6: Individual connectors between neighborhoods and Township parks.

- Educate the public regarding the importance of pedestrian connections in order to achieve “buy-in” to the pathways plan
- Establish an appropriate location for a pedestrian connection between North Broadmoor and Vetter Park

PATHWAY PLAN

A non-motorized pedestrian system includes several categories of pathways, based on the anticipated volume of usage and the destinations served. Where pedestrian connections are necessary but a pathway system is not warranted, sidewalks may be provided. In White Lake, there are many potential trail routes with different levels of importance, based on facilities available in the Township and the population centers they connect.

The Pathway Potential Map (Map RP-16) includes several “types” of pathways, including an M-59 pathway, primary local routes, secondary local routes, and connections to the Oakland County Trail System and utility corridor. The M-59 pathway is a key route, since it provides direct access to the Township Hall, Township Library, Hawley Park, and a majority of White Lake’s non-residential development. Other major roads would serve as primary local pathways, including the following:

- Bogie Lake Road,
- Elizabeth Lake Road,
- Teggerdine Road, and
- Union Lake Road.

The four primary pathways above would connect M-59 and a significant number of White Lake neighborhoods to one another and to the following destinations:

- Township Hall/ Library/ Hawley Park and Fisk Farm on M-59;
- Huron Valley Educational Complex on Bogie Lake Road;
- Houghton Elementary on Elizabeth Lake Road;
- Dublin and St. Patrick Elementary Schools on Union Lake Road;
- Dublin Center/ Vetter Park on Union Lake Road;
- Pontiac Lake State Recreation Area and Indian Springs Metropark via Teggerdine, and potentially Oxbow Elementary to Elizabeth Lake Road.



M-59 Corridor in White Lake Township

Secondary local pathways are less heavily traveled than the primary routes, and would connect the following:

- Highland Recreation Area and Indian Springs/ Pontiac Lake State Recreation Area via Ormond Road and White Lake Road;
- M-59 corridor to Pontiac Lake State Recreation Area via Fisk Road;
- Huron Valley Educational Complex to Union Lake Road; and
- Union Lake Corridor to Highland Recreation Area.

The M-59 pathway and the secondary trails along White Lake Road and Pontiac Lake Road would connect to the proposed Oakland County Trails System, which would provide White Lake residents access to the regional, non-motorized system.

TYPES OF PATH FACILITIES

As noted above, there are a variety of paths that could be provided, depending upon the funding available and the community's needs. In White Lake, the County road network could accommodate both signed bicycle routes and bicycle lanes. M-59 and the International Transmission Company (ITC) corridor within the Township provide ideal locations for shared-use paths separated from road rights-of-way. The ITC corridor could be designed for use by bicyclists, equestrians, and the like, while providing users with natural views such as hills, meadows, woodlands, wetlands, and waterways. By incorporating these possibilities with the Goals and Objectives developed after public input, the following outlines the three types of planned bicycle facilities in White Lake Township:

Signed Bicycle Route

A signed bicycle route is a low-volume roadway designated for cyclist use, which typically connects dense residential areas to municipal facilities (Township Hall, library, etc.), schools, churches, retail uses, and the like. There is not a dedicated lane within the roadway for bicycle use. Rather, bicyclists share the road with vehicles and are guided to their destination by "bicycle route" (D11-1) signs along the shoulder. Under some circumstances, a bicycle route may be provided parallel to a sidewalk or pedestrian way, as shown in the image to the right.

Signed bicycle routes are typically provided in areas where there are low volumes of motorized vehicle traffic, or limited right-of-way would prohibit the construction of a dedicated bicycle lane or separate pathway. Unpaved roads, Natural Beauty Roads, and subdivision roads may all serve as signed bicycle routes.



*www.pedbikeimages.com/
Michael King*

In White Lake, roads that are expected to have a signed bicycle route include Jackson, Porter-Grass Lake-McKeachie (between Township offices and Bloomer #4 State Park), Cooley Beach, Cedar Island Road, the road through Highland Recreation Area connecting to the Oakland County Trail System, and the unpaved portions of Pontiac Lake Road and Fisk Road (prior to development of a separate pathway).

Bicycle Lane

Bicycle lanes are dedicated portions of the roadway that are designed, stripped, and signed to accommodate bicyclists. The lanes are commonly provided on roadways with higher vehicular traffic volumes and speeds than the unpaved roads and subdivision roads discussed above, and where there is a greater number of anticipated users. Typically, a single bicycle lane is provided on both sides of the road, so bicyclists can travel in same direction as vehicles on the road.

There are several thoroughfares in White Lake that could be designed to accommodate bicycle lanes, including Bogie Lake Road, Elizabeth Lake Road, Teggerdine, Union Lake Road, Ormond Road, White Lake Road, and the paved portions of Pontiac Lake Road and Fisk Road.



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Shared Use Path

Shared-use paths are routes that accommodate two-way “traffic” of non-motorized and pedestrian uses within a single right-of-way, separated from the roadway. Frequently, these trails are developed within an easement that is part of a utility corridor or within an abandoned railroad corridor. Shared-use paths can accommodate a wider variety of users (walkers, runners, in-line skaters, bicyclists, equestrians) than either signed bicycle routes or bicycle lanes, due to their greater width and separation from roads. Often these trails are used during the winter months for cross-country skiing. Therefore, the design of this trail system (width, materials, grade, etc.) is critical in order to accommodate all potential, desirable users. In White Lake Township, proposed pathways along M-59 and the ITC corridor would be classified as shared-use paths.



Source:www.bicyclinginfo.org

Other – Sidewalks

In areas where pathways are not provided, including within residential developments and along road right-of-ways not planned for pathways, sidewalks should be installed. Sidewalks will help to ensure that pedestrians are able to safely access the pathway system from their neighborhoods, and do not have to drive to use it. Similarly, residential neighborhoods should be connected to parks in order improve access for all residents. Providing a connection between the North Broadmoor subdivision and adjacent Ferdinand C. Vetter Park is a key link that must be made to maintain appropriate recreational access for residents. Sidewalks should be a minimum 5' wide and, where possible, 6' wide.

PATHWAY SYSTEM MAP

Based upon an analysis of the Pathway Potential Map, a Pathways Plan (Maps RP-17 and RP-18) was developed to provide linkages between high-density residential areas, the municipal complex, schools, parks, and retail areas. The routes that are expected to carry the highest volume of non-motorized and pedestrian traffic are planned as the primary routes, with the anticipated lower-volume corridors classified as secondary routes. The M-59 and ITC easement are other key routes of the pathway system, which will eventually connect to the Oakland County Pathways.

PATHWAY DESIGN

The usage of a pathway system is dependent upon a variety of factors, including the location of the pathway, safety features, and barrier-free accessibility. In addition to accommodating wheelchairs, accessibility includes designing the amenities so people with a hearing or sight impairment, a cognitive disability, someone unable to read, young children and the elderly, people using a walker or power scooter; and those not physically fit can utilize the trail. Consequently, the pathway must be carefully designed to accommodate all desirable users of the system.

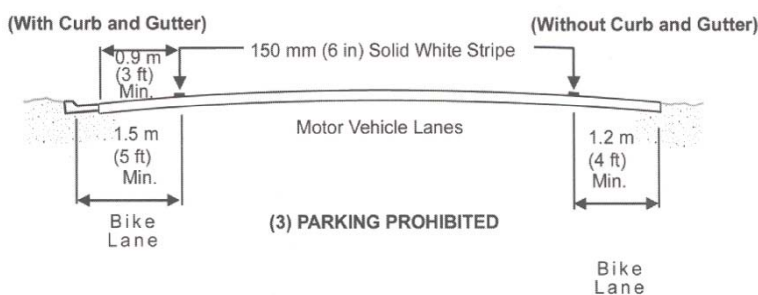


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SURFACING AND WIDTH

The surfacing and width of a path is a primary design component that is dependent upon the type of path provided. While signed bicycle routes utilize the existing roadway, the surface and width of bicycle lanes and shared-use paths must be carefully considered.

Figure 9-1
Cross-Section of a Bicycle Lane



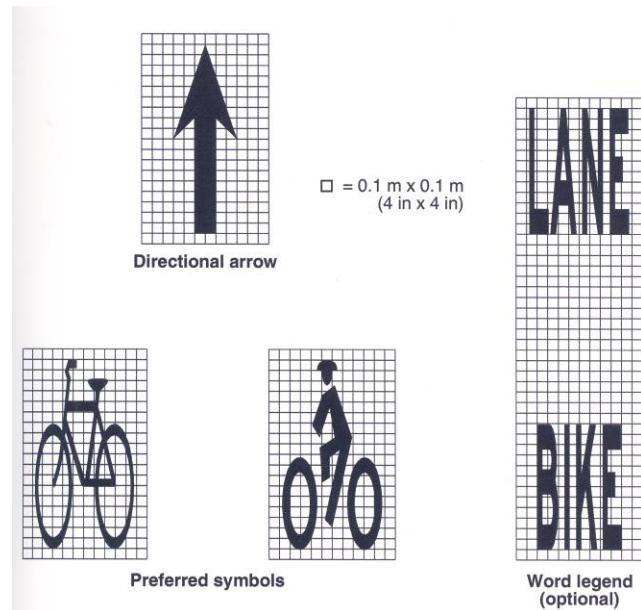
Source: U.S. Department of Transportation, Federal Highway Administration

Bicycle Lanes

Bicycle lanes would be paved with the same surface as the road itself, either asphalt or concrete. On a road without curb and gutter where on-street parking is not permitted, the minimum width of a bicycle lane is 4', as shown in Figure 9-1. Whenever possible, a 5' width would be preferred on roads with a high volume and/or speed of traffic. Roads that have a curb and gutter should have a minimum lane width of 3', with the gutter adding an additional 2', to provide a 5' bike lane.

The bicycle lane must be separated from the vehicle lane by a combination of stripping and pavement markings. There are numerous options available, depending upon roadway conditions. Examples of these possible pavement markings are provided in Figure 9-2 below. The Michigan Manual of Uniform Traffic Control Devices (MMUTCD) should also be consulted.

Figure 9-2
Examples of Bicycle Lane Pavement Markings



Source: U.S. Department of Transportation, Federal Highway Administration

Coordination of bicycle lane installation with the Road Commission for Oakland County could result in bicycle lanes, lane markings, and signage being provided as part of a road repavement project for minimal cost.

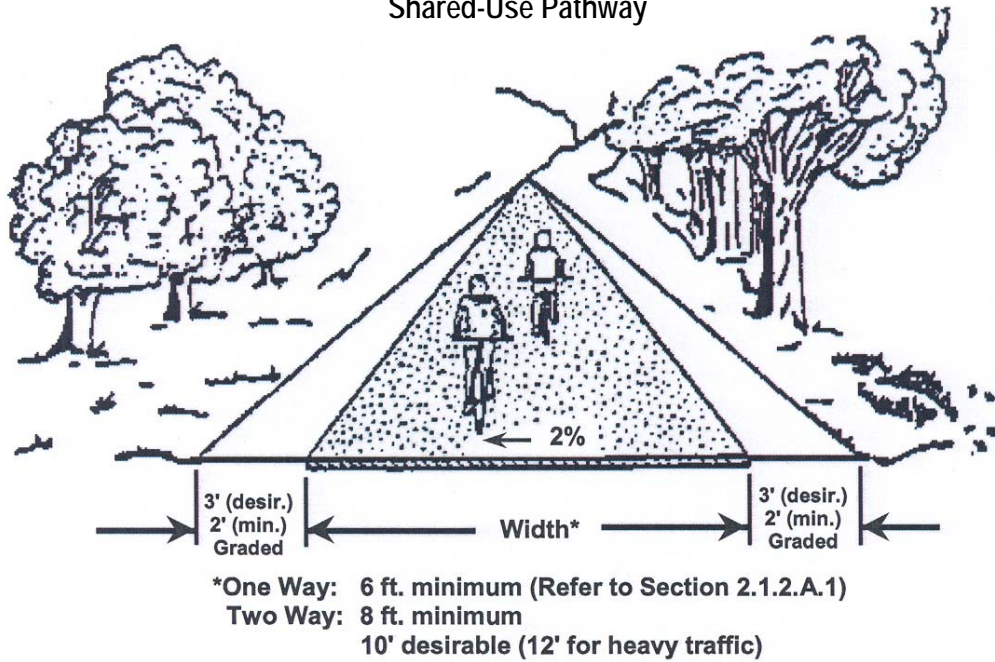
Shared-Use Paths

Shared-use paths are typically developed with either a paved surface (asphalt or concrete) or an unpaved, durable surface such as crushed limestone. The proposed M-59 pathway should accommodate bicyclists, walkers, in-line skaters, joggers, and similar pedestrian activity. As a result, a paved surface is necessary. Newer portions of the M-59 pathway have been installed with asphalt, and it is expected that the remainder will be asphalt as well. The utility corridor, however, is expected to be a primary route for equestrians, in addition to its anticipated use by bicyclists and pedestrians. While crushed limestone may be the most appropriate material to meet the needs of both cyclists and equestrians, the grades along some portions of this corridor may be too steep for an unpaved surface. As a result, a more comprehensive analysis of the route and terrain within the utility corridor is necessary prior to making a choice of the pathway material.

As shown in Figure 9-3 below, a shared-use path should have a minimum width of 8' to accommodate two-way traffic, with a preferred width of 10' where feasible. This width standard applies to both the proposed M-59 pathway and the utility corridor pathway. An 8' width will accommodate maintenance vehicles and emergency vehicles that will need to access the trail. Whenever possible, a 4 inch-wide yellow centerline stripe should be provided to separate opposite directions of travel.

While it may not be possible to provide a "shoulder" adjacent to the M-59 pathway, it should be provided adjacent to the utility corridor pathway if the easement width will accommodate it. The pathway should be a minimum 2' in width on either side of the trail surface. If there is sufficient easement width, the shoulder should be 3' on either side of the pathway. The "shoulder" provides a safe area for users to pull off the trail, while reducing the impact upon vegetation and the surrounding natural area. The 2' wide shoulder should have a maximum 1:6 slope (16.67% grade).

Figure 9-3
Shared-Use Pathway



Source: Iowa Statewide Urban Design and Specifications (SUDAS); Urban Design Standards Manual;
www.iowasudas.org/designs/ch8sec2.pdf

Figures 9-4 and 9-5 illustrate the recommended standard for major and minor pathways in White Lake Township. Figures 9-6 and 9-7 illustrate the recommended standards for multi-use cross-country pathways with and without equestrian trails.

Figure 9-4
Standards for Major Pathways



Figure 9-5
Standards for Minor Pathways



Figure 9-6
Standards for Multi-Use Cross-Country Pathway with Equestrian Trail

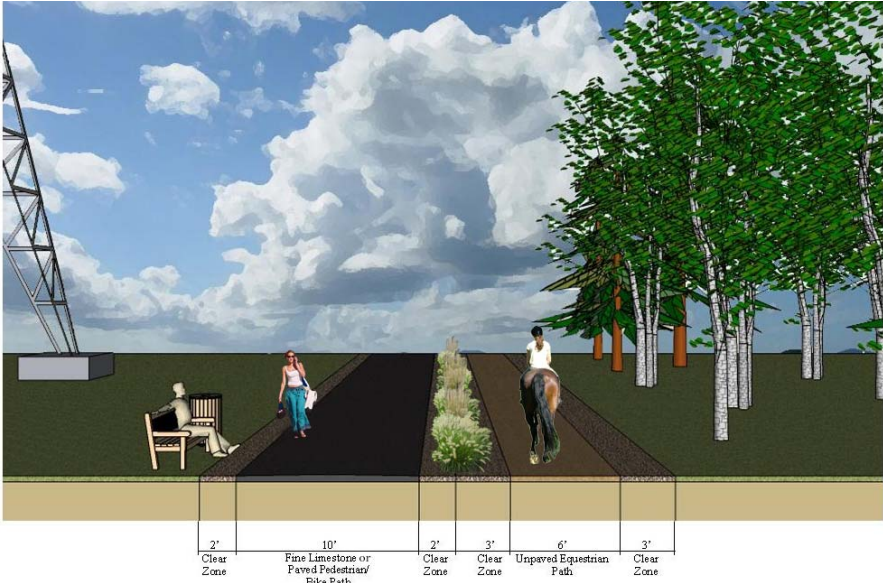
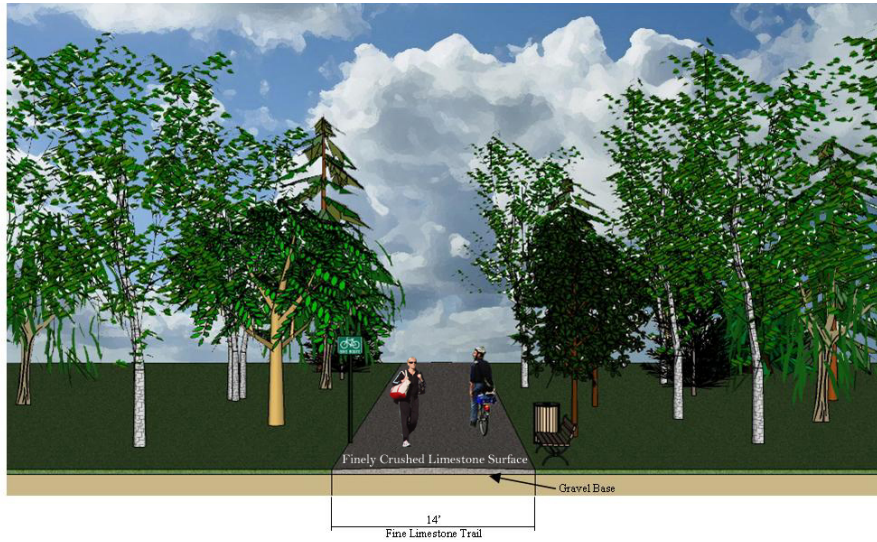


Figure 9-7
Standards for Multi-Use Cross-Country Pathway without Equestrian Trail



CLEARANCE

The area adjacent to the pathway must be kept free of obstacles, in order to protect park users from possible injury due to objects protruding into or overhanging the pathway. Lightpoles, vegetation, and signs are among the items that could encroach on the trail area, and pose a danger to pathway users. AASHTO recommends that 3' of clearance should be provided on either side of the pathway (an additional 1' on either side of the trail, beyond the 2' graded area) to provide proper horizontal separation. In addition to providing safety for trail users, the 3' of clearance improves access for maintenance crews to mow the grass. Vertical separation should be a minimum of 8' to accommodate bicyclists and 12' to have proper space for horse riders.

