

MARQUETTE CHARTER TOWNSHIP

MARQUETTE COUNTY | MICHIGAN



MASTER PLAN | 2020-2024



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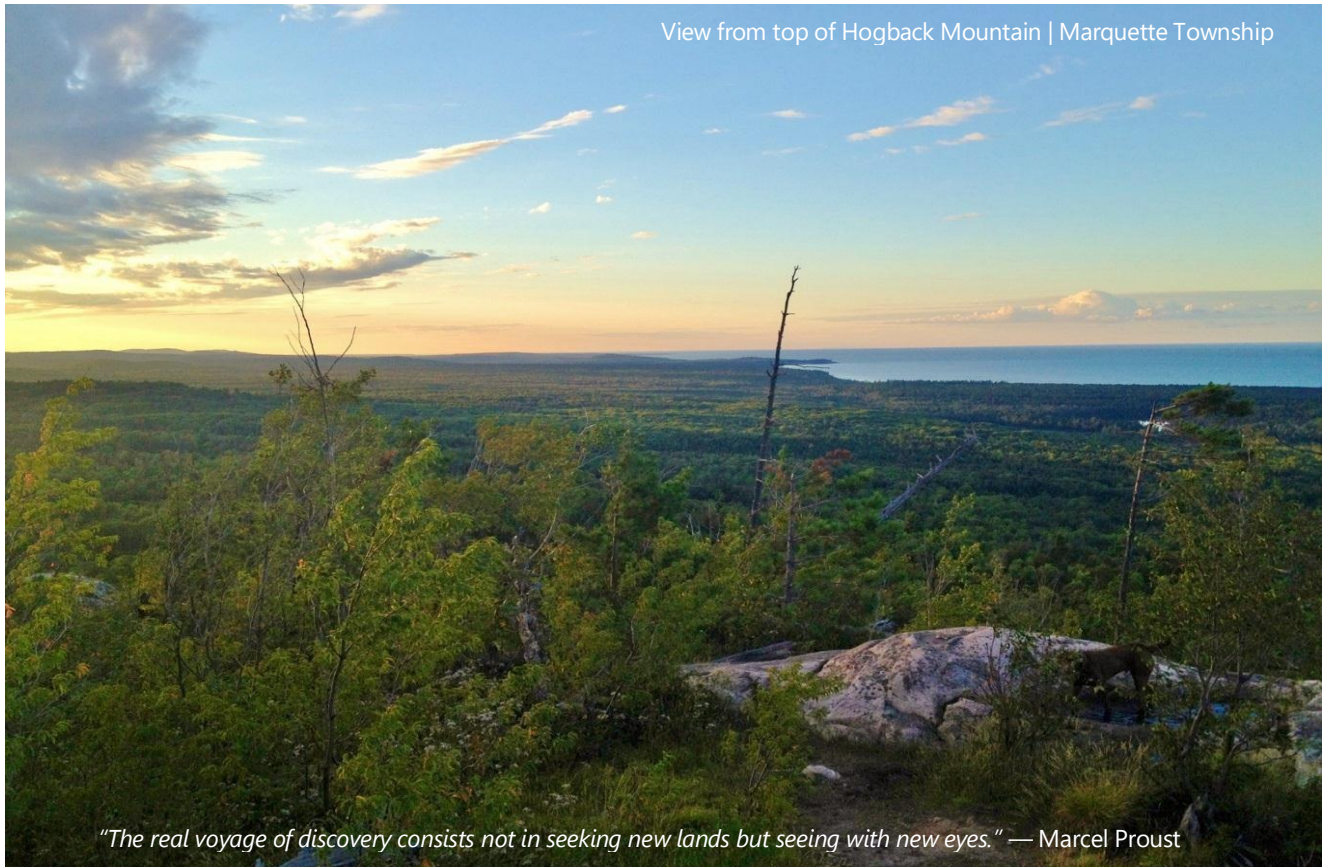


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- APPENDIX A – [2018 CITIZEN SURVEY RESULTS](#)
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- APPENDIX D – [2019 CAPITAL IMPROVEMENTS PLAN](#)
- APPENDIX E – [TEN PRINCIPLES OF SMART GROWTH](#)
- APPENDIX F – [NEW ECONOMY ECONOMIC DEVELOPMENT PRINCIPLES](#)
- APPENDIX G – [MARQUETTE TOWNSHIP RECREATION PLAN 2022 – 2026](#)
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CHAPTER ONE | INTRODUCTION

1.1 WHAT IS A MASTER PLAN?

The enclosed Master Plan relays Marquette Township’s opportunity to gain quality, sustainable, community development by addressing evolving trends, changing demographics, and the mutual benefits of public and private partnerships. This Master Plan update provides guidance for future land use, transportation amenities, and capital spending, economic development and community facilities in a coordinated manner. It also conveys a common vision for the future and denotes achievable goals and objectives to assist with that vision.

The materials and concepts presented in the Master Plan will be used to assist Marquette Township officials with making informed decisions regarding all public and private land uses, while also accounting for the provision of public facilities and services. It is a long-range plan that should assist in guiding the Township over a period of 10 to 20 years. The plan is a living document that denotes the community’s vision—what the people of a community desire and support for their collective future. This plan is also designed to be complimentary to other regional plans, thereby setting the stage for regional collaboration.

1.2 PURPOSE OF A TOWNSHIP MASTER PLAN

Per the [Michigan Planning Enabling Act, P.A. 33 of 2008](#), the Planning Commission “shall make and approve a Master Plan as a guide for development.” The Master Plan is not an ordinance. It does not change the zoning of anyone’s property and it does not have the force of law. It is merely a set of policies, strategies and goals to enhance and improve the community over a projected period of time. The Master Plan update process also creates a framework for public participation and community involvement which promotes regional cooperation and contributes to our small town quality-of-life.

Further, [Michigan Zoning Enabling Act of 2006](#) requires that the zoning ordinance be based on a plan to promote health, safety and general welfare. Zoning is an instrument for adjusting the classification and regulation of land use and it has the force of law.

In conclusion, the Master Plan is our community’s vision, while the zoning ordinance governs the path to that vision. With a Master Plan in place, zoning decisions consistent with the plan and zoning ordinance are presumed to be valid by the courts.

1.3 THE MASTER PLAN UPDATE PROCESS

For the purpose of updating the Marquette Township Master Plan, Planning & Zoning Department staff assisted the Planning Commission in administering the update, the community survey and with coordinating the open-house work sessions that were also part of the update process.

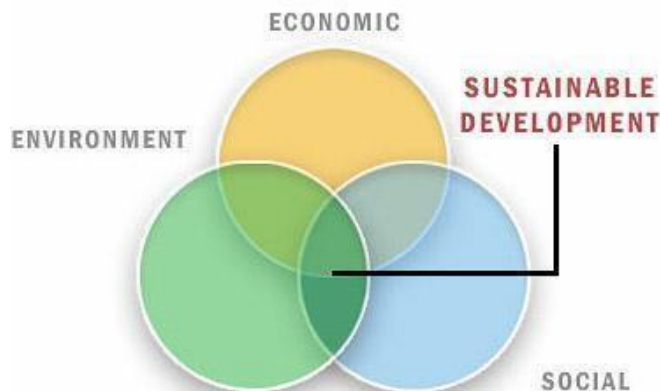
1.4 INCORPORATING SUSTAINABILITY PRINCIPLES

The Marquette Township Planning Commission understands that sustainability is an imperative concept in land use planning. There are many definitions and theories about what sustainability means, but for the

purpose of this Master Plan, the Township is utilizing the [United Nations Commission on Sustainable Development](#) definition which means, “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” This definition is intended to encompass environmental, social and economic concerns.

The [Department of Housing and Urban Development](#), [Department of Transportation](#), and the [Environmental Protection Agency](#) created sustainability policies that acknowledge the balance needed between housing, transportation, and the environment. These “livability principals” provide a benchmark for Marquette Township as they move forward in developing their own livability principles:

- Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- Promote equitable, affordable housing. Expand location and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- Support existing communities. Target federal funding toward existing communities—through strategies like transit-oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- Coordinate and leverage federal policies and investment. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy
- Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.



1.5 LOCATION AND TRANSPORTATION LINKS

[Marquette Charter Township](#) is located in the central Upper Peninsula of Michigan in [Marquette County](#), adjacent to the City of Marquette, the most populous city in the Upper Peninsula. Marquette County lies on the southern shore of Lake Superior, and consists of 19 townships and three cities.

A general location map is provided as Figure 1-1 and a map showing the location of the Township within the county is shown as Figure 1-2. The Township has a land area of about 54.7 square miles, making up three geographic townships: T48N-R25W, T49N-R25W and T49N-R26W. The Township's northeast edge borders Lake Superior. Powell Township is to the north; Ishpeming Township makes up a portion of the west boundary; Negaunee Township makes up part of the south and west boundaries; Sands Township is to the south; and the City of Marquette is to the east.

The Township's geographic location is relatively remote from large urban areas of Michigan. It is an eight-hour drive to Detroit and seven hours to Lansing. However, the City of Marquette is adjacent to the Township, offering amenities found in larger urban areas, such as the university and the hospital. The Marquette area has become a regional shopping hub for much of the Upper Peninsula. Other recreational and resort areas of the Upper Peninsula are in close proximity.

The major transportation route in the Township is U.S. Highway 41/M-28. US-41 and M-28 are merged through the Township, and consist of a multi-lane highway running from Harvey through the City of Ishpeming. US-41 is an important north/south corridor connecting the central and northern Upper Peninsula with larger cities in Wisconsin and Illinois including Green Bay, Milwaukee and Chicago. Although M-28 follows US-41 from Harvey to Baraga County, it is an important east/west highway. M-28 traverses the northern half of the Upper Peninsula from the City of Wakefield to Interstate 75 near Sault Ste. Marie. Other major transportation routes include County Roads 492 and 550.

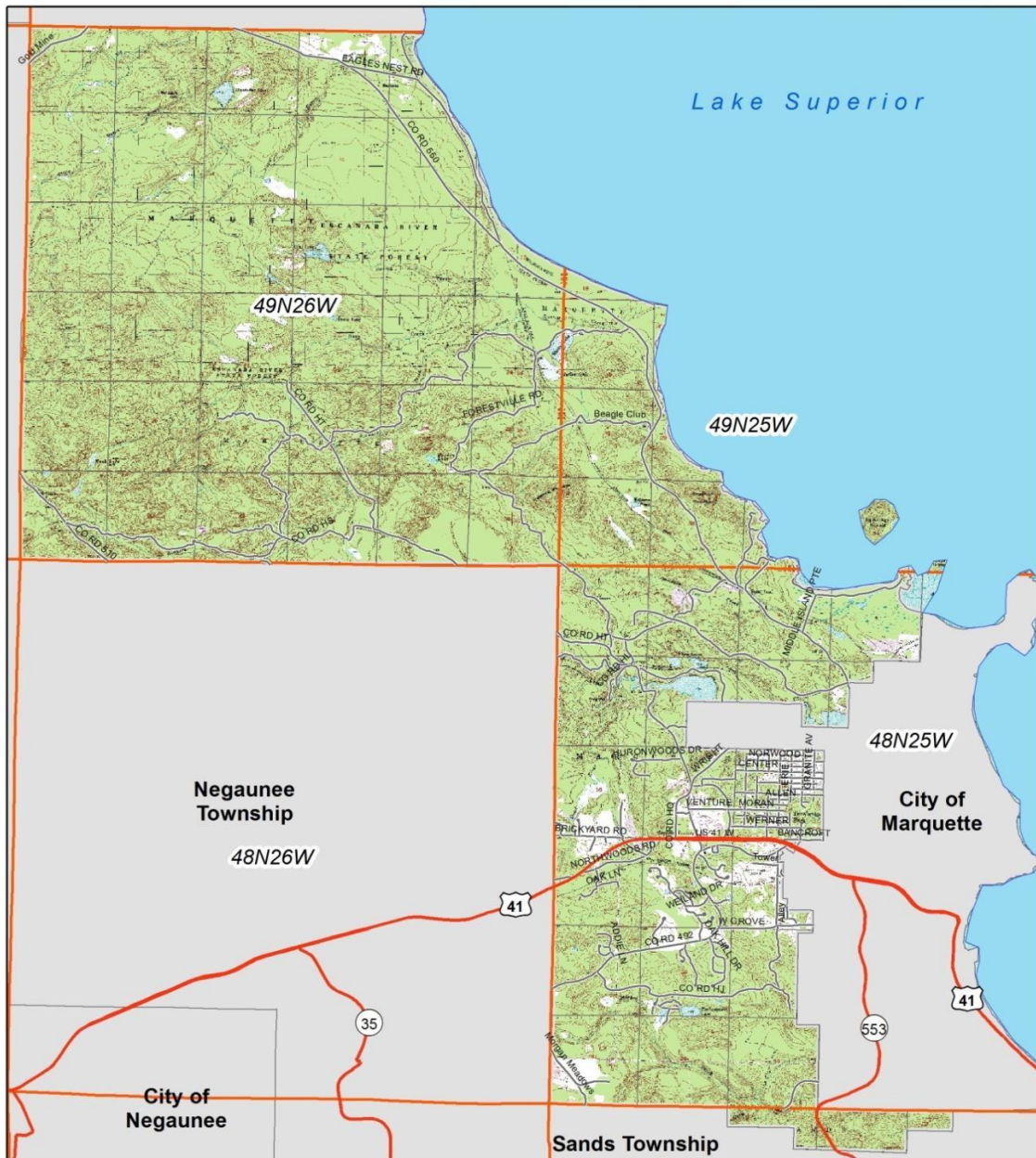


US-41 Corridor | Marquette Township

Figure 1-1: General Location Map



Figure 1-2: Township Base Map





Base Map
Marquette Township, MI



Legend

- Highways
- Marquette Township Roads
- Town and Range Lines
- Township Boundary
- Section Lines

Source: Michigan Geographic Data Library, UPEA GIS, MAB, 5.9.2011

CHAPTER TWO | SOCIAL & ECONOMIC CHARACTERISTICS

2.1 INTRODUCTION

Social and economic characteristics are essential components to consider in the preparation of a master plan. An analysis of the community's existing and future population and household characteristics provides a foundation upon which a major portion of a plan is based. While an evaluation of a community's current characteristics provides insight into immediate needs and deficiencies, population projections provide a basis for determining future land use requirements, public facility needs, and essential services.

This section of the plan examines several elements which are central to understanding a community's overall population and housing characteristics. These items include population growth patterns and population shifts, age/gender breakdowns, racial composition, household size, housing characteristics, income characteristics, educational attainment, and employment patterns. **All demographic data in the plan will be update upon completion of the 2020 U.S. Census.*

2.2 POPULATION TRENDS

Population growth is the most important factor influencing land use decisions in any community. If the population of a community is growing, there will be a need for more housing, commerce, industry, parks and recreation, public services and facilities, or roads. Figure 2-1 shows the population trends for Marquette Township from 1940 to 2010.

Table 2-1 compares the historical population trends for Marquette Township with the City of Marquette and Marquette County from 1940 to 2010. Overall, Marquette Township has experienced fairly significant growth in the majority of the decades studied. The highest percentage growth occurred in the 1940's with an increase of 64.1 %, followed by the 1970's with an increase of 56.7%. The decade of the 1960's was the only period when Marquette Township's population declined. Most recently, the Township has increased in population between the 2000 & 2012 census by over 600 residents.

Table 2-1: Historic Population Trends 1940-2010

Historic Population Trends, 1940 - 2010						
Year	MQT TWP	% Change	City of Marquette	% Change	MQT COUNTY	% Change
1940	780		15,170		47,144	
1950	1,280	64.1%	17,202	13.4%	47,654	1.1
1960	1,880	46.9%	19,824	15.2%	56,154	17.8
1970	1,703	-9.4%	21,967	10.8%	64,686	15.2
1980	2,669	56.7%	23,288	6.0%	74,101	14.6
1990	2,757	3.3%	21,977	-5.6%	70,887	-
2000	3,286	19.2%	19,661	-10.5%	64,634	-
2010	3,905	18.8%	21,355	8.6%	67,077	3.8

2.3 POPULATION DENSITY

Table 2-2 shows the land area and population density for the local municipalities of Marquette County. As of 2010, Marquette Township has a population density of 77.5 persons per square mile. This places Marquette Township as the second most dense Township in the County with Chocolay (98.9 persons per square mile) being the most dense and Negaunee (73.3 persons per square mile) being third.

2.4 AGE DISTRIBUTION

Information on age distribution within a population can assist a community in matching public services to community characteristics and in determining special needs of certain age groups. Analysis of age distribution may also be used by policy makers to identify current gaps in services and to project future service needs for housing, education, recreation and medical care.

Table 2-2: Population Density			
Land Area and Population Density, Marquette County 2000 to 2010			
Unit of Government	Land Area in Square Miles	Persons Per Square Mile	
		2000	2010
Marquette County	1821.3	35.5	36.8
Champion Township	120.9	2.5	2.5
Chocolay Township	59.7	120.0	98.9
Ely Township	137.7	14.6	14.2
Ewing Township	48.4	3.2	3.3
Forsyth Township	175.2	27.5	35.2
Humboldt Township	93.8	5.0	4.9
City of Ishpeming	8.7	768.5	743.7
Ishpeming Township	86.5	40.7	40.6
City of Marquette	11.4	1724.6	1873.2
Marquette Township	50.4	60.1	77.5
Michigamme Township	133.7	2.8	2.6
City of Negaunee	13.8	331.6	331.0
Negaunee Township	42.1	64.3	73.3
Powell Township	154.2	4.7	5.3
Republic Township	113.2	9.8	9.4
Richmond Township	55.6	17.5	15.9
Sands Township	70.9	30	32.2
Skandia Township	72	12.6	11.5
Tilden Township	94.3	10.6	10.7
Turin Township	84.2	1.6	1.8
Wells Township	154.9	1.9	1.5
West Branch Township	35.5	46.4	45.7



Annual Park Clean-up | National Trails Day

Age distribution comparisons for the Township, Trowbridge Park, City, and County are presented in Table 2-3. In general, the age distributions for Marquette Township have the highest percentages (39 percent) of people between the ages of 25 to 54 years. Due to the presence of Northern Michigan University within the City of Marquette, the City has much higher percentages of people under the age of 25 than the Township and County.

Table 2-3: Age Distribution

Age Group	Marquette Township		Trowbridge Park		Marquette City		Marquette County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 5 years	170	4.4	112	5.1	788	3.7	3,491	5.2
5 to 9 years	170	4.4	84	3.9	630	3	3,293	4.9
10 to 14 years	216	5.5	108	5	706	3.3	3,472	5.2
15 to 19 years	243	6.2	132	6.1	2,355	11	5,140	7.7
20 to 24 years	340	8.7	241	11.1	4,661	21.8	7,026	10.5
25 to 29 years	246	6.3	177	8.1	1,797	8.4	4,328	6.5
30 to 34 years	215	5.5	137	6.3	1,136	5.3	3,789	5.6
35 to 39 years	181	4.6	121	5.6	923	4.3	3,480	5.2
40 to 44 years	222	5.7	120	5.5	912	4.3	3,811	5.7
45 to 49 years	317	8.1	162	7.4	1,161	5.4	4,637	6.9
50 to 54 years	347	8.9	210	9.7	1,219	5.7	5,194	7.7
55 to 59 years	354	9.1	185	8.5	1,315	6.2	5,333	8.0
60 to 64 years	265	6.8	131	6	985	4.6	4,256	6.3
65 to 69 years	183	4.7	74	3.4	616	2.9	2,893	4.3
70 to 74 years	136	3.5	71	3.3	565	2.6	2,269	3.4
75 to 79 years	112	2.9	48	2.2	543	2.5	1,759	2.6
80 to 84 years	103	2.6	40	1.8	444	2.1	1,447	2.2
85 years and over	85	2.2	23	1.1	599	2.8	1,459	2.2
Total	3,905	100	2,176	100	21,355	100	67,077	100
Median Age	43.9 Years		38.8 Years		29.1 Years		39.4 Years	
2000 Median Age	40.1 Years		38.5 Years		30.6 Years		37.5 Years	

2.5 RACE

Another important characteristic of a community is its ethnic make-up. Understanding the ethnic fabric of a community helps to identify the diverse needs of its population.

Marquette Township has remained almost exclusively White. In 2010, 94.6% of the 3,693 persons in the community were White, declining from 95.4% in 2000. Other races in Marquette Township according to the 2010 census include American Indian and Alaska Native (1.9%), Two or More Races (1.9%), Asian, Hawaiian and Pacific Islander (1.6%), and Black or African American (0.2 %).

2.6 HOUSEHOLDS

Since the 1970's, the nationwide trend has been a decline in household size. There are many reasons for this trend including increasing divorce rates: families have fewer children, elderly living alone, and others.

Table 2-4: Household Size

Average Household Size 2000-2010							
Marquette Township		Trowbridge Park		City of Marquette		Marquette County	
2000	2010	2000	2010	2000	2010	2000	2010
2.5	2.24	2.63	2.33	2.13	2.05	2.35	2.26

If the household size of a community is decreasing, this means that new housing units may be necessary to accommodate for more citizens needing places to live. In some municipalities, new housing units are being built to accommodate the demand for housing created by lower household sizes in spite of declining overall populations.

