

# Master Plan



**A Joint Master Planning Effort by the Communities of:**

**Alpena County  
Green Township  
Ossineke Township  
Wilson Township**



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**ALPENA COUNTY, GREEN TOWNSHIP, OSSINEKE TOWNSHIP,  
AND WILSON TOWNSHIP JOINT MASTER PLAN**

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**Alpena County Adoption Date**  
**Green Township Adoption Date**  
**Ossineke Township Adoption Date**  
**Wilson Township Adoption Date**



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# Chapter 1

## Introduction & Planning Process

### **PREFACE**

The Master Plan provides a “blueprint” for future growth. This Master Plan translates the communities’ values and goals into a framework to guide decisions and development regarding growth, land use, public facilities, and services. It contains a long-range vision about how to retain economic health, conserve natural resources, meet the needs of residents and businesses, ensure an efficient transportation system, ensure compatible land uses, and promote public health, safety, and welfare.

This plan is prepared as authorized under the Michigan Planning Enabling Act (PA33 of 2008) and is used to satisfy the requirement of section 203(1) of the Michigan Zoning Enabling Act (PA110 of 2006), MCL 125.3203 for the jurisdictions of Alpena County, Green Township, Ossineke Township, and Wilson Township. This Plan also mentions the other jurisdictions within Alpena County: Alpena Charter Township, Long Rapids Township, Maple Ridge Township, Sanborn Township, the City of Alpena, and the Village of Hillman (which is partially in Alpena County). In addition to the joint Master Plan, these four jurisdictions along with Alpena Township have developed a joint Recreation Plan.

This Master Plan serves as a policy document to guide public and private users, including community groups, developers, government officials, businesses, and residents, in their land use decisions regarding development, policies, capital improvements, and future growth. It needs to be periodically evaluated and as needed, updated to reflect significant changes, development trends, and the public’s desire to change. Updating this plan as things change or goals are accomplished should not be regarded as a weakness in this plan or planning effort. A Master Plan is a “living” document that needs to be used and modified regularly.

### **RELATIONSHIP BETWEEN THE MASTER PLAN AND THE ZONING ORDINANCE**

The Master Plan is a set of policies that represent a community’s future vision and has a certain degree of flexibility for review and adjustment should conditions change over time. It carries weight when applied to specific land use decisions, but it is not considered law. The long-range goals of the Master Plan form the basis of the zoning ordinance and zoning decisions. Zoning regulates the use of the land. A zoning ordinance controls how land is used and contains the rules that govern the path to the Master Plan’s vision (it is the law). State law requires a zoning ordinance be based on an adopted Master Plan. Zoning decisions that are consistent with the Master Plan are more likely to be presumed valid if challenged in the courts.



## LOCATION AND HISTORY

### ALPENA COUNTY

Alpena County is located along Lake Huron in the northeast section of Michigan's Lower Peninsula (Figure 1-1). It is bordered by Presque Isle County to the north, Montmorency County to the west, Alcona County to the south, and Lake Huron to the east. Alpena County covers 568 square miles (363,520 acres) and is 24 miles long from north to south and varies between 20.8-30.8 miles east to west due to Lake Huron's irregular shoreline. There are several offshore islands in Lake Huron that are part of the county. The following jurisdictions are located within the planning area for this plan: the City of Alpena, and Alpena, Green, Long Rapids, Maple Ridge, Ossineke, Sanborn, Wellington and Wilson Townships. Also included in the planning area are Ossineke (census designated place), and the unincorporated places of Bolton, Cathro, Herron, Hubbard Lake, Lachine, Leer and Long Rapids.

In the mid-1830's, the first European-American settlers were attracted to the Alpena area for its commercial fishing. Since the harbor in the City of Alpena is protected by the Thunder Bay, it became a commercial fishing center. In 1857, the State Legislature organized Alpena County, which included what later became the modern counties of Montmorency, Oscoda, Alpena, and part of Presque Isle. In the 1860's, the area began to grow due to extensive logging activities. The Thunder Bay River was used to transport logs from logging sites to the sawmills and Lake Huron port in the City of Alpena.

Alpena became a transportation hub due to the extension of rail lines and its location near the Thunder Bay River and Lake Huron, which allowed logging and milling activities to continue to flourish. The great wildfire of 1871 destroyed the northern half of Alpena County and areas in Presque Isle County. The fire destroyed thousands of acres of forestlands and several people died when the settlements of Cathro, Metz, and Posen were destroyed. In 1900, the county's population was 18,254.

In the early 1900's, paper production and limestone companies were formed. In 1908, the Fletcher family built their first dam on the Thunder Bay River to generate electricity for their new paper mill. Later, they built three more hydro dams and also dammed Hubbard Lake and Fletcher's Pond to hold water for power generation. Additionally, they created Alpena Power Company, which still serves the area. These dams were sold in 1990 and are currently operated by the Thunder Bay Power Company under FERC permits.

Today, Alpena County is a hub for transportation, healthcare, education, commercial and retail services that serve Alpena and its neighboring counties.



- State or US Highway
- Alpena County
- Local Municipal Boundary



Location Map  
**Master Plan**  
 Alpena County, Michigan

Northeast Michigan Council of Governments  
[www.nemcog.org](http://www.nemcog.org)

**FIGURE 1-1 ALPENA COUNTY LOCATION MAP**

## **GREEN TOWNSHIP**

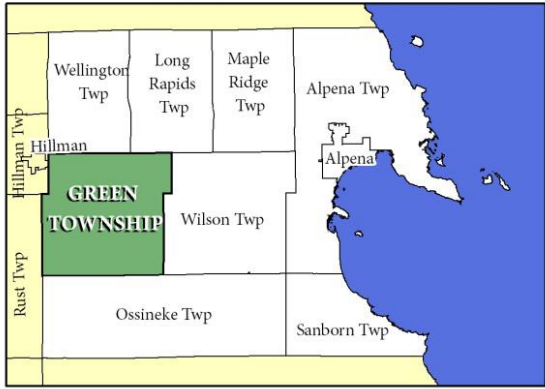
Green Township was established on April 4, 1881 along with Alpena County. The Township is organized as a general law township and is composed of approximately 81 square miles (Figure 1-2). The Township's economic and social conditions continue to be closely associated with its natural resources, which includes its forests, agricultural lands, Beaver Lake, and the Fletcher Floodwaters. In 1932, the Thunder Bay River was dammed to form Fletcher Floodwaters, which constitutes nearly 20% of the township (8,970 acres) and is well known for its extensive fishing opportunities.

Prior to European settlement, the forests were the principle land cover and provided opportunities to spur early economic development through trapping and logging. Additionally, the township's proximity to the Thunder Bay River made it accessible for loggers to supply the sawmills in the City of Alpena.

In the nineteenth century, the State and Federal governments made land available at a cheap price at the same time the demand for construction wood, railroad ties, trestles, and fuel was rapidly increasing for the expansion of communities. This event caused the township to see significant effects of human activity, which included the depletion of the township's timber supply. After the depletion of the forest resources, the land was divided into smaller tracts and used primarily for farming and recreation. In the 1950's, family farming operations focused on dairy, strawberries, and diverse crops, and was a significant part of the economy. Today, large sections of forestlands have regenerated and are periodically harvested for timber. Additionally, several large commercial farms and numerous smaller, part-time farms dominate the agricultural sector.



**Alpena County**



**Base Map**

Northeast Michigan Council of Governments  
www.nemcog.org

FIGURE 1-2 GREEN TOWNSHIP LOCATION MAP

## OSSINEKE TOWNSHIP

Ossineke Township is located in the southern portion of Alpena County and lies within T29N and R5E, R6E, and R7E (Figure 1-3). It is eighteen miles by six miles and includes three government survey townships for a total of 108 square miles. State Highway M-65 travels north-south near the township's western edge, while U.S. 23 lies three miles east of the township's eastern boundary. The City of Alpena is approximately 20 miles northeast of the township and provides more extensive services.

Ossineke Township is rural in nature and features farming in the eastern portion and large tracts of public and private recreational lands in the western portion. Year-round and seasonal residential developments are located around Beaver Lake and in the unincorporated community of Hubbard Lake. There are also limited commercial services available to residents in Hubbard Lake.

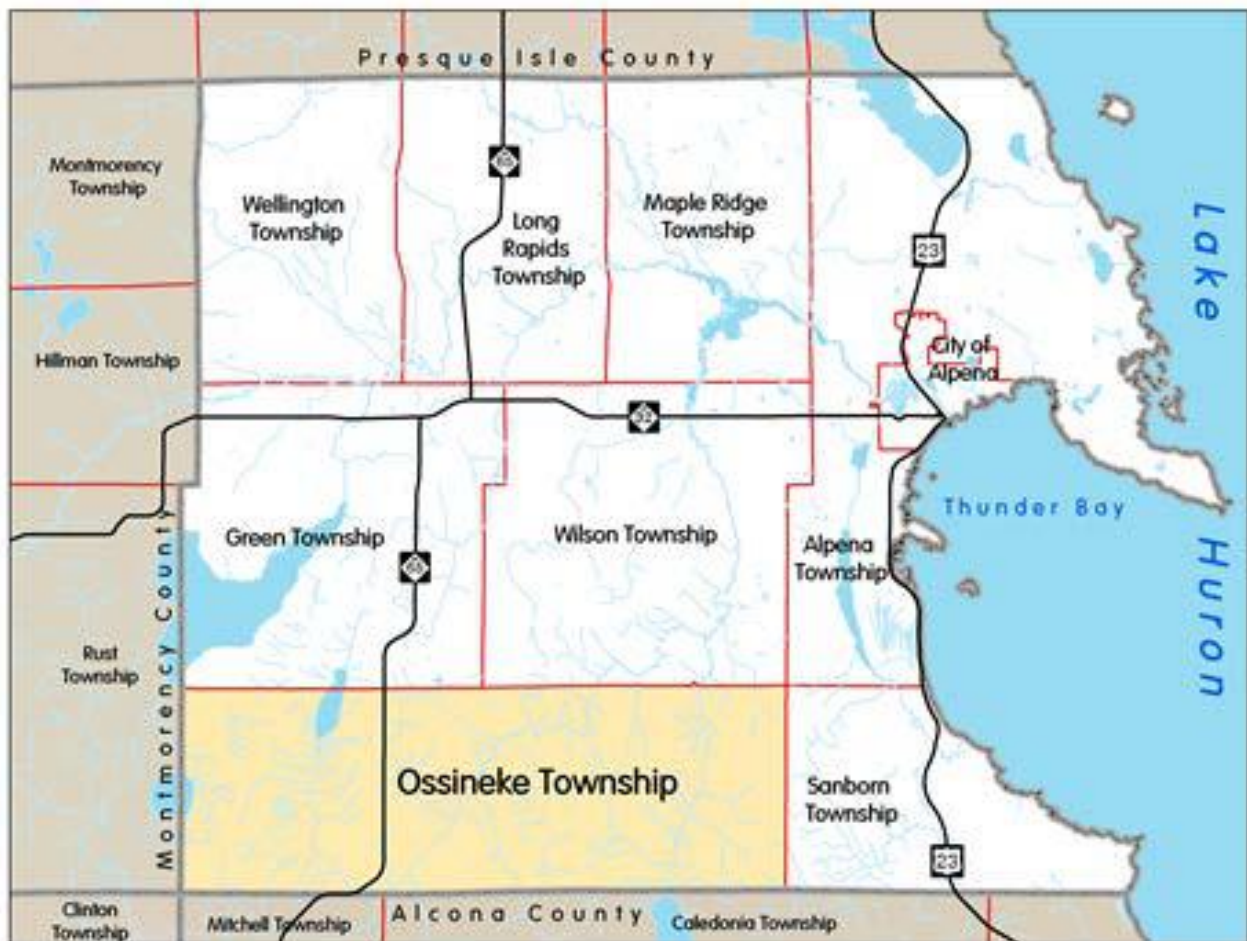


FIGURE 1-3 OSSINEKE TOWNSHIP LOCATION MAP



## WILSON TOWNSHIP

Wilson Township is centrally located in Alpena County and is bordered by Alpena, Maple Ridge, Long Rapids, Green, Ossineke, and Sanborn Townships (Figure 1-4). The township lies within T30N R6E and R7E, and T31N R6E and R7E, and encompasses 80 square miles. The township does not have any incorporated municipalities. In the northern portion of the township, M-32 connects it with the City of Alpena to the east and Green Township to the west.

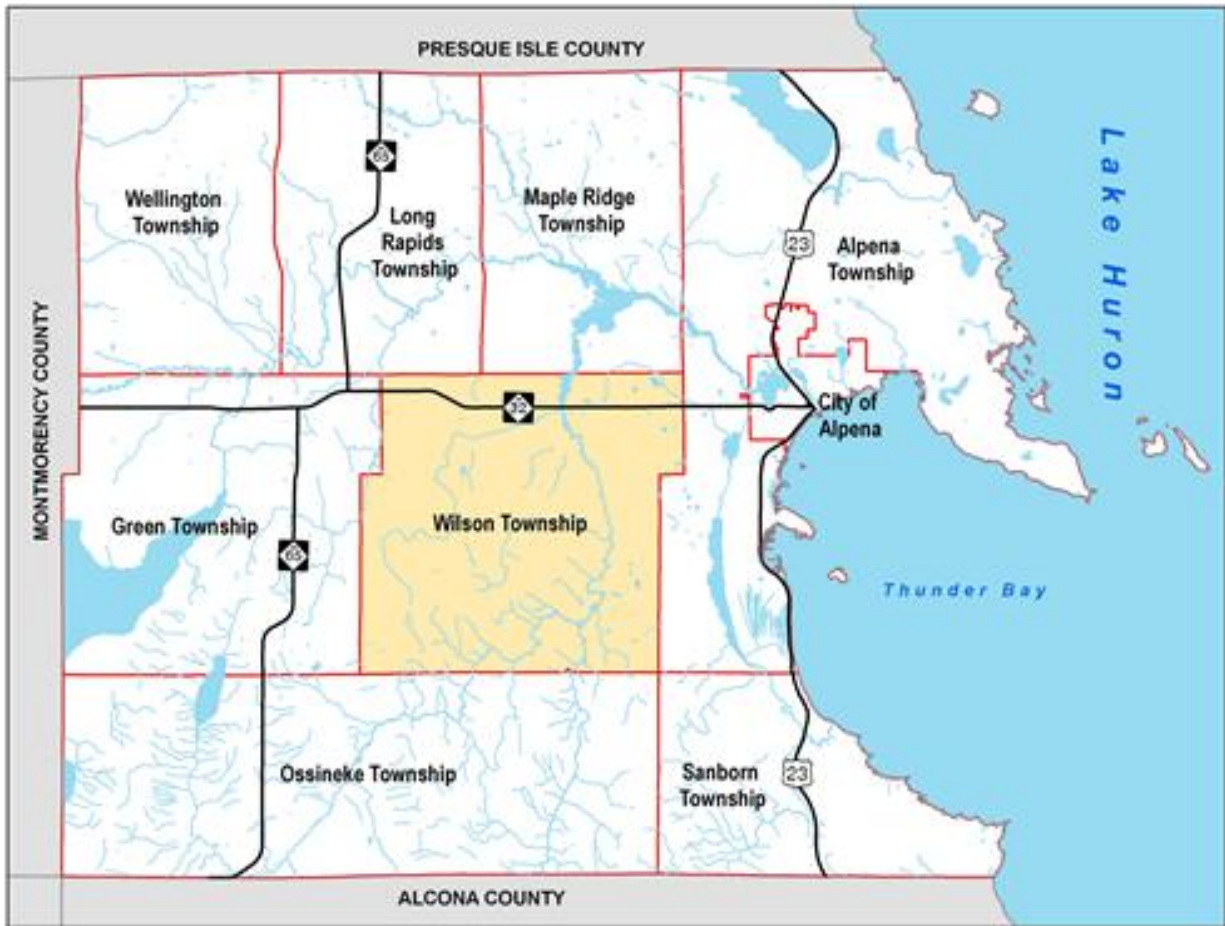


FIGURE 1-4 WILSON TOWNSHIP LOCATION MAP

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# Chapter 2

## Social and Economic Conditions

An important step in understanding the future needs of a community is to analyze its population, housing, income, education, and employment characteristics. The following chapter contains socio-economic data for Alpena County, Green Township, Ossineke Township, and Wilson Township.

### POPULATION

The 2017 American Community Survey shows Alpena County continues to be the most populated county in Northeast Michigan with a population of 28,730 (Figure 2-1). The county's population has increased by 55% since 1930 with the peak population occurring in 1980. However, the county has experienced a continual population decline with an 8.3% decline since 2000 (Table 2-1). In Northeast Michigan, Otsego County was the only county that experienced a population increase between 2000 and 2017, while Oscoda County had the greatest population decline (Figure 2-2).

Alpena County's population density is 50.2 persons per square mile; however, 66% of the population is concentrated in Alpena Township and the City of Alpena. If the land area and population of the City of Alpena and Alpena Township are excluded, the average density for the remaining seven townships is 21.3 persons per square mile.

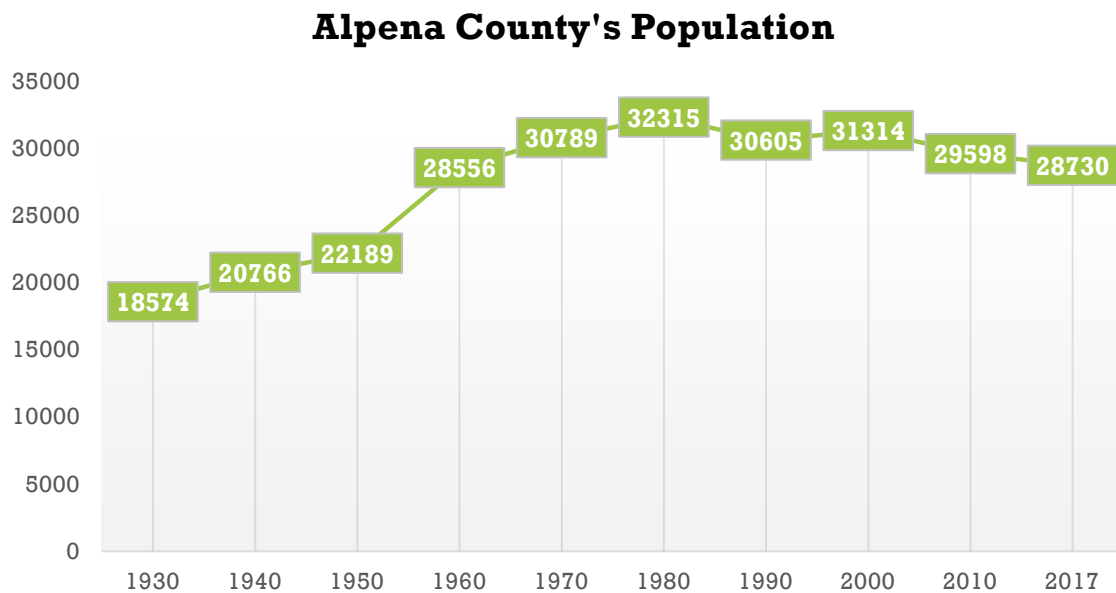
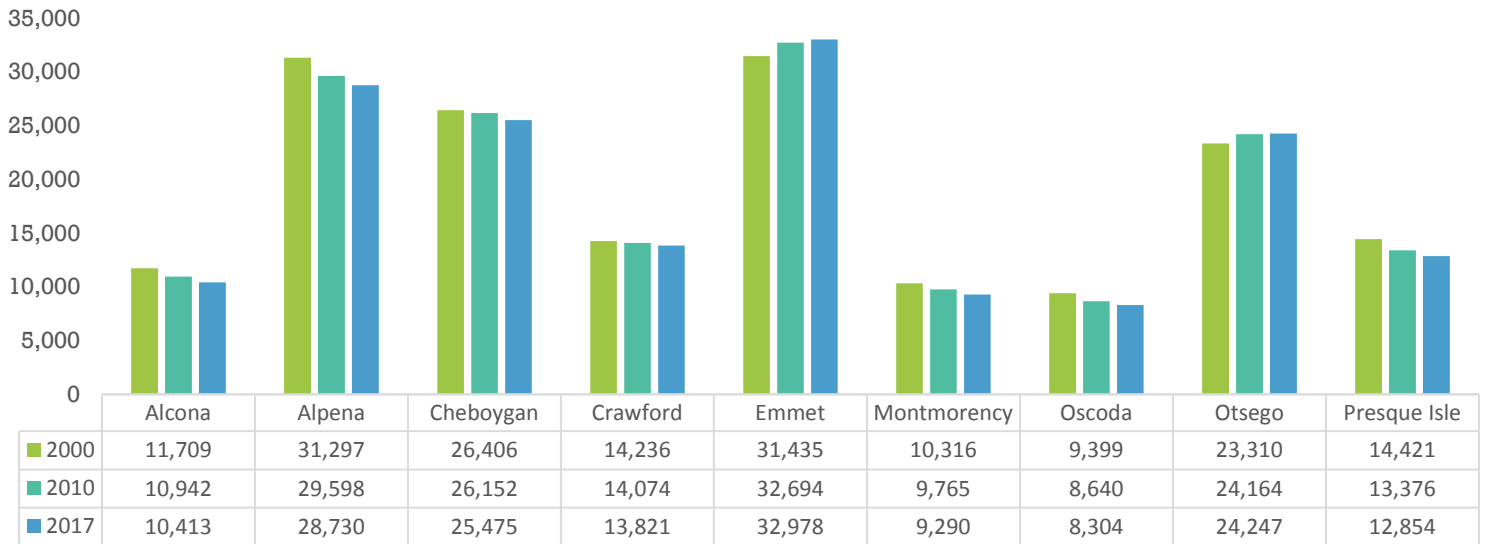


FIGURE 2-1 ALPENA COUNTY'S POPULATION SINCE 1930



## Population Comparison Between Neighboring Counties, 2000 - 2017



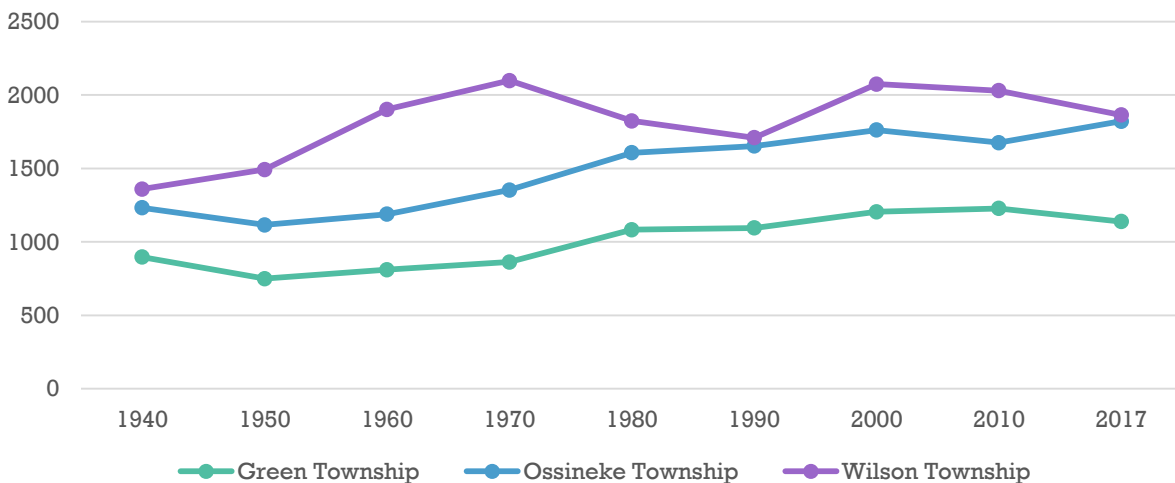
**FIGURE 2-2 POPULATION COMPARISON BETWEEN COUNTIES, 2000-2017**

The Northeast Michigan Region includes the counties of Alcona, Alpena, Cheboygan, Crawford, Montmorency, Oscoda, Otsego and Presque Isle. Emmet County is located in the Northwest Michigan Region, but is included for comparison.

Since 1940, the populations in Green, Ossineke, and Wilson Townships have increased (27.0%, 47.8%, and 37.2%, respectively) (Figure 2-3). According to the 2017 American Community Survey, Green Township’s population was 1,138, Ossineke Township’s population was 1,821, and Wilson Township’s population was 1,864 (Table 2-1). Since 2000, Green and Wilson Townships have seen population declines (5.6% and 10.1%, respectively), while Ossineke Township has seen a 3.4% population increase.

## Population Change for Green, Ossineke, and Wilson Townships, 1940-2017

Source: U.S. Census Bureau



**FIGURE 2-3 GREEN, OSSINEKE, AND WILSON TOWNSHIPS POPULATION CHANGE, 1940-2017**

Between 1980 and 2017, Green, Maple Ridge, and Ossineke Townships have experienced population gains (5.1%, 6.6%, and 13.3%, respectively), while Wilson Township experienced an 11.2% population decline (Table 2-1). Other jurisdictions in Alpena County that have experienced population declines during this time frame include the City of Alpena (-17.1%), Alpena Township (-13.0%), Sanborn Township (-11.7%), Wellington Township (-10.4%), and Long Rapids Township (-1.7%). Compared to all of the jurisdictions in Alpena County, Ossineke Township experienced the largest population gain during the last 38 years.

**TABLE 2-1 POPULATION FOR ALPENA COUNTY AND ITS MUNICIPALITIES, 1980-2017**

Municipality	1980 Pop.	1990 Pop.	Percent Change '80-'90	2000 Pop.	Percent Change '90-'00	2010 Pop.	2017 Pop.	Percent Change '00 – '17	Percent Change '80 – '17
Alpena Township	10,152	9,602	-5.4%	9,788	1.9%	9,060	8,834	-9.7%	-13.0%
Green Township	1,083	1,095	1.1%	1,205	10.0%	1,228	1,138	-5.6%	5.1%
Long Rapids Township	1,006	1,021	1.5%	1,019	-0.2%	1,010	989	-2.9%	-1.7%
Maple Ridge Township	1,572	1,514	-3.7%	1,715	13.3%	1,690	1,676	-2.3%	6.6%
Ossineke Township	1,607	1,654	2.8%	1,761	6.5%	1,675	1,821	3.4%	13.3%
Sanborn Township	2,297	2,196	-4.4%	2,152	-2.0%	2,116	2,029	-5.7%	-11.7%
Wellington Township	286	269	-5.9%	296	10.0%	307	256	-13.5%	-10.4%
Wilson Township	2,098	1,902	-9.3%	2,074	9.0%	2,029	1,864	-10.1%	-11.2%
City of Alpena	12,214	11,354	-7.0%	11,304	-0.4%	10,483	10,123	-10.4%	-17.1%
<b>Alpena County</b>	<b>32,315</b>	<b>30,605</b>	<b>-5.3%</b>	<b>31,314</b>	<b>2.3%</b>	<b>29,598</b>	<b>28,730</b>	<b>-8.3%</b>	<b>-11.1%</b>

Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates

**SEASONAL POPULATION**

The 2017 American Community Survey reported 2,073 seasonal, recreational, or occasional use housing units in Alpena County (12.9% of the total housing units), which is much less than the surrounding counties. Additionally, the 2017 American Community Survey reported Green Township has 340 seasonal, recreational, or occasional use housing units (38.8% of the total housing units), Ossineke Township has 340 seasonal, recreational, or occasional use housing units (31.7% of the total housing units), and Wilson Township has 120 seasonal, recreational, or occasional use housing units (11.9% of the total housing units).

An approximate estimate for the number of seasonal residents can be determined by multiplying the number of seasonal, recreational, or occasional use housing units by the average household size. However, this figure does not include seasonal visitors or tourists who stay in area motels,

campgrounds, etc. The seasonal population estimate for Alpena County would be about 4,561 persons, which would increase the county’s population from 28,730 to 33,291 persons (15.9% population increase). Green Township’s seasonal population estimate would be about 782 persons, which is a 68.7% population increase (1,138 to 1,920 persons). Ossineke Township’s seasonal population estimate would be about 925 persons, which is a 50.8% population increase (1,821 to 2,746 persons). Wilson Township’s seasonal population estimate would be about 257 persons, which is a 13.8% population increase (1,864 to 2,121 persons).

**NET MIGRATION**

The U.S. Census estimates the movement of people from one county to another across the nation. The Census County-to-County Migration Flows for 2012-2016 from the American Community Survey reports a net outmigration of 229 persons from Alpena County. During this same time frame, Alpena County’s population estimates show a net decrease of 516 people.

**RACE AND ETHNIC COMPOSITION**

Over the last seventeen years, the majority of Alpena County’s population identifies as white (Table 2-2). The county’s non-white populations have slightly increased in numbers between 2000 and 2017. The most significant increase was seen in the African American or Black population with a 120.8% increase. The populations for Asian (38.8%), American Indian and Alaska Native (4.9%), and Hispanic or Latino Origin (105.5%) have also increased during this time frame.

Excluding the “Two or More Races” category, Hispanic or Latino Origin was the largest minority group consisting of 1.3% of the population, followed by the African American or Black, Asian, and American Indian and Alaskan Native populations at 0.6%, 0.4%, and 0.4%, respectively. Persons included in the “Two or More Races” category made up 1.4% of the county’s population.

<b>TABLE 2-2 ALPENA COUNTY'S POPULATION BY RACE AND HISPANIC ORIGIN, 2000-2017</b>						
<b>Race and Ethnic Composition</b>	<b>2000</b>		<b>2010</b>		<b>2017</b>	
	<b>Number</b>	<b>Percent of Total Population</b>	<b>Number</b>	<b>Percent of Total Population</b>	<b>Number</b>	<b>Percent of Total Population</b>
White	30,753	98.9%	28,845	97.5%	27,816	96.8%
Black or African American	77	0.2%	79	0.3%	170	0.6%
American Indian & Alaska Native	123	0.4%	156	0.5%	129	0.4%
Asian	103	0.3%	152	0.5%	143	0.4%
Two or More Races*	218	0.7%	311	1.0%	421	1.4%
Hispanic or Latino Origin**	181	0.6%	304	1.0%	372	1.3%

\*2010 Census gave respondents the opportunity to choose more than one race category.  
 \*\*Persons of Hispanic or Latino Origin may be of any race.  
 Source: 2000 and 2010 U.S. Census, 2017 American Community Survey 5-Year Estimates

Additionally, the majority of Green, Ossineke, and Wilson Townships’ populations identify as white. Since 2010, Green Township has seen a small increase in the Black or African American population (0% to 0.2%) and in the two or more races population (0.6% to 1.2%). The township has also seen a decrease

in its white (98.9% to 98.4%), and American Indian and Alaska Native populations (0.5% to 0%). Ossineke Township has seen a small increase in its White (97.0% to 97.5%), Black or African American (0.1% to 0.5%), and American Indian and Alaska Native populations (0% to 0.8%) since 2010, while it has seen a slight decrease in its Asian (0.7% to 0.6%) and two or more races populations (1.8% to 0.9%). In 2010, Wilson Township’s population identified as 100% White. Since then, the township has become more diverse with an increase in its American Indian and Alaska Native (0% to 0.2%) and two or more races populations (0% to 1.2%).

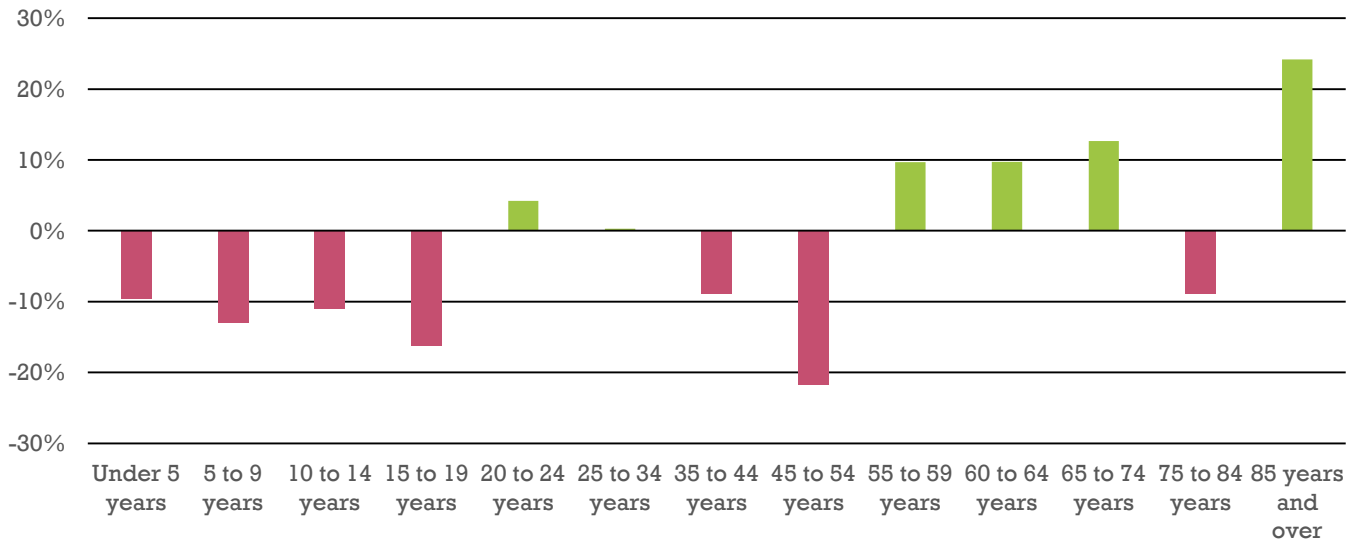
**AGE DISTRIBUTION**

The 2017 American Community Survey shows 52.7% of Alpena County’s population and 43.5% of the State of Michigan’s population was 45 years or older (Table 2-3). The 45-64 age group is the most populous in all of the municipalities except for Wellington Township, where the 65 and older age group is the most populous. Since 2012, Alpena County has seen an increase in its 20-34 age groups, 55-74 age groups, and 85 years and older age group. Figure 2-4 shows the older age groups are increasing at a faster rate than the 20-34 age groups. In the county as a whole, the 65 and older age group slightly exceeds the 25-44 age group as a percentage of the total population (Table 2-3).

Since 2011, Green Township has seen an increase in its 5-19 age groups, 35-44 age group, 55-64 age groups, and 85 and older age group (Figure 2-5). Despite the increase in these groups, the overall population has declined. Ossineke Township has seen an increase in its under 5 age group, 15-34 age groups, and 60 and older age groups since 2011, while the overall population has slightly declined (Figure 2-5). Wilson Township has seen an increase in its 20-24 age group, 45-64 age groups, and 75 and older age groups as well as an increase in its overall population (Figure 2-5). Figure 2-6 provides the percent of the total population that is in each age group for the county and townships. Figure 2-7 displays the age distribution for Alpena County, its municipalities, and the State of Michigan.

**Alpena County Population  
Percent Change by Age Group, 2012 - 2017**

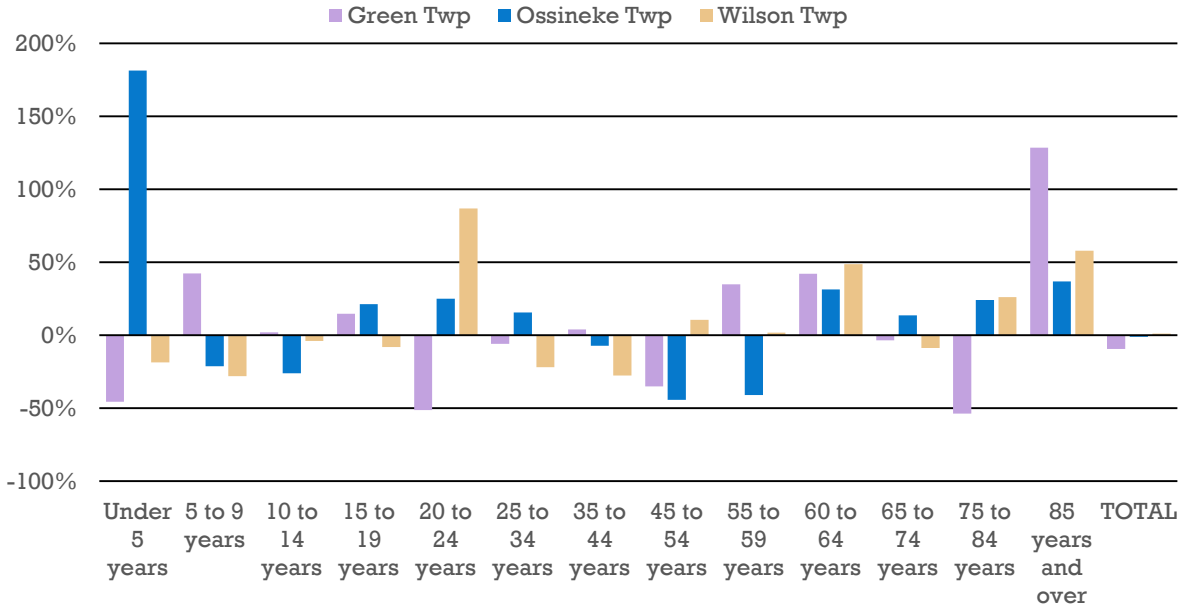
Source: U.S. Census, 2012 and 2017 ACS



**FIGURE 2-4 ALPENA COUNTY’S POPULATION CHANGE, 2012-2017**

## Green, Ossineke, Wilson Townships Population Percent Change, 2011-2017

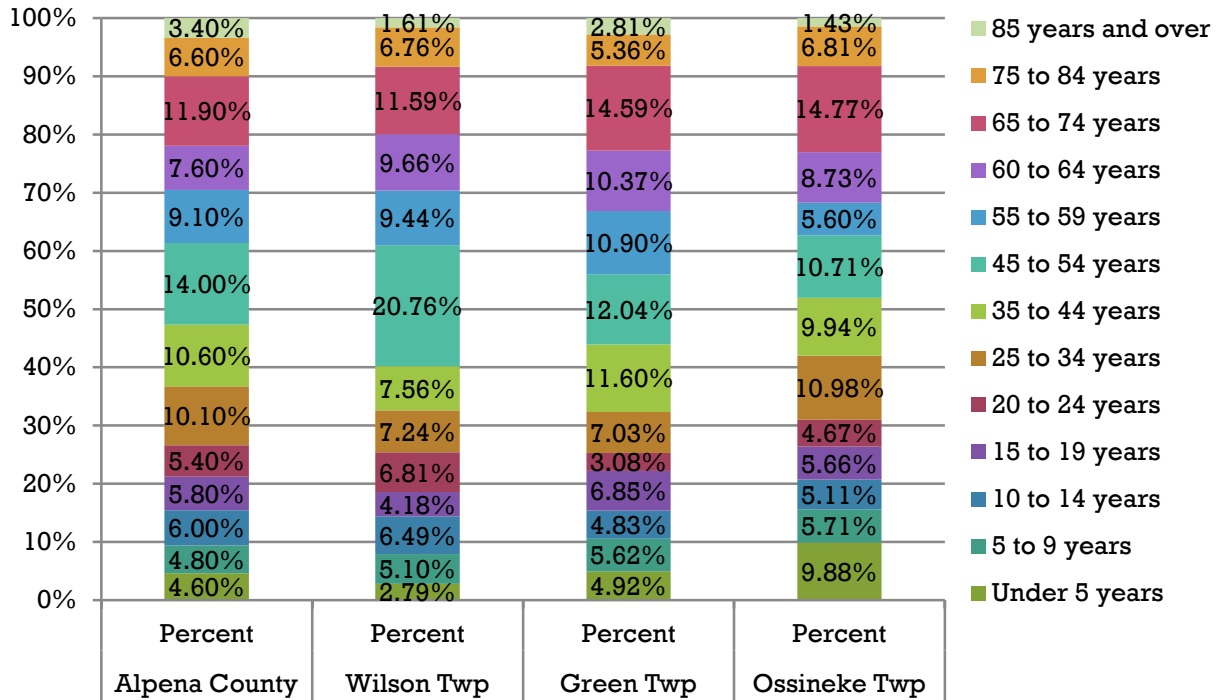
Source: U.S. Census 2007-2011, 2013-2017 American Community Surveys



**FIGURE 2-5 GREEN, OSSINEKE, AND WILSON TOWNSHIP POPULATION CHANGE, 2011-2017**

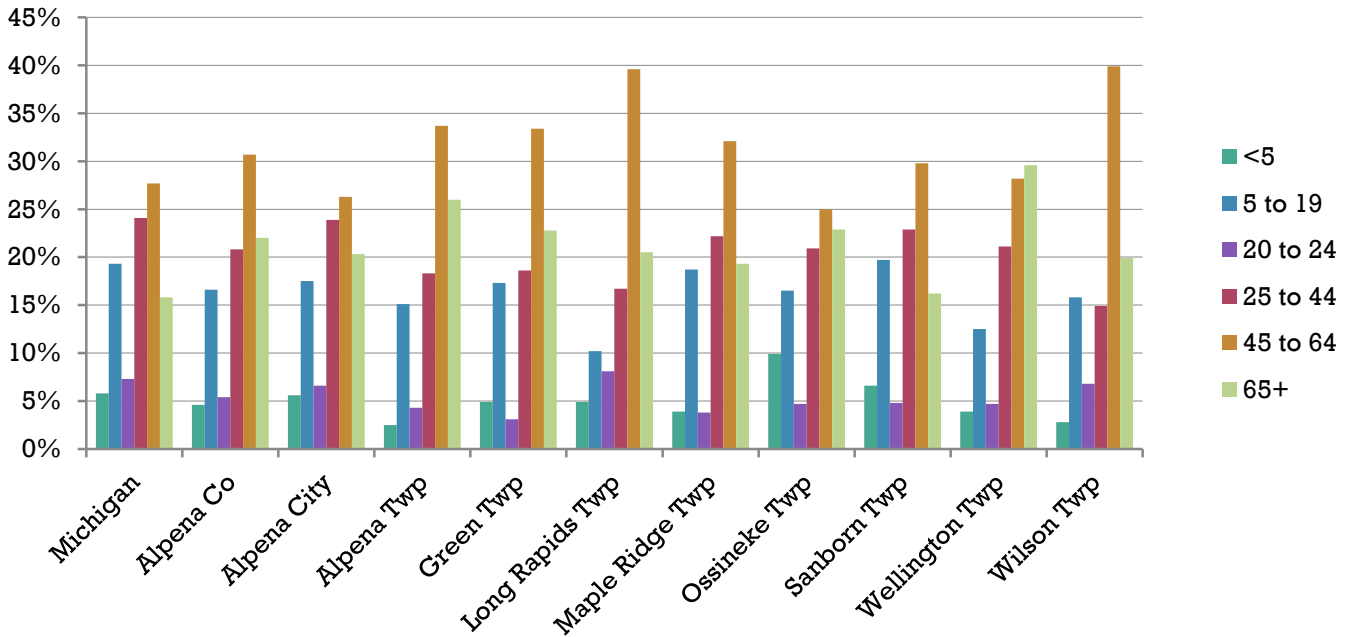
## Age as Percent of Total Population

Source: US Census Bureau, 2013-2017 American Community Survey 5-year Estimates



**FIGURE 2-6 AGE GROUPS AS A PERCENT OF THE TOTAL POPULATION**

## Age Distribution - 2017



**FIGURE 2-7 AGE DISTRIBUTION 2017**

The median age of residents in Alpena County has been increasing since 2000. According to the U.S. Census, the median age has increased from 40.4 years in 2000 to 44.7 years in 2010 to 47.6 years in 2017. Table 2-3 illustrates the age groups and median ages for the county, municipalities, and the State of Michigan. The table shows Alpena Township has the highest median age in the county, while the City of Alpena has the lowest. Compared to the State’s median age of 39.6 years, Alpena County and each of its jurisdictions have higher median ages.

Since 2000, Green Township has seen an increase in the median age of its residents. In 2000, the median age was 42.1 years. It increased to 48.9 years in 2010 and to 49.3 years in 2017. Compared to the 2017 county (47.6 years) and State median ages (39.6 years), the township’s median age is higher (Table 2-3).

Ossineke Township has seen a fluctuation in the median age of its residents. In 2000, the median age was 40.5 years and it increased to 47.1 years in 2010. In 2017, the median age decreased to 42.9 years. Compared to the 2017 county (47.6 years) and State median ages (39.6 years), Ossineke Township’s median age is lower than the county, but higher than the State (Table 2-3).

Wilson Township has seen an increase in the median age of its residents since 2000. The median age increased from 39.1 years in 2000 to 47.9 years in 2010 to 49.3 years in 2017. The township’s 2017 median age is higher than the county (47.6 years) and State (39.6 years) (Table 2-3).

**TABLE 2-3 AGE DISTRIBUTION-2017**

<b>Jurisdictions</b>	<b>&lt; 5 Yrs.</b>	<b>%*</b>	<b>5-19 Yrs.</b>	<b>%*</b>	<b>20-24 Yrs.</b>	<b>%*</b>	<b>25-44 Yrs.</b>	<b>%*</b>	<b>45-64 Yrs.</b>	<b>%*</b>	<b>65 Yrs. &amp; &gt;</b>	<b>%*</b>	<b>Median Age</b>
Alpena Township	219	2.5	1,344	15.1	382	4.3	1,625	18.3	2,973	33.7	2,291	26.0	52.4
Green Township	56	4.9	197	17.3	35	3.1	212	18.6	379	33.4	259	22.8	49.3
Long Rapids Township	48	4.9	101	10.2	80	8.1	165	16.7	392	39.6	203	20.5	51.7
Maple Ridge Township	66	3.9	313	18.7	63	3.8	371	22.2	538	32.1	325	19.3	46.1
Ossineke Township	180	9.9	300	16.5	85	4.7	381	20.9	456	25.0	419	22.9	42.9
Sanborn Township	133	6.6	400	19.7	98	4.8	464	22.9	605	29.8	329	16.2	42.5
Wellington Township	10	3.9	32	12.5	12	4.7	54	21.1	72	28.2	76	29.6	52.1
Wilson Township	52	2.8	294	15.8	127	6.8	276	14.9	743	39.9	372	19.9	49.3
City of Alpena	565	5.6	1,767	17.5	666	6.6	2,413	23.9	2,660	26.3	2,052	20.3	42.1
Alpena County	1,329	4.6	4,748	16.6	1,548	5.4	5,961	20.8	8,818	30.7	6,326	22.0	47.6
Michigan		5.8		19.3		7.3		24.1		27.7		15.8	39.6

Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates  
 \*Figure shows the percentage each age group represents out of the local unit's total population.

## DISABILITY STATUS

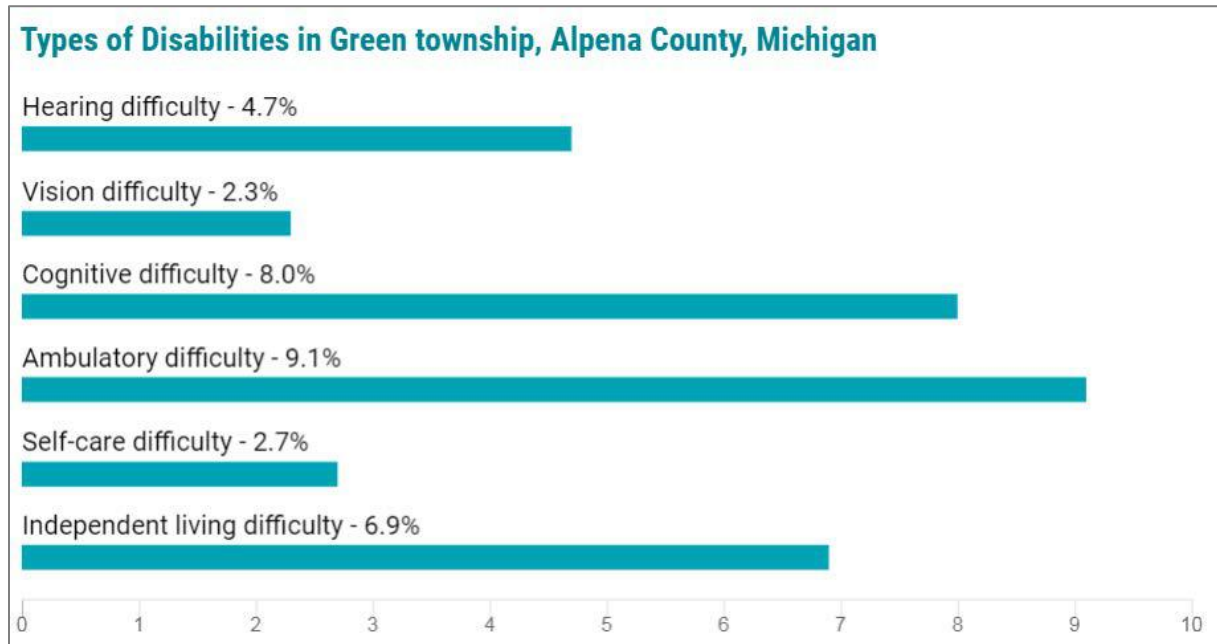
The American Community Survey estimates the data related to disabled status and is based on a self-reporting sample. Persons with disabilities include those with a hearing difficulty, a vision difficulty, a cognitive difficulty, an ambulatory difficulty, a self-care difficulty, and an independent living difficulty. In 2017, Alpena County had an estimate of 5,340 people who reported having a disability, which is an estimate of 18.8% of the total noninstitutionalized population. There were 5,221 disabilities reported by individuals between the ages of 18-64 years (Table 2-4). Ambulatory disabilities were the most common followed by cognitive disabilities. It should be noted a number of individuals reported multiple disabilities and appear in more than one category. Northeast Michigan Community Mental Health serves 1,078 individuals over the age of 26 that have a disability. Additionally, the Alpena-Montmorency-Alcona Educational Service District serves 63 individuals with disabilities aged 26 years and younger.

<b>TABLE 2-4 DISABILITY STATUS IN ALPENA COUNTY</b>	
<b>Status Type</b>	<b>Number of Persons</b>
<b>Population under 5 years with a disability</b>	<b>38</b>
With a hearing difficulty	19
With a vision difficulty	19
<b>Population 5-17 years with a disability</b>	<b>438</b>
With a hearing difficulty	15
With a vision difficulty	31
With a cognitive difficulty	288
With an ambulatory difficulty	57
With a self-care difficulty	47
<b>Population 18-64 years with a disability</b>	<b>5,221</b>
With a hearing difficulty	595
With a vision difficulty	479
With a cognitive difficulty	1,295
With an ambulatory difficulty	1,350
With a self-care difficulty	493
With an independent living difficulty	1,009
<b>Population 65+ years with a disability</b>	<b>4,983</b>
With a hearing difficulty	1,130
With a vision difficulty	427
With a cognitive difficulty	551
With an ambulatory difficulty	1,431
With a self-care difficulty	476
With an independent living difficulty	968
Source: 2017 American Community Survey 5-Year Estimates	

Within the Northeast Region of Michigan (delineated by Alcona, Alpena, Cheboygan, Crawford, Montmorency, Oscoda, Otsego, and Presque Isle Counties), approximately 20.1% of the population has a disability with the majority of disabilities in individuals 65 years and older according to the 2017 American Community Survey. The high percentage of disabilities in the region indicates a demand for disabled services.

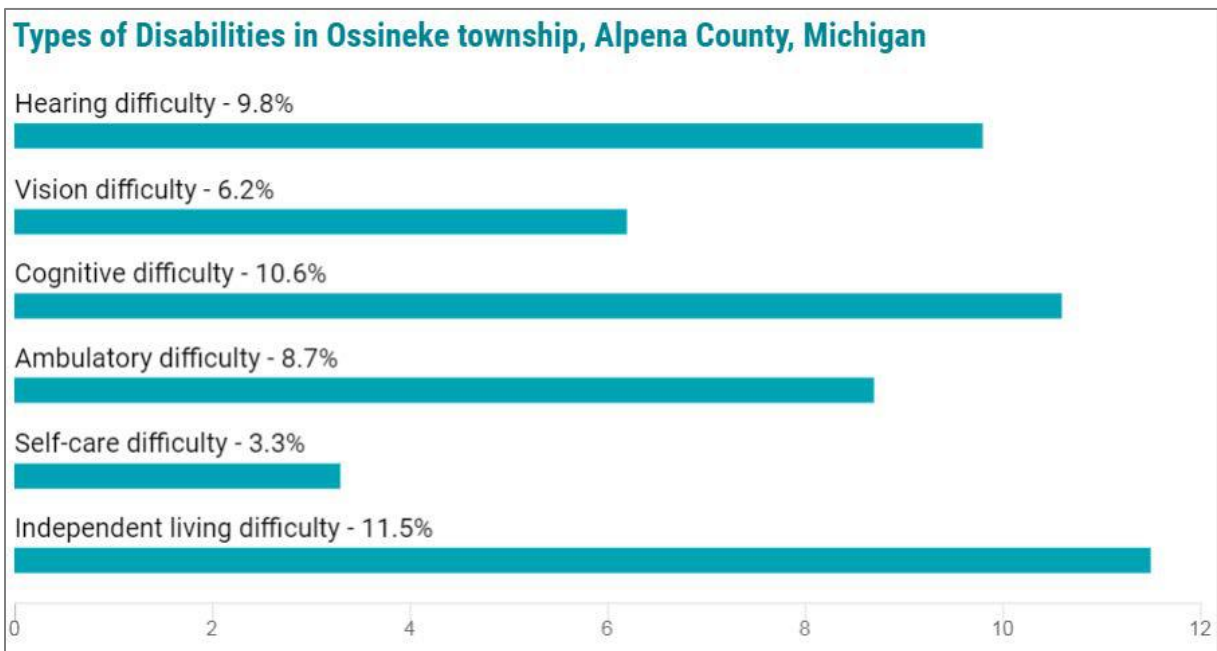


Figure 2-8 provides an indication of disabled individuals residing in Green Township. Ambulatory difficulty is the most common disability in the township followed by cognitive difficulty and independent living difficulty.



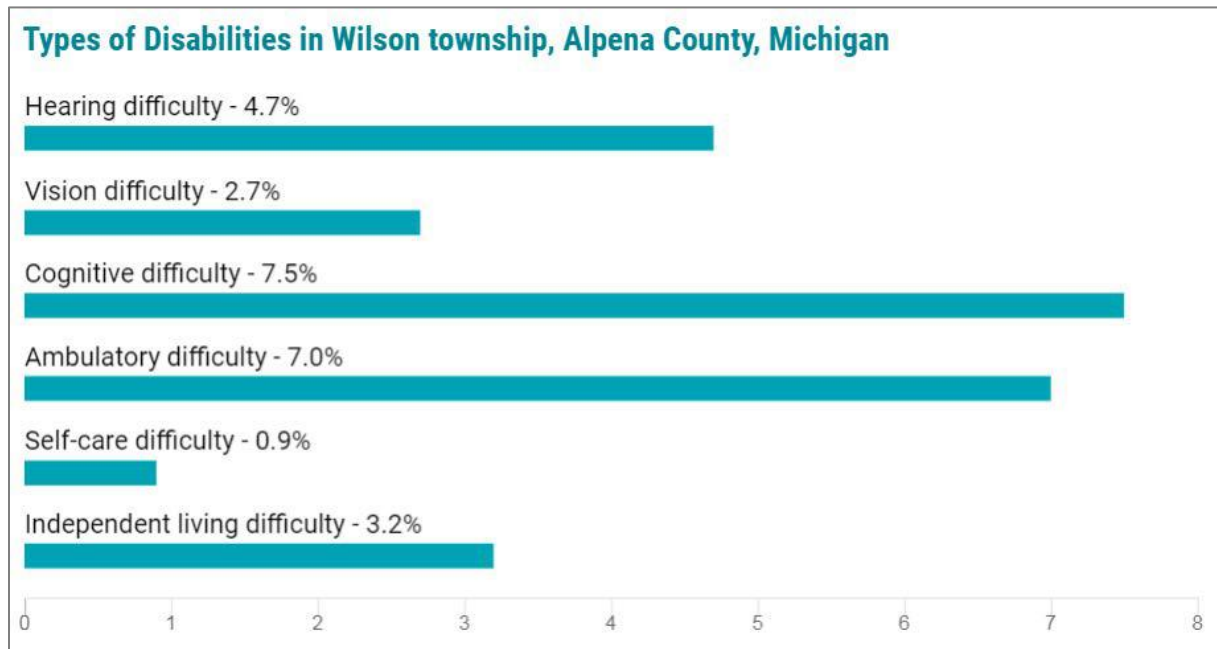
**FIGURE 2-8 GREEN TOWNSHIP DISABILITY STATUS**

Figure 2-9 provides an indication of disabled individuals residing in Ossineke Township. Independent living difficulty is the most common disability followed by cognitive difficulty, hearing difficulty, and ambulatory difficulty.



**FIGURE 2-9 OSSINEKE TOWNSHIP DISABILITY STATUS**

Figure 2-10 provides an indication of disabled individuals residing in Wilson Township. Cognitive difficulty is the most common disability followed by ambulatory difficulty.



**FIGURE 2-10 WILSON TOWNSHIP DISABILITY STATUS**

### **EDUCATIONAL ATTAINMENT**

Alpena County has seen an increase in the number of people 25 years and older who have a high school diploma or higher (Table 2-5). In 1990, 73.6% had a high school diploma or higher and in 2000, that percentage increased to 83.1%. In 2010, the percentage again increased to 87.0% and to 91.1% in 2017. According to the American Community Survey, of the 21,105 county residents 25 years and older, 33.9% were high school graduates, while 6.4% had attended school into the 9<sup>th</sup>-12<sup>th</sup> grade with no diploma and 2.6% had completed less than the 9<sup>th</sup> grade. About 26.6% had attended some college with no degree, 13.3% had Associate’s degrees, 11.1% had earned a Bachelor’s degree, and 6.2% had earned a graduate or professional degree. The percentage of residents with a Bachelor’s degree in the county (11.1%) is lower than the State (17.1%) and the United States (19.1%). Additionally, the percentage of residents with a graduate degree in Alpena County (6.2%) is a little less than half that of the State (11.0%) and the United States (11.8%).

Out of the 850 residents 25 years and older in Green Township, 39.1% were high school graduates, while 8.8% had attended school into the 9<sup>th</sup>-12<sup>th</sup> grade with no diploma and 2.7% had completed less than the 9<sup>th</sup> grade (Table 2-5). Compared to the county and state, Green Township has a higher percentage of high school graduates. About 22.4% of township residents had attended some college with no degree, 10.4% had Associate’s degrees, 11.2% had earned a Bachelor’s degree, and 5.5% had earned a graduate or professional degree. The percentage of residents with a Bachelor’s degree in the township is similar to the county and lower than the State. Additionally, the percentage of residents with a graduate degree is less than the county and the state.

In Ossineke Township, out of the 1,256 residents 25 years and older, 35.4% were high school graduates, while 10.1% had attended school into the 9<sup>th</sup>-12<sup>th</sup> grade with no diploma and 4.4% had completed less than the 9<sup>th</sup> grade (Table 2-5). Compared to the county and state, Ossineke Township has a higher percentage of high school graduates. About 26.0% of the township residents had attended some college with no degree, 13.0% had Associate’s degrees, 10.0% had earned a Bachelor’s degree, and 4.5% had earned a graduate or professional degree. The percentage of residents with a Bachelor’s degree or a graduate degree in the township is less than the county and state.

According to the American Community Survey, out of the 1,391 residents 25 years and older in Wilson Township, 33.8% were high school graduates, while 7.6% had attended school into the 9<sup>th</sup>-12<sup>th</sup> grade with no diploma and 1.2% had completed less than the 9<sup>th</sup> grade (Table 2-5). About 29.9% had attended some college with no degree, 13.0% had Associate’s degrees, 10.0% had earned a Bachelor’s degree, and 4.5% had earned a graduate or professional degree. Compared to the county and state, Wilson Township has a similar percentage of high school graduates as the county, and a higher percentage than the state. The percentage of residents with a Bachelor’s degree and graduate degree in the township is less than the county and state.

<b>Education Attainment</b>	<b>Green Township</b>	<b>Ossineke Township</b>	<b>Wilson Township</b>	<b>Alpena County</b>	<b>Michigan</b>
Population 25 years and older	850	1,256	1,391	21,105	997,075
Less than 9 <sup>th</sup> grade education	2.7%	4.4%	1.2%	2.6%	3.0%
9 <sup>th</sup> -12 <sup>th</sup> grade, no diploma	8.8%	10.1%	7.6%	6.4%	6.7%
High school graduate	39.1%	35.4%	33.8%	33.9%	29.3%
Some college, no degree	22.4%	26.0%	29.9%	26.6%	23.6%
Associate degree	10.4%	13.0%	13.0%	13.3%	9.3%
Bachelor’s degree	11.2%	8.6%	10.0%	11.1%	17.1%
Graduate or professional degree	5.5%	2.5%	4.5%	6.2%	11.0%
Percent high school graduate or higher	88.5%	85.5%	91.2%	91.0%	90.2%
Percent bachelor's degree or higher	16.7%	11.1%	14.5%	17.3%	28.1%

Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates

## **MEDIAN HOUSEHOLD INCOME**

Median household income is a reliable measure of the economic health of families. Over the past several decades, Northeast Michigan has seen a steady increase in its median household income. Unfortunately, the income levels lag behind the state (Table 2-6). Alpena County’s median household income is 77.7% of the State’s median household income and 71.0% of the national median household income.