GRADE

The pathway grade is calculated as the change in elevation over the distance along the trail. The AASHTO Guide for the Development of Bicycle Facilities (1999) recommends a maximum grade of 5% on paved paths, with smaller, gradual grades being provided whenever feasible. When grades exceed 5%, AASHTO recommends the following grade limits for a given distance along the trail:

Grade	Maximum Recommended Distance (feet)
5-6%	800
7%	400
8%	300
9%	200
10%	100
11%+	50

Signage should be provided along the trail to inform users of the upcoming grade, as shown in Figure 9-8 below. Also, adding switchbacks or additional width to the trail are other design elements that can compensate for the impact of the steeper grades.

On unpaved paths such as crushed limestone, AASHTO recommends maintaining grades at 3% or less. Steeper grades along an unpaved path may be more prone to drainage and erosion problems, and may not allow a recreational bicyclist to control his or her speed on a decent. However, with careful design and construction, some segments of a limestone path may be able to accommodate greater slopes.

Figure 9-8
Example of Signage Informing Users of Steep Grade



Source: Houston Bike Route Signage (www.h-town-visually.blogspot.com)

CROSS SLOPE

The cross slope is defined as the incline of the pathway from one side to another. Some cross slope is necessary to maintain proper surface drainage and prevent water ponding and ice accumulation. However, if the slope is too great, then it is awkward for pathway users and potentially dangerous for those who need a barrier-free surface. To ensure safety, drainage grates and manhole covers should be located out of the traveled way of trail users.

Bicycle Lanes

AASHTO (1999) recommends a 2% pavement cross slope, so that proper drainage may occur. By sloping in one direction rather than crowning the pathway, both construction of the pathway and drainage are simplified.

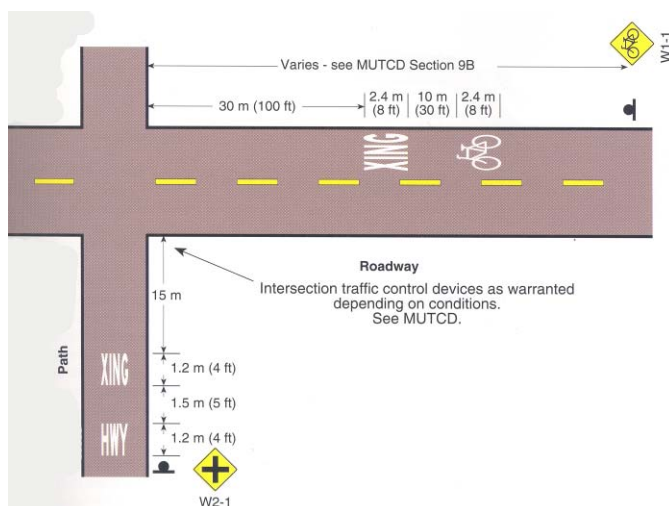
Shared-Use Paths

Paved shared-use paths are recommended to have a 2% cross slope. (See Figure 9-8 above). On unpaved paths, the cross slope could be increased to a maximum of 5%.

DESIGN SPEED

There are a variety of conditions that impact the speed at which a bicyclist travels. The location of the pathway, its width and grade, prevailing winds, and other pathway users influence how fast a bicyclist moves. On a paved surface, whether it is a bicycle lane or shared-use path, AASHTO recommends a design speed of 20mph for portions of a trail with a maximum 4% grade. Steeper downgrades should be designed at 30mph. Per AASHTO, unpaved surfaces should be designed at a lower speed of 15mph. A higher design speed of 25mph can be used on unpaved paths that have a steeper slope, or where the prevailing winds are expected to increase the speed of a bicyclist. For the safety of bicyclists and other path users, speed limit signs should be provided at key locations along the trail.

Figure 9-9
Basic Pathway and Road Intersection



Source: U.S. Department of Transportation, Federal Highway Administration

Intersections

The intersection of a pathway with a road, railroad, or other motorized way requires careful design to maintain the safety of both the pathway user and the vehicles or trains in the opposing paths. There are a variety of design elements that can be incorporated at the intersection, including pavement markings, signage, and barriers such as gates or bollards. The specific elements incorporated at a given intersection are dependent upon the type of intersection, and the volume and speed of traffic on both the pathway and the road or railroad.

The Greenways (1993) book identifies three types of intersections as part of the pathway design process: midblock, adjacent path, and complex. A midblock crossing occurs

where the trail crosses the roadway away from an intersection. An adjacent block crossing occurs where the trail crosses the highway at an existing intersection. A complex crossing is any other configuration. Greenways outlines the following basic principals that should apply to all pathway crossings:

- Trails should intersect the roadway at 90 degrees, or as close to 90 degrees as possible
- Intersections should be designed consistently, so that trail and roadway users can identify them
- Utilize the Michigan Manual of Uniform Traffic Control
- Devices (MMUTCD) when designing the intersection, incorporating sound engineering judgement.
- Maintain visibility of trail users at the intersection and make their movements as predictable as possible.



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Dan Burden



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Signage and Pavement Markings

Paved pathways and the road surface should include signage and/or pavement markings to inform users of the approaching intersection. The signage and markings for a given intersection will vary according to the type of pathway or roadway involved in the crossing. A basic intersection design is noted in Figure 9-9 on the previous page. Signage is provided in advance of the intersection, according to the standards of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD). A bicycle symbol (W1-1) is adjacent to the road and an intersection symbol (W2-1) is alongside the trail.

Beyond the signage are pavement markings on both the pathway (“hwy xing”) and the road (bicycle symbol and “xing”). Signalized intersections, including a potential pathway crossing of M-59, must include a pedestrian phase to provide proper time for a safe crossing.

The Appendix includes additional examples of trail and road configurations from the 2003 Manual of Uniform Traffic Control Devices (MUTCD). While these specific configurations may not be provided in the Michigan version of the Manual, they use the same signage and should therefore be applicable to Michigan pathways.

Barriers

For the safety of pathway users, unauthorized motorized vehicles must be prohibited from accessing the trail. While appropriately-placed signage, such as a “No Motor Vehicles” sign (R5-3) may be sufficient at the entrance to some trails, often a barrier must be constructed to prevent entry. In addition, barriers help to ensure the safety of pathway users by slowing them down in advance of the intersection, so the user can make a safe crossing.



www.pedbikeimages.com/ Michael Cynecki

Gates and bollards are two types of physical barriers that could be provided at intersections. These barriers must be either removable or constructed in a way that would permit quick and easy access by emergency vehicles and maintenance vehicles, whenever necessary. When choosing a type of barrier, consider where the barrier will be located. AASHTO standards specify that there must be 5’ of clear space between structures to provide barrier-free access.

Examples of 4 basic barrier designs can be found in Greenways (1993): drop-down bollard, barrier rail with gate, hinged bollard, and removable bollard.

As illustrated in Figure 9-10 on the next page, the drop-down bollard contains a lock pin. Once the pin is removed, the bollard can be lowered. The diagram also includes a security gate, which is the best choice to slow down pathway users prior to entering the intersection.



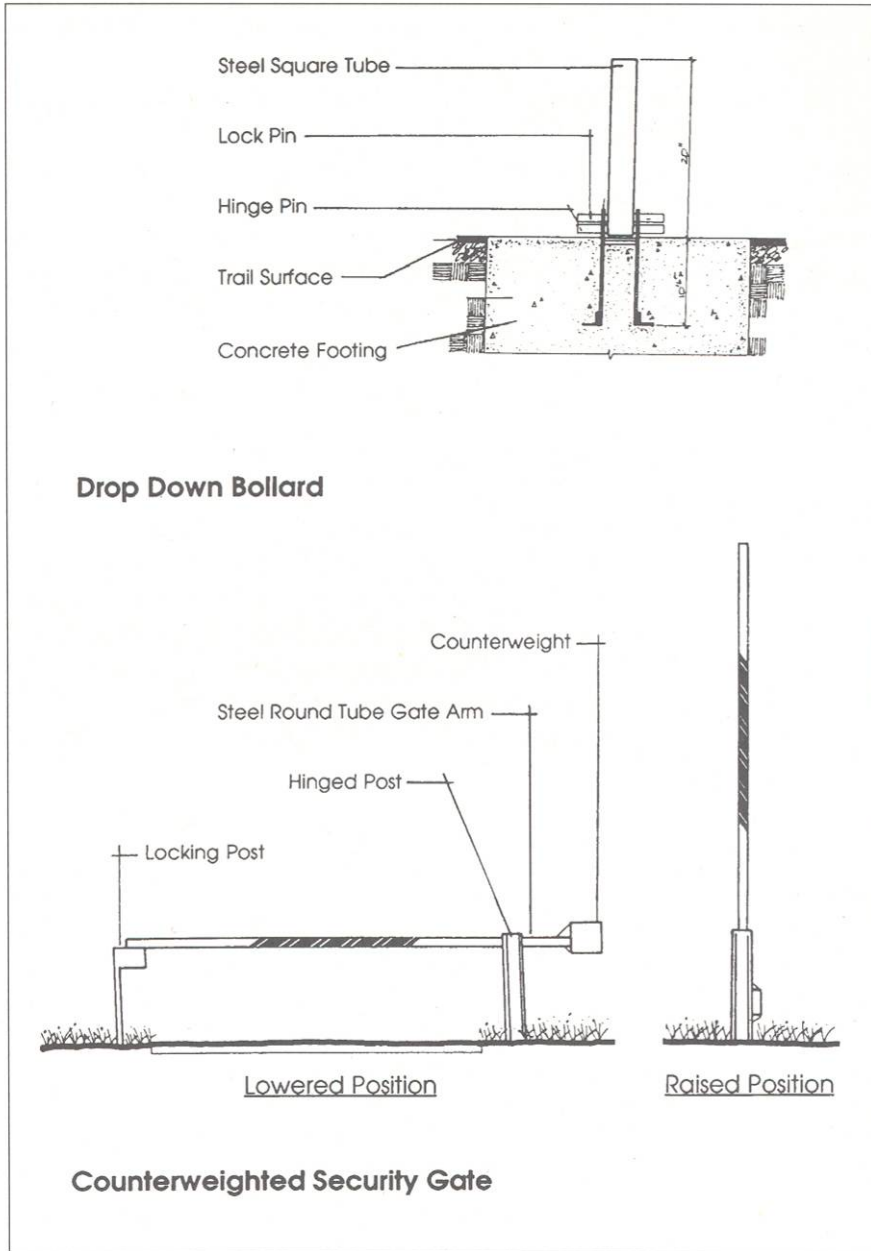
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Hinged bollards are constructed into an L-shape to catch the front bumper of a vehicle. The bollard is locked into place and removed when necessary.

Removable bollards are constructed into two pieces. The lower portion is encased in concrete beneath the ground surface, while the upper portion is locked into position over the lower part.

If a bollard is utilized, placing reflectors onto it will increase visibility to the trail user, especially in the dark or during inclement weather. A reflectorized bollard should be set back from the intersection to prevent potential distraction to drivers along the road.

Figure 9-10
Examples of Barriers for Use at Intersections



Source: Greenways, A Guide to Planning, Design, and Development, 1993, The Conservation Fund

Transitions

The transition between a pathway and a road must be considered, so that all users can safely navigate the intersection. The Federal Highway Administration specifies that small changes in level, up to 0.25 inches, can be provided without an edge treatment. If there is a change in level between 0.25 inches and 0.5 inches, then a beveled surface at a maximum slope of 50% should be constructed. Any change in level that is greater than 0.5 inches should be ramped, or removed if possible.

BRIDGES AND BOARDWALKS

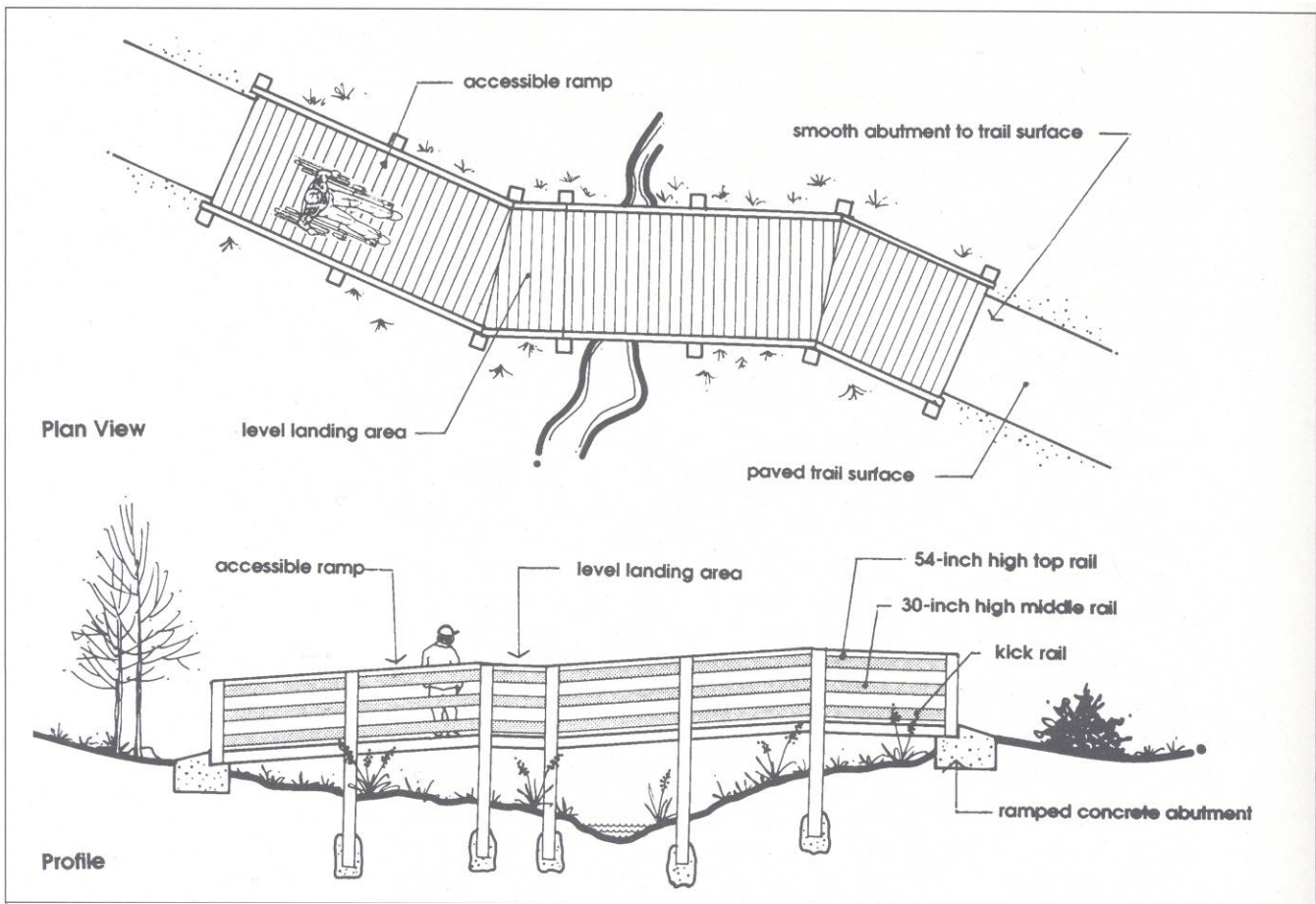
Bridges and boardwalks are common pathway features whenever the trail must cross a busy highway or a natural feature such as a wetland, lake, or other water body. These structures are likely to be necessary along the shared-use path within the utility corridor, due to the numerous wetlands and submerged areas in White Lake. The crossing should be designed so there is minimal impact to the natural feature, while maintaining the continuity of the pathway system. AASHTO (1999) recommends the following design characteristics for bridges and boardwalks:

- Bridge/boardwalk width should be the same as the pathway, plus an additional 2' on either side. The additional area provides a place for users to stop and move out of the way of other trail users, while simultaneously providing protection from bridge railings.
- Railings should be a minimum of 4.5' in height, without any protrusions into the pathway.
- Weight capacity must accommodate pedestrian live loadings, maintenance vehicles, and emergency vehicles.

As shown in Figure 9-11 below, the Greenways (1993) book provides a diagram of a barrier-free boardwalk, including both a plan view and a profile view. The diagram illustrates a ramped concrete abutment that provides a proper barrier-free transition between the trail and the boardwalk. The ramp must be provided at no greater than a 1:20 slope, in order to meet accessibility standards. A level landing area is provided so users can pause on the boardwalk to take a brief rest or take in the view. Three rails are provided as part of the railing system. The top railing, at 54" (4.5'), meets the minimum height standard noted in the AASHTO standards above. The 30"-high middle rail and kick rail at the bottom provides additional safety, particularly for small children.

In White Lake, the proposed shared-use path along the utility corridor (north side of M-59) is planned to be the primary equestrian route within the Township. Further analysis is necessary to determine whether or not it is feasible to provide a bridge or underpass that would permit horse riders to safely cross M-59, in order to access Highland Recreation Area.

Figure 9-11
Example of Boardwalk Design



Source: Greenways, A Guide to Planning, Design, and Development, 1993 The Conservation Fund

REST AREA

Rest areas must be provided in periodic locations along the pathway, in order to give the users a safe place to leave the trail and take a break. It is much safer for pathway users to have a place to stop outside of the trail area, rather than being forced to remain on the path or pick a potentially unsafe area on the side of the trail. Rest areas are particularly important for children, older persons, and those with a mobility impairment, who may not have the stamina to move along the trail for their entire trip. A general recommendation is to place rest areas between 1,000' and 1,500' apart. However, the ideal design would seek to locate rest areas where there are also features to view, such as a meadow, overlook, wetland, woodland, or lake. Also, it is recommended to provide a rest interval within 25' of the top or bottom of a maximum grade segment.

Trash receptacles should be provided at each rest area, unless the location would be difficult for maintenance personnel to access on a regular basis. Benches should be installed at selected rest areas to give pathway users a place to sit. To maintain accessibility for the widest variety of pathway users, benches should include backrests and at least one arm rest to provide leverage when standing up.

Per the Federal Highway Administration, rest areas should be designed with the following characteristics:

- Same surface as pathway
- Minimum area of 5'x5'
- 5% maximum grade
- 2% maximum cross slope

TRAIL COMPONENTS

The usability and enjoyment of the pathway system is dependent upon more than the proper design and engineering of the trail. Users must have convenient access to a pathway to make it easy to use. Information about trail conditions should be available prior to starting the trip, in order to reduce potential frustrations or unsafe conditions for which a potential user may not be physically prepared. Amenities should be provided for pathway users prior to beginning their trip, including a place to rest and refresh. The following discusses the trailhead components and signage that should be provided to inform and assist pathway users.