Table 2-4 (on the previous page) compares household sizes for Marquette Township, Trowbridge Park, the City of Marquette and Marquette County. All four areas of comparison decreased in household size between 2000 and 2010. Trowbridge Park has the second highest household size at 2.33 in 2010 and Marquette Township is the third highest at 2.24 in 2010.

Table 2-5 shows the household characteristics for the Township, City, and County in 2000. The Census Bureau classifies households in terms of the relationships among the persons who share a housing unit. Some households are families, consisting of two or more persons related by blood, marriage, or adoption, while others are non-family households composed of persons living alone or with unrelated persons.

In the year 2010, Marquette Township was reported to have 1,734 households. Of these, the majority are family households (1,050), with the majority of family households consisting of married couples (879). However, of these married couples, 584 households didn't have any children. Of the other non-married family households, over 108 households are female householders with no husband present, about half of whom do not have children less than 18 years. Male householder families exhibit a similar pattern. Slightly over half of these households do not have children (33).

Table 2-5: Household Type

Household Type								
Marquette Township, Trowbridge Park, City of Marquette, Marquette County 2010								
Household Type	Marquette Township		Trowbridge Park		Marquette City		Marquette County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total households	1,734	100	931	100	8,321	100	27,538	100
Family households (families)	1,050	60.6	588	63.2	3,788	45.5	16,664	60.5
With own children under 18 years	378	21.8	207	22.2	1,465	17.6	6,442	23.4
Husband-wife family	879	50.7	470	50.5	2,768	33.3	13,170	47.8
With own children under 18 years	295	17	155	16.6	893	10.7	4,419	16
Male householder, no wife present	63	3.6	37	4	271	3.3	1,131	4.1
With own children under 18 years	30	1.7	17	1.8	133	1.6	634	2.3
Female householder, no husband present	108	6.2	81	8.7	749	9	2,363	8.6
With own children under 18 years	53	3.1	35	3.8	439	5.3	1,389	5
Nonfamily households	684	39.4	343	36.8	4,533	54.5	10,874	39.5
Householder living alone	521	30	218	23.4	3,176	38.2	8,361	30.4
Male	221	12.7	113	12.1	1,360	16.3	4,027	14.6
65 years and over	55	3.2	23	2.5	255	3.1	916	3.3
Female	300	17.3	105	11.3	1,816	21.8	4,334	15.7
65 years and over	182	10.5	49	5.3	720	8.7	2,009	7.3

2.7 INCOME

Three pieces of data are used to measure income in a community (per capita, median household and median family). Table 2-6 compares these three income measures for the Township with the City of Marquette and Marquette County. All of the income levels in the Township, City and County increased from the 2000 Census to the Community Survey compiled by the Census Bureau between 2005 and 2009. Marquette Township leads in all three income levels.

Income						
Marquette Township, City of Marquette, Marquette County						
Income Type	Marquette Township		City of Marquette		Marquette County	
	2000	2005-2009	2000	2005-2009	2000	2005-2009
Per Capita Income	\$23,056	\$29,887	\$17,787	\$20,946	\$18,070	\$22,891
Median Household Income	\$42,385	\$49,325	\$29,918	\$31,912	\$35,548	\$43,692
Median Family Income	\$50,994	\$75,543	\$48,120	\$62,020	\$46,281	\$60,084

2.8 EMPLOYMENT

Table 2-7 shows principal employers in Marquette County and their respective number of employees. The largest employer in the County is [UP Health System - Marquette](#) with over 1,900 employees, followed by [Northern Michigan University](#) (1,200 employees) and [Cleveland Cliffs](#) (1,567 employees).

Workforce and employment trends in Figures 2-8 and 2-9 are based on [Michigan Labor Market](#) information. Figure 2-8 is a comparison of unemployment rates in three reference areas including the State of Michigan, Upper Peninsula of Michigan (U.P.), and Marquette County. Unemployment in the three reference areas peaked in 1992 (high of 11 percent), declined to a low in 2000 (low of 4 percent), then rose steadily until a high spike between 2008 and 2009 (high of almost 14 percent). In 1992, the Upper Peninsula had the highest unemployment rate of the three reference areas. Reversing the trend in 2009, State unemployment rates exceeded other U.P. reference areas due to the decline of the downstate automotive industry. Since 1990, unemployment trends remained stable in Marquette County and the U.P. while rising in the state as a whole.

2018/19 Principal Employers	
EMPLOYER	# OF EMPLOYEES
UP HEALTH SYSTEM - MARQUETTE	1,924
CLEVELAND CLIFFS	950
PENINSULA MEDICAL CENTER	650
UP HEALTH SYSTEM - BELL	380
BELL HOSPITAL	348
RTI SURGICAL	265
ALGER-MARQUETTE COUNTY COMMUNITY ACTION BOARD	250
EAGLE MINE	198
MEIJER	190
WAL*MART	178
NORLITE NURSING CENTER	162
SUPERIOR EXTRUSION, INC.	150
M.J. VANDAMME, INC.	150
OJIBWA CASINO II	140
AMERICAN EAGLE REGIONAL AIRCRAFT MAINTENANCE FACILITY	137
PUBLIC EMPLOYERS	
NORTHERN MICHIGAN UNIVERSITY	1,200
MARQUETTE AREA PUBLIC SCHOOLS	428
MICHIGAN DEPARTMENT OF CORRECTIONS	365
COUNTY OF MARQUETTE	270
NEGAUNEE PUBLIC SCHOOLS	190
CITY OF MARQUETTE	177
D.J. JACOBETTI HOME FOR VETERANS	175
GWINN AREA COMMUNITY SCHOOLS	140
ISHPEMING PUBLIC SCHOOLS	111

Figure 2-8: Unemployment Trends

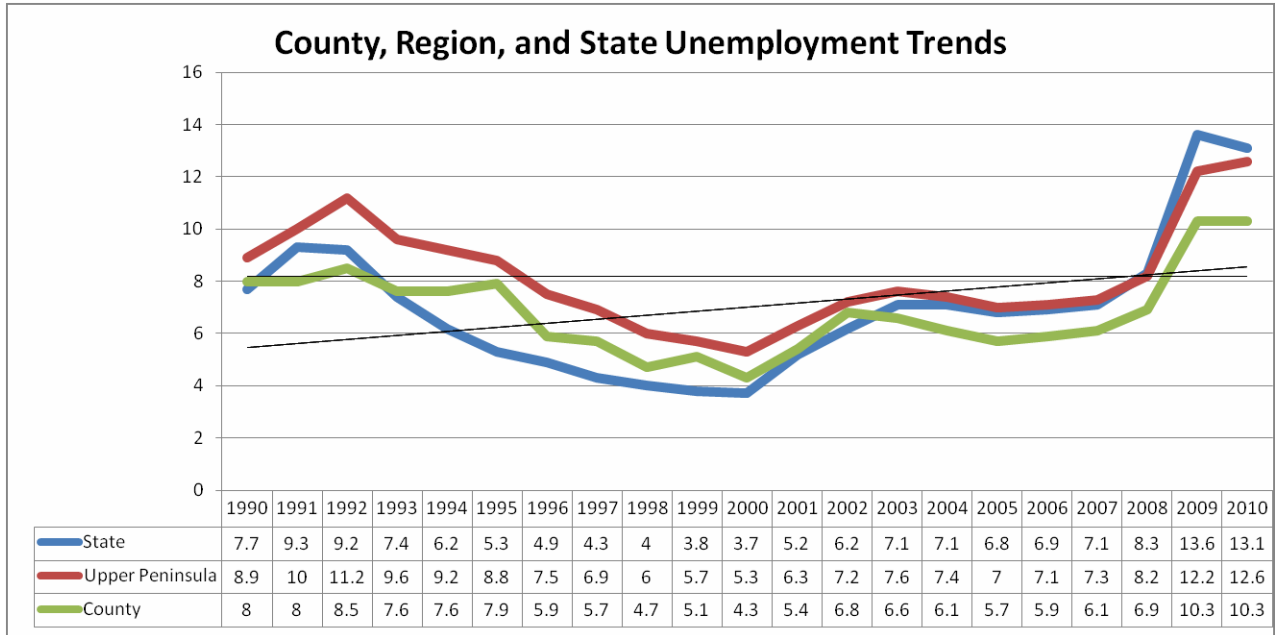
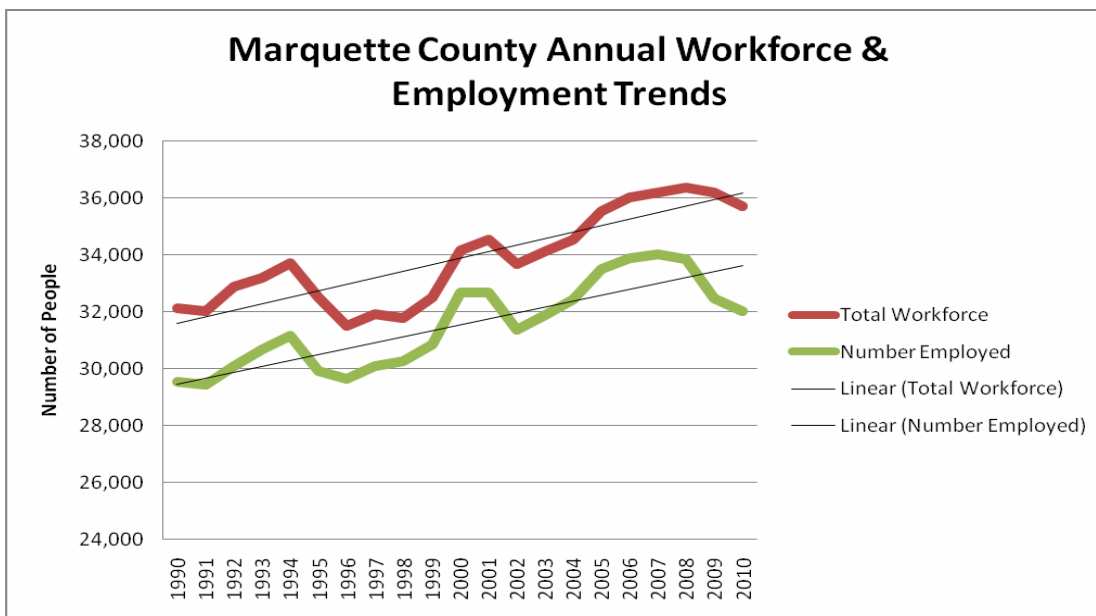


Figure 2-9 illustrates employment levels in comparison to total workforce levels in Marquette County for the years 1990 through 2010. Marquette County workforce and employment levels were closely related during this period until a recent divergence when the number employed declined precipitously compared to a slight decline in the total workforce. This indicates rising unemployment levels. Although both the size of the workforce and the number employed in Marquette County has trended upward since 1990, 2008 marked the beginning of a declining trend especially steep in the number employed.

Figure 2-9: Workforce and Employment Trends



2.9 HOUSING

A range of housing options is a primary need of any community. Meeting the housing needs of residents in different stages of life and circumstances can help to revitalize rural communities and retain residents. One way to do this is by supporting mixed-use neighborhoods which combine residential and neighborhood commercial uses in an effort to promote walking and a sense of community. This allows greater independence for those who either do not have the opportunity or prefer not to depend on the automobile for transportation.

The number of housing units in the Township has increased slightly (about 4 percent) in the past 10 years. According to the 2010 United States Census, there are 1,907 housing units in the Township, which is an increase of 400 units from 2000.

While the number of housing units in Marquette Township increased, the number of vacant units decreased. In 2000 it was reported there were 197 vacant housing units, in 2010 that number dropped to 173, with just over half of these units continuing to be seasonal. These numbers suggest that even in the tough economic times of the last few years, there is still a demand for housing in the Township. Table 2-10 below, compares housing data for Marquette Township from the 2000 and 2010 Census.

Table 2-10: Housing Occupancy and Ownership				
Housing Occupancy and Ownership				
Status	2000		2010	
	Number of Units	Percentage	Number of Units	Percentage
Total Housing Units	1,506	100%	1,907	100%
Occupied Housing Units	1,309	86.9%	1,734	90.9%
Owner Occupied	991	65.8%	1,162	60.9%
Renter Occupied	318	21.1%	572	29.9%
Vacant Housing Units	197	13.1%	173	9.1%
Seasonal/Recreational Use	123	8.2%	115	6.0%
Other vacant	74	4.9%	58	3.0%

Source: U.S. Census Bureau



CHAPTER THREE | NATURAL RESOURCES

3.1 INTRODUCTION

The natural environment plays a major role in land development. The natural environment can significantly hinder land development such as a steep slope prohibiting the construction of any structure. Conversely, the natural environment can be impacted by land development. An example would be the increased water runoff and erosion potential caused by clearing vegetation. Thus, when preparing a Master Plan, it is important to examine the natural environment in order to determine where development is best suited, and where it should be discouraged.

In any environmentally sensitive area within a community, development should be prevented. Environmentally sensitive areas are lands whose destruction or disturbance will affect the life of a community by either:

- Creating hazards such as flooding or slope erosion.
- Destroying important public resources such as groundwater supplies and surface water bodies.
- Wasting productive lands and non-renewable resources.

Each of these effects is detrimental to the general welfare of a community, resulting in social and economic loss.

This chapter has two main goals. First, is to identify areas in the Township that are best suited for development. The focus is on areas that will minimize development costs and provide amenities without adversely impacting the existing natural systems. The second, to identify land that should be conserved in its natural state and is most suitable for conservation, open space or recreation purposes.

Climate, geology, topography, woodlands, wetlands, soil conditions, water resources, and fish and wildlife resources are among the most important natural features impacting land use in Marquette Township. Descriptions of these features follow.

3.2 CLIMATE

The climate of Marquette County is seasonal, as the region experiences considerable changes in temperatures and precipitation throughout the year. The region's climatic conditions are best described as long cold winters and moderate warm summers. One of the major factors impacting the region's climate is Lake Superior. During the summer months, the cool waters and breezes coming from Lake Superior work to produce mild temperatures as compared to the hot temperatures experienced by other regions at approximately the same latitude as Marquette County. Conversely, during the winter months, Marquette County does not experience as many bitterly cold days due to the moderating effects of the warmer Lake Superior waters. However, winds blowing across these relatively warm waters pick up moisture to produce cloudy weather periods throughout the winter, as well as frequent periods of "lake effect" snow. This seasonal climate is one of the factors contributing to Marquette Township's appeal as a place to live and recreate. The pleasantly cool summer temperatures are ideal for summer tourism while the tempered winter temperatures mixed with lake effect snowfall creates an ideal situation for winter sports enthusiasts. The average annual temperature for Marquette is 43.15° F. The lowest temperature on record was minus

24° F on February 3, 1996. The highest recorded temperature was 104° F on July 19, 1977. The average annual precipitation is 29.14 inches, and the average annual snowfall is 119 inches.

Projected Future Climate of Marquette Area

Many of the observed trends in temperature and precipitation are expected to continue or accelerate in the future.

- Average Temperature: Models project average temperatures will continue to rise by 3.5-6°F in the region through midcentury. Temperatures are generally projected to warm faster in northern parts of the Great Lakes region.
- Freeze-free season: The freeze-free period is projected to continue to lengthen by an additional 1-2 months under high emissions scenarios.
- Total Precipitation: Most models project precipitation will increase overall, though the magnitude of projections varies widely. Many models project that summer precipitation will remain stable or decline.
- Declining snow depth: Snow depth will likely continue to decline as winter temperatures warm. Less snowpack and less snow cover during the spring and fall could have implications for local summer water supply and winter insulation against freeze damage.

Additional information on **Marquette's Historical Climatology can be found [HERE](#).*

3.3 GEOLOGY

Geology for Marquette Township can be described in terms of Quaternary (Surface) Geology and Bedrock Geology. The Quaternary Geology of the Upper Peninsula is shown on the following page. Figure 3-1 depicts the surface features and sediments created by glaciation during the last 15,000 years. Glaciers scoured out the Great Lakes, dumped piles of debris (moraines) along their leading edges and left flat plains of clay-rich soils (glacial till) where the glaciers melted in place. Their melt waters formed vast rivers that built wide, sandy plains of outwash. Many of our inland lakes were created when blocks of ice fell off of the glacier, became covered by debris and eventually left a depression (kettle) when the block melted. Ridges of sand and gravel called eskers show us places where rivers that started under the ice emerged from the front of the glacier. Drumlins are egg-shaped hills that were carved by the bottom of the glacier after it had moved across older deposits.

Much of the Marquette area of the Upper Peninsula is composed of thin drift to exposed bedrock or artificial fill (shown in brown). Other surface features in the Marquette area include till, post-glacial alluvium or glacial outwash, and end moraines or ice contact outwash. Although not prominent in the Marquette area, lacustrine deposits, peat, muck or sand dunes (shown in dark blue) cover much of the eastern half and northwest portion of the Upper Peninsula.

The consequences of glaciation touch our everyday lives. Soil fertility, erosion, potential drainage, and suitability for agriculture and construction all depend upon the sediments that glaciers left behind. All of our ground water for drinking and irrigation either filters through, or is stored within, glacial sediments. Sand and gravel outwash and dunes are used for roadbeds, building and industry. Clay from lakebeds and till is used to seal landfills and to make pottery and tile.

As a result of the geology that formed our landscape, the mining of those earth products have played a major role in the development of communities in the Upper Peninsula, including the Marquette area in the 19th century. Copper, iron ore, silver, and most recently, high-grade nickel, are all by products of the area’s geology and continue to be extracted for consumer products.

Marquette County’s Eagle Mine is an underground, high-grade nickel and copper mine located in western portion of the county. It is also the first mine to be permitted under Michigan’s Part 632 Non Ferrous Mineral Mining Law. The mine is expected to produce 365 million pounds of nickel, and 295 million pounds of copper, and trace amounts of other minerals over its estimated eight year mine life (2014-2022).