<b>Jurisdiction</b>	<b>2017</b>
Alcona County	\$39,424
<b>Alpena County</b>	<b>\$40,954</b>
Cheboygan County	\$42,876
Crawford County	\$42,666
Montmorency County	\$39,152
Oscoda County	\$36,833
Otsego County	\$50,823
Presque Isle County	\$43,758
State of Michigan	\$52,668
United States	\$57,652

SOURCE: 2017 ACS 5-YEAR ESTIMATES

Within Alpena County, Wellington Township has the lowest median household income at \$34,375, while Green Township has a higher median household income than the county and State (\$52,734, \$40,954, and \$52,668, respectively) (Table 2-7). Ossineke and Wilson Townships' median household incomes (\$44,375 and \$48,208, respectively) are higher than the county (\$40,954), but less than the state (\$52,668).

**TABLE 2-7 MEDIAN HOUSEHOLD INCOME IN ALPENA COUNTY AND ITS JURISDICTIONS**

Jurisdiction	2017
Alpena Township	\$42,125
Green Township	\$52,734
Long Rapids Township	\$47,143
Maple Ridge Township	\$48,875
Ossineke Township	\$44,375
Sanborn Township	\$39,205
Wellington Township	\$34,375
Wilson Township	\$48,208
City of Alpena	\$37,064
Alpena County	\$40,954
State of Michigan	\$52,668
Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates	

Generally, individuals with steady, year-round employment tend to have higher overall incomes than those who are laid-off part of the year. As more retirees move into the region and the local economy becomes more reliant on service and tourism industries, the gap between the region's and State's median household incomes is expected to widen. Additionally, lower incomes may cause people to move to areas that offer higher incomes, which may create an imbalance in the labor force.

## POVERTY RATES

Information from the American Community Survey shows poverty rates based on income levels for the past 12 months in Alpena County, and Green, Ossineke, and Wilson Townships (Table 2-8). Alpena County's poverty rate for families is 9.9% and increases to 19.3% when there are children present in the families. The poverty rates for families and families with children in Green, Ossineke, and Wilson Townships are below the county rate, where Wilson Township does not have any families with children living in poverty.

**TABLE 2-8 POVERTY RATES- 2017**

Category	Green Township	Ossineke Township	Wilson Township	Alpena County
Families	4.9%	8.2%	3.8%	9.9%
All families with related children under 18	7.8%	15.0%	0.0%	19.3%
Married couple families	2.6%	3.6%	4.2%	4.7%
Married couple families with related children under 18	0.0%	3.9%	0.0%	6.5%
Female householder, no husband present	10.7%	26.8%	0.0%	31.7%
Female householder, no husband present with related children under 18	33.3%	40.5%	0.0%	46.3%
Householder 65+ years	0.0%	3.6%	4.0%	3.9%
Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates				

In Alpena County, the poverty rate for a female householder is 31.7% and increases to 46.3% when there are children under 18 years old present in the household (~789 families in Alpena County). Poverty rates in Green and Ossineke Township for female householders and female householders with children are below the county's rate. Wilson Township does not have any female householders with or without children living in poverty.

The percentage of householders 65 and older living in poverty in Alpena County has decreased from 6.9% in 2000 to 3.9% in 2017. Green Township does not have any householders 65 and older living in poverty. Ossineke Township’s poverty rate for householders 65 and older is below the county’s rate, while Wilson Township’s rate is slightly higher than the county.

## LABOR FORCE

### EMPLOYMENT AND UNEMPLOYMENT

The civilian labor force is defined as all civilian individuals over age 16 who are employed or actively seeking employment. Labor force numbers can change rather quickly in response to economic conditions. During prolonged periods of unemployment, unsuccessful job seekers can drop out of the work force by going back to school, leaving the area in search of work elsewhere, or stopping the search for work. Between 1990 and 2017, Alpena County’s civilian labor force has remained relatively stable, experiencing growth in the 1990’s, and a decline between 2000 and 2017.

Compared to the State of Michigan and the United States, unemployment rates have been historically high in Alpena County, but lower than the rates in nearby counties. Figure 2-11 shows the change in unemployment rate between 1990 and 2017 for the United States, Michigan, Northeast Michigan, and Alpena County. Between 1992 and 2000, Alpena County’s unemployment rate drastically declined. However, the rate began to climb between 2000 and 2003, when it began to fall again. Similar to the United States and Michigan, Alpena County’s economy suffered job losses as a result of the downturn in the national economy. This downturn caused extremely high unemployment rates in 2009, which have since been declining in Alpena County.

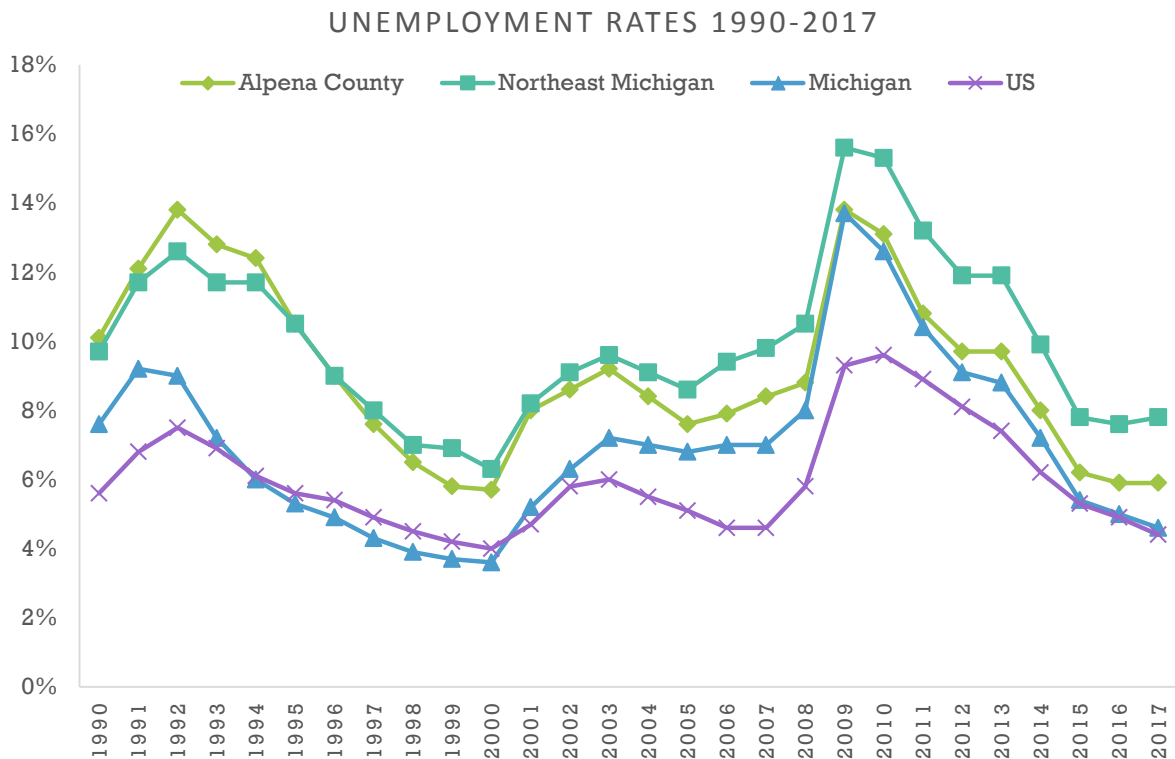


FIGURE 2-11 CHANGES IN UNEMPLOYMENT RATES, 1990-2017

## WAGE AND SALARY EMPLOYMENT

Data regarding wage and salary information was acquired from the Michigan Department of Technology, Management, and Budget, and the American Community Survey. Since each entity classifies sectors differently, comparisons were also kept separate. Table 2-9 provides information about the number of establishments, average employment number, and average weekly wage for each industry in Alpena County. The largest employment sectors in the county are local government, retail trade, manufacturing, and healthcare and social assistance according to the Michigan Department of Technology, Management, and Budget. It should be noted the Alpena Regional Medical Center is counted under the “Local Government” category. Even though retail trade has surpassed manufacturing in the number of people employed, manufacturing still remains a significant part of Alpena County’s economy. Although not reflected in the data shown, Alpena County’s economy was centered on the manufacturing industry until the mid-1980’s. Table 2-10 shows the change in employment for each industry in Alpena County between 2010 and 2017.

<b>TABLE 2-9 ESTABLISHMENTS, EMPLOYMENT AND WAGES IN ALPENA COUNTY- 2017</b>			
<b>Industry</b>	<b>Number of Establishments</b>	<b>Average Employment</b>	<b>Average Weekly Wages</b>
Agriculture, forestry, fishing & hunting	18	48	\$558
Mining	5	82	\$1,458
Utilities	3	*	*
Construction	90	498	\$765
Manufacturing	57	1,507	\$1,158
Wholesale trade	31	429	\$884
Retail trade	125	1,903	\$531
Transportation & warehousing	25	212	\$731
Information	11	141	\$689
Finance & insurance	34	347	\$883
Real Estate, rental & leasing	19	109	\$435
Professional, scientific & technical services	43	253	\$892
Administrative & waste services	28	227	\$417
Educational services	4	205	\$261
Health care & social assistance	65	1,307	\$611
Arts, entertainment, & recreation	12	90	\$297
Accommodation & food services	72	998	\$265
Other services (except public administration)	105	472	\$379
Unclassified	5	30	\$592
Federal Government	14	137	\$1,149
State Government	10	180	\$1,203
Local Government	16	2,426	\$885

Source: Michigan Department of Technology, Management and Budget Quarterly Census of Employment & Wages – 4<sup>th</sup> Quarter 2017  
\*Suppressed data

<b>TABLE 2-10 RESIDENTS' EMPLOYMENT BY INDUSTRY IN ALPENA COUNTY, 2010-2017</b>		
<b>Industry</b>	<b>2010</b>	<b>2017</b>
Agriculture, forestry, fishing and hunting, and mining	2.9%	2.9%
Construction	6.3%	5.8%
Manufacturing	11.4%	11.8%
Wholesale trade	3.5%	2.3%
Retail trade	13.6%	15.0%
Transportation and warehousing, and utilities	4.6%	4.6%
Information	2.2%	1.6%
Finance and insurance, and real estate and rental and leasing	5.1%	4.6%
Professional, scientific, and management, and administrative and waste management services	6.8%	6.0%
Educational services, and health care and social assistance	25.9%	26.8%
Arts, entertainment, and recreation, and accommodation and food services	8.7%	9.1%
Other services, except public administration	4.7%	5.5%
Public administration	4.3%	4.0%
Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates		

Green Township has seen growth in its overall economy since 2010. The largest employment sectors in the township are educational services, healthcare, and social assistance, manufacturing, agriculture, forestry, fishing and hunting, and mining, and retail trade. Table 2-11 shows educational services, healthcare, and social assistance accounts for 20.7% of the employment opportunities in Green Township. The township has seen a decline in the following industries: construction, manufacturing, educational services, healthcare, and social assistance, finance and insurance, and arts, entertainment, recreation and accommodation services. However, it has seen growth in agriculture, forestry, fishing and hunting, and mining, wholesale trade, transportation and warehousing, information, other services, and public administration.

Ossineke Township has seen a decline in its overall economy since 2010. The largest employment sectors in the township are educational services, healthcare, and social assistance, manufacturing, and retail trade. Table 2-12 shows 43.7% of the township's employment opportunities are either in the educational services, healthcare, and social assistance industry or manufacturing industry. Ossineke Township has seen a decline in agriculture, forestry, fishing and hunting, and mining, construction, wholesale trade, transportation and warehousing, finance and insurance, arts, entertainment, and recreation, and accommodations, and public administration. However, the township has seen growth in manufacturing, retail trade, professional, scientific, and management, educational services, healthcare, and social assistance, and other services, except public administration.

Wilson Township has also seen a decline in its overall economy since 2010. The largest employment sectors in the township are educational services, healthcare, and social assistance, transportation and warehousing, and utilities, and retail trade. Table 2-13 shows educational services, healthcare, and social assistance accounts for 21.0% of the employment opportunities in the township. The township has seen a decline in the following industries: agriculture, forestry, fishing and hunting, and mining,



construction, wholesale trade, retail trade, information, and educational services, healthcare, and social assistance. The township has seen growth in manufacturing, transportation and warehousing and utilities, finance and insurance, and real estate, and rental and leasing, professional, scientific and management, and administrative and waste management services, arts entertainment, recreation, and accommodation and food services, other services, and public administration.

<b>TABLE 2-11 GREEN TOWNSHIP INDUSTRY OCCUPATIONS</b>		
<b>Industry</b>	<b>2010</b>	<b>2017</b>
Agriculture, forestry, fishing and hunting, and mining	2.4%	13.5%
Construction	16.1%	5.4%
Manufacturing	16.1%	13.8%
Wholesale trade	3.8%	5.4%
Retail trade	12.7%	12.1%
Transportation and warehousing, and utilities	1.9%	8.6%
Information	0.0%	1.2%
Finance and insurance, and real estate and rental and leasing	2.2%	0.0%
Professional, scientific, and management, and administrative and waste management services	5.0%	4.2%
Educational services, and health care and social assistance	24.5%	20.7%
Arts, entertainment, and recreation, and accommodation and food services	7.9%	3.7%
Other services, except public administration	4.1%	7.2%
Public administration	3.1%	4.2%
Source: U.S. Census Bureau, 2017 American Community Survey 5 Year Estimates		

<b>TABLE 2-12 OSSINEKE TOWNSHIP INDUSTRY OCCUPATIONS</b>		
<b>Industry</b>	<b>2010</b>	<b>2017</b>
Agriculture, forestry, fishing and hunting, and mining	6.3%	6.0%
Construction	9.4%	7.6%
Manufacturing	12.4%	20.0%
Wholesale trade	3.6%	1.8%
Retail trade	12.7%	16.7%
Transportation and warehousing, and utilities	5.3%	3.2%
Information	0.5%	0.5%
Finance and insurance, and real estate and rental and leasing	4.0%	3.2%
Professional, scientific, and management, and administrative and waste management services	4.5%	5.0%
Educational services, and health care and social assistance	21.8%	23.7%
Arts, entertainment, and recreation, and accommodation and food services	9.3%	4.7%
Other services, except public administration	5.2%	6.3%
Public administration	4.9%	1.4%
Source: U.S. Census Bureau, 2017 American Community Survey 5 Year Estimates		



TABLE 2-13 WILSON TOWNSHIP INDUSTRY OCCUPATIONS		
Industry	2010	2017
Agriculture, forestry, fishing and hunting, and mining	7.3%	3.0%
Construction	11.8%	7.4%
Manufacturing	7.7%	8.5%
Wholesale trade	2.2%	1.1%
Retail trade	18.2%	10.3%
Transportation and warehousing, and utilities	2.5%	11.8%
Information	2.7%	0.8%
Finance and insurance, and real estate and rental and leasing	5.0%	8.1%
Professional, scientific, and management, and administrative and waste management services	6.5%	9.9%
Educational services, and health care and social assistance	24.8%	21.0%
Arts, entertainment, and recreation, and accommodation and food services	2.4%	6.9%
Other services, except public administration	6.2%	7.3%
Public administration	2.7%	3.9%
Source: U.S. Census Bureau, 2017 American Community Survey 5 Year Estimates		

## COMMUTING TO WORK

As shown in Table 2-14, the vast majority (82.9%) of workers in Alpena County travel to work by driving alone. About 8.4% of people carpooled, 1.2% took either public transportation or a motorcycle to work, 0.7% of people rode a bicycle to work, 2.7% of people walked, and 3.9% of people worked at home.

Additionally, about 78.5% of Green Township's residents drove alone to work and 12.7% carpooled. Approximately 78.0% of Ossineke Township's residents drove alone to work and 10.8% carpooled, and 87.7% of Wilson Township's residents drove alone and 7.3% carpooled. More people rode bicycles or walked to work in Green Township than in Ossineke or Wilson Townships. However, more people worked from home in Ossineke and Wilson Townships than in Green Township.

TABLE 2-14 WORK COMMUTE, 2017								
Mode of Transportation	Green Township		Ossineke Township		Wilson Township		Alpena County	
	#	%	#	%	#	%	#	%
Drove Alone	333	78.5%	482	78.0%	757	87.7%	10,285	82.9%
Carpooled	54	12.7%	67	10.8%	63	7.3%	1,042	8.4%
Public Transportation/Motorcycle	0	0.0%	3	0.5%	0	0.0%	149	1.2%
Bicycle	7	1.7%	0	0.0%	0	0.0%	87	0.7%
Walked	24	5.7%	20	3.2%	20	2.3%	335	2.7%
Worked at home	6	1.4%	46	7.4%	23	2.7%	484	3.9%
Source: 2017 American Community Survey 5-Year Estimates								

## HOUSING AND TRANSPORTATION COSTS OF LIVING

Costs of living can be measured in many different ways. Housing costs as a percent of income are frequently used as a benchmark. However, this does not consider the travelling costs from home to work, and for other necessities (e.g. healthcare, grocery shopping, etc.). Often, 30% of household income is the benchmark for the cost of housing. The Center for Neighborhood Technology (CNT) developed a Housing and Transportation (H+T) Index that accounts for transportation costs, a household’s second highest expenditure. Based on this index, 45% of household income is the benchmark for housing and transportation costs. Across America, only 26% of neighborhoods are considered affordable at this benchmark. Based on the H+T index, Alpena County has moderate access to jobs, is car dependent with very limited or no access to public transportation, has very low density and limited walkability, and no location efficient neighborhoods.

A location efficient neighborhood has shorter travel times and closer proximity between home and work for residents. Rural areas tend to have higher transportation costs. On average, the municipalities in Alpena County have higher transportation costs. Residents who live and work in the City of Alpena tend to have lower transportation costs. Alpena County’s housing and transportation costs account for 58% of the household income (housing costs account for 27% of household income, while transportation costs account for 32%). The county’s average annual transportation costs are \$12,255.

## HOUSING CHARACTERISTICS

Approximately 80-96% of housing units are owner-occupied in the municipalities in Alpena County, except for the City of Alpena where only 62.4% of housing units are owner-occupied (Table 2-16). Throughout the county, the number of vacant houses fluctuate depending on location with Wellington Township having the highest vacancy rate followed by Green Township. Alpena County has a relatively limited amount of seasonal housing (12.9% of its total housing units), which is much less than other counties in the Northeast Michigan where close to 40% of their housing units are seasonal. The largest percentage of seasonal housing in Alpena County are found in Green, Ossineke, and Wellington Townships, while the City of Alpena has the least amount of seasonal housing.

Information in Table 2-15 shows the year housing units were built in Alpena County. About 72.8% of the units were built prior to 1980 with 37.9% built prior to 1960. The City of

TABLE 2-15 YEAR STRUCTURE BUILT				
Year Structure Built	Green Township	Ossineke Township	Wilson Township	Alpena County
2000 or later	13.1%	7.3%	13.4%	8.2%
1990-1999	17.3%	12.0%	11.4%	8.8%
1980-1989	12.8%	15.4%	9.0%	10.2%
1960-1979	36.4%	42.1%	34.3%	34.9%
1940-1959	12.1%	10.9%	14.8%	23.4%
1939 or earlier	8.3%	12.3%	17.0%	14.5%
Source: 2000 and 2010 U.S. Census Bureau, 2017 American Community Survey				

Alpena has the largest percentage of older housing units in Alpena County with 85.7% of its housing built before 1980. Many of the city’s older houses are historic, well-kept homes; however, there are some in need of repair and renovations. According to the 2000 U.S. Census, all municipalities in Alpena County, except for the City of Alpena, had more than 50% of their housing stock built between 1940 and 1970. In Green Township, 56.8% of the housing units were constructed prior to 1980. Ossineke Township has about 65.3% of its housing units constructed prior to 1980 with 12.3% built before 1940.

Wilson Township has 66.1% of its housing units built prior to 1980 with 17.0% built before 1940. Due to the age of housing units in the county, some are in need of upgrades and renovations. Alpena County and the City of Alpena have housing rehabilitation programs to help lower income homeowners make repairs to their houses.

<b>TABLE 2-16 HOUSING CHARACTERISTICS - 2017</b>								
<b>Municipality</b>	<b>Total Housing Units</b>	<b>Total Occupied Housing Units</b>	<b>Percent of Occupied Housing Units</b>	<b>Total Vacant Housing Units</b>	<b>Percent of Vacant Housing Units</b>	<b>Total Seasonal Housing Units</b>	<b>Percent of Seasonal Housing*</b>	<b>Percent of Owner Occupied Housing</b>
Alpena Township	5,102	4,137	81.1%	965	18.9%	547	10.7%	81.1%
Green Township	877	485	55.3%	392	44.7%	340	38.8%	96.3%
Long Rapids Township	679	458	67.5%	221	32.5%	154	22.7%	95.2%
Maple Ridge Township	941	691	73.4%	250	26.6%	176	18.7%	94.2%
Ossineke Township	1,071	686	64.1%	385	35.9%	340	31.7%	88.3%
Sanborn Township	1,049	799	76.2%	250	23.8%	196	18.7%	79.3%
Wellington Township	232	116	50.0%	116	50.0%	99	42.7%	86.2%
Wilson Township	1,005	813	80.9%	192	19.1%	120	11.9%	90.0%
City of Alpena	5,075	4,604	90.7%	471	9.3%	101	2.0%	62.4%
Alpena County	16,031	12,789	79.8%	3,242	20.2%	2,073	12.9%	80.3%
Source: U.S. Census Bureau, 2017 American Community Survey 5-Year Estimates								
*Figure shows the seasonal housing units as a percentage of the municipality's total housing units.								

## STATE EQUALIZED VALUE (SEV)

The characteristics of property values can be obtained through the analysis of the State Equalized Value (SEV). All assessed values in Alpena County are lower than they were in 2008 with industrial property values holding the steadiest (Table 2-17). Agricultural values continue to drop, while commercial and residential values have been increasing since 2014.

Nearly two-thirds of the county's SEV is concentrated in the City of Alpena and Alpena Township (Table 2-18). Generally, the assessed values have remained relatively stable in the county's municipalities, except for Long Rapids and Wellington Townships where the assessed values have declined.

**TABLE 2-17 ASSESSED VALUE IN ALPENA COUNTY 2008-2018**

Year	Agricultural	Residential	Commercial	Industrial	Timber Cutover	Personal Property	Real + Personal Property
2018	\$87,612,018	\$741,155,100	\$111,743,100	\$35,638,400	-	\$69,063,454	\$1,045,212,072
2017	\$87,631,400	\$732,622,600	\$114,683,700	\$35,140,000	-	\$71,666,280	\$1,041,743,980
2016	\$90,552,600	\$705,933,100	\$112,495,100	\$34,556,700	-	\$71,581,286	\$1,015,118,786
2015	\$93,847,300	\$693,910,900	\$106,692,100	\$34,282,000	-	\$89,054,710	\$1,017,787,010
2014	\$90,308,300	\$684,352,000	\$106,000,900	\$33,092,100	\$441,900	\$82,271,290	\$996,466,490
2013	\$92,345,700	\$680,600,900	\$109,183,000	\$32,480,900	\$4,019,800	\$87,806,547	\$1,006,436,847
2012	\$88,524,900	\$702,578,200	\$106,404,600	\$33,138,600	\$5,608,700	\$85,812,109	\$1,022,067,109
2011	\$85,737,000	\$755,954,000	\$110,167,500	\$32,744,900	\$7,873,800	\$83,012,819	\$1,075,490,019
2010	\$108,734,900	\$781,123,000	\$125,568,600	\$35,597,500	\$5,154,200	\$82,870,620	\$1,139,048,820
2009	\$115,307,700	\$812,429,300	\$130,939,300	\$37,711,300	\$26,066,700	\$81,660,263	\$1,204,114,563
2008	\$125,308,000	\$824,634,800	\$132,441,700	\$36,478,700	\$27,717,200	\$79,234,273	\$1,225,814,673

Source: Michigan Department of Treasury

**TABLE 2-18 ASSESSED VALUE OF ALPENA COUNTY'S MUNICIPALITIES, 2014-2018**

Jurisdiction	2014	2015	2016	2017	2018
Alpena Township	\$342,460,000	\$343,544,100	\$361,790,900	\$372,844,100	\$370,897,800
Green Township	\$67,730,500	\$68,456,800	\$70,695,300	\$72,784,100	\$71,780,900
Long Rapids Township	\$42,197,545	\$46,026,105	\$42,957,575	\$40,834,546	\$39,631,747
Maple Ridge Township	\$55,837,800	\$54,197,000	\$53,311,500	\$55,194,200	\$56,845,900
Ossineke Township	\$84,431,400	\$86,692,100	\$85,678,100	\$86,973,000	\$86,835,700
Sanborn Township	\$66,101,473	\$67,005,666	\$65,059,558	\$67,757,034	\$69,088,407
Wellington Township	\$22,871,400	\$20,707,600	\$20,020,700	\$19,536,500	\$19,946,100
Wilson Township	\$71,635,772	\$76,342,439	\$77,195,253	\$78,158,200	\$81,133,518
City of Alpena	\$243,200,600	\$254,815,200	\$238,409,900	\$247,662,300	\$249,052,000
Alpena County	\$996,466,490	\$1,017,787,010	\$1,015,118,786	\$1,041,743,980	\$1,045,212,072

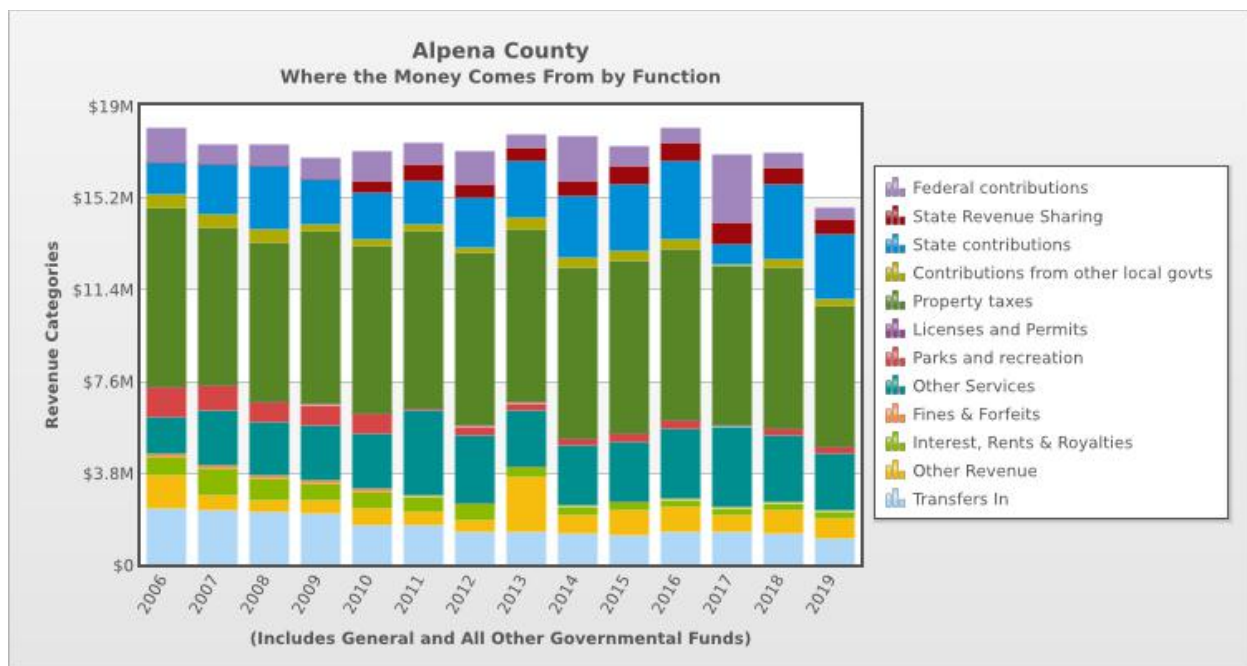
Source: Michigan Department of Treasury

## FINANCES

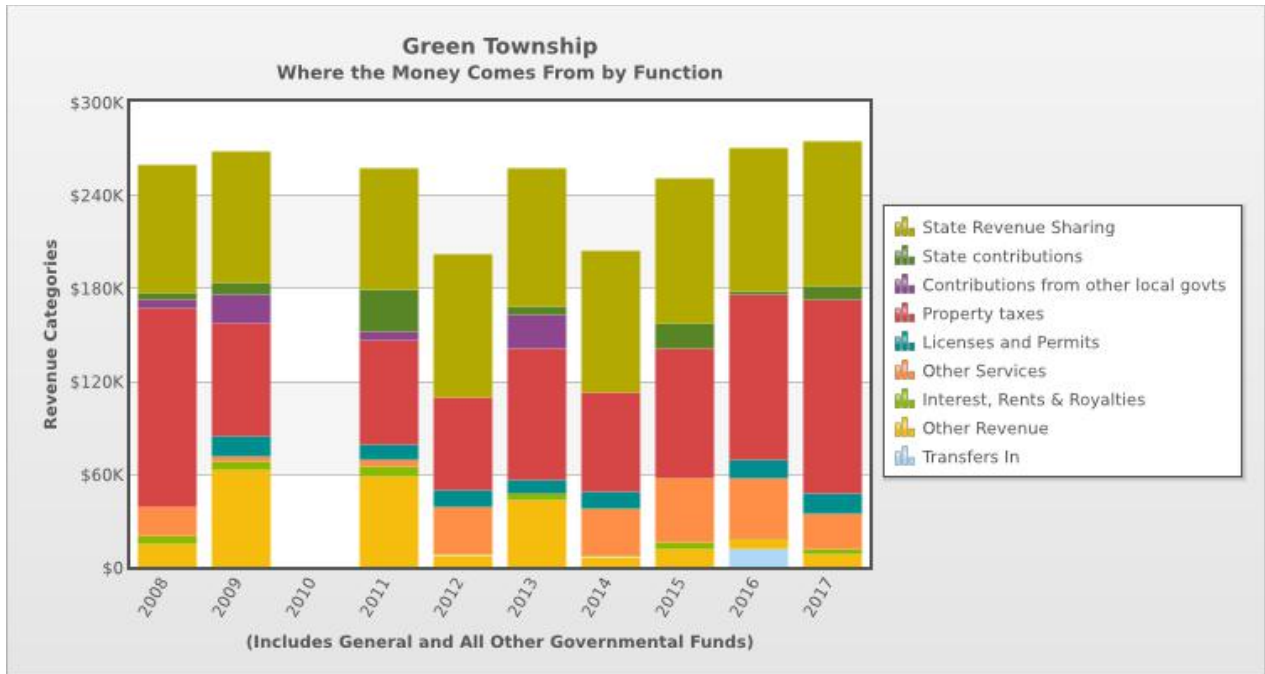
Munetrix ([www.munetrix.com](http://www.munetrix.com)) is an online system which displays fiscal data for local units of government in order to provide transparency and an understanding of local unit finances to the public. Information provided in this section was generated from F65 forms to give a summary of financial health (Northeast Michigan Council of Governments sponsored the Munetrix data).

### REVENUES

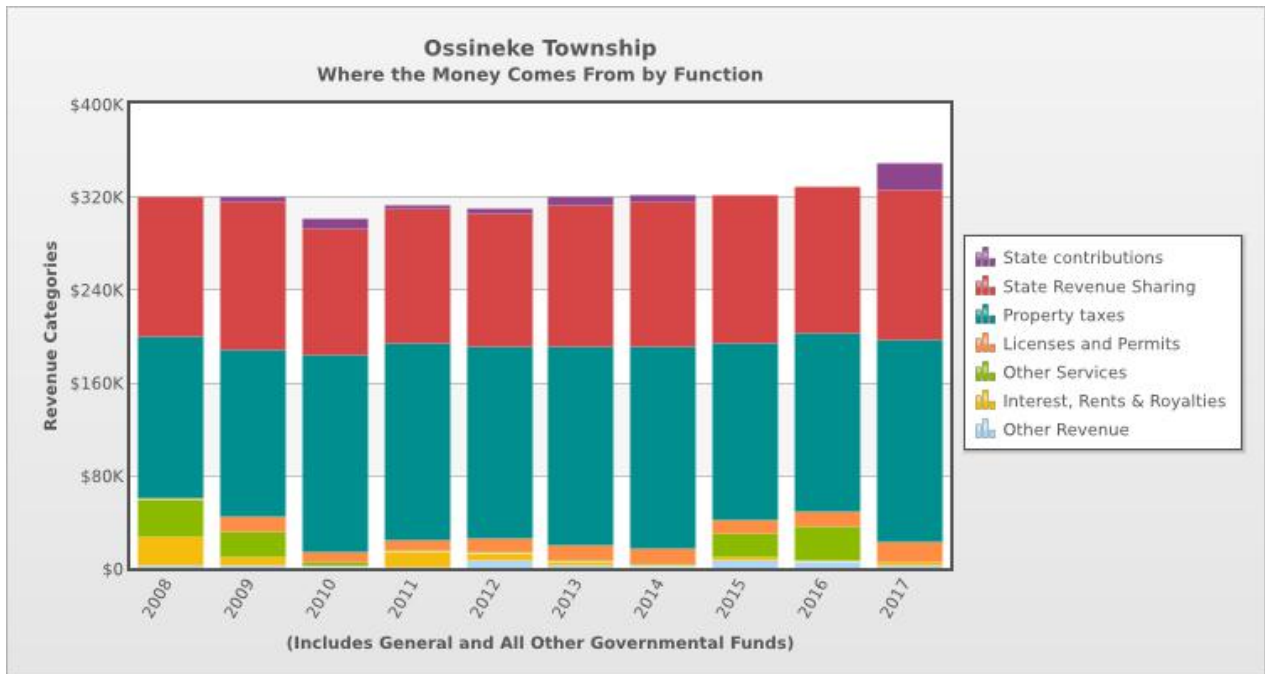
Revenue is generated from tax dollars received from residents and businesses, which are generated from the millage rate multiplied by property valuations. Revenue is also generated from other sources, such as State and Federal grants, permits, and fees. Alpena County's largest revenue sources are from property taxes and state contributions (Figure 2-12). Green, Ossineke, and Wilson Townships' largest revenue sources are from state revenue sharing and property taxes (Figure 2-13 to Figure 2-15).



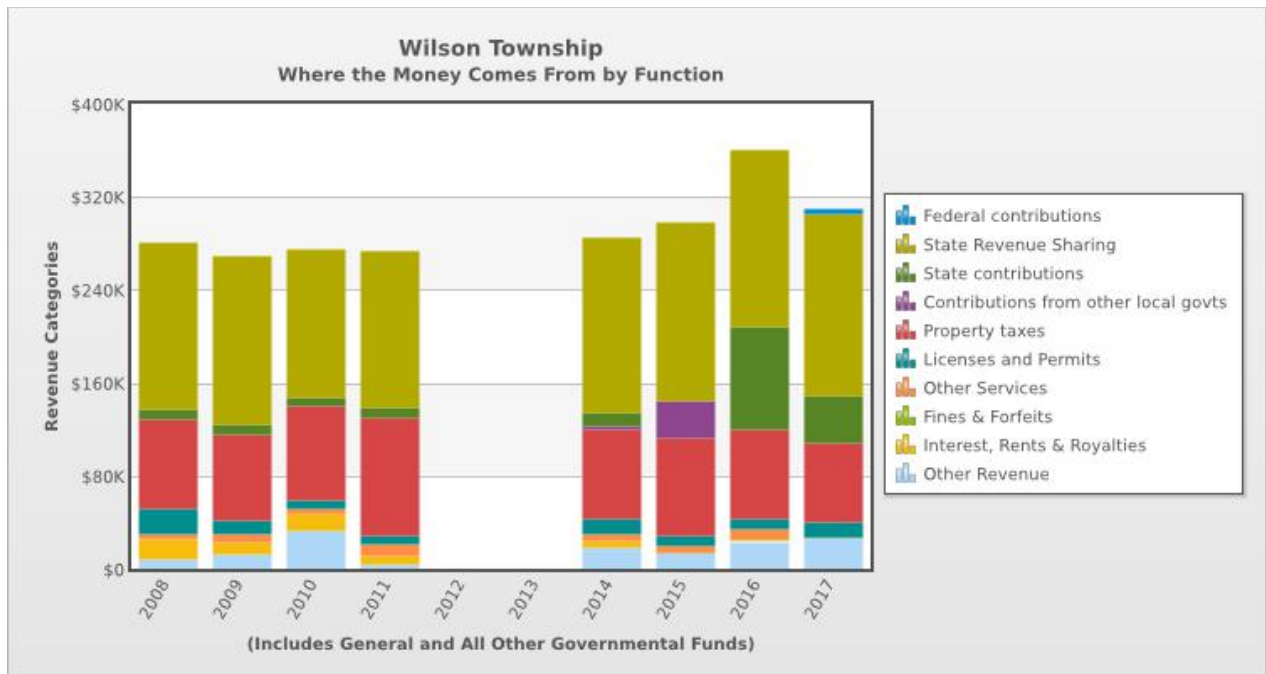
**FIGURE 2-12 ALPENA COUNTY'S REVENUE SOURCES**



**FIGURE 2-13 GREEN TOWNSHIP'S REVENUE SOURCES**



**FIGURE 2-14 OSSINEKE TOWNSHIP'S REVENUE SOURCES**

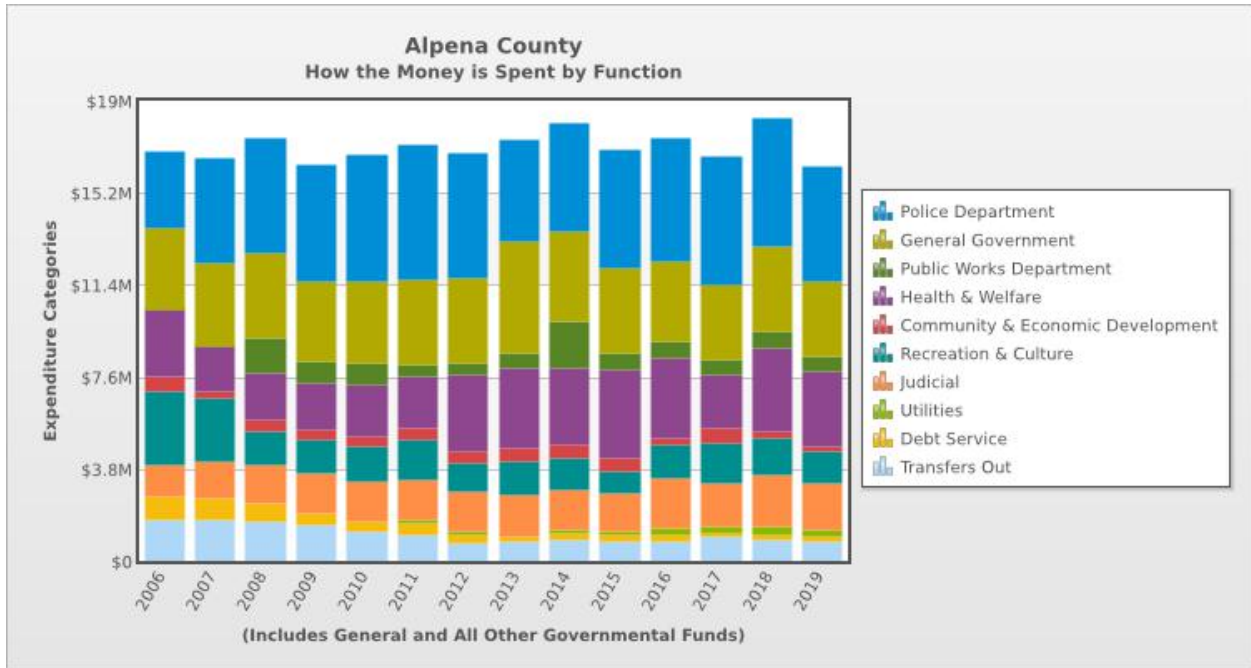


**FIGURE 2-15 WILSON TOWNSHIP'S REVENUE SOURCES**

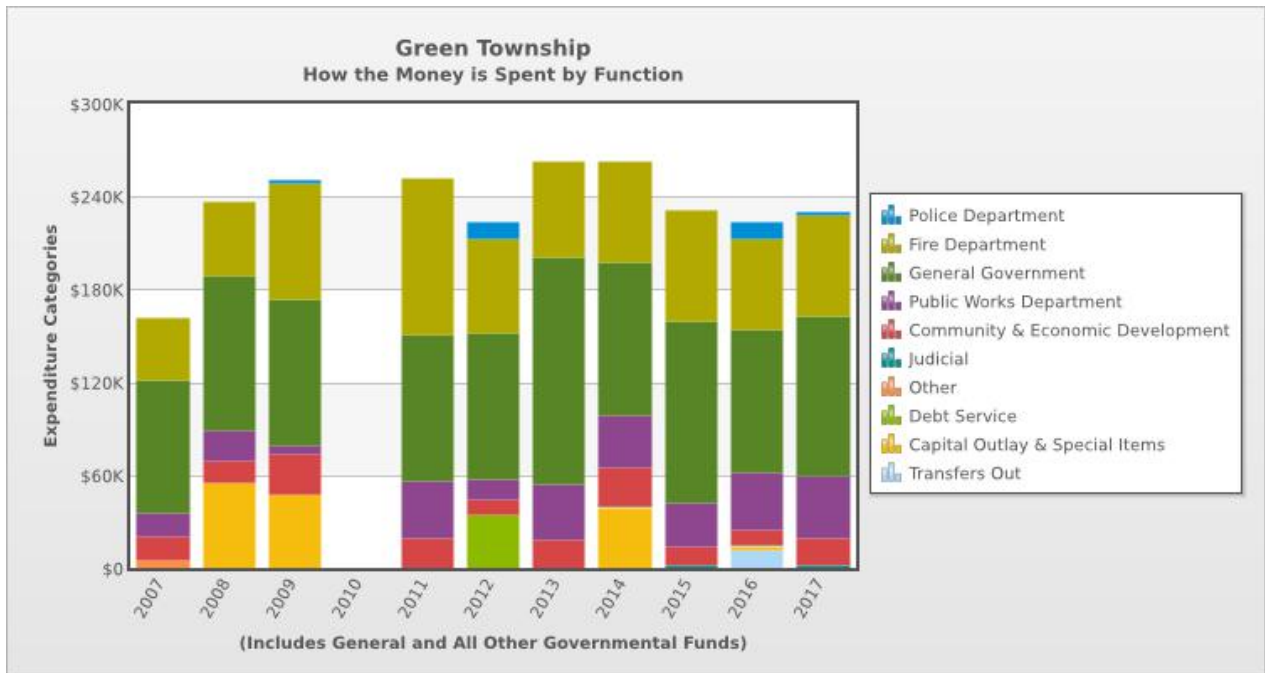
### EXPENDITURES

Figure 2-16 shows where expenses are incurred in Alpena County. The categories with the most funds expended are “police department,” “general government,” and “health and welfare.” Figure 2-17 shows where expenses are incurred in Green Township. The categories with the most funds expended are “general government” and “fire department.” Figure 2-18 shows where expenses are incurred in Ossineke Township. The categories with the most funds expended are “general government” and “public works department.” Figure 2-19 shows where expenses are incurred in Wilson Township. The categories with the most funds expended are “general government” and “public works department.”





**FIGURE 2-16 ALPENA COUNTY EXPENDITURES**



**FIGURE 2-17 GREEN TOWNSHIP EXPENDITURES**



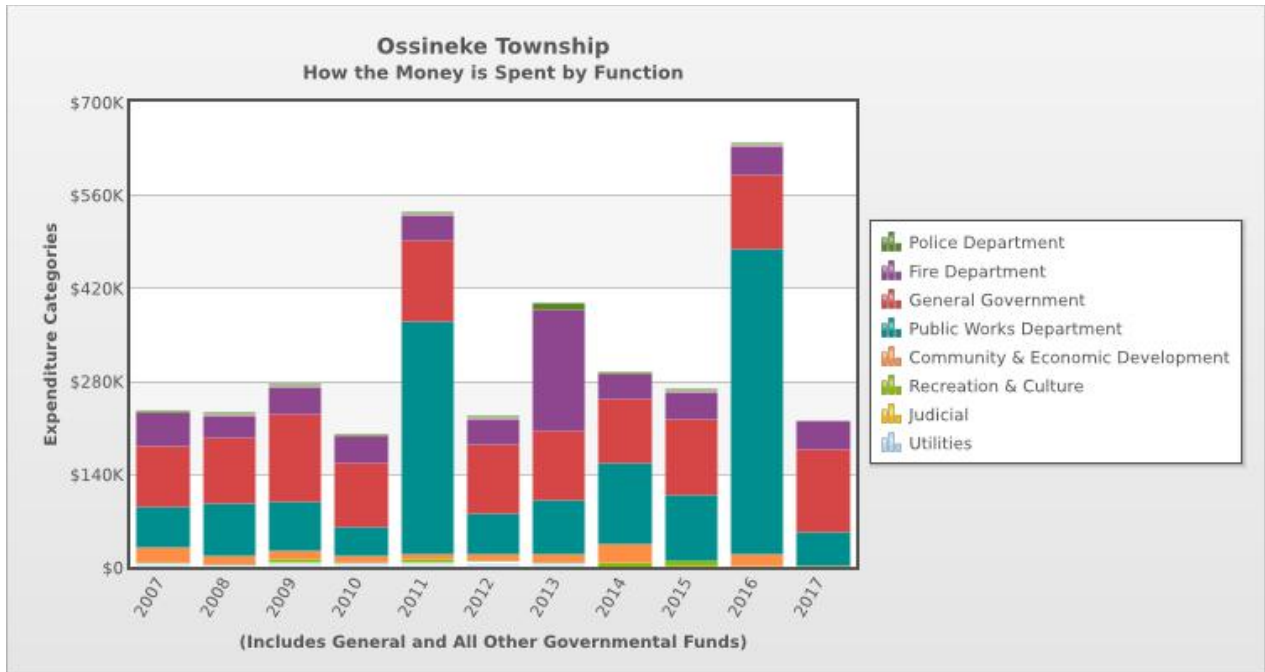


FIGURE 2-18 OSSINEKE TOWNSHIP EXPENDITURES

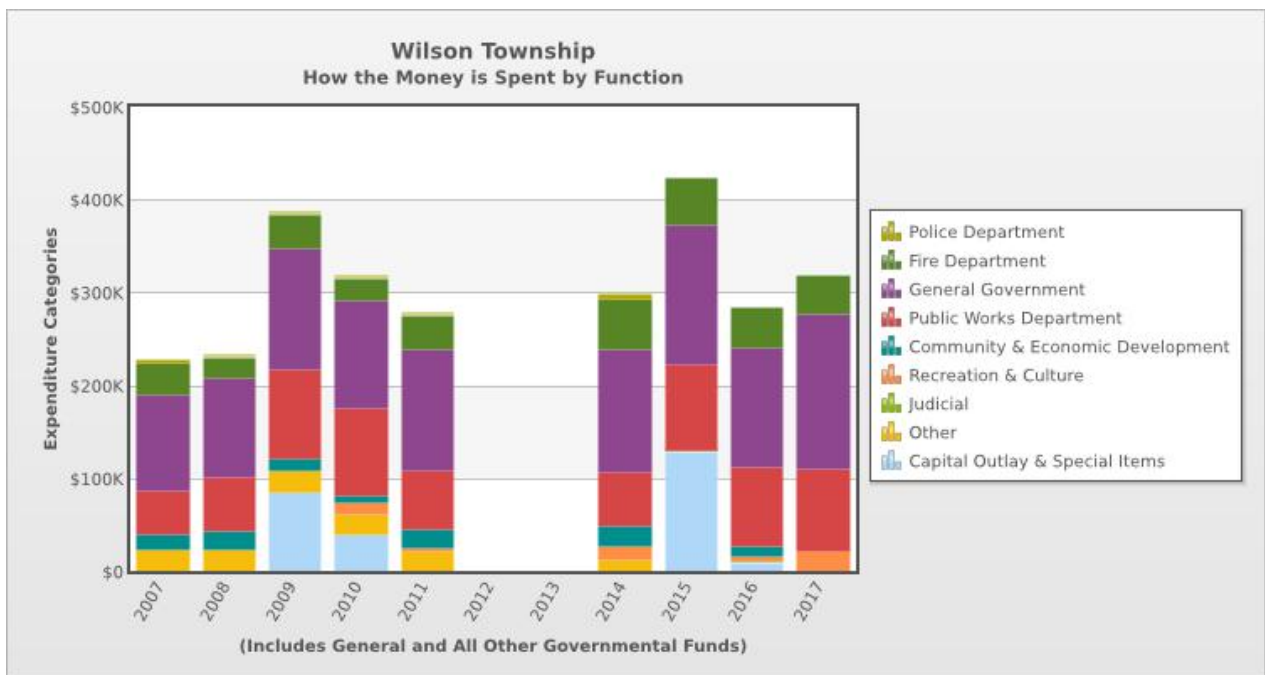


FIGURE 2-19 WILSON TOWNSHIP EXPENDITURES

Figure 2-20 shows the county’s expenditures are generally lower than its revenues, which results in a steady fund equity. However, in 2019, the county’s expenditures were higher than its revenues, which caused the fund equity to decrease. Figure 2-21 shows Green Township’s revenues and expenditures

have fluctuated over time, resulting in a fluctuating fund equity. Currently, the fund equity is increasing. Figure 2-22 shows Ossineke Township’s expenditures have been below its revenues resulting in an increasing fund equity. In 2011, 2013, and 2016, the township’s expenditures were higher than its revenues, which caused the fund equity to decrease. Figure 2-23 shows Wilson Township’s expenditures have generally been higher than its revenues, which has resulted in a decreasing fund equity. In 2011, 2016, and 2018, the township’s revenues were higher than its expenditures and caused the fund equity to increase.

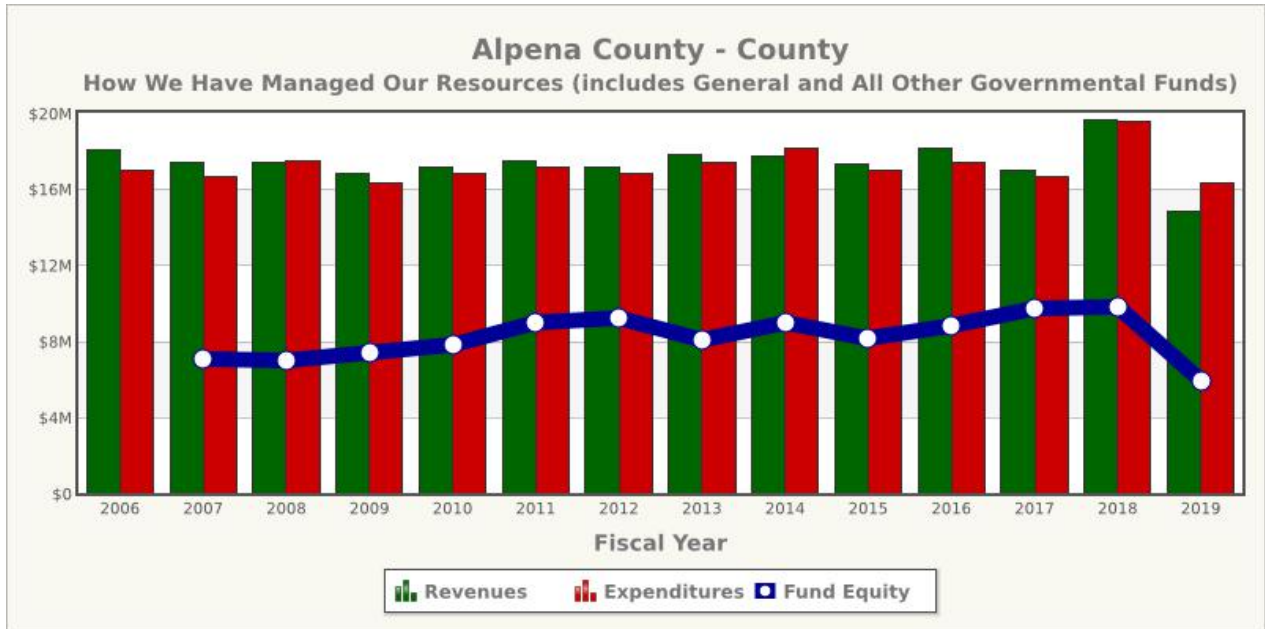


FIGURE 2-20 ALPENA COUNTY RESOURCE MANAGEMENT

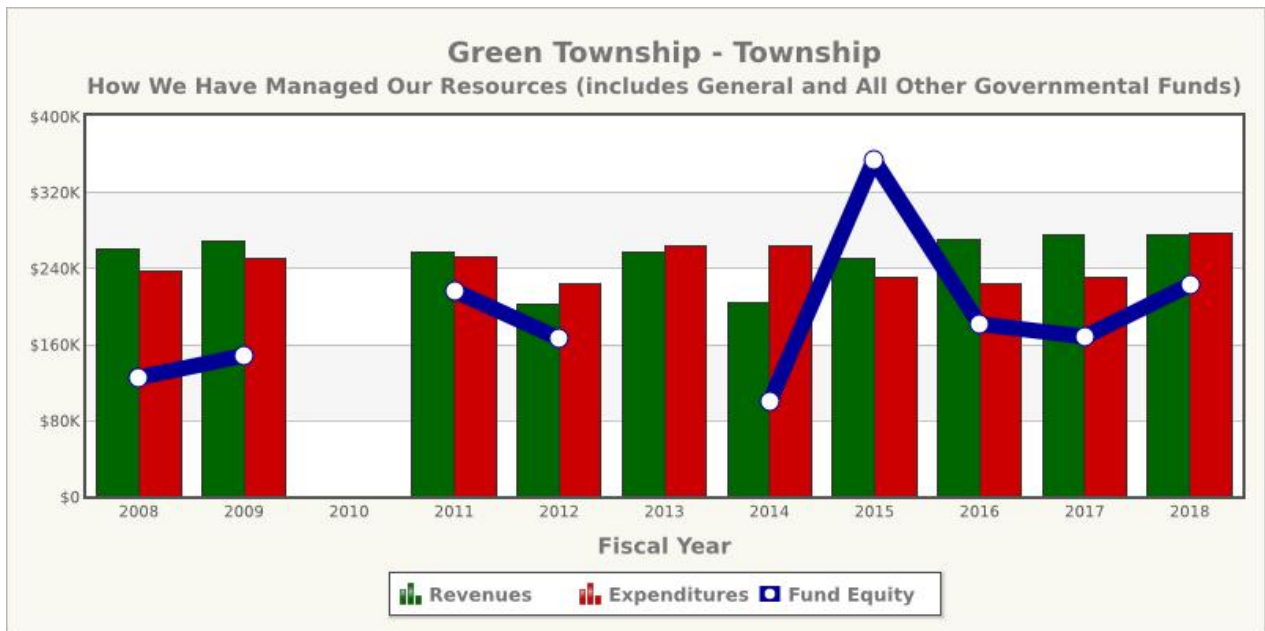
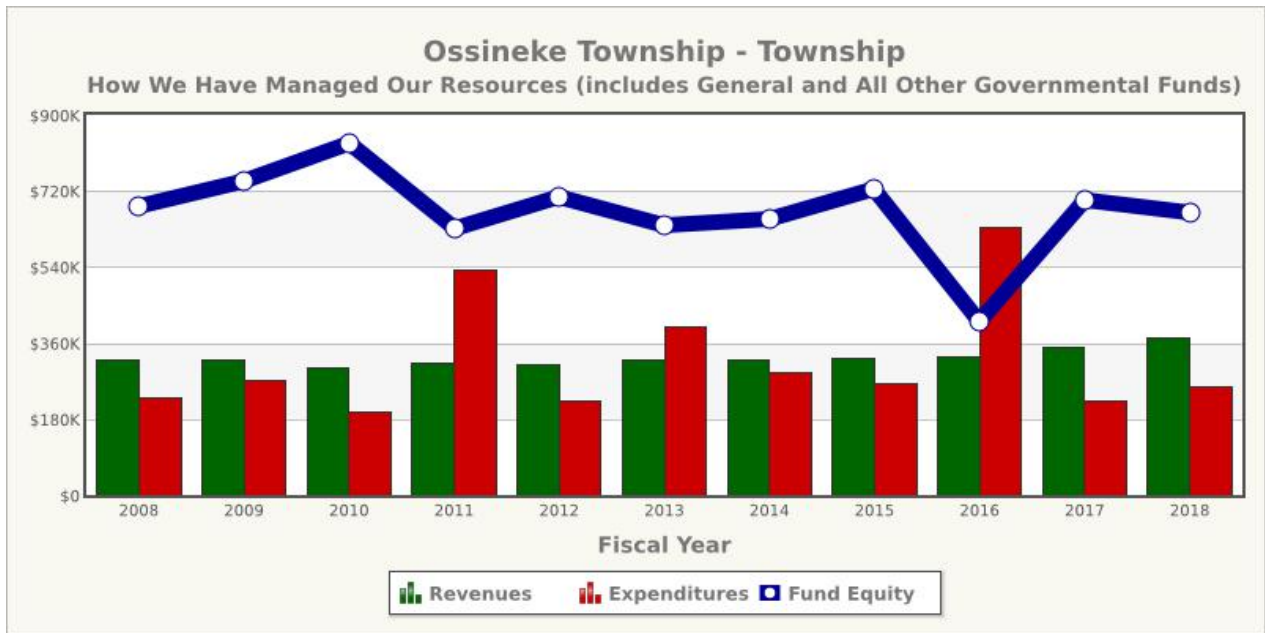
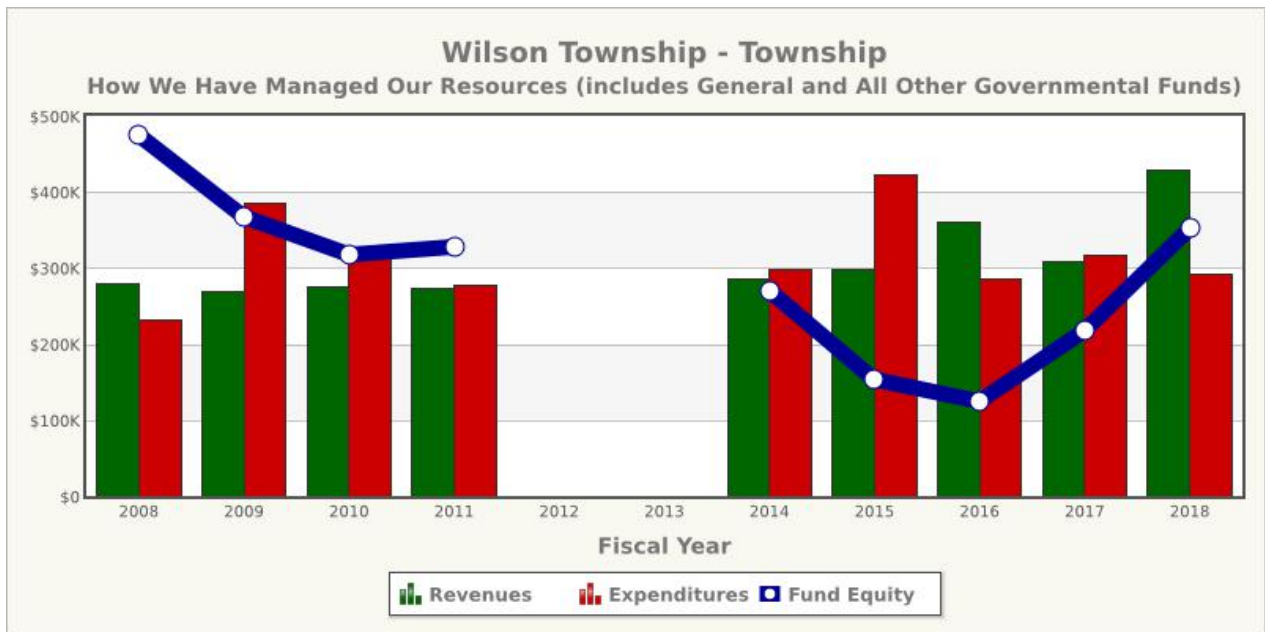


FIGURE 2-21 GREEN TOWNSHIP RESOURCE MANAGEMENT



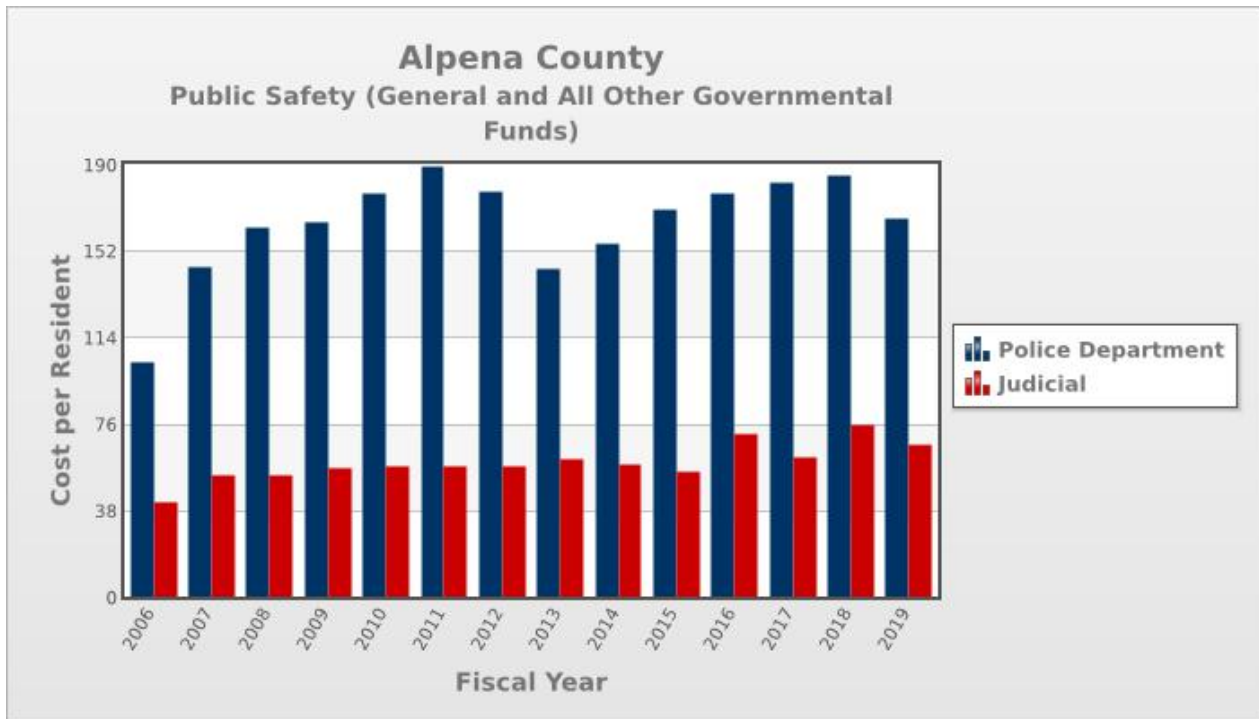
**FIGURE 2-22 OSSINEKE TOWNSHIP RESOURCE MANAGEMENT**



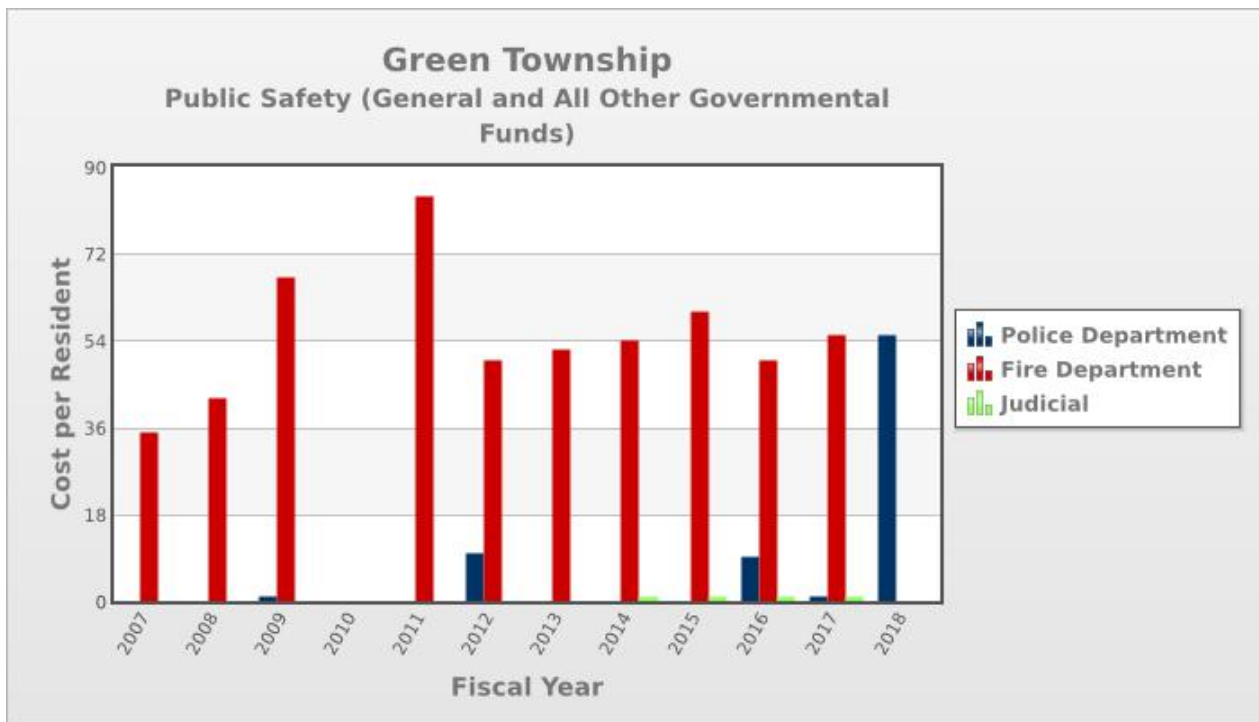
**FIGURE 2-23 WILSON TOWNSHIP RESOURCE MANAGEMENT**

**PUBLIC SAFETY COST PER RESIDENT**

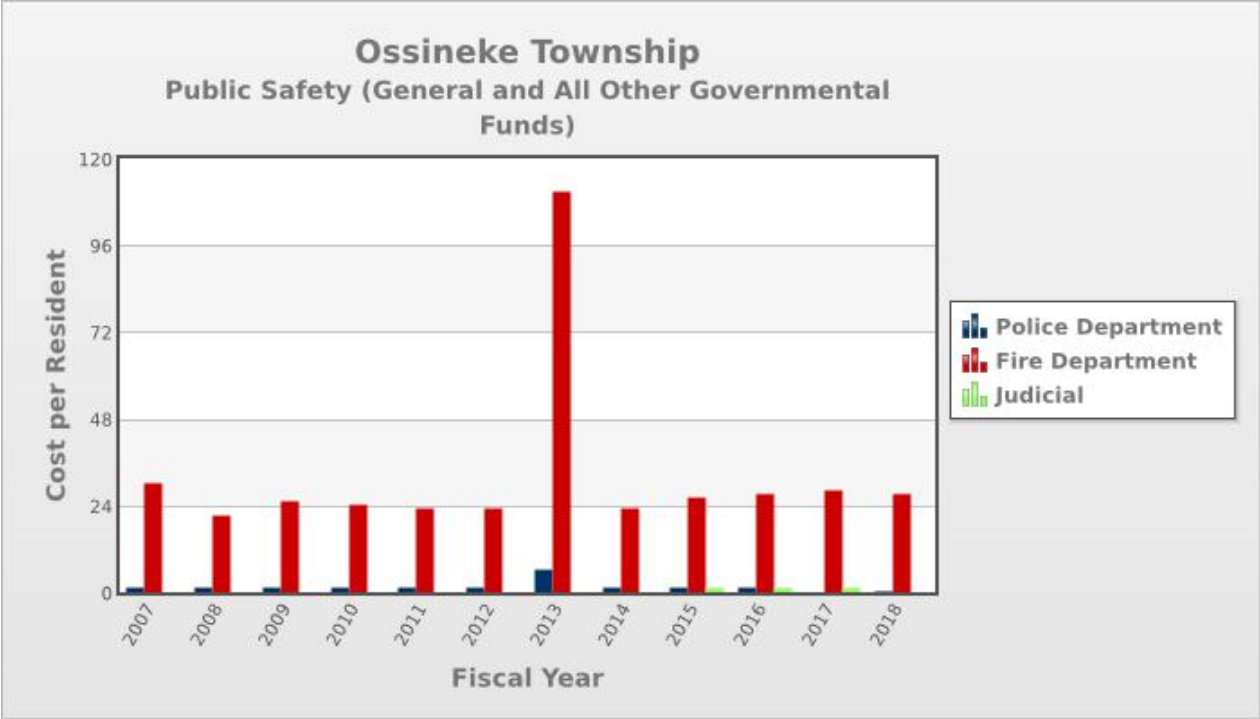
Figure 2-24 to Figure 2-27 show the total cost per resident for public safety services from 2006 to 2019 in Alpena County, and Green, Ossineke, and Wilson Townships.