Source: U.S. Department of Transportation, Federal Highway Administration

Trailhead

A trailhead is any designated point where a user can access the trail. White Lake trailheads should include parking (approximately 15 spaces), trash receptacles, benches, bicycle racks, interpretive markers, portable restroom facilities, and a staging/rest area for equestrians (where appropriate). Interpretive markers should include information about the trail conditions: name of trail, surfacing, route map, distance, and grades. Also, rules for pathway use should be posted prominently. The Pathways Plan Map (Map RP-17) includes the two proposed trailhead locations in White Lake, including Indian Springs and the Township-owned property adjacent to the utility corridor on the south side of M-59.



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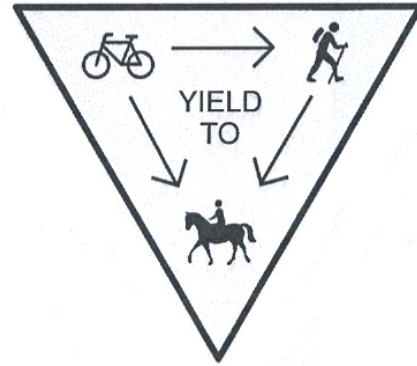


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Signage

Proper signage is necessary in order to ensure the safety of pathway use and direct users to their destination. Signs must be easy to read and understand, and include limited text and graphics to avoid confusion. In addition to installing maps of the trail system at trail heads and major trail intersections, way-finding signs could be provided to direct users to major roads and community destinations. Locations in White Lake that should be included are parks, churches, schools, major shopping areas, and the Township Hall/ Township Library/ Hawley Park complex. Adding historical or informational markers would enhance a user's experience on the trail.

Signage should include posting of the trail rules in prominent locations along the pathway. Examples of common trail rules are a restriction to permit only non-motorized and pedestrian activities, limiting pathway use to daylight hours, and a requirement for dog owners to have the animal on a leash and provide proper waste disposal.



Source: U.S. Department of Transportation,
Federal Highway Administration.

PATHWAY IMPLEMENTATION STRATEGIES

A collaborative effort among a variety of agencies will be required to implement the White Lake pathways system. Using the Pathways Plan Map (Map RP-17) as a base, a final route will have to be determined in cooperation with individuals and entities within the White Lake Community. Easements will need to be secured from a variety of parties, including the Road Commission for Oakland County (RCOC), Michigan Department of Transportation (MDOT), International Transmission Company (ITC), and possibly private land owners.

Due to the high cost of design, engineering, and installation of the pathways, the Township will have to seek funding assistance from other sources. Grant monies available through the Michigan Department of Natural Resources (MDNR) and the Michigan Department of Transportation (MDOT) are anticipated to be the primary funding source, with additional money from the Township General Fund, local service clubs, and possibly even private foundation grants.

As the pathway is developed, it will be important for residents to remain informed throughout the process. If the community does not have knowledge or buy-in of the project, its success will be compromised.

The following items suggest techniques to ensure implementation of the pathway plan:

EDUCATE / INFORM

- Inform residents about the pathway concept, through a PowerPoint presentation or article in a community newsletter.
- Seek the assistance of stakeholder groups, including equestrians and bicyclists, when designing the specific location and elements of the pathway.
- Develop safety education programs to ensure users understand pathway rules and how to different users can coexist.
- Publish trail maps.

DESIGN / INSTALL

As part of the pathway development, proper way-finding signage must be provided in key locations for the trail users. Signage and pavement markings must be included to ensure that pedestrian activity is appropriately separated from vehicular traffic.

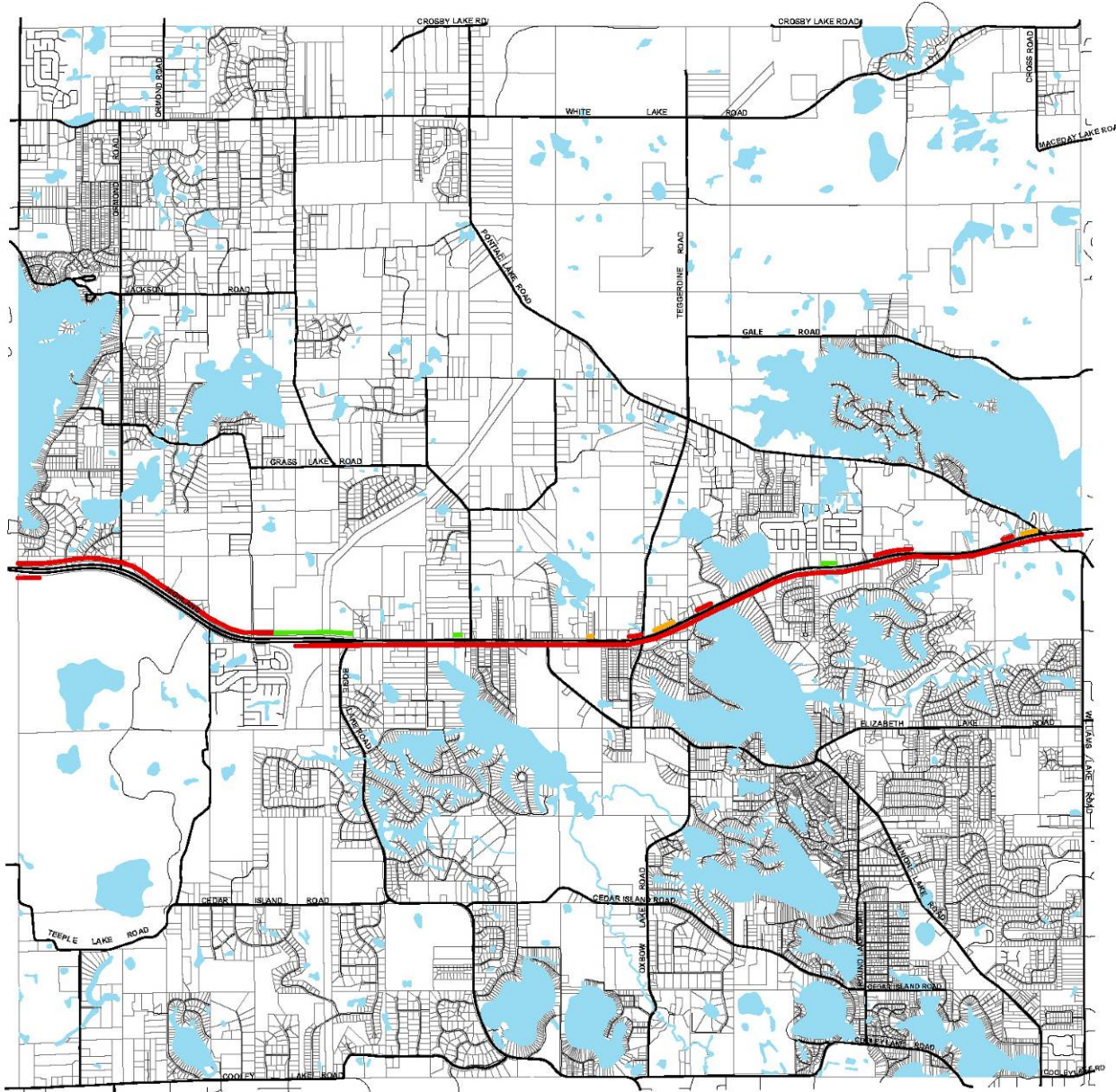
A Safe Routes to Schools Workbook could help to make sure that children are provided with an effective walking and biking route between home and school. This Workbook would provide the criteria to ensure that the community, in conjunction with the school districts, would be able to identify and implement the Safe Routes program. Design details of the safe routes should be provided, including examples of pavement markings and signs that should be installed, meeting the standards of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), where applicable.

- Ensure uniform signage standards throughout the system
- Provide proper maintenance of the trails
- Consider seasonal uses to ensure trails are accessed throughout the year (ie. considering shared-use paths for cross-country ski use)

PATHWAY SYSTEM FUNDING

White Lake Township can pursue a variety of mechanisms to get pathways installed within the Township. Given the high cost of pathway installation, the Township must pursue cost-effective ways to provide the pathways. The Township should use its planning and zoning powers to ensure that the Zoning Ordinance and Subdivision Regulations Ordinance require developers to construct pathway segments as a condition of development approval.

- Establish a Special Assessment District to cover the installation costs of providing “missing links” within the pathway system.
- Consider bonds and millages to assist in funding.
- Seek State and Federal grants, including:
 - TEA-21 Enhancement Grants for M-59
 - MDOT – Surface Transportation Program - Enhancement grants
 - MDNR grants for State, regional, and local connectors.
 - Designation and trail funding through Michigan Trailways
 - Michigan Transportation Fund
 - Funding through the Safe, Accountable, Flexible, and Efficient Transportation Equity Act (SAFETEA) (2003)
 - Federal money through the Recreational Trails Program (RTP)
 - Funding through the Congestion Mitigation and Air Quality Improvement Program (CMAQ)
 - Private foundation grants (Community Foundation for Southeast Michigan, etc.)



- 5-FOOT WIDE CONCRETE SIDEWALK
- 8-FOOT WIDE ASPHALT PATHWAY
- 8-FOOT WIDE ASPHALT PATHWAY (APPROVED/PROPOSED BUT NOT INSTALLED)

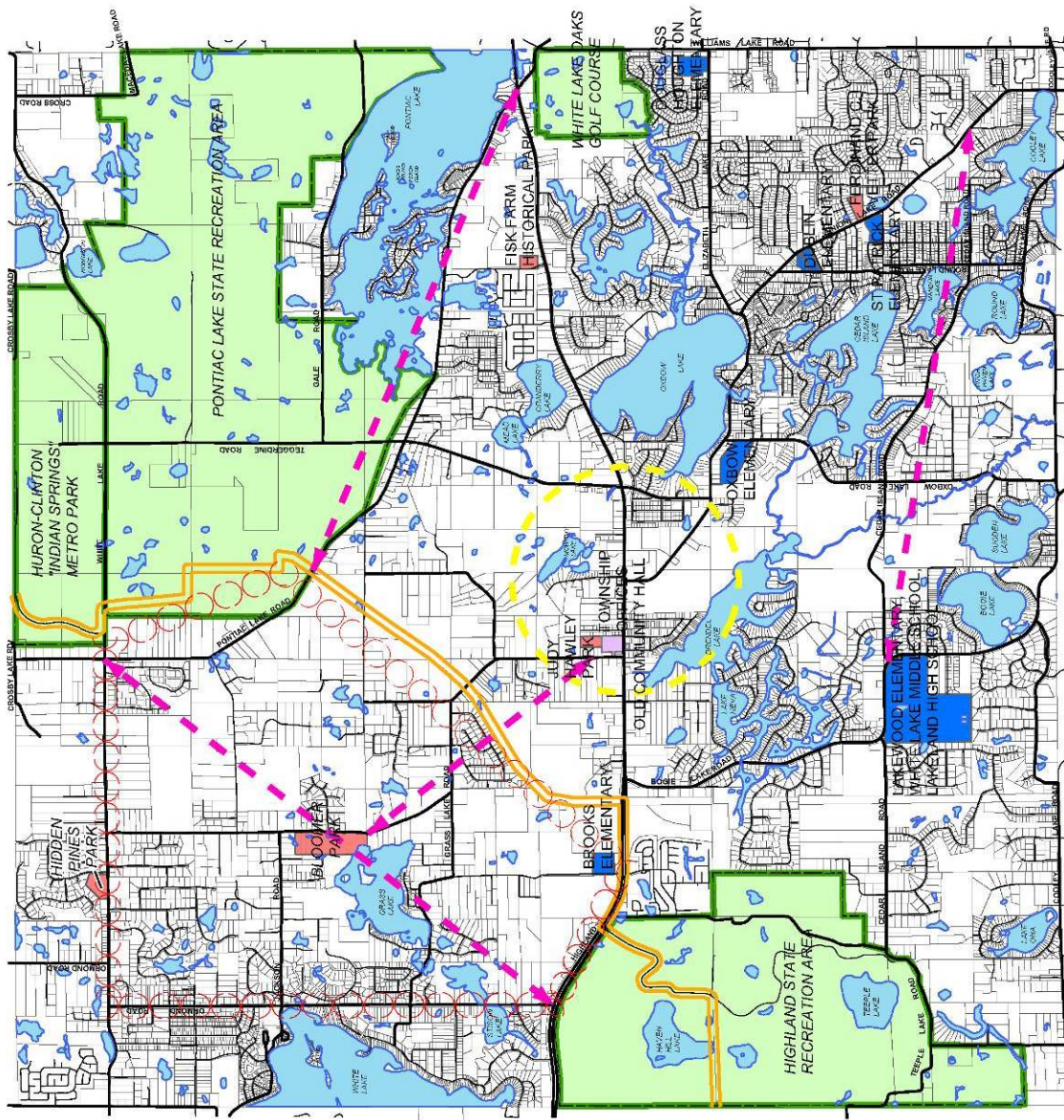
**EXISTING
PATHWAYS**
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-15



**BIRCHLER ARROYO
ASSOCIATES, INC.**

SOURCE: WHITE LAKE TOWNSHIP



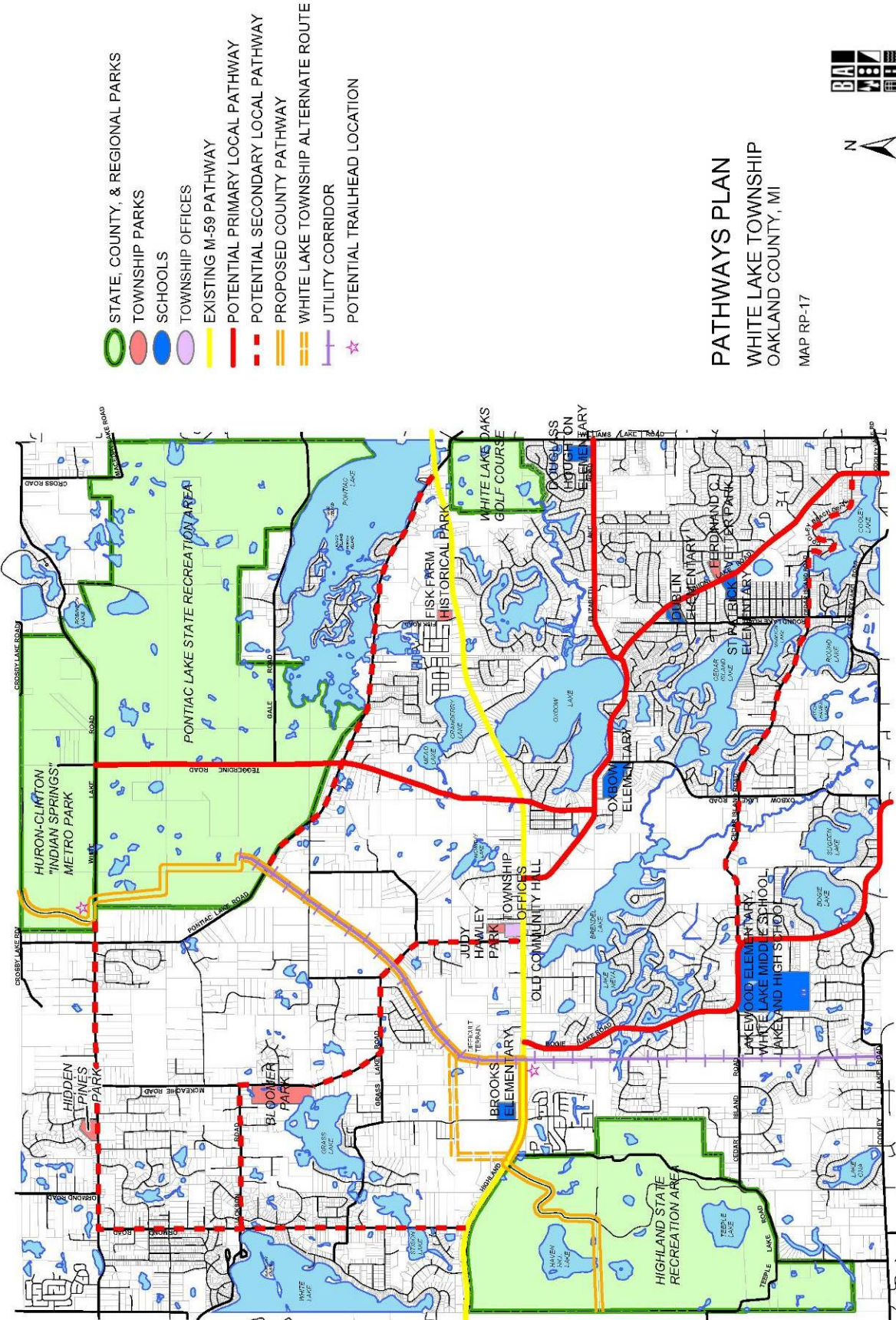
- STATE, COUNTY, & REGIONAL PARKS
- TOWNSHIP PARKS
- SCHOOLS
- TOWNSHIP OFFICES
- CENTRAL GATHERING PLACE
- PATHWAY CONNECTOR
- EQUESTRIAN POTENTIAL
- PROPOSED COUNTY PATHWAY