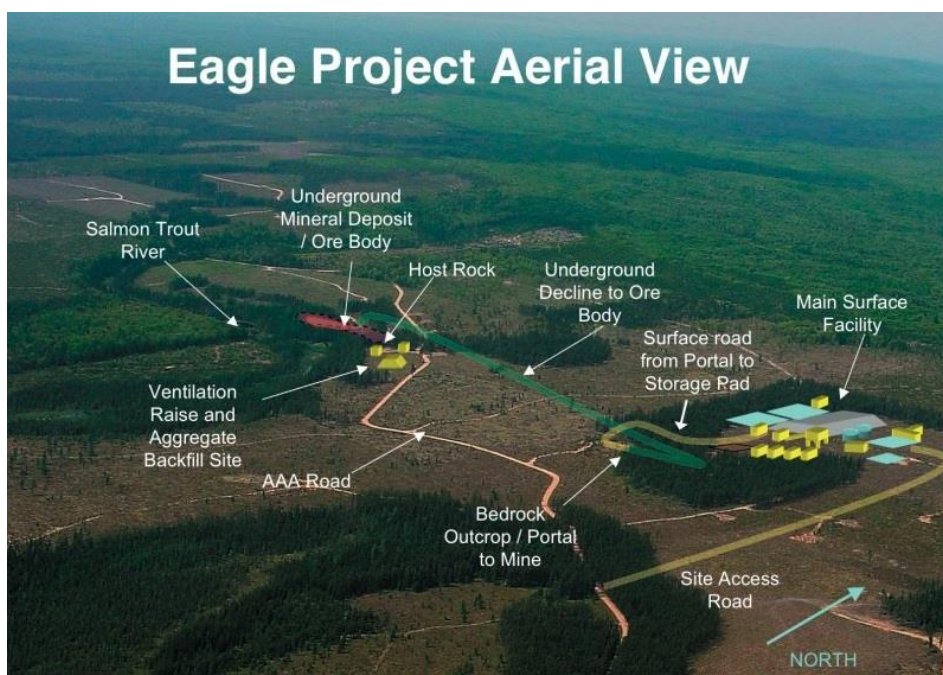


Figure 3-1: Quaternary Geology

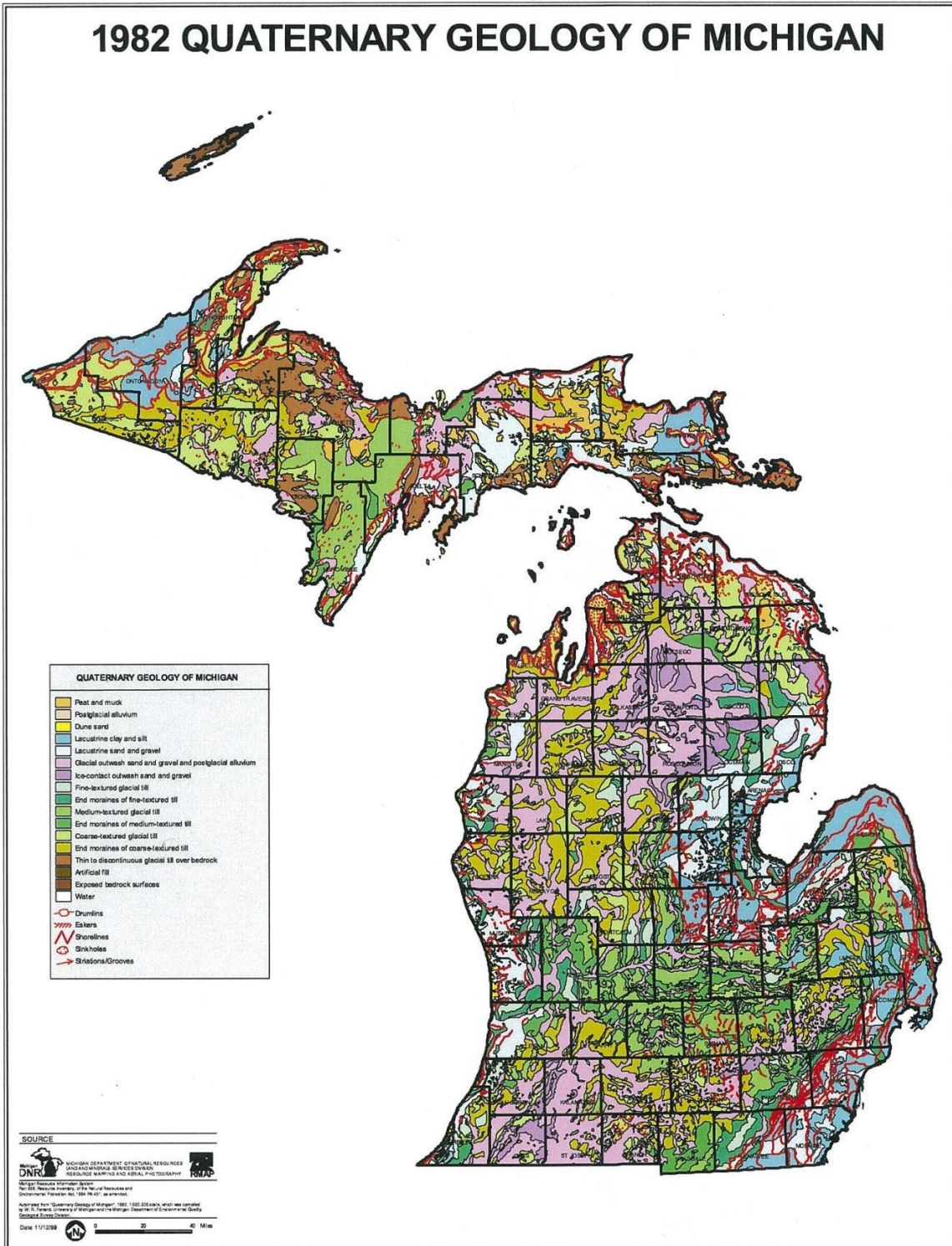
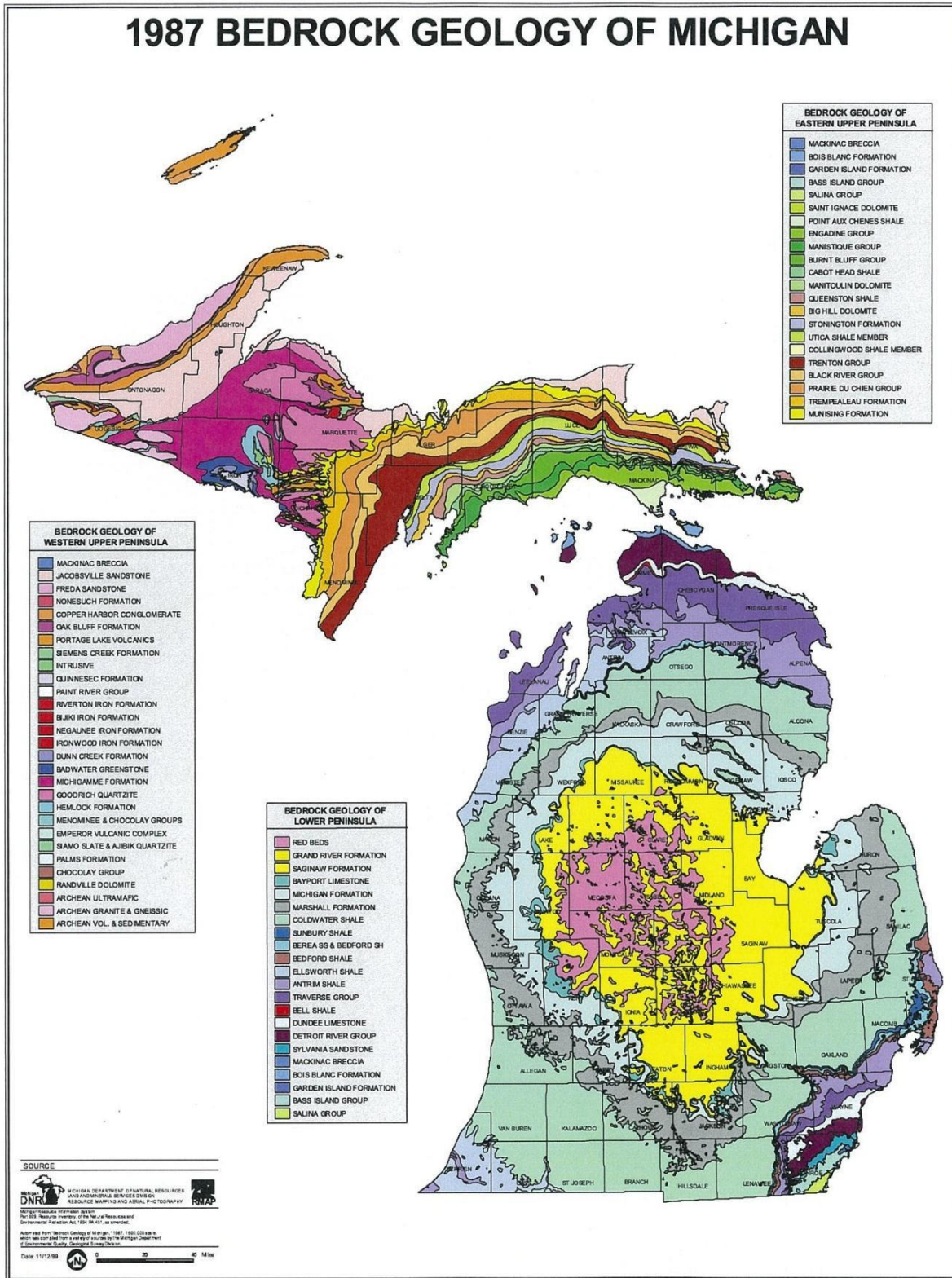


Figure 3-2: Bedrock Geology



The Bedrock Geology of the Upper Peninsula is depicted on the previous page in Figure 3-2. Bedrock is generally concealed by an unattached layer of loose fragmented rock. This loose material may have formed in place by decomposition of the underlying parent bedrock or it may be an accumulation of foreign rock fragments deposited by wind, water or ice (in the form of glaciers). Over most of the state, bedrock is buried beneath glacial deposits (drift). In a number of places, however, especially in the western Upper Peninsula and along the Great Lakes shores in the north, bedrock protrudes through the mantle of drift.

The western portion of the Upper Peninsula (including the Marquette area) is underlain by rocks of Precambrian age. These Precambrian rocks are classified as Lower Proterozoic, Middle Proterozoic, and Archean. The Precambrian age involves 85 to 90 percent of all geologic time. The oldest date presently recorded for Precambrian rocks is circa 3900 million years, and it is estimated that the earth originated 4000 to 5000 million years ago. The Precambrian thus begins at some yet undetermined time between 4500 and 3800 million years ago and extends to 500 million years ago. Essentially all of Michigan's metallic mineral resources (iron, copper, copper sulfides, silver, etc.) occur in rocks of the Precambrian age.

3.4 TOPOGRAPHY

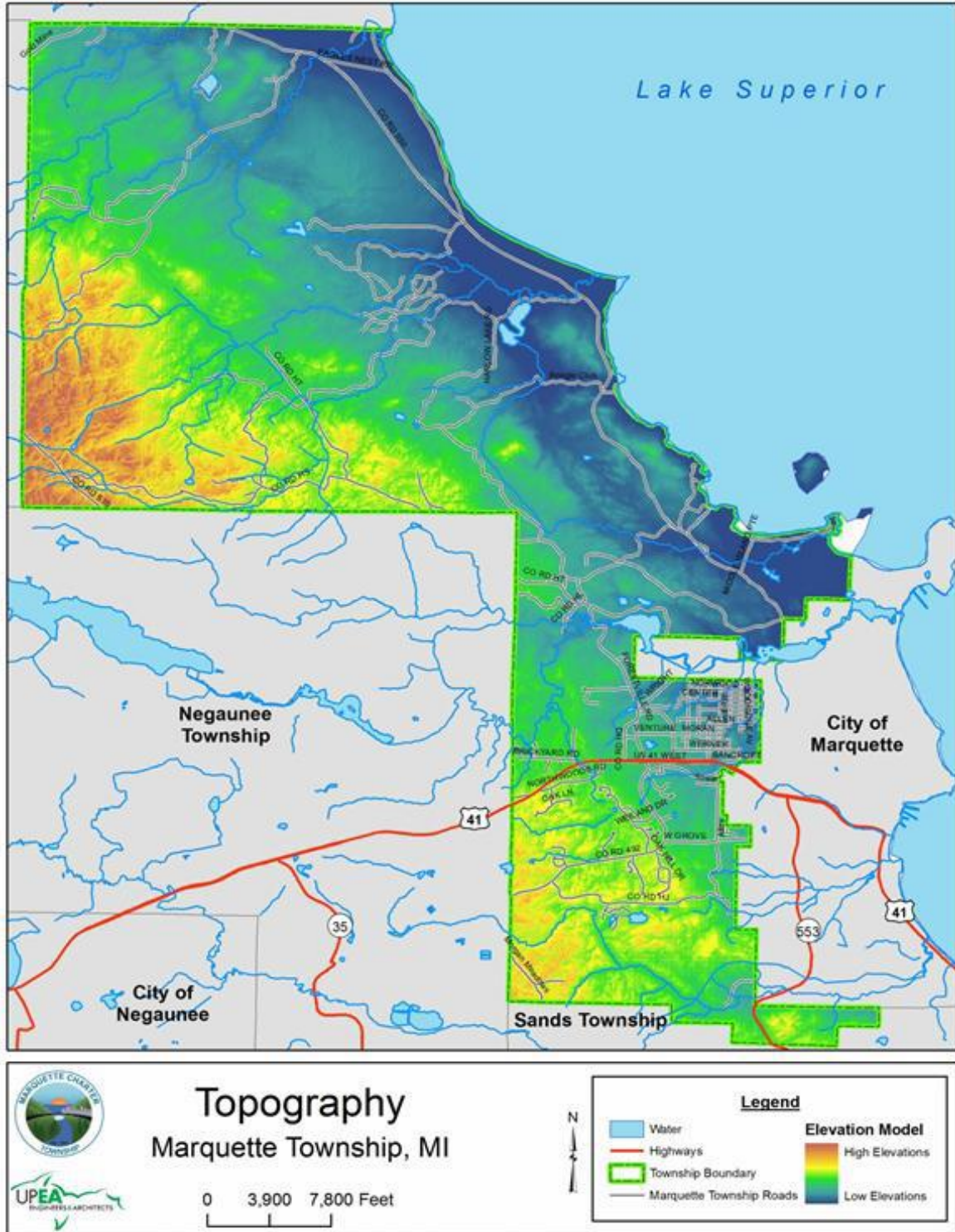
Topography has very important planning implications. Land use and required maintenance depend to a large degree on slope, although today there are fewer restrictions on development in steep slope areas due to better construction and engineering techniques. Still, while steep slope can provide attractive views and recreational opportunities, building development can be adversely impacted.

Due to Marquette Township's extreme variations in elevation, topography plays a major factor in existing and future land use and development. The terrain of Marquette Township is rugged with significant elevation changes and steep slopes. Figure 3-3 uses a digital elevation model with a graduated color scheme to portray the elevations within the Township. Lower elevations are shown as blue, while middle elevations change to green, yellow, and orange colors and the highest elevations are shown in rust. The digital elevation model for Marquette County was obtained through the Michigan Geographic Data Library web site.

The lowest elevation in the Township is along the shoreline of Lake Superior, which has an approximate surface elevation of 600 feet above sea level. Elevations rise quickly beyond the shoreline in the form of hills and sometimes steep cliffs. Many of the inland areas of the Township are also very rugged, with steep hills or deep creek beds. In the southern portion of the Township south of U.S. 41/M-28, the terrain is hilly with elevations reaching above 1,300 feet. Along U.S. 41/M-28 and in the more urbanized portion of the Township the terrain is fairly hilly with elevations increasing from the east to the west. In the northern and western portions of the Township, the terrain is hilly and rugged and also features many steep creek and river beds. The highest elevation of more than 1,600 feet is found in this portion of the Township near County Road 510. Within the Township, elevations rise from a low of 600 feet to a high of over 1,600 feet representing a total elevation change of more than 1,000 feet.

Such a tremendous range in elevation is considered to be one of area's most aesthetic features. The Township's rugged terrain can be appealing for its scenic beauty and provide attractive views as well as provide an opportunity for outdoor recreational activities such as cross-country skiing, hiking and mountain biking. However, the terrain of the Township poses significant limitations to development. Improper planning and land development can result in soil stability disturbances, altering of established drainage ways, elimination of natural wind screens, land slippage and rapid erosion which adds silt and sediment to downstream waterways. Consequently, development on hills should be conducted in a manner compatible with hillside ecology.

Figure 3-3: Digital Elevation Model



3.5 FORESTLANDS

Marquette Township contains and is surrounded by extensive forested areas that contribute to the recreation and economic opportunity and industry in the Township. Much of the land in the northern portion of the Township is either State-owned forest or Commercial Forest Reserve land. Cover is mostly upland hardwoods (31 percent), aspen (15 percent), hemlocks (13 percent), red pine (8 percent—mostly over 100 years old), mixed lowland conifers (7 percent—most over 90 years old), and lowland brush (6 percent). Most of the aspen will be left unmanaged (being old and inaccessible) and the pines and lowland conifers are to be managed for old forest conditions.

Additional information on **Commercial Forest Lands from the **Michigan Department of Natural Resources** can be found [HERE](#).*

3.6 WETLANDS

Wetlands are often referred to as marshes, swamps or bogs. The [United States Army Corps of Engineers](#) defines wetlands as "those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Residents of Michigan are becoming more aware of the value of wetlands. Beyond their aesthetic value, wetlands improve water quality of lakes, streams and ground-water by filtering polluting nutrients, organic chemicals and toxic heavy metals. Wetlands are closely related to high groundwater tables and serve to discharge or recharge aquifers. Additionally, wetlands support wildlife, and wetland vegetation protects shorelines from erosion.

Additional information on area **Wetlands from the **Michigan Department of Environmental Quality** can be found [HERE](#).*

3.7 SOILS

Soil composition analysis is used in land use planning to predict soil behavior for selected land uses and to identify special practices needed to ensure compatibility of land use. Improvements may be needed to overcome soil limitations, depending on the planned use of the land. This information is useful to farmers, foresters, community officials, engineers, developers, and home buyers.

Adequate drainage (and the protection of it) is important to minimize stormwater impacts, the efficient operation of septic drain fields and residential drinking water. Adequate depth to the water table is necessary to prevent groundwater contamination from septic systems or other non-point source runoff. The construction of roads, buildings and septic systems on steeply sloped areas or areas with organic and hydric soils require special design considerations. In addition, costs for developing these sensitive areas are greater than in less constrained parts of the landscape.

General soils and hydric soils information is provided through [SSURGO](#) soils data, which is the [County Soil Survey](#) prepared by the [Natural Resource Conservation Service \(NRCS\)](#) in digital format. Hydric soils are soils with poor potential for development. Hydric soils have high water tables and are often located within the floodplains of creeks or rivers. Areas with high concentrations of hydric soils have a wide range of limiting conditions such as seasonably high water tables, fair to poor bearing capacities, and medium compressibility and shear strength. The locations of general soil types are shown in Figure 3-4 and hydric soils on Figure 3-5. In total, hydric soils cover 2,058 acres or 5.8% of the Township. Soil constraints

discussed in this section should be used as general guides for the planning process. Detailed on-site investigations should be conducted prior to development.



Views of the local terrain looking North from Sugarloaf Mountain (above) and of the shoreline (below).



Figure 3-4: General Soil Types Map

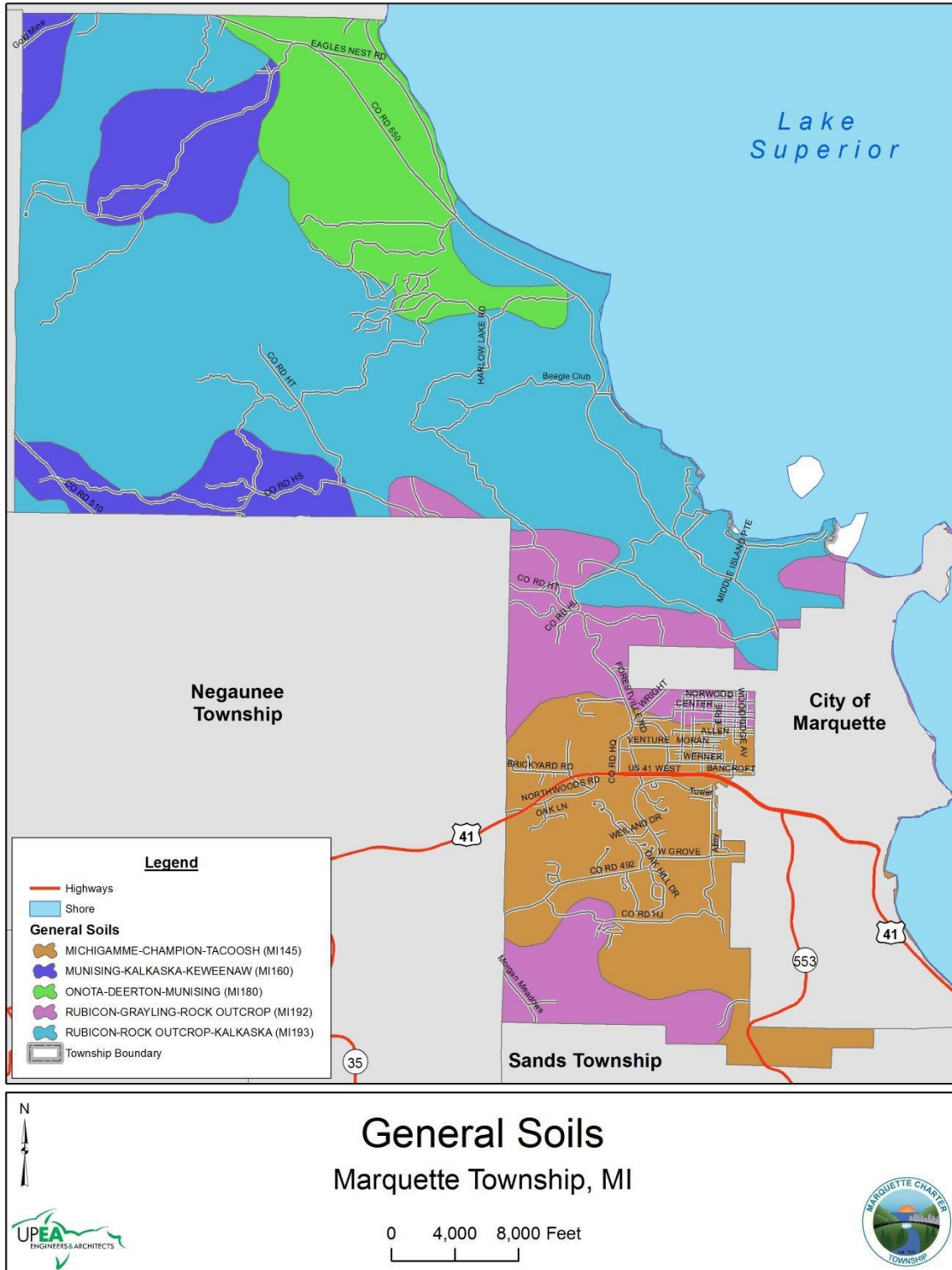




Figure 3-5: Hydric Soils






Hydric Soils
Marquette Township, MI

0 4,000 8,000 Feet



N



Legend

- Highways
- Shore
- Hydric Soils
- Township Boundary

Source: Michigan Geographic Data Library, UPEA GIS, MAB, 5.9.2011

3.8 WATER RESOURCES

Both human and natural ecological systems depend upon water. Perhaps the most valuable natural resource of Marquette Township is the abundance of fresh water. Having been of historic importance, it is also the resource that will, to a great extent, determine the future of the area. Thus, the management of water becomes a prime factor in planned development. The principal reasons for controlling development on or near water are to protect watersheds, to preserve the quality and quantity of the water supply, and to prevent damaging floods.