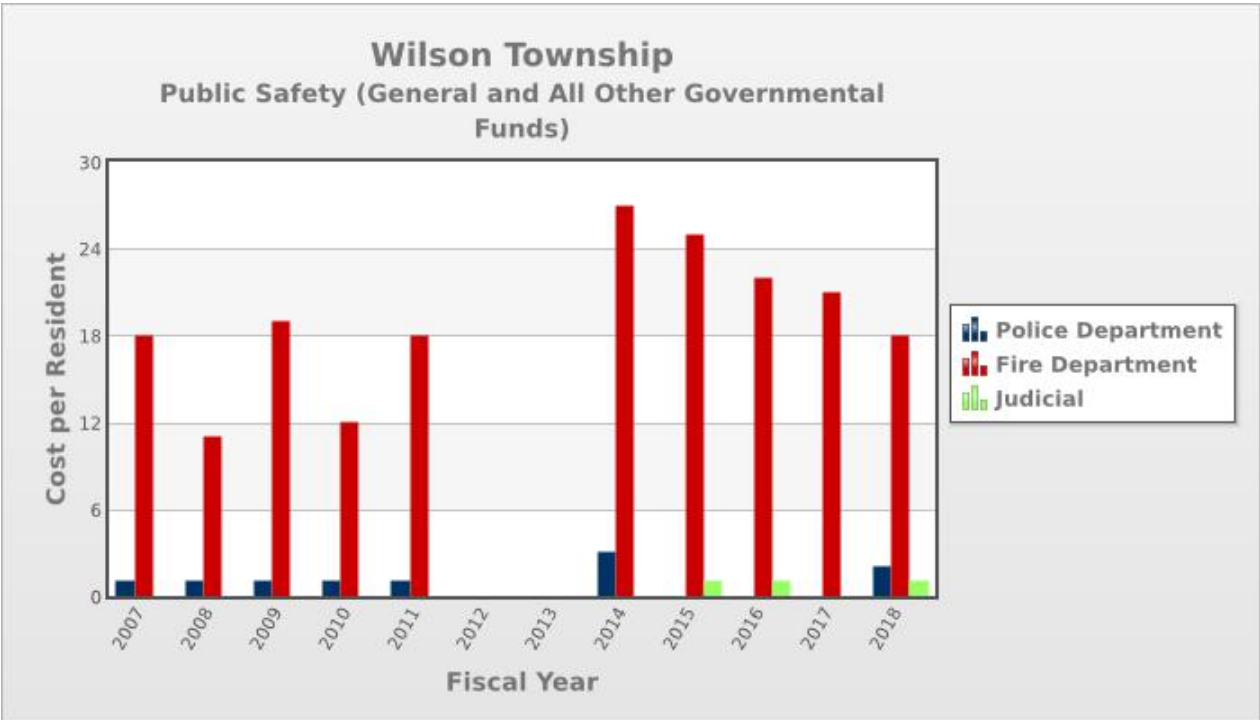
**FIGURE 2-24 ALPENA COUNTY PUBLIC SAFETY COST PER RESIDENT**



**FIGURE 2-25 GREEN TOWNSHIP PUBLIC SAFETY COST PER RESIDENT**



**FIGURE 2-26 OSSINEKE TOWNSHIP PUBLIC SAFETY COST PER RESIDENT**



**FIGURE 2-27 WILSON TOWNSHIP PUBLIC SAFETY COST PER RESIDENT**

## FINANCIAL STRESS

The Munetrix "Stress Meter" provides an overview of Indicator Scores used to calculate the financial stress of a municipality. The Indicator Score gives an overall picture of the soundness of local governments, the trend of stability over time, and allows the identification of local units that are most in need of help. Scores are generated

Points from Scale	Category	State Action
0-4	Fiscally Neutral	No State action needed
5-7	Fiscal Watch	Unit of local government is notified of its relatively high score and is placed on a watch list for the current and following year.
8-10	Fiscal Stress	Unit of local government is notified of its high score, is placed on a watch list for the current and following year, and receives consideration for review.

Source: Munetrix

based on the criteria of population growth, real taxable value growth, general fund expenditures as a percent of taxable value, general fund operating deficit, prior general fund operating deficit, size of general fund balance, fund deficits in current or previous year, and general long-term debt as a percent of taxable value. The lower the number, the more fiscally sound a local unit is determined to be.

There are three score categories: Fiscally Neutral (stress scores of 0-4), Fiscal Watch (stress scores of 5-7), and Fiscal Stress (stress scores of 8-10) (Table 2-19). The State Department of Treasury uses these indicator scores to determine those communities in Michigan which are under the most extreme financial stress. Table 2-20 shows the indicator scores for Alpena County and its municipalities from 2009 to 2017. The majority of municipalities with reported data have remained in the Fiscally Neutral category. However, in 2011 and 2014, Alpena Township had a fiscal indicator score of 5 which moved it into the Fiscal Watch category. Figure 2-28 shows the fiscal stress for all of the municipalities in Alpena County. Figure 2-29 shows the fiscal stress for all of Northeast Michigan and shows how some communities were placed in the Fiscal Watch category beginning in 2008.

Jurisdiction	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alpena County	1	1	1	2	2	2	1	2	3
Alpena Township	3	4	5	4	4	5	4	4	4
City of Alpena	1	2	1	1	1	1	1	2	2
Green Township	-	0	1	1	-	-	-	2	-
Long Rapids Township	3	-	0	-	1	1	1	-	2
Maple Ridge Township	-	-	-	1	-	-	-	-	-
Ossineke Township	1	-	1	-	1	1	2	-	2
Sanborn Township	1	-	1	-	2	1	1	2	2
Wellington Township	-	-	-	-	-	1	-	-	-
Wilson Township	1	-	1	-	-	-	-	-	3

Source: Munetrix 2018



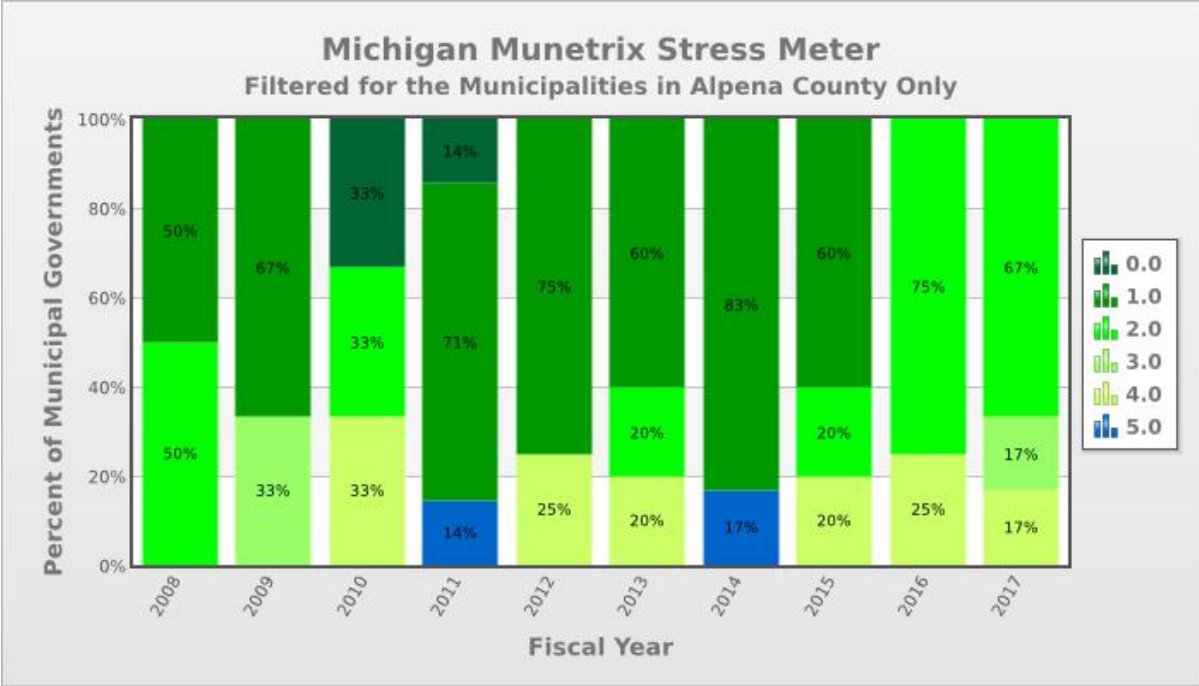


FIGURE 2-28 STRESS METER FOR THE MUNICIPALITIES IN ALPENA COUNTY

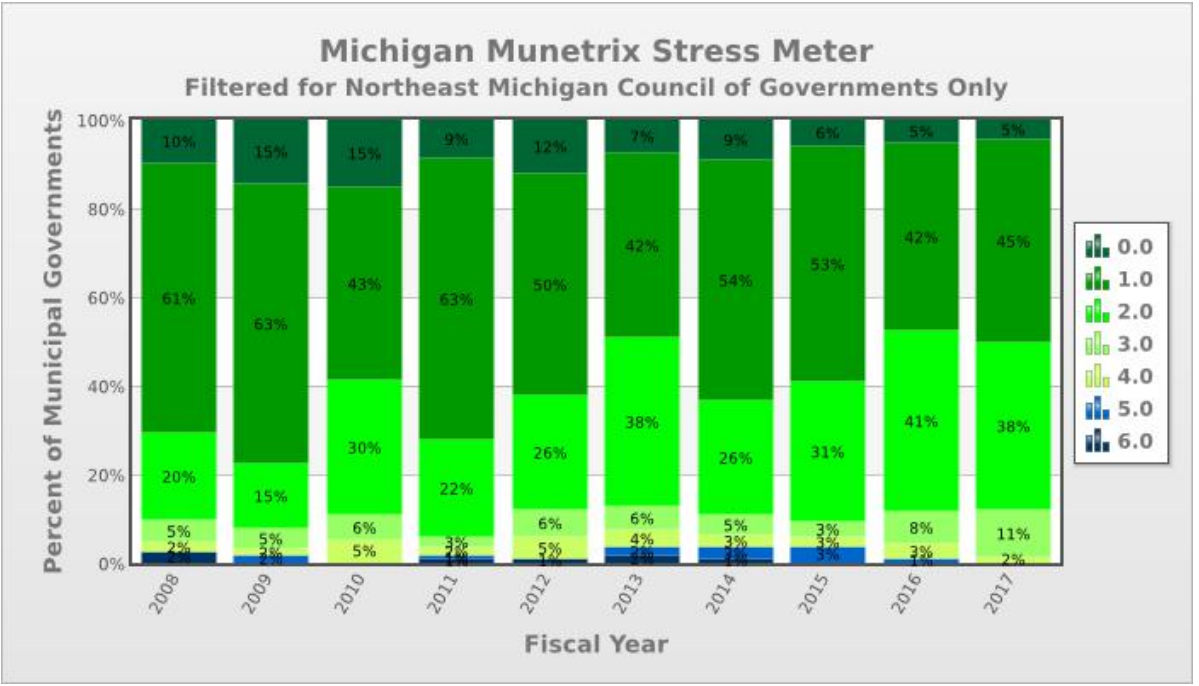


FIGURE 2-29 STRESS METER FOR THE MUNICIPALITIES IN NORTHEAST MICHIGAN

### GENERAL FUND OPERATING RESULTS

This variable is computed by subtracting general fund expenditures from general fund revenues for a given year. This figure is then divided by general fund revenues. If the number that results is less than -0.01, this indicates a unit has a nontrivial operating deficit and receives a score of 1. If the unit does not have a general fund operating deficit, or if the deficit is trivial, the unit is given a 0. Figure 2-30 shows a comparison of general operating fund deficit averages from all counties in Northeast Michigan. Alpena County's operating results are below the indicator trigger, indicating it has an operating deficit. Figure 2-31 to Figure 2-33 show the general fund operating results for Green, Ossineke, and Wilson Townships. Green and Wilson Townships' general fund operating results are at the indicator trigger for fiscal distress, while Ossineke Township's general fund does not have an operating deficit.

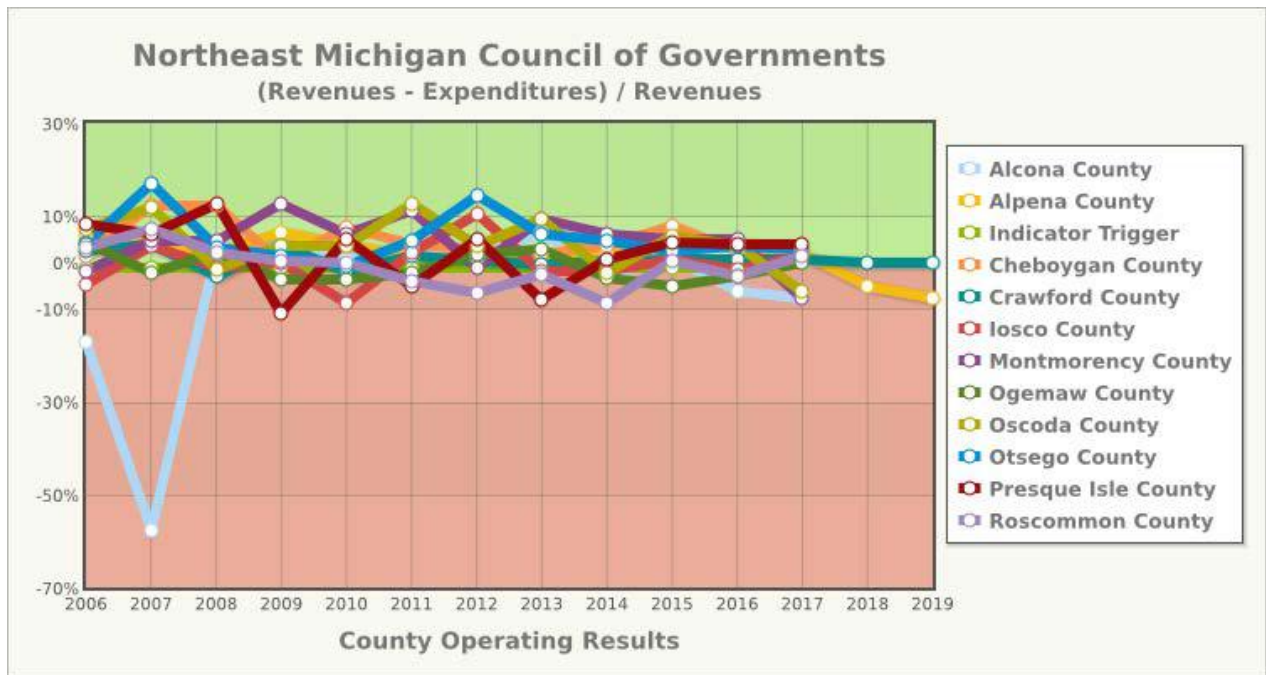
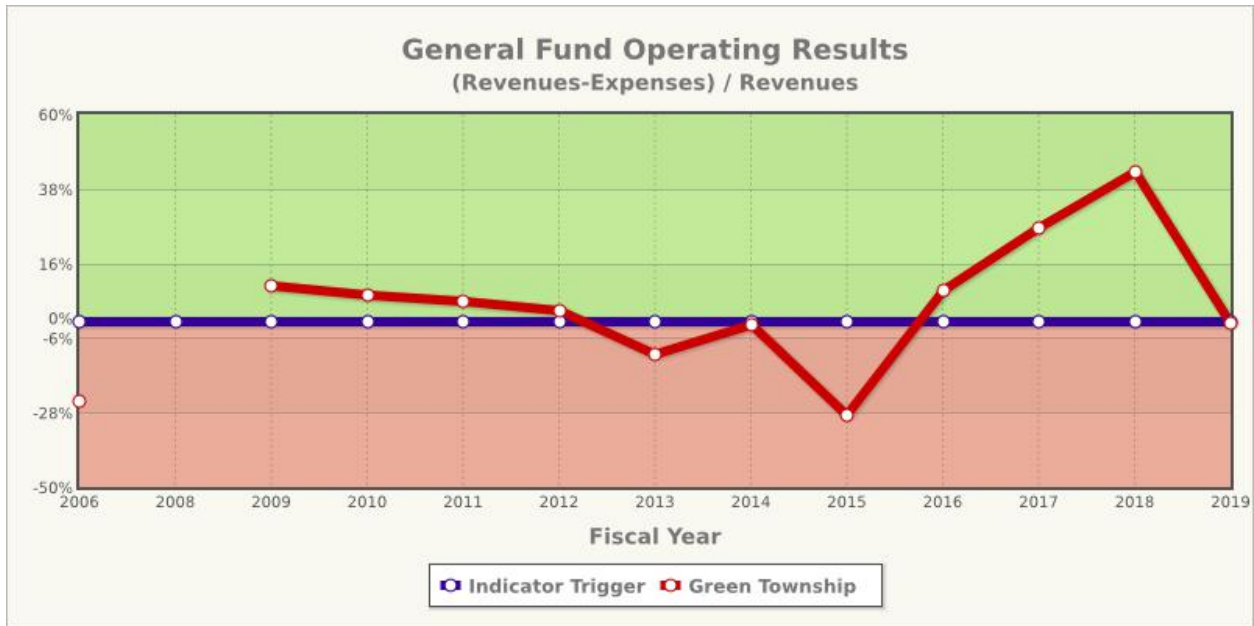
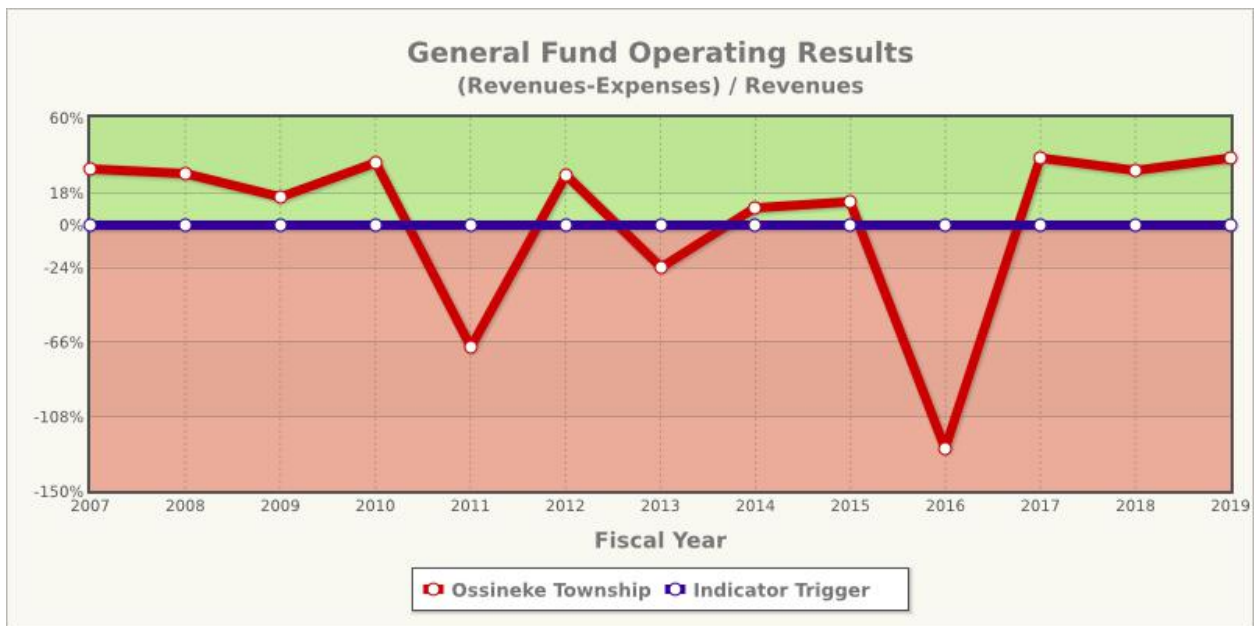


FIGURE 2-30 NORTHEAST MICHIGAN GENERAL OPERATING FUND DEFICIT AVERAGES

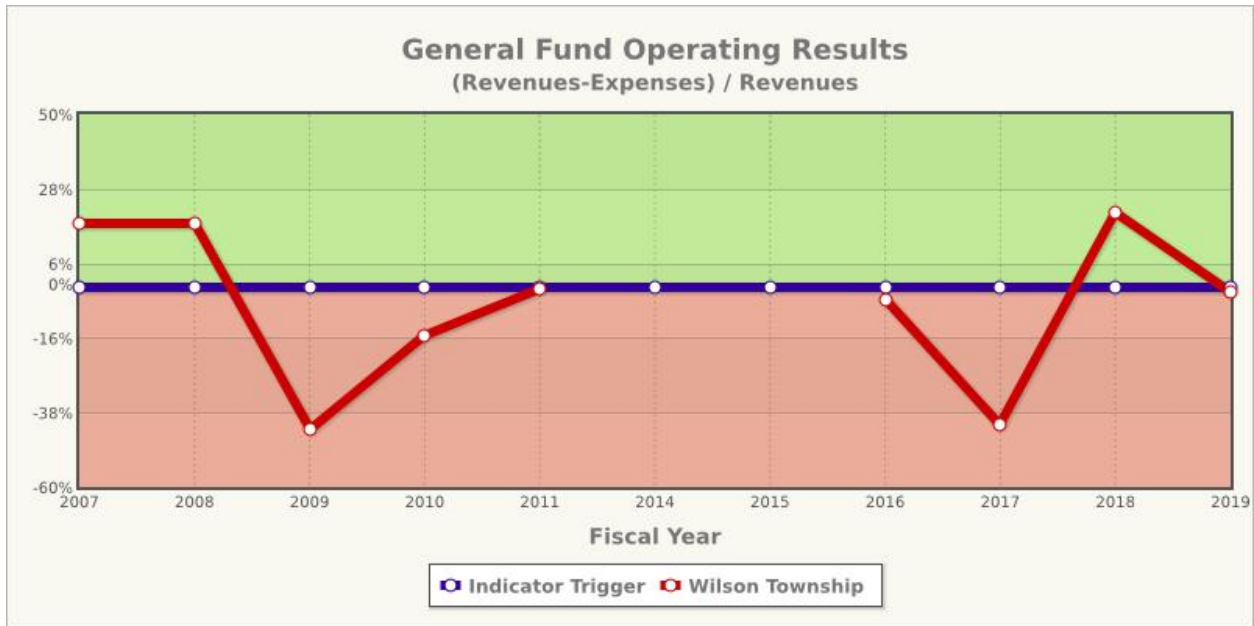




**FIGURE 2-31 GREEN TOWNSHIP'S GENERAL FUND OPERATING RESULTS**



**FIGURE 2-32 OSSINEKE TOWNSHIP'S GENERAL FUND OPERATING RESULTS**



**FIGURE 2-33 WILSON TOWNSHIP'S GENERAL FUND OPERATING RESULTS**

**FUND BALANCE AS A PERCENT OF GENERAL FUND REVENUES**

Most units maintain a positive fund balance, and it is a sign of fiscal distress if the fund balance is negative. Units typically find it beneficial to keep the fund balance from declining too greatly as this inhibits their ability to cope with unexpected circumstances in either the revenue or expenditure stream. The actual variable constructed for this indicator is the general fund balance as a proportion of general fund revenue. If a unit maintains a general fund balance less than 13% of its general fund revenue, it scores a 1. Conversely, a general fund balance above the 0.13 level scores a 0. Figure 2-34 shows the fund balance for Northeast Michigan. Alpena County's fund balance is well above the indicator trigger for fiscal distress. Figure 2-35 to Figure 2-37 shows the general fund balance as a percent of fund revenues for Green, Ossineke, and Wilson Townships. Green Township's general fund balance is at the indicator trigger for fiscal distress, while Ossineke and Wilson Township's general fund balance is above the indicator trigger.

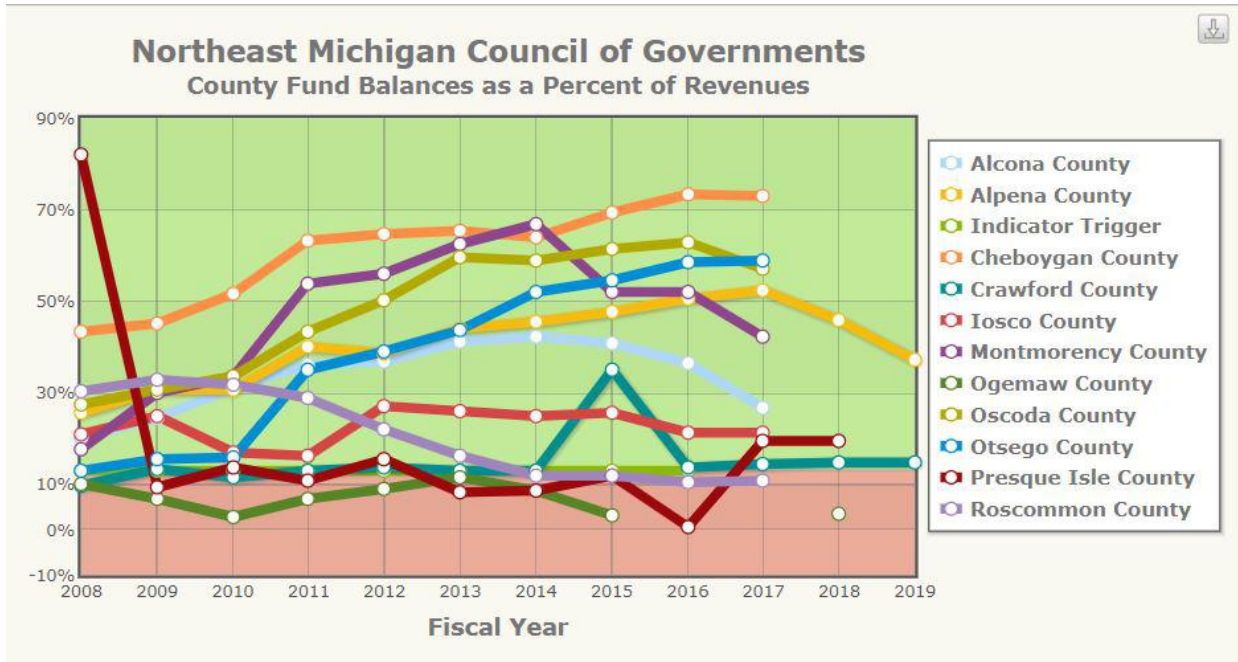


FIGURE 2-34 NORTHEAST MICHIGAN FUND BALANCE

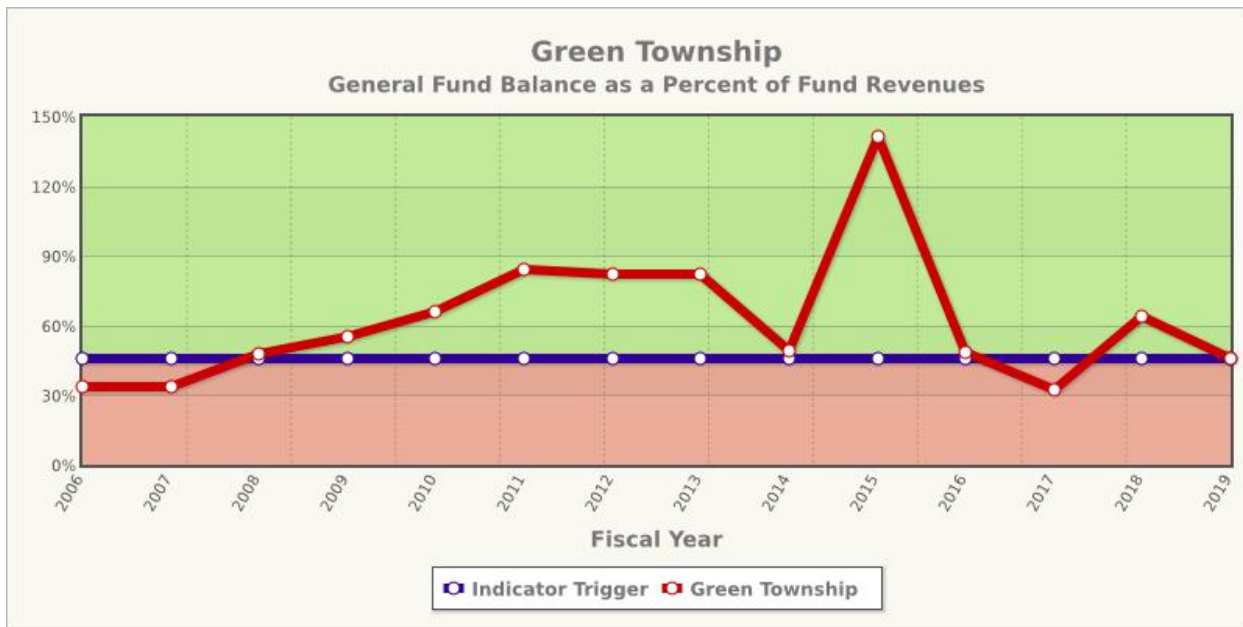


FIGURE 2-35 GREEN TOWNSHIP FUND BALANCE

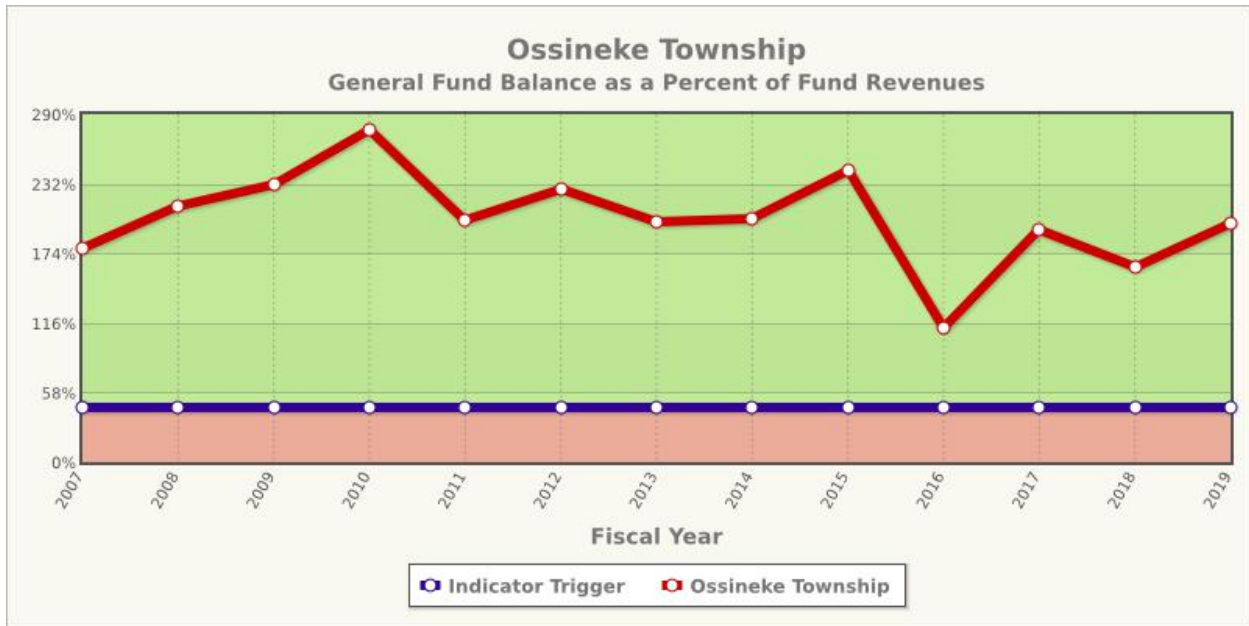


FIGURE 2-36 OSSINEKE TOWNSHIP FUND BALANCE

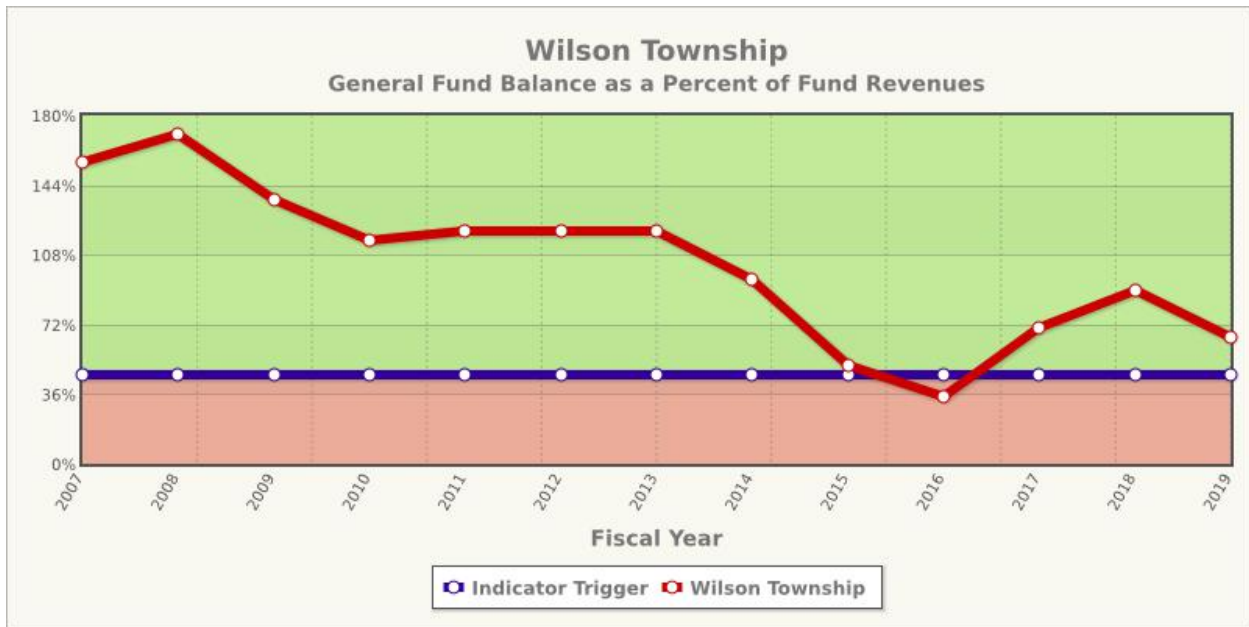
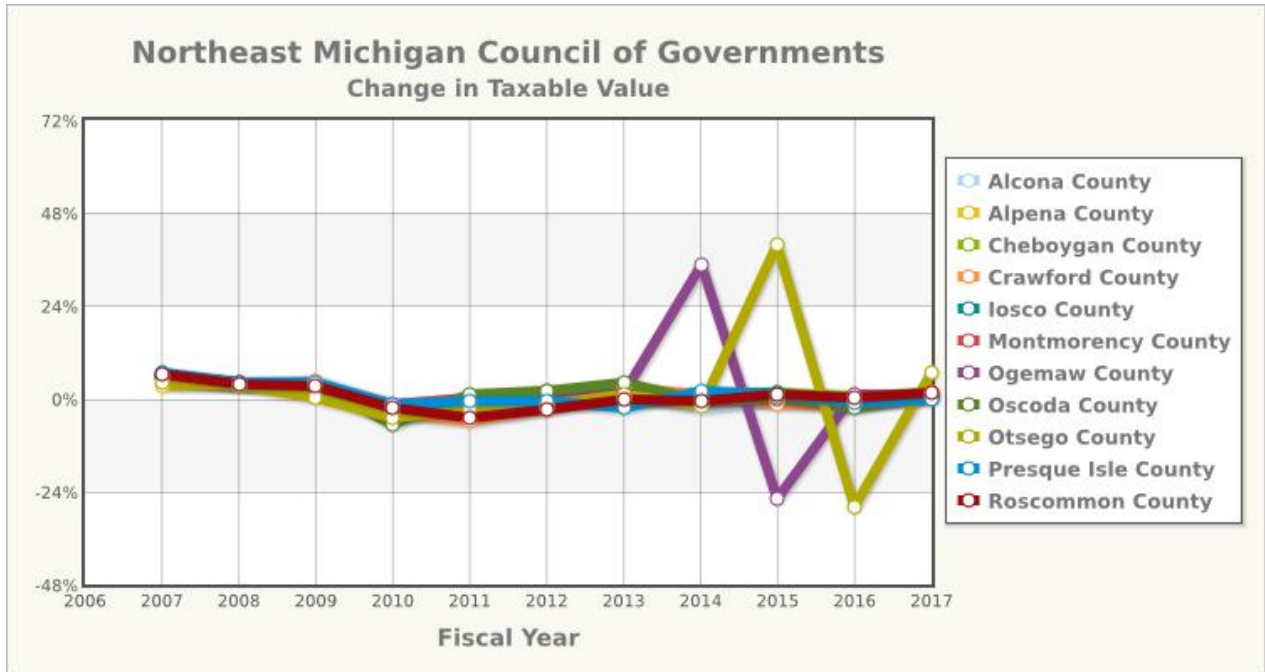


FIGURE 2-37 WILSON TOWNSHIP FUND BALANCE

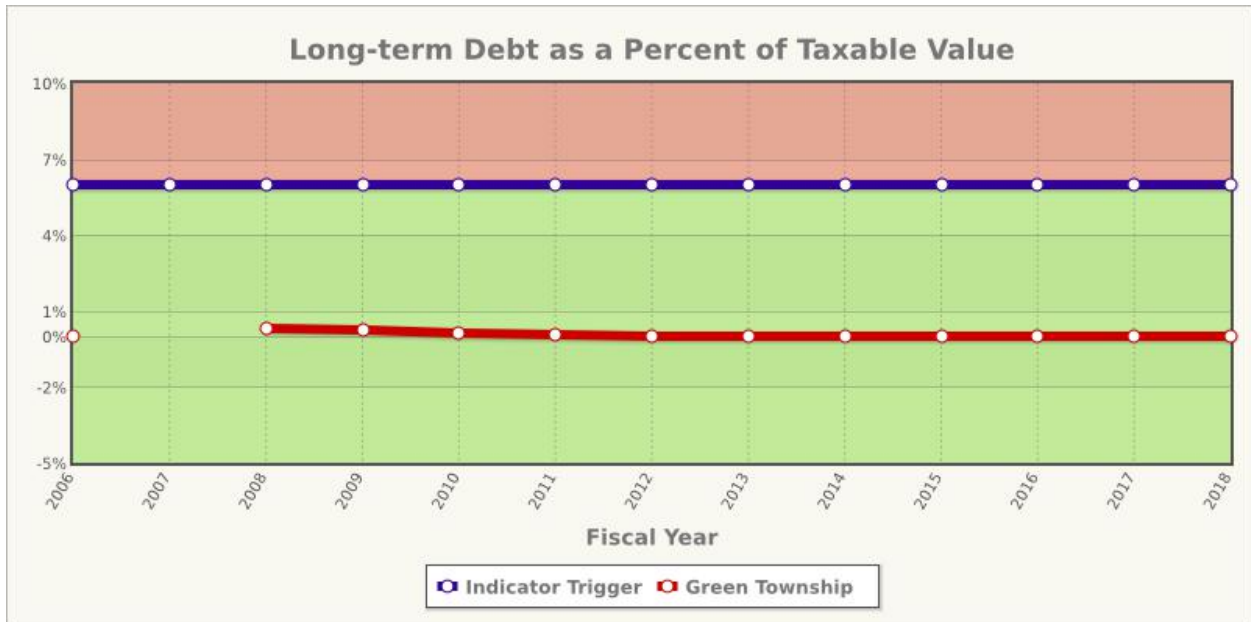
**PERCENT CHANGE IN TAXABLE VALUE**

There appears to be a relationship between declining taxable value of a community and its fiscal health. Since many local governments rely heavily upon property taxes, it follows that decreases in taxable value will require major adjustments in expenditures. Two-year growth periods of real taxable value for each unit are computed. Communities score a 1 if they demonstrate negative real growth and a 0 if they exhibit positive growth or remain stable. To compute real taxable value, the current year taxable value is

divided by the adjusted deflator. Figure 2-38 shows percent change in taxable value for Northeast Michigan. Figure 2-39 to Figure 2-41 shows long term debt as a percent of taxable value for Green, Ossineke, and Wilson Townships. The long term debt for all three townships is well below the indicator of fiscal distress.



**FIGURE 2-38 NORTHEAST MICHIGAN CHANGE IN TAXABLE VALUE**



**FIGURE 2-39 GREEN TOWNSHIP'S LONG-TERM DEBT AS A PERCENT OF TAXABLE VALUE**



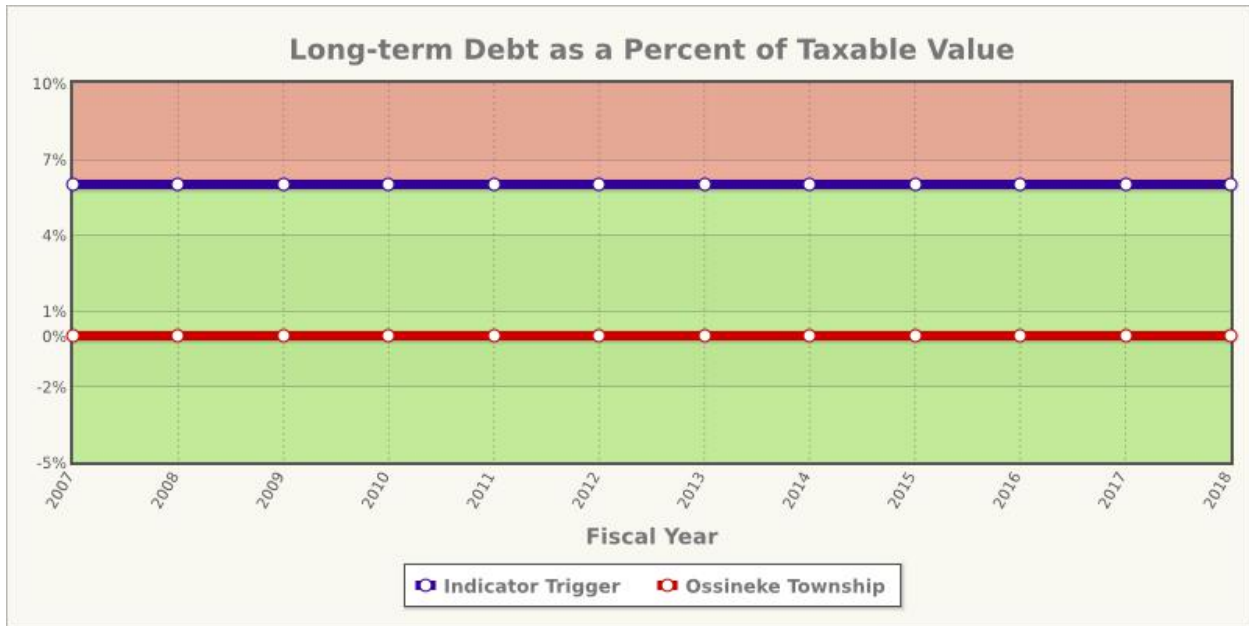


FIGURE 2-40 OSSINEKE TOWNSHIP'S LONG-TERM DEBT AS A PERCENT OF TAXABLE VALUE

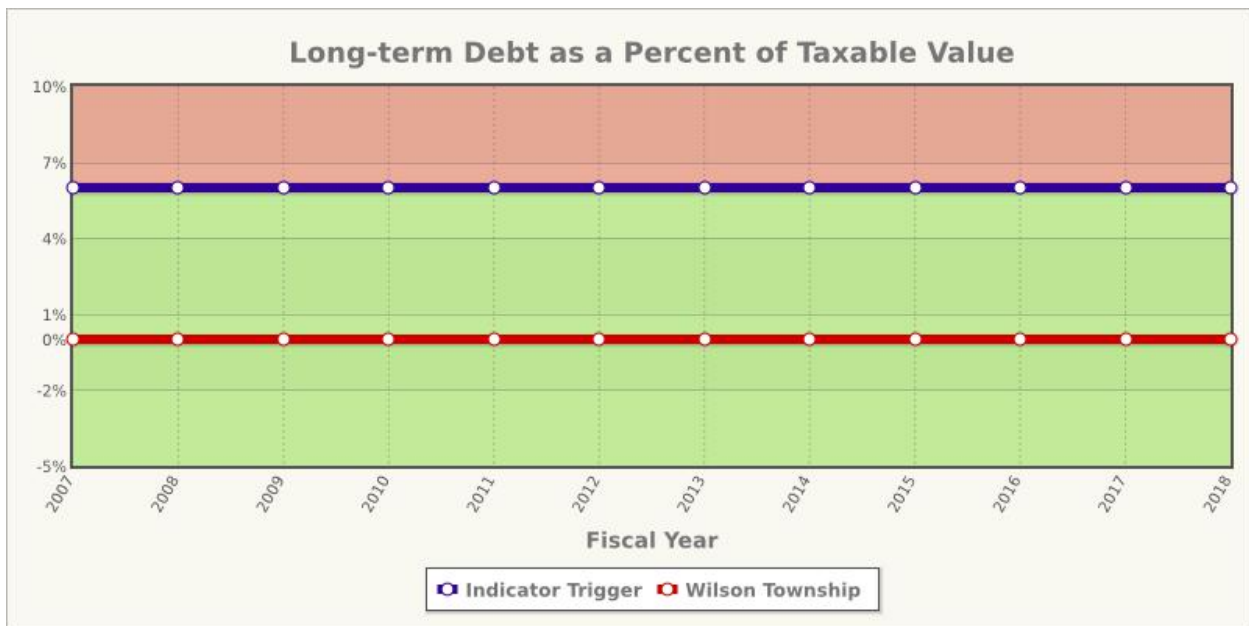


FIGURE 2-41 WILSON TOWNSHIP'S LONG-TERM DEBT AS A PERCENT OF TAXABLE VALUE

**AVAILABLE RESERVES AS A PERCENT OF TOTAL EXPENDITURES**

Available reserves are the total equity minus any designated and reserved funds divided by the total annual expenditures (includes general fund, enterprise funds, and all other funds, but excludes component unit funds). Alpena County, and Green, Ossineke, and Wilson Townships' available reserves as a percent of total expenditures is well above the trigger of fiscal distress (Figures 2-42 to 2-45).

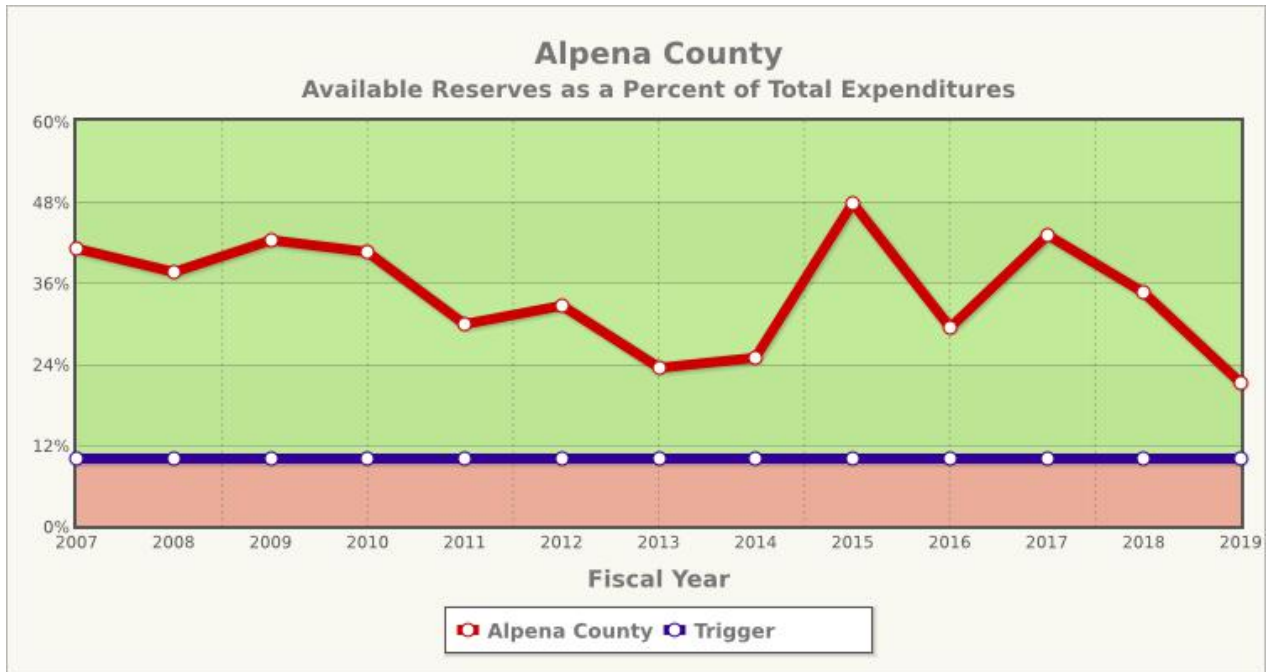
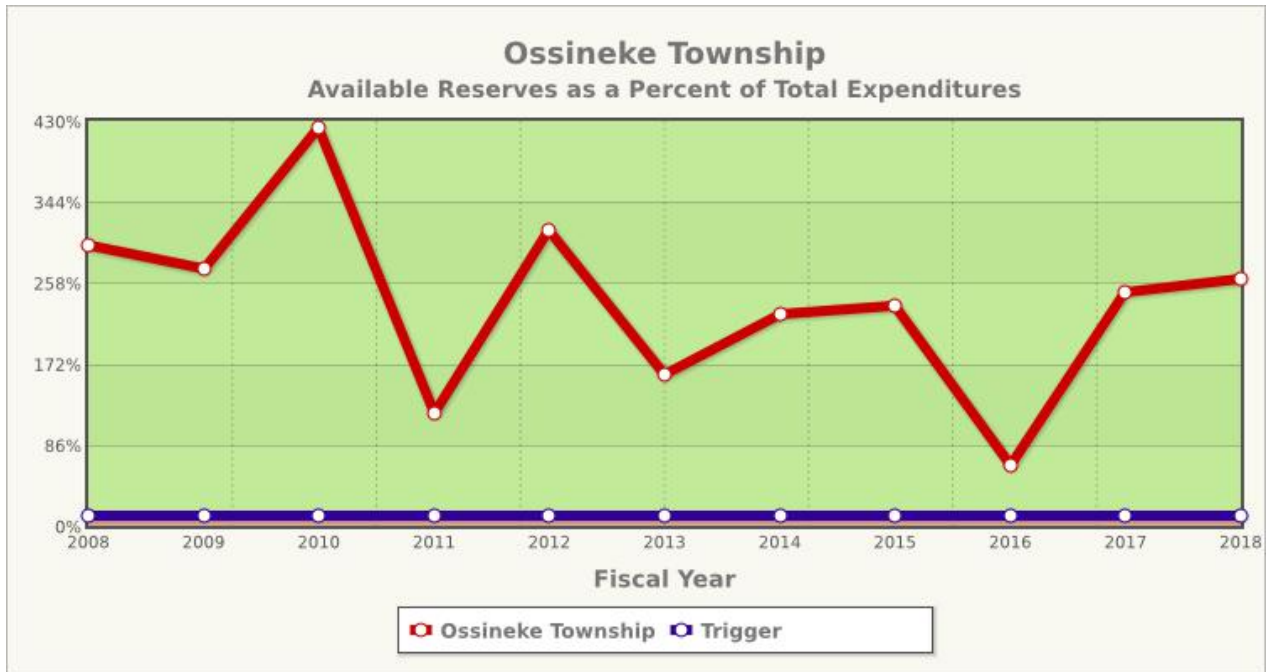


FIGURE 2-42 ALPENA COUNTY: AVAILABLE RESERVES AS A PERCENT OF TOTAL EXPENDITURES



FIGURE 2-43 GREEN TOWNSHIP: AVAILABLE RESERVES AS A PERCENT OF TOTAL EXPENDITURES



**FIGURE 2-44 OSSINEKE TOWNSHIP: AVAILABLE RESERVES AS A PERCENT OF TOTAL EXPENDITURES**



**FIGURE 2-45 WILSON TOWNSHIP: AVAILABLE RESERVES AS A PERCENT OF TOTAL EXPENDITURES**



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# Chapter 3

## Community Services and Facilities

Community services and facilities play an important role in maintaining and improving quality of life. The location and level of some services, such as public water, public wastewater, and fiber optic lines, determine the types and intensities of development within a community. These services may be sufficient for the needs of the current population; however, future development may require an upgrade or expansion of services and facilities. Often, smaller communities do not have the financial resources to provide the variety of public, semi-public, and private services that would be considered essential in a larger community. For example, many rural communities work cooperatively with adjacent communities to provide essential services.