PATHWAY POTENTIAL
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MI

MAP RP-16



SOURCE: OAKLAND COUNTY



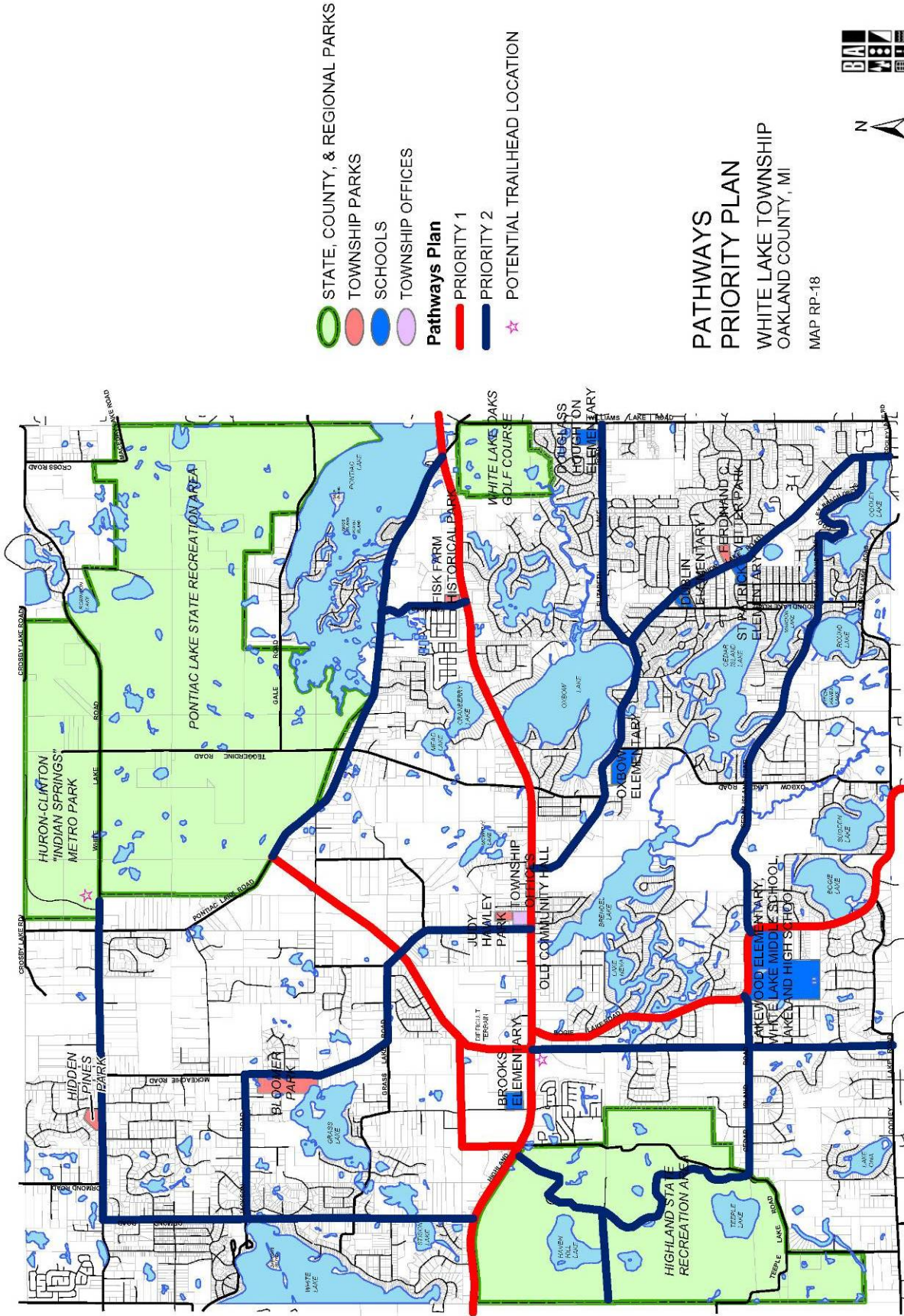
- STATE, COUNTY, & REGIONAL PARKS
- TOWNSHIP PARKS
- SCHOOLS
- TOWNSHIP OFFICES
- EXISTING M-59 PATHWAY
- POTENTIAL PRIMARY LOCAL PATHWAY
- POTENTIAL SECONDARY LOCAL PATHWAY
- PROPOSED COUNTY PATHWAY
- WHITE LAKE TOWNSHIP ALTERNATE ROUTE
- UTILITY CORRIDOR
- POTENTIAL TRAILHEAD LOCATION

PATHWAYS PLAN
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MI

MAP RP-17



SOURCE: OAKLAND COUNTY



- STATE, COUNTY, & REGIONAL PARKS
- TOWNSHIP PARKS
- SCHOOLS
- TOWNSHIP OFFICES
- Pathways Plan**
- PRIORITY 1
- PRIORITY 2
- ☆ POTENTIAL TRAILHEAD LOCATION

**PATHWAYS
PRIORITY PLAN**
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI
MAP RP-18



BECKLER ARBETO
ASSOCIATES, INC.

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CHAPTER 10 – PUBLIC INPUT

WHITE LAKE TOWNSHIP 5-YEAR PLAN VISIONING RESULTS

On the evening of Wednesday, January 16th 2013 the White Lake Township Parks and Recreation Committee hosted a public workshop at the Dublin Community Center at 685 Union Lake Road. This workshop was conducted in order to establish community goals and priorities for the next 5-10 years with regard to Recreation in White Lake Township. The participants were guided through a series of group exercises that use a brain storming format to solicit comments and priorities. Below is a summary of each of the exercises.

Exercise One: Things we do well and Things we can do better

During this exercise participants were asked to think about the current White Lake Township parks facilities and services and list in two columns what things the Township does well and what thing the Township could do better in the future. This exercise lasted approximately twenty (20) minutes. Groups were asked at the end of the exercise to vote on the top two (2) items that were done well and what could be done better. The results are as follows:

Things We Do Well		Things We Can Do Better	
	Votes		Votes
Well Maintained Parks	10	Bike paths along roads	16
Move in the Park Event	5	Dogs on leashes/clean-up	4
Great Outdoor Sports Facilities	4	Cedar Island Road/Oxbow Lake Road	3
Baseball Fields	4	Connectivity between parks and schools	2
Park Playground Equipment	3	Parks and Recreation Department	2
Keeping the Needs of Citizens in Mind	3	Water activities	2
Hess Hathway	2	Better neighborhood parks	2
Good Activities	1	Larger baseball fields for older youth	1
Paved Pathways in Vetter and Hawley Park	1	Better park signage	1
Care of Wetlands and Open Space		More horse events	1
Working Relationship with White Lake Library		Park restrooms	1
Large Parks		Movie night	1
Great Public Outreach		More water trails	1
Horse Trails		More multi-use trails	
		White Lake organized sports	
		Public fishing areas	
		Trails for senior citizens	
		More park benches	
		Cedar Island Frontage Park	
		Promotion and Communication	
		Better park upkeep and utilization	
		Ice rinks/Dog Parks	
		Concerts	

Exercise Two: Priorities for the next 5 to 10 Years

The focus of this exercise was to get participants to imagine what the Township Park system would look like in five to ten years. It was explained that funding and approval for projects was not to be a factor in their vision, but to dream of lofty goals and projects the Township might embark on in the future. Participants were given about forty (40) minutes on this exercise. When the brain storming was concluded participants were asked to vote for the top three (3) projects listed by their group. Tabulated below are the results of this exercise:

Group 1		Group 2	
	Votes		Votes
Sports Complex	3	Connectivity between parks (ITC) Trail	4
Collaborate with RCOC on sidewalks and pathways	3	Skate park	4
Canoe, kayak, launch with parking	2	Pocket/neighborhood parks	2
Multi-purpose trails and sidewalks	2	Buy land between White Lake Oaks and Pontiac Rec.	1
Equestrian center/riding area	2	Paved Handicap Access Parks	1
Develop park at the corner of Williams Lake Rd. and Elizabeth Lake Rd.	1	Disc golf course	1
Develop park behind Fire Station 1 on M-59	1	Indoor mountain bike facility	
Historical Park/Village	1	Group 4	
Hockey rink/skating area			Votes
Golf dome		Dedicated downtown area with bike and walking paths	6
Outdoor swimming/pool, beach, slides		Bike paths throughout the Township	5
Create Cedar Island Rd. Park and River Access		A community center with programmed activities (indoor pool, gym, and farm market)	3
Develop Brendal Lake Campground		Township sponsor or organized sports for children	1
Golf Course		Dog friendly park	1
Open air exercise equipment			
Group 3		Group 5	
	Votes		Votes
Horse trails to parks	3	Lake frontage township park (nature center)	2
Parks and recreation summer programming (crafts, camping, ropes course)	3	Acquire Alpine Valley and develop into a four season park (water slides, putt-putt, zip line)	2
Bike and walking trails to parks	2	Skate park	2
Parks that double as Ride-Shares and Transit Stops	1	Athletic complex with facilities	2
Indoor community center on Porter Road Property/Historic Village	1	Better bike and walking paths	2
Land on Union Lake Road South of St. Patrick's School into park		Develop and maintain wildlife corridors (ITC Corridor)	1
Preserve more land and open space		Safe connection of parks, schools, and neighborhoods	1
Beautification of M-59 Corridor with plantings and landscape		More neighborhood parks with playgrounds	

Exercise Three: How do we get there?

This short exercise is used to get the participants to list out policies and decisions the Township may take to realize their vision for the future. Participants were given approximately fifteen (15) minutes for this exercise. The results are as follows:

How do we get there...	
Contest for school kids to design projects for parks	Parks and recreation millage
Federal and state grants	Pay to play for certain facilities
Sell engraved bricks for parks – fundraisers	Website, newsletter, email to Township
Annual outdoor festival to raise money	Improve awareness
Marketing	Parks videos and pod-cast
Study West Bloomfield and their pathways	New roads to include pathways and sidewalks
Coordinate/Cooperation with developers for neighborhood and park connectivity	Use Township owned properties
Cooperation with school districts and Michigan DNR	Find funds other than tax increases
Corporate donations to projects	Public/private partnerships
	Community groups and volunteer organizations

Exercise Four: Collective Prioritization


The final activity compiled all of the projects and policies recorded in exercise two (Priorities for the next 5-10 years) into one master list. All of the participants were asked to vote on their top three (3) priorities overall. Below is final tabulation of that voting exercise:

Collective Prioritization			
	Votes		Votes
Bike and walking paths	16	Develop a park at Cedar Island Road Area	1
Parks in Dedicated Downtown Area (Village Lakes)	11	Acquire property south of St. Patrick's (develop multi-use park)	
Equestrian Center and Historic Village (Township property on Porter Road)	10	Make all parks handicap accessible	
Horse Trails (System to connect to parks)	6	Golf dome/Golf course/Disk Golf Course	
Connect all parks in Township with paths	6	Dog park	
Community Center (pool, rec fields/courts, rock climbing) Sports Complex	6	Township sponsored recreation programs	
Develop a Lake Front Park that includes a nature preserve and boat launch	5	Develop a park at the Brendal Lake Campground	
Develop a park at Williams Lake Road and Elizabeth Lake Road	4	Develop a park at the Township Property behind Fire Station 1	
Use parks as ride share and mass transit staging area	3	More neighborhood parks	
Skate park	2	Acquire Alpine Valley and develop a Four Seasons park	
Preserve more land and green space	1	ITC Corridor Trail	
Acquire land at the end of Airport Runway for park on Pontiac Lake Road	1	Indoor mountain bike facilities	

ONLINE COMMUNITY RECREATION SURVEY

White Lake Township provided the opportunity for the Community to take part in an online survey from January 3rd until February 3rd 2013. During the month long period the survey was available the Township received 264 responses (survey results can be found in the plan appendix). The survey responses combined with the visioning session input has become the backbone of the 5-Year Parks and Recreation Action Plan. Below is a copy of the notice that was sent out to residents and officials via email:

Gregory R. Baroni, Supervisor
Terry Lilley, Clerk
Mike Roman, Treasurer



Trustees
Carol J. Burkard
Scott Fuggles
Andrea C. Voorheis
Rik Kowall

WHITE LAKE TOWNSHIP

7525 Highland Road • White Lake, Michigan 48383-2900 • (248) 698-3300 • www.whitelaketwp.com

A few minutes of your time will help to keep White Lake Township “The Four Seasons Playground”!

Dear Residents and Friends of White Lake:

Your response to the survey link below is extremely important. White Lake Township Parks and Recreation is conducting a Parks and Recreation Survey to establish priorities for the future improvement of the Townships parks and recreation facilities, programs, and services. We appreciate your time in taking this 5-10 minute survey. The time you invest taking this survey will help the Parks and Recreation Committee take a resident driven approach to updating its 5-Year Parks and Recreation Plan.

If you have any questions please feel free to contact the White Lake Community Development Department at 248.698.3300 ext. 2.

Thanks in advance for your time.

<https://www.surveymonkey.com/s/WhiteLake5-YearPlan>

CHAPTER 11 – GOALS AND OBJECTIVES

Goals and Objectives formulated by the Township are the basis of the recreation planning process. They form the framework for public and private decision-making regarding recreational facilities and programs in the Township. This Recreation Plan seeks to pursue long-range recreational goals and objectives through specific short-range actions on the part of the Township, County, and State as well as private entities.

Following the public input process the Goals and Objectives were written and adopted by the Parks and Recreation Committee. The Goals state the general concepts regarding what the Township intends to accomplish, while the Objectives offer the more specific recommendations for achieving the Goals. The Goals and Objectives were developed utilizing the public comments collected during the Public Visioning Workshop, and the Parks and Recreation Online Survey results. Public Input and staff analysis create the structure

GOAL 1. Develop a system of trails and multi-use pathways in White Lake Township.

OBJECTIVES

- Establish a regional east-west trail that connects Waterford and Highland Townships.
- Recognize and adopt a Complete Streets Policy within the framework of the Road Commission for Oakland County (RCOC) Complete Streets General Guidelines.
- Develop a system of paved multi-use pathways that links recreation areas with population concentrations as well as link to adjacent community pathways.
- Determine the feasibility and locational criteria for development of multi-use pathways and sidewalks in specific areas of the Township.
- Provide pedestrian connections between residential neighborhoods.
- Develop standards for a Township pathway system to be added to the required improvements for development of properties, as found in the Zoning Ordinance and Subdivision Regulation Ordinance.
- Ensure that safety is built into the system by providing proper pavement marking and signage.
- Work to promote the retrofitting of older residential neighborhoods to provide sidewalk and pathway connections to other residential and commercial destinations.
- Explore the development of canoe trails.

GOAL 2. Pursue the acquisition or expansion of local land for park and recreation facilities.

OBJECTIVES

- Evaluate traditional and creative means of acquiring additional parkland for local recreation.
- Negotiate with developers to provide additional parkland within specific neighborhoods.
- Work to create policy to require more neighborhood parks within new residential developments or connections to existing parks.
- Evaluate the availability of neighborhood parks within walking of population concentrations, and determine future locations for additional parks based upon the outcome.
- Determine an appropriate location for a community-wide park.
- Evaluate park purchase opportunity of the Hitchcock Property.
- Initiate discussions with owners of properties with natural lands regarding land conservation programs.
- Commission a feasibility study to determine if White Lake Township has a need for a Community Center that would provide year round recreational and educational activities as well as addition public meeting space.
- Pursue the acquisition of lands that meet one or more of the following criteria:
 - Priority natural areas as identified in the Michigan Natural Resources Inventory assessment or through the White Lake Township Green Infrastructure Program
 - Waterfront property, particularly lands adjacent to the Huron River or its tributaries and headwaters, high quality wetlands or lakefront
 - Land adjacent to existing parkland
 - Land on or adjacent to proposed trails and pathways

GOAL 3. Pursue the development at existing and planned future local recreation facilities.

OBJECTIVES

- Implement development projects at Hawley and Vetter parks to ensure their continued use and enjoyment by residents and visitors. Projects may include but are not limited to: plantings, restroom facilities, paved parking, and splash pads.
- Continue the development of Hidden Pines Park to include a walking track, playground, picnic shelter , landscaping, and improved parking area,
- Seek grant funding for the completion of Phase II of Bloomer Park. Completing the trail network and providing additional park amenities.
- Should the Hitchcock property be purchased, evaluate the potential for its use as a modern equestrian campground, a trail head for the White Lake Trail, and a day-use Township Park.

GOAL 4. Maximize the state, metro and county park resources and recreation opportunities that are located in White Lake Township.

OBJECTIVES

- Maximize the monies available for development of new recreation facilities by limiting the dollars that must be allocated for land acquisition.
- Consider methods to secure the ownership and/or preservation of any State land that may be sold in the future.
- Collaborate with the Highland State Recreation Area (MDNR) and the Friends of Highland Recreation Area (FOHRA) to promote the preservation and utilization of the historic Haven Hill retreat for recreation.
- Work with the Pontiac Lake State Recreation Area (MDNR) and the Huron Clinton Metro Parks on opportunities to connect the two parks via multi-use trails.
- Take a proactive role in the development of long-range plans, stewardship plans and operations for state, metro and county park land located in the Township.

GOAL 5. Promote the establishment of cooperative public/private partnerships with adjacent communities and non-profit organizations to develop or provide recreational facilities and programs.

OBJECTIVES

- Collaborate and promote cooperation with local, regional, and state recreation agencies including: Waterford, Springfield, Highland, and Commerce Parks and Recreation, Oakland County Parks and Recreation, Huron-Clinton Metro-Park Authority, and the Michigan Department of Natural Resources.
- Support and encourage cooperative efforts with existing organizations such as Hi-White Baseball, Huron Valley Soccer Club, Lakes Area Youth Soccer League, 4-H, Huron Valley Schools, Huron Valley Arts Council, Huron Valley Optimist Club, White Lake Historical Society, and Friends of the White Lake Township Library.
- Consider development of a cooperative recreational services system, with school districts and adjacent communities, to provide recreational programs at shared facilities.
- Support private non-profit organizations which provide recreational facilities or programs through financial, in-kind, or facility access agreements.
- Meet periodically with the Parks & Recreation committees of the four neighboring townships to discuss possible joint ventures and coordinate provision of facilities and programs.
- Encourage the establishment of 'Friends' groups to facilitate the development, programming and maintenance of parks. Have a liaison from each 'Friends' group attend Park and Recreation Committee meetings.
- Promote the formation of 'Friends Groups' or similar organizations that would assist with the stewardship of state, metro, county and local parkland in White Lake Township.

GOAL 6. **Maintain and operate parks and recreational facilities and programming for the enjoyment of current and future residents.**

OBJECTIVES

- Establish and operation parks according to an annual budget approved by the Township Board of Trustees.
- Identify alternative revenue streams that would support the operation and maintenance of Township facilities.
- Pursue alternative funding sources, such as grants, for the implementation of actions identified in this plan.
- Establish a Parks and Recreation Department to oversee maintenance of the park system.
- Develop a Parks and Recreation Commission to assist in providing recreational facilities and programs to the growing Township population.
- Provide regular maintenance to ensure the safety and usability of the recreational facilities.
- Consider methods to improve the functioning and usability of existing equipment, such as by installing irrigation equipment.
- Secure continued funding for the parks through passage of a modest millage (support millage research and renewal in 2013 or 2016).
- Work to develop to develop a marketing program for area parks and events. Marketing White Lake Township's recreation offerings is a vital component in its overall economic development strategy.

GOAL 7. Offer year-round programming and events that provide outdoor education and recreation experiences to White Lake Township residents and visitors.

OBJECTIVES

- Consider Oakland County's Community Assistance Program as a resource at Township events.
- Model programming and events after successes experienced by southeast Michigan communities.
- Continue to provide and promote summer activities including Movie in the Park, Concerts and other programming.
- Continue working with Huron Valley Recreation and Education on promoting and encouraging the growth of the White Lake Farmers Market.

GOAL 8. **Develop a public communications program to inform residents and visitors of parks and recreation facilities and events.**

OBJECTIVES

- Develop a marketing program to inform residents, especially those new to White Lake, about the parks and recreation opportunities available. Methods for disseminating information may include but not be limited to: Parks and Recreation web page (linked from Township’s web site); on-line newsletter and calendar of events; list-serve notices; brochures; portable displays; participation in public events; presentations to local groups; and press releases.
- Create a White Lake Parks and Recreation Facebook page or other social media page that promotes locals parks and events.
- Design a uniform sign system that is informative and easily recognizable to the public.
- Install signage along major roadways to identify the location of parks facilities, particularly for Judy Hawley Park that does not have road frontage.
- Develop a summer program (monthly event) at Vetter and Hawley parks to promote the Township’s park system and develop local support for expansion.