Marquette Township rests on the shores of Lake Superior. Statistics place Lake Superior as the largest Great Lake in both surface area (31,700 sq. miles) and volume (2,900 cubic miles). Not only is Lake Superior the largest of the Great Lakes, it has the largest surface area of any freshwater lake in the world. Lake Superior is bordered by the states of Michigan, Wisconsin, and Minnesota, and the Canadian province of Ontario and has a total shoreline length of 2,726 miles including islands.

Marquette Township's shoreline along Lake Superior totals approximately 11 miles. The shoreline exists as a major attraction for local residents and tourists, and helps to form the overall character and attractiveness of the community. Lake Superior is certainly one of the most important environmental features in the Township given its overall impact on the Township's history, economy, development, and character.

In addition to Lake Superior, the Township also contains numerous smaller sized surface water bodies. A large number of streams and creeks flow through Marquette Township, which when combined total more than 60 miles in length. The more prominent streams include Dead River, Big Garlic River, Little Garlic River, Harlow Creek, Nash Creek, Bismark Creek, Compeau Creek, and Morgan Creek. Numerous lakes are also found in the Township, totaling more than 300 acres in surface area. Some of the more significant lakes include Harlow Lake, Dead River Reservoir, Echo Lake, Lake Enchantment and Three Lakes.

3.9 FISH AND WILDLIFE RESOURCES

Marquette Township and surrounding environments are enriched by the diverse types and species of fish and wildlife that flourish in its waters and forests. Many fish species abound in the waters of Lake Superior, its tributaries, and inland lakes. Marquette Township, like most rural areas of Marquette County, abounds in wildlife, especially in the forested areas surrounding the developed portions of the Township. The types of local wildlife can be divided into three broad categories: mammals, birds and fish.

Mammals include whitetail deer, black bear, pine martin, skunk, raccoon, beaver, muskrat, otter, coyote, bobcat, mink, weasel, woodchuck, snowshoe hare, squirrel, and fox. Representative bird species include a wide variety of songbirds, crow, raven, woodpecker, sandhill crane, hawk, owl, eagle, falcon, and game species of ruffed grouse, woodcock, ducks, mergansers and geese. Fish include brook trout, brown trout, rainbow trout, splake, perch, bass, crappies, northern pike, and walleye.

Most of the fisheries and wildlife resources are located in the undeveloped northern portions of the Township on State and corporately owned land. Township residents, as well as numerous annual visitors, are attracted to the woods to hunt for the white tailed deer and small game species such as snowshoe hare, cottontail rabbits and gray squirrels. Sufficient habitat is provided for relatively good ruffed grouse and woodcock hunting. Other game species of importance to trappers are beaver, otter, muskrat, raccoon, skunk and weasel. The reintroduction of non-game species such as the moose, marten and fisher has been very successful.

Marquette Township also provides prime waterfowl habitat, which is supplemented by beaver dams, pothole wetlands and wooded floodplain areas. Additional habitat can be found along the shoreline of Lake Superior and the Township's many inland lakes and rivers and traditional wildlife corridors. Marquette Township, and Marquette County overall, is a major part of the Mississippi migratory flyway. Thousands of Canada geese pass over the area every fall as well as ducks and shorebirds.

Marquette Township offers the sport fisherman an abundance of fishing opportunities. Michigan's official state fish, the brook trout, is a native to Marquette Township. German brown and rainbow trout also attract many sport fishermen to the area. Lake Superior is famous for its Great Lakes sport fisheries. The fishery and wildlife are important to Marquette Township which reflects the importance of maintaining a high level of water quality.

3.10 THREATENED AND ENDANGERED SPECIES

Marquette County is home to a number of plants and animals that are threatened, endangered or of special concern as identified in the [Michigan Natural Features Inventory](#) database, which is maintained by the [Michigan State University Extension](#). A full list of endangered or threatened plant and animal species of Marquette County, which are protected under the [Endangered Species Act of the State of Michigan](#) (Public Act 203 of 1974 as amended), is included in Appendix H. This list also includes plant and animal species of special concern. While not afforded legal protection under the act, many of these species are of concern because of declining populations in the State. Should these species continue to decline, they would be recommended for threatened or endangered status. Protection of special concern species before they reach dangerously low population levels would prevent the need to list them in the future by maintaining adequate numbers of self-sustaining populations.

3.11 LOCAL FOOD PRODUCTION

Food is often produced hundreds, sometimes thousands of miles from where it is consumed requiring significant energy consumption for handling, transportation and storage and resulting in significant food waste from spoilage during its journey. According to a recent study published in the [Public Library of Science](#), 40% of food is wasted in the U.S. That figure measured waste occurring throughout the entire food system starting at the farm and ending at what ends up thrown away as plate scrapings. Not only is that a huge amount of waste – a tremendous amount of energy, soil fertility and water is squandered.

The lack of fresh, local food production also significantly impacts our diet and health. We tend to eat what is available – which has typically been highly-processed food that can handle long distance travel and has a long shelf life. We are what we eat, and the obesity epidemic is one of the most visible and obvious indications that the industrialized food system has had a significant and negative health impact.

The Marquette Township Planning Commission realizes the history of food production and the current trends for incorporating new principles and zoning regulations into the community to enable increased production of local food. Moving forward, the Planning Commission will work to improve the accessibility of local food production by reviewing existing limitations and by working with our surrounding municipalities to develop new policies and zoning language that affords our residents better access to local food and a higher quality of life.

CHAPTER FOUR | Existing Land Use

4.1 INTRODUCTION

Land use is impacted by the natural environment, economics, transportation patterns, conservation and preservation interests, land ownership, and the desires of the public. Action at all levels (federal, state, county, and local) plays an important role in land use through regulation and public investment. Public investment in schools, parks, roads, water and sewer extensions, etc. all provide opportunity for development and will often determine what type of development will occur. The natural environment impacts land development because of topography, soil conditions, drainage potential, and tract size. Conservation land placed into public ownership provides recreational uses. Local governments are endowed with the ultimate authority for controlling land use through zoning laws and building and sanitation codes. This establishes parameters within which development can occur. It is important that future land use decisions be realistic in light of the ability of local governments to provide essential public services in a fiscally responsible manner. In order to achieve this goal, it is important to review the current land use inventory of the Township.

This chapter will provide the categories of current land uses in the Township and provide the foundation for future land use recommendations. The current land use data presented in Figure 4-1 on page 3 was created in 2018 by the Marquette Township Planning & Zoning Department by using assessment data, Marquette County Equalization Department data and by updated aerial imagery.

4.2 RESIDENTIAL

In the Township, residential land is divided into two categories single-family residential and multi-family residential land uses. Marquette Township has a variety of single-family land uses including full-time single-family dwellings units, seasonal cabins, cottages, and camps. The highest concentration of single-family dwelling units in Marquette Township is found in the Trowbridge Park area adjacent to the City of Marquette. Lower-density, suburban style single-family subdivisions include Bishop Woods, Oak Hills, Lake Enchantment, Morgan Meadows, Huron Woods, Chapel Ridge and Grandview Subdivisions. Multi-Family development includes a number of duplexes and apartment complexes including the Lost Creek Development and Cedarville Townhomes. Recent changes to the zoning ordinance allow for and regulate a trending land use – *Tiny Homes*.

4.3 COMMERCIAL

The commercial developments land use category is predominantly retail sales and service establishments, located along the US 41/M-28 corridor. Commercial uses include large retail establishments such as Meijer, Lowes, Walmart, Target, Menards, T.J. Maxx, PetSmart, Best Buy, and Kohl's. Grocery stores, car dealerships, hotels/motels, restaurants and the Thomas Theatre Group Cinema are also found along the corridor. The Township also has small neighborhood commercial establishments in Trowbridge Park, as well as a few along County Road 550.

4.4 INDUSTRIAL

The Industrial category includes land occupied by manufacturing industries, processing facilities, and warehouses. This category also includes land used for extractive operations, municipal water facilities, rail

yards and communication towers. In the Township, land uses classified as Industrial are WE Energies ash disposal site, N&N Trucking & Recycling, a rail yard operated by Lake Superior & Ishpeming railroad, gravel pits found off of County Road 550 and the towers located off of Morgan Meadows Road.

4.5 INSTITUTIONAL

Institutional uses are generally used by the public, whether private or publicly owned. Some examples of institutional land uses include the Township hall, fire station, churches, schools, and cemeteries.

4.6 VACANT LAND

Vacant land is land that is currently not wooded or used for any other purpose. Vacant land in the Township is located on Forestville Road and in the Cornerstone Business Park, which is rapidly developing.

4.7 WOODLAND

For the purposes of this section, woodland includes upland forests, lowland forests, and all wetland types. As stated in the previous section, this land makes up the majority of the land use in the Township. This land use also includes uses such as timber harvesting and recreational areas.

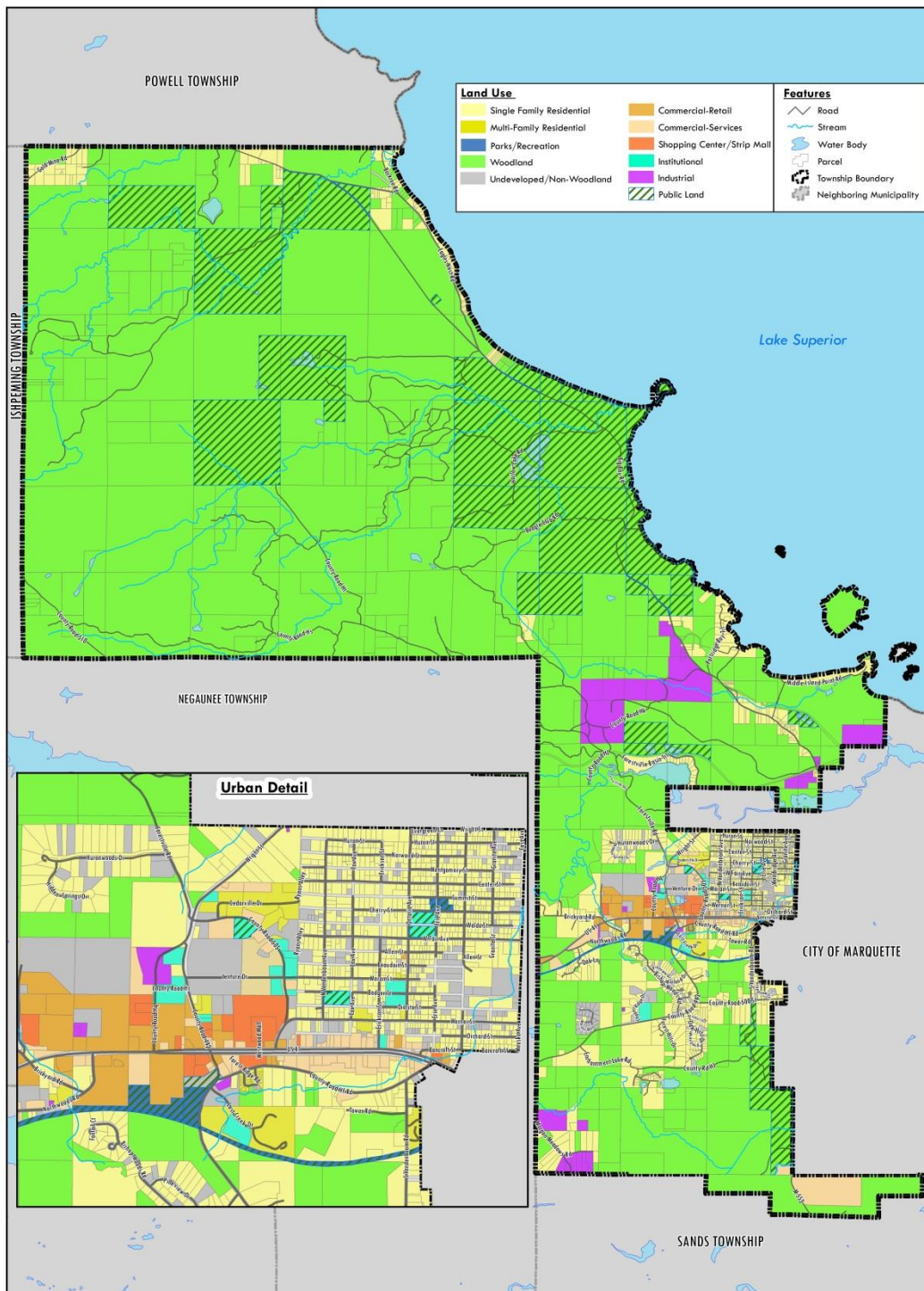
4.8 WATER BODIES

Water bodies are extremely important to Marquette Township and the region as a whole. Water bodies in the Township include Lake Superior, Lake Enchantment, Bishop Pond, Three Lakes, Blemhuber Lake, Echo Lake, Dollar Lake, Club Lake, Harlow Lake, Wetmore Pond, Big Garlic River, Little Garlic River, Nash Creek, Bismark Creek, Harlow Creek, Compeau Creek, Badger Creek, Whetstone Brook, Orianna Creek, Western Brook, Carp River and Morgan Creek.

4.9 PUBLIC LANDS

Public land is also an abundant land use in the Township. These lands are actively owned by local, state, or federal government entities and feature a variety of passive land uses. Examples of public lands in Marquette Township include the Lions Field Recreation Area, Schwemwood Park/Iron Ore Heritage Trailhead, the Heartwood Forest property, the Echo Lake Nature Preserve, the Sugar Loaf Mountain area, Wetmore Pond, Little Presque Isle, Harlow Lake, Lilly Pond and Hog Back Mountain.

Figure 4-1: Current Land Use

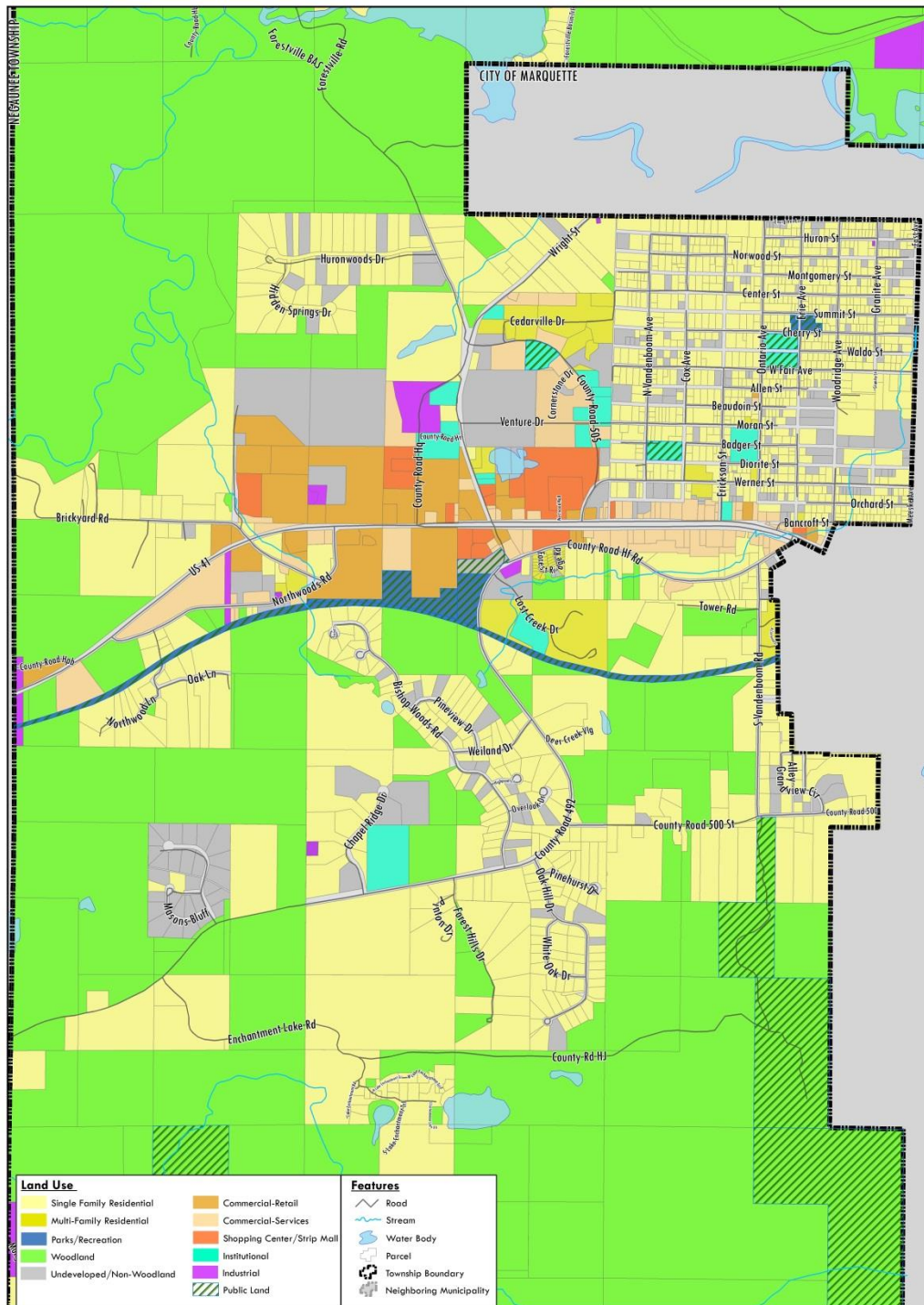


2018 CURRENT LAND USE MAP
MARQUETTE CHARTER TOWNSHIP, MI



Marquette Charter Township does not guarantee or warrant the accuracy, currency, completeness, or fitness of information depicted on this map. Information should not be relied upon to establish legal title, boundary lines, and locations of utilities and/or other improvements.

Figure 4-2: Urban Detail Current Land Use



2018 CURRENT LAND USE MAP -URBAN DETAIL-



Marquette Charter Township does not guarantee or warrant the accuracy, currency, completeness, or fitness of information depicted on this map. Information should not be relied upon to establish legal title, boundary lines, and locations of utilities and/or other improvements.

CHAPTER FIVE | COMMUNITY SERVICES

5.1 INTRODUCTION

The potential location for future development must be analyzed according to the types of existing land use, amount of undeveloped land within each land use type, the character of the land itself and the availability of certain infrastructure, services or facilities. This chapter will explore the location and extent of existing services and facilities. Services are provided in many ways by public or quasi-public agencies or by private enterprise. Each service provider makes the service available to the best of its capabilities. The resulting service levels determine the capacity of a given location to attract various types of land development.

5.2 TRANSPORTATION INFRASTRUCTURE

Transportation infrastructure serves to tie a community together and link it to the rest of the outside world. Transportation systems include roads, bridges, aviation, rail, public transit, and non-motorized systems. Together, these networks create economic opportunity and provide access to markets, goods, and services. The quality of these assets reflects and impacts community health and vitality. Circulation, utility, and communication infrastructure serve to tie a community together and link it to the rest of the outside world. Local streets and pedestrian networks should provide safe, reliable access to work, shopping, recreation, and residences. Regional transportation and communication networks create economic opportunity and provide access to markets, goods, and services not found in the community.



Roadway Network

The principle transportation mode in the Township today is vehicular transportation served by the roadway network. Roads have both functional and aesthetic value. As the predominant transportation mode, roads create a path of first impression for the public space of a community. Functionally, roads serve two basic purposes, the movement of traffic (mobility) and provision of access to adjoining property. The design of a road depends principally on its functional classification and the traffic volume it is expected to accommodate at some future time. Each of the roads within the Township has a specific traffic capacity, design standard, and design use depending on its primary function. By defining the function of roads and their service to the community, the appropriate land uses can be encouraged adjacent to these roads. Different design elements of roads include the number of lanes, width and surfacing of shoulders, width of structures, type of surface, and design speed. Land uses and roadway function are closely connected. Roadway capacity and design influences future development. More intensive development usually Occurs along higher capacity roadways that provide convenient access to the largest market.

As more arterial improvements are made, and accessibility and value of properties increases, it may lead to even more intensive development. With this development, comes an increase in congestion, traffic, and safety problems. Pressure builds to make even more arterial improvements, starting the cycle all over again.

It is important to employ access management principles to preserve proper road function and the value of public investment along major roads. The road network in the Township is described in detail below. The Township recently participated in updating the [US-41/M-28 Comprehensive Corridor & Access Management Plan](#). This plan details existing conditions of the highway corridor and specific recommendations. The Township is currently undergoing an update of a Transportation Plan. When completed, this plan will detail current roadway conditions, as well as goals and objectives for transportation infrastructure within Marquette Township.

National Functional Classification

The [Federal Highway Administration](#) classifies roadways based on the type of service the roadway is intended to provide. Based on this system, roadways are classified into one of three broad categories: arterials, collectors, and local roads. [The Federal Highway Administration's National Functional Classification](#) has been implemented on most roadways in Marquette Township.