### PUBLIC WATER & WASTEWATER SUPPLIES

The City of Alpena has the only water treatment and wastewater treatment plants in the county. The City contracts operation and billing for both utilities to Suez Water. Public water and wastewater are available throughout the city, portions of Alpena Township, a portion of Wilson Township and at the Alpena County Regional Airport. The City of Alpena Water Filtration Plant supplies water, and the City of Alpena Water Recycling Plant treats all wastewater in the public system (Figure 3-1).

Alpena Township and the City of Alpena each manage, operate and maintain the water facilities within their boundaries. Per a 1977 contract and Master Agreement, signed with Alpena Township, the City of Alpena provides up to 1.5 million gallons of water to the Township per day and accepts up to 2 million gallons of wastewater per day. However, this agreement has expired and is being renegotiated between the City and Township.



FIGURE 3-1 PUBLIC WATER AND SEWER BOUNDARIES

According to information from the managing entity of the water systems, the 2017 average daily water usage for both the City and Township was approximately 1.63-million gallons, with maximum daily usage of 1.77-million gallons. Per the 1977 agreement, service area boundaries were established that limit the extension of wastewater and water infrastructure. When initially established, the boundary went north to Bloom Road, East to Wessel Road, West to the Alpena Township Line and south to Partridge Point. The agreement was amended in 1998 to extend the service area to include wastewater and water lines to the Alpena County Regional Airport. In 2006, the water main was extended south along US-23 to the southern Alpena Township line. The remainder of the County is served by individual wells and septic tanks for which permits must be obtained from District Health Department #4.

### **PUBLIC WATER SUPPLY**

The Alpena water system serves 4,576 customers in the City of Alpena and 2,298 customers in the adjacent portions of Alpena Township. Thunder Bay is the source for all public water in Alpena County. A groundwater investigation conducted in 1966 by W.G. Keck & Associates determined there is not a water bearing formation in the area adequate to serve as a source for municipal supply. The City of Alpena Water Filtration Plant is located on the shore of Thunder Bay at the south end of the City of Alpena. The water plant is a conventional surface water plant. Coagulation, flocculation, and filtration are used to clean the water.

The water system consists of a Thunder Bay intake, 6.0 mgd filter plant, four elevated storage tanks and eighty miles of distribution piping. The current raw water intake has been in service since 1905 and has two intakes. The intake line is 2,000 feet long and is a 40-inch diameter pipe with a 30-inch polyethylene liner. There are two openings that are anchored by rock and timber intake cribs; one located approximately 1,000 feet from shore in 10 feet of water and the second located approximately 2,000 feet from shore in 17 feet of water. The rated capacity of the intake pipe is 8 million gallons per day at 2.52ft/sec. Control of zebra mussel colonization within the intake pipe is accomplished via chemical addition. Once the water enters the treatment plant, it takes 12 hours to complete the treatment cycle.

During the process, at least 50,000 samples are collected and analyzed per year and fluoride, phosphate, and flocculent aides are added. The plant laboratory is certified by the State of Michigan to test for Total and Fecal Coliform bacteria. These are the primary indicator organisms for water quality, both for drinking and swimming/recreation. The facility also tests for chlorine (disinfectant), pH, hardness, alkalinity, turbidity, fluoride, and other possible contaminants as required.

One 750 KVA diesel powered (1034 HP) generator is available to operate the entire water treatment plant. This generator will produce all of the necessary electricity to meet City needs during any power failure. The auxiliary generator is exercised quarterly.

The treatment plant has a firm capacity of 6.0 million gallons per day with a maximum daily demand of 3.04-million gallons per day. The average daily demand is 1.98-million gallons per day. There are also 80.6 miles of water main within the entire system.

Treated water storage is as follows:

- 1-million gallon ground storage at the Water Treatment Plant
- 750,000 gallons at Ninth Avenue elevated tower
- 750,000 gallons at North Industrial elevated tower
- 500,000 gallons at Alpena Township M-32 elevated tower
- 500,000 gallons at Alpena Township Piper Road elevated tower
- 300,000 gallons at the Alpena Township US-23 South elevated tower

## **PUBLIC WASTEWATER**

The original water recycling treatment plant became operational in 1953 and many of the treatment units remain in use today. In 1972, the plant was upgraded to improve pollutant removal capability. Using grant funds from the USEPA, secondary treatment was added to the facility. A biological treatment process called Activated Sludge was used to enhance removal of dissolved pollutants from the wastewater. This addition improved pollutant removal rates and the plant regularly achieves 90 to 95% pollutant removal efficiency.

The Alpena Water Recycling Plant has a defined service area of a 25-mile radius around the plant and serves 4,798 customers in the City of Alpena and 2,013 customers in Alpena Township. The system consists of 69.3 miles of sanitary wastewater lines and 11 lift stations. The treatment plant has an average design capacity of 5.5 million gallons per day with a maximum pumping capacity of 7.2 million gallons per day. The average daily treatment is 2.3 million gallons per day.

Preliminary treatment accomplishes the removal of screenings and grit from the raw wastewater. The removed grit is collected, stored, and disposed of by land filling. Primary Clarifiers accomplish about 15% to 20% pollutant removal. Aeration reactors and final clarifiers aid in removing more bacteria. A Biosolids Application Program is in place, which utilizes the nutrient-rich residues to beneficially enrich soils for area farmers. Biosolids are also used to regenerate forest growth and to reclaim areas destroyed during industrial mining operations.

Chlorine bleach is added to the treated wastewater after secondary treatment is complete. Any wastewater treatment process generates solids that must be stabilized and recycled. Two 300,000-gallon anaerobic digesters are used to treat the solid material generated by the Alpena Water Recycling Plant. A valuable byproduct of the anaerobic digestion process is methane gas. This energy source is used to fire the plant boiler and fuel a 4-cylinder engine that drives a raw wastewater pump. Utilization of methane gas from the digester saves the utility about \$15,000 per year in energy costs.

*Mercury Minimization:* The Alpena Water Recycling Plant first implemented mercury minimization in 1986. The focus of the plan was to identify and eliminate mercury discharges from commercial and industrial sources. Utility personnel have assisted in the identification of numerous over-the-counter products that utilize mercury as a preservative. Once identified, mercury free products can be substituted.

*Industrial Pretreatment Program:* The water recycling plant management staff regulates commercial and industrial wastewater discharges. Chemicals that could upset the biological processes at the plant must be strictly controlled. The indiscriminate discharge of metals and other toxins can also pass through the plant and enter the environment. Customers that have the potential to negatively impact plant processes are issued discharge permits and are inspected annually to ensure compliance with limitations.

*Odor Control:* The equipment and infrastructure necessary to transport and recycle wastewater creates conditions that are inherently prone to the creation of odors. Because of the plant's close proximity to the City Marina, \$1.5 million worth of odor control equipment was added to the facility as well as aesthetic upgrades.

## GREEN TOWNSHIP WATER SUPPLY AND SEWAGE DISPOSAL

Public water and sewage disposal are not available in Green Township. However, a residential development located along the eastern portion of the Village of Hillman receives public water and sewer services from the village. The rest of the township relies on on-site private wells for domestic drinking water and private on-site septic systems for wastewater disposal. According to well log records, the drinking wells are drilled up to a depth of 350 feet (Figure 3-2).

In the past, private septic systems have worked satisfactorily when development was scattered and/or seasonal in nature. As seasonal homes are converted into year-round homes and development increases along major roadways and shoreline areas, septic system problems have occurred more frequently. Bedrock near the surface and poorly suited soils, such as hydric or sandy soils, pose problems for siting septic fields. In an effort to protect nearby drinking water wells and water resources, Green Township adopted septic system regulations for properties adjacent to or that have access to inland lakes.

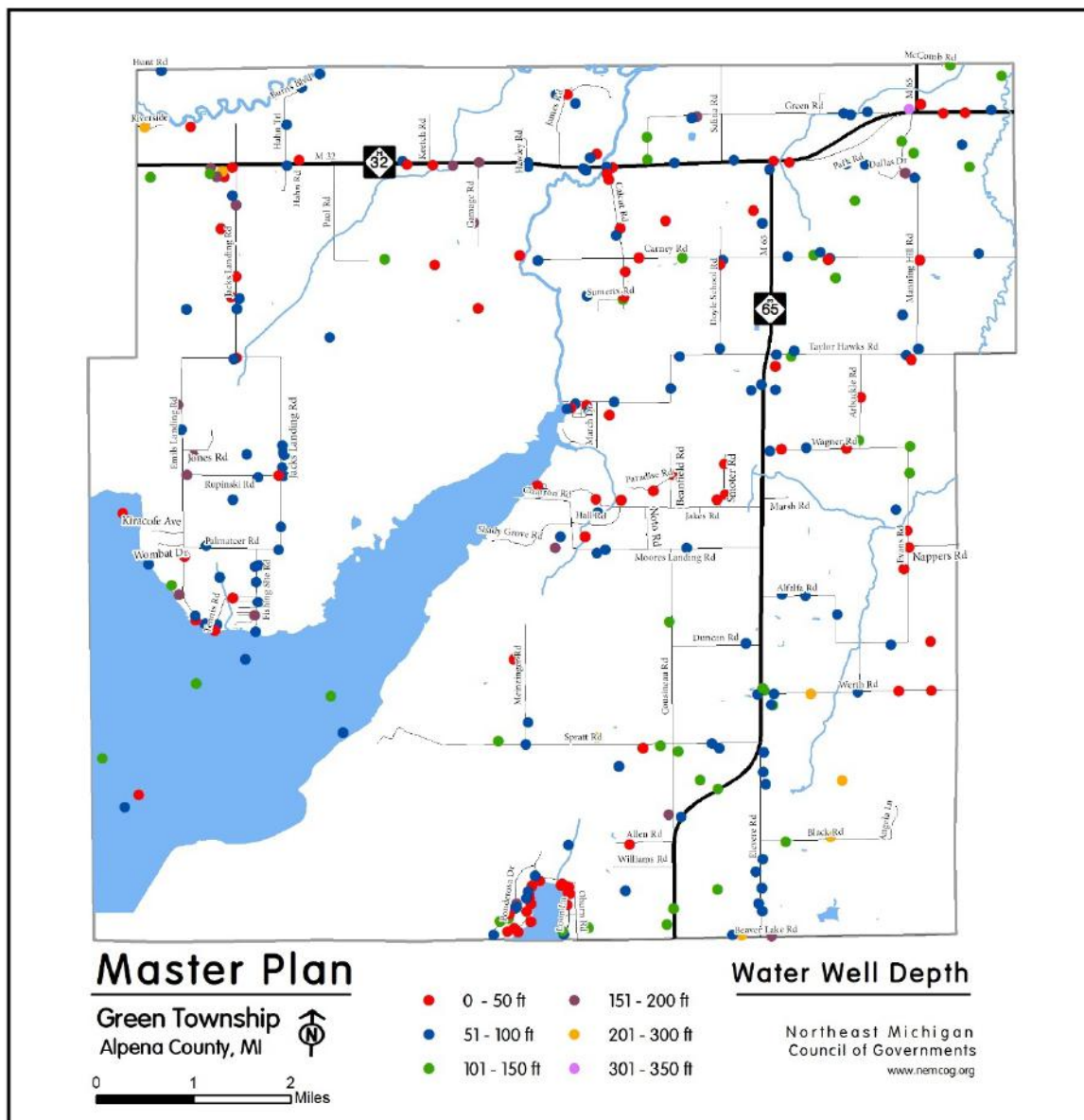


FIGURE 3-2 GREEN TOWNSHIP WATER WELL DEPTH

## **OSSINEKE TOWNSHIP WATER SUPPLY AND SEWAGE DISPOSAL**

Public drinking water and sewage disposal are not available in Ossineke Township. Residents rely upon on-site private wells for domestic drinking water, which are regulated by the District Health Department under the Public Health Code. The Federal and State Safe Drinking Water Acts regulate wells for facilities, such as schools, motels, etc.

According to well log records the drinking wells in Ossineke Township are drilled to a depth between 30 and 318 feet (Figure 3-3). Approximately 92% of the wells are drawing from aquifers in glacial drift and the remaining wells are drilled into bedrock. While bedrock aquifers are found across the township, there is a concentration trending east-west in the vicinity of Beaver Lake Road and north-south in the vicinity of Hubbard Lake Road.

Residents rely on private on-site septic systems. There are two important determinants for siting a septic system: soil types and steepness of slopes. Areas with clay soils, steep slopes, and small lots pose problems for siting and maintaining septic systems. Additionally, lakefront properties tend to have older systems that need to be upgraded to accommodate the increased usage from year-round living or larger homes. In some cases, it is not possible to expand the septic system due to small lot sizes and required isolation distances from water wells and surface water.



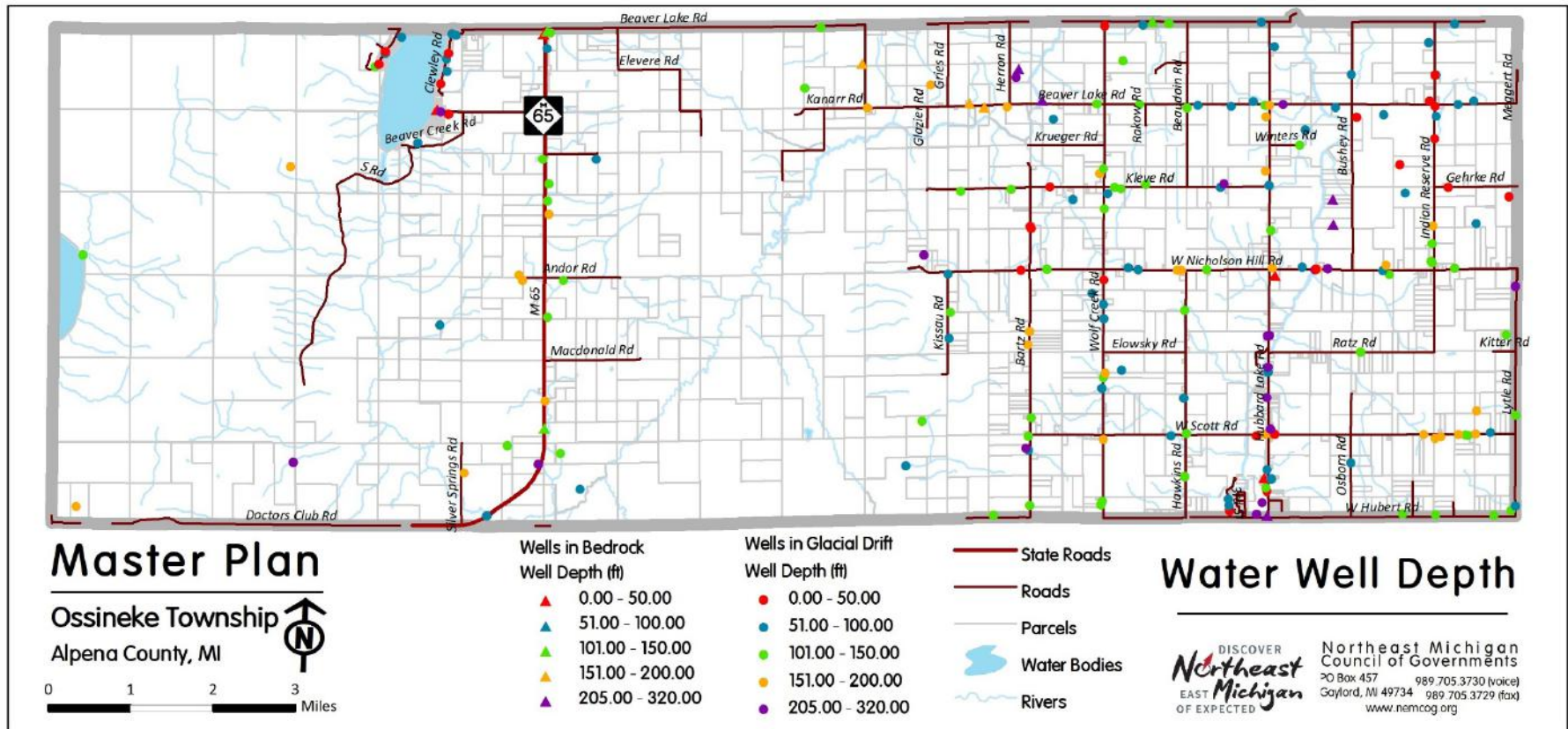


FIGURE 3-3 OSSINEKE TOWNSHIP WATER WELL DEPTH

## WILSON TOWNSHIP WATER SUPPLY AND SEWAGE DISPOSAL

The majority of the residents in Wilson Township rely on on-site private wells and on-site private septic systems, while some residents are served by the public water and sewer lines that serve the Alpena County Regional Airport (Figure 3-4). On-site private wells for domestic drinking water are regulated by the District Health Department under the Public Health Code. The Federal and State Safe Drinking Water Acts regulate wells for facilities, such as schools, motels, etc.

According to well log records, most drinking water wells in Wilson Township are drilled to a depth of 25 to 240 feet (Figure 3-5). Approximately 76% of the wells are drawing from aquifers in glacial drift with a depth range between 25 to 227 feet, while about 18% of the wells are drilled into bedrock with depths ranging from 34 to 240 feet (Figure 3-6). There is a concentration of bedrock aquifers in the northern portion of the township. Overall, District Health Department #4 has not indicated major issues with water quality; however, there are some isolated incidents with nitrate levels.

Since most of the township residents rely on private on-site septic systems, there are two important determinants for siting a septic system: soil type and steepness of slopes. Areas with clay soils, steep slopes, and small lots pose problems for siting and maintaining septic systems. Additionally, lakefront properties tend to have older systems that need to be upgraded to accommodate the increased usage from year-round living or larger homes. In some cases, it is not possible to expand the septic system due to small lot sizes and required isolation distances from water wells and surface water. According to District Health Department #4, approximately half of the drain fields are inground, while half are mounded systems. Mounded systems are required when soils do not perc properly due to clay soils, bedrock, and highwater tables. Generally, these systems are satisfactory when development is scattered or seasonal in nature.

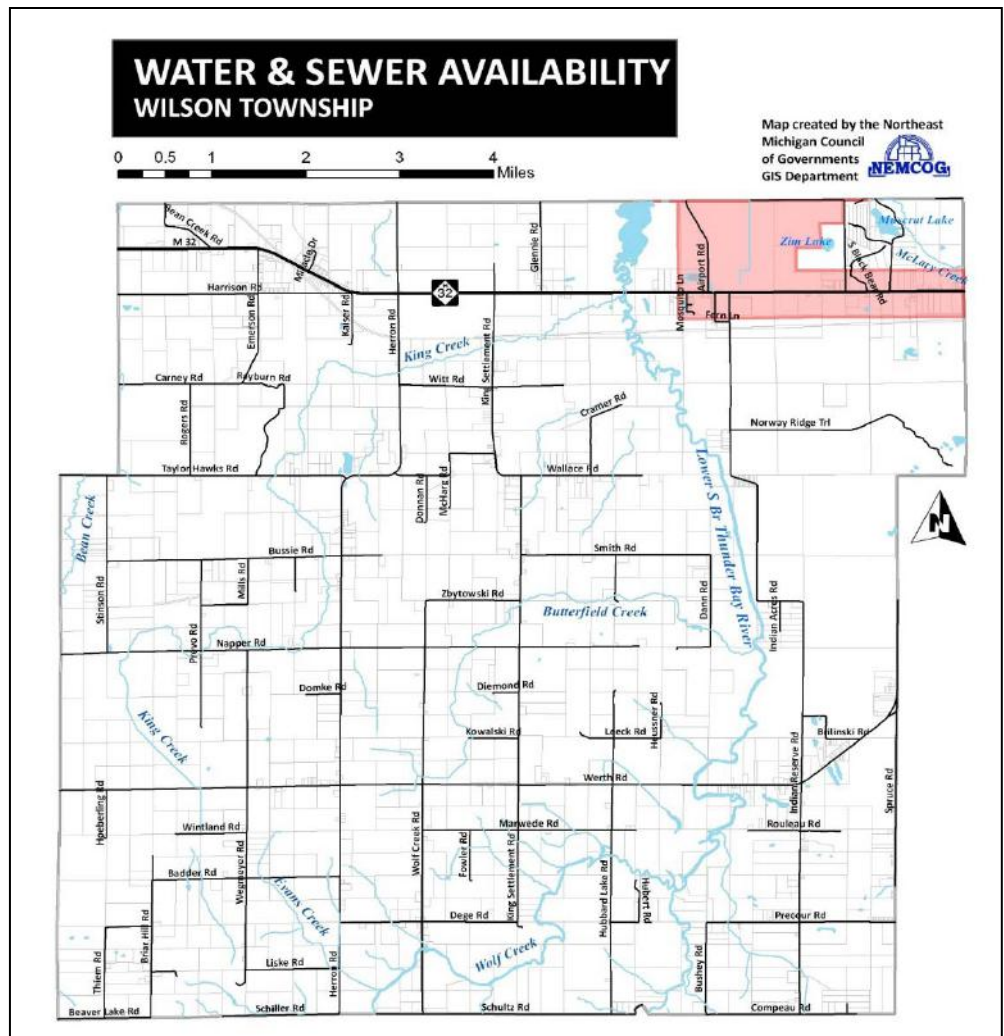
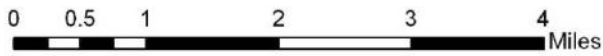


FIGURE 3-4 WILSON TOWNSHIP PUBLIC WATER AND SEWER AVAILABILITY



# WATER WELL DEPTH WILSON TOWNSHIP



Map created by the Northeast Michigan Council of Governments  
GIS Department

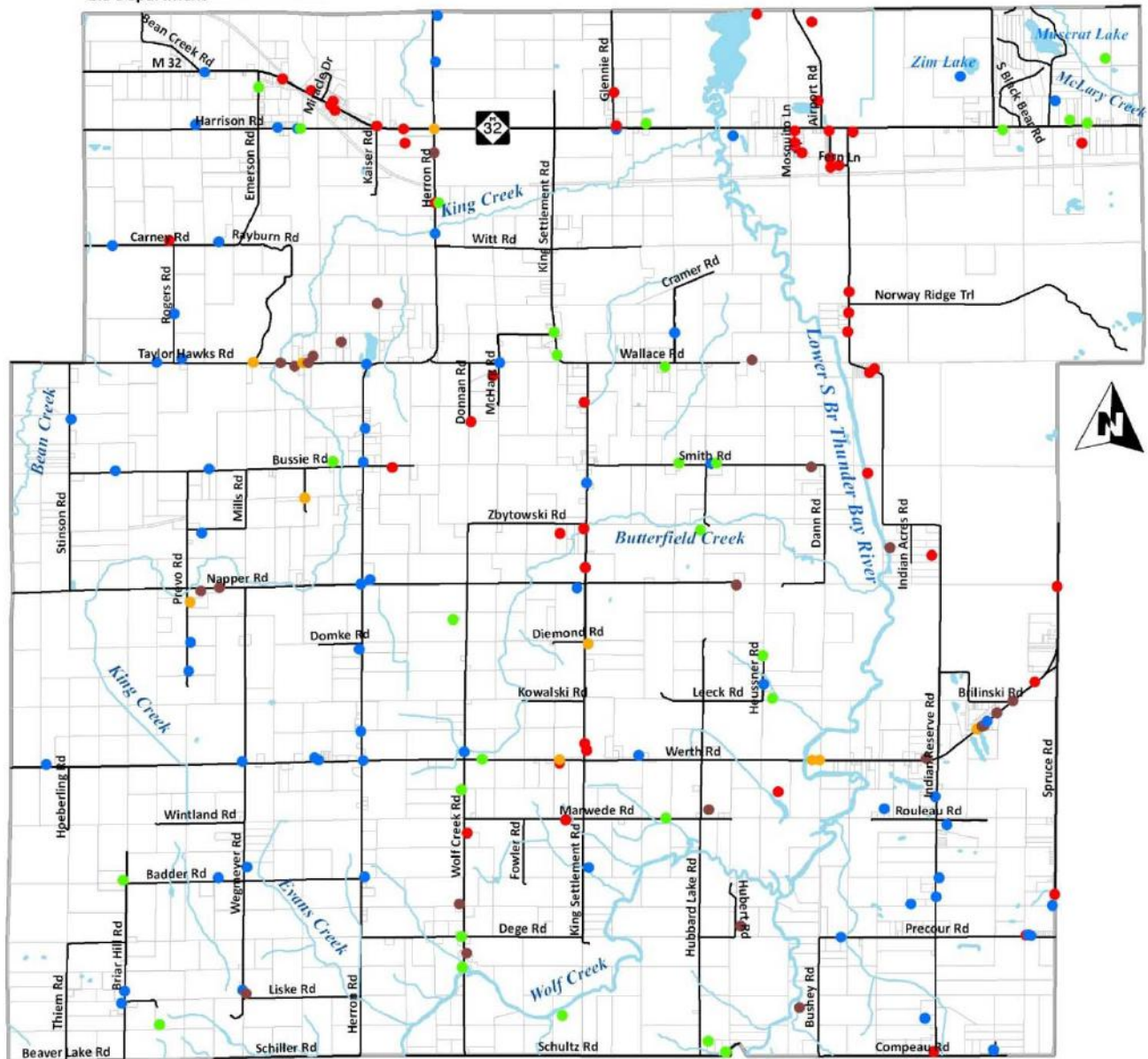
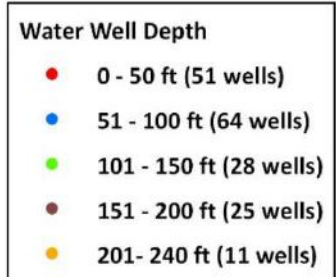
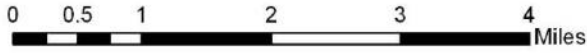


FIGURE 3-5 WILSON TOWNSHIP WATER WELL DEPTH

# WATER WELL AQUIFER TYPE WILSON TOWNSHIP



Map created by the Northeast Michigan Council of Governments  
GIS Department

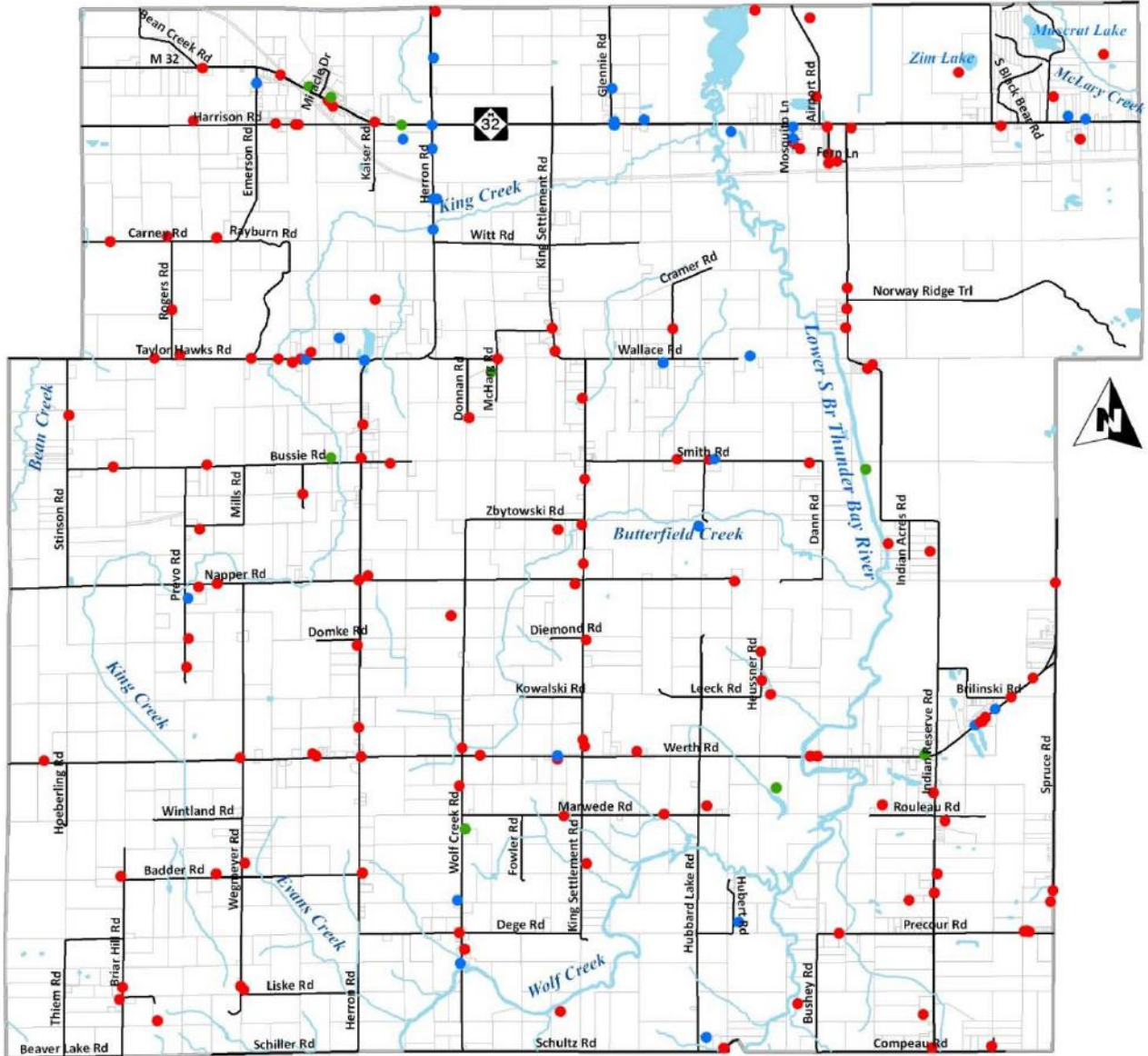
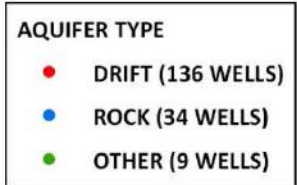


FIGURE 3-6 WILSON TOWNSHIP WATER WELL AQUIFER TYPE

## UTILITIES

Alpena County’s utility system includes the City of Alpena water and wastewater systems, and private suppliers of electric, natural gas, telecommunications, and solid waste disposal (Table 3-1).

TABLE 3-1 ALPENA COUNTY UTILITY SYSTEM		
Utility	Company	Service Area
Natural Gas	DTE Gas	Alpena Township, Maple Ridge Township, Sanborn Township, Wilson Township
	Presque Isle Electric & Gas Co-op	Green Township along M-65 and M-32, Long Rapids Township, Maple Ridge Township, Ossineke Township
	Liquefied Propane, Fuel Oil, Wood, Corn, Pellets	Green Township, Ossineke Township
Electricity	Alpena Power Company	Alpena Township, Maple Ridge Township, Ossineke Township, Sanborn Township, Wilson Township, Green Township (only in isolated cases)
	Presque Isle Electric & Gas Co-op	Alpena Township, Green Township, Long Rapids Township, Maple Ridge Township, Ossineke Township, Wellington Township, Wilson Township
	Consumers	Ossineke Township, Sanborn Township
Telecommunications	Telephone: Telnet Worldwide, Frontier, Allband Multimedia, Verizon Cellular Service: Numerous providers Internet: Numerous providers Cable: Charter Communications, Allband Multimedia	Countywide, Green Township: in the area of Park Road in Lachine only
Water and Sewer	City of Alpena Water/Wastewater Utility	City of Alpena, Alpena Township, Wilson Township

Source: Michigan Department of Licensing & Regulatory Affairs (Michigan Public Service Commission)

### SOLID WASTE DISPOSAL

Alpena County is a member of the Montmorency-Oscoda-Alpena Solid Waste Management Authority (MOASWMA). The MOASWMA landfill in Montmorency County is the primary destination for the county’s solid waste. Collection of solid waste is available through private hauling companies with curbside collection being the most common collection method. Residents from Green Township have the option to take garbage directly to the MOASWMA and pay per bag instead of paying a private hauling company. Industrial waste in Wilson Township is transported to Waste Management’s Landfill in Waters, Michigan. Yard waste is picked-up monthly from April to November in the City of Alpena and processed at its composting facility located at the City DPW Facility.

Although the Lafarge Corporation owns and operates its own landfill, many other industries have found ways to recycle all or portions of their wastes. The Alpena City Water Recycling Plant produces 500 dry tons per year of sludge, all of which is used for different applications, such as farm fields, forest regeneration and mine reclamation. It is the goal of the plant to keep all sludge out of the landfill.



The Alpena Resource Recovery Program ([www.AlpenaRecycling.org](http://www.AlpenaRecycling.org)) is administered by Northeast Michigan Council of Governments (NEMCOG) and is overseen by the Alpena Resource Recovery Board that includes representatives from various political jurisdictions. The program includes the Resource Recovery Facility (RRF) located on M-32 and a number of full-time drop off sites (Figure 3-7). The primary funding source for the program is a surcharge fee per household. Businesses and out-of-county residents can purchase permits to participate in the program. The program accepts electronics, household hazardous waste, paper, tin, batteries, aluminum, plastic, cardboard, garbage, construction debris, mattresses, furniture, appliances, and motor oil. It also participates in the "Cleansweep" program sponsored by the Michigan Department of Agriculture, which is designed to encourage citizens to turn in hazardous materials.



**FIGURE 3-7 RESOURCE RECOVERY BIN LOCATIONS MAP**

**BROADBAND/FIBER OPTIC NETWORK**

Providing broadband in a rural area is a greater challenge than a densely populated urban area since there are fewer potential customers per square mile for the local internet service providers. However, efforts by local coalitions have assisted with broadband deployment.

In January 2005, the Alpena City Council’s Vision Statement and Goals document included the development of a “wired city” and the relocation of all new or reconstructed utilities underground. This led to the development of a plan to develop a fiber optic conduit network that would provide the backbone for high-speed telecommunications (e.g. voice, video, and data transfer), and a ready-made system in which to place new or relocated aerial utilities. To further develop the fiber optic network, the City also adopted a policy to develop an underground conduit system as part of other road construction projects within the City.

The City pursued the sharing of resources with the public/nonprofit sector through the creation of a fiber optic consortium. The City of Alpena, Michigan Works!, Alpena County, Alpena Community College, the Thunder Bay National Marine Sanctuary, Northland Library Cooperative, and Alpena Regional Medical Center were the charter members of the consortium. The consortium’s purpose is to enhance voice, video and data communications among all public/non-profit entities and develop a redundant network throughout the greater Alpena area to ensure service reliability. Recently the Consortium has reorganized, becoming the North East Michigan Fiber Consortium (NEMiFC). NEMiFC amended its Articles

of Association and By-Laws in order to add additional members, gain the ability to own its own fiber optic networks, apply for grant funding and offer more support to its members.

To accelerate the development of both the network and the consortium, the City of Alpena applied for and received a 2006 Center for Regional Excellence designation from the State of Michigan. This designation included a \$25,000 micro-grant, which targeted network development in three key target zones (City Hall/City Marina/Northland Library Target Zone; the Community Development Building Target Zone; the ARMC/Civic Center Target Zone). All construction projects were completed within one year and educational activities were completed by the end of 2007. NEMiFC also developed a policy by which its members can install and own fiber and choose to lease dark fibers to other entities to support the maintenance and expansion of the broader fiber network.

Local internet service providers are utilizing government funds (e.g. loans and grants) to assist areas with no broadband coverage. Most government programs aim to assist internet service providers that will utilize 10Mbps or faster. Figure 3-8 provides information about the type of service platforms in Alpena County that have broadband download speeds of at least 10Mbps and upload speeds of 1Mbps. Red, yellow, and purple areas show non-wireless broadband connections. Figure 3-9 shows the maximum download speed across Alpena County.

# Broadband Service Inventory by Platform

Advertised Speeds of at Least 10 Mbps Download and 1 Mbps Upload

Alpena County Michigan

Published July 31, 2018



Data displayed on this map is developed from a combination of direct provider outreach and data collection, FCC Form 477 filings, State Broadband Initiative data, and independent research conducted by Connect Michigan. As such, broadband availability at an exact address location cannot be guaranteed. Detailed broadband services may also be available.

Submit questions or recommendations to: [map@connectmi.org](mailto:map@connectmi.org)



## Symbology

In areas where multiple broadband providers offer services, this platform composites map stacks coverage display layers in the order presented below.

- Interstate
- US Road
- Local Road
- Municipal Boundary
- County Boundary
- Water
- National/State Land
- Fiber Broadband
- Cable Broadband
- DSL Broadband
- Fixed Wireless Broadband
- Mobile Wireless Broadband\*
- Unserved Area

\*This map is not a guarantee of coverage, contains areas with no service, and generally practice where outdoor coverage is available. Equipment, topography and environment affect service.

0 1 2 4 Miles  
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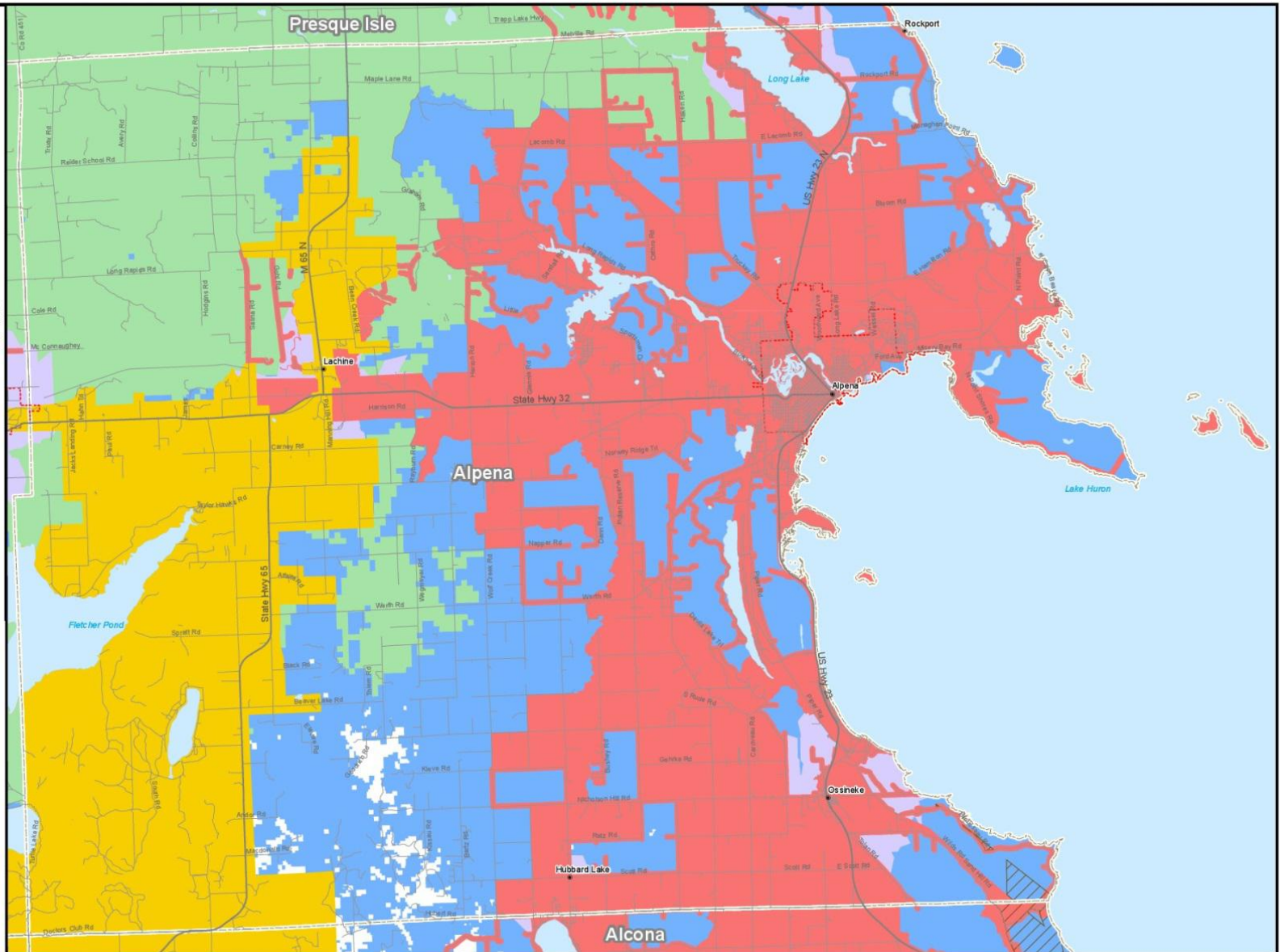


FIGURE 3-8 ALPENA COUNTY BROADBAND SERVICE INVENTORY BY PLATFORM



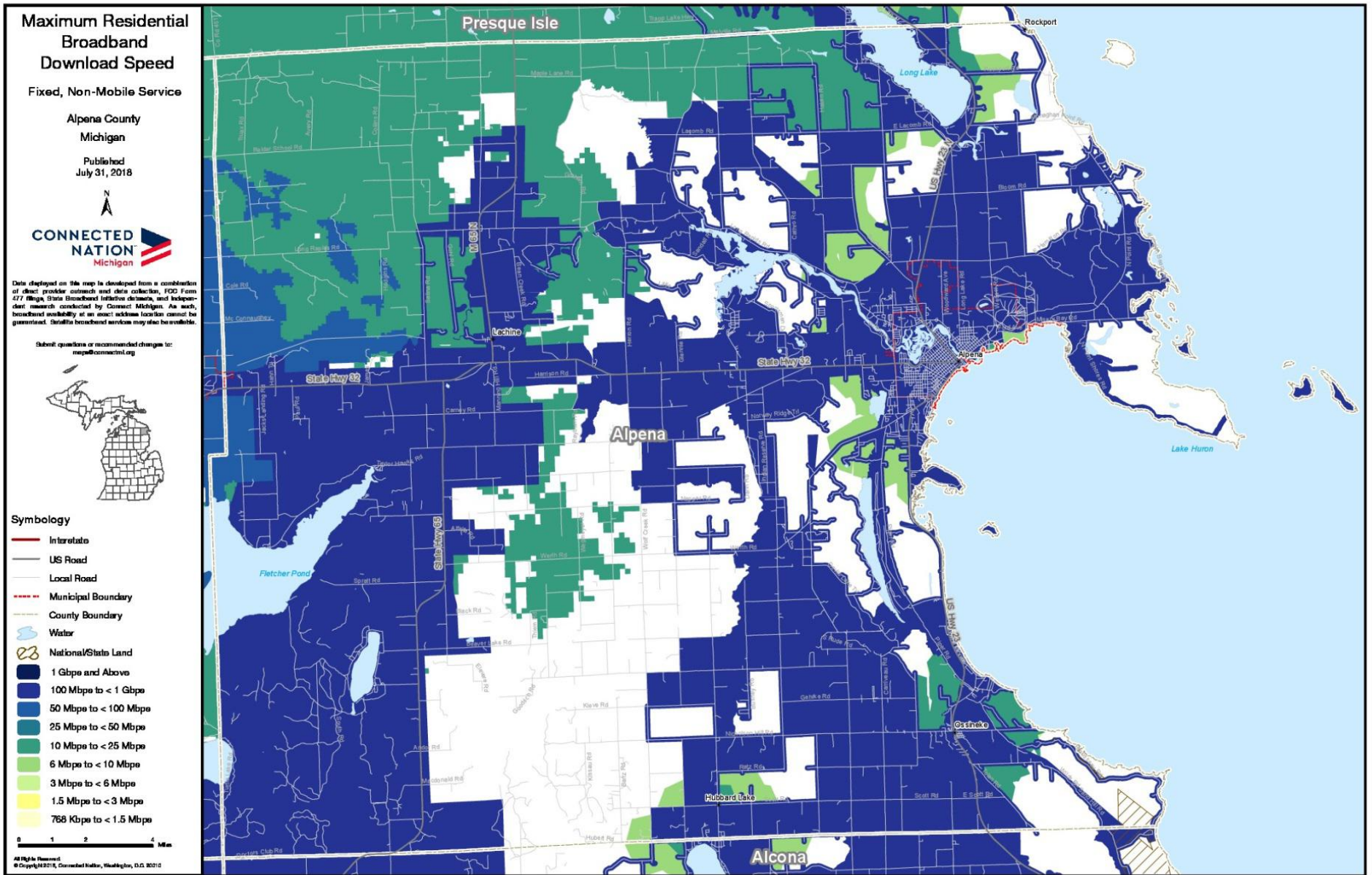


FIGURE 3-9 ALPENA COUNTY MAXIMUM RESIDENTIAL BROADBAND DOWNLOAD SPEED

## TRANSPORTATION

### ALPENA COUNTY ROAD NETWORK

Alpena County does not have an interstate highway; however, it is served by approximately 72 miles of state and federal highways (Figure 3-10). US-23 and M-65 travel north-south through the county. US-23 follows the shoreline of Lake Huron from Mackinaw City to Standish and south into Ohio, while M-65 runs along the western portion of the county. M-32 travels east-west through the county and connects it with I-75 and US 131. The County Road Commission maintains 660 miles of county roads and is also under contract with the Michigan Department of Transportation (MDOT) to maintain 159 lane miles of state highway in Alpena County.

The Alpena County Road Commission, MDOT, and Northeast Michigan Council of Governments (NEMCOG) use the Pavement Surface Evaluation and Rating (PASER) system to assess all of the federal-aid roads. The system ranges from 1 to 10, with 1 representing a failed road and 10 representing a new road. The road rating for roads owned by MDOT and the Alpena County Road Commission can be viewed in Table 3-2.

Each road rating has a prescribed fix:

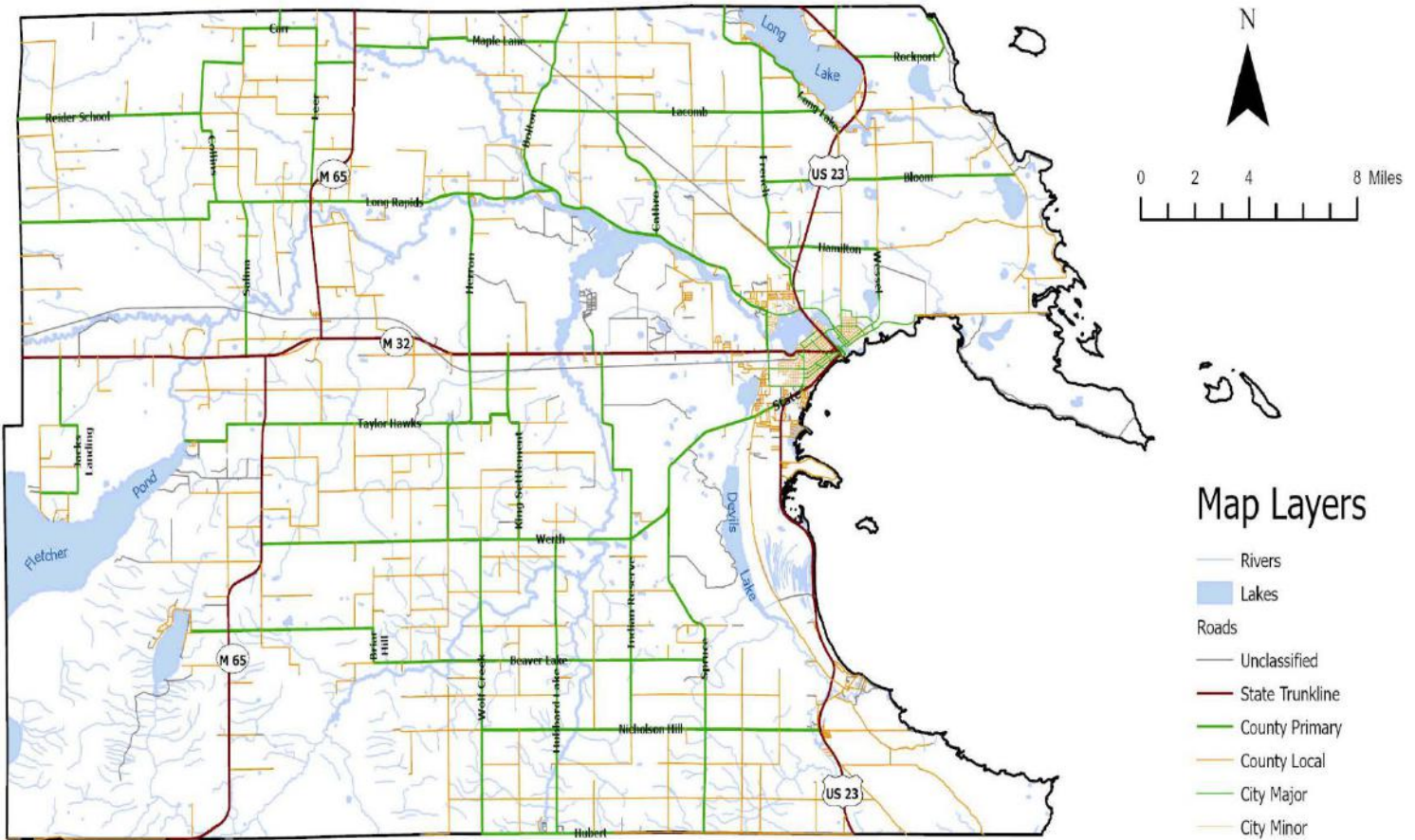
- *Routine Maintenance (rating 8-10)*: Scheduled maintenance activities include street sweeping, drainage, clearing, shoulder gravel grading, and sealing cracks.
- *Capital Preventive Maintenance (rating 5-7)*: Planned cost-effective treatments to preserve pavement, delay future deterioration, and maintain or improve the functional condition without increasing structural capacity.
- *Structural Improvements (rating 1-4)*: Rehabilitation and reconstruction work to address the road's structural integrity.

TABLE 3-2 2018 PASER RESULTS				
Authority	Routine Maintenance (8-10)	Capital Preventive Maintenance (5-7)	Structural Improvements (1-4)	Total Mileage Rated
Michigan Department of Transportation	14.8 miles	37.0 miles	17.6 miles	69.4 miles
Alpena County Road Commission	47.2 miles	44.3 miles	28.6 miles	120.1 miles
Source: NEMCOG 2018				

Alpena County has seen an increase in roads requiring structural improvements and a decrease in roads requiring routine maintenance. In 2018, 62.0 miles of roads were in need of routine maintenance (32.7%), 81.3 miles of roads were in need of capital preventive maintenance (42.9%) and 46.2 miles of roads were in need of structural improvements (24.3%). The City of Alpena contains 74.2 total miles of streets and has four bridges that cross the Thunder Bay River.



# Alpena County Road Network



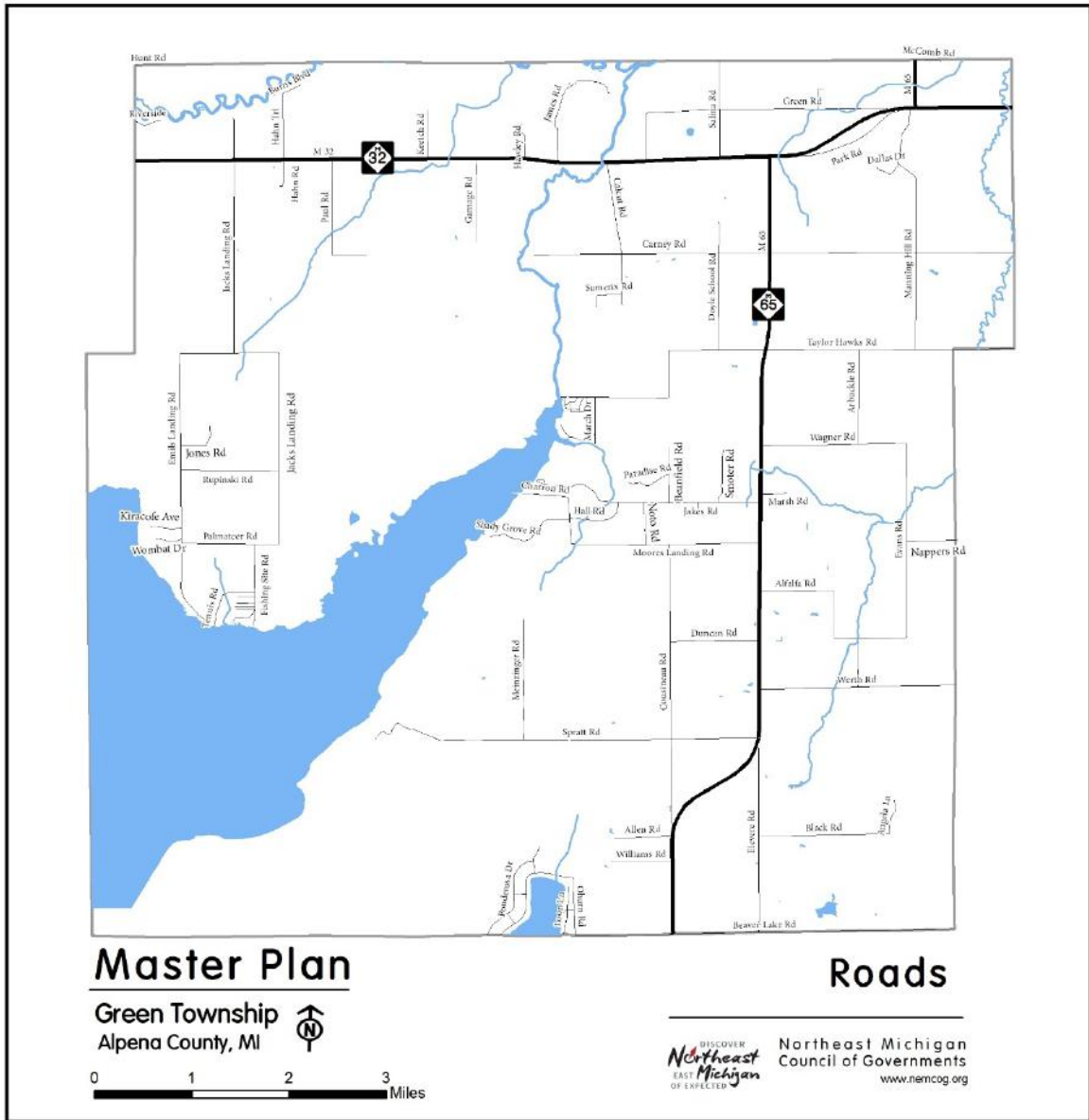
**FIGURE 3-10 ALPENA COUNTY ROAD MAP**

According to the Michigan State Police Criminal Justice Information Center, Alpena County had 861 crashes in 2017. The majority of the crashes occurred on local streets with 350 deer accidents, 50 distracted driver accidents, 34 alcohol accidents, 21 police-ambulance-fire accidents, 13 drug accidents, 11 bicycle accidents, and 5 pedestrian accidents.

From 2006 to 2013, the annual average daily traffic volume generally followed the same trends for both M-32 and US-23 according to MDOT. In 2017, the annual average daily traffic (AADT) for M-32 ranged between 5,095 and 19,917, and the AADT for US-23 ranged between 5,627 and 13,668. For new developments, a traffic crash and flow analysis should be completed during the site plan review process.

## **GREEN TOWNSHIP ROAD NETWORK**

In Green Township, M-32 and M-65 intersect for approximately a half mile at Manning Hill Road (Figure 3-11). M-32 runs east-west across the northern part of the township for 10 miles, while M-65 runs north-south along the east side of the township for 10.5 miles. Local roads are maintained by the Alpena County Road Commission with funding assistance from the Township.



**FIGURE 3-11 GREEN TOWNSHIP ROADS**

**OSSINEKE TOWNSHIP ROAD NETWORK**

Roads are scarce in Ossineke Township due to the low population density and large tracts of forested and recreational land. According to the Michigan Center for Geographic Information, the township has 117 miles of roads, including over seven miles of state trunkline (M-65), over 37 miles of county primary roads, over 68 miles of county local roads, and three miles of unclassified roads.

Roads on the eastern side of the township (R7E) are better developed than the roads on the western side (R5E, R6E), which consist of private roads and two-tracks (Figure 3-12). State highway M-65 runs north-south along the dividing line between R5E and R6E for over seven miles. Hubbard Lake Road and Wolf Creek Road are the only other roads that travel the entire north-south distance of the township. The county primary roads include Beaver Lake Road, Hubbard Lake Road, Indian Reserve Road, Hubert Road, Nicholson Hill Road, and Wolf Creek Road. The Alpena County Road Commission is responsible for road maintenance, snow removal, and improvements.

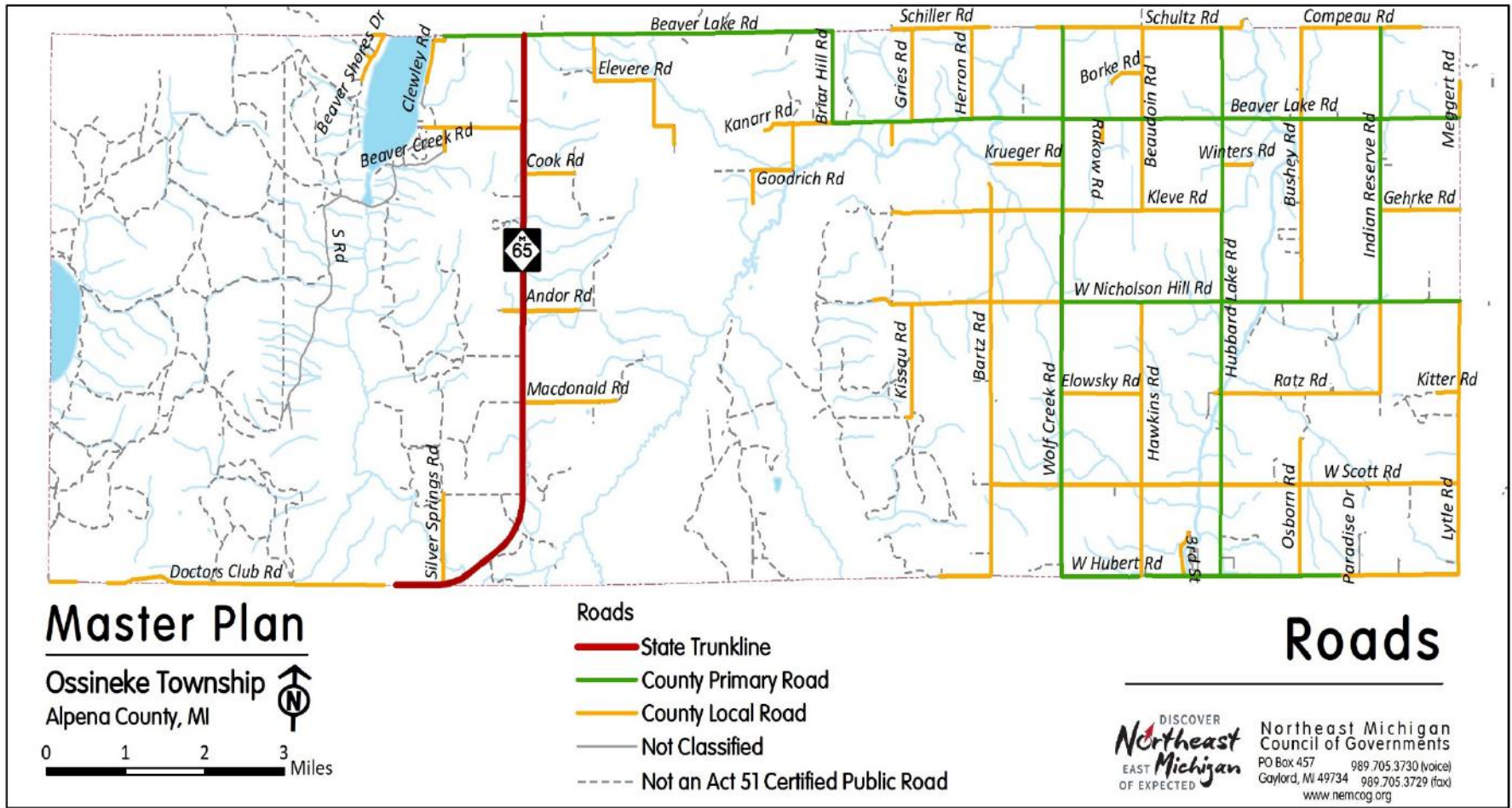


FIGURE 3-12 OSSINEKE TOWNSHIP ROADS



## WILSON TOWNSHIP ROAD NETWORK

According to the Michigan Center for Geographic Information, Wilson Township has 135.9 miles of roads including 9.1 miles of state trunkline (M-32), 44.7 miles of county primary roads, 68.5 miles of county secondary roads, and 13.6 miles of unclassified roads.