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CHAPTER 12 - ACTION PLAN

The focus of White Lake's Recreation Plan is to begin development of a township-wide pathways system and expand recreational offerings through land acquisition and development. The Action Program describes, in detail, the proposed strategy for the next 5 years, beginning in 2014 and extending through 2018. The Action Program is designed to implement the Goals and Objectives presented in Chapter 11. Each proposed "action" is related to the goals which it promotes.

2014 ACTION PROGRAM

TEGGERDINE ROAD PATHWAY CONNECTION

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 200,000	Local
	\$ 200,000	Total

Basis for Action

An important, long-term, high-priority objective is the development of a township-wide system of pathways connected to the regional network. The Teggerdine Road Pathway would connect M-59 in the south to Indian Springs Metro Park in the north. This pathway would provide access at certain points to the Pontiac Lake Recreation Area. This pathway would connect to regional pathways through Indian Springs Metro Park, and through the potential development of a trail inside of the ITC transmission corridor in White Lake. This project would be a collaborative effort of White Lake Township, MDNR (Pontiac State Recreation Area), RCOC, and Huron Clinton Metro-Park Authority. **Goals 1, 4, and 5.**

HIDDEN PINES PARK DEVELOPMENT

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 250,000	Local
	\$ 75,000	Pass Port Grant
	\$ 300,000	MNRTF
	\$ 625,000	Total

Basis for Action

Hidden Pines Park provides the opportunity to develop a neighborhood sized park in a recreationally underserved area of White Lake Township. Currently, Hidden Pines is the only neighborhood park located north of M-59. Hidden Pines offers adjacent neighborhoods a baseball/softball field and simple crushed asphalt parking area. Planned improvements will add a walking path, playground, picnic pavilion and improved parking. These enhancements will also upgrade the park's accessibility rating. **Goals 2 and 3.**

OXBOW / M-59 MINI-PARK

Project Type:	Land Acquisition	
Priority:	Medium	
Estimated Cost:	\$ 50,000	Local
	\$ 50,000	MNRTF
	\$ 100,000	Total

Basis for Action

Expansion of recreational land is critical to meet the needs of both existing and future residents, especially as vacant land becomes more scarce and the Township's population continues to grow. This mini-park site is anticipated to serve as a rest stop and possibly a trailhead along the M-59 Pathway. **Goals 1 and 2.**

BOGIE LAKE ROAD PATHWAY

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 375,000	Local
	\$1,125,000	MNRTF, MDOT, and USDOT
	\$1,500,000	Total

Basis for Action

An important, long term, high priority objective is the development of a township-wide pathways system. Priority connections are the north-south and east-west trailways shown on the Pathways Priority Plan. This pathway provides the north-south connection from M-59 (north) to the Township's southern boundary and connects a complex of 3 schools to neighborhoods throughout the length of the corridor. Implementation should occur along with the construction of a sanitary sewer interceptor, thereby disturbing the area one time for two major infrastructure projects. **Goal 1.**

2015 ACTION PROGRAM

BLOOMER PARK DEVELOPMENT PHASE II

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 100,000	Local
	\$ 200,000	MNRTF
	\$ 300,000	Total

Basis for Action

With the completion of Bloomer Parks Phase I redevelopment in 2013 the Township seeks to complete the restoration of the northern half of the park. The second phase of development would include completing the improved pathway network and providing other park amenities including park benches. **Goals 2 and 3.**

WHITE LAKE TRAIL (ITC CORRIDOR) PHASE 1 TRAIL DEVELOPMENT

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 100,000	Local
	\$ 200,000	MNRTF, MDOT and USDOT
	\$ 300,000	Total

Basis for Action

An important, long-term, high-priority objective is the development of a township-wide pathways system. The ITC Corridor Trail provides a critical link between Pontiac Lake State Recreation Area and Highland Lake State Recreation Area, via the M-59 trailway. This route is included in the Oakland County Greenways Plan and should include state and regional financial participation. Construction of the trailway is expected to occur throughout the duration of this Plan. **Goals 3, 5.**

M-59 PATHWAY RENOVATION

Project Type:	Development
Priority:	High

Basis for Action

An important, long-term, high-priority objective is the development of a township-wide pathways system. Priority connections are the north-south and east-west trailways shown on the Pathways Priority Plan. This pathway provides the primary east-west route along M-59 with connections to future north-south township routes (Teggerdine Trail) as well as the regional White Lake Trail (ITC Corridor) pathway. The pathway is presently discontinuous and many sections are in such poor condition that they require replacement. This project will likely occur along with the restoration and reconstruction of M-59 by MDOT. **Goal 1**

BRENDEL LAKE CAMPGROUND PROPERTY

Project Type:	Land Acquisition	
Priority:	High	
Estimated Cost:	\$250,000	Local
	\$500,000	MNRTF
	\$750,000	Total

Basis for Action

This former campground property has recently become available. Its location on Brendel Lake, a lake at the headwaters of the Shiawassee and Huron Rivers, makes it an essential element in the Township's quest to protect sensitive properties in the headwaters chain of lakes. **Goal 2.**

2016 ACTION PROGRAM

WHITE LAKE COMMUNITY CENTER / VILLAGE

Project Type:	Planning and Policy	
Priority:	High	
Estimated Cost:	\$ 65,000	Local
	\$65,000	Total

Basis for Action

White Lake Township can commission a feasibility study to determine the need for a community center with year round programming including fitness and arts classes. The study will also look at the suitability of Township property for use as a historic village and a regional equestrian riding center. **Goals 2, 3 and 5.**

OXBOW / M-59 MINI-PARK DEVELOPMENT

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 80,000	Local
	\$ 175,000	MNRTF
	\$ 255,000	Total

Basis for Action

Development of recreational land is critical to meet the needs of both existing and future residents, especially as the Township's population continues to grow, the trail network matures, and there is increased use of the network. This mini-park site is anticipated to serve as a rest stop and possibly a trailhead along the M-59 Pathway. **Goals 2, 5.**

BRENDEL LAKE COMPLEX PROPERTIES ACQUISITION / PROTECTION

Project Type:	Land Acquisition / Protection	
Priority:	Medium	
Estimated Cost:	\$ 230,000	Local
	\$ 470,000	MNRTF
	\$ 700,000	Total

Basis for Action

Continue to purchase properties in the Complex. The Township has a long-range goal to protect sensitive properties in the Shiawassee-Huron headwaters chain of lakes. The Township anticipates establishing a 3-year budget for purchase of land and/or conservation easements in order to preserve this natural system for the enjoyment of current and future generations. **Goal 1.**

2017 ACTION PROGRAM

WHITE LAKE TRAIL (ITC CORRIDOR) PHASE 2 AMENITIES

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 175,000	Local
	\$ 300,000	MNRTF, MDOT and USDOT
	\$ 475,000	Total

Basis for Action

An important, long-term, high-priority objective is the development of a township-wide pathways system. The ITC Corridor Trail provides a critical link between Pontiac Lake State Recreation Area and Highland Lake State Recreation Area, via the M-59 trailway. This route is included in the Oakland County Greenways Plan and should include state and regional financial participation. Construction of the trailway is expected to occur throughout the duration of this Plan. **Goals 3, 5.**

BRENDEL LAKE COMPLEX PROPERTIES ACQUISITION / PROTECTION

Project Type:	Land Acquisition / Protection	
Priority:	Medium	
Estimated Cost:	\$230,000	Local
	\$470,000	MNRTF
	\$700,000	Total

Basis for Action

Continue to purchase properties in the Complex. The Township has a long-range goal to protect sensitive properties in the Shiawassee-Huron headwaters chain of lakes. The Township anticipates establishing a 3-year budget for purchase of land and/or conservation easements in order to preserve this natural system for the enjoyment of current and future generations. **Goal 2.**

2018 ACTION PROGRAM

BRENDEL LAKE COMPLEX PROPERTIES ACQUISITION / PROTECTION

Project Type:	Land Acquisition / Protection	
Priority:	Medium	
Estimated Cost:	\$230,000	Local
	\$470,000	MNRTF
	\$700,000	Total

Basis for Action

Continue to purchase properties in the Complex. The Township has a long-range goal to protect sensitive properties in the Shiawassee-Huron headwaters chain of lakes. The Township anticipates establishing a 3-year budget for purchase of land and/or conservation easements in order to preserve this natural system for the enjoyment of current and future generations. **Goal 1.**

UNION LAKE PATHWAY

Project Type:	Development	
Priority:	Medium	
Estimated Cost:	\$ 225,000	Local
	\$ 450,000	MNRTF, MDOT, Oakland County Tri-Party
	\$ 675,000	Total

Basis for Action

The Union Lake Road corridor is the area of White Lake that contains the highest density of residential development in the Township. A pathway along the corridor is critical to provide residents with safe, non-motorized access to the homes, churches, schools and other places in the area. A comprehensive walkability study should be done for select areas along Union Lake Road. **Goal 1.**

WHITE LAKE TRAIL (ITC CORRIDOR) INITIAL AT GRADE CROSSING

Project Type:	Development	
Priority:	High	
Estimated Cost:	\$ 100,000	Local
	\$ 150,000	MNRTF, MDOT, and USDOT
	\$ 250,000	Total

Basis for Action

In order to connect Highland State Recreation Area and the Pontiac State Recreation Area using the ITC Corridor an "at grade" crossing on M-59 (Highland Road) will be necessary. The design of the crossing would need to be studied and should be included in the initial design phase for the overall trail. **Goal 1.**

2019 - 2020 FUTURE ACTION PROGRAM ITEMS

CEDAR ISLAND ROAD LAND

Project Type:	Development	
Priority:	Medium	
Estimated Cost:	\$ 300,000	Local
	\$ 600,000	MNRTF, MDOT and USDOT
	\$ 900,000	Total

Basis for Action

Expansion of recreational land is critical to meet the needs of both existing and future residents, especially as vacant land becomes more scarce and the Township's population continues to grow. **Goal 2.**

HITCHCOCK PROPERTY

Project Type:	Land Acquisition	
Priority:	Medium	
Estimated Cost:	\$ 300,000	Local
	\$ 600,000	MNRTF
	\$ 900,000	Total

Basis for Action

Expansion of recreational land is critical to meet the needs of existing and future residents, especially as vacant land becomes scarce and the Township's population increases. This property is an ideal trailhead location, and should be purchased when the land becomes available. **Goal 2.**

HALEY-HILLS FARM

Project Type:	Land Acquisition	
Priority:	Low	
Estimated Cost:	\$ 125,000	Local
	\$ 1,450,000	MNRTF
	\$ 2,175,000	Total

Basis for Action

Expansion of recreational land is critical to meet the needs of both existing and future residents, especially as vacant land becomes scarce and the Township's population continues to grow. **Goal 2.**

UNION LAKE ROAD PARK PROPERTY

Project Type:	Land Acquisition	
Priority:	Low	
Estimated Cost:	\$ 100,000	Local
	\$ 600,000	MNRTF
	\$ 700,000	Total

Basis for Action

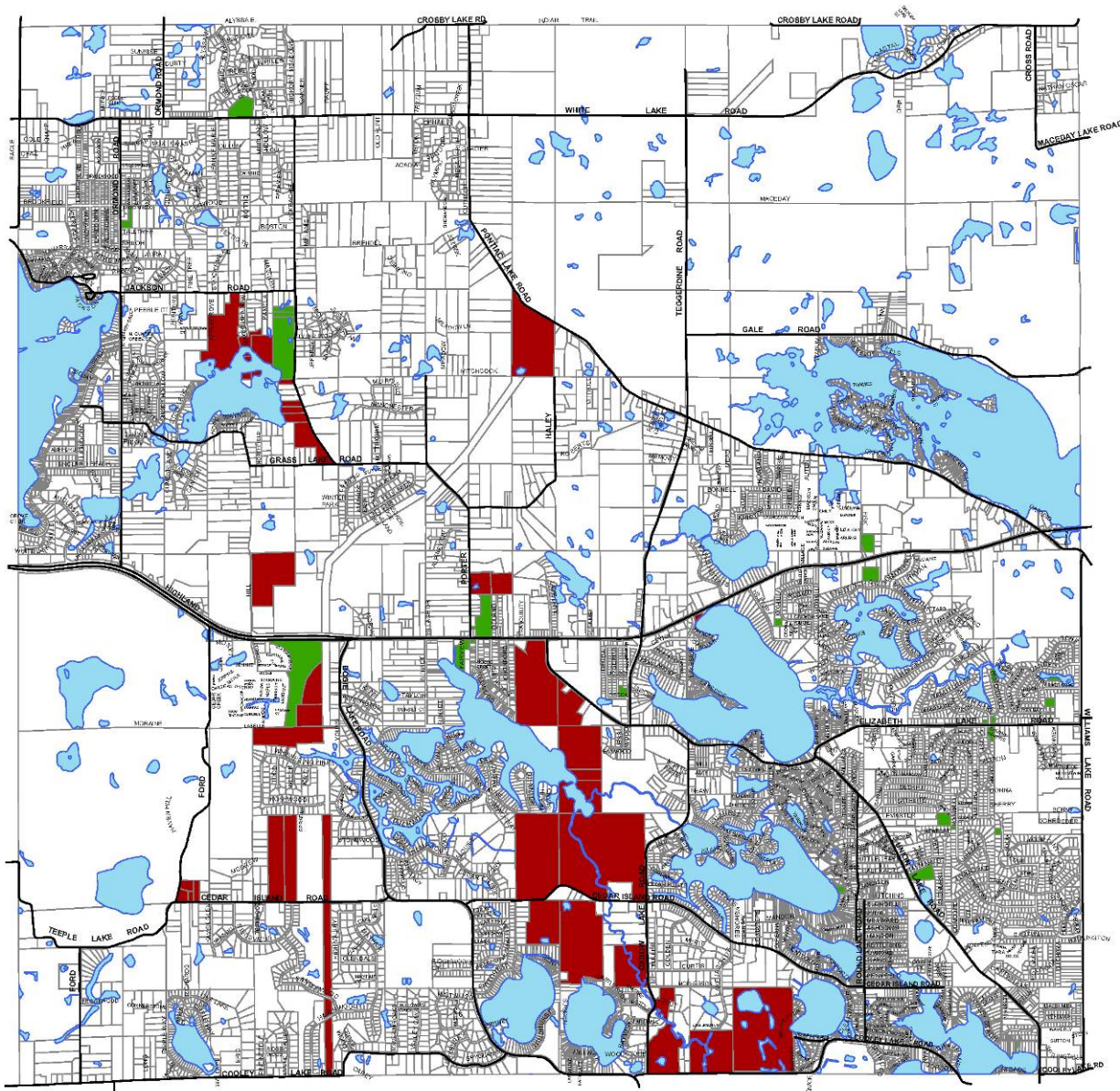
Expansion of recreational land is critical to meet the needs of both existing and future residents, especially as vacant land becomes scarcer and the Township's population continues to grow. Union Lake Property would be ideal for the development of a disc golf course, Skate Park, or other destination type recreation facility. **Goal 2.**

**Action Plan Summary
Priority & Planning Budget**

YEAR	PROPOSED ACTION	PRIORITY	TOWNSHIP SHARE	GRANT AMOUNT	TOTAL COST
DEVELOPMENT / PLANNING PROJECTS					
2014	Teggerdine Road Pathway Connection	High	\$150,000	-	\$150,000
	Hidden Pines Park Development	Medium	\$250,000	\$345,000	\$595,000
	Bogie Lake Road Pathway	High	\$375,000	\$1,125,000	\$1,500,000
	2014 Total		\$775,000	\$1,470,000	\$2,245,000
2015	Bloomer Park Phase 2 Development	High	\$100,000	\$200,000	\$300,000
	White Lake Trail [ITC Corridor]	High	\$150,000	\$300,000	\$450,000
	M-59 Pathway Renovation	High	\$100,000	\$200,000	\$300,000
	2015 Total		\$350,000	\$700,000	\$1,050,000
2016	White Lake Community Center / Village Study	High	\$65,000	-	\$65,000
	Oxbow Lake M59 Mini-Park	High	\$80,000	\$175,000	\$255,000
	2016 Total		\$145,000	\$175,000	\$320,000
2017	White Lake Trail Amenities [ITC Corridor]	High	\$175,000	\$300,000	\$475,000
	2017 Total		\$175,000	\$300,000	\$475,000
2018	Union Lake Pathway	Medium	\$225,000	\$450,000	\$675,000
	White Lake Trail Initial At-Grade Crossing of M-59	High	\$100,000	\$150,000	\$250,000
	2018 Total		\$325,000	\$600,000	\$925,000
5-Year Totals			\$1,770,000	\$3,245,000	\$5,015,000

**Action Plan Summary
Priority & Planning Budget (continued)**

YEAR	PROPOSED ACTION	PRIORITY	TOWNSHIP SHARE	GRANT AMOUNT	TOTAL COST
ACQUISITION PROJECTS					
2014	Oxbow Lake M59 Mini-Park Purchase	Medium	\$50,000	\$50,000	\$100,000
	2014 Total		\$50,000	\$50,000	\$100,000
2015	Brendel Lake Campground Property Purchase	High	\$250,000	\$500,000	\$750,000
	2015 Total		\$250,000	\$500,000	\$750,000
2016	Brendel Lake Complex Properties Acquisition / Protection	Medium	\$230,000	\$470,000	\$700,000
	2016 Total		\$230,000	\$470,000	\$700,000
2017	Brendel Lake Complex Properties Acquisition / Protection	Medium	\$230,000	\$470,000	\$700,000
	2017 Total		\$230,000	\$470,000	\$700,000
2018	Brendel Lake Complex Properties Acquisition / Protection	Medium	\$230,000	\$470,000	\$700,000
	2018 Total		\$230,000	\$470,000	\$700,000
	5-Year Totals		\$1,064,000	\$1,960,000	\$3,024,000
2019 to 2020	Cedar Island Road Properties Purchase	Medium	\$300,000	\$600,000	\$900,000
	Hitchcock Park Property Purchase	Medium	\$300,000	\$600,000	\$900,000
	Haley-Hills Farm Property Purchase	Low	\$125,000	\$250,000	\$375,000
	Union Lake Road Park Property Purchase	Low	\$200,000	\$600,000	\$700,000
	2019 to 2020 Long-range Totals		\$925,000	\$2,050,000	\$2,875,000