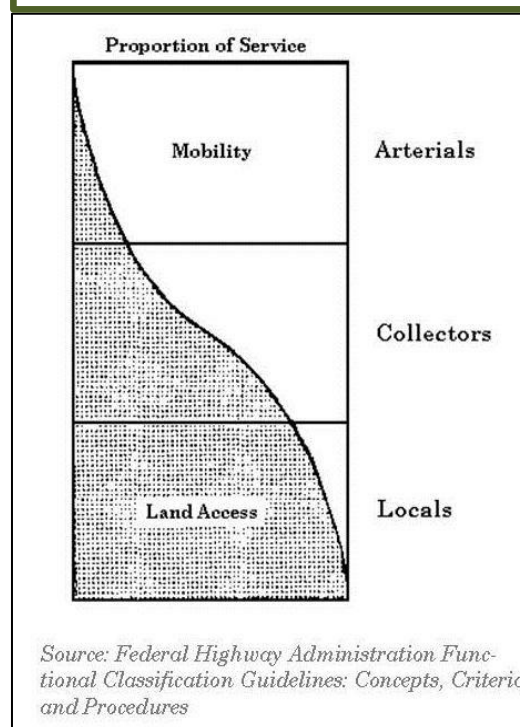
Arterials

Roadways classified as principal arterial or minor arterials accommodate major traffic movement over long local or regional distances. The only principal arterial in the Township is US-41. The section of US-41 in the Township is approximately four miles long. It serves as the primary highway for residents of the region as well as a major state trunkline for travel across the Upper Peninsula.

This section of the U.S.-41/M-28 corridor sees some of the highest traffic volumes in the Upper Peninsula at 33,686 vehicles per day in 2016. Along the corridor, the speed limit changes multiple times. At the intersection of County Road 492 and US-41, the roadway transitions from a five-lane roadway to a four-lane roadway with a median. This is also where the speed limit drops from 55 miles per hour to 50 miles per hour. Near the Days Inn in the Township, the speed limit drops from 50 miles per hour to 45 miles per hour and stays 45 through the rest of the Township. The [Michigan Department of Transportation](#) is responsible for all planning, design, construction and maintenance of state trunklines.

Roadways classified as minor arterials interconnect with and provide access to principal arterials, accommodating more modest trip lengths and placing a higher emphasis upon access to land uses. The only minor arterial in the Township is County Road 492 north of US-41.

Figure 5-1: Relationship of Mobility and Land Access



Collectors

Roadways classified as collectors emphasize access to abutting land area and the collection of traffic for distribution to the larger arterial systems which may exist within the municipality or neighboring municipalities.

Collectors in the Township include:

- Ontario Street
- Werner Street
- Fair Avenue
- County Road 492
- County Road 500
- County Road 550

Local Roads

Local Roads emphasize access to abutting properties and the collection of traffic for distribution to collector and arterial corridors. These roads make up approximately 28 miles in Marquette Township. The Marquette County Road Commission is responsible for planning, design, construction and maintenance of all County roads. Funding for these roads is provided through the Federal Government, State funds, and grants from the [Marquette County Board of Commissioners](#) and Township contributions.

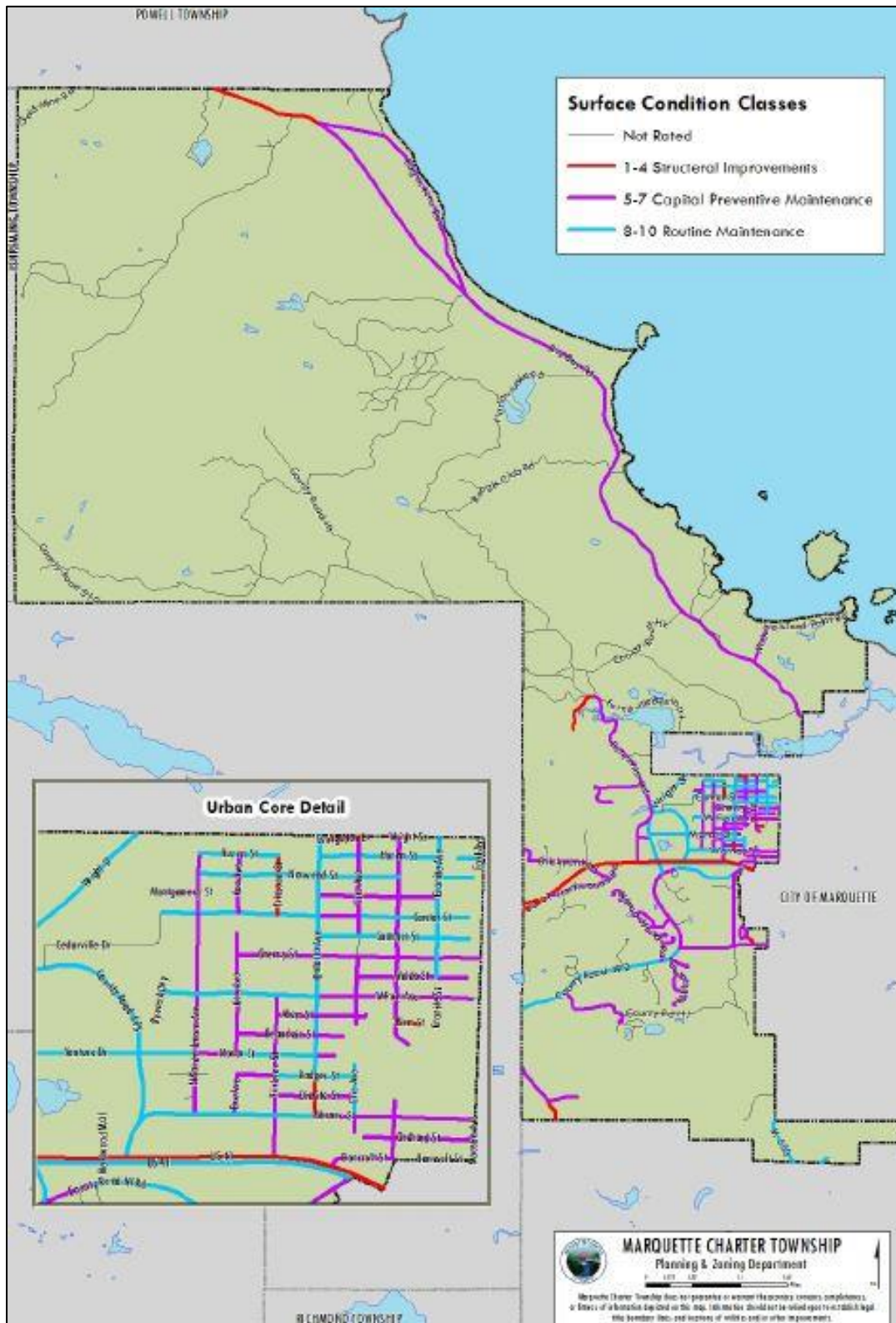
Road Maintenance

The first step in the resource allocation process is to assess current infrastructure conditions. MDOT and Marquette County Road Commission utilize the [Pavement Surface Evaluation and Rating \(PASER\)](#) inventory and asset management system for assessing the condition of National Functional System major streets. Many Township roads may have been evaluated along with the County process. PASER is a visual survey method developed by the University of Wisconsin Transportation Information Center, and adopted by the State of Michigan's Transportation and Asset Management Council (TAMC) to evaluate road conditions. TAMC requires that all entities within Michigan receiving Act 51 funds perform inspection on the entirety of their respective roadways every two years. Act 51 agencies responsible for roadways within Marquette Township are the Marquette County Road Commission and MDOT. PASER utilizes ten (10) separate ratings are used to evaluate the surface distress of the pavement based on pavement material and types of deterioration present. The ratings are then grouped into three categories based on the type of work required, including Routine Maintenance, Capital Preventive Maintenance, and Structural Improvement. See the below table for PASER ratings and recommended maintenance. Figure 5-2 indicates Marquette Township Roadways current PASER conditions.

Routine Maintenance includes regularly scheduled preventative treatments such as street sweeping, drainage clearing, gravel shoulder grading, and sealing of tight cracks. PASER ratings 8-10 are usually newly constructed or recently improved roads requiring little or no maintenance.

More Information from the **Michigan Transportation and Asset Management Council can be found [HERE](#).*

Figure 5-2: Marquette Township PASER



Capital Preventive Maintenance consists of planned treatments applied to existing roadways to retard further deterioration, maintain or improve function, and correct distress. PASER ratings 5-7 are roads have good structural support with surface deterioration, such as cracks over one-quarter (1/4) inch in width.

Roads rated as needing Structural Improvement include those in need of repair to improve the structural integrity of the pavement. PASER ratings 1-4 are roads that may need major rehabilitation or reconstruction. Typical problems include rutting greater than one-half (1/2) inch deep, cracking in the wheel path, severe block cracking, alligator cracking, and cracks with severe erosion.

The Planning Commission recommends that the Township continue to implement access management standards in all new development or redevelopment along the corridor, and utilize the collaborative review process as established by the US-41 Corridor Access Management team. Along with this, the Township will support the utilization of internal circulation systems including pedestrian and bicycle facilities with the development of concentrated mixed-use clusters along the highway corridor for all users.

Asphalt Streets		
PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required
8	Very Good	Little or no maintenance
7	Good	Crack sealing and minor patching
5 & 6	Fair - Good	Preservative treatments (non-structural)
3 & 4	Poor - Fair	Structural improvement (overlay)
1 & 2	Failed	Reconstruction

Concrete Streets		
PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required
7 & 8	Very Good	Routine maintenance
5 & 6	Fair - Good	Surface repairs, sealing, partial-depth patching
3 & 4	Poor - Fair	Extensive slab or joint rehabilitation
1 & 2	Failed	Reconstruction

Public Transportation

Public transportation service is provided to the Township by the [Marquette County Transit Authority](#) (commonly known as Marq-Tran), which is funded through a County-wide millage and Federal and State subsidy. Marq-Tran provides fixed routes and door-to-door service from the hours of 6:00 A.M. to about 6:30 P.M. Stops along the fixed routes include Wal-Mart, Westwood Mall, Marquette County Health Department, Senior Centers, Northern Michigan University, K.I. Sawyer, Marquette General Hospital, Peninsula Medical Center, and many others. To accommodate more users, Marq-Tran affixes bike and ski racks to the front of all fixed-route buses.



Figure 5-3: Marq-Tran Route

Figure 5-4: Regional Transportation



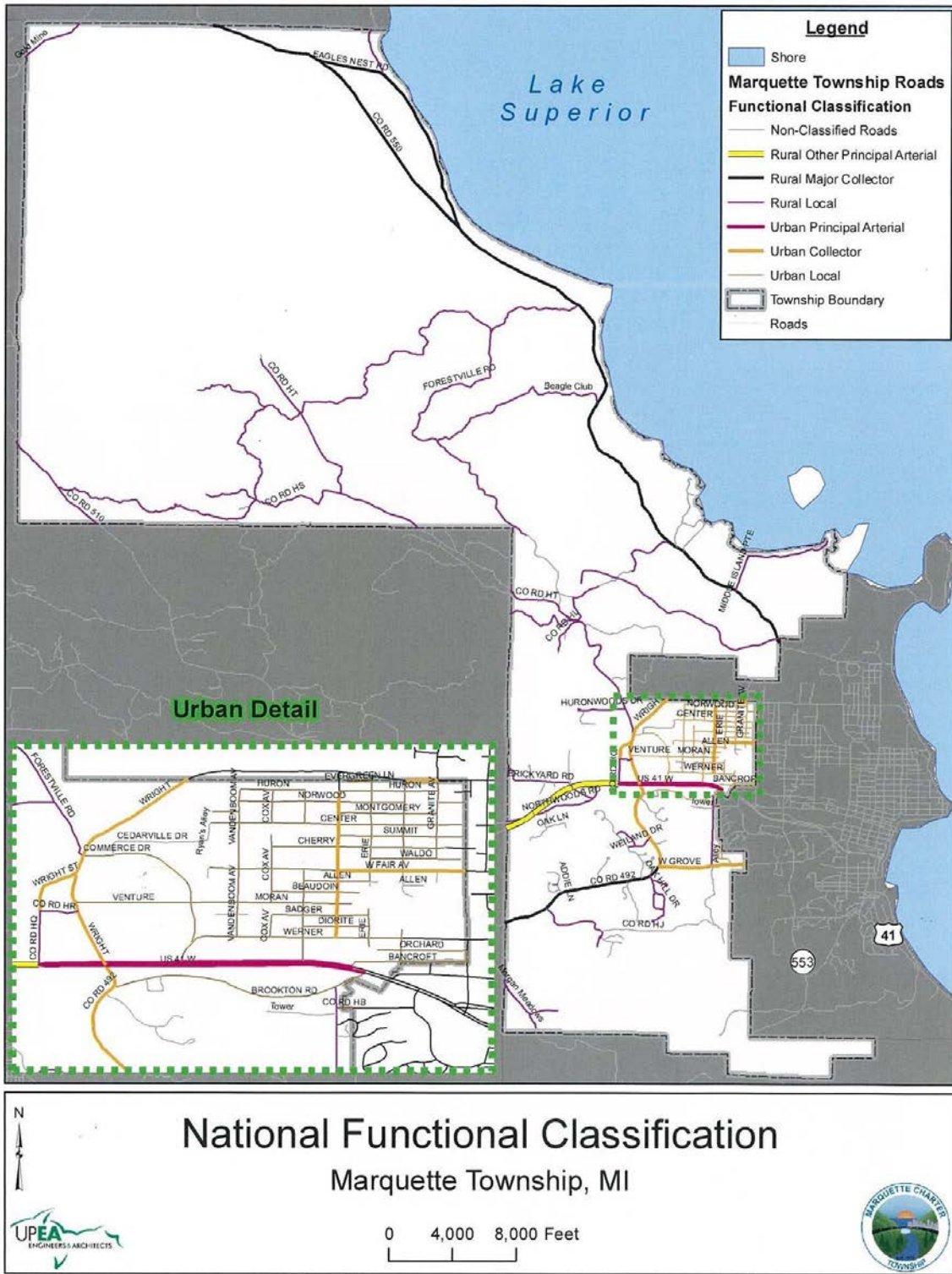
Regional Transportation Map

Marquette Township, MI



Source: ESRI, UPEA GIS. MAB 5.9.2011

Figure 5-5: National Functional Classification Map



Source: Michigan Geographic Data Library; UPEA GIS; MAB; 5/9/2011

Railroad

[Lake Superior & Ishpeming Railroad \(LS&I\)](#) operates a main line which passes through Marquette Township. This line is used to bring iron ore pellets from the Cliffs Natural Resources operations to the ore dock located in Presque Isle Harbor in the City of Marquette. There is currently no passenger rail service provided to the area.

Port

The nearest port to Marquette Township is located in the City of Marquette. This port ships iron ore pellets from the Eagle Mine and receives commodities such as salt, limestone, and coal. The iron ore pellets are transported by rail that passes through Marquette Township to the ore dock where they are loaded onto freighters. The other commodities are transported via truck to their destinations.

Air Transportation

The closest airport to Marquette Township is the [Sawyer International Airport](#) located north of Gwinn on a portion of the former [K.I. Sawyer Air Force Base](#). The Sawyer International Airport facility sits on 2,100 acres and includes a passenger terminal and a single paved 9,070 by 150 foot runway. This runway was originally designed and built for the Air Force's B-52 bombers. The airport is currently served by Delta Airlines and American Airlines. These airline companies provide connection to larger, regional locations.

Non-Motorized Transportation

Non-motorized transportation facilities – both trail and pathway connections – have become increasingly more prominent in Marquette Township's transportation planning efforts. Although the automobile is still the primary transportation option, walking and biking are becoming increasingly more tied to quality of life and enhanced economic benefit factors. In general, municipalities that are walkable and bikeable tend to encourage active healthy lifestyles, a livelier social environment, and a more vibrant community.

Non-motorized transportation is also linked to reduced greenhouse gas emissions, lower levels of pollution, less traffic congestion, and an overall healthier environment. Walkable communities are valued by those who either can't, or don't wish to depend on automobile transportation. These communities support greater levels of independence in mobility options for senior citizens, youth, and lower-income people. Because of the positive effects that walking and bicycling have on recreation, fitness, transportation, and the environment, these transportation modes are valuable community assets. The differences in the needs and desires of pedestrians and bicyclists require a variety of facility types to accommodate them safely.

When planning for non-motorized transportation facilities, it is important to understand who these users are. A pedestrian, according to the [American Association of State Highway and Transportation Officials \(AASHTO\)](#), is defined as "a person afoot or in a wheelchair". Universal Design and ADA standards ensure that pedestrian facilities are designed to accommodate the needs of handicapped or disabled pedestrians. A bicycle is defined in [Section 257.4 of the Michigan State Vehicle Code, Act 300 of 1949](#), as "a device propelled by human power upon which a person may ride, having either two or three wheels in a tandem or tricycle arrangement, all of which are over 14 inches in diameter." Michigan law allows bicycles on all Michigan highways and roads except limited access freeways, or unless otherwise posted. There are many different types of pedestrians and bicyclists. Pedestrians are the easiest group to accommodate; although there are many different ages and abilities of pedestrians.

Most pedestrians can be accommodated sufficiently by providing pathways along roadways and/or trails when feasible. However, they travel at a much slower speeds than a bicycle, therefore pedestrian accommodations should be provided at closer intervals (ideally one-quarter mile spacing).

Non-motorized Infrastructure

Non-motorized infrastructure is necessary to accommodate those who don't use or are unable to use automobile transportation, either by choice, ability, or due to affordability. Although the Township may not be able to feasibly construct pedestrian infrastructure in all areas, specific nodes and segments for future pedestrian infrastructure have been identified by way of a *Complete Streets Ordinance* that the Township has adopted since the last revision to the Master Plan. This ordinance has identified specific road segments, areas, and places of interest that should feature pathway or trail development where and when feasible. These priority areas should also be supported with a plan to maintain these facilities in good repair, and to clear them of obstructions, including snow. This proposed infrastructure is also intended to be complementary to planned or existing regional trail systems, and to accommodate universally accessible design principles, when possible.

In conclusion, there are many reasons people use non-motorized pathways and trails: to visit local businesses, to take their children to the local park, to visit neighbors, for exercise, and to spend time with family. Most importantly, walkable neighborhoods are safe neighborhoods. Cracked and broken road shoulders or sidewalks are dangerous or uncomfortable for senior citizens, people pushing children in strollers, skateboarders, visually-challenged people, and even bicyclists. They may be impossible for disabled people to navigate. If suitable walking surfaces aren't provided, people will improvise and use roadways or create informal paths. Creating walkable communities can be difficult in rural areas that are oriented to the automobile. For many years, development has been oriented to vehicular travel. As the population of the Township ages, and the Township seeks to attract new residents and businesses, it is imperative that we strive to increase the walkability of the community.

Bicycle Infrastructure

Currently, there are two on-street bicycle facilities that feature wider (paved) shoulders for residents and visitors to utilize. One segment is along County Road 492 and the other is along County Road 550 from the Marquette city limit to Eagles Nest Road. On-street bikeways bring enormous benefits to both the cycling and non-cycling public by creating opportunities to incorporate exercise. They use public dollars efficiently by reducing road maintenance costs and increasing the carrying capacity of the transportation system. They improve safety for all users; bicyclists feel they have a safe space on the road, tend to be more law-abiding, and motorists are placed at greater ease knowing where bicyclists are apt to be. Bicycle lanes are typically provided on collector and arterial streets. They can be implemented by narrowing existing travel lanes, removing a travel lane, widening a roadway, or paving a shoulder. However, these varying needs must be weighed carefully.

The most efficient way to incorporate bikeways is to include them as part of road reconstruction projects, or as a restriping of the roadway with bicycle lanes during routine resurfacing. Design of bikeways must consider:

- Sight lines and topography
- Lane widths for all travel modes
- Intersection design

- Signing, markings, and striping
- Design of road drainage
- Pavement conditions
- Specific design for pinch points, driveways, railroad crossings, and other challenging areas
- Integration with off-street shared-use trails/paths
- Lighting for safety
- Education outreach regarding bicycle safety and etiquette

If bicycle lanes are deemed unfeasible, alternative improvements may be substituted, such as using shared lane markings, or directing cyclists to an alternative bikeway. A wide outside lane can give extra room for bicycle operation if there is not enough room for a bicycle lane.

Multi-Use Paths

The Iron Ore Heritage Trail is a 48-mile long Heritage Corridor that extends from the former Republic Mine site adjacent to downtown Republic, north and east through Marquette Township to the Lake Superior shoreline in downtown Marquette, where it continues generally along the shoreline to the eastern border of Chocolay Charter Township. The multi-use path follows contemporary rail corridors as well as long abandoned rail grades dating from the earliest days of mining in the Upper Peninsula.

Additional multi-use pathway was installed as a result of a major US-41 Michigan Department of Transportation (MDOT) highway reconstruction 2019. Coupled with the 2019 US-41 reconstruction, a 10-foot pathway now leads to and from a safe crossing of US-41, by way of a sub-surface pedestrian underpass. The project will eventually connect over 100 miles of documented, non-motorized motorized pathways in Marquette County, as well as the MDNR Snowmobile Trail #14. Multi-Use pathway projects such as the 2019 US-41 Underpass Project are a result of continual collaborative efforts made by Marquette Township, MDOT and the MDNR. Local, private donations totaled approximately \$200,000 to assist with this project.