M-32 traverses east-west across the northern portion of the township with the remaining roads classified as county and private (Figure 3-13). The county primary roads include Beaver Lake Road, Herron Road, Hubbard Lake Road, Indian Reserve Road, King Settlement Road, Spruce Road, Taylor Hawks Road, Werth Road, Wolf Creek Road and a portion of Airport Road. The Alpena County Road Commission is responsible for road maintenance, snow removal, and improvements. Wilson Township contributes to road funding as funds are available.

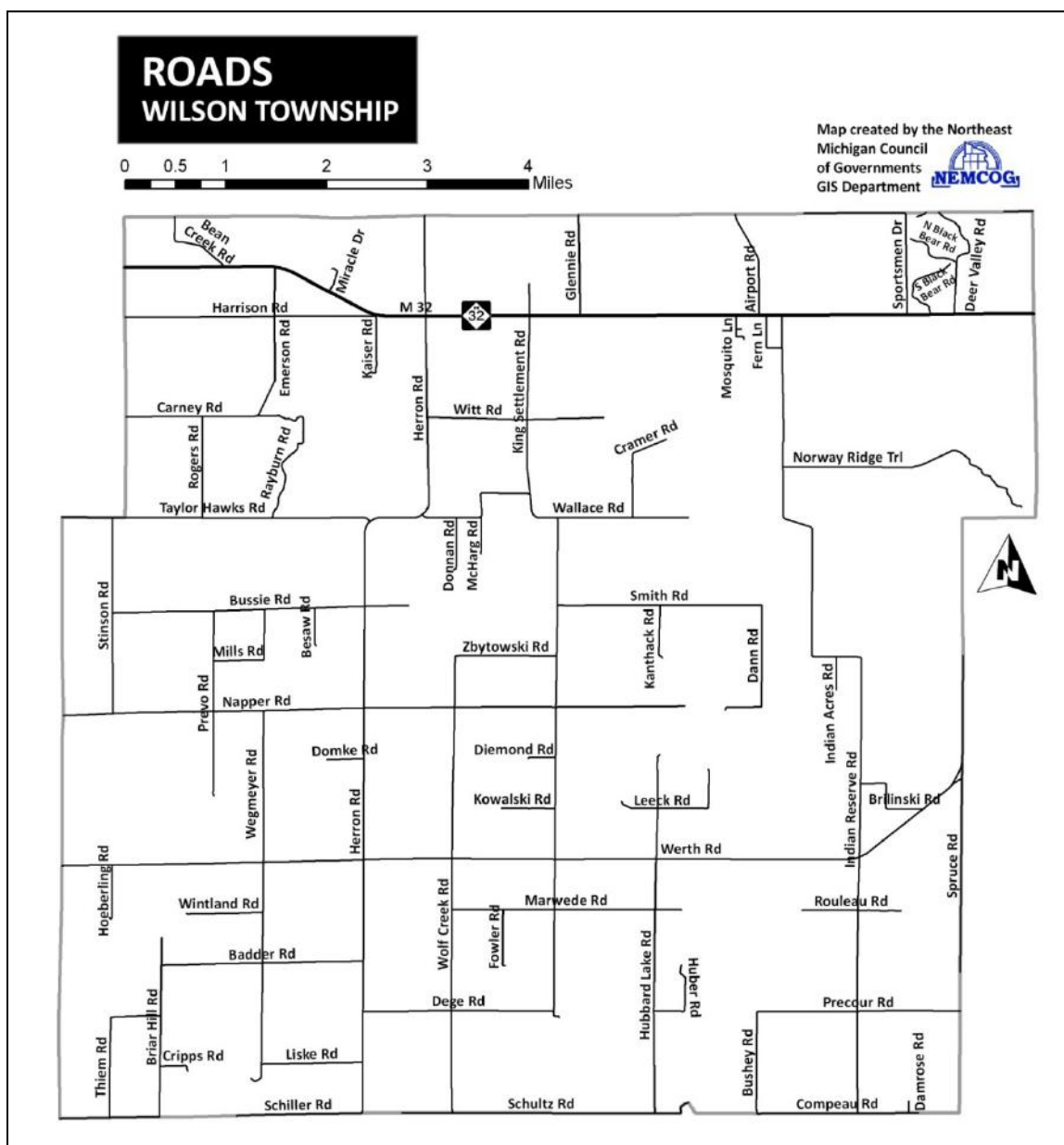


FIGURE 3-13 WILSON TOWNSHIP ROADS

## AIR TRANSPORTATION

Regional air service is available at Alpena County Regional Airport (Phelps Collins), which is located in both Maple Ridge and Wilson Townships. The airport has a 9,001 foot runway, a 5,028 foot concrete runway, and state of the art communications and radar systems. The airport has the ability to accommodate any type of commercial or military aircraft and is a U.S. Customs Port of Entry. The airport is also home to the Combat Readiness Training Center (CRTC) of the Michigan National Guard. Passenger service connecting to Detroit and Pellston is provided by Skywest, an affiliate of Delta. Charter, airfreight, medivac services, flight training, and aircraft rentals are available from a variety of companies.

In 2019, construction was completed on a new airport terminal, parking lot and ramp improvements. The new terminal will be 12,900 square feet and will vastly improve the passenger experience. The new terminal will improve baggage handling, reduce airliner ground time, have more efficient TSA screen and baggage x-ray, and a passenger boarding bridge. The ramp is being extended 75 feet to the north to accommodate airliner “turn out” from the passenger boarding bridge. The new facility will be energy efficient with all power lines being underground. The former terminal building will be renovated for airport offices, meeting space, and an airport restaurant.

Table 3-3 shows the amount of freight and number of passengers that have traveled through the Alpena Regional Airport from 2005 to 2017. Passenger service at the airport decreased annually from 2005-2008, then began to increase until 2013 when there was an additional flight to Minneapolis. However, the flight was later dropped since Alpena was not considered an essential air service out of Minneapolis. From 2005 to 2017, inbound freight decreased by 44% and outbound freight decreased by 43%, with inbound freight outpacing outbound freight. This would indicate an opportunity to ship more freight out of Alpena on airplanes that have delivered goods to the area. The most recent data available indicates a steady increase in passenger enplanements from 2016 to July 2019 (Figure 3-14).

<b>TABLE 3-3 ALPENA COUNTY REGIONAL AIRPORT USAGE, 2005-2017</b>				
<b>Year</b>	<b>Freight (inbound) lbs.</b>	<b>Freight (outbound) lbs.</b>	<b>Commercial Passengers (inbound &amp; outbound)</b>	<b>Other Passengers (inbound &amp; outbound)</b>
2017	696,275	459,285	20,404	908
2016	651,692	415,119	16,975	862
2015	714,117	430,370	19,474	936
2014	696,172	425,654	24,852	880
2013	637,930	412,278	31,292	659
2012	649,524	465,811	25,350	975
2011	631,246	493,640	22,747	1099
2010	657,722	447,923	16,818	n/a
2009	518,930	411,489	14,876	n/a
2008	869,140	583,223	14,608	n/a
2007	963,505	785,840	15,288	n/a
2006	1,132,541	794,543	15,625	n/a
2005	1,244,849	806,391	19,666	n/a

Source: Alpena County Regional Airport

### Alpena County Regional Airport Enplanements Monthly Totals, 2016-2019

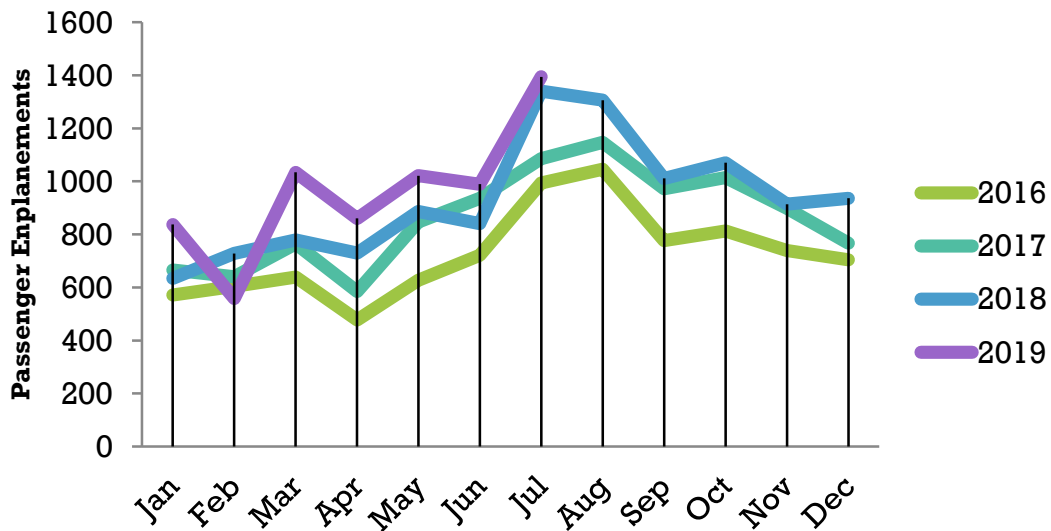


FIGURE 3-14 ALPENA COUNTY REGIONAL AIRPORT ENPLANEMENTS, 2016-2019

#### RAIL SERVICE

Freight rail service is provided by the Lake State Railroad Company. Rail service is used to deliver raw materials and products to and from the heavy industrial users in the area. No passenger service is offered. Alpena is at the end of the rail line, and Lake State Railroad has only one in-bound and one out-bound train per day, Monday through Saturday. Although the volume of freight is expected to increase, no extension or expansion of the line is anticipated. The rail bridge over the Thunder Bay River was replaced in July 2002, which was financed partially through a loan from MDOT.

#### MARINE FACILITIES

The Alpena area has two channels used for Great Lakes shipping: the Port of Alpena and the Lafarge Corporation. The annual shipping season for Alpena Harbor is from mid-March to mid-December. Shipping grew steadily between 1991 and peaked in 1999. In 2010, shipping was at its lowest level since 1991 and in general has stabilized at that lower level through 2015 (Figure 3-15). Table 3-4 shows cement and concrete are the major commodities shipped out of Alpena with the major receipts being coal, lignite, crude materials, and nonmetal minerals.

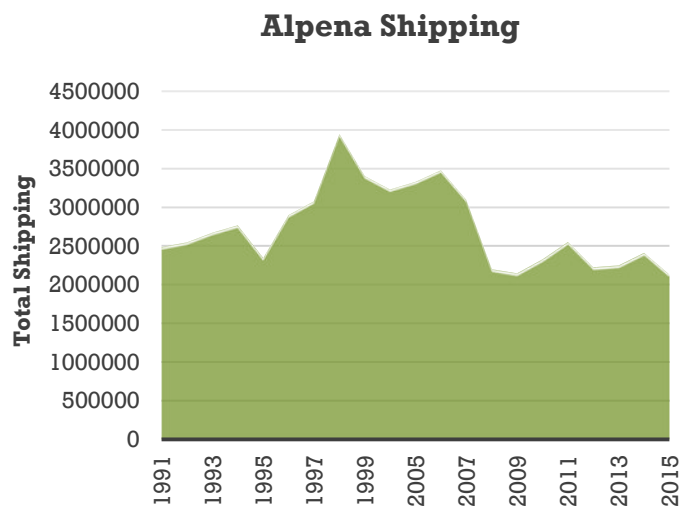


FIGURE 3-15 ALPENA COUNTY SHIPPING, 1991-2015

<b>TABLE 3-4 ALPENA FREIGHT TRAFFIC, 2016 (SHORT TONS)</b>			
<b>Commodity</b>	<b>Total</b>	<b>Receipts</b>	<b>Shipments</b>
Coal & Lignite	123,000	123,000	0
Petroleum Coke	129,000	129,000	0
Limestone	38,000	38,000	0
Gypsum	28,000	28,000	0
Aluminum ore	17,000	17,000	0
Cement & concrete	1,614,000	0	1,614,000
Fab. Metal Products	18,000	18,000	0
Salt	17,000	17,000	0
<b>Total</b>	<b>1,984,000</b>	<b>370,000</b>	<b>1,614,000</b>
Source: U.S. Army Corps of Engineers, Waterborne commerce of the United States, Waterways and Harbors, Great Lakes			

The City of Alpena Marina is a full-service public-private marina. The marina can accommodate both seasonal and transient boats of a variety of sizes. The marina is sheltered by a breakwall and access to Lake Huron is made via the mouth of the Thunder Bay River. The marina contains approximately 135 slips (58 seasonal and 77 transient) with full power and water services, launch ramps, courtesy docks, a fuel station, boater restrooms and shower facility, a fish cleaning station, a pump-out station, a marine store, maintenance facilities, and office building. Winter storage and boat launching services are also available. The City of Alpena Marina participates in the State of Michigan Central Reservation System.

**PUBLIC TRANSIT**

**THUNDER BAY TRANSPORTATION AUTHORITY**

The Thunder Bay Transportation Authority provides scheduled public transportation services to the residents of Alpena, Alcona, and Montmorency Counties, and a small portion of Presque Isle County. The authority operates Monday thru Friday with a fleet of 40 vehicles and 4 hybrid trolley buses. It also provides operational service to the three county areas and the City of Alpena via an operating agreement with a private operator. In 2017, the Thunder Bay Transportation Authority completed its new facility that includes a garage and maintenance facility. In 2017, the authority drove 518,034 annual vehicle miles and had 33,024 annual vehicle revenue hours.

Alpena Dial-A-Ride Transportation (“DART”) began operations in 1974 and was the eighth small bus system to be started in Michigan. It is operated as an on-demand transportation service by the Thunder Bay Transportation Authority, which consists of seven wheelchair lift equipped buses. The service runs seven days a week only in The City of Alpena. The boundary limits for city residents are Princeton Street and Henry Street to the north, Hobbs Drive/Bagley Street to the west, and Grant Street and Mich-E-Kewis Park to the South. The boundary limits for non-city residents are Hamilton Road to the north, Walter Street to the west, and Pohl Road to the south.

Since its beginning, the DART system has logged nearly 7.7 million miles and has carried over 4 million passengers. Funding for the system is derived from State and Federal reimbursements, fares, and a 0.65 mill City property tax levy. The property tax levy was first instituted in 1976 by a vote of the City electorate and has been renewed every 4 years by an average 3 to 1 vote margin. In 2005, the levy was renewed and increased from 0.5 to 0.65 mills.



### INDIAN TRAILS, INCORPORATED

Indian Trails provides statewide public transportation services on a daily basis. The bus route follows US-23 through Alpena County. Buses operate seven days a week with a southbound run in the morning and a northbound run in the afternoon. Buses are wheelchair lift equipped and have space set aside to accommodate wheelchairs. MDOT subsidizes this transportation service for areas in Northern Michigan. This system serves as a daily link between select cities and allows people to travel outside the area to other parts of the state and country.

### AMTRAK THRUWAY

Amtrak provides Thruway service at a bus stop outside of Walmart along M-32 West. This service uses motorcoaches to connect Amtrak passengers to Amtrak Train stations since Alpena County is not served by Amtrak's railroads.

### TAXI/SHUTTLE/LIMOUSINE SERVICES

Demand response public transportation service is provided by private companies operating in Alpena. A shuttle bus is provided by some lodging facilities, such as the Holiday Inn Express and the Ramada Inn, between the Alpena County Regional Airport and its facility. Passenger van schedules coincide with airline arrivals and departures.

### CHARTER/RENTAL BUS SERVICE

Charter bus service is not currently available in the county.

### CAR RENTAL

Car rental companies include Hudson Car Rental, Cliff Anscheutz Chevrolet, Thunder Bay Chrysler and Avis on M-32. These companies offer local, state and national rentals.

## EDUCATIONAL SYSTEM

Alpena Public Schools serves the entire county and a small portion of Presque Isle County (Table 3-5). The school district is part of the Alpena-Montmorency-Alcona Educational Service District which is composed of Alpena, Alcona, and Montmorency Counties. A portion of Green Township is served by Hillman Community Schools (Figure 3-16). According to *Standard and Poor's School Evaluation Services*, Alpena Public Schools had a 2018 enrollment of 3,937 students and a student to teacher ratio of 19.76. Alpena Public Schools had an operating expenditure of \$5,995 per student for 2017-2018 according to the Michigan Department of Education. All Alpena Public Schools buildings and facilities are linked by a fiber optic network.

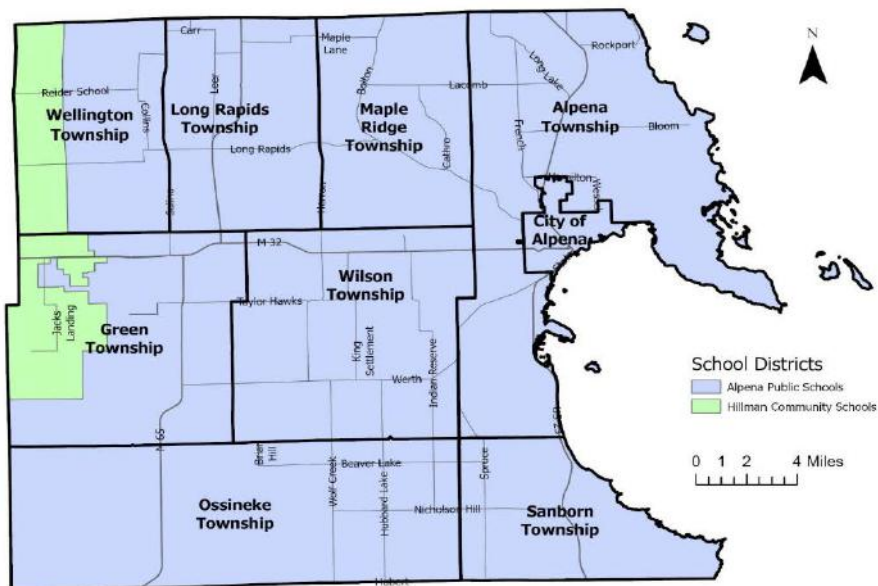


FIGURE 3-16 ALPENA COUNTY SCHOOL DISTRICTS

From 1980 to 2018 the total number of public and parochial K-12 students in Alpena County has significantly decreased. Enrollment during this period dropped by 49% from 7,655 students enrolled in 1980 to 3,937 enrolled in 2018. The district’s enrollment has continued to steadily decline since 1980 with 313 less students since 2012. Given the current age distribution in Alpena County, the downward trend in school enrollment is likely to continue.

<b>TABLE 3-5 ALPENA PUBLIC SCHOOLS</b>				
<b>School</b>	<b>School Type</b>	<b>Location</b>	<b>Enrollment 2011-2012</b>	<b>Enrollment 2015-2016</b>
<b>Besser School</b>	Elementary	375 Wilson St City of Alpena	348	425
<b>Ella White School</b>	Elementary	201 N. Ripley City of Alpena	402	465
<b>Hinks School</b>	Elementary	7667 U.S. 23 N. Alpena Twp.	193	156
<b>Lincoln School</b>	Elementary	309 W. Lake St. City of Alpena	162	173
<b>Sanborn School</b>	Elementary	12170 U.S. 23 S. Sanborn Twp.	205	183
<b>Wilson School</b>	Elementary	4999 Herron Rd. Wilson Twp.	261	225
<b>Thunder Bay Junior High</b>	Middle School	3500 West Third Ave Alpena Township	995	881
<b>Alpena Senior High</b>	Secondary	3303 South Third St. City of Alpena	1286	1309
<b>Aces Academy</b>	Alternative	700 Pinecrest Street City of Alpena	173	121
<b>Pied Piper Opportunity Center</b>	Special Education	444 Wilson Street City of Alpena	34	23
<b>Source: National Center for Educational Statistics</b>				

Alternative educational choices are available in the Alpena area. Three private schools are available in Alpena that include Immanuel Lutheran School, All Saints School, and Seventh Day Adventist School (Table 3-6). Home schooling is another education option that has grown in popularity. In 2014, Bingham Arts Academy, a no-cost charter school, closed.

<b>TABLE 3-6 PRIVATE SCHOOLS</b>				
<b>School</b>	<b>School Type</b>	<b>Location</b>	<b>Enrollment 2011-2012</b>	<b>Enrollment 2015-2016</b>
<b>All Saints School</b>	K-6	500 N. 2nd Ave. City of Alpena	102	81
<b>Seventh Day Adventist School</b>	K-7	4029 US 23 City of Alpena	9	6
<b>Immanuel Lutheran School</b>	PreK-8	355 Wilson Street City of Alpena	102	79
<b>Source: National Center for Educational Statistics</b>				

### **ACES ACADEMY**

ACES Academy (Alternative Choices for Educational Success) is housed in the former Oxbow Elementary School in Alpena. ACES Academy offers adult and alternative education, as well as community education programs. Its Alternative Education component serves students who have difficulty with the regular program at the Alpena High School. The Adult Education program helps adults earn a high school diploma equivalent (GED). In 2015-2016, 121 full and part time high school students were enrolled at ACES.

### **PIED PIPER OPPORTUNITY CENTER**

Pied Piper Opportunity Center is owned and operated by the Alpena-Montmorency-Alcona Educational Service District. The school serves students who are Moderately Cognitively Impaired, Severely Cognitively Impaired, Severely Multiply Impaired, and Autistic Impaired. Students range in age from 3 to 26 years. Pied Piper, located on Wilson Street, provides individualized instructional programs in personal care, independent living, language, and physical, vocational, academic, and social-emotional education to special needs students. Pupils are served at the center, at home, or in the hospital.

### **ALPENA COMMUNITY COLLEGE**

Alpena Community College (ACC) is located on 700 acres of land in the City of Alpena. ACC operates two major campuses plus outreach activities in various area public schools. The Main Campus is in the City of Alpena and the Huron Shores campus is located at the former Wurtsmith Air Force Base in Oscoda, Michigan. ACC's enrollment has dropped by 25% from 2,155 students enrolled in 2016 to 1,611 students enrolled in 2017. The college has maintained its 50 member full-time faculty; however, its part-time faculty has decreased from 145 staff members in 2016 to 75 staff members in 2017 (a 48% decline).

Founded in 1952, ACC will celebrate its 70<sup>th</sup> anniversary in the 2022-2023 academic year. Accredited by the Michigan Commission on College Accreditation in 1959, ACC was also awarded full accreditation from the North Central Association of Colleges and Secondary Schools in 1963. It has remained continuously accredited, with specific programs in medical assisting, nursing and community corrections.

ACC offers 80 programs of study, degree completion programs, vocational training, and community enrichment classes to residents of Alpena County and all of Northeast Michigan. The Madeline Briggs University Center (MBUC) at Alpena Community College houses offices of accredited four-year institutions that are cooperating with ACC to make completion programs for selected bachelor and master's degrees available in Northeast Michigan. The MBUC houses the offices of Ferris State and Northwood universities. Ferris State University offers a Bachelor of Arts in Integrative Studies, with Organizational Engagement or Social Science Management options. Northwood University has an on-site program center offering Bachelor of Business Administration programs, with focuses on Accounting, Computer Information Management, Health Care Management, and Management. Collaborative transfer programs with U of M Flint Nursing School, Madonna University Social Work, Lake Superior State University Business and Accounting and Eastern Michigan Technology Management provide more opportunities for local students. Additionally, ACC instituted an early college program that allows high school students to opt to take a "thirteenth" year of high school and begin taking college courses during their junior year. When they graduate, students keep the college credits and degrees they have earned.

Campus services include veteran's assistance, financial aid, a bookstore, The Learning Center, Stephen Fletcher Library, and the Women's Resource Center. The privately owned "College Park Apartments" are located nearby to provide student housing.

## **NORTHEAST MICHIGAN CAREER AND TECHNICAL EDUCATION CENTER**

Housed by the Alpena High School, the Tech-Ed Center provides a wide range of career and technical programs to students from Alpena, Alcona, Hillman, Atlanta, Posen and Rogers City high schools and to those from the ACES Academy. Adults may also participate in programs that range from studies in agriculture to computer specialists.

## **LIBRARIES & MUSEUMS**

### **GEORGE N. FLETCHER LIBRARY**

The George N. Fletcher Library is centrally located in downtown Alpena. Established in 1967, it serves Alpena County from a facility that was constructed in 1974 and fully remodeled in 1997. In 2002, the library was expanded into an adjacent building. This addition can be accessed from the second floor of the library via an enclosed walkway with surrounding windows, which afford a view of the adjacent street and plaza area below.

Library services include books, magazines, newspapers, compact discs, audiotapes, films, videocassettes, digital libraries, and an art lending library. Inter-library loan services and computers with Internet access are available for public use. Programs are offered for both children and adults. Special services include the READ (adult literacy program), Job Launch (resume writing, etc.), Books and Brown Bags (lunch hour book review), and the Foundation Grants Center. Authors, musicians, artists, and other specialty speakers are frequently featured. Additionally, the library has informational programs on specific topics, internet training, computer classes and other exhibits. For children, the library offers story hours, a summer book club, and many other individual programs. Visually and physically impaired individuals are accommodated by the library's special materials circulation.

For the calendar year 2017, the library had 69,000 books, 108 magazine subscriptions, 7 newspaper subscriptions, 1,900 videos, 1,837 compact discs- including audiobooks and music, over 3,000 downloadable audiobooks, 8,000 eBooks, and 130 digital magazine titles. The library provides access to 7 databases for research and educational purposes, in some cases both on and off-site.

Special Collections include the Michigan Room where numerous Michigan reference materials (e.g. law, history, and environment) and general materials (e.g. industry, maritime, sports, and wildlife) are available. In addition, genealogy sources with extensive Alpena County records, as well as records from surrounding counties are also available. The Foundation Center Collection includes private & public foundations listings, grants & funding sources, and how-to books.

In 2004, the Thunder Bay National Marine Sanctuary & Underwater Preserve approved an agreement with the Library to jointly manage the Thunder Bay Sanctuary Research Collection, one of the premiere collections on Great Lakes history in the world. The collection includes over 1,000 published works, 65,000 photographs, 56 linear feet of vertical files, 40 feet of periodicals, 60,000 data cards, 100 navigation charts, and 350 shipbuilding plans. Topics of the collection include wooden shipbuilding technology, Great Lakes ports and waterways, docks, cargoes, ships, shipbuilders, machinery and rigging, notable maritime personalities, and shipwrecks. A special feature of the collection is a card index listing most of the ships on the Great Lakes before the turn of the century, a roster of some 15,000 vessels, complete with descriptive data and highlights of the ships' careers and their ultimate losses. In addition to providing the historical basis for the Sanctuary's archeological research, the collection allows Great Lakes historians and Library patrons' access to documents and photographs not previously available to the public. This collection is also available online.

### **THE STEPHEN FLETCHER LIBRARY**

The Stephen Fletcher Library is located on the campus of Alpena Community College. Offering a full range of library services, it is available to the public as well as to students enrolled at the college. On-site computers provide library patrons with Internet access. Inter-library loans offer additional resources for research and other educational purposes.

### **THE BESSER MUSEUM FOR NORTHEAST MICHIGAN**

The Besser Museum for Northeast Michigan is the only museum in Northeast Michigan accredited by the American Association of Museums. Located in the north part of the City of Alpena, it is the regional center for art, history and science. The Besser Museum offers changing exhibits, lectures, workshops and classes in art, history and science. Besser Museum's galleries feature artworks by painters, photographers, potters and other artists drawn from across the area, state and country. Permanent history exhibits include Great Lakes Indian artifacts, lumbering and farming implements, 19<sup>th</sup> and 20<sup>th</sup> century decorative arts, an 1890's Avenue of Shops, and 19<sup>th</sup> and 20<sup>th</sup> century arts and graphics. The museum has a planetarium, Foucault pendulum, and eight historic structures on the grounds. Guided tours and planetarium programs are available year-round.

On the grounds of the Besser Museum is a group of historic buildings that have been developed into an interactive display. These buildings include the Maltz Exchange Bank, Green School, McKay Cabin and Spratt Church. These buildings, all significant to the area's history, are open to the public during special Museum events, such as the annual Fall Harvest Day, an observance on the first Saturday in October. A 1928 commercial fishing tug, the Katherine V., also graces the grounds. The Lafarge Fossil Park, an interactive exhibit, is a simulated limestone quarry that contains fossil material generously donated by Lafarge Alpena Plant and Specification Stone Products of Alpena. Open to the public, this display allows you to learn about the unique features of rocks and rock formations, plus allows an individual to dig in the exhibit and keep all the Devonian fossils they find.

### **THUNDER BAY NATIONAL MARINE SANCTUARY & UNDERWATER PRESERVE**

On October 7, 2000, the Thunder Bay National Marine Sanctuary & Underwater Preserve (Thunder Bay NMS/UP) designation was finalized and it became the thirteenth National Marine Sanctuary in a system that extends from American Samoa to Massachusetts. The Thunder Bay NMS/UP protects a nationally significant collection of over 150 shipwrecks, spanning over a century of Great Lakes shipping history. Thunder Bay NMS/UP represents the first Great Lakes sanctuary, the first freshwater sanctuary, the first sanctuary to focus solely on a large collection of underwater cultural resources, and the first sanctuary located entirely in state waters.

The Thunder Bay National Marine Sanctuary and Underwater Preserve encompasses 448 square miles of Northwest Lake Huron. The landward boundary of the sanctuary/preserve is marked by the northern and southern limits of Alpena County, and the sanctuary extends east from the lakeshore to longitude 83 degrees west.

Lake Huron's cold, freshwaters have created a remarkable state of shipwreck preservation that is unmatched by other sanctuaries' saltwater environments. Thunder Bay's collection of shipwrecks represents the diversity of vessels that navigated the Great Lakes in the 19th and 20th centuries. These sunken ships reflect transitions in vessel architecture and construction, while conveying stories of Great Lakes transportation and commerce. Documented shipwrecks are located at depths ranging from 12 feet to 180 feet. Some of the wrecks remain largely intact, while other sites are only remnants of vessels' boilers, engines, rudders, windlasses, and anchors. However, the documented wrecks are only a small section of the total wreckage believed to have occurred.

The National Oceanic and Atmospheric Administration (NOAA) and the State of Michigan have established a partnership to cooperatively manage the sanctuary's underwater cultural resources. A 15-member Sanctuary Advisory Council (SAC) representing the local community provides recommendations to NOAA and the State of Michigan concerning sanctuary development. The SAC will continue to advise the sanctuary/preserve manager about management issues. Sanctuary activities will focus on resource protection, education, and research. Priority activities include placing mooring buoys at identified shipwrecks, initiating an inventory and documentation of shipwrecks, and developing a maritime heritage education program.

The Great Lakes Maritime Heritage Center is a 20,000-square-foot facility that highlights the maritime heritage of the Great Lakes and the shipwrecks of Thunder Bay. The facility features a maritime heritage "discovery center" featuring more than 8,000 square feet of exhibits on the Great Lakes, shipwrecks, archaeology, and maritime history.

The Great Lakes Maritime Heritage Center, which also has interpretive shipwreck displays relating to the Thunder Bay National Marine Sanctuary, has been developed in a refurbished building within the old Fletcher Paper Mill property along the Thunder Bay River. The exhibits feature a life-size hand-built replica of a portion of a 1800's Great Lakes schooner, a recreation of a shipwreck site, artifact lab, and hundreds of interpretive learning opportunities.

#### **ALPENA CIVIC THEATRE**

Alpena Civic Theatre (ACT) is located at 401 River Street. This community-based group presents live theatre for area residents from September through May. Special summertime presentations are designed for audiences with children. Children are included in the cast. The building is owned by the City and leased to ACT.

#### **THUNDER BAY THEATRE**

Thunder Bay Theatre (TBT) is located at 400 North Second Avenue. Situated in Alpena's "Old Town" area, this professional theatre group presents live productions on a year round basis. As the only resident professional ensemble in Northeast Michigan, the TBT company ranges in size from eight to thirty actors.

#### **ART IN THE LOFT**

Art in the Loft is located at 109 N Second Ave and is a premier fine arts center and gallery. Its mission is to enrich the quality of life in Northeast Michigan through an arts center that offers learning opportunities and increases public participation in the arts. Art in the Loft offers art exhibits, visual and culinary art workshops, educational activities, and arts-centered community events.

#### **APLEX**

The APlex is located on Woodward Avenue across the street from Alpena Community College's student housing and the World Center for Concrete Technology. The facility has a gymnasium, four indoor tennis courts, a fitness facility, conference space, aerobic areas, and a spa and sauna. Initially owned by Besser Company, APlex was gifted in 2005 to the Community Foundation for Northeast Michigan. In 2007, the Community Foundation for Northeast Michigan granted the facility to the Park Family Foundation, and the Park Family Foundation remains the owner to this day. APlex is home to the Alpena Tennis Association, and has numerous gym rentals for cheerleading/tumbling, karate, basketball, volleyball, baseball, softball and soccer. APlex hosts numerous events, such as trade shows and social occasions. In 2009, construction of four outdoor beach volleyball courts was completed to accommodate and enhance the growing league that utilizes courts at Mich-e-ke-wis Park.



## **THUNDER BAY ARTS COUNCIL AND GALLERY**

The Thunder Bay Arts Council and Gallery (TBAC) is located at 127 W Chisholm and has served Alpena and Northeast Michigan since 1971. Its mission is to promote, support, and preserve the arts through performance, education, and leadership. TBAC hosts over twenty visual artists, a display of local student artists, and monthly featured artists on a rotating basis. TBAC also hosts Art on the Bay at Bay View Park, where over 100 artists, crafters, and vendors have merchandise for sale.

## **MEDIA**

Newspaper coverage is provided six days a week by *The Alpena News*, the county's only local newspaper, which is located in the City of Alpena. The paper supplies local, regional, and national news. Other newspapers circulated to residents include the *Detroit News/Detroit Free Press*, *The Bay Times*, *USA Today*, *Alcona Review* (in Ossineke Township), *Montmorency County Tribune* (in Green Township), and various advertising media.

Residents of Alpena County receive full television coverage with network and cable stations. One station (WBKB-TV) has an office located in the county. Cable television service is available throughout much of Alpena County by Spectrum; however, the more rural portions of the county cannot receive cable service. A wide array of radio stations can be received throughout Alpena County, including WATZ-AM/FM, WHSB-FM/Bay 108, WQLB/WKJZ (B-Rock), and WCMU-FM (public radio).

## **MEDICAL FACILITIES**

MidMichigan Medical Center-Alpena is a 139-bed acute care facility located in the City of Alpena. MidMichigan Medical Center-Alpena is the federally-designated rural Regional Referral Center for Northeast Michigan and part of the University of Michigan Health Systems. The hospital has an emergency department equipped to provide services for minor injuries and illness to trauma. Air and ambulance services are available for patients requiring care not available locally. There are two medical/surgical units that provide care for adult and pediatric patients. MidMichigan Medical Center-Alpena and other local medical providers also offer a wide variety of specialized medical services, including but not limited to a hyperbaric chamber, kidney dialysis, specialized cancer treatments, behavioral treatment, and treatments for sleep disorders

District Health Department #4's service area includes Alpena, Cheboygan, Montmorency and Presque Isle Counties. Services are provided through four major divisions: Personal Health Services, Home Health Services, Environmental Health Services, and Health Education. Health Department offices are located in Alpena, Cheboygan, Atlanta and Rogers City.

Northeast Michigan Community Mental Health provides support services to developmentally disabled persons and persons needing mental health services. The Northeast Michigan Community Mental Health service area covers Alpena, Alcona, Montmorency, and Presque Isle Counties. In addition, a VA clinic is located near downtown Alpena, which provides primary care to veterans.

Thunder Bay Community Health Service provides primary care for the entire family (from obstetrics to geriatrics) on an out-patient basis to the residents of Alpena, Montmorency, Cheboygan, Otsego, Oscoda, and Presque Isle Counties. The facility is staffed by four physicians, eight physician assistants, and five nurse practitioners. The clinic is fully equipped with x-ray and laboratory capabilities and a pharmacy. There are also three dentists, two eye doctors, fourteen social workers, and one counselor.



Medilodge of Hillman is located in the Village of Hillman and provides long-term nursing care and short-term rehabilitation services. This facility has 84 certified beds, 24-hour skilled nursing care, therapy services, a medical director, a nurse practitioner, a respiratory therapist, a podiatrist, and a dentist.

There are sixteen assisted living facilities in Alpena County.

## **PUBLIC SAFETY**

### **LAW ENFORCEMENT**

Alpena County has enhanced 911 emergency services that are available to all county residents. In Green, Ossineke, and Wilson Townships, law enforcement is the responsibility of the Alpena County Sheriff's Office and the Michigan State Police. Based on Green Township's location in the county, there may be high response times.

#### **Alpena County Sheriff's Office, 320 Johnson Street in Alpena**

- Service area: Areas in the county that do not have municipal police departments (28,405 people)
- Staff: 13 deputies (one open part-time Deputy position), 15 corrections officers (one open full-time Corrections Officer position)
- Equipment: 2,500cc Honda ATVs, 700cc UTV with tracks/enclosed heated cab, 600cc Polaris, 600cc Artic Cat, 17ft Fiberglass Center Console with trailer, 20ft Aluminum Flat Bottom with Jet Drive and trailer, 24ft Safe Boat with enclosed cabin and trailer, Inflatable Rescue Craft (housed at Alpena TWP North), Inflatable Rescue Craft (housed at Alpena City Fire), Towable Rescue sled with tires or skis (can be used behind ATV or snowmobile), 8ft Single axle trailer, 22ft enclosed trailer, 24ft enclosed trailer, 20ft enclosed trailer-fitted for search and rescue, speed radar trailer with message board, Ford 550 Incident Command Truck, Ford Ambulance-Fitted for Dive Team, Misc. Dive equipment for Dive Team
- Alpena County Jail: 69 bed capacity (November 2017: residents voted to construct, operate, furnish, and equip a new jail for the county. The new jail is under construction as of 2020.)

#### **City of Alpena Police Department, 501 W Chisholm in Alpena**

- Service area: 8.86 square miles (9,963 people)
- Staff: 10 patrol officers, 3 sergeants (one open position), 1 detective/sergeant, 1 lieutenant, 4 open positions
- Equipment: 8 utility vehicles, 2 bike patrols

#### **The Michigan State Police-Alpena Post #74, 3283 W. Washington in Alpena**

- Service area: Alpena, Alcona, Montmorency, Presque Isle, and Oscoda Counties
- Staff: 21 certified troopers, 5 sergeants, 2 detective/sergeants, 1 motor carrier officer, 1 lieutenant, 5 open positions
- Equipment: 22 utility vehicles
- Assists local law enforcement

#### **Law Enforcement Division, Michigan Department of Natural Resources**

- Service area: Alpena County (~30,000 people)
- Primarily tasked with conservation law enforcement; however, assist local law enforcement
- Staff: 2 full-time conservation officers
- Equipment: 2 ATVs, 4 snowmobiles, 2 small watercraft, 1 large watercraft

Uniform Crime Report data from 2012 to 2017 shows Alpena County has seen a decrease in rape, aggravated assault, burglary, and motor vehicle theft (Table 3-7). However, the county has seen an increase in murder, robbery, and larceny, while arson remains steady.

<b>Table 3-7 Crime in Alpena County</b>						
<b>Offense</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Murder</b>	0	0	0	0	3	2
<b>Rape</b>	3	11	18	19	30	18
<b>Robbery</b>	1	1	1	1	0	2
<b>Aggravated Assault</b>	8	12	21	13	27	17
<b>Burglary</b>	35	28	28	30	33	27
<b>Larceny</b>	75	96	125	120	107	139
<b>Motor Vehicle Theft</b>	2	5	2	3	6	2
<b>Arson</b>	1	0	0	3	1	1
<b>Source: Uniform Crime Report</b>						

## **FIRE DEPARTMENTS**

All fire departments in Alpena County have mutual aid agreements with each other. Additionally, the county has an “all encompassing” mutual aid agreement that provides assistance outside of normal emergency services with the adjoining counties of Iosco, Alcona, and Oscoda. Fire protection is provided to Green Township by the Green Township Fire Department for the east side of the township and the Hillman Fire Department for the west side of the township. Ossineke Township contracts with the Green Township Fire Department and the Hubbard Lake Fire Department for fire protection services. Wilson Township Fire-Rescue provides fire protection for Wilson Township.

### **Alpena Fire Department/Alpena County EMS, 501 W Chisholm Street and 2201 U.S. 23 South in Alpena**

- Service area: City of Alpena for fire, all hazard response; County for EMS (30,000 people)
- Staff: 27 authorized full-time staff (3 open positions)
- Equipment: 3 fire engines, 1 ladder truck, 7 ambulances, 3 utility vehicles, 2 small watercraft, 1 ice rescue unit, 2 ALS non-transport units (“echo”)

### **Alpena Township Fire Department, 2201 U.S. 23 South in Alpena**

- Service area: 125 square miles (10,000 people)
- Staff: 7 full-time staff, 21 part-paid staff, 6 open positions
- Equipment: 3 fire engines, 1 tanker, 3 ambulances, 1 grass rig, 1 ATV, 1 ice rescue unit

### **Maple Ridge Fire Department, 6010 Lacombe Road in Alpena**

- Service area: Maple Ridge Township except Thunder Bay Village (1,642 people)
- Staff: 2 part-paid staff, 5 open positions
- Equipment: 1 fire engine, 1 tanker, 1 ambulance, 1 grass rigs, 1 snowmobile, 2 large watercraft, 1 ice rescue unit (hovercraft)

### **Sanborn Township Fire Department, 12011 U.S. 23 South in Ossineke**

- Service area: Sanborn Township (2,000 people)
- Staff: 8 part-paid staff, 4 open positions
- Equipment: 2 fire engines, 1 tanker, 1 rescue ambulance, 1 grass rig

**Green Township Fire Department**, 1500 Moores Landing Road in Lachine

- Service area: Green Township (1,800 people)
- Staff: 18 paid-on call, 2 open positions
- Equipment: 1 fire engine, 2 tankers, 1 grass rig, 1 large watercraft, 2 ice rescue units, rescue trailer

**Long Rapids Township Fire Department**, 5310 N M-65 Highway in Lachine

- Service area: 81 square miles in Long Rapids Township and E. ½ of Wellington Township (1,400 people)
- Staff: 20 part-time staff
- Equipment: 1 fire engine, 1 tanker, 1 grass rig, 1 Utility vehicle, 1 ATV, 1 small watercraft

**Wilson Township Fire-Rescue**, 3746 King Settlement Road in Alpena

- Service area: 79.81 square miles (2,029 people)
- Staff: 15 part-paid staff, 5 open positions
- Equipment: 1 fire engine, 1 tanker, 1 emergency response vehicle

**Hubbard Lake Fire Department**, 1545 Hubert Road in Hubbard Lake (Alcona County)

- Service area: 144 square miles (~2,500-3,000 people)
- Staff: Full-time volunteers with some compensation, 6 open positions
- Equipment: 1 fire engine, 2 tankers, 1 grass rig, 1 ice rescue unit, ice rescue suits/sled, jaws, air bags

**Michigan Department of Natural Resources Office**, 4343 M-32 in Alpena

- Service area: Alpena County (30,000 people)
- Staff: 1 full-time staff member, 3 part-paid staff
- Equipment: 2 grass rigs (1 800-gallon capacity, 1 150 gallon capacity; both equipped with Class “A” foam), 1 utility vehicle, 1 ATV, 1 snowmobile, 1 tilted truck/450 LPG John Deere Dozer, ¾ ton 4x4 pick up

**Alpena Combat Readiness Training Center**

- Service area: Alpena Combat Readiness Center, 2<sup>nd</sup> Alarm Wilson Township 19 and response to 19 mutual aid agreements (up to 3,000 residents)
- Acts as the Region 7 Regional Hazmat Response Team
- Staff: 28 full-time staff, 5 open positions
- Equipment: 1 Pierce P-22 500 gallons of agent, 1 KME P-26 4000 gallons of agent, 1 6-pack F-250 2 wheel drive, 1 Kawasaki Mule 4 seater grass rig, 1 14ft V water rescue boat with 15 HP motor, 1 RDB “banana boat” and ice rescue trailer with 15 suits, 2 P-23 Crash rescue vehicles, 5 3,300 gallons of agent including C-6 ARFF foam, P-30 Medium Rescue with rescue equipment, F-450 small rescue with rescue and medical equipment, Chief 1 command vehicle, Mobile Command Trailer, Bauer Portable Air Trailer, Technical Rescue Trailer for confined space, High angle rescue, advance DECON trailer, spill response trailer, Hazmat trailer

**HURON UNDERCOVER NARCOTICS TEAM**

The Huron Undercover Narcotics Team (HUNT) is a multi-jurisdictional narcotics task force serving Alcona, Alpena, Montmorency, and Presque Isle Counties. The team consists of five undercover officers from local police agencies plus two detectives from the Michigan State Police. The team is dedicated to reducing the trafficking and availability of narcotics and its associated violent crime. The team was formed in 1990 and has since arrested nearly 3,000 criminals and removed over \$8 million worth of drugs from area communities. In 2016, HUNT investigated 163 regionwide complaints.

## **GOVERNMENT FACILITIES: ALPENA COMBAT READINESS TRAINING CENTER**

The Alpena Combat Readiness Training Center (Alpena CRTC) is a certified Joint National Training Center that handles the Air Force-related functions of the National Guard. It is co-located with the Alpena County Regional Airport, sharing functional assets including two runways and air navigation equipment. The Alpena CRTC manages the operational aspects of the airspace used by units training at Alpena CRTC and Camp Grayling. While the Alpena CRTC does not have any flying units of its own, it supports organizations from all branches of the military throughout the U.S. and coalition partners. Specific to Alpena CRTC are facilities for firefighter training, munitions storage, bulk jet fuel storage, Combat Aviation Patrol capable shelters and maintenance, Joint Terminal Attack Controllers to support range activities, a large aircraft parking apron, operations support facilities for transient units, aircraft maintenance hangars, billeting, dining, and recreational assets. The Alpena CRTC hosts the fourth-largest National Guard Bureau training operation, known as Northern Strike. The CRTC also has self-contained facilities large enough to house 3,000 persons, up to a maximum of 6,000 persons under emergency conditions. For more information, The Joint Land Use Study for Camp Grayling and Alpena Combat Readiness Training Center can be found at <http://www.discovernortheastmichigan.org/jlus.asp>.

## **COUNTY FACILITIES**

Alpena County owns 78 buildings throughout the county, which have an accumulative replacement value of approximately \$52 million (Table 3-8).

Built in 1935, the most prominent and well-known building owned by the county is the Alpena County Courthouse. The 19,600 square foot building is located at 720 West Chisholm, and occupies one city block. In 2001, the courthouse underwent extensive renovations, including new hot water boilers, air handling equipment, central air, a new roof membrane, new carpet, furniture, and some new office space. Although much of the building has been remodeled, considerable work is still needed to bring the building up to date and compliant with current ADA guidelines. A proposed addition to the building would add an elevator, and barrier free restrooms at an estimated cost of \$1.2 million. The building houses offices for the County Clerk, Register of Deeds, Equalization, County Treasurer, Circuit Court, Commissioners Offices, County Coordinator, and MIS Director.

Across the street from the County Courthouse is the Alpena County Annex Building at 719 West Chisholm. The facility was originally built as a Boys and Girls Club in the mid-1960s. Recent renovations to the building include new entry doors, new roof membrane, new carpeting, new air conditioner, new heating controls, and some new furniture. Future plans for the building include new carpet, additional furniture, improved heating for the Friend of the Court, replacement of the steam boiler with standby hot water boilers, improved heat control and interior painting. The 25,800 square foot building houses Probate Court, the Commissioners' meeting room, Friend of the Court, Family Division Circuit Court, District Court, Prosecuting Attorney offices and other miscellaneous offices.

The Department of Corrections and 911 Services are located at 703 West Chisholm. This building is 6,400 square feet and was constructed in the mid-1970s as a Girls' Club. Originally, the building was intended to be connected to the County Annex building. In 1999, the county took possession of the building and in 2001 the Department of Corrections moved into the building. A year later, 911 Services moved into the building.

The Alpena County Sheriff Office and County Jail are located at 320 Johnson Street. Originally constructed in 1955, the 17,044 square foot building had additions completed between 1989 and 1990. The current County Jail is in disrepair, requires continual maintenance, and is not adequate for its current use. Construction professionals determined the building cannot be economically altered or renovated to meet the future needs of the county. In November 2017, Alpena County residents voted to construct, operate, furnish and equip a new Alpena County Jail. The new building will house 94 inmates and be about 26,000 square feet in size.

The Department of Health and Human Services (DHHS) building is located at 711 West Chisholm Street. The building is a 19,308 square foot single level office building, which was completed and opened in 1993. The building was constructed using bond money and is leased to the State of Michigan. The FIA building has fewer maintenance problems than other buildings in the county inventory. Plans for the building include new carpet and establishing a roof replacement fund.

<b>Occupancy</b>	<b>Address</b>	<b>Replacement Cost</b>
Court House	720 W Chisholm	\$5,374,128
County Jail	320 Johnson	\$4,993,644
Court House Annex	719 W Chisholm	\$5,373,691
Plaza Pool & Tennis Courts	3303 Third St	\$3,456,278
Fairgrounds/Home	11th Street	\$104,223
Fairgrounds/Office	11th Street	\$173,245
Fairground Truck Barn	11th Street	\$149,363
Fairground Merch Building	11th Street	\$1,114,275
Fairground MSU Ext Office	11th Street	\$205,402
Fairground Grand Stand	11th Street	\$2,132,035
Fairground Animal Control	11th Street	\$117,670
Fairground Draft Horse Barn	11th Street	\$104,396
Fairground Cattle Barn	11th Street	\$260,824
Fairground Horse Barn	11th Street	\$207,135
Fairground Rest Rooms	11th Street	\$55,368
Rabbit/Poultry	11th Street	\$34,487
Fairground Rest Room - East	11th Street	\$78,843
Fairground New Poultry	11th Street	\$28,835
Fairground Ticket Booth	11th Street	\$11,646
Fairground Dugout #1	11th Street	\$2,570
Fairground Dugout #2	11th Street	\$2,570
Fairground Dugout #3	11th Street	\$2,570
Fairground Dugout #4	11th Street	\$2,570
Fairground Swine Barn	11th Street	\$146,502
Fairground Stage/Pavilion	11th Street	\$39,607
Sheep Barn	11th Street	\$119,335
Transformers/Camping Pedestals	11th Street	\$280,170
UG Fiber Optic - MSU Building to the house	11th Street	\$1,442
MDOT Building	1540 Airport Rd	\$935,564
Airport Radar Facility	1647 Airport Rd	\$23,644

Airport Terminal	1617 Airport Rd	\$1,061,486
Runway Lights	1617 Airport Rd	\$2,060,000
Fuel Farm Tanks/Piping	1617 Airport Rd	\$500,000
Airport Maintenance	1601 Airport Rd	\$340,951
Welch Hangar	1609 Airport Rd	\$365,109
Airport Sand Barn	1485 Airport Rd	\$52,311
Airport Snow Removal	1485 Airport Rd	\$980,968
EAA Hangar	1475 Airport Rd	\$136,223
Long Lake/Home	10002 Hinks Park Rd	\$70,555
Long Lake Store	10002 Hinks Park Rd	\$19,029
Long Lake Restroom	10002 Hinks Park Rd	\$83,054
Long Lake Shower/Restroom	10002 Hinks Park Rd	\$97,359
Long Lake Pavilion	10002 Hinks Park Rd	\$16,607
Long Lake Pavilion	10002 Hinks Park Rd	\$16,607
Long Lake Storage	10002 Hinks Park Rd	\$16,081
Long Lake New Bathhouse	10002 Hinks Park Rd	\$141,110
Beaver Lk/Garage	17354 Beaver Lake Rd	\$10,620
Beaver Lake Office	17354 Beaver Lake Rd	\$12,062
Beaver Lk Showers	17354 Beaver Lake Rd	\$83,631
Beaver Lake Cabin	17354 Beaver Lake Rd	\$17,991
Beaver Lk Pavilion	17354 Beaver Lake Rd	\$16,145
Beaver Lk Storage	17354 Beaver Lake Rd	\$11,066
Beaver Lake/Home	17354 Beaver Lake Rd	\$96,992
Beaver Lk Teen Center	17354 Beaver Lake Rd	\$61,918
Beaver Lake Restroom/Shower Addition	17354 Beaver Lake Rd	\$100,263
Sunken Lake/Home	10300 Fletcher Prk Rd	\$158,950
Sunken Lk Game Rm	10300 Fletcher Prk Rd	\$79,363
Sunken Lk Rest Rm	10300 Fletcher Prk Rd	\$83,631
Sunken Lk Pavilion	10300 Fletcher Prk Rd	\$10,723
Sunken Lk Bridge	10300 Fletcher Prk Rd	\$92,288
Sunken Lk Storage	10300 Fletcher Prk Rd	\$10,217
DHHS Building	711 1/2 Chisholm	\$2,838,503
Probation & Dispatch	703 Chisholm	\$738,063
Northern Lights Arena	751 Woodward Ave	\$10,960,349
Fiber Optic UG from Courthouse to Annex Building	Chisholm St	\$55,472
VA Office	150 N State Ave	\$18,911
Manning Hill Pavilion	M-32	\$21,030
Manning Hill Tower	M-32	\$31,000
Fiber Optic UG	M-32/Bagley- Airport Rd	\$41,733
District Health Department#4	100 Woods Circle	\$4,648,287
Airport Hanger	1593 Airport Rd	\$501,000
Source: Alpena County, 2019		

Alpena County owns significant recreation properties, such as the Fairgrounds, the Plaza Pool and tennis courts, Northern Lights Arena, Beaver Lake Park/Campground, Long Lake Park/Campground, Sunken Lake Park/Campground and Manning Hill Park. Green Township owns two cemeteries and the Green Township Hall, which includes ballfields, a basketball court, swings, volleyball court, slide, tetherball, merry-go-round, pavilion, and picnic tables. Ossineke Township owns the Township Hall and cemetery.



The Ossineke Township hall is located on 1.86 acres at the intersection of Wolf Creek Road and Nicholson Hill Road. It cost about \$200,000 to construct in 1999. The 2,880 square foot building has a complete kitchen facility that is used to host meetings, community functions, and private events. Wilson Township owns the Township Hall, fire station, cemetery, and property on Wolf Creek.

## HUMAN SERVICE AGENCIES SERVING ALPENA COUNTY

### **Alpena Senior Center**

<http://www.alpenaseniors.com>

### **Alpena Volunteer Center at Alpena Community College**

<https://alpenacc.galaxydigital.com>

### **Alpena Childcare and Development Center**

<https://alpenachildcare.weebly.com/>

### **Boys and Girls Club of Alpena**

<http://www.bgcalpena.org/>

### **Catholic Human Services**

<https://www.catholichumanservices.org/contact-alpena-mi>

### **Child and Family Services of Northeast Michigan, Inc.**

<http://www.cfsnemi.org>

### **D.A.R.E. Program**

#### **Alpena City Police Department**

[http://www.alpena.mi.us/departments/police\\_department/index.php](http://www.alpena.mi.us/departments/police_department/index.php)

### **District Health Department #4**

<http://www.dhd4.org>

### **Grief Recovery After a Substance Passing (GRASP)**

<http://www.grasphelp.org>

### **Habitat for Humanity Northeast Michigan**

<http://www.habitatnemi.org>

### **Hospice of Michigan- Northeastern Region**

<http://www.hom.org>

### **MSU Extension**

<http://www.canr.msu.edu/alpena>

### **Northeast Michigan Affordable Housing**

[http://www.publichousing.com/details/MI-Northeast\\_Michigan\\_Affordable](http://www.publichousing.com/details/MI-Northeast_Michigan_Affordable)

### **Northeast Michigan Community Mental Health**

<http://www.nemcmh.org>

### **Northeast Michigan Community Partnership, Inc.**

### **Northeast Michigan Community Service Agency (NEMCSA)**

<http://www.nemsca.org>

### **Hope Shores Alliance**

<https://hopeshores.org>

### **Alpena County Michigan Department of Health and Human Services**

<http://www.michigan.gov/mdhhs>

### **St. Vincent de Paul – Alpena**

<https://stvincentdepaulalpena.org/>

### **Sunrise Centre**

<http://www.alpenasunrisecentre.org>

### **Sunrise Mission**

<http://www.sunrisemission.com>

### **The Salvation Army**

<https://centralusa.salvationarmy.org/alpena>

### **United Way of Northeast Michigan**

<http://www.unitedwaynemi.org>

### **Clement C. Van Wagoner Outpatient Clinic**

<http://www.va.gov>

### **Veteran's Affairs**

<http://www.alpenacounty.org/veterans%20affairs.html>

## CEMETERIES

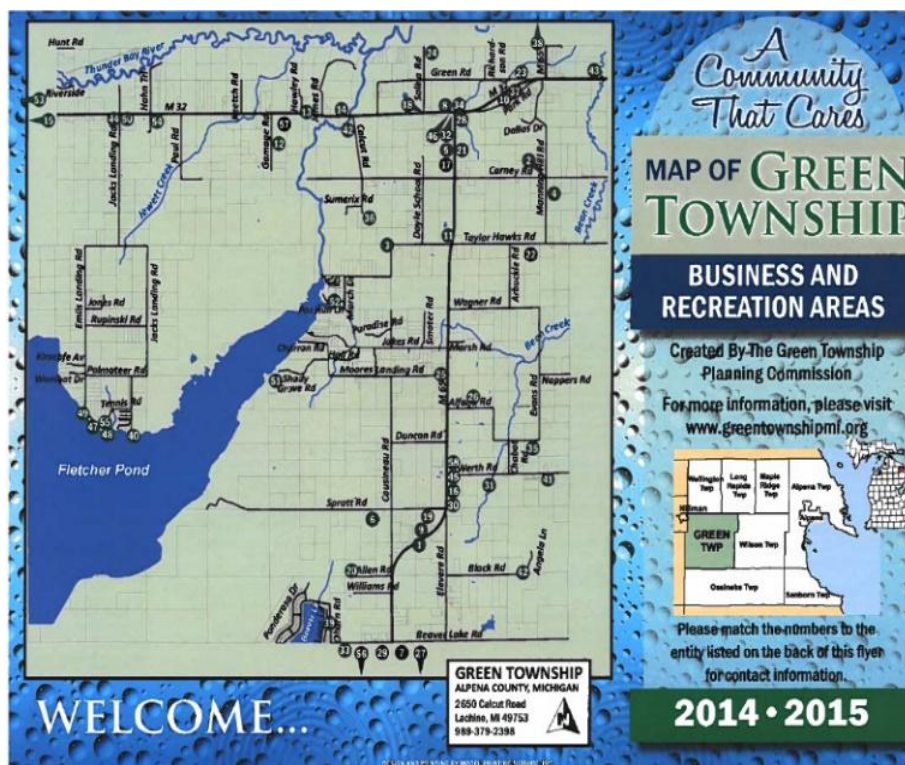
There are thirteen cemeteries in Alpena County with two located in Green Township, one located in Wilson Township, and one located in Ossineke Township. In Green Township, Greely Cemetery is located near M-65 and M-32, and Spratt Cemetery is located on Spratt Road. Both cemeteries are the responsibility of the Township Board. In the eastern portion of Ossineke Township in Section 28, the Ossineke Cemetery is located on Hubbard Lake Road approximately 0.2 miles north of the intersection of Hubbard Lake and Scott Roads. The cemetery is approximately 2.4 acres. The Wilson Township Cemetery is located on King Settlement Road across from the Wilson Township Hall and Fire Station.

## POSTAL SERVICE

Alpena County is served by eight post offices located in Alpena, Herron, Ossineke, Lachine, Hillman, Hubbard Lake, Spruce, and Posen. Green Township residents are served by the post offices in Lachine and Hillman. Ossineke Township residents are served by the post offices in Ossineke, Hubbard Lake, Lachine, Herron, Spruce, and Alpena. Wilson Township residents are served by the post office in Herron.

## RECREATION

The lakes, streams, and woodlands provide recreational opportunities that are important economic factors in the region. In 2019, Alpena County, the Charter Township of Alpena, Green Township, Ossineke Township, and Wilson Township developed a joint recreation plan. The Alpena Joint Recreation Plan can be found at the following website: <http://www.discovernortheastmichigan.org/docview.asp?did=629>. Additionally, Green Township promotes local recreation destinations and businesses through a local brochure.



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# Chapter 4

## Natural Resources

Northern Michigan’s natural environment provides various recreational opportunities and generates income, while also placing constraints on land development in critical and sensitive areas that are costly to remediate when altered. For example, flooding and soil erosion issues have increased when wetlands have been filled and forests have been cleared. When planning for future developments, the characteristics of the natural environment should be considered to preserve the area’s character, maximize economic benefits, and to prevent hazards caused by land alterations. An analysis of the physical environment can assist government officials in planning for future land uses.