- TOWNSHIP-OWNED PROPERTY
- POTENTIAL ACQUISITION PROPERTY

TOWNSHIP-OWNED PROPERTY & POTENTIAL RECREATIONAL LAND ACQUISITION

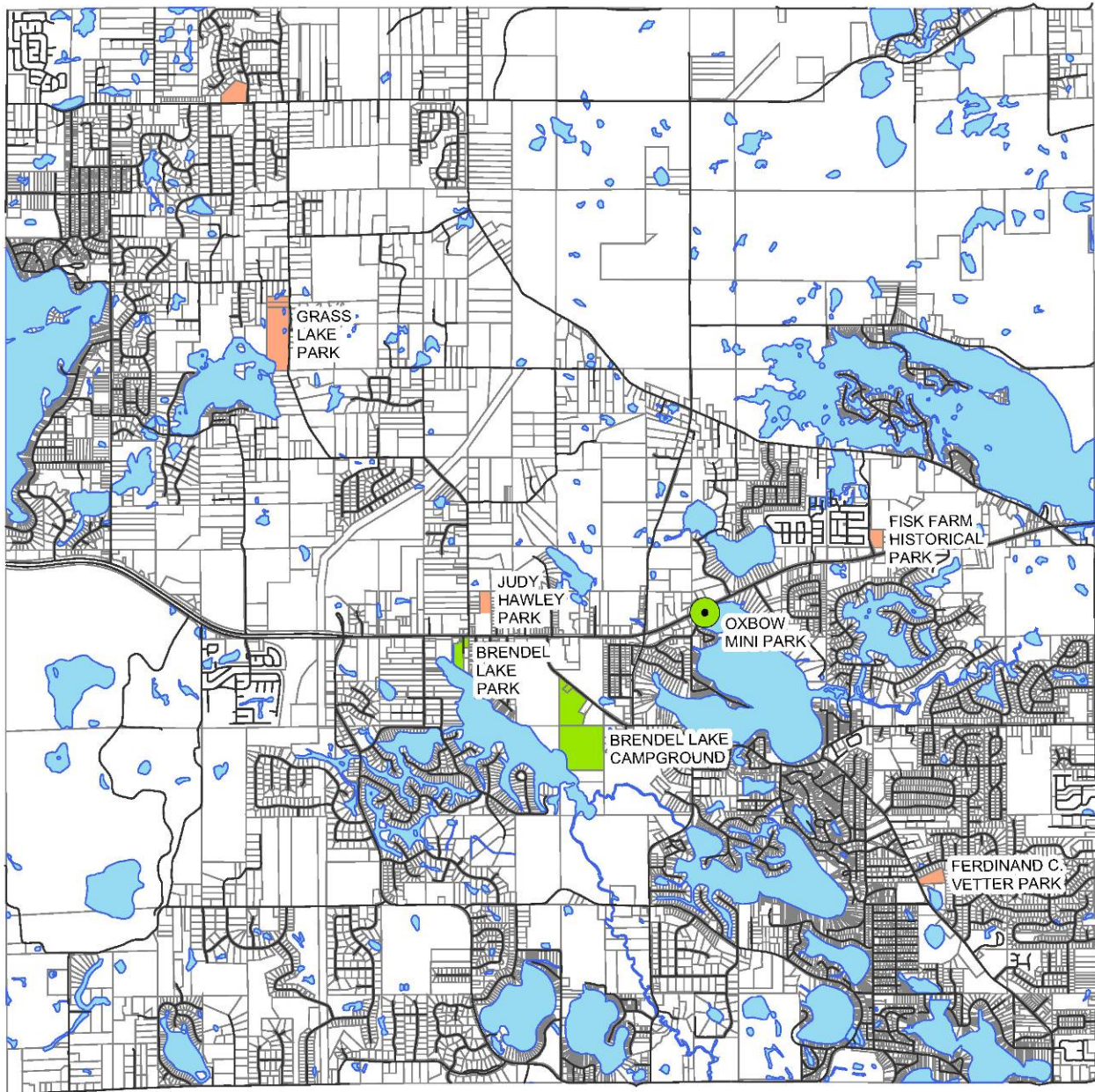
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-19



BIRCHLER ARROYO ASSOCIATES, INC.

SOURCES: OAKLAND COUNTY; WHITE LAKE TOWNSHIP ASSESSING;
WHITE LAKE PARKS AND RECREATION COMMITTEE



- EXISTING TOWNSHIP PARKS
- FUTURE TOWNSHIP PARKS

PARKS MASTER PLAN
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

MAP RP-20



BIRCHLER ARROYO
 ASSOCIATES, INC.

BASE MAP SOURCE: OAKLAND COUNTY



BLOOMER PARK
White Lake Township

MAP RP-21

PHASE ONE PARK PLAN

October 2011



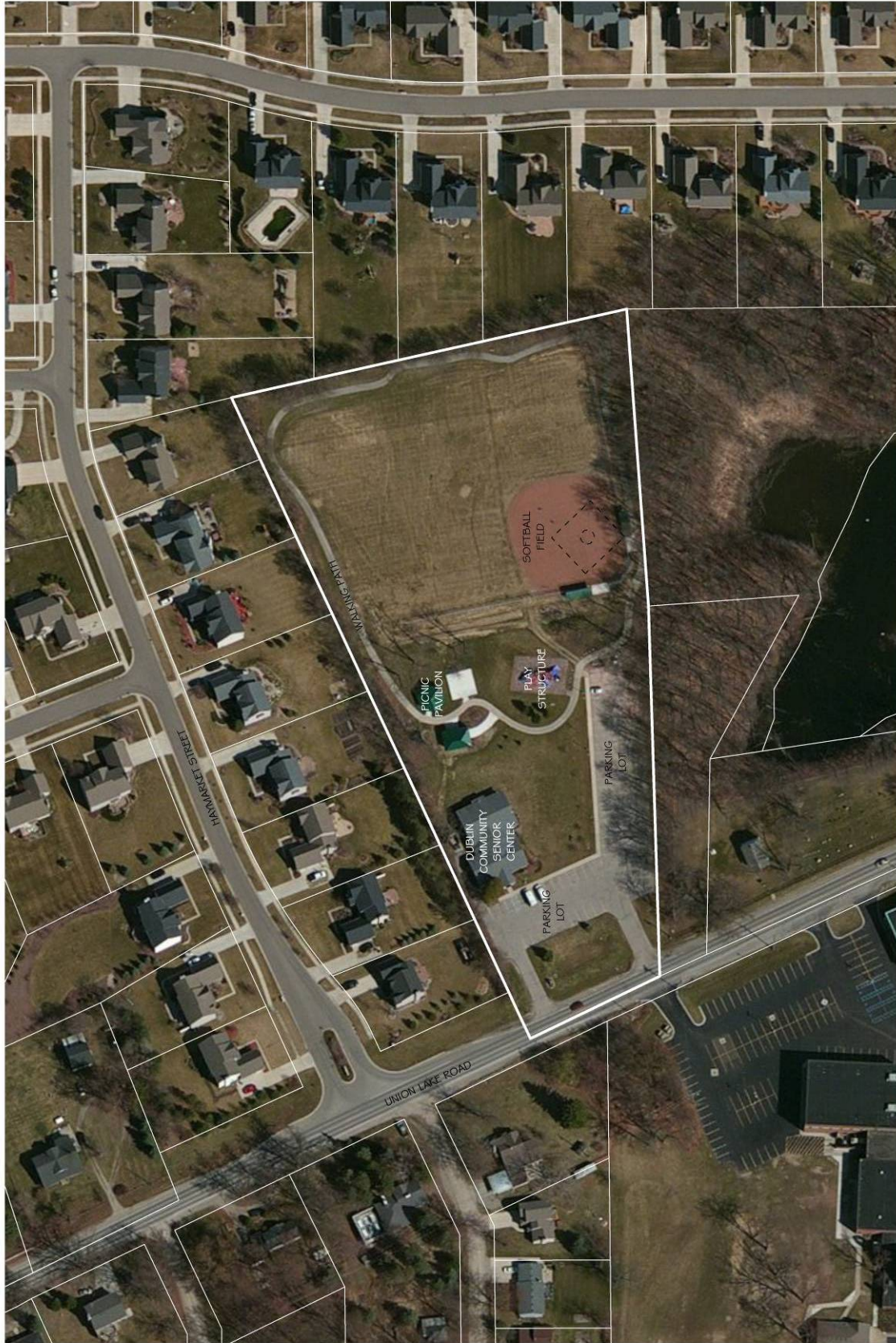
MAP RP-22

SOURCE: OAKLAND COUNTY

CONCEPTUAL DEVELOPMENT
SCHEME FOR
BRENDLE LAKE PARK
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MI

N
1" = 125'





1" = 125'

EXISTING CONDITIONS
FERDINAND C. VETTER PARK
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MI

MAP RP-23



MAP RP-24

SOURCES: OAKLAND COUNTY;
AERODATA, INC.

EXISTING CONDITIONS
JUDY HAWLEY PARK
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MI

N

 1" = 150'





Beckett & Raeder

MAP RP-25

White Lake Township
Hidden Pines Park Master Plan

April 2012

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APPENDIX

- ❖ Online Survey Results
- ❖ Intersection Design Standards, taken from Manual of Uniform Traffic Control Devices for Streets and Highways, Part 9 – Traffic Controls for Bicycle Facilities, 2003 Edition, by the United States Department of Transportation – Federal Highway Administration
- ❖ Public Hearing Notice
- ❖ Agenda
- ❖ Minutes
- ❖ Resolution of Adoption



APPENDIX

- ❖ Online Survey Results
- ❖ Intersection Design Standards, taken from Manual of Uniform Traffic Control Devices for Streets and Highways, Part 9 – Traffic Controls for Bicycle Facilities, 2003 Edition, by the United States Department of Transportation – Federal Highway Administration
- ❖ Public Hearing Notice
- ❖ Agenda
- ❖ Minutes
- ❖ Resolution of Adoption

1. Are you a resident of White Lake Township?

		ResponsePercent	ResponseCount
Yes		78.4%	207
No		21.6%	57
		AnsweredQuestion	264
		SkippedQuestion	0

2. White Lake has an abundance of parks and natural green space. Was that a factor in choosing to visit or live in White Lake?

		ResponsePercent	ResponseCount
Yes		69.6%	176
No		30.4%	77
		AnsweredQuestion	253
		SkippedQuestion	11












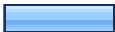

3. How often have you or members of your household visited the following White Lake Township Parks in the past year?

	Not at all	A few times per year	1-5 times per month	1-5 times per week	RatingCount
Judy Hawley Park (Behind Township Hall)	58.1% (144)	34.3% (85)	6.5% (16)	1.2% (3)	248
Ferdinand C. Vetter Park (Behind the Dublin Senior Center)	74.7% (180)	18.7% (45)	5.0% (12)	2.1% (5)	241
Bloomer Park (Located on McKeachie Road)	76.7% (184)	18.8% (45)	2.9% (7)	1.7% (4)	240
Hidden Pines Park (Located on White Lake Road East of Ormond Road)	80.0% (196)	17.6% (43)	2.4% (6)	0.0% (0)	245
AnsweredQuestion					254
SkippedQuestion					10

4. Which other Parks have you visited in White Lake Township in the past year?

	Not at all	A few times per year	1-5 times per month	1-5 times per week	RatingCount
Highland State Recreation Area	21.0% (53)	51.6% (130)	22.2% (56)	5.6% (14)	252
Pontiac State Recreation Area	21.0% (52)	50.0% (124)	16.9% (42)	12.9% (32)	248
Indian Springs Metro Park	13.5% (34)	52.4% (132)	22.6% (57)	11.5% (29)	252
White Lake Oaks Golf Course	67.6% (146)	24.1% (52)	5.1% (11)	3.2% (7)	216
Hess-Hathaway Park	48.4% (106)	37.9% (83)	11.4% (25)	2.7% (6)	219
Other (please specify)					9
AnsweredQuestion					262
SkippedQuestion					2

5. What do you typically do in the parks that you visit?

		ResponsePercent	ResponseCount
Walking/Running/Biking		69.2%	180
Use Playgrounds		27.7%	72
Picnicing		23.5%	61
Ice Skating/Cross County		10.8%	28
Baseball		3.8%	10
Softball		3.5%	9
Basketball		0.4%	1
Volleyball		0.8%	2
Attend Concerts, movies and community events		13.1%	34
Fishing/Canoeing		16.5%	43
Relaxing		34.6%	90
Golf		21.5%	56
Other (please specify)		43.1%	112
AnsweredQuestion			260
SkippedQuestion			4


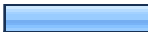

6. Overall how would you rate the physical condition of the White Lake Township Parks you have visited?

	Excellent	Good	Fair	Poor	RatingCount
Judy Hawley Park (Behind Township Hall)	24.4% (30)	63.4% (78)	13.8% (17)	0.0% (0)	123
Ferdinand C. Vetter Park (Behind the Dublin Senior Center)	24.1% (20)	61.4% (51)	14.5% (12)	0.0% (0)	83
Bloomer Park (Located on McKeachie Road)	20.3% (14)	58.0% (40)	17.4% (12)	4.3% (3)	69
Hidden Pines Park (Located on White Lake Road East of Ormond Road)	13.6% (9)	59.1% (39)	24.2% (16)	3.0% (2)	66
				Comments	32

AnsweredQuestion 150

SkippedQuestion 114

7. Do you feel that there are sufficient parks and green space areas within walking distance of your home?

		ResponsePercent	ResponseCount
Yes		56.5%	134
No (If so, on what street or in what neighborhood do you live?)		29.1%	69
Not Sure		14.3%	34
	Street or Neighborhood		89

AnsweredQuestion 237

SkippedQuestion 27

8. Listed below are possible actions White Lake Township could take to improve the parks and recreation system. Please indicate whether you would be very supportive, somewhat supportive, or not supportive of each action.












	Very Supportive	Somewhat Supportive	Not Supportive	Not Sure	RatingCount
1. Acquire land to preserve open space and protect the environment	54.3% (125)	27.8% (64)	11.7% (27)	6.1% (14)	230
2. Acquire land for preservation and develop walking / hiking trails	64.9% (150)	26.0% (60)	6.1% (14)	3.9% (9)	231
3. Acquire land for developing athletic fields	20.4% (45)	38.0% (84)	33.5% (74)	8.1% (18)	221
4. Acquire land for developing neighborhood parks and playgrounds	36.0% (81)	38.7% (87)	19.1% (43)	6.2% (14)	225
5. Upgrade and Update older park facilities / shelters / playgrounds	48.9% (112)	39.3% (90)	7.0% (16)	4.8% (11)	229
6. Develop new hard surface walking and biking trails that connect regional trails	59.4% (136)	24.5% (56)	11.4% (26)	4.8% (11)	229
7. Develop equestrian trails	37.1% (86)	24.1% (56)	28.4% (66)	10.3% (24)	232
8. Develop a new indoor recreation center with recreational programming, yoga/ spinning / kids activities	35.4% (80)	27.4% (62)	28.3% (64)	8.8% (20)	226
9. Develop new youth and adult athletic fields (Soccer and Baseball / Softball)	19.6% (44)	37.3% (84)	32.9% (74)	10.7% (24)	225
10. Develop a new off-leash dog park	38.2% (87)	23.7% (54)	27.6% (63)	10.5% (24)	228
11. Develop splash pad / sprayground / water activities for summer use at Township Parks.	27.2% (61)	31.3% (70)	29.9% (67)	11.6% (26)	224
12. Develop a Township Disc Golf Course	13.7% (31)	27.8% (63)	44.5% (101)	14.1% (32)	227
13. Develop a Skate Board Park or Skate Board Area in an existing	13.7% (31)	27.9% (63)	42.9% (97)	15.9% (36)	226

park.

AnsweredQuestion 242




SkippedQuestion 22

9. From the list below, which four (4) of the actions would you be most willing to fund with your White Lake Township Park and Recreation tax dollars?

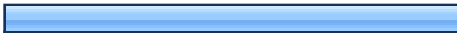

		ResponsePercent	ResponseCount
1. Acquire land to preserve open space and protect the environment		43.1%	97
2. Acquire land for preservation and develop walking / hiking trails		68.9%	155
3. Acquire land for developing athletic fields		4.9%	11
4. Acquire land for developing neighborhood parks and playgrounds		24.0%	54
5. Upgrade and Update older park facilities / shelters / playgrounds		42.2%	95
6. Develop new hard surface walking and biking trails that connect regional trails		49.8%	112
7. Develop equestrian trails		28.4%	64
8. Develop a new indoor recreation center with recreational programming, yoga/ spinning / kids activities		30.2%	68
9. Develop new youth and adult athletic fields (Soccer and Baseball / Softball)		10.7%	24
10. Develop a new off-leash dog park		29.8%	67
11. Develop splash pad / sprayground / water activities for summer use at Township Parks.		16.9%	38

12. Develop a Township Disc Golf Course		8.4%	19
13. Develop a Skate Board Park or Skate Board Area in an existing park.		6.2%	14
		AnsweredQuestion	225
		SkippedQuestion	39














10. Do you attend the White Lake Township Movie in the Park Summer Events?

		ResponsePercent	ResponseCount
Yes		16.3%	39
No		46.7%	112
Did not know White Lake had a Summer Movie Program		37.1%	89
		AnsweredQuestion	240
		SkippedQuestion	24

11. Should White Lake Township Parks and Recreation provide Summer Movies in the Park and other Summer activities like concerts in the park?

		ResponsePercent	ResponseCount
Yes		91.5%	193
No		8.5%	18
		Please comment	26
		AnsweredQuestion	211
		SkippedQuestion	53

12. What types of media do you use to hear about local events and park activities?

		ResponsePercent	ResponseCount
White Lake Township Website		27.7%	65
Facebook		23.8%	56
Twitter		3.0%	7
Email		30.2%	71
Library News Letter / Mail		34.9%	82
White Lake Patch		38.3%	90
Local White Lake Community Cable Channel		1.3%	3
Local Television News / Radio		9.8%	23
Oakland Press Newspaper		26.0%	61
Spinal Column News Weekly		54.0%	127
Oakland County Parks and Recreation		13.6%	32
Friends and Neighbors		45.5%	107
School Flyers and Emails		14.5%	34
		Other (please specify)	13
		AnsweredQuestion	235
		SkippedQuestion	29

Page 1, Q4. Which other Parks have you visited in White Lake Township in the past year?

1	Kensington	Jan 27, 2013 8:13 AM
2	Rose Oaks	Jan 23, 2013 3:47 AM
3	Kayak on Brendall Lake: Needs to be protected from over development. URGENT to recognize.	Jan 22, 2013 2:33 PM
4	park land on McKeachie	Jan 22, 2013 7:57 AM
5	Lyon Oaks	Jan 21, 2013 12:28 PM
6	Brendel Beach - Lakewood Village	Jan 15, 2013 1:47 PM
7	We love the White Lake parks!	Jan 15, 2013 9:35 AM
8	dodge in commerce & proud lake	Jan 15, 2013 8:29 AM
9	Kensington	Jan 9, 2013 6:46 AM

Page 1, Q5. What do you typically do in the parks that you visit?