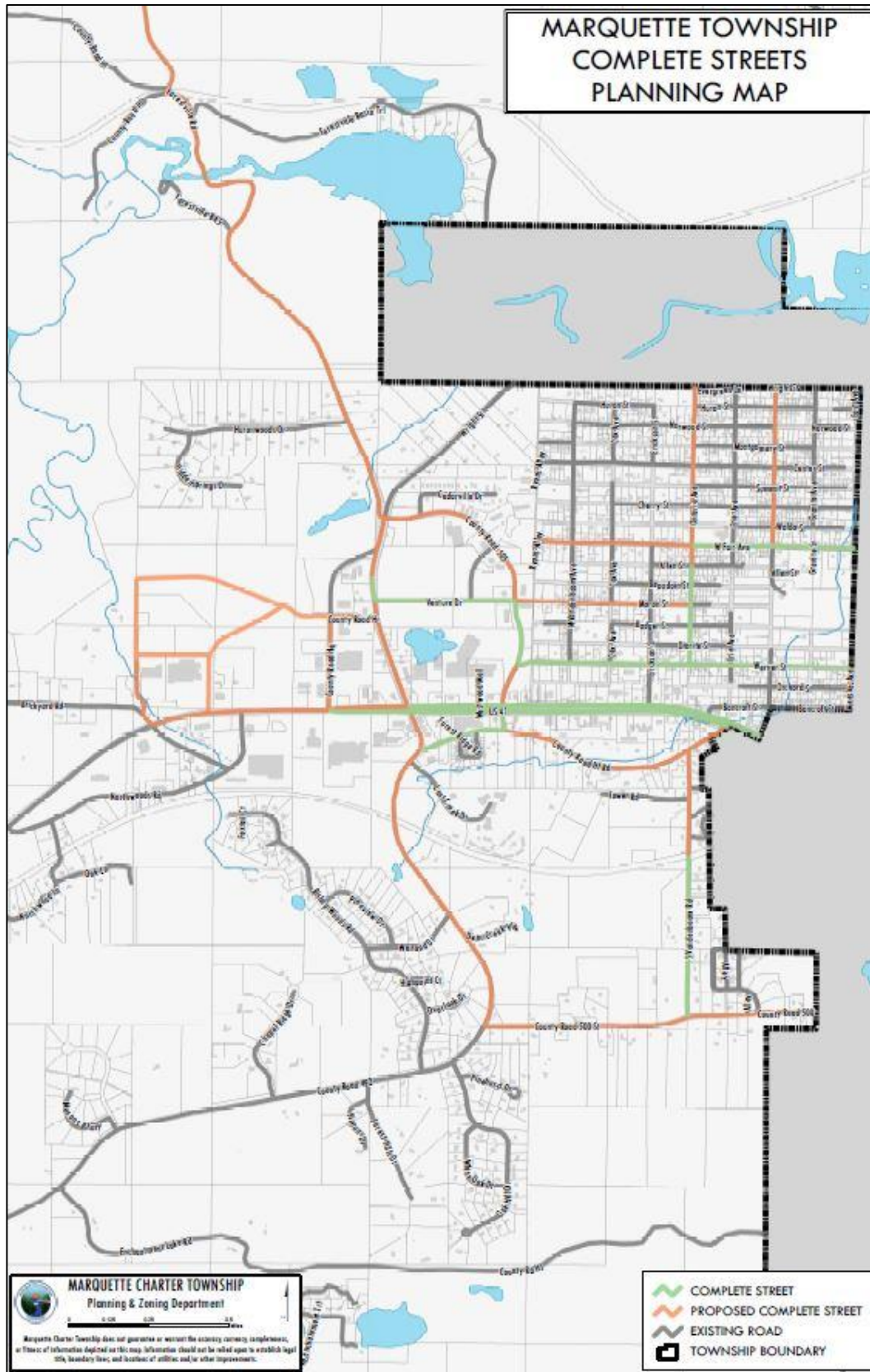
Complete Streets

Marquette Township embraces [Complete Streets](#) principles and will encourage the County Road Commission to apply these principles in all Township road projects as appropriate. This will support the goal for roadways to serve many functions, including linking various parts of the community, providing surface transportation accommodating all modes of transportation, providing public access to destinations, incorporating space for underground utilities and other public infrastructure, and helping to define and create a sense of place.

By passing an ordinance in 2013, Marquette Township has asked planners and engineers to consistently design and alter the right-of-way with all users in mind. As previously stated, quality-of-life is very important to the residents of the Township. Designing and building *Complete Streets* fosters livable communities and provides many benefits to the community such as:

- Encouraging healthy and active lifestyles through functional and attractive sidewalks or multi-use paths and well-defined bicycle routes consistent with the context of the community
- Allowing everyone, especially children, people with disabilities, and the elderly to safely and independently reach destinations and travel around the community

Figure 5-6: Marquette Township Complete Streets



- Reducing pedestrian risk by as much as 28 percent by implementing *Complete Streets* design elements such as raised medians, sidewalks, and other traffic-calming measures (according to the National Complete Streets Coalition)
- Promoting a cleaner environment. The *Complete Streets* approach encourages people to walk or bicycle to their destinations around the community, which may help reduce vehicle trips. Many *Complete Streets* designs also include increased green space along the roadway.

To accommodate diverse transportation modes, the Township will collaborate with MDOT in supporting increased opportunities for multi-modal transportation systems including carpool lots, bicycle and pedestrian facilities, heritage routes, long-distance bicycle trails, and snowmobile trails. The Township should consider creating a comprehensive bicycle/pedestrian plan, preferably in collaboration with regional partners, to prioritize needs and recommend improvements, and to move toward the achievement of a regional network. The completion of this kind of plan can make more funding sources available for these types of projects.

Marquette Township will continue to collaborate on regional multi-use path projects and be prepared to provide valuable links in the regional system. Multi-use paths will complement and help complete priority pedestrian networks within the Township. Marquette Township will also collaborate with MDOT and the Marquette County Road Commission to support the addition of bicycle lanes or improved shoulders on collector and arterial streets.

5.3 RECREATIONAL FACILITIES

In November of 2013, the Marquette Township Board adopted the current five-year Recreation Plan. This plan discusses in detail the recreational facilities available to the community. This section contains a brief summary of the recreation opportunities.

The Township offers extensive open space and forestland for recreation. According to the 2013-2018 Recreation Plan, approximately 96 percent of the Township falls into one of these two categories. Of this 96 percent, approximately 5,700 acres is State owned public recreation land and approximately 9,447 acres is privately owned land under the State's Commercial Forest Act, which is also available to the public for passive outdoor recreational use, including fishing and hunting. The current Recreation Plan is in the process of being updated and will be a part of the Master Plan update, once adopted.

Township-Maintained Facilities

Township owned recreation facilities include the South Vandeenboom Recreation Area, Lions Field/Kiddee Park and Schwemwood Park & Iron Ore Heritage Trailhead #8. These facilities are described in detail below.

- *South Vandeenboom Recreation Area:*
The South Vandeenboom Recreation Area consists of approximately 360 acres of forested land from Grove Street to M-553 along the Carp River. A portion of this property is used for the Township well field, as well as a multi-use recreation area. Currently recreational facilities include a portion of the South Marquette Trails supported by the Noquemanon Trail Network organization.
- *Lions Field/Kiddee Park Recreation Area:*
Located on Erie Avenue, this two-and-a-half-acre park contains a ball field, ice rink, tennis court, pavilion with picnic tables, grills, restrooms, parking and a playground with a merry-go-round, slides, spring rides, climber, and ADA compliant walking path.

- *Schwemwood Park & Iron Ore Heritage Trailhead #8:*
This approximately 6 acre parcel was developed by the Township as a nature park currently the park features a nature trail around the perimeter, wooden bridge, a bog overlook, a small wetland and a parking area. It has also become the home of the Iron Ore Heritage Trailhead #8, which will continue to be developed in the coming years with typical trailhead amenities, such as restrooms and bike repair stations.

Figure 5-7: Schwemwood Park & Iron Ore Heritage Trailhead #8

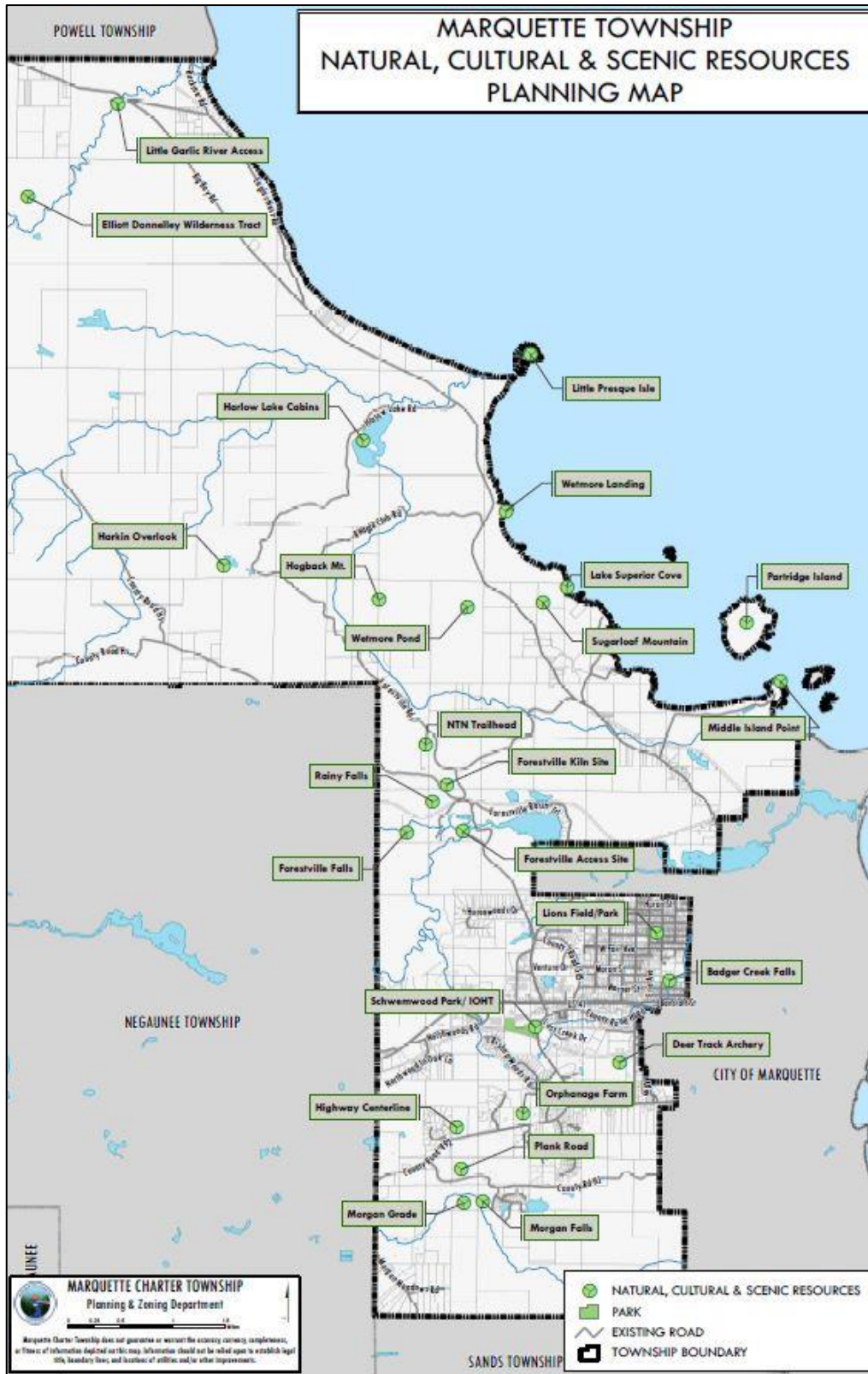


Other Public Facilities in the Township

These facilities include Sugar Loaf Mountain Natural Area, Longyear Forest, Little Presque Isle/Harlow Lake Area, 425 Area (Heartwood Property), Noquemanon Trail Network including South Trails and Forestville Trails, North Country Trail, Iron Ore Heritage Trail, Wetmore's Pond Interpretive Nature Trails, Snowmobile Trails, Escanaba River State Forest, Forestville Access Site, and the Little Garlic Access Site.

- *Vandenboom Elementary School Playground:*
Located on Erie Avenue, this 10.5 acre site is owned by the Marquette Area Public School District and serves as a neighborhood playground. The site includes parking, nature trails, a basketball court, open field and playground, pump track bike path, and disc golf.
- *St. Christopher's Parish:*
A small playground located on Badger Street that primarily serves preschoolers attending programs through the Parish.

Figure 5-8: Natural, Cultural and Scenic Resources Map



5.4 PUBLIC WATER AND SANITARY SEWER SERVICE

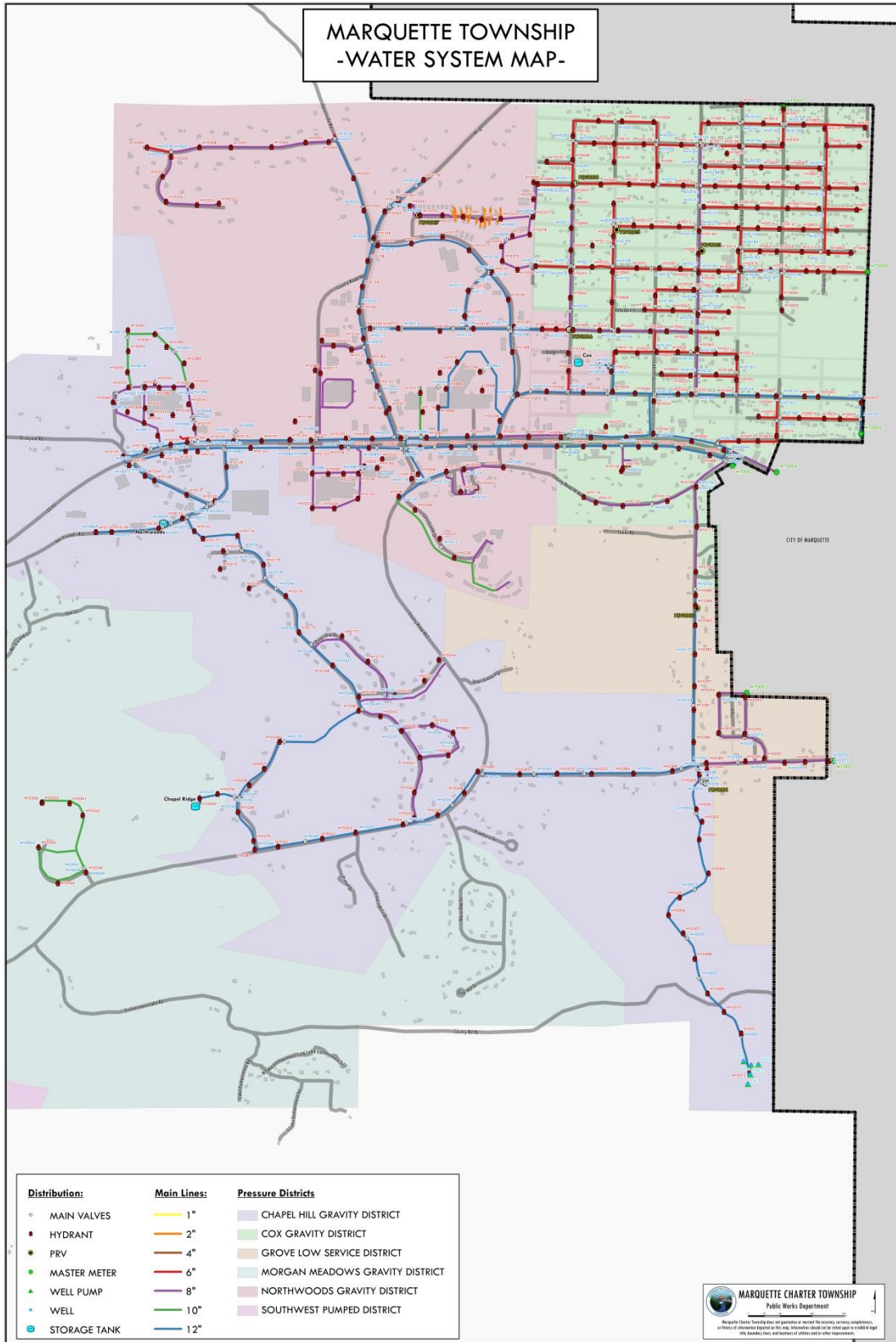
In 2002, the City of Marquette and Marquette Township contracted with engineering consultants to prepare a [Water System Study](#). Information in this section is referenced from these documents. Public water distribution and sanitary sewer collection services are provided to Marquette Township by Marquette Township owned infrastructure. Water treatment and wastewater treatment services are provided through joint arrangements with the City of Marquette.

The water supply from Lake Superior is purified at the City owned water treatment plant before distribution. The water treatment plant is capable of seven million gallons/day (MGD), but on average delivers three MGD. About 190,000 gallons per day is purchased by Marquette Township. The groundwater supply located in Marquette Township is treated with fluoride and sodium hypochlorite and pumped from a Township owned facility. The permitted firm well capacity is 825 gallons per minute. It is currently (2019) pumping about 140,000 gallons per day. Public water is provided to about 80 percent of the population of Marquette Township. The Township distribution system is divided into four major pressure districts. The [Cox Gravity District](#) is served by the City surface water supply. The [Northwoods Gravity District](#), the [Grove Low Pressure District](#), and the [Chapel Ridge Gravity District](#) are served by the Township groundwater supply. Public water is available along US-41/M-28 westward to Northwoods Road, throughout Trowbridge Park, north CR 492/Wright Street and Forestville Road to include Huron Woods Subdivision, south on Brickyard Road to Northwoods Road, the east end of Brookton Road, Vandenboom Road south of US-41/M-28, and CR 492 south to and including Lost Creek. The Chapel Ridge subdivision, Bishop Woods Subdivision, CR 492, Grove St. and Grandview Circle are served by the Chapel Ridge water reservoir. All other areas rely on private on-site wells. Figure 5-7 on the following page is a map of the current water system.

Sanitary sewer service in the Township is generally available where public water service exists, except that sewer service is not available at the Oak Hill Estates or Bishop Woods subdivisions, the northwest quarter of Trowbridge Park, Huron Woods Subdivision, Chapel Ridge Subdivision, south of CR 492 to Lost Creek, Grove St., Grandview Circle, and the south end of Vandenboom Rd. Five lift stations serve Marquette Township: Bancroft Lift Station, Huron Lift Station, Center Lift Station, Wright Lift Station, and US-41 Lift Station. Wastewater is transported to the Marquette Area Wastewater Treatment Facility located in the southeast area of the City of Marquette via a township-owned interceptor along the U.S. 41 by-pass. The treatment facility is jointly owned by Marquette Township, Chocolay Township, and the City of Marquette. Those not served by public sewer maintain onsite septic systems.



Figure 5-9: Marquette Township PASER



5.5 SOLID WASTE MANAGEMENT

Marquette Township provides [curbside solid waste collection](#) and [recycling services](#) to all Township residents. The Township contracts with a private waste hauler and residents are billed monthly. The Marquette County landfill is managed by the Marquette County Solid Waste Management Authority.

5.6 PUBLIC SAFETY

Police protection for Marquette Township is provided by the [Marquette County Sheriff's Department](#) and the [Michigan State Police](#). The Marquette County Sheriff's Department provides a number of services including road patrol, detective division, criminal and civil processing, airport security, animal control, prisoner transport, court security and operation of the Marquette County Jail. The Marquette County Sheriff's Department also includes a Special Operations Unit that oversees the volunteer rescue unit, dive team, marine and ORV patrols.



Fire protection is provided by the [Marquette Township Fire Department](#). Along with fire protection, the 30 member crew also provides EMS, technical rescue, and hazmat response services. In November of 2017 Marquette Township purchased an ambulance capable of providing basic life support. Advanced life support ambulance services are provided by UP Health Systems.

5.7 EDUCATIONAL FACILITIES

Grades K-12 is served in the Township by [Marquette Area Public School District \(MAPS\)](#). According to their website, MAPS covers 123 square miles and provides education to more than 3,100 students. The school district consist of three K-5 elementary schools, one grade 6-8 middle school, a senior high school and an alternative high and middle school. [North Star Public School Academy](#) is a public school in the Township chartered by Northern Michigan University, also serving the Marquette area. North Star serves students in grades K-12.

Township residents have the opportunity for higher education at [Northern Michigan University \(NMU\)](#) in the City of Marquette. Northern Michigan University offers 180 degree programs to approximately 9,000 students both graduate and undergraduate. The 360-acre campus is home to 52 facilities including the Seaborg Science Complex, two art galleries, one of four Olympic training facilities in the nation and the Superior Dome (a multi-use complex) which is one of the world's largest wooden domes.