### CLIMATE

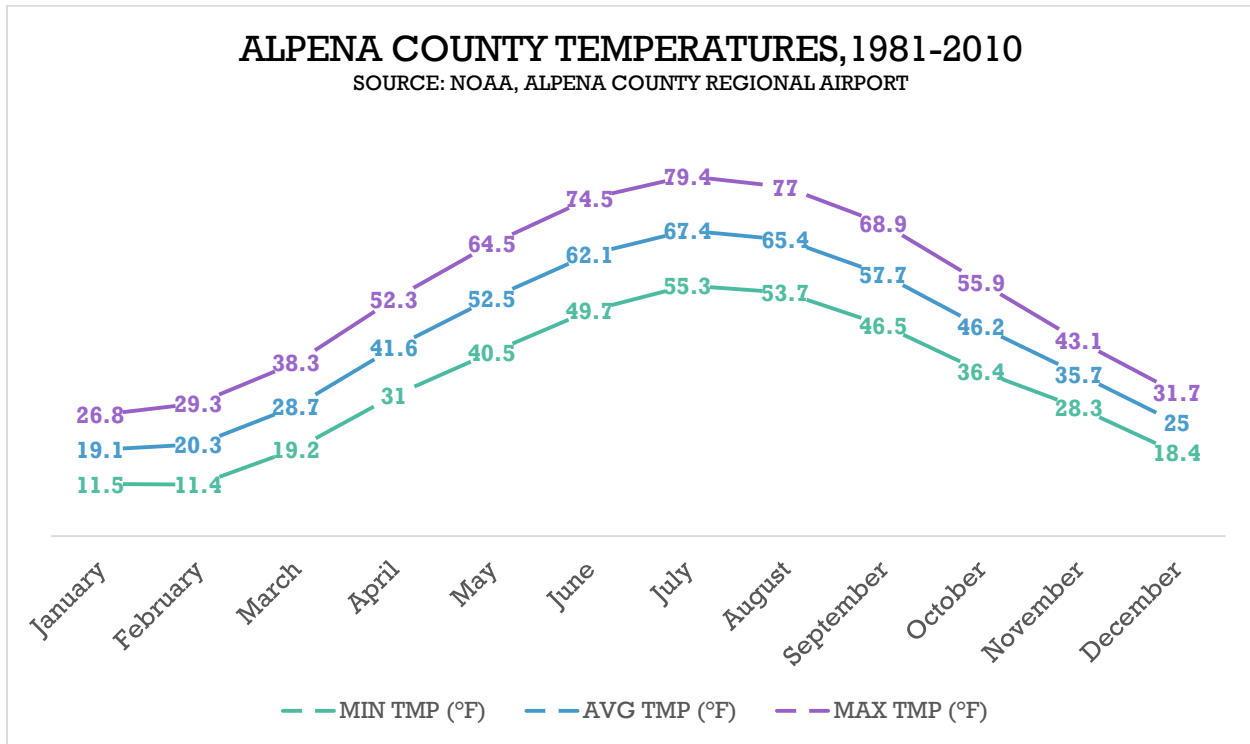
Temperature data from the Midwest Regional Climate Center indicates the climate along the immediate Lake Huron shore is semi-marine in nature and lacks many of the temperature extremes found inland and within a few miles of the shore. Although Thunder Bay and the Thunder Bay River are usually free of ice by the first week of April, water temperatures remain low enough to produce cool breezes reducing the maximum daily temperatures during the spring and summer. Summer temperatures have been recorded as high as 106<sup>oF</sup> (July 13, 1936) but this is very unusual. Sub-zero temperatures have been recorded as early as November 15<sup>th</sup> and as late as April 1<sup>st</sup>. The lowest recorded temperature was -37<sup>oF</sup> on February 17, 1979. In a typical year, there will be 3.5 days when temperatures are above 90<sup>oF</sup> and 12.4 days when temperatures are below 0<sup>oF</sup>. January is the coldest month with a mean temperature of 17.8<sup>oF</sup> and July is the warmest with a mean temperature of 66.7<sup>oF</sup> (Figure 4-1).

Summer months are usually mild with considerable sunshine. The average annual total precipitation for the county is 30.37 inches. Most of the summer precipitation consists of rain and thunderstorms which normally occur during the months of June, July and August. On average, the summer growing season is 156 days, while the average date for the first fall frost is October 4<sup>th</sup>. On average, thunderstorms occur 24 days per year. Michigan is located on the northern fringe of the nation’s tornado belt. Tornadoes generally occur during the spring and early summer. Since 1961, Alpena County has experienced fifteen tornadoes (two in Alpena Township, one in Green Township, six in Ossineke Township, two in the City of Alpena, two in Maple Ridge Township, and two in Long Rapids Township). On average, one hailstorm occurs per year.

Generally, winter months are cloudy with frequent light snow flurries and precipitation is in the form of sleet and snow. The 1971-2010 average seasonal snowfall was 85.3 inches. In 2017, the Midwest Regional Climate Center weather stations’ snowfall measurements varied from 24.5 to 52.9 inches. The annual snowfall in 2018 varied from 54.4 inches at the Alpena Wastewater Treatment Plant to 91.2 inches at the Alpena County Regional Airport.

The following snowfall extremes are recorded for Alpena County:

- Greatest observation-day total: 18.2 inches recorded February 22, 1922
- Greatest monthly total: 49.4 inches recorded March 1926
- Greatest seasonal total: 166.3 inches recorded during 1970-71
- Least seasonal total: 26.9 inches recorded during 1936-37
- Greatest snow depth: 42 inches recorded February 22, 1924



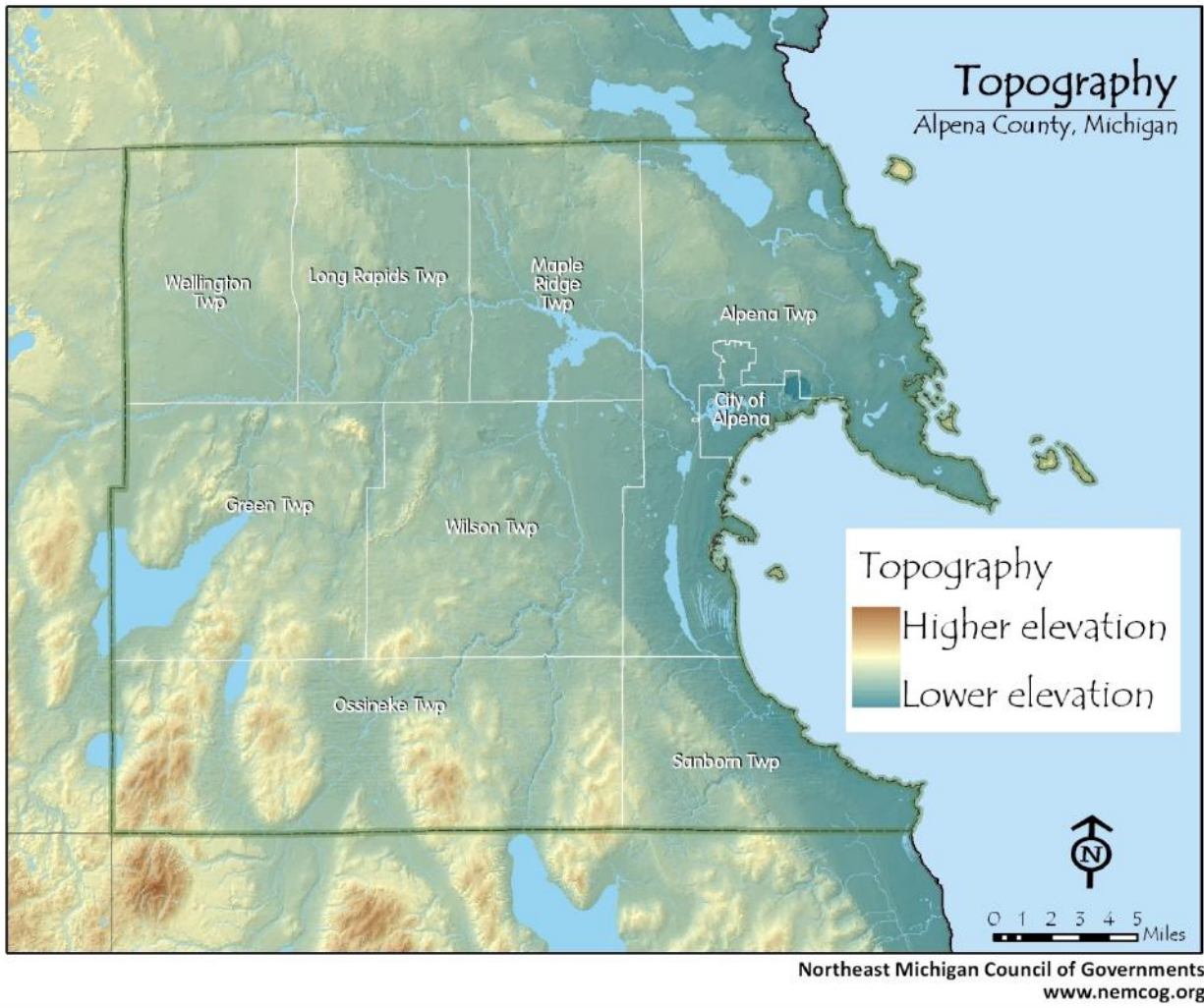
**FIGURE 4-1 ALPENA COUNTY TEMPERATURES, 1981-2010**

For most of the county, runoff from the spring thaw poses little danger of flooding. However, over the past 45 years, parts of Alpena County have transitioned from farm and forest to subdivisions, apartments, offices, streets, and parking lots. The change from semi-porous to impervious surfaces has created some flooding and stormwater runoff problems. Buildings and roads have been built where stormwater once flowed, and critical parts of the natural drainage system have been replaced with a haphazard man-made system. As witnessed in the spring of 1998, the combination of rapid snowmelt and heavy rains can overwhelm parts of the current drainage system and cause major flood events in areas of the county.

## TOPOGRAPHY AND GEOLOGY

The general elevation in Alpena County ranges from about 580 to 1140 feet above mean sea level, a difference of 560 feet above the level of Lake Huron (Figure 4-2). The elevation ranges from a low of about 600 feet above sea level in the City of Alpena area to a high of 1140 feet above sea level near the southwest corner of the county.





**FIGURE 4-2 ALPENA COUNTY TOPOGRAPHY**

Alpena County is diversified with strongly sloping and choppy areas, gently undulating areas, low swell or ridges, level plains, small areas of swampy soils and numerous streams and lakes. According to the map prepared by W. A. Burgess and D. F. Eschman, entitled *Landform Units in Northeastern Lower Michigan*, Alpena County is divided into several distinct landform units (Figure 4-3). The County's two predominant landform types are the Fletcher Pond Channeled Uplands located in the southwestern quarter of the county and the Devils Lake Karst Topography, which is located in the northeastern quarter of the county. The Ossineke Beach ridges are located in the southern portion of the county along the Lake Huron shoreline and extend several miles inland. This beach ridge and swale complex was created from receding glacial lake waters that left behind a series of ridges and depressions that parallel the shoreline.

The broader surface features, such as the moraines, eskers, deltas, drumlines, and lake plains, are expressions of glacial activity (Figure 4-4). The moraines were formed when material from the glacial ice was deposited in large hilly ridges. Eskers are long, narrow ridges that are composed of stratified sand and gravel that was deposited by glacial ice. Several eskers bisect the midsection of the county. Deltas formed where glacial streams emptied into lakes and ponds. Drumlin fields are spoon-shaped hills composed of glacial till and are found in the northeast and north-central areas of the county. Lake plains were created by the receding glacial Great Lakes and a two to eighteen-mile-wide lake plain runs along



the entire coastal area of the northeastern portion of the county. Some areas of the lake plain are sandy with pine and aspen forests, while other areas have poorly drained soils with cedar forests. This topography is well suited for scenic views and providing an opportunity for a diverse economy based on the agriculture, recreation, and forest industries.

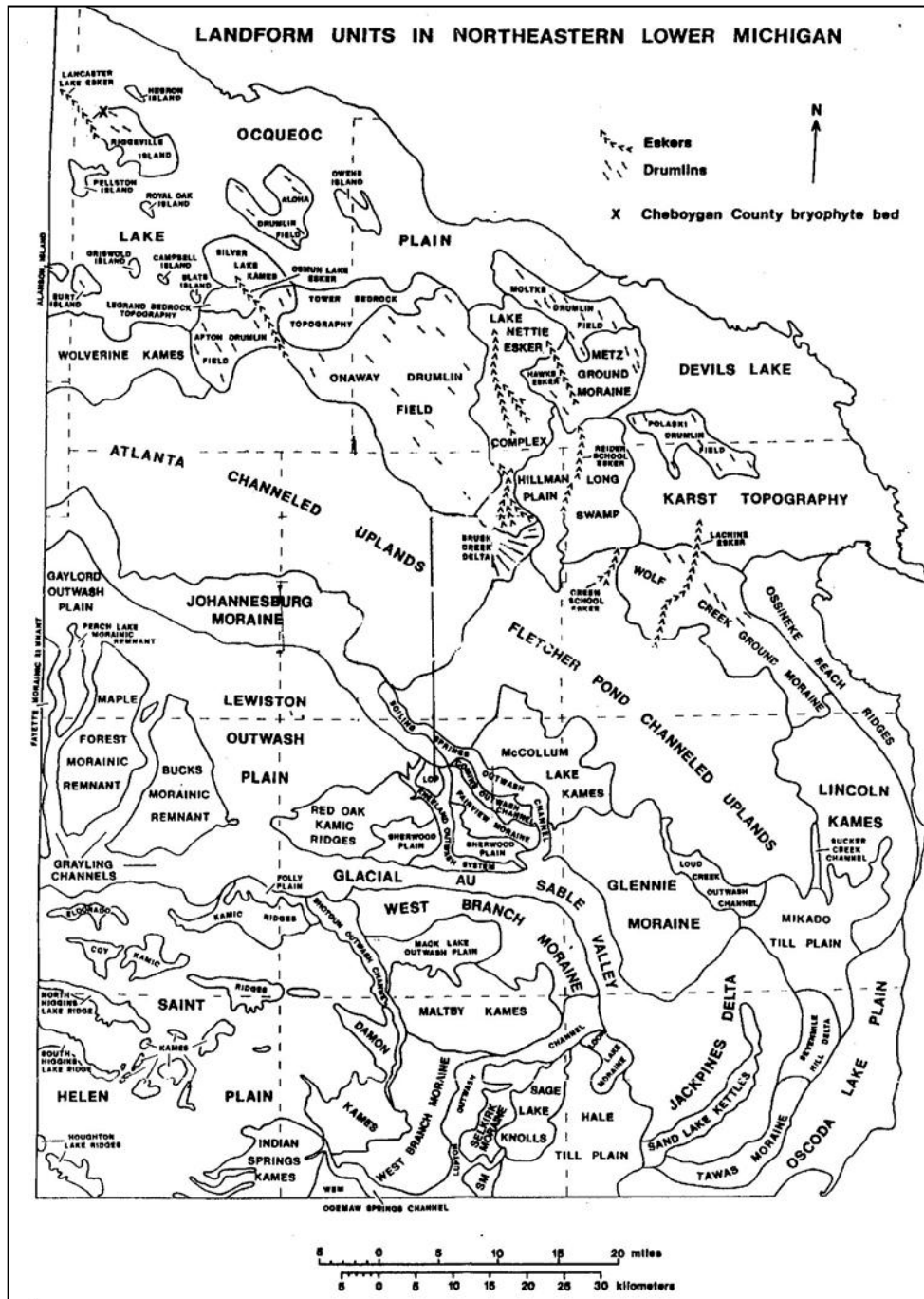
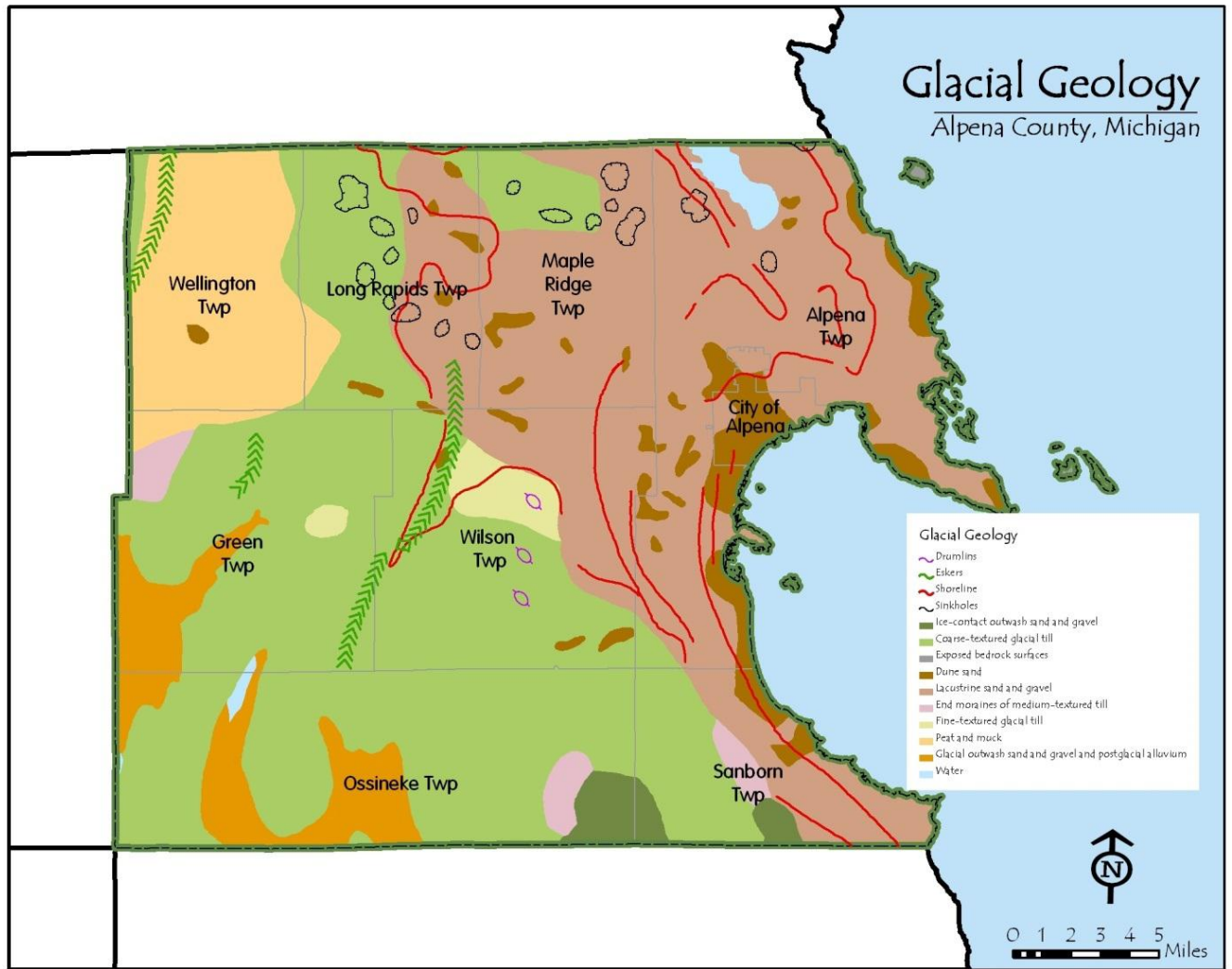


FIGURE 4-3 LANDFORM UNITS IN NORTHEASTERN LOWER MICHIGAN



Northeast Michigan Council of Governments  
www.nemcog.org

**FIGURE 4-4 ALPENA COUNTY GLACIAL GEOLOGY**

**GREEN TOWNSHIP TOPOGRAPHY AND GEOLOGY**

Green Township’s surface geology consists of peat and muck, moraines, till plains, outwash plains, and eskers (Figure 4-4). Peat and muck are found at the northern and northwestern edge of the township and consist of organic soil material. Muck contains more minerals than peat since plant parts are recognizable in peat, but indistinguishable in muck. The township has end moraines in the northwestern portion of the township, south of the peat and muck formation. The till plains are level areas located between the moraines that consist of unsorted glacial sand, gravel, rock, and clay. Outwash plains are primarily found in the southwestern portion of the township under Fletcher Pond. The outwash plains were formed from stratified glacial deposits of sand, gravel, silt, and clay. Coarse-textured glacial till is the dominant surface geology type found in the township with small areas of fine textured glacial till located in Section 5 and portions of Sections 6, 7 and 8. Eskers are located in the north-central portion of the township and extend through Sections 34 and 26 into Section 23, and along the boundary in the southeastern corner of the township where it crosses into Wilson Township.

## OSSINEKE TOWNSHIP TOPOGRAPHY AND GEOLOGY

Water from the melting glaciers created the outwash channels, sand deltas, kames, and eskers in Ossineke Township (Figure 4-4). The majority of the township is covered with coarse-textured glacial till, which is unstratified material deposited by glacial ice. The community's farms are able to thrive as a result of better soils formed from the sand, clay, and loam till deposits. The lowland areas formed by Beaver Creek and Wolf Creek contain glacial outwash sand/gravel and postglacial alluvium. The southeastern corner of the township consists of ice-contact outwash sand and gravel.

## WILSON TOWNSHIP TOPOGRAPHY AND GEOLOGY

Melting glaciers created the outwash channels, deltas, kames, lake plains, drumlins, and eskers in Wilson Township (Figure 4-4). The Lachine Esker is a prominent feature in the township and traverses in a southwest-northeast direction. The esker enters the township in Section 15, T30N-R6E; crosses Bussie Road and Taylor Hawks Road in Section 35, T31N-R6E, then crosses M-32 and exits north through Section 24. There are old shorelines and small, sandy dunes present in the township's lake plain. The sandy dunes provide habitat for red pine and white pine forests. The old shorelines influenced the location of the rivers in the township. The lower South Branch of the Thunder Bay River meanders across the landscape until it encounters the sandy ridge in Section 11, T30N-R7E, where it is deflected north for about two miles until it re-establishes a meandering course before emptying into Lake Winyah. Drumlins are found in the central portion of the township and around the township hall. The drumlins trend in a southeastward direction. Approximately two-thirds of Wilson Township is covered by a till plain that consists of coarse and fine textured glacial till, which is unstratified material deposited by glacial ice. The community's farms are able to thrive as a result of better soils formed from the sand, clay and loam till deposits.

## KARST TOPOGRAPHY

The county features karst topography in its northern section, which is characterized by sinkholes, sinkhole lakes, underground drainage, and caves (Figure 4-5). It occurs when the bedrock dissolves and the surface rock collapses into the cavity, which can cause tremors that may be reported as earthquakes. New sinkholes take several decades to appear on the surface. The sinkholes in Northern Michigan have been excavated by the major rock quarrying operations except for the ones in Alpena and the Rockport Quarry. These sinkholes show no evidence of swallowing soils or collapse; however, may be swallowing water as it filters through the glacial drift and collapsed formation. Thick drift and rubble have created a "gravel pack" and plug over most of the sinkholes, which prevents erosion. The county's sinkholes range in size from less than 10 feet to more than 1,300 feet in diameter and appear to be limited to areas of relatively thin glacial overburden or near fault or fracture lines and vigorous groundwater drainage.

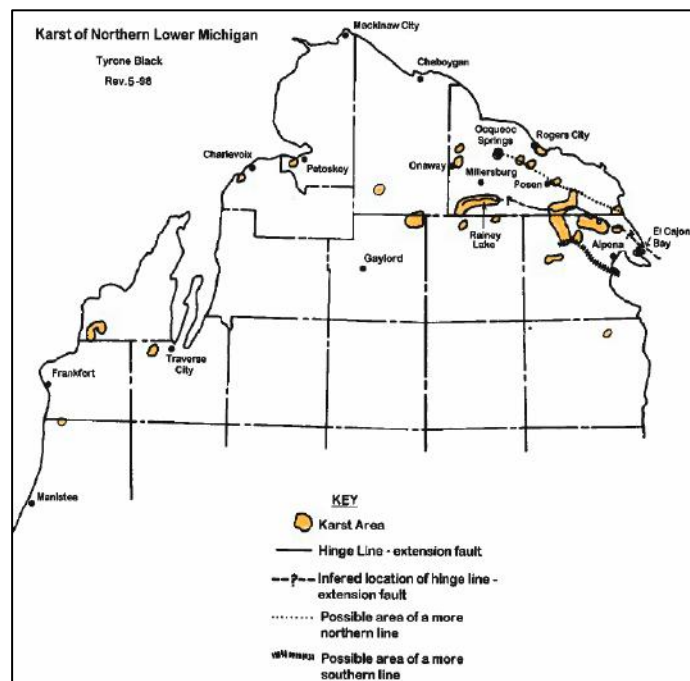


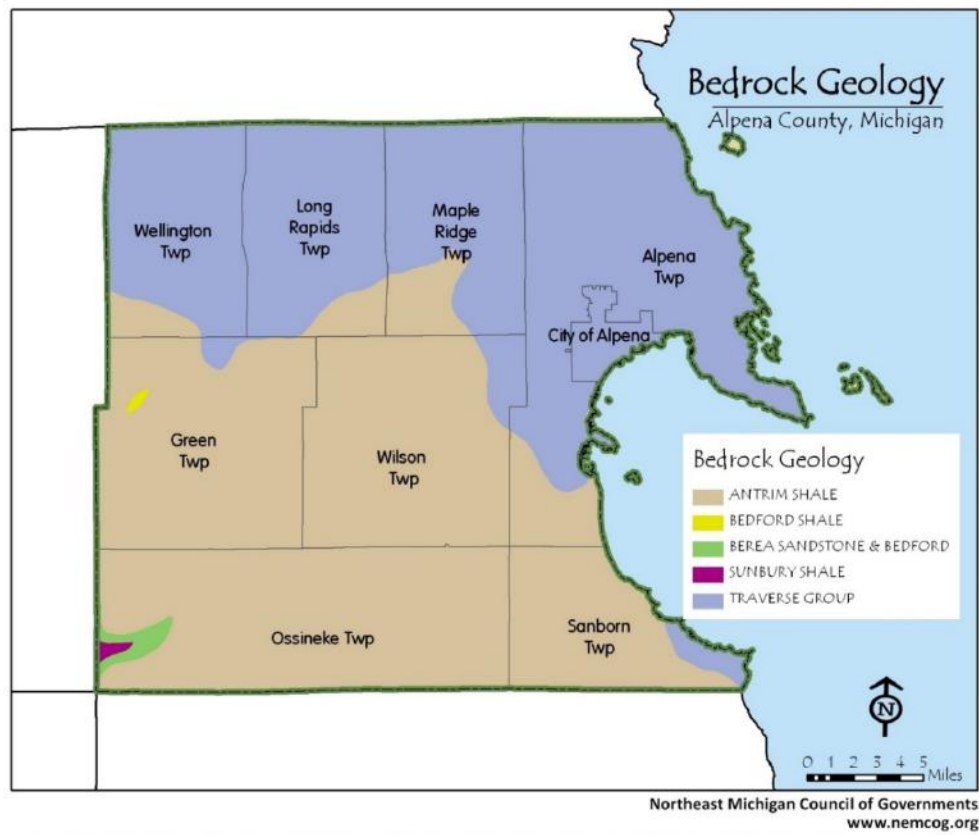
FIGURE 4-5 KARST TOPOGRAPHY IN NORTHERN LOWER MICHIGAN

According to the *USGS Summary of Hydrogeologic Conditions by County for the State of Michigan*, karst sinkhole lakes include Devil’s Lake, Long Lake, Fitzgerald Lake, and Mindack Lake. A narrative entitled *How and Why of Michigan Sinkholes* by Tyrone J. Black states geologists believe a hinge-line fault serves as a pathway for subterranean drainage and interconnects several sinkholes and sinkhole-controlled lakes before emptying into Lake Huron at El Cajon Bay.

**BEDROCK GEOLOGY**

Alpena County is located on the northeastern flank of the Michigan Basin, a depressional bedrock feature centered in Gratiot County that consists of over 5,000 feet of sedimentary rock. About 400 million years ago, Alpena County’s bedrock was formed when the ancient seas deposited sand, silt, and clays, and when chemical reactions caused the deposition of calcium carbonate, dolomite, salt, gypsum and anhydrite. As layers of sediments accumulated, they compacted to form solid rock.

The bedrock formations underlying the northern part of Alpena County belong to the Traverse Group, which consist primarily of limestone formations with some shale beds (Figure 4-6). The easily soluble limestone formations of the Traverse outcrop are thinly veiled by glacial drift and in conjunction with other hydrogeologic factors have formed karst areas in northern Alpena County. Overlying the Traverse Group and subcropping the central and southern portions of the county is the Antrim shale formation. Green Township has Antrim shale bedrock with a small area of Bedford shale in the northwest region of the township. Antrim Shale bedrock formations subcrop most of Ossineke Township with a small portion of Berea Sandstone and Bedford Shale, and Sunbury Shale in the western portion of the township. Antrim Shale also subcrops the majority of Wilson Township with a section of Traverse Group in the northeastern part of the township. The shale has been used as a component in cement manufacturing.



**FIGURE 4-6 BEDROCK GEOLOGY**



## SOILS

Soil characteristics help define the land's capacity to support certain types of land uses. Soils most suitable for development purposes are well drained and not subject to a high water table. Adequate drainage is important to minimize storm water impacts and to maximize the efficient operations of septic drain fields. An adequate depth to the water table is necessary to prevent groundwater contamination from septic systems. A high water table also limits the construction of basements. However, civil engineering techniques can be employed to improve drainage and maintain adequate separation from the water table, which are expensive to construct and maintain.

Soils play an important role in the food supply system. The Natural Resource Conservation Service (NRCS) identifies soils that are well or uniquely suited for crop production in Alpena County (Figure 4-7). When making land use decisions, it is important to consider the value of certain soils for agricultural purposes. Once land is converted from agricultural use to urban uses, the soils are permanently altered and its utility for agricultural production is greatly diminished, if not destroyed. Since the agriculture industry is important to the local economy, planners and public officials should carefully consider development proposals that threaten this non-renewable resource. Soils most suitable to agricultural production are located in a northwest-southeast trending band across the county. Wilson, Green, Wellington, Long Rapids, Maple Ridge, Sanborn and Ossineke Townships all have significant areas of agricultural soils, while Alpena Township and the City of Alpena have nearly none. Most of Wilson Township's prime agricultural soils are located in the central and west-central portion of the township; however, the area can be significantly expanded to the south and west of the township line if soils that would be prime when drained are included.

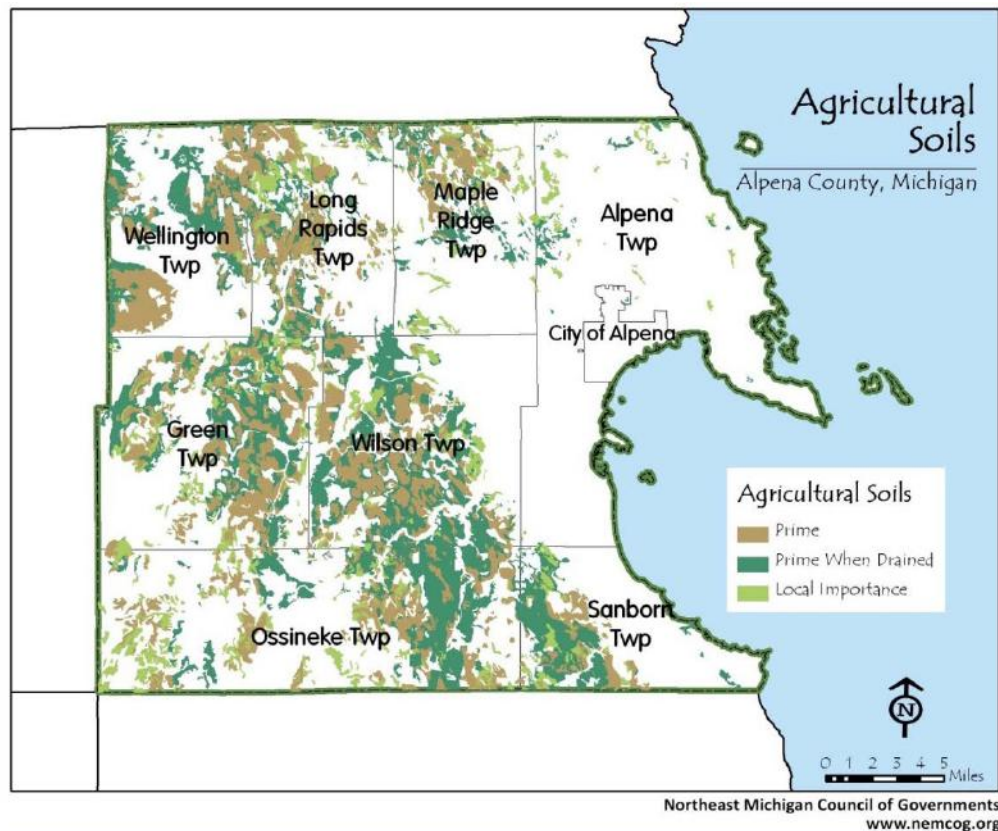


FIGURE 4-7 AGRICULTURAL SOILS

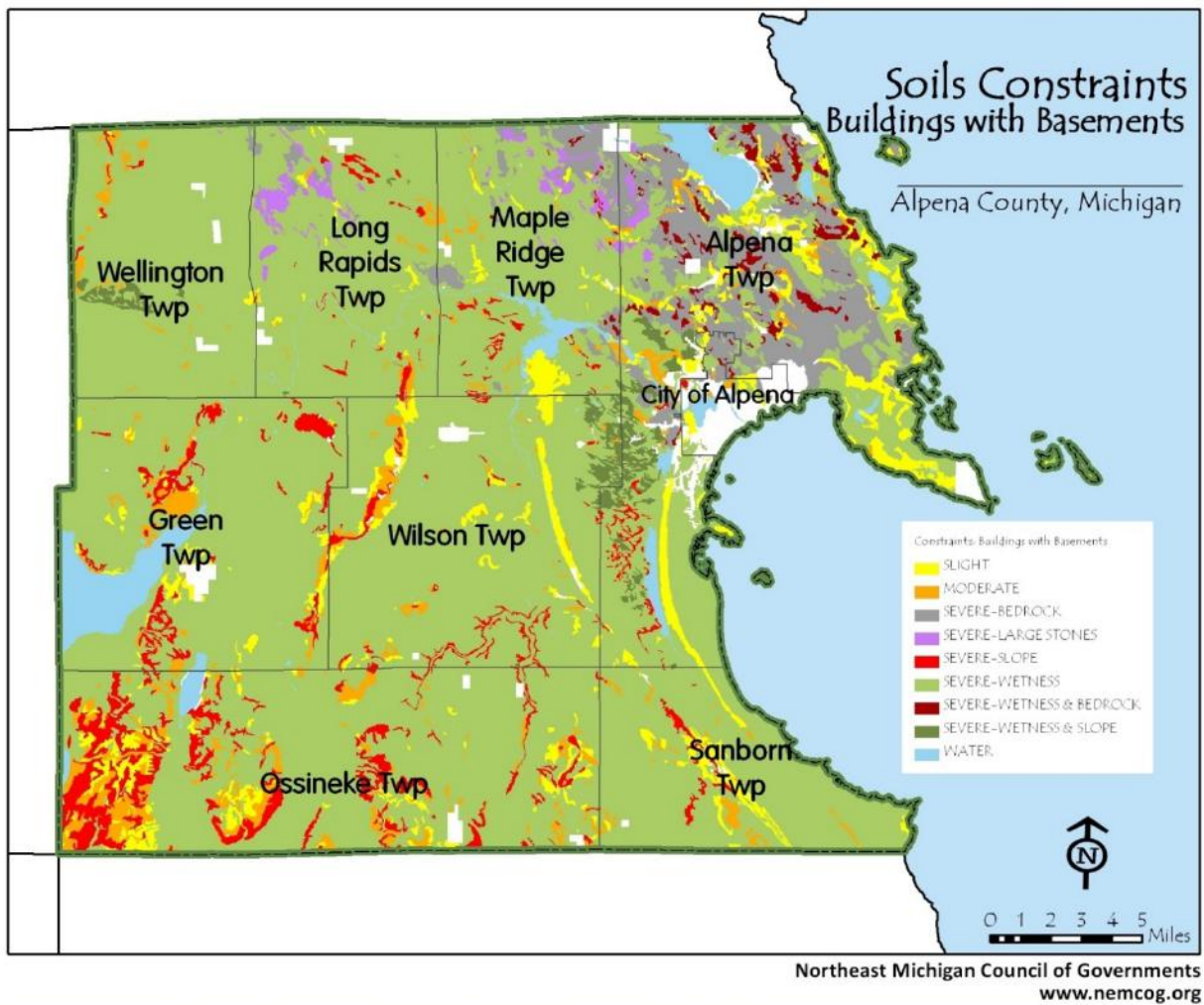
The *Soil Survey of Alpena County* rates soils for various uses (e.g. building site development) and identifies the limiting factors for building (e.g. steep slopes, soil types, or high water tables). Areas with well drained soils and slopes less than ten percent tend to have slight limitations for building development. Areas with severe limitations have slopes greater than 18 percent, high water tables, or organic or rocky soils. Based on criteria established by the NRCS, building constraints maps were developed showing soils with limitations for buildings with and without basements as well as those with steep slopes and hydric characteristics (including hydric inclusions) (Figures 4-8 to 4-10).

Nearly half of Green Township's soils have severe development and/or septic system constraints due to hydric soils or steep slopes. Hydric soils are particularly dominant in the area of Fletcher Pond's southern shoreline. Steep slopes are found throughout the township, but primarily form a narrow band in the central portion of the township that runs north and south from Fletcher Pond. Low density and less intensive development should be directed to areas with these severe building constraints.

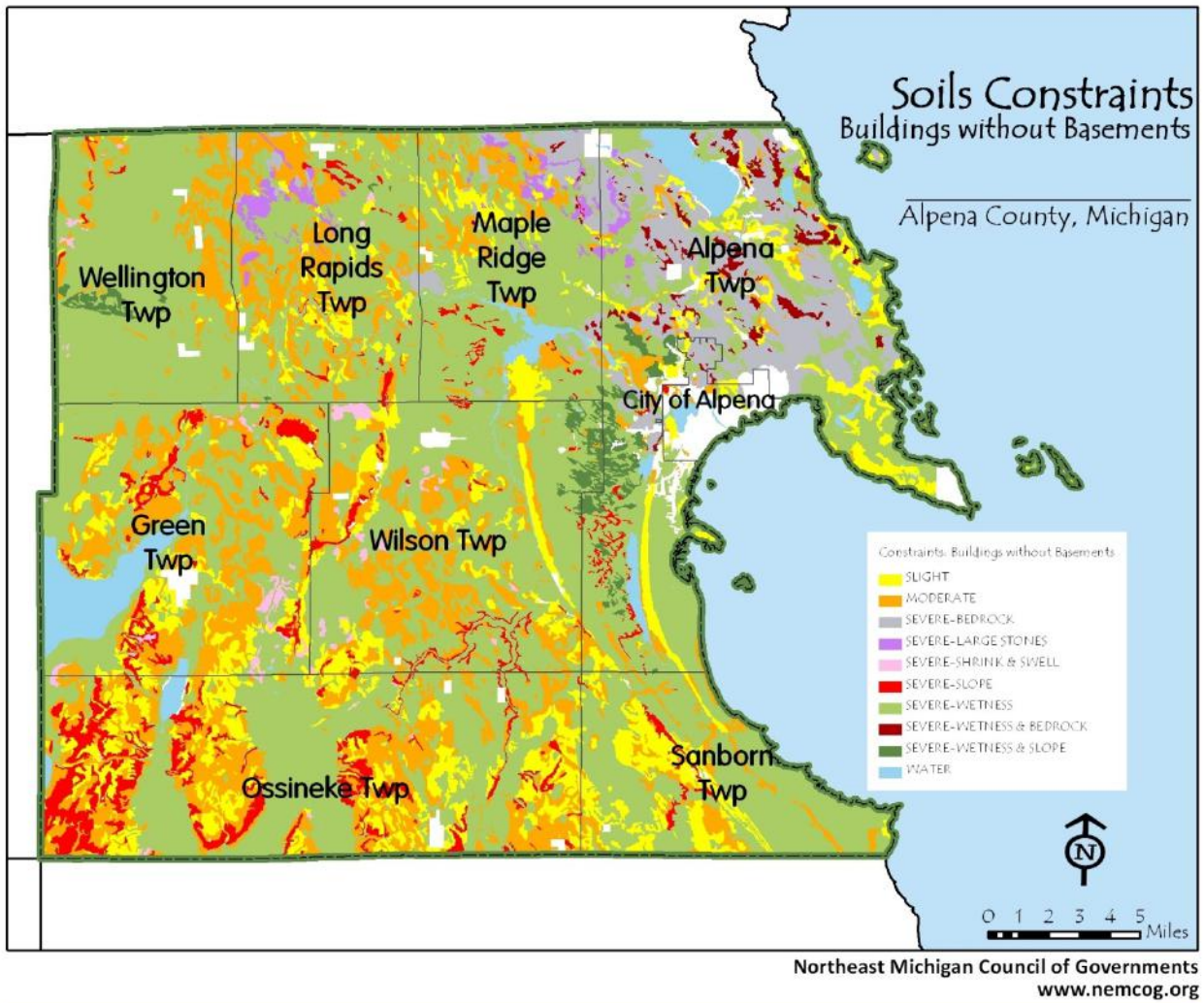
Ossineke Township's soils have severe constraints based on hydric soils and steep slopes. The township's hydric soils are fairly evenly distributed in the eastern portion of the township and are interspersed with soils with hydric inclusions (areas too small to be delineated from the primary soil types). There is also a large concentration of hydric soils in the central portion of the township in the vicinity of Wolf Creek and Beaver Creek. Ossineke Township has steep sloped areas dispersed throughout it with a large area of steep slopes (slopes greater than 18%) in the western portion of the township.

Hydric soils are fairly well distributed across Wilson Township with significant areas located in the northeast, northern, and southwestern portions of the township. Most of the steep slopes are located in the extreme northeastern portion of the township with some located in the western portion and along the riparian corridors in the south. While building and septic limitations appear to be widespread, much of the land would be considered suitable for building if proper engineering and building techniques are utilized.

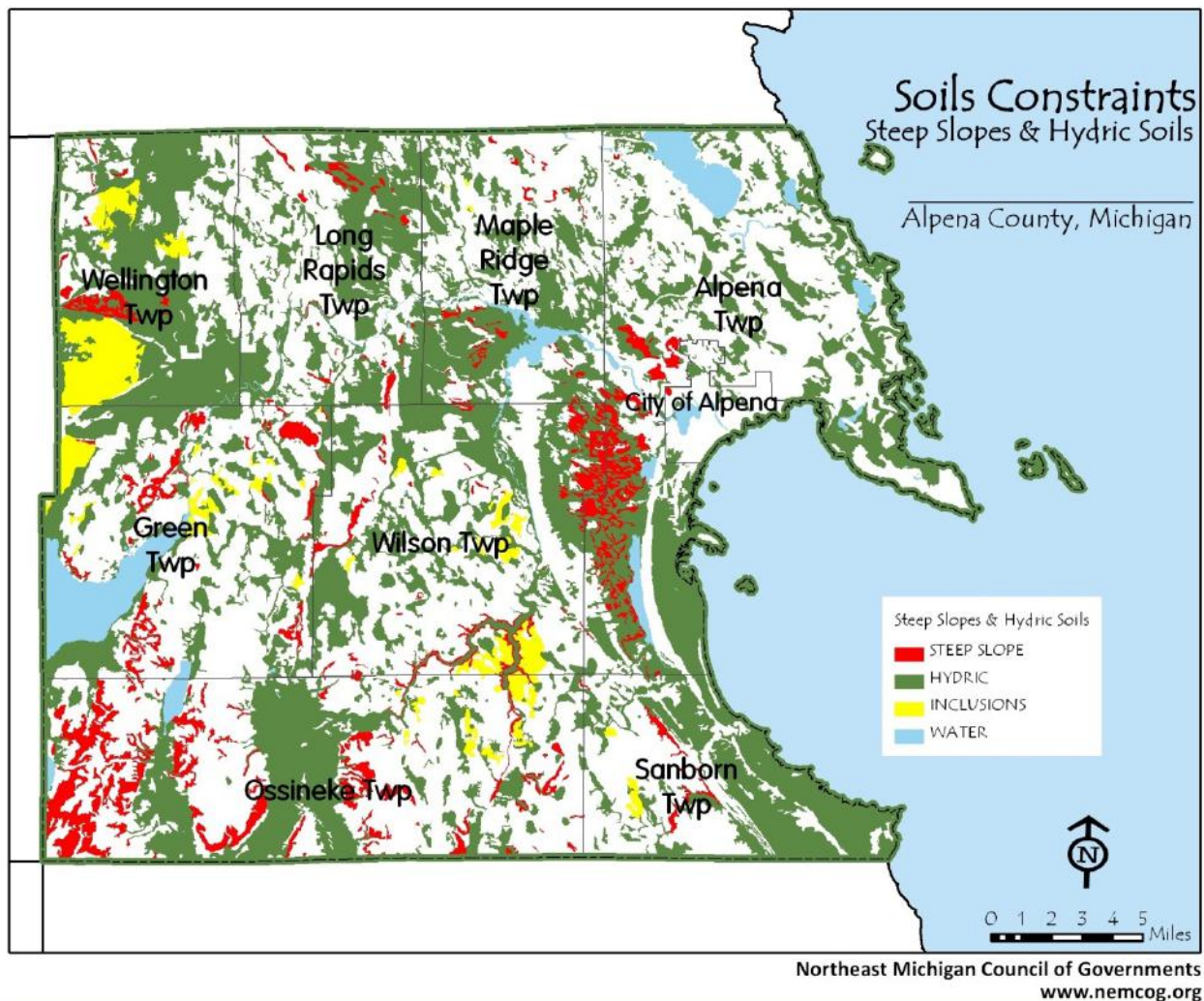




**FIGURE 4-8 SOILS CONSTRAINTS FOR BUILDINGS WITH BASEMENTS**



**FIGURE 4-9 SOILS CONSTRAINTS FOR BUILDINGS WITHOUT BASEMENTS**



**FIGURE 4-10 STEEP SLOPES AND HYDRIC SOILS CONSTRAINTS**

The NRCS uses criteria, such as water table depth, wetness, filtering capacity, and ability to perk water to define septic system limitations. Figure 4-11 shows areas with moderate to severe septic system limitations in Alpena County. Generally, most of the county has severe limitations due to poor filtration of septic effluents. This is a critical issue when the water table is close to the surface or when high-density development occurs. The best options to protect groundwater resources are to limit development types and density, or to provide public water and sewers for high-density developments.

Green Township is highly susceptible to septic limitations with virtually all of its soils exhibiting severe constraints. Since they do not absorb septic effluent efficiently, sand and gravel close to the septic field are considered poor filters. This is a problem when the water table is close to the surface or when high-density development occurs. Soils that are subject to wetness or ponding, such as those surrounding Fletcher Pond, are also ill-suited for use as septic absorption fields due to excessively slow absorption rates. The Township also contains significant areas of soils that perc slowly or have steep slopes. These conditions increase the Township’s vulnerability to groundwater contamination. However, it is possible in some cases to mitigate the impacts caused by development in less than ideal soils. For example, soils subject to slow absorption rates can be made more effective if fill material is used to raise the absorption



field above the water table, or if a subsurface drainage system is installed to lower the water table. In the case of poorly filtering soils, alternatives include the application of fill material to the site and/or the enlargement of the absorption field.

The soils in the central and eastern portion of Ossineke Township have severe septic limitations due to wetness. While septic limitations appear to be widespread, if proper engineering and building techniques are utilized, much of the land would be considered suitable for development. However, systems designed to handle severe soil constraints are both costly to construct and difficult to maintain.

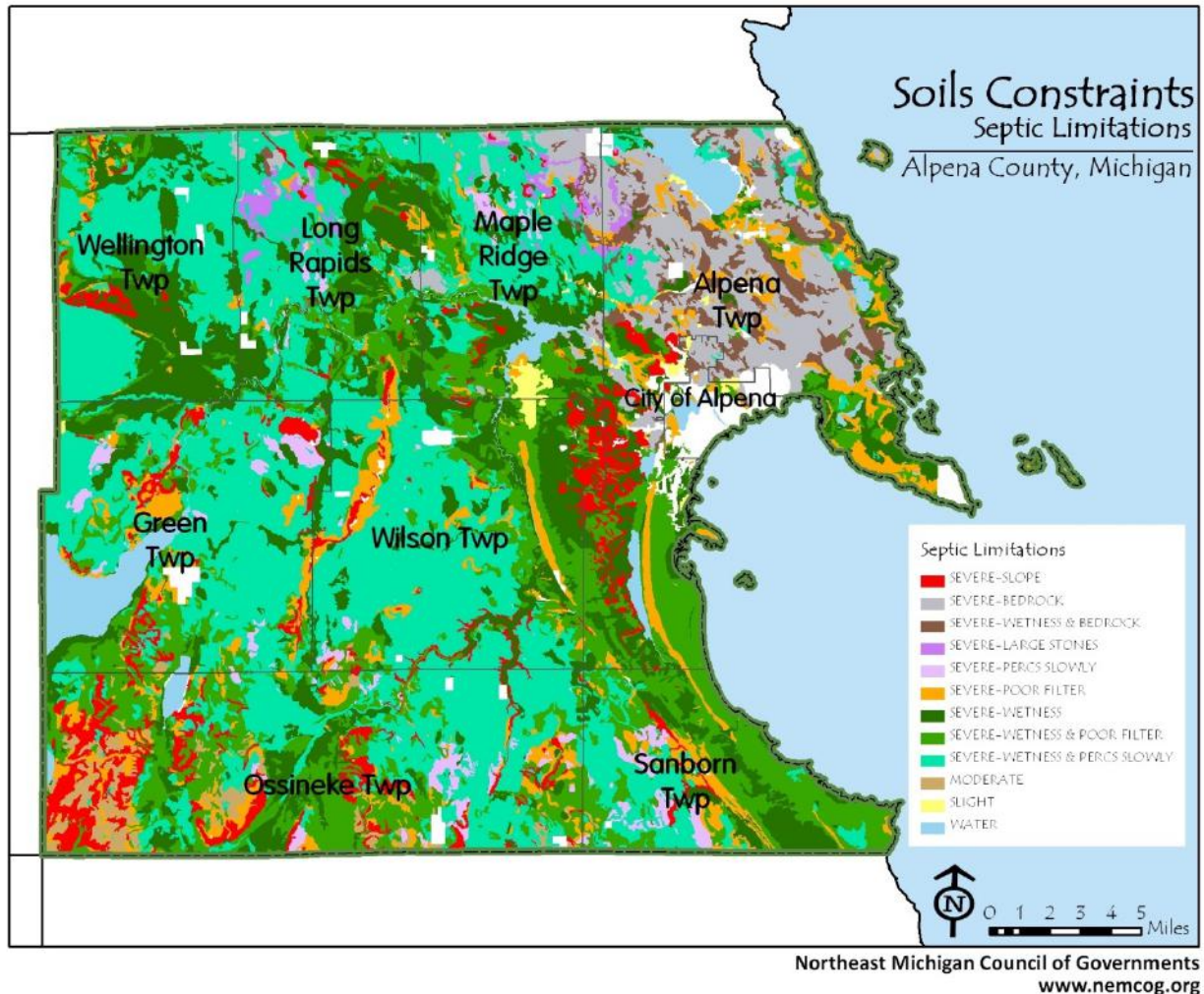


FIGURE 4-11 SOILS CONSTRAINTS SEPTIC LIMITATIONS

## WATER RESOURCES

### SURFACE WATER

Alpena County has a variety of water resources that it depends on for development, recreation, and commerce (Table 4-1, Figure 4-12). The county has 67 natural and artificial water bodies that range in size from under one acre to thousands of acres. Fletcher Pond Hydroelectric Reservoir lies in both Alpena County and Montmorency County. The reservoir covers a total of 8,970 acres with 5,310 acres in Green Township, Alpena County, which makes it the largest waterbody in Alpena County and Green Township. The county's largest natural lake is Long Lake (2,750 acres). Other large water bodies include Beaver Lake, Turtle Lake, Devils Lake #1 and #2 ("The Narrows"), Seven Mile Pond, Ninth Street Pond, Sunset Lake, Grass Lake, Crooked Lake, and Middle Lake (Table 4-2).

The main branch of the Thunder Bay River has headwaters in Montmorency County and flows west to east across Alpena County into Lake Huron. Wolf Creek and the Lower South Branch of the Thunder Bay River drain southern Alpena County. The Upper South Branch of the Thunder Bay River flows from the south to the north and was dammed to create Fletcher Pond Hydroelectric Reservoir. The North Branch of the Thunder Bay River flows from Presque Isle County through the northern portion of Alpena County. All three branches empty into Seven Mile Lake, which is a hydroelectric reservoir.

Although not included in the surface water inventory, Lake Huron is vital to Alpena County's community and economy. It is used as a primary source for drinking water in the City of Alpena. Thunder Bay serves as a shipping port for Alpena County industries and is the home to many charter fishing vessels. Shipping in Thunder Bay has a long and tumultuous history with over 160 shipwrecks occurring over the course of the last century. The rich history of Thunder Bay was recognized as a national treasure and it was designated as the Thunder Bay National Marine Sanctuary and Underwater Preserve, which opened in October 2000. More information about Alpena County's coastal dynamics can be found in Appendix A.

<b>Origin of Surface Water</b>	<b>Number of Water Bodies</b>	<b>Area (acres)</b>
Natural Lakes and Ponds	38	1,631
Natural Lakes with a dam	2	3,415
Artificial Lake	1	26
Artificial Ponds	20	11
Hydroelectric Reservoirs	5	7,389
Fish and Wildlife Flooding	1	900

Source: NEMCOG

Lakes are classified into three types based on their water quality and level of productivity. Oligotrophic lakes have very little nutrient accumulation, minimal aquatic plant and algae growth, very clear water, and can support cold water fish. Mesotrophic lakes have a greater presence of nutrients, lower clarity, and aquatic plants. Eutrophic lakes have high nutrient levels, turbid water, large amounts of aquatic plants, and suspended algae. The rate of eutrophication of a lake can be greatly influenced by human activities, such as changes in the watershed that alter the quality and quantity of runoff.

All of the county’s water-based recreation areas are facing increased development pressure. However, if development of these areas is done properly, the surface water quality and sediment/nutrient delivery rates into lakes and streams will not be greatly impacted. Some management techniques to safeguard water quality include the proper placement and maintenance of septic systems, the restricted use of fertilizers near shorelines, erosion control practices, lower density development near lakes and streams, and the use of green belts and buffers.

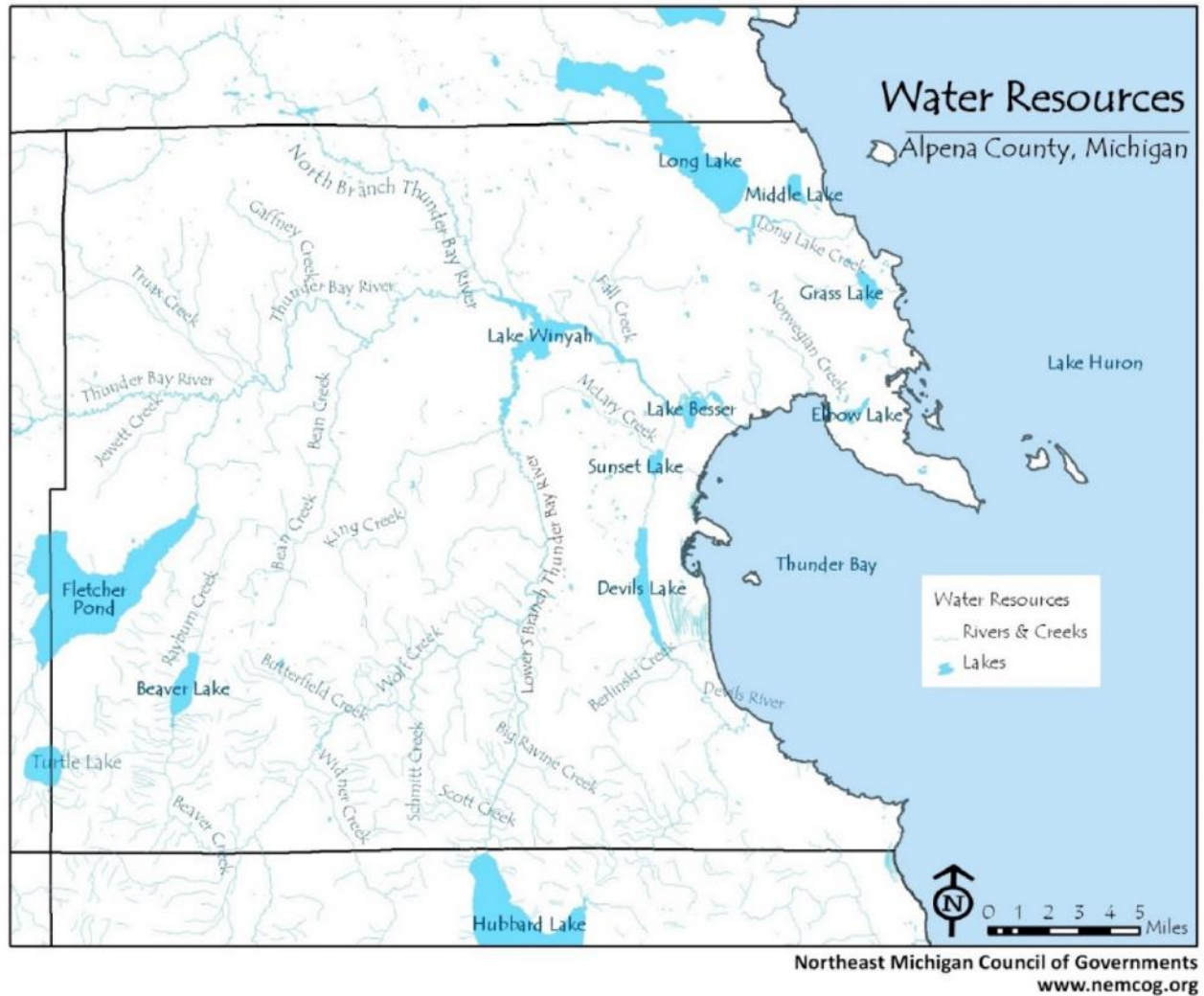


FIGURE 4-12 WATER RESOURCES



TABLE 4-2 ALPENA COUNTY LAKES INVENTORY					
Name	Location	Section	Acres	Description	Public Access
Beaver	29n5e, 30n5e	2,3, 35	665	Natural Lake w/ Dam	X
Combs	31n5e	24	4	Natural Lake	
Conway	31n9e	20	11	Natural Lake	
No Name (Crapo)	31n9e	9	24	Natural Lake	
Elbow (Crooked)	31n9e	20,21,29	170	Natural Lake	
No Name (Danokowski)	32n8e	6	6	Natural Lake	
Denton	32n7e	16	6	Natural Lake	
Devil's (#1)	30n8e	8,17,20,28,29,3 3	900	Fish & Wildlife Flooding	
Devil's (#2) (The Narrows)	32n8e	23,24	100	Natural Lake	
Fitzgerald	32n7e	1,6	34	Natural Lake	
Fletcher Pond (Floodwater)	30n5e	2,7,10,11, 15- 22, 28-31	5,310	Hydroelectric reservoir	X
Four Mile Pond	31n8e	7	98	Hydroelectric reservoir	X
Grass	31n9e,	33, 4	123	Natural Lake	
Jacob	32n7e	16	3	Natural Lake	
Long	32n8e	3,4,5,9,10,11,14 ,15	2,750	Natural Lake with Dam	X
McKay Dam	29n8e	26	0	Artificial Pond	
Middle	32ne	7,12,13,18	264	Natural Lake	
Mindack	32n7e	2	32	Natural Lake	
Sunset Lake	31n8e	29,32	183	Natural Lake	
No Name (Mud)	31n9e	20,29	16	Natural Lake	
Muskrat Farm	31n7e	24	23	Natural Lake	
Zim (Nash)	31n7e	23	8	Natural Lake	
Ninth Street (Lake Besser)	31n8e	15,16,21,22	392	Hydroelectric reservoir	X
No Name	31n9e	35	7	Natural Lake	
No Name	30n5e	9	0	Natural Lake	
No Name	32n9e	18	20	Natural Lake	
No Name	30n8e	9,16	100	Natural Lake	
No Name	30n8e	27	14	Natural Lake	
No Name	30n8e	21,22	32	Natural Lake	
No Name	31n9e	35	15	Natural Lake	
No Name	31n9e	18	21	Natural Lake	
No Name	31n9e	34,35	5	Natural Lake	
No Name	31n9e	20	5	Natural Lake	
No Name	31n8e	15,22	26	Artificial	
No Name	31n9e	10	33	Natural Lake	
No Name	32n9e	28,29	28	Natural Lake	
Seven Mile (Lake Winyah)	31n7e	1,2,3,9,10	1,530	Hydroelectric reservoir	X
Spratt Hunting	30n5e	12	10	Natural Lake	
Sylvester	31n5e	34	6	Natural Lake	
Turtle	29n5e	18,19	275	Natural Lake	

Source: Michigan State University, Department of Resource Development Michigan Lake Inventory Bulletin Number 4

## **GREEN TOWNSHIP SURFACE WATER**

The three most significant water bodies in Green Township are Fletcher Pond (partially located in Montmorency County), Beaver Lake (partially located in Ossineke Township), and the South Branch of the Thunder Bay River. Some factors that threaten or impair water quality in the township include:

- Stormwater runoff that introduces sediments and contaminants into the water system
- Increased shoreline development
- Loss of wetlands and wildlife habitat due to development and other human impacts
- Inadequate or poorly maintained septic systems
- Agricultural runoff that introduces bacteria and nutrients into the water system
- Increased sedimentation from shoreline erosion
- Erosion at road/stream crossings
- Impairment of recreation and aquatic/wildlife habitat with the introduction and spread of invasive species (e.g. zebra mussel)

There have been numerous water quality studies conducted on Fletcher Pond and the Thunder Bay River that have found that a variety of sources have introduced excess nutrients into the waters. Significant sources include yard and pet waste, improperly functioning septic systems on riparian parcels, and livestock management practices (e.g. unrestricted livestock access to water bodies and the storage/application of manure). In a 2003 nonpoint source pollution inventory in the Thunder Bay River Watershed, sediments and nutrients from road/stream crossings, streambank erosion, stormwater runoff, agricultural operations, land development practices, and lake and river access sites were determined to be the pollutants that most affected the river. Despite these pollutants, the Thunder Bay River exhibits a good to excellent water quality rating.