1	Horse riding	Jan 29, 2013 7:02 PM
2	Equestrian	Jan 29, 2013 4:38 PM
3	Camp, Hike, ride horse and walk my dog	Jan 29, 2013 4:08 AM
4	Horseback riding	Jan 28, 2013 12:20 PM
5	Horseback riding	Jan 28, 2013 11:00 AM
6	Horseback riding	Jan 27, 2013 8:13 AM
7	horseback riding	Jan 25, 2013 5:41 PM
8	Horseback Riding	Jan 25, 2013 1:40 AM
9	ride my horse at the horse parks	Jan 24, 2013 11:56 PM
10	Horse back riding	Jan 24, 2013 5:19 PM
11	Horseback riding	Jan 24, 2013 8:49 AM
12	Ride my horses, I can't believe you left this out! I can see you don't care about us!	Jan 24, 2013 7:34 AM
13	Horseback trail riding	Jan 24, 2013 7:03 AM
14	horseback riding	Jan 23, 2013 9:45 PM
15	ride horses	Jan 23, 2013 5:17 PM
16	Horseback riding	Jan 23, 2013 1:35 PM
17	horse ride	Jan 23, 2013 11:30 AM
18	ride my horse	Jan 23, 2013 10:02 AM
19	horseback riding	Jan 23, 2013 6:45 AM
20	Ride my horse	Jan 23, 2013 5:50 AM
21	Ride horse trails	Jan 23, 2013 5:25 AM
22	Equestrian	Jan 23, 2013 3:47 AM
23	horseback riding	Jan 22, 2013 7:39 PM
24	Horse back riding and Camping many times a yearPLRA	Jan 22, 2013 6:52 PM
25	horseback riding	Jan 22, 2013 6:44 PM
26	Horse back riding and camping	Jan 22, 2013 6:42 PM
27	horse back riding	Jan 22, 2013 6:16 PM

Page 1, Q5. What do you typically do in the parks that you visit?

28	Ride the trails on my horse	Jan 22, 2013 6:02 PM
29	ride my horse	Jan 22, 2013 5:54 PM
30	walk my dog ride my horse	Jan 22, 2013 5:17 PM
31	Horseback Riding	Jan 22, 2013 4:31 PM
32	Horseback ride	Jan 22, 2013 4:12 PM
33	Horse back riding	Jan 22, 2013 3:55 PM
34	Horse back riding	Jan 22, 2013 3:43 PM
35	Horseback ride	Jan 22, 2013 3:38 PM
36	Horse back riding & dog sledding	Jan 22, 2013 3:22 PM
37	Horseback riding	Jan 22, 2013 3:20 PM
38	horseback ride	Jan 22, 2013 3:16 PM
39	Horse back ride & camp	Jan 22, 2013 3:10 PM
40	horse ride	Jan 22, 2013 2:59 PM
41	Equestrian activities	Jan 22, 2013 2:53 PM
42	Horse riding the trails	Jan 22, 2013 2:52 PM
43	Horse camping and riding	Jan 22, 2013 2:52 PM
44	Kayaking, walking dogs	Jan 22, 2013 2:33 PM
45	HORSE BACK RIDING W MY HORSE	Jan 22, 2013 2:33 PM
46	riding my horses	Jan 22, 2013 2:28 PM
47	bicycle riding	Jan 22, 2013 9:56 AM
48	ride horses	Jan 22, 2013 7:57 AM
49	Horseback riding	Jan 22, 2013 7:06 AM
50	Horse back riding	Jan 21, 2013 4:59 PM
51	Dog park	Jan 21, 2013 12:28 PM
52	Horseback riding	Jan 21, 2013 12:08 PM
53	mountain biking	Jan 20, 2013 7:54 AM
54	archery	Jan 17, 2013 8:22 AM

Page 1, Q5. What do you typically do in the parks that you visit?

55	walk dogs	Jan 16, 2013 12:53 PM
56	N/A	Jan 16, 2013 11:53 AM
57	Boating	Jan 16, 2013 8:30 AM
58	beaches	Jan 16, 2013 7:51 AM
59	dog walking	Jan 16, 2013 5:49 AM
60	If Ice skating were available at the parks we would do that	Jan 16, 2013 5:45 AM
61	camping	Jan 15, 2013 5:16 PM
62	Soccer	Jan 15, 2013 3:51 PM
63	camping and classes	Jan 15, 2013 2:04 PM
64	picture taking	Jan 15, 2013 2:04 PM
65	Swimming	Jan 15, 2013 1:47 PM
66	I have not been to the parks	Jan 15, 2013 1:13 PM
67	sledding	Jan 15, 2013 12:49 PM
68	swimming	Jan 15, 2013 12:46 PM
69	Boating	Jan 15, 2013 10:33 AM
70	boating	Jan 15, 2013 10:26 AM
71	Walk dog	Jan 15, 2013 9:25 AM
72	horseback riding	Jan 15, 2013 9:21 AM
73	Horse back ride, Hike	Jan 15, 2013 8:53 AM
74	Soccer	Jan 15, 2013 8:37 AM
75	Mountain biking	Jan 15, 2013 8:30 AM
76	Sailing	Jan 15, 2013 8:17 AM
77	Kayaking	Jan 15, 2013 8:15 AM
78	camping	Jan 15, 2013 8:04 AM
79	Holiday Party	Jan 15, 2013 8:01 AM
80	walk / play with dog	Jan 15, 2013 8:00 AM
81	HORSEBACK RIDING	Jan 15, 2013 7:58 AM

Page 1, Q5. What do you typically do in the parks that you visit?

82	Spray/water parks, stuff for kids	Jan 15, 2013 7:54 AM
83	sledding and spay park	Jan 14, 2013 6:34 PM
84	horseback riding	Jan 14, 2013 1:13 PM
85	Mountain Bike	Jan 14, 2013 11:52 AM
86	Equstrian	Jan 14, 2013 8:10 AM
87	Geocaching	Jan 13, 2013 1:52 PM
88	horse back.riding	Jan 13, 2013 5:05 AM
89	Swimming, splash pad	Jan 13, 2013 3:38 AM
90	Ride my horse	Jan 12, 2013 5:13 AM
91	Horse back riding	Jan 11, 2013 4:48 PM
92	horseback riding	Jan 11, 2013 7:36 AM
93	equestrian trails	Jan 11, 2013 6:23 AM
94	Horseback Riding	Jan 10, 2013 8:36 PM
95	horse back riding	Jan 10, 2013 8:07 PM
96	Horseback Riding	Jan 10, 2013 2:51 PM
97	Horseback riding and volunteer work	Jan 10, 2013 1:18 PM
98	riding horses	Jan 10, 2013 12:56 PM
99	horseback riding	Jan 10, 2013 12:47 PM
100	horse back trail riding	Jan 10, 2013 12:01 PM
101	HORSE	Jan 10, 2013 10:22 AM
102	Horse back trail riding	Jan 10, 2013 10:12 AM
103	horseback riding	Jan 10, 2013 9:59 AM
104	dog walking	Jan 10, 2013 6:40 AM
105	Open house	Jan 9, 2013 1:38 PM
106	biking	Jan 9, 2013 1:28 PM
107	camp	Jan 9, 2013 12:46 PM
108	fly kites, walk the dog	Jan 9, 2013 6:44 AM

Page 1, Q5. What do you typically do in the parks that you visit?

109	We live in Hidden Pines - kids used to run around over there when waiting for bus	Jan 8, 2013 1:05 PM
110	Cross Country skiing in the winter would be an excellent addition	Jan 8, 2013 10:39 AM
111	eat lunch	Jan 8, 2013 9:05 AM
112	horse back riding	Jan 8, 2013 8:47 AM

Page 1, Q6. Overall how would you rate the physical condition of the White Lake Township Parks you have visited?

1	don't know. Walkway at park behind township office could use TLC	Jan 29, 2013 4:08 AM
2	n/a	Jan 28, 2013 11:00 AM
3	excellent at the state park	Jan 24, 2013 11:56 PM
4	Bloomer Park is under construction.	Jan 23, 2013 7:25 AM
5	Bloomer is under construction. So I will let you know	Jan 23, 2013 5:50 AM
6	I haven't visited these parks, I am an equestrian	Jan 23, 2013 3:47 AM
7	i don't use these parks can't give an opinion	Jan 22, 2013 5:54 PM
8	Don't know these parks	Jan 22, 2013 2:52 PM
9	have not visited Bloomer or Hidden Pines parks	Jan 22, 2013 9:56 AM
10	Have not visited these	Jan 21, 2013 12:08 PM
11	n/a - did not visit 3 of the 4 parks	Jan 20, 2013 7:54 AM
12	not finished,	Jan 17, 2013 11:48 AM
13	not applicable	Jan 17, 2013 5:45 AM
14	didn't visist	Jan 16, 2013 12:53 PM
15	N/A	Jan 16, 2013 11:53 AM
16	Don't use	Jan 16, 2013 7:12 AM
17	Was never finished during 2012 season	Jan 16, 2013 5:52 AM
18	Hopefully the Hidden Pines Park will be completed this spring	Jan 16, 2013 5:45 AM
19	have not visited	Jan 15, 2013 7:14 PM
20	do not know have not been there	Jan 15, 2013 4:05 PM
21	I have never heard of Bloomer Park or Hidden Pines Park	Jan 15, 2013 2:04 PM
22	Want more bike and hiking paths.	Jan 15, 2013 1:38 PM
23	I have not been to the parks	Jan 15, 2013 1:13 PM
24	Have not visited these parks.	Jan 15, 2013 9:35 AM
25	Never been to any of them.. Didn't know about them	Jan 15, 2013 8:42 AM
26	As a resident of Hidden Pines Sub I am extremely disappointed with the township locating a baseball field there. I think there are going to be many accidents on White Lake area because of the ball field. I believe a passing car	Jan 15, 2013 8:02 AM

Page 1, Q6. Overall how would you rate the physical condition of the White Lake Township Parks you have visited?

will get hit with a ball. There is not sufficient parking. While the park is in good condition I wish it was somewhere else.

27	I do not go often enough to rate them	Jan 15, 2013 7:58 AM
28	haven't been to the township parks	Jan 12, 2013 5:13 AM
29	I have not visited these	Jan 9, 2013 6:48 AM
30	Not enough visits to make accurate assessment	Jan 9, 2013 5:59 AM
31	no earthly idea where ^ these ^ parks are, there's no list or addresses or anything	Jan 9, 2013 5:24 AM
32	We are very anxious for Bloomer Park to be completed.	Jan 8, 2013 10:58 AM

Page 1, Q7. Do you feel that there are sufficient parks and green space areas within walking distance of your home?

1	Shady Hollow	Jan 29, 2013 4:38 PM
2	Lake ona	Jan 26, 2013 9:52 PM
3	fuller st	Jan 25, 2013 5:39 PM
4	I have to drive to get to any horse parks	Jan 24, 2013 11:56 PM
5	Village Acres	Jan 24, 2013 4:00 PM
6	Jozwik	Jan 24, 2013 7:34 AM
7	46 Croutty. Nothing is in walking distance except the cemetary.	Jan 23, 2013 7:25 AM
8	Brendel Road	Jan 23, 2013 5:50 AM
9	I am not a resident	Jan 23, 2013 3:47 AM
10	I board my horse in WLT and ride 100's of miles there	Jan 22, 2013 6:52 PM
11	Orion twp.	Jan 22, 2013 6:02 PM
12	milford	Jan 22, 2013 5:54 PM
13	haley	Jan 22, 2013 3:55 PM
14	Reese rd, Clarkston	Jan 22, 2013 2:52 PM
15	Highland Hills Milford Clyde	Jan 22, 2013 2:33 PM
16	Twin Lakes	Jan 22, 2013 9:56 AM
17	Havenwood	Jan 22, 2013 9:38 AM
18	Holly township	Jan 22, 2013 7:06 AM
19	Rose Township	Jan 21, 2013 4:59 PM
20	1354 waverly drive	Jan 20, 2013 12:32 AM
21	Willow Pond Subdivision	Jan 17, 2013 11:48 AM
22	Village Acres subdivision	Jan 17, 2013 5:45 AM
23	Fox bay sub	Jan 16, 2013 7:23 PM
24	Huron river dr.	Jan 16, 2013 7:11 PM
25	Emwood court	Jan 16, 2013 4:42 PM
26	Tamarack Hills	Jan 16, 2013 12:53 PM
27	Lakeside Dr	Jan 16, 2013 12:16 PM

Page 1, Q7. Do you feel that there are sufficient parks and green space areas within walking distance of your home?

28	not that there's bloomed park	Jan 16, 2013 10:29 AM
29	Village Acres	Jan 16, 2013 8:30 AM
30	haley rd.	Jan 16, 2013 7:39 AM
31	Willow Pond	Jan 16, 2013 5:45 AM
32	Lakewood Village	Jan 16, 2013 3:47 AM
33	Sierra Heights	Jan 15, 2013 11:43 PM
34	Carla Hills Estates	Jan 15, 2013 6:01 PM
35	cranberry beach	Jan 15, 2013 5:39 PM
36	elizabeth laKE RD	Jan 15, 2013 4:11 PM
37	capri lakewood	Jan 15, 2013 2:56 PM
38	105 Shotwell/ we need walking/and bike paths not parks	Jan 15, 2013 2:04 PM
39	Lakewood Village	Jan 15, 2013 1:47 PM
40	tower st	Jan 15, 2013 12:41 PM
41	Williams Lake Crossings	Jan 15, 2013 11:14 AM
42	Lakewood Village	Jan 15, 2013 10:35 AM
43	lakewood village	Jan 15, 2013 10:26 AM
44	Bluffs at Williams Lake Crossing - New Sub on Williams south of Elizabeth	Jan 15, 2013 10:21 AM
45	Ormond rd	Jan 15, 2013 9:53 AM
46	Cedar Shores area	Jan 15, 2013 9:41 AM
47	Lakeview near Cedar Island Lake	Jan 15, 2013 9:35 AM
48	6425 Ellinwood	Jan 15, 2013 9:28 AM
49	Lakewood Vollage	Jan 15, 2013 9:25 AM
50	3150 Cooley lake road	Jan 15, 2013 8:53 AM
51	Twin Lakes	Jan 15, 2013 8:32 AM
52	round lake blvd	Jan 15, 2013 8:29 AM
53	Carla Hills Estates	Jan 15, 2013 8:16 AM
54	Ford Road	Jan 15, 2013 8:10 AM

Page 1, Q7. Do you feel that there are sufficient parks and green space areas within walking distance of your home?

55	Lakewood village - I wish there were sidewalks on Bogie Lake	Jan 15, 2013 8:04 AM
56	Union Lake Road	Jan 15, 2013 8:01 AM
57	We need bike paths throughout the TWP that connect parks and other communities.	Jan 15, 2013 7:56 AM
58	We have to use bikes or car to get to parks.	Jan 15, 2013 7:54 AM
59	Teggerdine	Jan 14, 2013 6:34 PM
60	Lakewood Village	Jan 14, 2013 2:28 PM
61	Haley Road	Jan 14, 2013 10:08 AM
62	Cranberry Lake Meadows	Jan 13, 2013 3:38 AM
63	W. Wardlow Road-Highland	Jan 11, 2013 7:36 AM
64	i live in Commerce Twp.(just outside of downtown Walled Lake)	Jan 10, 2013 1:18 PM
65	Haley Rd	Jan 10, 2013 12:27 PM
66	meadow lane	Jan 10, 2013 12:01 PM
67	Danforth Street	Jan 10, 2013 6:40 AM
68	Diana CT	Jan 9, 2013 4:24 PM
69	Applewood St.	Jan 9, 2013 1:38 PM
70	fox bay	Jan 9, 2013 1:18 PM
71	Colony Heights	Jan 9, 2013 9:50 AM
72	Audubon	Jan 9, 2013 9:39 AM
73	Fox Bay	Jan 9, 2013 9:25 AM
74	Surburban Knolls Subdivision	Jan 9, 2013 9:23 AM
75	Willow Pond Sub	Jan 9, 2013 8:24 AM
76	Midway St.	Jan 9, 2013 7:11 AM
77	lakewood village	Jan 9, 2013 7:10 AM
78	2365 Ridge Road	Jan 9, 2013 6:46 AM
79	Ormond, no sidewalks	Jan 9, 2013 6:44 AM
80	How many miles would be considered walking distance?	Jan 9, 2013 5:59 AM

Page 1, Q7. Do you feel that there are sufficient parks and green space areas within walking distance of your home?

81	Whispering Meadows, we're hoping to acquire one undeveloped lot to convert to neighborhood park	Jan 9, 2013 5:24 AM
82	Woodcroft	Jan 9, 2013 5:13 AM
83	sierra Heights	Jan 8, 2013 7:17 PM
84	Cranberry Lake Estates	Jan 8, 2013 12:09 PM
85	Twin Lakes Subdivision.	Jan 8, 2013 10:39 AM
86	Twin Lakes Village subdivision	Jan 8, 2013 10:35 AM
87	Twin Lakes Village	Jan 8, 2013 9:18 AM
88	Porter Rd.	Jan 8, 2013 9:05 AM
89	sugden lake rd	Jan 8, 2013 8:47 AM

Page 2, Q11. Should White Lake Township Parks and Recreation provide Summer Movies in the Park and other Summer activities like concerts in the park?

1	2 times a year is enough for movies. Maybe a concert would be nice	Jan 29, 2013 4:10 AM
2	this is a two hour away trip to come out to white lake for me	Jan 24, 2013 11:59 PM
3	I have never been to one but now I am interested	Jan 24, 2013 4:04 PM
4	don't know	Jan 23, 2013 5:51 AM
5	I seek White Lake Twp for equestrian activities only	Jan 22, 2013 2:56 PM
6	Concerts yes, movies no - target market too varied	Jan 21, 2013 12:12 PM
7	If you have extra cash give it to police and fire	Jan 16, 2013 11:55 AM
8	IDK, what is the cost????	Jan 16, 2013 8:32 AM
9	More concerts.	Jan 15, 2013 10:17 PM
10	yes. only if enough people show up to justify it.	Jan 15, 2013 7:26 PM
11	concerts/ we see enough movies	Jan 15, 2013 2:10 PM
12	Might attend concert if schedule worked	Jan 15, 2013 1:54 PM
13	I think it is a waste of money.	Jan 15, 2013 8:57 AM
14	Didn't even know about them	Jan 15, 2013 8:44 AM
15	Some young teen events would be nice	Jan 15, 2013 8:07 AM
16	Havent heard about this venue	Jan 15, 2013 8:01 AM
17	No opinion	Jan 15, 2013 7:58 AM
18	I haven't seen the movies yet, but I did live in Baltimore for a number of years. The outside wall of my apartment was where they would show the movies.. See this link for more information, but I'd love to see the movies here grow to be something like this. http://thedailyrecord.com/2012/07/04/its-movie-night-in-little-italy/	Jan 14, 2013 10:18 AM
19	Have heard many good comments about the movies	Jan 10, 2013 8:10 PM
20	Depends in interest	Jan 10, 2013 2:54 PM
21	Since I don't live in White Lake, I can't really respond but I would go!	Jan 10, 2013 1:23 PM
22	no comment	Jan 9, 2013 7:13 AM
23	Not sure if every twp. needs to do this. Waterford, Highland and Milford already provide free concerts and they are close enough. Maybe we need to think of something totally different.	Jan 9, 2013 6:04 AM
24	A real parks and rec department would offer summer camps for kids	Jan 8, 2013 12:14 PM

Page 2, Q11. Should White Lake Township Parks and Recreation provide Summer Movies in the Park and other Summer activities like concerts in the park?