5.8 HEALTHCARE

[UP Health System of Marquette](#) the largest employer in Marquette County, is located in the City of Marquette. MGH is the region's only Level II Trauma Center and has been named by Thomson Reuters as one of the 50 Top Cardiovascular Hospitals. According to their website, MGH's major services include Marquette General's Heart Institute, Cancer Center, Brain & Spine Center, Rehabilitation Center, Behavioral Health, Digestive Health, Weight Loss Center and Women's & Children's Center. In April of 2019, UP Health Systems moved into a new \$300 million-dollar, 700,000 sq. ft. facility. The new facility will hold 275 beds housed in private rooms.

CHAPTER SIX | PUBLIC INPUT

6.1 PUBLIC OPEN HOUSE MEETINGS

Marquette Township residents and business owners played a vital role in the preparation of this Master Plan update. Public workshop/input sessions were held at the Marquette Township Community Room on September 26th and November 1st of 2018. The sessions included presentations by staff, the Recreation Committee and featured various maps and graphic displays regarding transportation, recreation, existing conditions, and land use.

Those in attendance were invited to place comment notes on maps and discuss any existing issues or opportunities facing the Township. Township Planning Staff and Planning Commissioners were in attendance to answer any questions and discuss participant's comments and ideas. The following is a list of comments compiled from comment forms, notes on the maps, and discussion with residents and business owners.

- *Need bike path on Fair Ave. from Ontario, east to City limits*
- *Consider a venue to hold mid-large events, similar to lower harbor and Lakeview arena*
- *Consider a 1-3 year-old playground and splash pad*
- *Encourage stormwater management best practices*
- *Rezone 420 Brickyard Road and change on Future Land Use Map*
- *Make private drive north of Brickyard Road (Meijer driveway) a public road.*
- *Pursue public road north of Shoppes of Marquette and Meijer*
- *Pursue frontage roads along U.S. 41 Highway Corridor*
- *Encourage private food production such as private poultry in Trowbridge*
- *Pursue a safety fence enclosing Lions Field Kiddee Park Area*
- *Install cognitive sensory features at Lions Field Playground*
- *Consider housing needs in relation to changing local demographics*

6.2 2018 COMMUNITY SURVEY

In an effort to better understand and provide for the needs of our residents, the Planning Commission tasked the Planning & Zoning Department with conducting a community survey. The 2018 Community Survey (conducted in June/July 2018) included questions regarding quality of life, growth management, transit planning, park and recreation planning, and economic development. The 2018 citizen survey was distributed by mail to approximately 750 households within the Township. These residences were chosen by a random selection, and accounted for just over 40% of all Marquette Township households.

To ensure statistical relevance, staff's goal was to obtain a minimum of 145 completed surveys from Marquette Township residences. This goal was achieved, with approximately 248 surveys having been completed and recorded. The resulting 248 completed surveys have a 95% level of confidence with a precision of +/- 6%.

Various meetings were also held with the Planning Commission throughout the process, in which they discussed Master Plan topics.

CHAPTER SEVEN | GOALS & OBJECTIVES

7.1 INTRODUCTION

This chapter of the Marquette Township Plan outlines a course for action in achieving Township goals. These goals and objectives are our "To Do." They let prospective investors and residents know what is expected, desired, and supported.

Goals reflect the needs, values, and desires of the community, and they cover a wide range of topics. They answer the question, "What do we want the future of our community to look like?" They also represent a desired future condition, or an end to which efforts are directed.

Objectives are statements of a position, or course of action, which provide a means of obtaining a stated goal. Objectives are also more specific and measurable tasks that may be long-term, mid-term, or short-term, but need to occur in order to accomplish stated goals.

7.2 GOALS AND OBJECTIVES

Goal #1 *Encourage Best Management Practices Regarding Land Use*

Ensure that new development represents the best-management practices such as, [Smart Growth](#) principles which will lead to compact development that utilizes existing infrastructure. This will enhance efficiency in public service provision and infrastructure maintenance, and help preserve natural resource lands.

Objective 1.1

Work with developers to help create attractive, walkable and bikeable mixed-use environments where people can more easily access employment, entertainment, commercial, and recreation opportunities. This will reduce vehicular trips, and encourage the use of non-motorized transportation (and healthier lifestyles).

Objective 1.2

Rehabilitate or reuse vacant and underutilized properties (including brownfields). Convert single-use into mixed-use developments as a preferred strategy over new development.

Objective 1.3

Create walkable communities to enhance mobility, strengthen the economy, facilitate transportation alternatives, and improve social and recreational interaction.

Objective 1.4

Make development decisions predictable, fair, and cost-effective while also balancing community goals. Utilize GIS to update and maintain current land use and other pertinent data and consider making this data available to the public.

Objective 1.5

Discourage development in unsuitable areas, such as those containing steep slopes, flood plains, caving areas, high water tables, wetlands, or shallow soils, or other activities detrimental to human health, safety and welfare.

Objective 1.6

Locate new development in or near existing developed areas to promote an efficient and compact pattern of development, reduce the negative effects of sprawl, and reduce infrastructure and service costs.

Objective 1.7

Encourage and support compact development and compact building design for efficient public service provision, efficient use of land resources, facilitation of a walkable/bikeable community, improved feasibility for public transit and a more vibrant business environment.

Objective 1.8

Strengthen regulations, enforcement measures, and administrative structure to support environmental protection standards that preserve sensitive environmental areas that are incompatible with development.

Objective 1.9

Continuously review the zoning ordinance to ensure that there are provisions addressing sensitive environmental areas that cross parcel boundaries such as bluffs, erosion zones, floodplains, caving areas, shorelines, wetlands, swamps, marshes, wellhead protection areas, and aquifer recharge sites.

Objective 1.10

Monitor regulations to preserve and enhance riparian buffers along the rivers and other water bodies in the Township to protect water quality and aquatic and wildlife habitat. This includes adopting land use controls (such as zoning setback distances from watercourses) that are established and uniformly applied.

Objective 1.11

Update stormwater management techniques in the zoning ordinance to protect water quality, including adjustments to parking standards, landscaping standards, and development standards. Utilize natural filtration and detention systems whenever possible. Ensure that residential driveway culverts and stormwater ditches are kept clear and are free-flowing.

Objective 1.12

Protect tracts of contiguous forest lands for conservation, recreation, wildlife habitat, and timber management activities. This can be accomplished through acquisitions, conservation easements, protective zoning overlay districts, etc.

Objective 1.13

Increase public awareness of Marquette Township planning and zoning activities through media, newsletters, etc.

Objective 1.14

Maintain and update the Zoning Ordinance provisions consistent with this Master Plan.

Objective 1.15

Support uniform zoning enforcement.

Objective 1.16

Make zoning decisions consistent with the Future Land Use Recommendations/Map of this Master Plan.

Objective 1.17

Consider and evaluate the productive capacity of land before forest lands are changed to another use and/or developed.

Objective 1.18

Encourage forestation or reforestation where soils are suitable for such purposes. Forested lands are important for wildlife habitat, wind protection, soil stability, noise buffer, recreational use, aesthetics and lumber resources. The Township should explore methods of promoting sound forestry management practices through education, regulatory or other methods, including the Quality Forest Management plans.

Objective 1.19

Preserve scenic views and open space, especially along major roadways and shorelines. Discourage outdoor advertising signs except in commercial and industrial areas.

Objective 1.20

Ensure compliance with the Marquette Township Stormwater Ordinance when reviewing development proposals.

Objective 1.21

Support strategies and recommendations of the Whetstone Brook and Orianna Creek Watershed Management Plan when considering development proposals in these streams' watersheds.

Objective 1.22

Collaborate with Health Department in conducting septic system public educational programs regarding maintenance and management of these systems.

Objective 1.23

Minimize soil erosion by the effective enforcement of Public Act 451 or 1994 (Natural Resources and Environmental Protection Act), Part 91, Soil Erosion and Sediment Control (SESC).

Objective 1.24

Continue to seek ways to reduce the amount of parking spaces needed for commercial development in order to reduce impervious surfaces areas and improve stormwater quality.

Objective 1.25

Encourage form-based and other progressive zoning principles.

Goal #2 *Transportation Enhancement*

A multi-modal, balanced transportation system, accommodating travel patterns of all users safely and efficiently throughout the Township, at minimal environmental and fiscal cost.

Objective 2.1

Implement the recommendations of the Marquette Township Transportation Plan.

Objective 2.2

Participate in a regional or county-wide wayfinding sign project.

Objective 2.3

Work with the Road Committee and the Recreation Committee to identify and map the Township's motorized and non-motorized transportation plans. Use this information to update the Transportation and Recreation Plans.

Objective 2.4

Work with the Michigan Department of Transportation (MDOT) and the Marquette County Road Commission

(MCRC) to implement the proposed improvements and rationale section of the US-41/M-28 Comprehensive Corridor and Access Management Plan pertaining to Marquette Township regarding major intersection improvements, road improvements, access management and coordinated capital improvements plans.

Objective 2.5

Participate in aesthetic enhancement projects for the highway corridors in partnership with MDOT scheduled improvements. Work with the Marquette Township Business Association (MTBA) and the Downtown Development Authority (DDA) when coordinating these projects.

Objective 2.6

Adopt an Asset Management philosophy for the local road system which includes a mix of potential fixes. Work to maintain and upgrade the Township road network, as needed.

Objective 2.7

Encourage the Marquette County Road Commission to perform traffic counts on a five-year cycle for the major street system, and 10-year cycles for local roads.

Objective 2.8

Prepare a comprehensive bicycle/pedestrian pathway plan to prioritize needs and recommend improvements and facilitate a connected, regional non-motorized transportation network.

Objective 2.9

Implement Complete Streets principles by collaborating with MDOT, the MCRC, and Michigan Department of Natural Resources (MDNR) to support increased opportunities for multi-modal transportation systems including carpool lots, bicycle and pedestrian pathways, heritage routes, long-distance bicycle trails, and snowmobile trails. Marquette Township should also continue working with these agencies to construct grade-separated crossings of US-41 corridor.

Objective 2.10

Incorporate complete, integrated and clearly-marked, non-motorized transportation networks as a priority project in Capital Improvement Plans (CIP).

Objective 2.11

Create and maintain priority pedestrian corridors to important destinations as outlined in this plan. These pedestrian systems will be designed to be complementary to planned or existing regional trail systems, and to accommodate universally accessible design principles whenever possible. Update zoning regulations to require sidewalks in new developments that connect to identified pedestrian destinations.

Objective 2.12

Seek supplemental funding for planned improvements to major and minor roads by the Marquette County Road Commission and the Michigan Department of transportation. Assure that design and schedule of projects are compatible with the Master Plan.

Objective 2.13

Enforce the Township's Sign Ordinance in order to increase safety and enhance the aesthetic quality of commercial development.

Objective 2.14

Seek additional funding for the maintenance and plowing of pedestrian pathways in the business district.

Objective 2.15

Provide additional support for motorized and non-motorized access and trail connectivity in area, where and when feasible.

Objective 2.16

Create additional frontage roads where and when feasible.

Objective 2.17

Encourage the installation of electric car charging stations, where and when feasible.

Goal #3 *Public Services, Facilities and Infrastructure***Provide appropriate public facilities and services to support the residential, commercial and recreational activities of residents, business owners and visitors.****Objective 3.1**

Create plans to conserve energy and increase efficiency in all public facilities and to adopt renewable energy technology when possible, thereby creating a model for private companies and residents to follow.

Objective 3.2

When siting new public facilities ensure the location is easily accessible for motorists, bicyclists, pedestrians, and public transportation users.

Objective 3.3

Maintain local regulations and ownership of existing water and wastewater treatment systems.

Objective 3.4

Support the development and maintenance of water and sewer service boundaries, as needed.

Objective 3.5

Work with the public schools to expand and/or locate new facilities according to the Township's land use policies and zoning regulations.

Objective 3.6

Encourage joint use of school facilities by the school district, City, Township and County.

Objective 3.7

Continue to provide Township-wide curbside solid waste collection and recycling services and a monthly drop-off site for larger waste items.

Objective 3.8

Continue to support the operation and enhancement of the Marquette Township Fire/Rescue Department.

Objective 3.9

Continue cooperation with the Marquette County Sheriff's Department and Michigan State Police in the provision of law enforcement.

Objective 3.10

Coordinate Township services with other service providers to complement their efforts.

Objective 3.11

Encourage all governmental units to cooperate on facilities and services whenever practical across Township/City/County lines.

Objective 3.12

Ensure adequate parking facilities for commercial and public attraction areas for both motorists and bicyclists through site plan review and zoning regulations.

Objective 3.13

Support and encourage private civic groups which provide educational and social programs of importance to local residents.

Objective 3.14

Support public transportation services to assist those with limited mobility, and as a way to conserve energy.

Objective 3.15

Encourage the development of wind and solar power for commercial and residential developments.

Goal #4 Recreation**Preserve and enhance public access and enjoyment of unique natural amenities and create a community that supports year-round active living and recreation environments.****Objective 4.1**

Make recreational opportunities more accessible to all Township residents and visitors.

Objective 4.2

Continue to update the Township's Recreation Plan every five years and submit to the Michigan Department of Natural Resources for approval and for the ability to apply for grants.

Objective 4.3

Implement the goals, objectives and action plan of the 5-year Recreation Action Plan.

Objective 4.4

Identify and apply for appropriate grant funding for recreation projects as identified in the 5-year Recreation Plan.

Objective 4.5

Review all existing and proposed recreational sites and facilities for barrier-free accessibility which conforms to the Americans with Disabilities Act (ADA).

Objective 4.6

Enhance development of facilities at existing park sites to meet community recreational needs.

Objective 4.7

Develop active and passive recreational opportunities for all age groups and special populations.

Objective 4.8

Promote recreation and other uses that preserve natural features in forested land.

Objective 4.9

Support the development/expansion of multi-use trails in accordance with the Marquette Township Transportation Plan and Recreation Plan.

Objective 4.10

Encourage volunteerism, stewardship and local business support whenever possible to assist with recreational planning implementation.

Objective 4.11

Continue to foster favorable working relationships with stakeholders in providing recreational opportunities. Some of these entities include the City of Marquette, Marquette County, Marquette Area Public Schools, Iron Ore Heritage Recreation Authority, Noquemanon Trail Network (NTN), North Country Trail Hikers, Michigan Department of Natural Resources, and the Michigan Department of Transportation.

Objective 4.12

Encourage the Marquette Township Board of Trustees to establish an annual fund or millage for the purpose of acquiring natural, cultural, and scenic properties as they become available, so as to preserve these resources.

Objective 4.13

Develop and maintain additional neighborhood parks for children, where and when feasible.

Objective 4.14

Promote recreational activities in Marquette Township, as well as recreational locations such as Sugar Loaf Mountain, Hogback Mountain, Harlow Lake, Little Presque Isle, Dead River, Echo Lake and Blemhuber Lake.

Objective 4.15

Develop uniform directional signage for Marquette Township recreational attractions.

Objective 4.16

Encourage the Marquette Township Board of Trustees to establish a recreational millage to support grant match money and maintenance of our parks.

Goal #5 *Economic Development*

Improve the economic conditions in Marquette Township by promoting the community as a great place to work, live, visit and recreate.

Objective 5.1

Retain and encourage expansion of existing businesses and industries. Aim to attract new economic developments such as light manufacturing, research and development, high-tech, and medical research facilities to provide desired levels of employment opportunities in Marquette Township.

Objective 5.2

Encourage infrastructure and service networks to support businesses, employees, and residents.

Objective 5.3

Acknowledge and promote Marquette Township as a regional shopping and entertainment center.

Objective 5.4

Maintain the existing urban core area as the major activity center within the Township and encourage its development, thereby limiting sprawl and promoting infill redevelopment.

Objective 5.5

Seek grants through federal, state and other funding sources for infrastructure improvements and economic development projects.

Objective 5.6

Promote the Township's environmental resources, natural features, cultural and historic sites, and events as a way to encourage tourism.

Objective 5.7

Through zoning, provide adequate and appropriate spaces for the establishment of commercial, light industrial and manufacturing enterprises.

Objective 5.8

Mitigate and/or remove blight from commercial districts.

Objective 5.9

Continue to promote development of the business park where the Marquette Township Community Center is located, as a place for office development and other mixed use.

Objective 5.10

Encourage economic development in areas that are compatible with, and accessible to, existing utility services and transportation facilities.

Objective 5.11

Encourage mixed-use developments in conjunction with public improvements.

Objective 5.12

Seek US-41 corridor improvements regarding aesthetics, lighting, pedestrian access, and ingress and egress into existing and future commercial developments.

Objective 5.13

Limit and/or reduce driveways from all properties to the roadway to minimize traffic congestion, conflicts, and safety issues.

Objective 5.14

Minimize conflicts between adjacent incompatible land uses.

Goal #6 *Housing*

Maintain and preserve the quality of existing residential areas and encourage the provision of an adequate supply of housing for all residents.

Objective 6.1

Maintain a friendly and safe living atmosphere and protect the rural character of residential areas outside the urban core.

Objective 6.2

Encourage all housing in the Township to be maintained in a decent, safe, and sanitary condition. Ensure enforcement of the Marquette County Building Codes, the Marquette Township Zoning Ordinance and property maintenance codes.

Objective 6.3

Utilize housing improvement and rehabilitation programs to eliminate unsound housing and to improve and conserve sound, but aging housing.

Objective 6.4

Address the special needs of the disabled and elderly population when considering community development projects.

Objective 6.5

Consider development density, available roads and services along with the environmental characteristics of the site.

Objective 6.6

Encourage conservation subdivisions and residential developments, which allows for a concentration of smaller lots, while preserving common areas for use by all residents in the development.

Objective 6.7

Support uniform enforcement of the Property Maintenance Code of the Charter Township of Marquette.

Objective 6.8

Ensure safe and quality residential neighborhoods while protecting the rural character of the Township.

Objective 6.9

Encourage housing opportunities for all income and age groups.

Objective 6.10

Encourage a continued high rate of single-family owner occupancy to maintain housing quality, while meeting local needs for rental units.

Objective 6.11

Promote an adequate quantity of new housing to accommodate anticipated population growth and climate trends.

Objective 6.12

Consider zoning map amendments to encourage affordable and/or tiny homes in Marquette Township.

Objective 6.13

Encourage developers to provide more affordable housing.

Goal #7 Government**Improve the responsiveness to citizens and staff needs and timeliness of local government**

decision- making, consistent with fiscal responsibility and transparency.**Objective 7.1**

Survey all Marquette Township facilities to determine present and future needs.

Objective 7.2

Conduct required statutory meetings, committee meetings, departmental meetings, special meetings and public hearings in a professional manner.

Objective 7.3

Increase citizen involvement in decision-making through participation and effective communication through community surveys and public input sessions.

Objective 7.4

Provide a Township newsletter and/or other forms of communication on a regular basis.

Objective 7.5

Review and update the Master Plan every 5-years, as appropriate.

Objective 7.6

Continue to support the Marquette County Central Dispatch and 9-1-1 services.

Objective 7.7

Encourage volunteers to serve on the Township Board, Planning Commission and various committees.

Objective 7.8

Continue to improve and update Marquette Township website.

CHAPTER EIGHT | FUTURE LAND USE & ZONING PLAN

8.1 INTRODUCTION

A future land use plan is representative of the preferred future and how the community would like to grow. Future Land Use planning sets the desired amounts and locations of all land uses including: residential, commercial, industrial, public facilities, open space, recreational areas and changes to traffic circulation throughout the Township.

Local governments are endowed with the ultimate authority for controlling land use through zoning laws as well as, building and sanitation codes. These various regulations establish parameters within which development can occur. Zoning regulations must be based on a plan developed with public input. It is important that future land use decisions be realistic in light of the ability of local governments to provide essential public services in a fiscally responsible manner.

8.2 FUTURE LAND USE DESCRIPTIONS AND MAP

The following future land use descriptions support the goals and objectives of this plan. Categories include:

- Development District
- Forest Recreation
- General Business
- Industrial
- Resource Production
- Rural Residential
- Scenic Residential
- Urban Residential

The *Development District* Future Land Use category is designed to serve as a buffer between higher intensity commercial areas and residential areas. It is designed to be a flexible, transitional area where commercial, business and residential land uses may all be present.

The *Forest Recreation* Future Land Use category includes lands primarily used for sustainable forest management, recreation, and preservation of natural resources and sensitive environmental areas. This area is for uses that are compatible with natural resources, such as low impact recreation, trails and wildlife areas. Existing residential uses are accommodated at a very low density but further subdivision of lands is not encouraged so as to maintain the integrity of the land for productive and conservation purposes.

These lands are generally in close proximity to publicly owned conservation/recreation lands or are currently maintained in a Commercial Forest Program.

The *General Business* Future Land Use category generally includes the areas adjacent to highways which provide a convenient location for larger regional and local serving auto-oriented uses. Surface parking must be accommodated but is preferably located in the rear of the property or

screened or buffered from view. Access is generally from the highway but shared access is encouraged to

preserve highway safety and function. The area is intended to incorporate various transportation modes, including all season non-motorized connections to increase ease, safety, and convenience of walking and bicycling from surrounding neighborhoods.