Excess nutrients also cause the proliferation of aquatic nuisance species, such as Eurasian watermilfoil (present in large portions of Fletcher Pond) and Hydrilla. Once introduced to a water body, these species spread rapidly and form dense vegetation mats that hinder navigation and prevent native aquatic plants and animals from accessing sunlight. As the plant matter dies and sinks to the bottom of a lake, it depletes the oxygen supply as it decomposes, which further degrades the lake.

Green Township's tourism industry thrives on boating, fishing, and hunting opportunities provided by its water resources. Additionally, golf courses, canoe liveries, restaurants, entertainment enterprises, and other businesses benefit from visitors attracted to the area's water-resources. Since the township's economy largely depends on the availability of high quality lakes and streams, it is important to address water quality threats and maintain Green Township's standing as one of Northeast Michigan's preferred vacation destinations. One way to maintain the high quality water resources would be to implement a water quality monitoring program in partnership with adjacent counties or townships. Specifically, the Beaver Lake area has been highly-developed and should be closely monitored in addition to providing information to residents about how to protect the quality of the lake.

## **OSSINEKE TOWNSHIP SURFACE WATER**

Ossineke Township's surface water is mostly in its rivers, streams, and two lakes. Beaver Lake (675 acres) lies in the northwestern portion of the township and in Green Township to the north. Turtle Lake (841 acres) lies along the western boundary of the township with the remainder lying in Rust Township, Montmorency County. Even though it is not located in the township, Hubbard Lake is south of the township and provides recreational opportunities to township residents.

Wolf Creek and the Lower South Branch of the Thunder Bay River are the two major river systems in the township. Beaver Creek, Little Wolf Creek, Schmitt Creek, Widner Creek, and Butterfield Creek are all associated with the Wolf Creek system, while Big Ravine Creek, Scott Creek, Simmons Creek, and Doscoba Creek are associated with the Thunder Bay River system.

### **WILSON TOWNSHIP SURFACE WATER**

The majority of Wilson Township is located in the Thunder Bay River Watershed with the eastern portion of the township located within the coastal watersheds of the Devil's River and Black River. The township houses King Creek, Wolf Creek, and Butterfield Creek, which flow into the Lower South Branch of the Thunder Bay River. The extreme western edge of the township is drained by Bean Creek, which also flows into the Thunder Bay River. Wilson Township has two natural, warm water lakes: Zim Lake and Muskrat Lake. Zim Lake is 7.5 acres and is approximately 36 feet deep. Muskrat Lake is 23 acres. The waters of Lake Winyah, an impoundment of the Thunder Bay River, extends south into Wilson Township. Another man-made lake was created by Lafarge in the abandoned Paxton shale quarry. The township's lakes contain warm water species, such as pan fish, northern pike, and bass.

### **GROUNDWATER**

Most of the groundwater in Michigan discharges into the Great Lakes through entry into surface streams or from the subsurface directly into the lake bottom. When the surface topography cuts below the surface of the groundwater level, groundwater can emerge. Artesian springs are formed when groundwater develops pressure (high hydrostatic head) under confinement and breaks through to the surface. Groundwater can also be drawn off into areas with lower groundwater pressure (low hydrostatic head). These areas can be layers of coarse materials or open fissures and voids in bedrock where the groundwater can flow quickly through the caverns and fissures, slowly through the coarse materials, and very slowly through the fine materials. Clay acts as a barrier to the flow of groundwater, but is not present everywhere as it varies in thickness and horizontal extent.

Contaminated groundwater generally travels unobserved until it is detected in a water supply well. However, some contamination may remain undetected since no odor, taste, or color is evident. Once contaminated, groundwater is expensive and difficult to clean up, which may cause the contamination to last for decades.



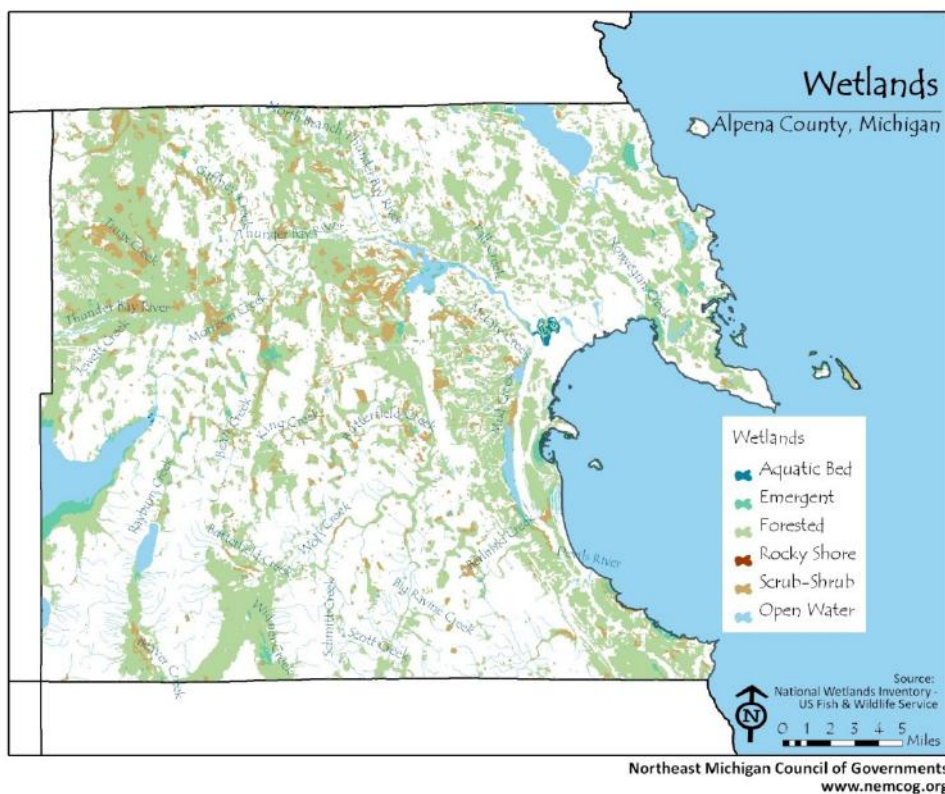
Sinkhole areas are often conduits for groundwater pollution since they were historically used as dump sites and some continue to be used in this manner. Water contamination from agricultural drainage, nitrates, infectious disease, septic systems and sediment have been documented within the karst terrain. Protection and preservation of sinkholes has the potential to prevent groundwater contamination and maintain the sinkholes as a scenic feature.

Other sources of groundwater contamination include abandoned wells, pesticides and fossil fuels, and road salt. If abandoned wells are not properly capped, they have the potential to contaminate the groundwater through the well. The Alpena-Montmorency Conservation District offers assistance with properly capping wells. Improper storage or use of pesticides and fossil fuels can lead to contamination through spills, leaking storage tanks, accidental discharges, or misapplication. Unprotected road salt storage facilities and road runoff that infiltrates to the groundwater recharge zones can also cause contamination.

The groundwater depth in many areas of Alpena County is less than 50 feet below the soil surface or shallower if located near lakes, streams, or wetlands, which results in shallow drinking water wells. This combination of factors places Alpena County’s groundwater at risk for contamination. Currently, a wide variety of contaminants have been discovered in the groundwater at sites throughout the county and it is highly likely there are sites that have not been discovered yet. For groundwater protection planning, it should be assumed the entire county is vulnerable to contamination.

## WETLANDS

A wetland is an area where water is found, either on the surface or near the surface, at any time during the year. Poorly drained soils and hydrophytic vegetation is also present. Wetlands are often referred to as marshes, swamps, or bogs. Michigan residents are becoming increasingly aware of the value of wetlands since they improve water quality of lakes and streams by filtering nutrients, organic chemicals, and toxic heavy metals. Wetlands are also related to high water tables, serve to discharge or recharge aquifers, and provide habitat for a wide variety of plants and animals. By absorbing excess water when river levels are high and releasing water when levels are low, wetlands help prevent floods and droughts.



There are numerous wetland areas scattered throughout Alpena County totaling over 26 thousand acres (Figure 4-13). In addition to the many inland wetland areas, Alpena County has significant coastal wetlands scattered along its 61 miles of Lake Huron coastline. These wetlands provide nesting habitat and feeding areas for migratory birds and help slow shoreline erosion by dissipating wave energy.

FIGURE 4-13 WETLANDS



## FORESTS

Approximately 60% of Alpena County is covered by forests that are used for timber, fiber, outdoor recreation, and wildlife habitat. The predominant forest types are lowland hardwoods (e.g. ash, elm, soft maple, and cottonwood), lowland conifers (e.g. cedar, tamarack, black and white spruce, and balsam), and aspen/birch forests (Figure 4-14).

According to the *Resource Assessment of Alpena County*, about 71.1% of forestland is owned by private non-industrial landowners, while corporations own 15.4%, the State or Federal Governments own 12.4%, and cities and townships own 1.1%. The forest industry on private lands contributes greatly to the overall economic well-being of Alpena County.

### MAJOR FOREST PESTS

In the summer of 2002, the emerald ash borer (EAB) was discovered near Detroit in Southeast Michigan. This exotic beetle is responsible for the death of approximately 20 million trees in the Lower Peninsula since the beetle's larvae feed on the inner bark of the ash trees and disrupt the tree's ability to transport water and nutrients. After infected with the beetle larvae, the trees die within 3-4 years. Adult beetles nibble on ash foliage, but cause little damage. The Michigan Department of Agriculture reports Alpena County as a Level I quarantined area, which means the area is generally infested with EAB. The Michigan Department of Agriculture revised its quarantine in February 2011, which regulates the movement of EAB, ash trees, wood chips, and hardwood firewood.

Alpena County's red and white oaks have oak wilt, which is a fungal disease that moves through the water-conducting tissue of a tree and causes it to die. Small beetles transport the disease between trees when they feed on sap from open wounds on the trees. Red oaks are more susceptible to the disease than white oaks. From mid-April to mid-July, oaks must be protected from wounds to prevent the spread of the disease. If wounds do occur, painting a sealant on the tree may prevent infection. Additionally, the transport of oak logs and firewood spreads the disease. Root grafts can be broken using a deep vibratory plow to prevent the disease from spreading underground. All oak trees in diseased stands must be removed to prevent the spread of the disease.

## FISH & WILDLIFE

Sheltered by evergreen and hardwood forests, Alpena County's wildlife includes raccoon, fox, mink, beaver, wildcat, deer, elk, black bear, ruffed grouse, and turkey. Hunting for white tailed deer and small game species, such as cottontail rabbit, tree squirrels, wild turkey and ruffed grouse, attract many people to the county annually. Other game species include beaver, otter, muskrat, raccoon, opossum, skunk and weasel. Alpena County also has prime waterfowl habitat that is supplemented by private ponds, beaver dams, pothole wetlands and wooded floodplain areas. Additionally, Alpena County is part of the Mississippi flyway for migratory birds.

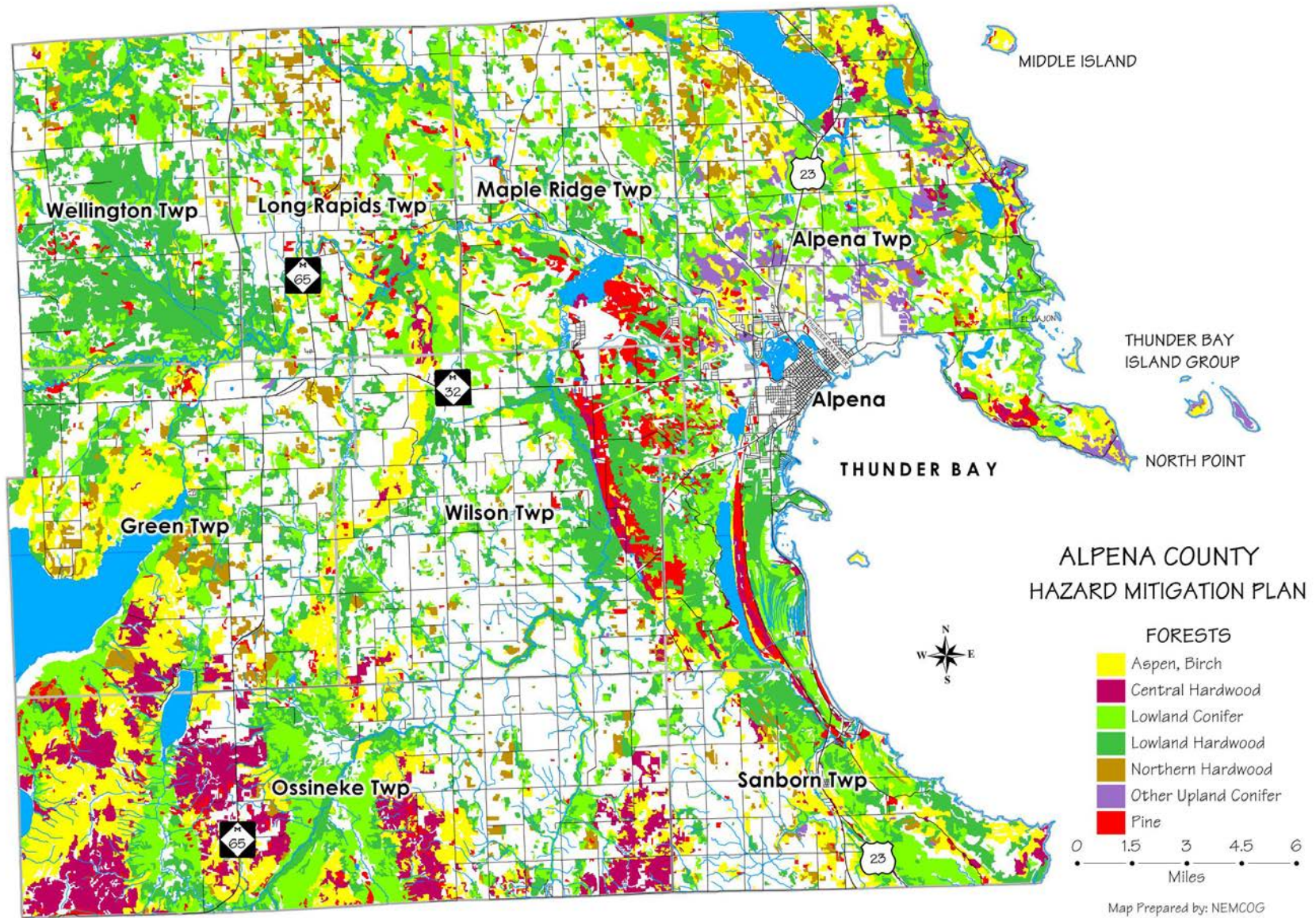


FIGURE 4-14 ALPENA COUNTY FOREST TYPES



## HUNTING

Hunting opportunities for most wildlife and game birds is available in Alpena County (Table 4-3). White tail deer are abundant for the big game hunter and black bear populations are high in areas of dense forest, even though the overall population is low. Along with privately-owned forestlands, state lands provide ample habitat for wild turkey, ruffed grouse, woodcock, and other upland birds, and are open to the public for hunting, unless otherwise posted. Small game, such as the cottontail rabbit, snowshoe hare and squirrel, are also common.

TABLE 4-3 ALPENA COUNTY'S GAME SPECIES INVENTORY		
Species	Relative abundance	Management Potential
Deer	High	Good. Timber cuttings on private land could increase deer carrying capacity.
Bear	Low overall High in places	Limited. Population holding at low level. High in less populated forestland held for hunting recreation. Gradual reduction is expected.
Bobcat	Medium overall	Good. Long range maintenance of swamplands is vital.
Raccoon	Moderate	Good. Moderate hunting and trapping pressures maintains the population at a desired level.
Squirrel	Moderate	Good. Population fluctuates based on winters and crops.
Snowshoe Hare, Cotton Tail	Up and Down	Good. Fluctuates on a 10-15 year cycle. Continued survival depends on large areas of swampland
Ruffed Grouse	Moderate	Good. Population numbers are increasing. Habitat improves with clear cutting coniferous cover
Waterfowl	Low to Medium	Canada Geese numbers are increasing. Wood Duck numbers increased with local nest box placement. No change in mallard numbers. Includes Wood Cock.
Wild Turkey	Moderate	Good. Population is continuing to increase.
Fox, Beaver, Badger, Muskrat, Mink, Otter	Low to Moderate	Low level. Populations fluctuate.
Source: Tom Carlson, DNR Wildlife habitat biologist, Atlanta MI. 1989		

Bovine Tuberculosis (TB) is a bacteria caused disease that attacks the respiratory system and is the most infectious out of the three types of tuberculosis (human, avian, and bovine). Human tuberculosis is rarely transmitted to non-humans and avian tuberculosis is typically restricted to birds. TB is capable of infecting most mammals (e.g. coyotes, raccoons, black bear, bobcat, red fox, and opossum), but is primarily found in hoofed animals. Despite being considered a low health risk to humans, humans can contract the disease. Although the State of Michigan attained TB accredited-free state status in 1979, it is believed TB from infected cows infected Michigan's white-tailed deer population as a result of shared pastures. In 1994, a TB infected deer was killed by a hunter in Alpena County. In 2001, Presque Isle County had one deer test positive for TB. Unfortunately, large deer populations combined with indiscriminate feeding practices were contributing factors to the spread of TB in Alpena County and across Northern Michigan. In 2002, 9 deer tested positive for TB out of the 1,236 deer that were tested in Alpena County. In 2003, 9 deer tested "preliminary positive."

In an effort to eradicate TB, a TB testing campaign was implemented, a surveillance zone and Deer Management Unit 452 (DMU 452) was created, changes occurred for deer feeding rules and deer harvest numbers, the number of hunting days was expanded, and new deer or elk farms were banned. Hunters

in the surveillance area were asked to submit deer heads for testing, while testing in DMU 452 is mandatory. Presque Isle County is in the infected area, but is in DMU 071, not DMU 452. In November 2011, the Natural Resources Commission voted to remove the baiting ban in Presque Isle County, which allowed hunters to use up to two gallons of bait. Baiting remains illegal in Alpena, Montmorency, Alcona, and Oscoda Counties.

Although not in Alpena County, chronic wasting disease (CWD) has been found in Michigan's Lower Peninsula. In an effort to decrease the spread of CWD, the State has adopted protocols and control measures, including asking hunters to be aware of and on the lookout for the disease, getting deer checked, avoiding long-distance movements of deer carcasses, handling and disposing of deer carcasses in a responsible manner, staying up to date with the latest regulations, and only bringing back animal parts when hunting out of state.

## **FISHING**

Alpena County offers multiple opportunities for sport fishing on its lakes, rivers, streams, and shore waters of Lake Huron. These water resources have an abundance of warm, cool and cold water fish species that provide ample fishing opportunities. Some of the fish species include brown trout, pan fish, crappies, salmon, rainbow trout, lake trout, brook trout, largemouth bass, smallmouth bass, perch, walleye, and pike.

Historically, the Thunder Bay River provided a link between inland habitats and Lake Huron where the fish used the corridor for spawning and nursery habitats. Although most of the riverine habitat is now inaccessible to Lake Huron fish due to the presence of hydro-power projects, the watershed still provides nutrient inputs to the shore waters of Thunder Bay.

Most of Michigan's game and pan fish are found along the Thunder Bay River and its major branches. Since 2000, the DNR has stocked the Thunder Bay River with over 430,000 fish, including brown trout, rainbow trout, and walleye. There are several impoundments along the river that vary in size from Fletcher Pond to smaller Lake Winyah. Lake Winyah was formed when Seven Mile Dam was constructed and houses northern pike.

Lake Huron offers many fishing opportunities that include brown trout, lake trout, rainbow trout and salmon. Public boat launches on Lake Huron are located at Rockport, off Fletcher Street in Alpena, at the Alpena Small Boat Harbor, and on the Devil's River in Ossineke. Charter boat services are available at the Alpena Small Boat Harbor. Undeveloped possible access sites from public land are at Ossineke, Squaw Bay and Partridge Point. According to the Michigan DNR fish stocking report, Lake Huron has been stocked with over 4.9 million fish, including brown trout, lake trout, and walleye since 2000.

One of the most scenic and rustic waterways in the area is Fletcher Pond (Green Township), which was created by damming the Thunder Bay River. It is Michigan's 12<sup>th</sup> largest inland water body, but the maximum depth is only ten feet. Although the shallow, stump-laden waters hamper powerboats, Fletcher Pond offers some of the best largemouth and smallmouth bass fishing in the State. Pike, crappies, perch and other pan fish are also abundant. Year-long fishing activities include ice fishing.

Long Lake is located on the northern border of Alpena County and covers 5,652 acres with a maximum depth of 25 feet. Long term fish stocking programs make walleye abundant in these waters. Largemouth and smallmouth bass, pike, and pan fish are also commonly caught here.

Beaver Lake covers 665 acres and is located in the southwest part of the county. This lake contains largemouth and smallmouth bass, perch, pike, and other pan fish. Since 2000, the DNR has stocked the lake with 180,000 fish including northern pike and walleye.

### DOUBLE CRESTED CORMORANT

In Alpena County and throughout the Great Lakes Basin, the Double Crested Cormorant, a deep-diving fish predator, has substantially increased in population due to the abatement of some pesticides over the past twenty years. The high densities of these birds combined with their observed fish eating behaviors have led to their implication in declines of commercial and recreational fisheries throughout the Great Lakes.

Central Michigan University (CMU) and the Michigan DNR Fisheries Division initiated an intense population sampling in May 1999. Compared to similar data gathered by researchers at CMU over 20 years ago, the researchers found the smallmouth bass population had declined by 75-80% and other fish species (brown bullhead and rock bass) have declined by as much as 98%. These findings may mean cormorants have a secondary effect on sport fisheries by competing with desired sport fish for forage fish, which may be affecting community trophic dynamics. However, researchers have found it difficult/impossible to identify the actual causes behind fish population declines.

### THREATENED AND ENDANGERED SPECIES

Alpena County is home to a number of different plants and animals that are threatened, endangered, or of special concern (Table 4-4). These plant and animal species are protected under the State of Michigan's Endangered Species Act (Public Act 203 of 1974 as amended). Many of these species are of concern due to their declining or unreliable populations and if these species continue to decline, they would be recommended for threatened or endangered status. Protection of special concern species before they reach low population levels prevents the need to list species in the future by maintaining adequate numbers for self-sustaining populations.

Table 4-4 Alpena County Endangered and Threatened Species					
Scientific Name	Common Name	Federal Status	State Status	Occurrences	Last Observed
Accipiter gentilis	Northern goshawk		SC	2	2007
Acipenser fulvescens	Lake sturgeon		T	1	1991
Adlumia fungosa	Climbing fumitory		SC	1	1908
Alasmidonta viridis	Slippershell		T	3	1932
Ammodramus henslowii	Henslow's sparrow		E	1	2006
Ammodramus savannarum	Grasshopper sparrow		SC	1	2006
Arnoglossum plantagineum	Prairie indian-plantain		SC	1	1989
Asplenium rhizophyllum	Walking fern		T	1	1952
Astragalus neglectus	Cooper's milk vetch		SC	1	2017
Bombus affinis	Rusty-patched bumble bee	LE	SC	1	1965

**Table 4-4 Alpena County Endangered and Threatened Species**

Scientific Name	Common Name	Federal Status	State Status	Occurrences	Last Observed
<i>Bombus terricola</i>	Yellow banded bumble bee		SC	1	1966
<i>Botrychium michiganense</i>	Michigan moonwort		T	1	1952
<i>Buteo lineatus</i>	Red-shouldered hawk		T	11	2003
<i>Calypso bulbosa</i>	Calypso or fairy-slipper		T	1	1908
<i>Carex scirpoidea</i>	Bulrush sedge		T	1	1981
<i>Charadrius melodus</i>	Piping plover	LE	E	1	2003
<i>Chlidonias niger</i>	Black tern		SC	1	1998
<i>Cirsium pitcheri</i>	Pitcher's thistle	LT	T	3	1996
<i>Coregonus artedi</i>	Lake herring or Cisco		T	4	1993
<i>Crataegus douglasii</i>	Douglas's hawthorn		SC	2	1930
<i>Cypripedium arietinum</i>	Ram's head lady's-slipper		SC	3	2009
<i>Dorydiella kansana</i>	Leafhopper		SC	1	2010
<i>Dryopteris filix-mas</i>	Male fern		SC	2	1963
<i>Emydoidea blandingii</i>	Blanding's turtle		SC	3	2018
<i>Gallinula galeata</i>	Common gallinule		T	1	2019
<i>Gavia immer</i>	Common loon		T	5	2019
<i>Glyptemys insculpta</i>	Wood turtle		SC	1	1991
<i>Haliaeetus leucocephalus</i>	Bald eagle		SC	31	2017
<i>Hydroprogne caspia</i>	Caspian tern		T	2	1999
<i>Iris lacustris</i>	Dwarf lake iris	LT	T	9	2011
<i>Lanius ludovicianus migrans</i>	Migrant loggerhead shrike		E	2	1981
<i>Lasmigona compressa</i>	Creek heelsplitter		SC	1	
<i>Lasmigona costata</i>	Flutedshell		SC	2	1932
<i>Myotis lucifugus</i>	Little brown bat		SC	2	2012
<i>Myotis septentrionalis</i>	Northern long-eared bat	LT	SC	2	2013
<i>Notropis anogenus</i>	Pugnose shiner		E	2	1991
<i>Nycticorax nycticorax</i>	Black-crowned night-heron		SC	3	2009
<i>Opheodrys vernalis</i>	Smooth green snake		SC	1	1957
<i>Pandion haliaetus</i>	Osprey		SC	6	2017
<i>Percina copelandi</i>	Channel darter		E	4	1925
<i>Perimyotis subflavus</i>	Eastern pipistrelle		SC	1	2010
<i>Pinguicula vulgaris</i>	Butterwort		SC	2	1981
<i>Pterospora andromedea</i>	Pine-drops		T	3	2020
<i>Rorippa aquatica</i>	Lake cress		T	3	1984

**Table 4-4 Alpena County Endangered and Threatened Species**

Scientific Name	Common Name	Federal Status	State Status	Occurrences	Last Observed
Salix pellita	Satiny willow		SC	1	1895
Sander canadensis	Sauger		T	1	1923
Sistrurus catenatus	Eastern massasauga Rattlesnake	LT	SC	6	2010
Somatochlora hineana	Hine's emerald dragonfly	LE	E	2	2015
Sphaerium fabale	River fingernail clam		SC	2	
Spiza americana	Dickcissel		SC	1	2006
Sterna hirundo	Common tern		T	7	2008
Tanacetum huronense	Lake Huron tansy		T	1	1912
Thamnophis butleri	Butler's garter snake		SC	2	1957
Trichostema brachiatum	False pennyroyal		T	1	1895
Trimerotropis huroniana	Lake Huron locust		T	2	1996
Villosa iris	Rainbow		SC	2	1932

Source: Michigan Natural Features Inventory, August 20, 2020  
 State Status: E=endangered, T=threatened, SC=special concern  
 Federal Status: LE=listed endangered, LT= listed threatened

## AGRICULTURE

The United States Department of Agriculture maintains information on agricultural activities and prepares the U. S. Census of Agriculture. The 2007 and 2012 Census of Agriculture Reports were used to gain an understanding of the status and trends in agriculture. Table 4-5 shows the number of farms and acres farmed decreased from 2007 to 2012. However, the average farm size increased slightly. While the estimated market value of land and buildings (average per farm) decreased by \$19,200 over the five year period, the estimated market value of machinery and equipment (average per farm) increased by \$16,200. There was an increase in the number of small farms with 1-9 acres, but other size groups showed a loss in numbers.

Even though there were fewer farms, the total market value of agricultural products sold, the market value of agricultural products (average per farm), the net income (average per farm), and the number of farms with annual value of sales of \$25,000 or greater increased between 2007 and 2012. Additionally, the number of farms where the principal operator worked at farming full time increased over the five year period.

In 1974, Public Act 116 (now known as Part 361, Farmland and Open Space Preservation of the NERPA Act, P.A. 451 of 1994) was passed into state law to provide tax relief to farmers that agreed to keep their farms in undeveloped condition. To qualify for the tax credit, a farmer must enter into a “farmland development rights agreement” in which they agree to impose a restrictive covenant on the property to limit property development for uses other than farming. The agreements stay with the land and must last a minimum of ten years and may be renewed. Once an application is approved, the property owner would continue to pay property taxes, but any amount that exceeds 3.5% of the owner’s annual household income becomes a tax credit applied to the state income tax. If the credit is larger than the



taxes owed, the balance is refunded. Records from the Michigan Department of Agriculture and Rural Development show Alpena County farms have 54 active agreements covering approximately 5,600 acres.

<b>TABLE 4-5 AGRICULTURE IN ALPENA COUNTY</b>		
<b>Category</b>	<b>2007</b>	<b>2012</b>
Farms (number)	573	458
Land in farms (acres)	85,947	69,274
Land in farms - Average size of farm (acres)	150	151
Land in farms - Median size of farm (acres)	79	80
Estimated market value of land and buildings (average per farm)	\$387,180	\$367,974
Estimated market value of land and buildings (average per acre)	\$2,581	\$2,433
Estimated market value of machinery and equipment (average per farm)	\$66,222	\$82,430
Farms by size - 1 to 9 acres	16	23
Farms by size - 10 to 49 acres	195	129
Farms by size - 50 to 179 acres	246	205
Farms by size - 180 to 499 acres	79	71
Farms by size - 500 to 999 acres	29	23
Farms by size - 1,000 acres or more	8	7
Total cropland (farms)	525	409
Total cropland (acres)	59,577	44,122
Total cropland - Harvested cropland (farms)	420	349
Total cropland - Harvested cropland (acres)	46,450	38,428
Market value of agricultural products sold	\$21,458,000	\$23,653,000
Market value of agricultural products sold (average per farm)	\$37,449	\$51,644
Total farm production expenses (average per farm)	\$30,420	\$45,944
Net farm income (average per farm)	\$9,251	\$9,258
Farms by value of sales - Less than \$2,500	264	199
Farms by value of sales - \$2,500 to \$4,999	68	53
Farms by value of sales - \$5,000 to \$9,999	75	35
Farms by value of sales - \$10,000 to \$24,999	70	66
Farms by value of sales - \$25,000 to \$49,999	28	38
Farms by value of sales - \$50,000 to \$99,999	21	15
Farms by value of sales - \$100,000 or more	47	52
Principal operator by primary occupation - Farming	217	227
Principal operator by primary occupation - Other	356	231
Crops, including nursery and greenhouse crops	\$6,430,000	\$9,507,000
Grains, oilseeds, dry beans, and dry peas	\$3,835,000	\$7,467,000
Corn	\$1,166,000	\$3,231,000
Wheat	\$899,000	\$1,078,000
Soybeans	\$489,000	\$2,415,000
Other grains, oilseeds, dry beans, and dry peas	\$1,263,000	\$697,000
Vegetables, melons, potatoes, and sweet potatoes	\$182,000	\$223,000
Fruits, tree nuts, and berries	\$175,000	\$162,000
Nursery, greenhouse, floriculture, and sod	\$296,000	\$216,000
Cut Christmas trees and short-rotation woody crops		\$68,000
Other crops and hay	\$1,912,000	\$1,362,000
Poultry and eggs	\$36,000	\$27,000
Cattle and calves	\$2,370,000	\$2,091,000
Milk from cows		\$11,784,000
Hogs and pigs	\$43,000	
Sheep, goats, wool, mohair, and milk		\$51,000
Horses, ponies, mules, burros, and donkeys	\$129,000	\$159,000
Source: The Census of Agriculture, United States Department of Agriculture, 2007 and 2012		

## OIL & GAS WELLS

According to the Michigan Department of Environment, Great Lakes, and Energy, Alpena County has 1,595 oil and gas wells with the majority of wells classified as producing gas wells (Table 4-6). The majority of wells are located in Green, Wilson, and Ossineke Townships with a small amount located in Sanborn Township (Figure 4-15).

TABLE 4-6 OIL AND GAS WELLS IN ALPENA COUNTY	
Well Type	Number of Wells and Status
Brine Disposal Well	37-active, 2-plugged
Dry Hole	89-plugging approved, 1-unknown
Gas Condensate Well	2-plugging approved
Gas Well	872-producing, 16-plugging approved, 6-plugging completed, 13-temporarily abandoned
Brine Well	2-unknown
Lost Hole	5-plugging approved
Location only	416-terminated permit, 6-plugging approved, 5-permitted well
Test Hole	84-plugging completed, 39-unknown

Source: Michigan Department of Environmental Quality, 2018

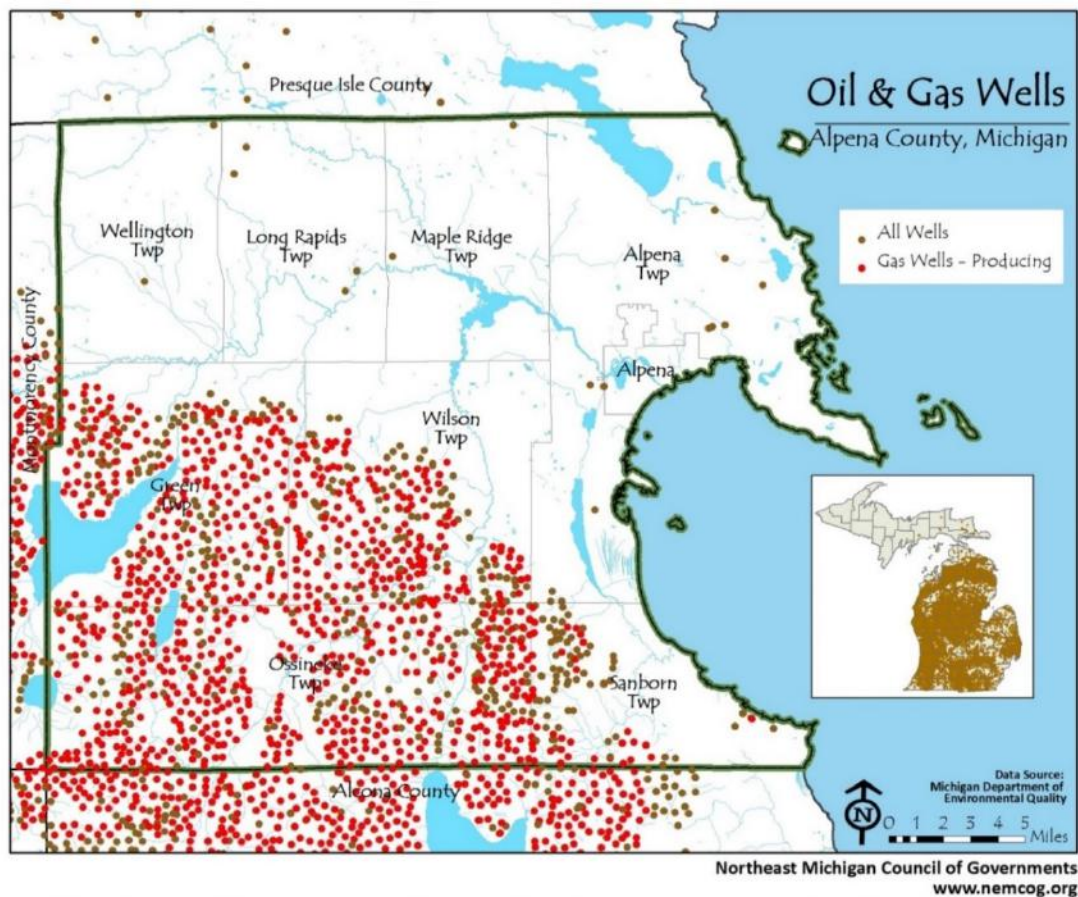


FIGURE 4-15 OIL AND GAS WELLS

## DISCHARGE PERMITS

### SURFACE WATER DISCHARGE PERMIT

The State of Michigan controls the discharge of pollutants from waste and wastewater into Michigan’s surface waters through the National Pollutant Discharge Elimination System (NPDES) permitting process. This process imposes effluent limitations and other necessary conditions to protect the environment and meet State and Federal regulations. Alpena County has 33 issued NPDES permits (Table 4-7).

TABLE 4-7 ALPENA COUNTY SURFACE WATER PERMITS				
Site Name	Address	Site Type	Permit Number	Expiration Date
Alpena Biorefinery	412 Ford Avenue	Industrial; Standard Wastewater	MI0058997	10/1/16
Alpena Biorefinery	412 Ford Avenue	Industrial; Standard Wastewater	NEC186519	7/17/21
Alpena Co Regional Airport	1617 Airport Road	Industrial	MIS210266	4/1/22
Alpena CRC-Herron Rd HRRR	Herron Road	Construction Site	MIR115354	11/7/23
Alpena CRC-Wolf Creek Rd	Wolf Creek Road	Construction Site	MIR115425	1/14/24
Alpena WWTP	210 Harbor Drive	Municipal Sanitary- Public	NEC186477	4/6/21
Alpena WWTP	210 Harbor Drive	Municipal Sanitary- Public	MI0022195	10/1/21
Ameri-Shred Ind Corp-Alpena	3490 US 23 North	Industrial	MIS210265	4/1/22
ATI Casting Service	615 McKinley Street	Industrial	NEC186337	6/9/20
ATI Casting Service LLC	615 McKinley Avenue	Industrial	NEC157933	6/2/20
Bay Mfg Corp-Alpena	3750 US 23 North	Industrial	MIS210264	4/1/22
Benjey North	108 East Herman Street	Industrial	NEC157645	7/18/19
Besser Co	801 Johnson Street	Industrial	MIS211043	4/1/22
Cheboygan Cement-Alpena BP	400 Commerce Drive	Industrial	MIS210263	4/1/22
Conveyor Systems Inc	167 North Industrial Highway	Industrial	MIS210710	4/1/22
Decorative Panels Intl-Alpena	416 Ford Avenue	Industrial	MI0002500	10/1/16
Federal Express Corp-APNA	2070 M-32 West	Industrial	NEC186537	10/11/21
Great Lakes Maritime Center	500 West Fletcher Street	Industrial	MIG250479	4/1/18
Lafarge-Alpena	1435 Ford Avenue	Industrial	MI0001988	10/1/17
Lees Auto Parts-Alpena	5221 US 23 North	Industrial	MIS220057	4/1/22
Nemroc Inc-Alpena	800 Bolton Street	Industrial	MIS210057	4/1/22
Nor-Tech Ind Corp-Alpena	3800 US 23 North	Industrial	MIS210385	4/1/22
Panel Processing Inc-Alpena	120 North Industrial Highway	Industrial	NEC157944	8/11/20
PCI	3810 US 23 North	Industrial	MIS210284	4/1/22
Quest Industrial Corp-Alpena	1995 Hamilton Road	Industrial	MIS210262	4/1/22
R E Glancy Inc-Alpena	3502 Wessel Road	Industrial	MIG490152	4/1/20

TABLE 4-7 ALPENA COUNTY SURFACE WATER PERMITS				
Site Name	Address	Site Type	Permit Number	Expiration Date
Ren-Tech Ind Corp-Alpena	3580 US 23 North	Industrial	MIS210277	4/1/22
Specification Stone Products	1009 Long Lake Avenue	Industrial	MIG490151	4/1/20
Specification Stone Products	1009 Long Lake Avenue	Industrial	MIS210998	4/1/22
Steel Craft Inc-Alpena	1086 East Hamilton Road	Industrial	MIS210275	4/1/22
Thunder Bay Tree Service LLC	1172 Halley	Pesticide	MIG031060	2/1/22
UPS-Alpena	1847 M-32 W	Industrial	NEC157876	3/12/20
Via-Tech Corp-Lachine	11715 M-32 West	Industrial	MIS210468	4/1/22

Source: Michigan Department of Environment, Great Lakes, and Energy, 2019

### GROUNDWATER DISCHARGE PERMIT

The State of Michigan regulates the discharge of wastes and wastewaters into the ground or groundwater system through the groundwater discharge permit program. Field staff review effluent and groundwater data and inspect discharge facilities. The issuance of a groundwater permit does not authorize the violation of local, state, or federal regulations, nor does it remove the obligation to obtain other permits or government approvals. According to the Michigan Department of Environment, Great Lakes, and Energy (EGLE), there are two groundwater discharge permits issued in Alpena County:

- Lakeshore Estates MHP at 8924 West Long Lake Road. Permit Number: GW1510284
- Team Elmers Alpena Quarry at 3870 East Hamilton Road. Permit Number: GW1540048

### AIR QUALITY PERMITS

The State of Michigan administers the Renewable Operating Permit (ROP) system to regulate air emissions for facilities that emit more than a certain amount of air contaminants. According to EGLE, there are two renewable operating permits issued in Alpena County:

- Decorative Panels International at 412-416 Ford Avenue in the City of Alpena. Permit Number: MI-ROP-B1476-2015a
- Holcim (US) Inc. dba Lafarge Alpena Plant at 1435 Ford Avenue in the City of Alpena. Permit Number: MI-ROP-B1477-2012c

## SITES OF ENVIRONMENTAL CONTAMINATION

The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended regulates facilities of environmental contamination in Michigan. The Remediation and Redevelopment Division of EGLE works toward managing and revitalizing sites of environmental contamination to protect the environment. The division administers two programs: Environmental Remediation (release of hazardous substances from facilities) and Leaking Underground Storage Tanks (release of hazardous substances from underground storage tanks).

The facility inventory database has information for Sites of Environmental Contamination (Part 201), Leaking Underground Storage Tanks (Part 213), and Baseline Environmental Assessments (BEA). The Baseline Environmental Assessment documents the existing contamination and allows a facility to be acquired and/or operated without being held liable for the existing contamination. EGLE also has an online mapping application, *Environmental Mapper*, which allows users to view sites of environmental contamination, leaking underground storage tank sites, and any land use or resource use restrictions imposed on a property that has been provided to EGLE.

In Alpena County, the facility inventory database reports there are 182 sites of environmental contamination (Table 4-8):

- Part 201 only: 56 sites
- Part 201 with BEA: 16 sites
- Part 201 and Part 213: 9 sites
- Part 201 and Part 213 with BEA: 5 sites
- Part 213 only: 39 sites
- Part 213 with BEA: 6 sites
- BEA only: 51 sites

<b>TABLE 4-8 SITES OF ENVIRONMENTAL CONTAMINATION IN ALPENA COUNTY</b>		
<b>Facility Name</b>	<b>Address</b>	<b>Data Source</b>
1000 Highland Court	1000 Highland Court	Part 201
112 & 120 E. Herman St.	112 & 120 E. Herman St.	BEA
1135 West Chisholm	1135 West Chisholm	BEA, Part 201
120 W Washington Ave	120 W Washington Ave	BEA
1295 DeVere Dr.	1295 DeVere Dr.	BEA, Part 201
1615 M-32 West	1615 M-32 West	BEA, Part 201
181 North Industrial Highway	181 North Industrial Highway	BEA, Part 201
201 North Third Street	201 North Third Street	BEA
2700 Pearl Rd	2700 Pearl Rd	BEA
2707 Pearl Road	2707 Pearl Road	BEA, Part 201
310 N 2nd Ave and 123 Water St	310 N 2nd Ave and 123 Water St	BEA
3550 US 23 South	3550 US 23 South	Part 201
401 Oxbow Drive	401 Oxbow Drive Unit 5 - Oxbow Commercial Village	BEA
4170 US-23 South (Former Scrap Yard)	4170 U.S.-23 South	BEA, Part 201
610 S. Third Avenue Heating Oil Release	610 S. Third Avenue	Part 201
633 W. Campbell Street	Former Alpena Flour Mill	BEA
718 West Campbell Street	718 West Campbell Street	BEA
Abandoned Drum on Behning Road	north end of Behning Road	Part 201
Abitibi-Price Corp	416 Ford Avenue	Part 201
Action Auto Stores, Inc	0 SOUTH	Part 213
Admiral Petroleum #5867	2520 US HIGHWAY 23	Part 213
Alpena Airfield Area PFAS	M-32 West of Alpena	Part 201
Alpena Area Wide SAF	several sites - each scored separately	Part 201
Alpena City Highway Garage	615 W CAMPBELL ST	Part 213
Alpena Community College	666 Johnson Street	Part 201
Alpena County Regional Airport	AIRPORT ROAD RTE 6	Part 213, Part 201
Alpena County Road Commission	1400 N Bagley St	Part 213
Alpena County Sheriffs Dept	320 JOHNSON ST	Part 213
Alpena EZ Mart	1035 W CHISHOLM ST	Part 213
Alpena Hide and Leather Company	817 and 819 West Miller Street	Part 201
Alpena Holiday Inn Express	225 RIVER ST	Part 213
Alpena LF City of	M-32 (3.3 miles west of Bagley St)	Part 201
Alpena Manufacturing	2919 Garden St.	Part 201, BEA
Alpena Oil Campbell Street	620 West Campbell	Part 201
Alpena Oil Co Inc	235 Water St	Part 213



TABLE 4-8 SITES OF ENVIRONMENTAL CONTAMINATION IN ALPENA COUNTY		
Facility Name	Address	Data Source
Alpena Public Schools - Bus Garage (0001)	1357 M-32 West	Part 201
Alpena Resource Recovery c/o NEMCOG	4344 M-32 west	Part 201
Alpena Riverfront Area	several sites - each scored separate	Part 201
Alpena South E-Z Mart	2222 US HIGHWAY 23	Part 213
Alpena Third & River	Third & River Streets 225 River Street (address was 201 N 3 <sup>rd</sup> )	Part 201
Alpena Third Avenue	2341 Third Avenue	Part 201
Amerilodge Group	225 River St	BEA
Bean Creek Rd Res Well	2918 Bean Creek Road	Part 201
Beavers Automotive & Radiator Repair Inc	600 N Ripley Blvd	Part 213
Belz & Son Marina	14322 HWY 638	Part 213
Besser Company	801 Johnson Street	Part 201
Bob-A-Lu Market	10010 Werth Rd	Part 213, BEA
Bradley's Paradise Lodge (10000353)	16991 TAYLOR HAWKS RD	Part 213
Brown Jug Party Store	1256 LONG RAPIDS RD	Part 213
C&S Transportation	3224 & 3310 US 23 South	Part 201
Cap and Bottle Party Store	525 South State Street	BEA, Part 201, Part 213
Carter Street Right of Way	BETWEEN SECOND & THIRD AVE	Part 213
Cathro Auto Parts	5436 Cathro Rd.	Part 201
Chippewa Drive Fuel Oil Release	10303 Chippewa Road	Part 201
Chroninger's Radiator & U-Haul	2389 US 23 South	Part 201, BEA
City of Alpena Marina	400 E CHISHOLM ST	Part 213, Part 201
Cliff Anschuetz Chevy/old/nissan	1074 US HIGHWAY 23	Part 213
Commercial Parcel	2313 US 23 South	BEA
Consumers Energy (Former MGP)	730 State Street	Part 201
Country Party Store	3074 M 32	Part 213
Cramer, Inc.	12990 West M-32	BEA
Dault Property Sanborn Twp.		Part 201
Deckside Marina	9027 West Long Lake Road	BEA
Diamonds Point Self Service	2404 US HIGHWAY 23	Part 213
Downtown Union 76	201 E Chisholm St	Part 213
Dunkin Donuts	2591 US HIGHWAY 23	Part 213, BEA
Dunkin Donuts (HAC)	2585 US HIGHWAY 23	Part 213, BEA
E-Z Way Store Inc	2060 M 32	Part 213
First of America Bank - Alpena	2329 US 23 South	Part 201
Fisher Recycling	4174 US-23 South	Part 201, BEA
Fivenson Iron and Metal Co.	927 Long Lake Ave	Part 201
Former Action Auto	2229 US 23 South	BEA
Former Alpena City Garage	615 W. Campbell Street	BEA
Former Alpena Collision	305 Ninth Avenue	Part 201, BEA
Former Alpena Flour Mill	633 West Campbell Street	Part 201
former BBi Enterprises, LP	820 West Long Lake Avenue	BEA
Former D & M Railroad Property	122, 124, 130, 220 & 224 W. Fletcher St.	BEA
former ERB Lumber Company	2633 US-23 South	BEA
Former Fletcher Paper Company	318 W. Fletcher Street	Part 201, BEA
Former Floyd Minton Cedar Post Company	2800 & 2806 Floyd Lane	BEA
Former Kurvan's Party Store South	612 S RIPLEY BLVD	Part 213
former MDOT property	420 West Campbell Street	BEA



<b>TABLE 4-8 SITES OF ENVIRONMENTAL CONTAMINATION IN ALPENA COUNTY</b>		
<b>Facility Name</b>	<b>Address</b>	<b>Data Source</b>
Former Yockey Construction Co. Property	1499 M-32 West	BEA
Francis Service Station	11923 US 23	BEA
Freese Hydraulics Property	324 North 11th and 325 North 10th Avenue	BEA, Part 201
Fuel Oil Release Hiawatha Lane	10344 Hiawatha Lane	Part 201
Garants Office Supplies & Print	117 W Washington Ave	Part 213
Gilliand Construction	M32	Part 201
Glawe Equipment Co.	Bloom Road	Part 201
Gorski Property	117 South Ripley Street (T31N, R8E, Section 23)	BEA
Great Lakes Maritime Heritage Center	500 W. Fletcher St.	BEA, Part 201
H & N Kurvan's	1141 Highway US-23 North	BEA
Hansen Trucking and Bulldozing	Spruce Road	Part 201
Harborside Mall	100-190 North State Avenue	Part 201, BEA
Health Wise Medical Clinic	101 Oxbow Drive	Part 201
Hibner Rd. Res Wells	Hibner Road	Part 201
Holiday Stationstore #177	2270 US HIGHWAY 23	Part 213, BEA
Homant Oil Property	1010 Long Lake Avenue	BEA
Hubbard Lake Garage	13833 Hubbard Lake Rd	Part 213
Hubbard Lake General Store	6914 HUBERT RD	Part 213
Huggler Oil Co	930 W WASHINGTON AVE	Part 213, Part 201
Huron Industrial Park	500 Palm Street	Part 201, BEA
Huron Oil Ideal BP Property	1035 West Chisholm Street	BEA
Jason's Posen Quick Stop	10706 Michigan Ave	BEA
Jerry DUBY Excavating	9883 M-32	Part 201
Jim Taylor	5571 M 65	Part 213
JRs Country Store and Liquor	14471 M 32	Part 213, BEA
Kihns Superette	8042 Wolf Creek Rd	Part 213, Part 201
Komatsu America Corp.	181 N. Industrial Highway	BEA
L & K Sunoco (00004055)	9975 US 23 South	Part 201, Part 213
L & M Salvage	10628 Ossineke Rd	Part 201
Lafarge Corporation	1435 Ford Avenue	Part 201
Lake State Railway	1002 Long Lake Avenue	Part 201
Lancewicz Dump	4197 Long Lake Road	Part 201
Lee Parcel	1143 M-32 West	BEA
Lee's Auto Parts	5221 US-32 North	Part 201
Long Lake Heating Oil Release	9011 W. Long Lake Road	Part 201
Long Lake Super Market	9538 W Long Lake Rd	Part 213, Part 201
Lynn Drive Alpena County	1055 Lynn Drive	Part 201
Maple Ridge Twp Disposal	5558 Lacombe Rd.	Part 201
McAnsh Property	523 South State Street	BEA
McVannel's LLC	12990 M 32	Part 213
MI Stop LLC	1141 US HIGHWAY 23	Part 213
Midas Muffler	901 West Washington Avenue	BEA, Part 201, Part 213
Middle Island Light Station	Middle Island	Part 201
National Gypsum	Misery Bay Road	Part 201
National Gypsum Company	T 31N R8E, Section 24 Tax ID# 04-091-024-000-256-00	BEA
Ninth Street Warehouse	9TH STREET WAREHOUSE	Part 213

TABLE 4-8 SITES OF ENVIRONMENTAL CONTAMINATION IN ALPENA COUNTY		
Facility Name	Address	Data Source
Northland Market	9010 M 65	Part 213, BEA, Part 201
Opechee Inc	9621 US HIGHWAY 23	Part 213
Ossineke Industries	10401 Piper Road	Part 201
Ossineke Laundromat	11677 US 23	Part 201
Ossineke Sport & Party Inc	11923 US HIGHWAY 23	Part 213
Oxbow Commercial Village	301 Oxbow Drive Units 2, 3, 4, prospective Unit 5	BEA
Oxbow Commercial Village Condominiums	Maas Development Property Units 6, 7 & 8 Pinecrest Street	BEA
Oxbow Park	off Pinecrest	Part 201
Oxbow Park	T31N-R8E, Section 16 NW 1/4 of the SW 1/4	BEA
Partridge Point Marina	1105 Partridge Point Rd	Part 213
Perry Oil Co. Campbell (00037458)	634 West Campbell Street	Part 201, BEA, Part 213
Pilarski Parcel	1275 M-32 West	BEA
Proposed 7-11 Store #36916 Garb-Ko 85	650 North Ripley Blvd	BEA
Quick & Convenient Store	7120 HUBERT RD	Part 213
R.a. Townsend Co	1100 N Bagley St	Part 213
Res Well French Rd	6214 French Rd.	Part 201
Reynolds Residence Fuel Spill	15027 Third Street	Part 201
Richardson Auto Repair	13775 HUBBARD LAKE RD	Part 213
Scheuner Construction Dump	Wessel Road	Part 201
Schultz's Market and Gas (00009132)	12010 Wolf Creek Road	Part 201, Part 213
Second Avenue Former Salvage Yard	Second Avenue	BEA
Second Avenue Former Salvage Yard	Second Avenue NE of Herman Street	Part 201
Seymours Grocery	8943 US HIGHWAY 23	Part 213
Shallas Market Inc.	326 Long Lake Ave	Part 213
Sodium Borate Disposal	Dubey Gravel Pit Corner of Weiss and Wessel Roads	Part 201
Sparkle Mart North	906 and 912 W. Washington Avenue	BEA
Sparkle Mart North/Admiral Store #166	906 West Washington St	BEA, Part 213
Sparkle Mart South	2520 US 23 South	BEA
Specification Stone Products	Quarry and Long Lake Roads	Part 201
Spruce Road Dump	Spruce Road	Part 201
Stockade General Store (00001522)	6153 US 23 North	Part 201, Part 213
Summit Sports	224 E CHISHOLM ST	Part 213, BEA, Part 201
SWATT, LLC	615 W. Campbell St.	BEA
Tandem Transport	5 Wood Street	Part 201
The Barn	11904 US HIGHWAY 23	Part 213, Part 201
The Former Barn	11904 & 11924 US-23 South and adjoining vacant parcel to west	BEA
Third Avenue Soil Piles	Third Avenue	Part 201
Thunder Bay Island USCG	US Coast Guard Station	Part 201
Thunder Bay Manufacturing	666 McKinley Ave.	Part 201, BEA
Thunder Bay River Heating Oil Release	2050 Riverview Drive	Part 201
Total # 2587	2140 State Street	BEA
Total # 2587	2140 State Street, Lot 5	BEA

<b>TABLE 4-8 SITES OF ENVIRONMENTAL CONTAMINATION IN ALPENA COUNTY</b>		
<b>Facility Name</b>	<b>Address</b>	<b>Data Source</b>
Total #2587	2140 US HIGHWAY 23	Part 213
Trans Auto Glass & Company, Inc.	421 West Miller Street	BEA
Transfer Station Parcel	1298 US 23 North	BEA
Transportation Garage	1357 M032	Part 213
True Van	620 RIPLEY	Part 213
Turning Brook	300 Oxbow Drive Units 6, 7 & 8	BEA
Tuttle Street	132 Tuttle	Part 201
Union Oil	235 West Chisholm	BEA
Unit 1 - Oxbow Commercial Village	101 Oxbow Drive	BEA
W Washington Avenue Heating Oil Release	538 W. Washington Avenue	Part 201
Wayne Kowalski	102 MASON ST	Part 213
Wessel Road Quarry	Wessel Road	Part 201
West Miller Street Property	817 W Miller St	BEA
What Not Shop Heating Oil Release	4307 US 23 S	Part 201
Word of Life Commercial Property	801 West Miller Street	Part 201
	311 Taylor Street	BEA
	815 West Miller Street	BEA
	819 & 821 W. Miller St.	BEA
Source: Michigan Department of Environment, Great Lakes, and Energy 2020		

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# Chapter 5

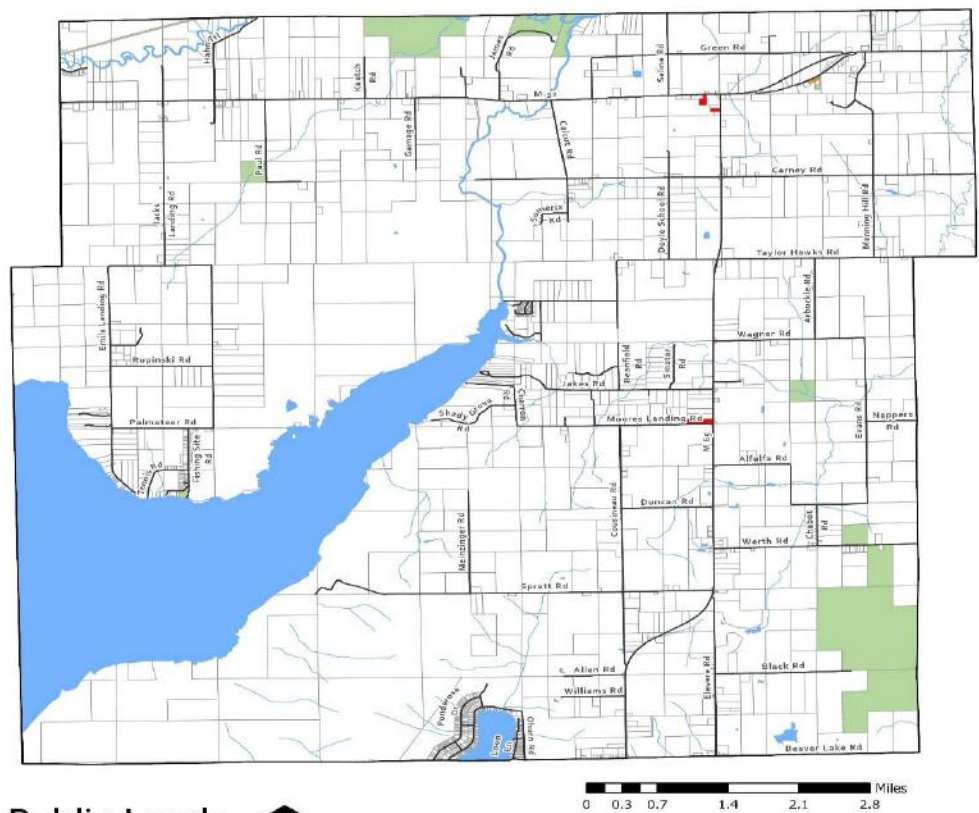
## Existing Land Use

Prior to determining future land uses, an accurate assessment of existing land uses should be available. This chapter presents information on the types of land uses currently existing in Alpena County, Green Township, Ossineke Township, and Wilson Township.