25	Concerts and musicals vs children focused programs	Jan 8, 2013 10:40 AM
26	Only if it has been atteded well.	Jan 8, 2013 9:23 AM

Page 2, Q12. What types of media do you use to hear about local events and park activities?

1	Milford TImes	Jan 25, 2013 5:43 PM
2	Pontiac Lake and Highland Trailriders Associations	Jan 23, 2013 3:53 AM
3	Equestrian online network	Jan 22, 2013 2:56 PM
4	Pontiac Lk horseman ass	Jan 22, 2013 2:56 PM
5	Sharon Greene's column	Jan 21, 2013 4:59 PM
6	Highland Equestrian Conservancy	Jan 21, 2013 12:12 PM
7	mmba.org forum	Jan 20, 2013 9:55 PM
8	Whitelake Patch	Jan 15, 2013 10:24 AM
9	Oakland Press	Jan 15, 2013 8:01 AM
10	highland trail riders, pontiac lake trail riders	Jan 11, 2013 4:56 PM
11	Milford times	Jan 9, 2013 6:47 AM
12	"township website" is an oxymoron, it is out of date and hardly useful, doesn't even have a list of the twp parks: NO MORE BASEBALL FIELDS PLEASE there are other things that the 98% do besides your 2% who play baseball	Jan 9, 2013 5:26 AM
13	would love to recieve emails	Jan 8, 2013 8:51 AM

BEGIN
RIGHT TURN LANE



LANE
LANE

YIELD TO



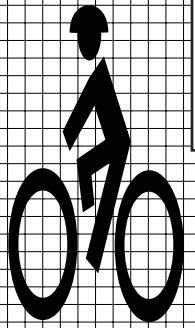
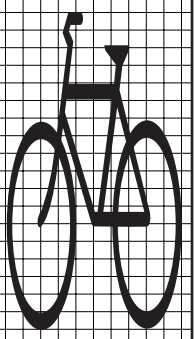
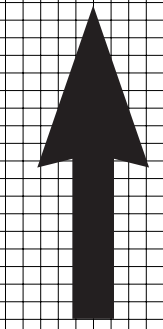
Manual on Uniform Traffic Control Devices

for Streets and Highways

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Part 9 Traffic Controls for Bicycle Facilities



U.S. Department of Transportation
Federal Highway
Administration



Figure 9B-6. Example of Signing for an On-Roadway Bicycle Route

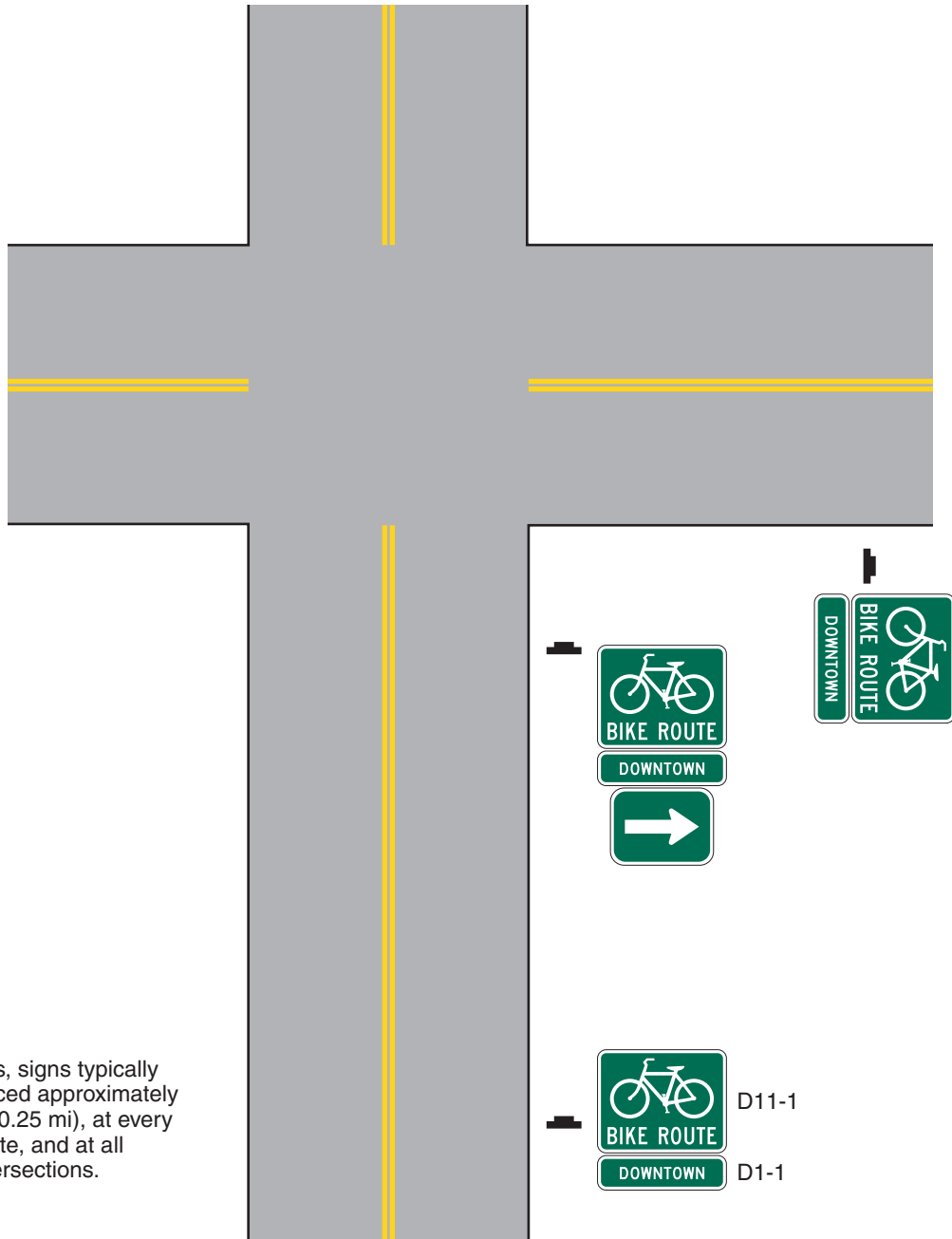


Figure 9B-7. Examples of Signing and Markings for Shared-Use Paths

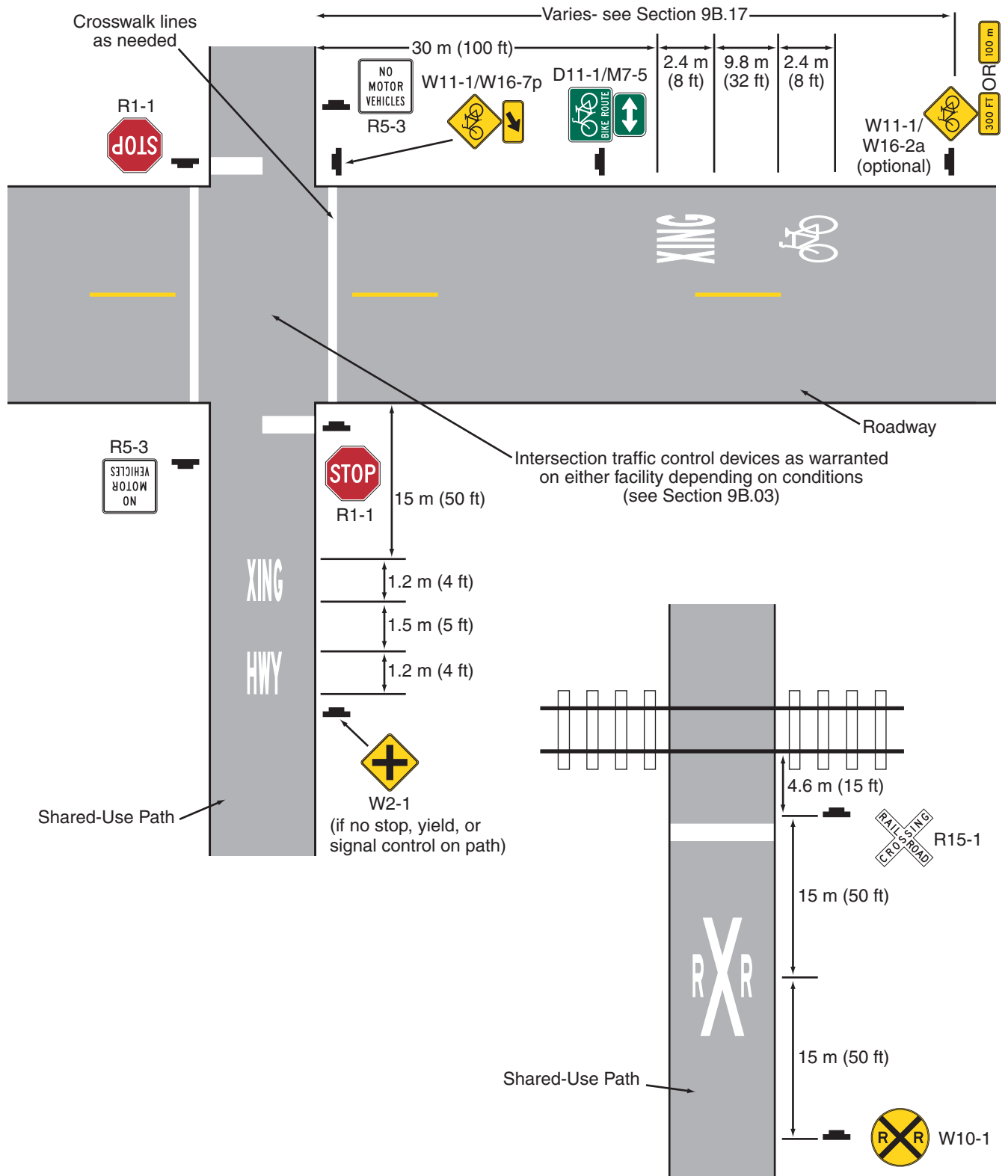


Figure 9C-5. Example of Pavement Markings for Bicycle Lanes on a Two-Way Street

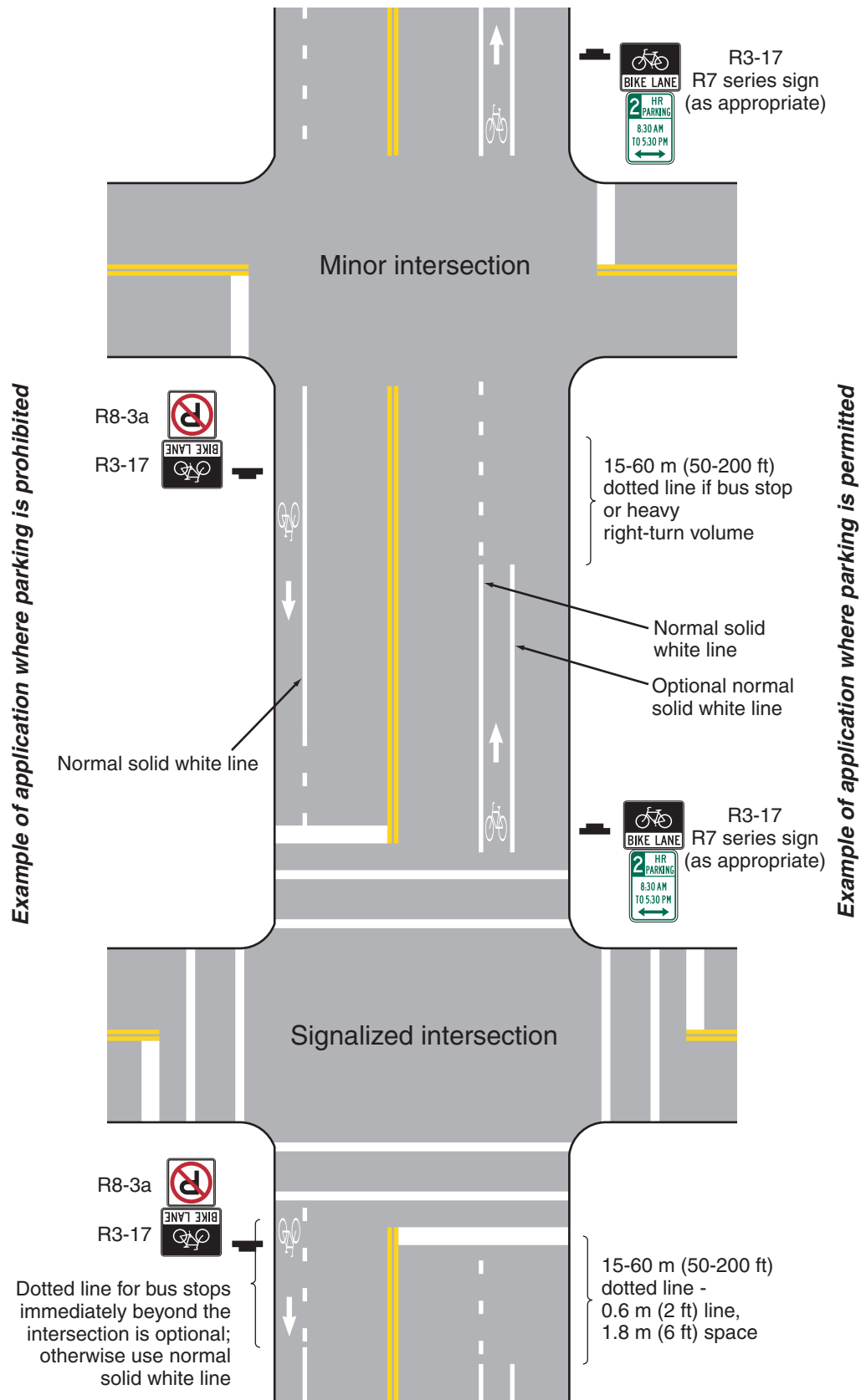
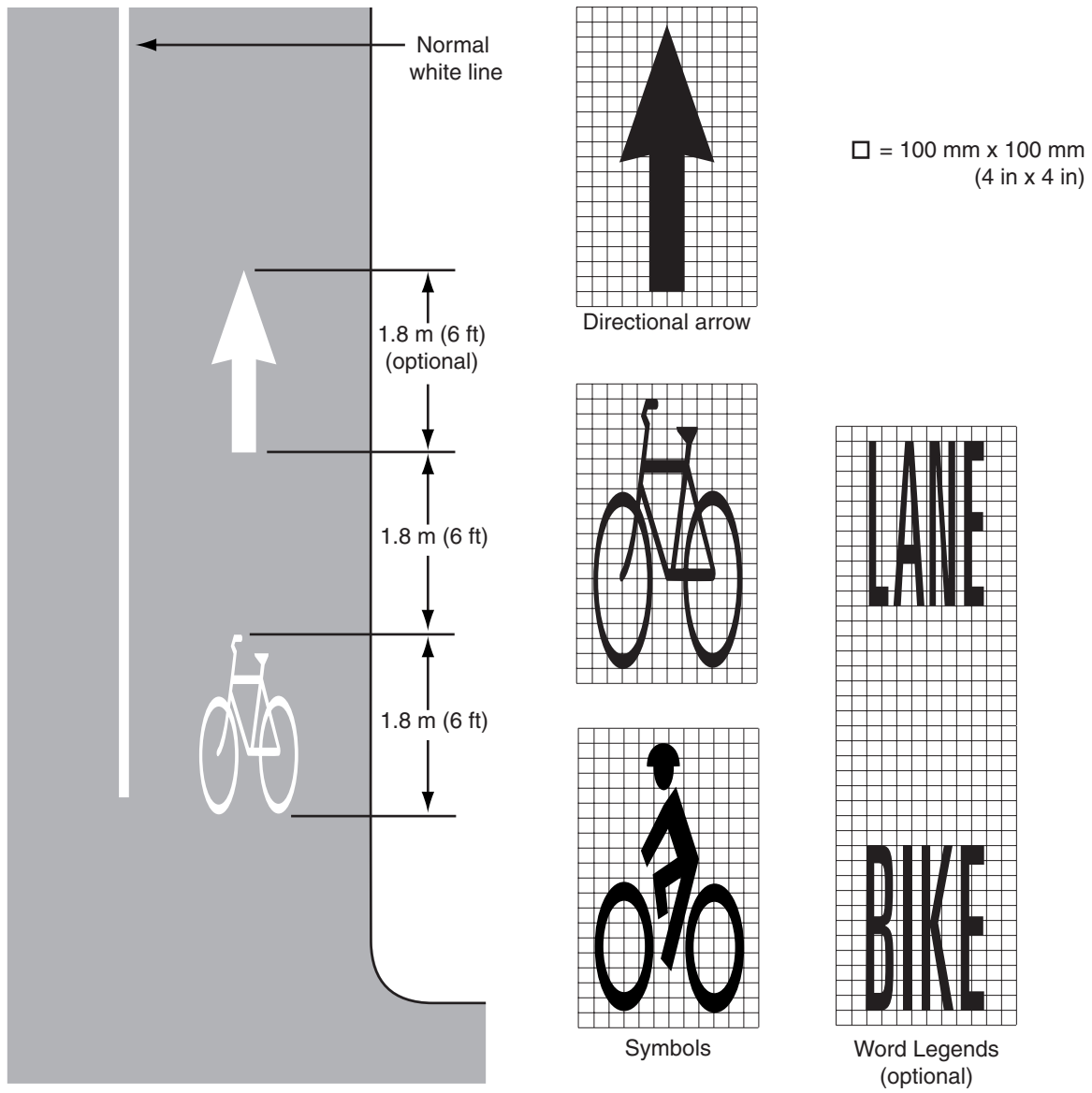


Figure 9C-6. Example of Optional Word and Symbol Pavement Markings for Bicycle Lanes



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