The *Industrial* Future Land Use category includes industrial service and manufacturing firms which engage in intense scale or volume of activity and may store materials or vehicles outdoors. Few customers, especially the general public, come to the site. These areas are characterized by the presence of heavy machinery, building materials, and raw materials for processing and storage, and the utilization of chemicals and intense processes. This future land use area is also for uses that are not compatible in any other districts.

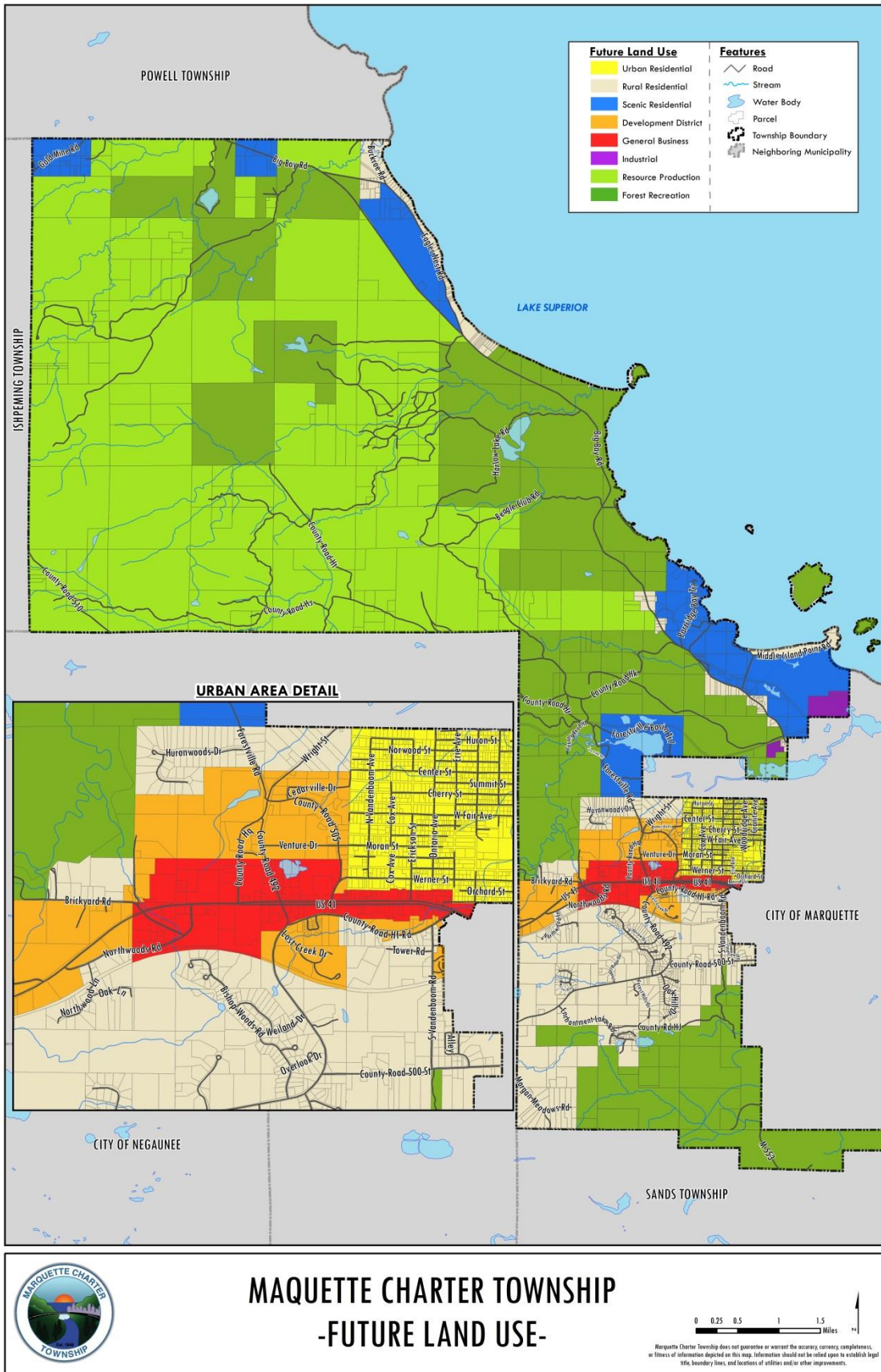
The *Resource Production* Future Land Use category includes much of the land in the northern part of the Township. Much of these areas are not accessible year-round and are only served by roads designated as seasonal roads by the Marquette County Road Commission. For this reason uses recommended for this area includes agricultural activities, extraction of earth products, hunting and fishing camps, forest products harvesting, wood processing facilities and outdoor recreational facilities.

The *Rural Residential* Future Land Use category includes properties with a residence normally with septic and private well infrastructure. These properties have access to a primary County road and exist in various levels of density. A slightly higher residential density is envisioned for properties along existing roads when the development is designed as conservation or open space subdivision, provided that at least 60 percent of the space is usable, undeveloped, open space.

The *Scenic Residential* Future Land Use category includes lower residential densities such as one unit per five acres. It is preferred that these homes be located close to the road to preserve more space for recreational opportunity. A higher residential density and smaller lots are envisioned for properties when the development is formatted as conservation or open space subdivision, provided that at least 75 percent of the space is usable, undeveloped, open space.

The *Urban Residential* Future Land Use category includes mostly single-family housing with some smaller multi-family complexes. Homes are generally on smaller lots, and it is intended that homes could be interspersed with neighborhood offices or businesses, churches, and parks, especially near main intersections or shopping areas.





8.3 RELATIONSHIP BETWEEN ZONING AND FUTURE LAND USE

The Land Use Map is a graphic representation of how land in the Township is planned to be used. The future land use map is a general description of where and what intent the zoning should have in the future. This map and the descriptions listed above make up the Future Land Use Plan for the Charter Township of Marquette. This Future Land Use Plan will serve as a guide for making decisions on the rezoning of land.

8.4 ZONING DISTRICTS AND ZONING PLAN

Marquette Township is currently divided into seven zoning districts. The Township is also working on adding two districts; these proposed districts are discussed in this section. The intent and purpose of each district is discussed in this section. The permitted and conditional uses within each district are discussed in *Article XIV, Principal Uses Permitted in Districts Section 14.05* of the *Charter Township of Marquette Zoning Ordinance*. A schedule of district regulations is included in *Article XVIII, Section 18.13 through Section 18.19* of the *Charter Township of Marquette Zoning Ordinance*.

8.5 CURRENT ZONING DISTRICTS

Rural Residential District (RR)

The Rural Residential District is established to provide low-density, limited growth, residential areas. It is designed to accommodate residential development for those who desire low-density environments in somewhat remote locations and are willing to assume the costs of providing individual private utility systems and amenities. This District is established to protect and preserve the existing character of those areas within the Township which are presently rural in nature and contain scattered residential developments or other low-intensity uses. This District is generally characterized by lack of public sewer, water, and a well-developed road circulation system. It is the intent of the Township to concentrate its infrastructural resources in areas where more intense development is planned; existing developments within this District are likely to remain without public service facilities indefinitely.

Urban Residential District (UR)

The Urban Residential District is established to provide higher density areas for single family housing developments and is intended to grow at a moderate intensity with an urban residential character. It is intended that this District be serviced with all of the facilities for urban living including community sanitary sewers and water supply systems. This District is generally located where a full range of public utilities are existing or may soon be provided to compliment and encourage development of this intensity.

Development District (DD)

The Development District is intended to accommodate future growth in specifically designated areas within the Township where planning studies and future land use maps have indicated, where infrastructure already exists, or where it would be most likely to occur. The location of this district will most naturally occur between the General Business District areas and Residential area within the Township. It is designated to be a flexible, Transitional Growth District where a variety of mixed Land Uses, including Commercial, Office and Residential, could compatibly co-exist. This District is intended to function primarily as a transitional zone located between the more intensive existing land uses and land uses

exhibiting minimal impact or intensity, such as are inherent in a Residential District. The Land Use Intensities within this transition district will be controlled utilizing the Minimum Performance Standards as required for each proposed development to be located within the District. Excluded from this District are high intensity Land Uses which are best located in the more intense zoning districts within the Township.

General Business District (GB)

The General Business District is intended to serve as a focal point for the commercial needs of the highest density population areas of the Charter Township of Marquette and the surrounding areas. The General Business District shall be served by existing or planned public utilities capable of supporting intense development. The standards prescribed for the District are designed to optimize utilization of existing infrastructure. The minimum performance standards are intended to assure compatibility of land uses within the General Business District, as well as neighboring areas. Excluded are uses that require segregation due to environmental and/or health considerations not easily controlled by the application of minimum standards for performance.

Segregated Business District (SB)

The Segregated Business District is intended to accommodate industrial uses which must be segregated because of the inherent nuisance impacts which cannot be made compatible with other uses through the application of minimum performance standards. The creation of the Segregated Business District recognizes the potential for public nuisance, infrastructure, and operational incompatibilities between permitted uses and those of other districts. Accordingly, the standards for this District are designed to accommodate intensive industrial uses having potentially severe adverse impacts. This District should be linked to locations with appropriate environmental characteristics and existing or planned industrial facilities. Standards of performances shall assure that nuisances caused by land uses within the Segregated Business District will have minimal impact on adjacent areas. The locational requirements of intensive use districts shall be recognized as a "Segregated Business District" and be discouraged from being utilized for any type of less intensive uses.

When the opportunity arises, it is recommended changing the name of this district from Segregated Business District to Industrial District. This name change will provide a better understanding of the permitted uses in this district.

Resource Production District (RP)

The Resource Production District is intended to promote the most appropriate social, economic, and environmental utilization of land in the Charter Township of Marquette. This District is intended to provide for a variety of different uses which are resource based. Differences in land uses within the District shall be assured of compatibility by developmental standards required for each land use within the District. The minimum performance standards are intended to provide flexible utilization of the Township's natural resources while preventing nuisance situations from arising.

A large portion of Marquette Township is forest land devoted to timber harvest and natural resource production. Under the current ordinance, this District allows single family residential development on one (1) acre lots as a special use, with a requirement that the lots front a county road.

Small lots fragment large tracts of land, increase demand for more public services in often remote areas, and will impact both resource production and recreational use of the property.

It is recommended this provision be changed in the Resource Production District to allow residential development on five (5) acre lots as a special use only when done as a subdivision development or a conservation subdivision and the property has frontage or access to an all-season county road. Overall density will remain low, the residential parcels will be clustered, and impacts reduced.

Forest Recreation District (FR)

The Forest Recreation District is designed to promote the use of wooded and rural areas of the Township in a manner that will retain the basic attractiveness of the natural resources and provide enjoyment for both visitors and residents of the area. Township services such as snow plowing, school bus pick-up and garbage collection may not be provided depending on the exact location. The minimum lot size is five acres with a front yard and rear yard setback of 50 feet and the total of the two side yard setbacks of 25 feet. Land use may include fish hatcheries, commercial forest production, non-commercial forest production, saw mills, firewood sales, logging/contractor operations, emergency service centers, motorized trails, non-motorized trails, arboretums, boat landings, outdoor ice skating rinks, park and playgrounds.

Scenic Residential District (SR)

The Scenic Rural District is established to preserve and protect large tracts of land in the Township and to provide for very low density residential development located on private roads. The minimum lot size is five acres with smaller lots available by way of Special Use. The minimum lot size is five acres with a front yard and rear yard setback of 50 feet and the total of the two side yard setbacks of 25 feet. Land use may include Single-family Residences, Bed and Breakfasts, Rental-Dwellings, Nature Areas/ Open Space, Ski Areas, Campgrounds, Tennis Courts, Schools, Churches and Emergency Service Centers.



8.6 CLIMATE RESILIENCY & FUTURE LAND USE

Climate Resiliency in planning and development helps to ensure the prosperity, livability, equity, and sustainability of a community for future generations. Resiliency planning focuses on all aspects of community, ensuring the economy, the environment, and social/living conditions are vibrant and upheld through adversity. Marquette Township recognizes the interdependencies among physical and social vulnerabilities and wishes to mitigate the extent to which climate change may influence land-use patterns. Township Officials see opportunity within future land-use categories, as presented in this plan, that promote solutions that address these climate impacts while also benefiting community health. The overarching climate drivers that require Township attention through land-use planning are; Air Quality, Emergency Response & Extreme Events, and Water Related concerns.

Air Quality

Increasing average annual temperatures and shifting seasonal precipitation patterns that have at times led to drought conditions can lead to intensified wildfires, poorer air quality, and increased pollen counts. This can impact health by causing or exacerbating respiratory illnesses as well as mental health and stress consequences. In order to reduce the impacts of air pollutants it is necessary to maintain heavily forested areas such as *Forest Recreation* and *Resource Production* land use categories assist in the absorption of Local Air Pollutants.

Emergency Response & Extreme Events

Extreme weather events and wildfires seen with climate change coupled with insufficient infrastructure, inadequate transportation networks, isolated residents, and other challenges can lead to increased health dangers in the community, such as injury, respiratory illnesses, cold-related illness, and mental health consequences. Remote areas in the outer reaches of Marquette Township are vulnerable to the impacts of reduced emergency response. As such, it is necessary to limit residential land uses that promote high-intensity development in these areas.

Water Related Concerns

Increased extreme rain events as well as increased drought conditions and lasting increased temperatures seen with climate change that can lead to intensified flooding, road closures, mold, contaminated water, and intensified wildfires, among other dangers. For example, Marquette Township shoreline residences are especially susceptible to flooding and the erosion as a result of wave action from Lake Superior. The *Scenic Residential & Rural Residential* Future Land Use categories adjacent to Lake Superior are intended to provide low-density, limited areas of residential growth. Maintaining low density residential Land Uses along Lake Superior mitigates residential vulnerability along Lake Superior.

As these Resiliency Planning concepts and solutions continue to develop, Marquette Township wishes to utilize them where and when feasible within the realm of Future Land Use Planning.

CHAPTER NINE | PLAN IMPLEMENTATION & ADOPTION

9.1 INTRODUCTION

The Township aims to carry out the goals and objectives of this Master Plan. The Township Board, Planning Commission and staff will continue to monitor the outcomes of the plan and will propose changes as they are needed and/or warranted.

This Master Plan is not a permanent document. It can be amended over time. Because Marquette Township is a growing community, it may be necessary to revise and/or update the Master Plan more regularly than every five (5) years. In order for the Master Plan to be relevant to the community, it must remain current and relevant to issues and opportunities that may arise.

9.2 PLAN REVIEW

As required by the [Michigan Planning Enabling Act, P.A. 33 of 2008](#), the draft plan was distributed to neighboring communities, county and utilities on March 5, 2020, with instructions for review and comment. A list of the entities receiving the draft plan is located below.

9.3 PUBLIC HEARING AND ADOPTION

The Public Hearing notice for adoption was published in the Mining Journal on June 4, 2020. The Township Planning Commission held a duly called Public Hearing on June 24, 2020. Following the Public Hearing, the Planning Commission adopted the *Charter Township of Marquette Master Plan | 2020-2024* by resolution on June 24, 2020. The Marquette Township Board of Trustees passed a Resolution of Concurrence at their meeting on July 7, 2020; a copy of those resolutions can be found further into this chapter.

9.4 DISTRIBUTION OF THE PLAN

Following adoption, the final plan was distributed to neighboring communities, county and utilities in the same manner as the draft plan. A list of those receiving the final plan is below.

- Powell Township
- City of Marquette
- Marquette County
- Sands Township
- Ishpeming Township
- Negaunee Township
- Northern Natural Gas Company
- Charter Communications
- SEMCO Energy Gas Company
- Marquette Board of Light and Power
- SBC
- LS&I Railroad

PLANNING COMMISSION ADOPTION RESOLUTION



MARQUETTE CHARTER TOWNSHIP

161 County Road 492
Marquette, Michigan 49855
Ph | 906.228.6220
Fx | 906.228.7337
www.marquettetownship.org

ORIGINAL

Charter Township of Marquette
Marquette County, Michigan

Planning Commission Resolution

#062420-1

At a regular meeting of the Marquette Township Planning Commission held on June 24, 2020, held virtually on Zoom, the following resolution was offered by Commission member Wiegand and supported by Commission Chairperson Springer.

A RESOLUTION ADOPTING THE UPDATED MARQUETTE TOWNSHIP MASTER PLAN | 2020-2024

WHEREAS, the Michigan Planning Enabling Act (P.A. 33 of 2008), authorizes the Planning Commission to prepare and periodically update a Master Plan for the use, development and preservation of all lands in the Township; and

WHEREAS, the Planning Commission prepared an updated Master Plan and submitted said plan to the Township Board for review and comment; and

WHEREAS, the Township Board received and reviewed the proposed Master Plan update prepared by the Planning Commission and authorized the distribution of the updated Master plan to the Notice Group entities identified in the Michigan Planning Enabling Act (P.A. 33 of 2008); and

WHEREAS, notice was provided to the Notice Group as provided in the Michigan Planning Enabling Act (P.A. 33 of 2008); and

WHEREAS, the Planning Commission held a Public Hearing on June 24, 2020 to consider the public comment received on the proposed Master Plan update, and to further review and comment on the Master Plan; and

WHEREAS, the Planning Commission finds that the proposed Master Plan update is desirable, proper, and reasonable and furthers the use, preservation, and development goals and objectives of the Township;

NOW, THEREFORE, BE IT HEREBY RESOLVED AS FOLLOWS:

1. The Marquette Charter Township Planning Commission hereby adopts the proposed Master Plan Update, including all of the chapters, figures, descriptive matters, maps and tables contained therein.
2. Distribution to Notice Group. Pursuant to MCL 125.3843, the Planning Commission approves the distribution of the adopted Master Plan update to the Notice Group.

**MARQUETTE CHARTER TOWNSHIP**

161 County Road 492
Marquette, Michigan 49855
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Fx | 906.228.7337
www.marquettetownship.org

3. Findings of Fact. The Planning Commission has made the foregoing determination based on a review of existing land uses in the Township, a review of the existing Master Plan provisions and maps, and input received from Planning Commission members and the public, as well as with the assistance of the Township's Planning & Zoning Department staff. The Planning Commission also finds that the amended Master Plan will accurately reflect and implement the Township's goals and objectives for the use, preservation, and development of lands within Marquette Charter Township.
4. Effective Date; Repeal. The amended Master Plan shall become effective on the adoption date of this resolution. The prior Master Plan is hereby repealed upon the updated Master Plan becoming effective.

Yeas: Springer, Wiegand, Heikkinen, Johnson
Nays: None
Absent/Abstain: None

RESOLUTION DECLARED ADOPTED.

CERTIFICATION

I hereby certify that the above is a true copy of a resolution adopted by the Charter Township of Marquette Planning Commission at the time, date, and place specified above; pursuant to the required statutory procedures.

Date: June 24, 2020

By:

Michael Springer
Planning Commission Chairperson

MARQUETTE TOWNSHIP BOARD CONCURRENCE RESOLUTION

**ORIGINAL****MARQUETTE CHARTER TOWNSHIP**

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 www.marquettetownship.org

Charter Township of Marquette
 Marquette County, Michigan

**RESOLUTION OF CONCURRENCE IN SUPPORT OF THE MASTER
 PLAN UPDATE | 2020-2024**

#070720-1

WHEREAS, the Michigan Planning Enabling Act (P.A. 33 of 2008), authorizes the Planning Commission to prepare and periodically update a Master Plan for the use, development and preservation of all lands in the Township; and

WHEREAS, the Planning Commission prepared an updated Master Plan and submitted said plan to the Township Board for review and comment; and

WHEREAS, the Township Board received and reviewed the proposed Master Plan update prepared by the Planning Commission and authorized the distribution of the updated Master plan to the Notice Group entities identified in the Michigan Planning Enabling Act (P.A. 33 of 2008); and

WHEREAS, notice was provided to the Notice Group as provided in the Michigan Planning Enabling Act (P.A. 33 of 2008); and

WHEREAS, the Planning Commission held a required Public Hearing on June 24, 2020 to consider the public comment received on the proposed Master Plan update, and to further review and comment on the Master Plan; and

WHEREAS, at a regular meeting of the Marquette Township Planning Commission held via teleconference utilizing Zoom software on June 24, 2020, a Master Plan Update Adoption Resolution was offered by Commission member Dave Wiegand, supported by Commission member Michael Springer and supported unanimously.

NOW, THEREFORE, BE IT HEREBY RESOLVED AS FOLLOWS:

1. The Marquette Charter Township Board of Trustees does hereby concur with the action of the Planning Commission by passing this resolution on the 7th day of July, 2020.

Yeas: Supervisor Durant, Clerk Ritari, Treasurer Johnson, Trustee LaRue, Trustee Markes, Trustee Wiegand, Trustee Everson

Nays: None

Absent/Abstain: None



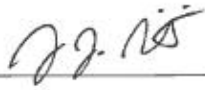
MARQUETTE CHARTER TOWNSHIP

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CERTIFICATION

I hereby certify that the above is a true copy of a resolution adopted by the Charter Township of Marquette Board of Trustees at the time, date, and place specified above; pursuant to the required statutory procedures.

Date: July 7, 2020

By: 

Randy J. Ritari, Clerk