### PUBLIC LANDS

#### GREEN TOWNSHIP

Green Township owns 0.028 acres in Green Township that consists of the Greeley Cemetery, and the Green Township Hall and Ball Diamond (Figure 5-1). Alpena County owns Manning Hill in Green Township’s northeast corner. This park provides breathtaking views and has a small pavilion, picnic tables, and rustic restrooms. The State of Michigan owns approximately 1,909 acres in Green Township with the majority of the land on the north-central boundary and the southeast boundary.



Public Lands  
Green Township  
Alpena County



#### Legend

- Roads
- Rivers
- Lakes
- Parcels
- State of Michigan Ownership
- Alpena County Manning Hill
- Green Township Ownership

FIGURE 5-1 GREEN TOWNSHIP PUBLIC LANDS

## OSSINEKE TOWNSHIP

The Mackinaw State Forest accounts for 5,651 acres in the central portion of Ossineke Township, which includes lands formerly designated as the Wolf Creek Public Hunting Grounds (Figure 5-2). The lands are managed for wildlife, not commercial timber production. The Chippewa Hills Pathway occupies most of the upland parcels in the Mackinaw State Forest and includes three groomed hiking and cross-country ski trails. The state forest land also includes forested wetlands that are primarily cedar swamps. Fishing, hiking, and wildlife observation opportunities are limited due to the dense growth, wet terrain, and lack of access roads.

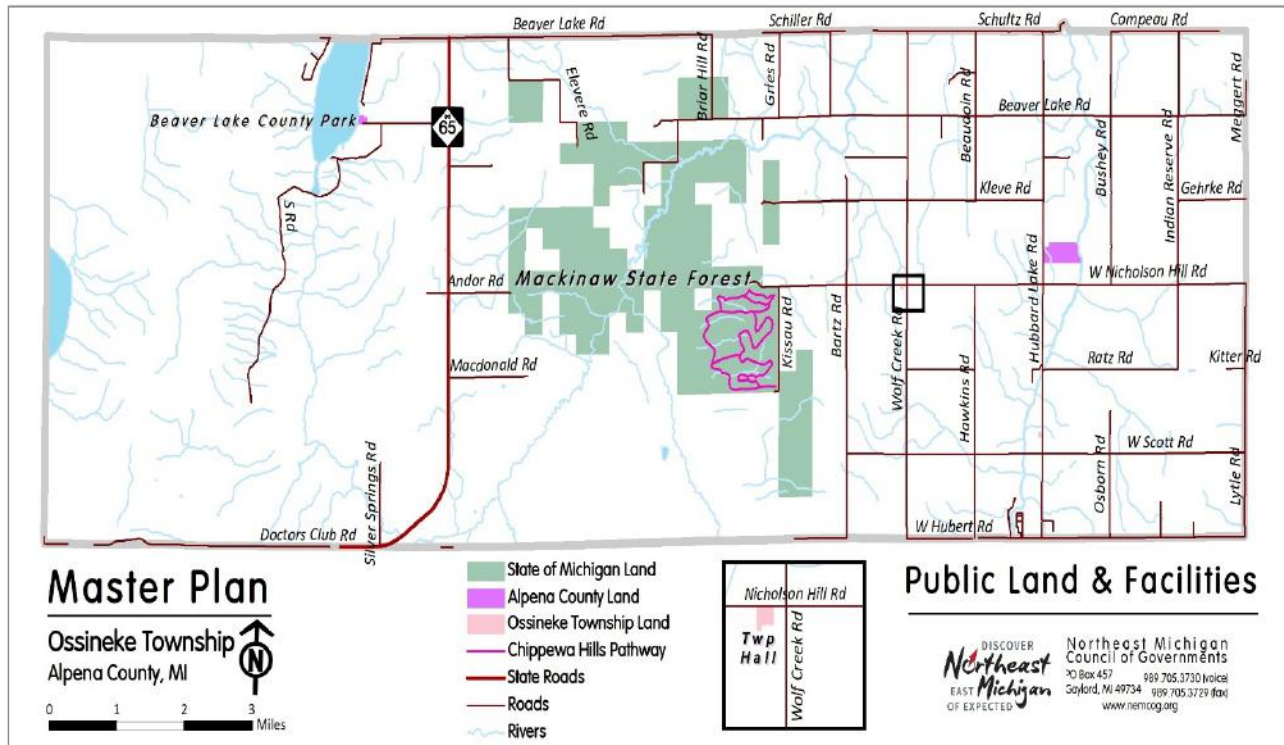


FIGURE 5-2 OSSINEKE TOWNSHIP PUBLIC LAND AND FACILITIES



## WILSON TOWNSHIP

State land accounts for 8,490 acres as part of the Mackinaw State Forest on the eastern edge of Wilson Township (Figure 5-3). Alpena County land ownership accounts for 1,049 acres and incorporates the Alpena County Airport.

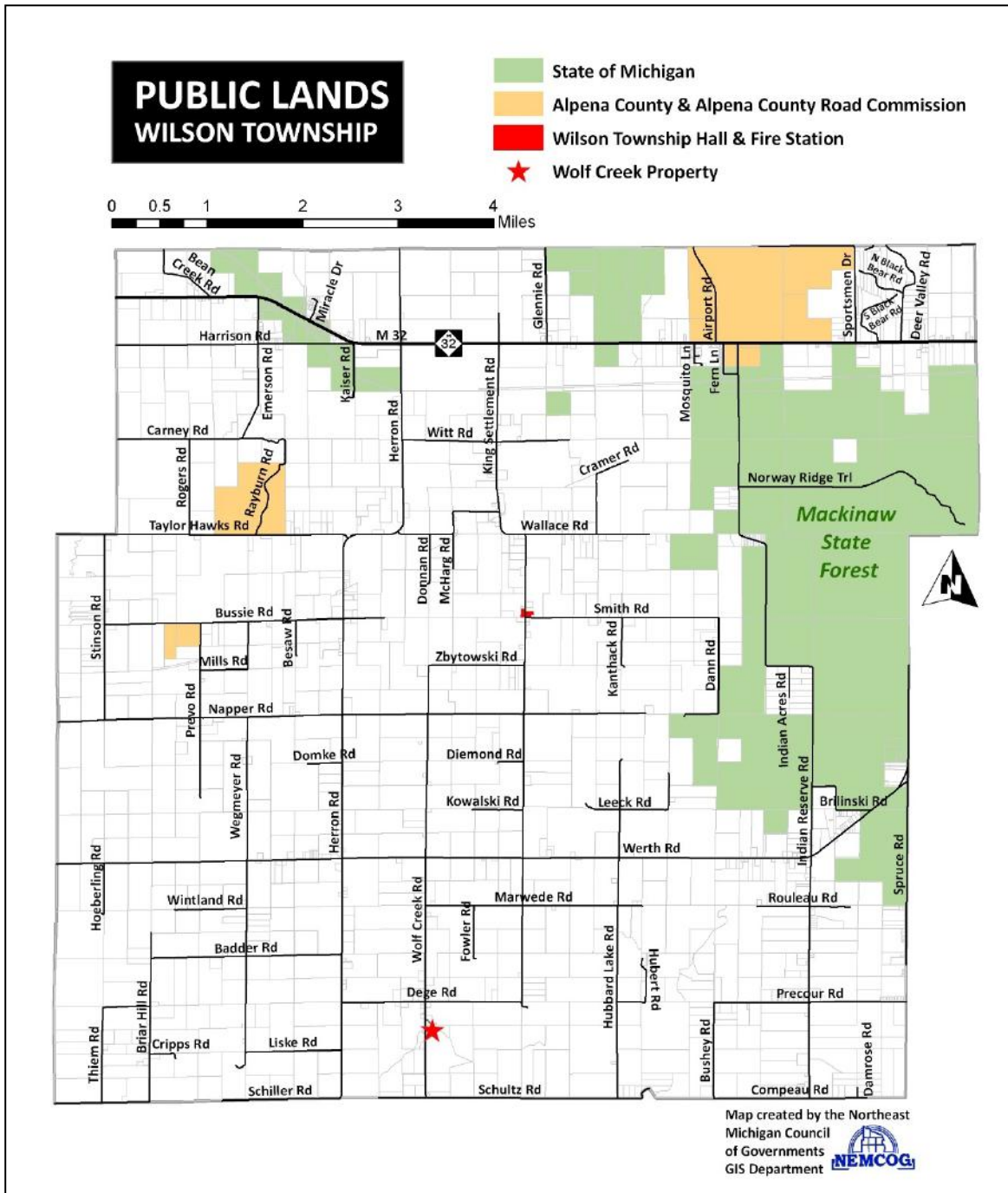


FIGURE 5-3 WILSON TOWNSHIP PUBLIC LANDS

## EXISTING LAND USE CHARACTERISTICS

The Existing Land Cover/Use for the Joint Master Plan was generated by classifying parcels into the following Michigan Resource Information System (MIRIS) Land Cover/Use classification categories: Residential, Commercial, Industrial/Utility/Extractive, Institutional/Recreational, Agriculture, Non-Forest Upland, Upland Forest, Lowland Forest, Wetlands, Water, and Beaches. Land use map data was acquired from several community master plans and from the State of Michigan MIRIS data (Figures 5-4 to 5-13). Color aerial photos from 2014 and 2018 along with USDA ancillary digital map data, such as parcels, hydric soils, and National Wetlands Inventory, were used to complete the map and analysis. Table 5-1 presents the existing land cover/use breakdown for Alpena County, Green Township, Ossineke Township, and Wilson Township. Lowland and upland forests are the predominant land covers in Alpena County, Green Township, and Ossineke Township (59.3%, 55.9%, and 66.9%, respectively). The predominant land covers in Wilson Township are agriculture and lowland forests (57.2%).

TABLE 5-1 EXISTING LAND USE								
Land Cover/Use Type	Alpena County		Green Township		Ossineke Township		Wilson Township	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Residential	21,582	5.6%	2,162	4.2%	2,151	3.1%	2,473	4.8%
Commercial	1,712	0.4%	111	0.2%	78	0.1%	225	0.4%
Industrial/Utility/Extractive	6,674	1.7%	370	0.7%	528	0.8%	1,474	2.9%
Institutional/Recreational	2,409	0.6%	105	0.2%	55	0.1%	503	1.0%
Agriculture	60,173	15.7%	8,727	17.0%	11,438	16.7%	13,871	27.1%
Non-Forest Upland	22,110	5.8%	2,758	5.4%	5,051	7.4%	3,774	7.4%
Upland Forest	93,581	24.5%	14,841	28.9%	28,018	40.8%	8,383	16.4%
Lowland Forest	133,100	34.8%	13,869	27.0%	17,882	26.1%	15,419	30.1%
Wetlands	26,958	7.1%	2,888	5.6%	2,505	3.6%	4,575	8.9%
Water	13,301	3.5%	5,460	10.6%	929	1.4%	460	0.9%
Beaches	496	0.1%	-	-	-	-	-	-
<b>Total</b>	<b>382,096</b>	<b>100%</b>	<b>51,291</b>	<b>100%</b>	<b>68,634</b>	<b>100%</b>	<b>51,156</b>	<b>100%</b>

Source: NEMCOG 2019

### RESIDENTIAL

Residential land use includes residential dwelling structures, such as single-family houses, duplexes, multi-family low-rise residential, multi-family medium and high rise residential, seasonal cabins, farmhouses, and mobile home parks. The total residential land use in Alpena County is approximately 21,582 acres (5.6%). The largest concentration of residential development is located in the City of Alpena and around its periphery in Alpena Township. Residential development accounts for 2,162 acres in Green Township (4.2%), 2,151 acres in Ossineke Township (3.1%), and 2,473 acres in Wilson Township (4.8%). Smaller concentrations of residential developments are found around Ossineke (Sanborn Township), Hubbard Lake (Ossineke Township) and Lachine (Long Rapids Township). Residential development is occurring along county roads where larger parcels are being split into ten acre or smaller parcels in the county's interior. Green Township has residential development along the county roads, M-65, M-32, the shoreline of Beaver Lake, and mixed with commercial land uses on the northern shore of Fletchers Pond.

Some waterfront areas have high concentrations of residential development from new development and the conversion of seasonal cabins into year round homes. Long Lake (Alpena Township), Sunset Lake (Alpena Township), Lake Winyah (Maple Ridge Township), Beaver Lake (Long Rapids and Green Townships), Fletcher Pond (Green Township), portions of the Thunder Bay River, and portions of the Lake Huron shoreline have concentrations of residential development.

### **COMMERCIAL**

The commercial land use category includes central business districts, shopping centers/malls, strip commercial, neighborhood stores, and commercial business parking areas. The total commercial land in Alpena County is 1,712 acres (0.4%). Commercial uses are primarily located in the City of Alpena, along M-32, along US-23 in Alpena Township, and in Ossineke (Sanborn Township). Commercial development accounts for 111 acres in Green Township (0.2%), 78 acres in Ossineke Township (0.1%), and 225 acres in Wilson Township (0.4%). Small nodes of commercial development are found throughout the county at primary crossroads and in Hubbard Lake (Ossineke Township). Generally, these establishments are convenience stores that cater to residents and tourists.

### **INDUSTRIAL/UTILITY/EXTRACTIVE**

Industrial/Utility/Extractive land uses includes extractive industries, manufacturing and industrial parks, light industries that fabricate or package products, oil & gas drilling and production facilities, lumber mills, chemical plants, brick-making plants, large power facilities, waste product disposal areas, areas of stockpiled raw materials, and transportation facilities. Industrial/Utility/Extractive land uses account for 6,674 acres in the county (1.7%), 370 acres in Green Township (0.7%), 528 acres in Ossineke Township (0.8%), and 1,474 acres in Wilson Township (2.9%). The majority of the land use consists of the Lafarge Corporation quarry and cement processing facility, the Alpena Regional Airport, and various gravel pits.

### **INSTITUTIONAL/RECREATIONAL**

This category includes churches, schools, museums, hospitals, cemeteries, public buildings, military facilities, and recreational facilities. Institutional/recreational land uses account for 2,409 acres in the county (0.6%), 105 acres in Green Township (0.2%), 55 acres in Ossineke Township (0.1%), and 503 acres in Wilson Township (1.0%). These land uses are well distributed throughout the county with large concentrations in the City of Alpena (various schools, parks, and Alpena Community College), and in Maple Ridge Township (military).

### **AGRICULTURE**

The agriculture category includes land used for the production of food and fiber, and land used for non-food livestock. Examples include cropland, orchards, confined feeding operations for livestock, permanent pasture lands, farmsteads, greenhouse operations, and horse training areas. The total agriculture land use in Alpena County is approximately 60,173 acres (15.7%). Agriculture land use accounts for 8,727 acres in Green Township (17.0%), 11,438 acres in Ossineke Township (16.7%), and 13,871 acres in Wilson Township (27.1%). These three townships along with Long Rapids Township (8,171 acres) have the largest amount of agriculture lands. Agriculture is the third most common land use in Green and Ossineke Townships. The majority of the agriculture land are found in the prime agricultural soils that bisect the county from the northwest to the southeast.

## **NON-FOREST UPLAND**

Non-forest uplands include open land and rangeland (e.g. barren land, herbaceous open land, and shrubland). Herbaceous open land is usually subject to continuous disturbances, such as mowing, grazing, or burning, and has a variety of grasses, sedges, and clovers (e.g. quack grass, brome grass, upland and lowland sedges, red canary grass and clover). Shrubland is land in transition from being open to becoming a forest and includes native shrubs and woody plants, such as blackberry and raspberry briars, dogwood, willow, sumac, and tag alder. Non-forest uplands account for 22,110 acres in the county (5.8%), 2,758 acres in Green Township (5.4%), 5,051 acres in Ossineke Township (7.4%), and 3,774 acres in Wilson Township (7.4%). Non-forest uplands in the county consist of abandoned farms in the farming belt and areas that are the result of logging operations or reclaimed mines.

## **UPLAND FOREST**

The upland forest category includes upland hardwoods (maple, beech, basswood, red oak, aspen and birch) and upland conifers (red, white or jack pine, white or blue spruce, eastern hemlock, and balsam fir). Upland forests account for 93,581 acres of the county's land area (24.5%). Additionally, upland forests account for 14,841 acres in Green Township (28.9%), 28,018 acres in Ossineke Township (40.8%), and 8,383 acres in Wilson Township (16.4%). Large areas of upland forests are found in the western portion of Ossineke and Green Townships. Furthermore, upland forests are the predominant land cover in Ossineke Township.

## **LOWLAND FOREST**

Lowland forest areas are dominated by species that grow in very wet soils. Lowland hardwoods include ash, elm, red maple and balsam poplar. Lowland conifers include cedar, tamarack, balsam fir, black and white spruce. Lowland forests are the largest land use in the county at 133,100 acres (34.8%). Additionally, lowland forests account for 13,869 acres in Green Township (27.0%), 17,882 acres in Ossineke Township (26.1%), and 15,419 acres in Wilson Township (30.1%). Large areas of lowland forests are found in Wellington Township, Long Rapids Township, Alpena Township, and on the eastern edge of Sanborn Township.

## **WETLANDS**

Wetlands are areas where the water table is at or near the land surface for a significant part of the year. Examples include marshes, mudflats, wet meadows, shrub/scrub swamps, and shallow areas along rivers, lakes, or ponds. Wetlands account for 26,958 acres in Alpena County (7.1%), for 2,888 acres in Green Township (5.6%), 2,505 acres in Ossineke Township (3.6%), and 4,575 acres in Wilson Township (8.9%). Wetlands are found throughout the county along river systems with concentrations in the southern portion of Maple Ridge Township and at the coastal lake plain areas in Alpena and Sanborn Townships.

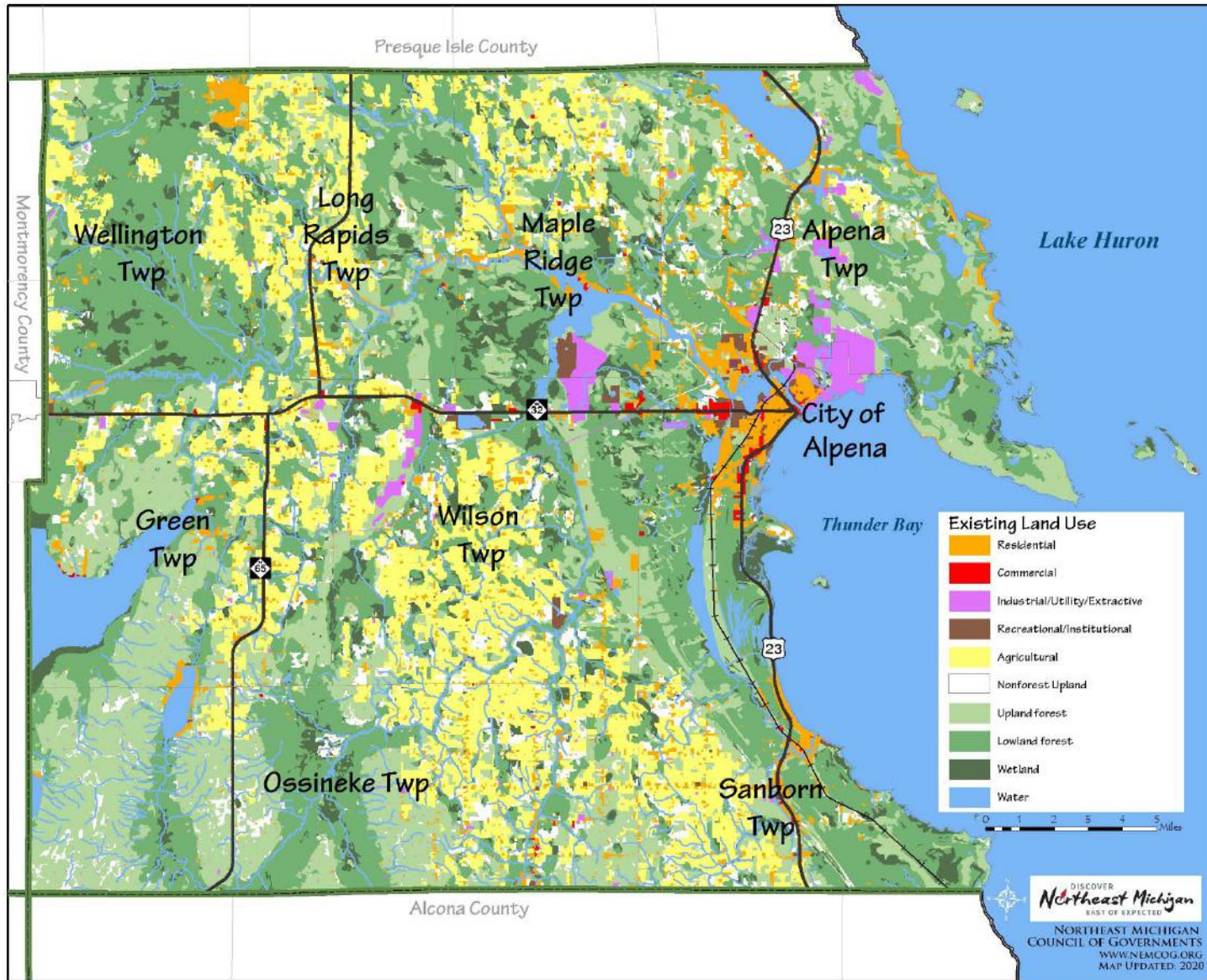
## **WATER**

This category includes lakes, reservoirs, impoundments, ponds, rivers, and streams. Approximately 13,301 acres of the county is water (3.5%). Fletcher Pond (Green Township), Long Lake (Alpena Township), Lake Winyah (Maple Ridge Township), Devils Lake (Alpena Township), Beaver Lake (Long Rapids and Green Townships), Turtle Lake (Ossineke Township), Grass Lake (Alpena Township), Middle Lake (Alpena Township), Sunset Lake (Alpena Township) and the three branches of the Thunder Bay River contain the majority of the surface water in the county. Additionally, water accounts for 5,460 acres in Green Township (10.6%), 929 acres in Ossineke Township (1.4%), and 460 acres in Wilson Township (0.9%). Green Township's high water acreage is due to Beaver Lake and Fletchers Pond.

**BEACHES**

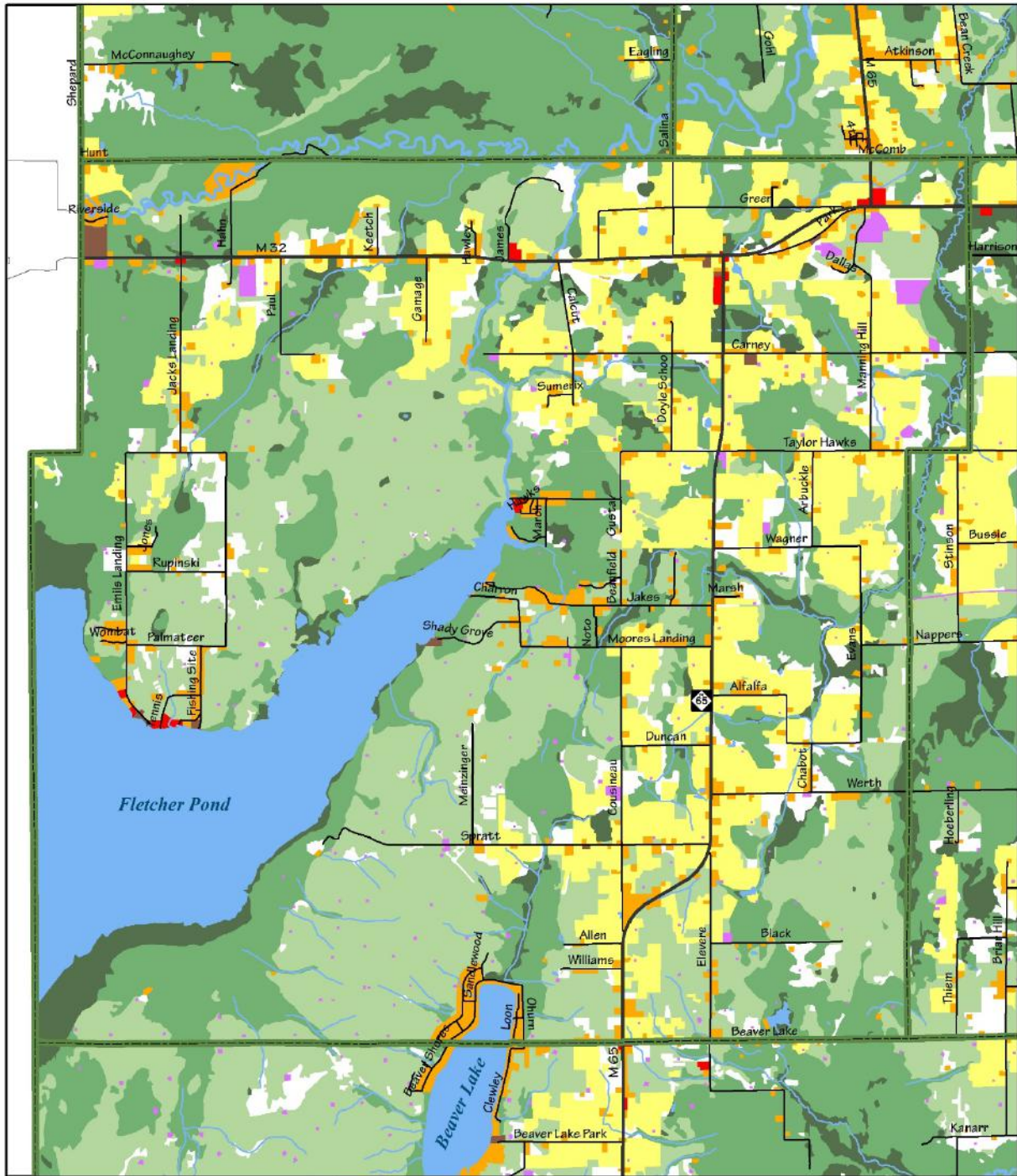
Beaches along Lake Huron were delineated for this Joint Master Plan and include sand, cobblestones, and bedrock. However, the width and acreage of the beaches vary depending on water levels and depths. For example, water levels were well below average and beaches covered a much larger area in the first decade of this century. In 2020, Lake Huron water levels have reached record highs, which equates to less beach area along the coastline. The county has 496 acres of beaches (0.1%), while Green, Ossineke, and Wilson Township do not have any beaches in this category.





**FIGURE 5-4 ALPENA COUNTY EXISTING LAND USE**





**Green Township  
Existing Land Use**

0 1 2 Miles

- |                               |                  |
|-------------------------------|------------------|
| Residential                   | Nonforest Upland |
| Commercial                    | Upland forest    |
| Industrial/Utility/Extractive | Lowland forest   |
| Recreational/Institutional    | Wetland          |
| Agricultural                  | Water            |

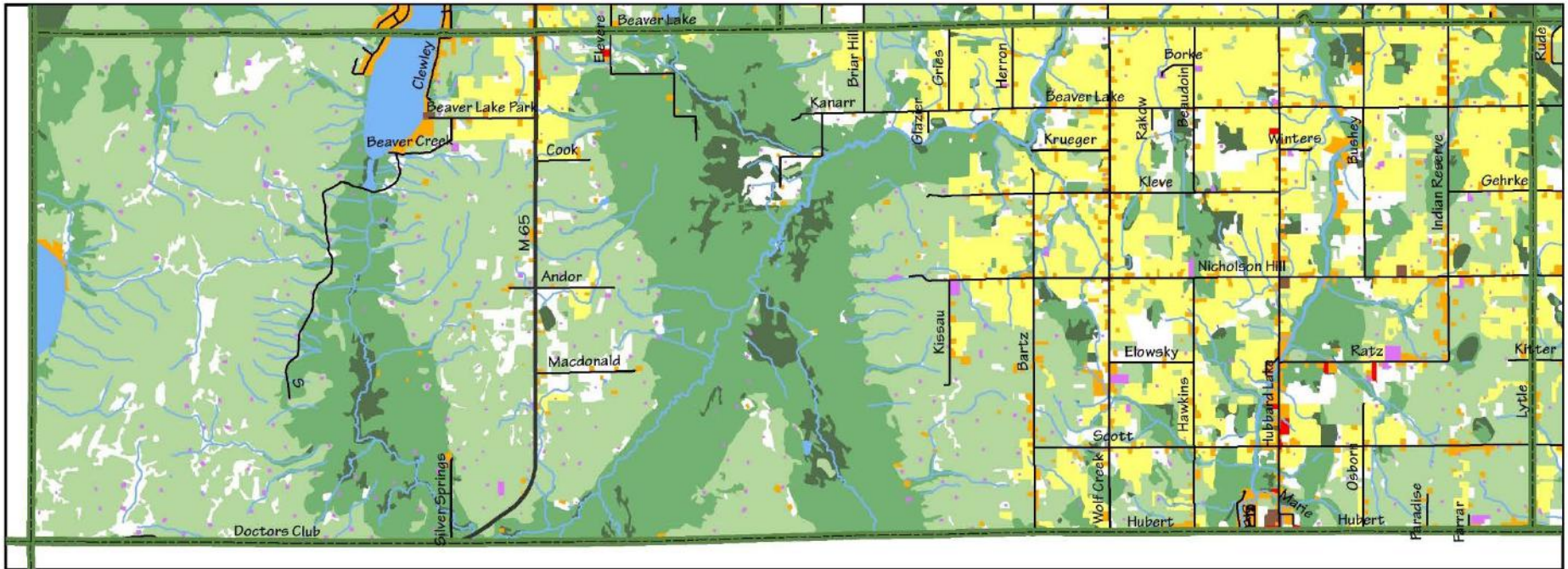
DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED

NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS

WWW.NEMCOG.ORG  
MAP UPDATED: 2020

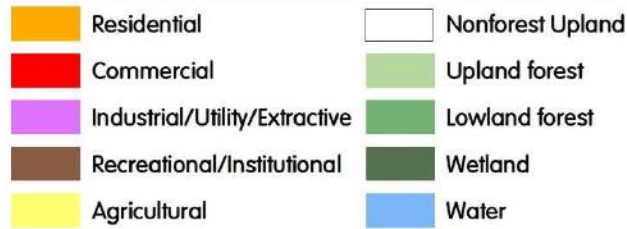
**FIGURE 5-5 GREEN TOWNSHIP EXISTING LAND USE**





### Ossineke Township Existing Land Use

0 1 2 3 4 Miles



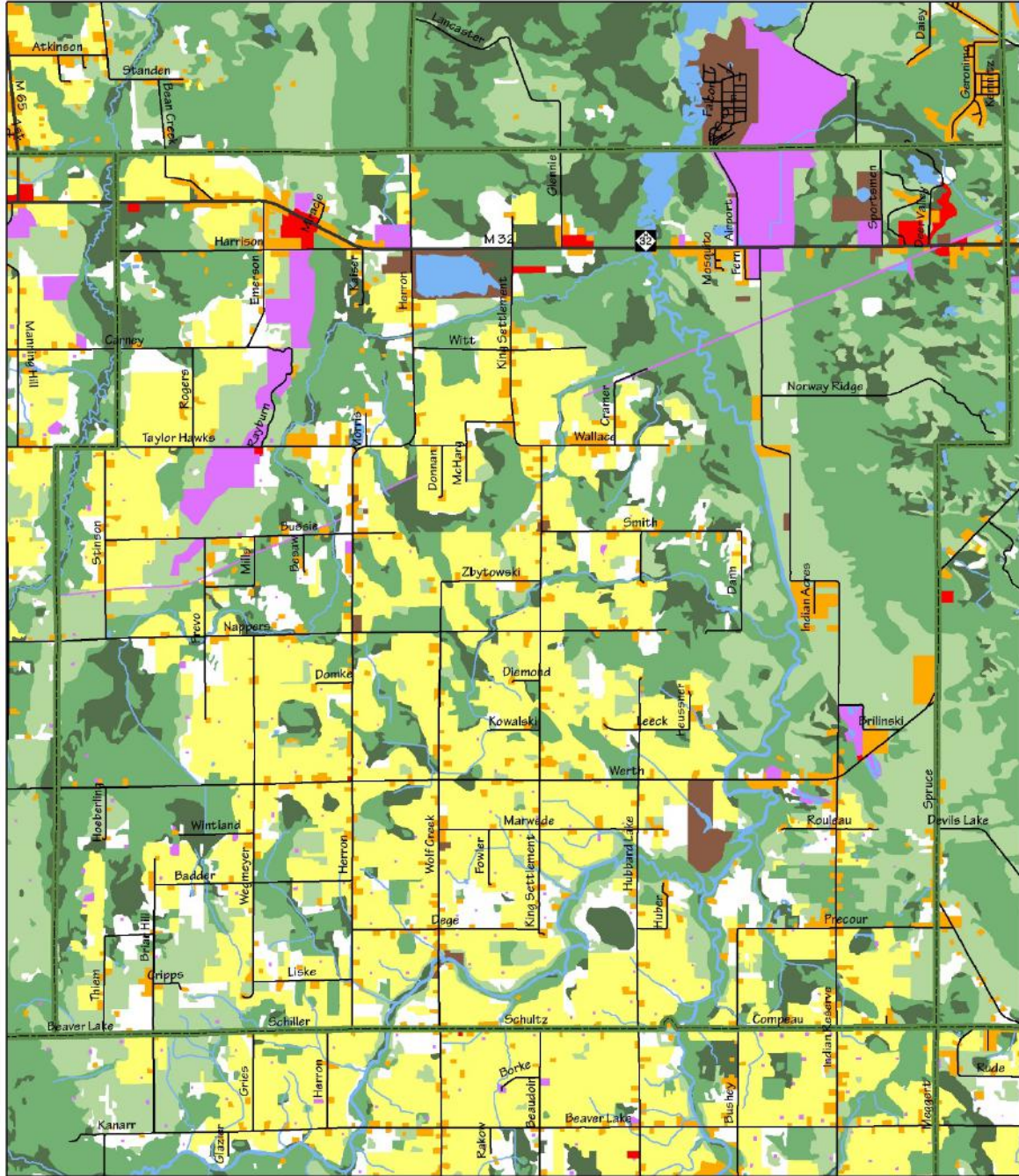
DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED

NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS

WWW.NEMCOG.ORG  
MAP UPDATED: 2020

FIGURE 5-6 OSSINEKE TOWNSHIP EXISTING LAND USE





**Wilson Township  
Existing Land Use**

0 1 2 Miles



- |                               |                  |
|-------------------------------|------------------|
| Residential                   | Nonforest Upland |
| Commercial                    | Upland forest    |
| Industrial/Utility/Extractive | Lowland forest   |
| Recreational/Institutional    | Wetland          |
| Agricultural                  | Water            |

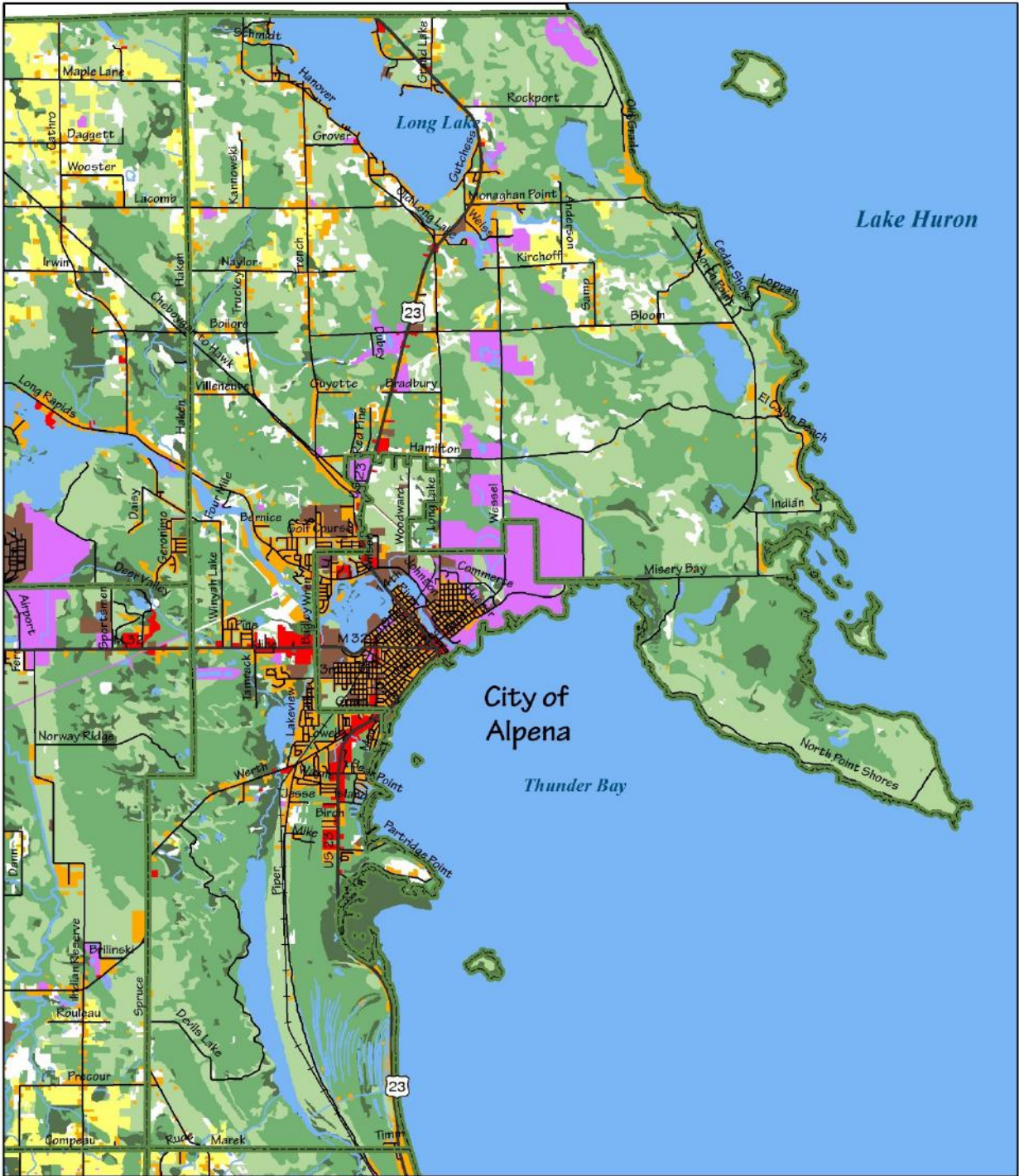
DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED

NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS

WWW.NEMCOG.ORG  
MAP UPDATED: 2020

**FIGURE 5-7 WILSON TOWNSHIP EXISTING LAND USE**





**Alpena Township  
Existing Land Use**

0 1 2 Miles

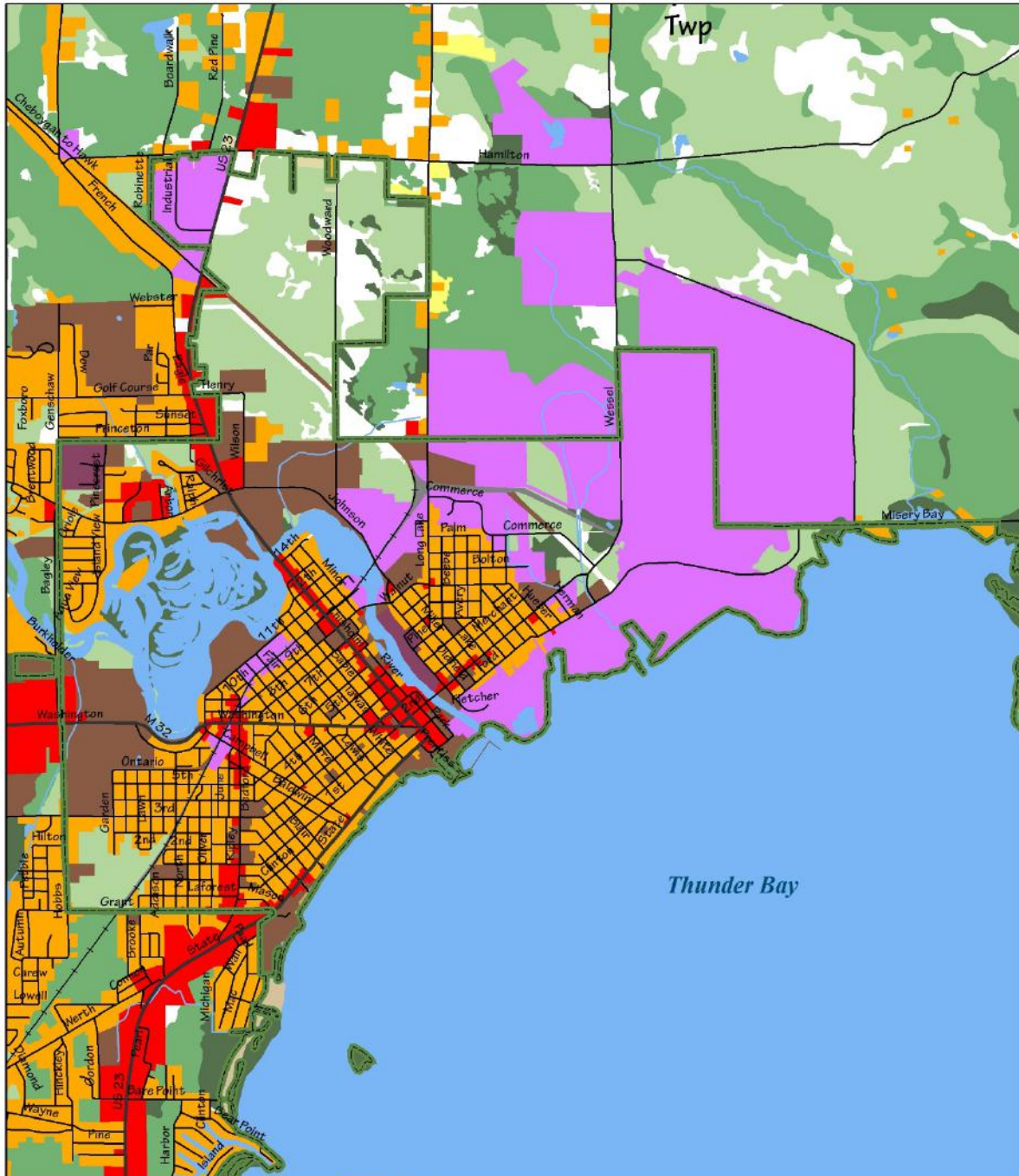
- |                               |                  |
|-------------------------------|------------------|
| Residential                   | Nonforest Upland |
| Commercial                    | Upland forest    |
| Industrial/Utility/Extractive | Lowland forest   |
| Recreational/Institutional    | Wetland          |
| Agricultural                  | Water            |

DISCOVER  
**Northwest Michigan**  
EAST OF EXPECTED

NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS

WWW.NEMCOG.ORG  
MAP UPDATED: 2020

**FIGURE 5-8 ALPENA TOWNSHIP EXISTING LAND USE**



**City of Alpena  
Existing Land Use**

0 1  
Miles

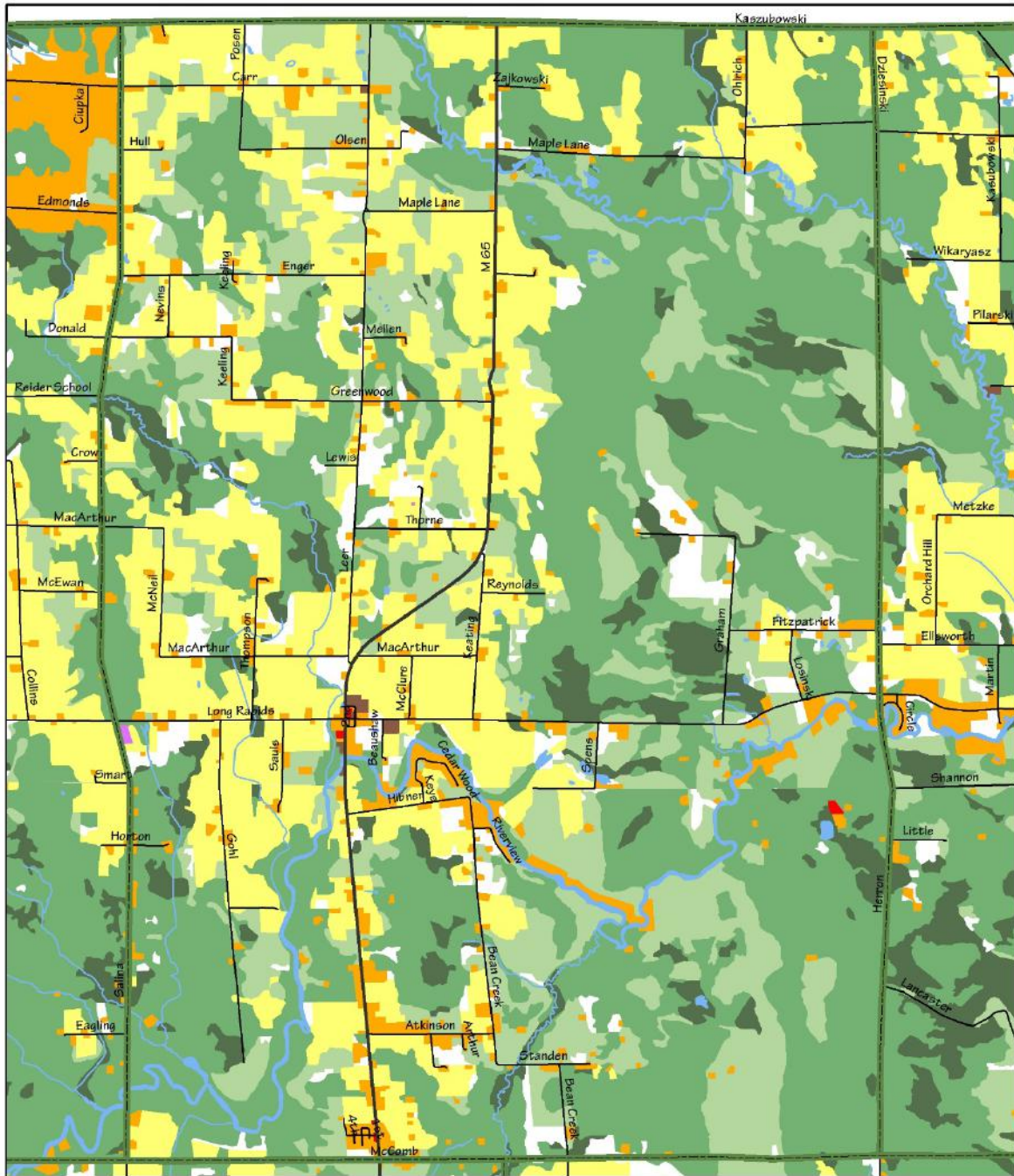


- |   |                               |   |                  |
|---|-------------------------------|---|------------------|
|  | Residential                   |  | Nonforest Upland |
|  | Commercial                    |  | Upland forest    |
|  | Industrial/Utility/Extractive |  | Lowland forest   |
|  | Recreational/Institutional    |  | Wetland          |
|  | Agricultural                  |  | Water            |

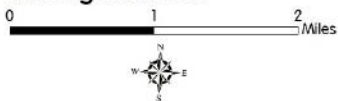
DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED  
NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS  
WWW.NEMCOG.ORG  
MAP UPDATED: 2020

**FIGURE 5-9 CITY OF ALPENA EXISTING LAND USE**





**Long Rapids Township  
Existing Land Use**



- |                               |                  |
|-------------------------------|------------------|
| Residential                   | Nonforest Upland |
| Commercial                    | Upland forest    |
| Industrial/Utility/Extractive | Lowland forest   |
| Recreational/Institutional    | Wetland          |
| Agricultural                  | Water            |

DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED  
NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS  
WWW.NEMCOG.ORG  
MAP UPDATED: 2020

**FIGURE 5-10 LONG RAPIDS TOWNSHIP EXISTING LAND USE**



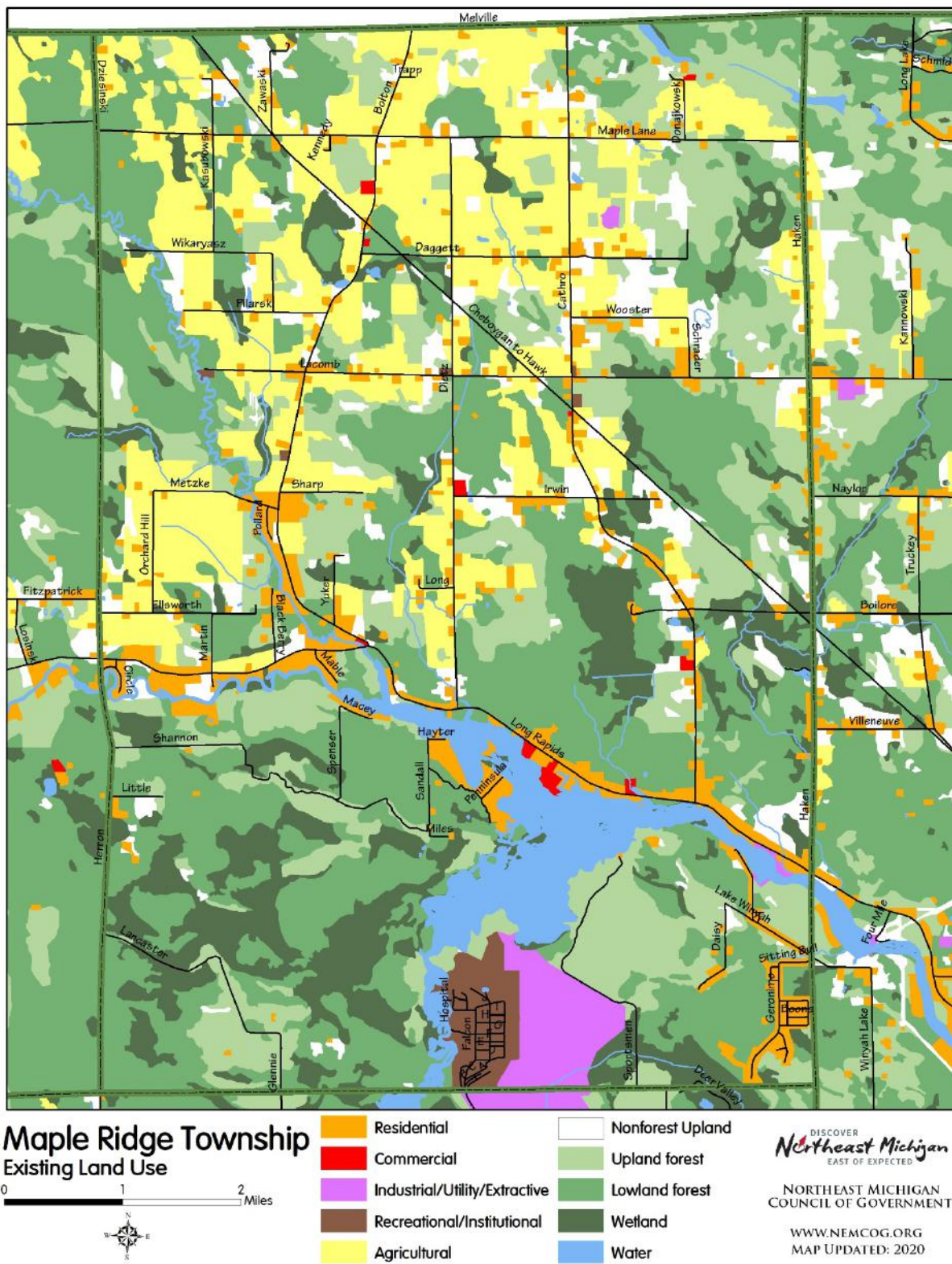


FIGURE 5-11 MAPLE RIDGE TOWNSHIP EXISTING LAND USE

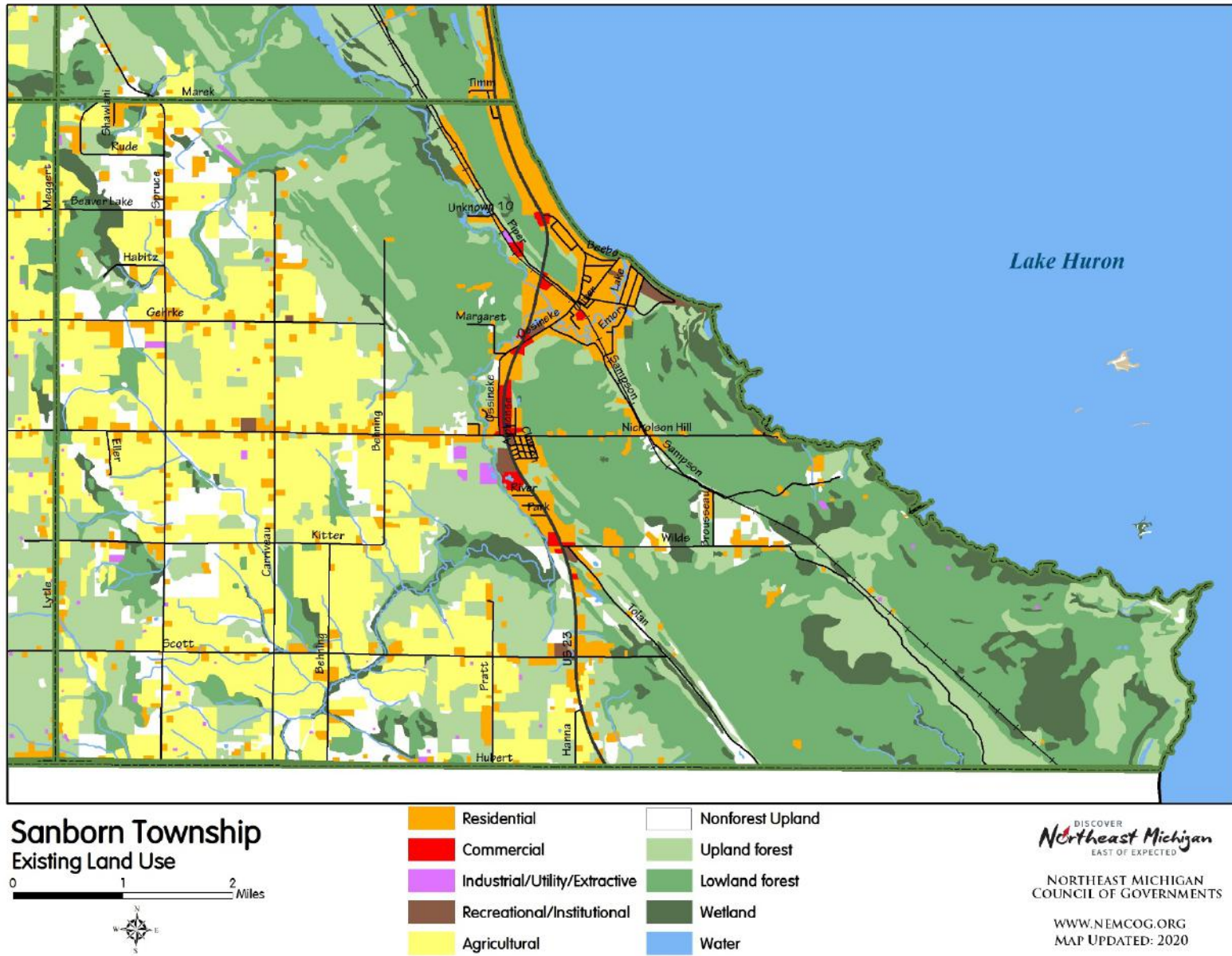
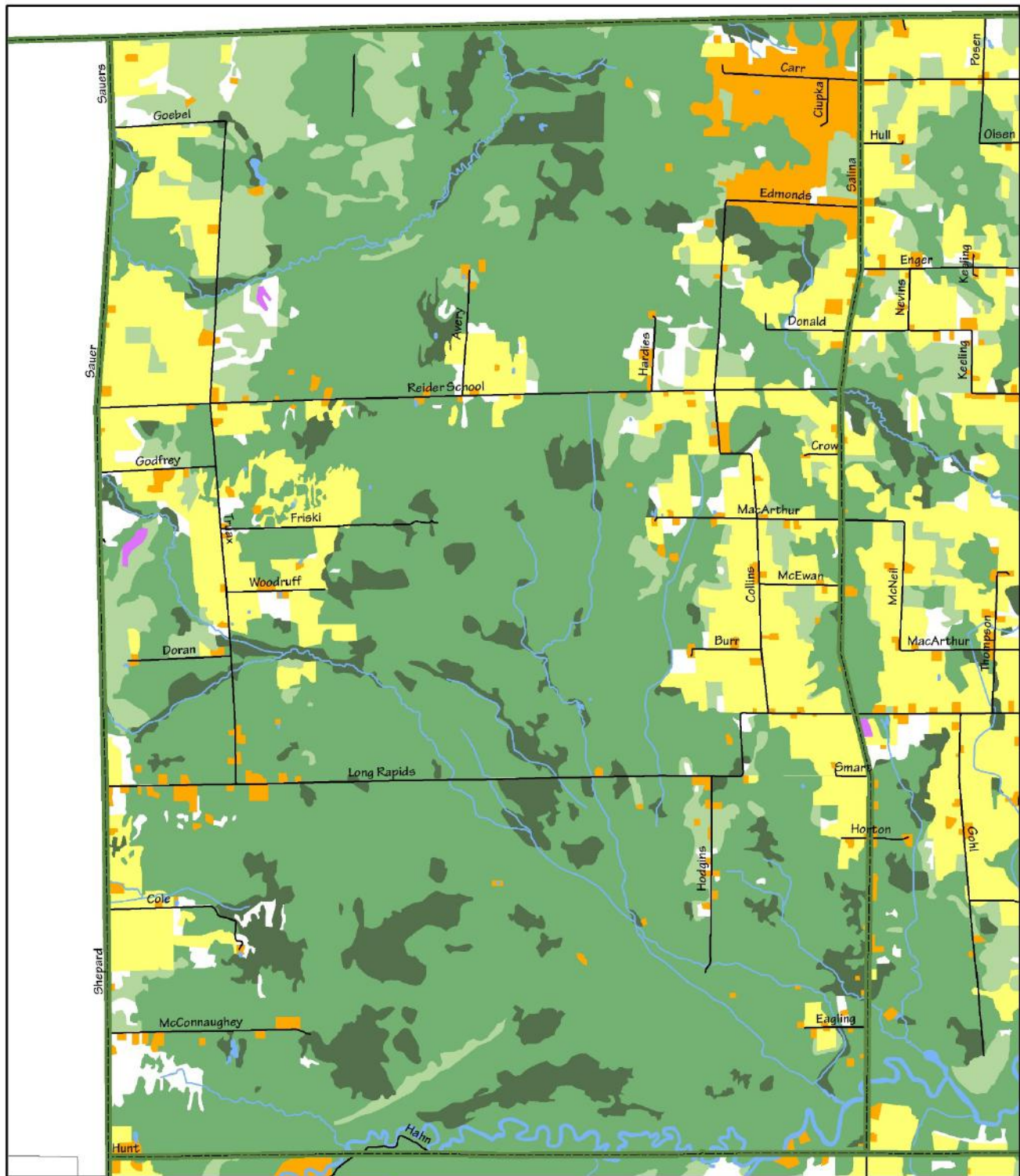


FIGURE 5-12 SANBORN TOWNSHIP EXISTING LAND USE















**Wellington Township**  
Existing Land Use

0 1 2 Miles



- |   |  |
|---|--|
|  Residential                   |  Nonforest Upland |
|  Commercial                    |  Upland forest    |
|  Industrial/Utility/Extractive |  Lowland forest   |
|  Recreational/Institutional    |  Wetland          |
|  Agricultural                  |  Water            |

DISCOVER  
**Northeast Michigan**  
EAST OF EXPECTED

NORTHEAST MICHIGAN  
COUNCIL OF GOVERNMENTS

WWW.NEMCOG.ORG  
MAP UPDATED: 2020

**FIGURE 5-13 WELLINGTON TOWNSHIP EXISTING LAND USE**

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# Chapter 6

## Community Goals and Objectives

### PURPOSE

The purpose of this chapter is to establish the goals, objectives and action strategies that will guide future growth and development in a manner that will reflect the county's and townships' unique characters. In developing community goals and objectives, it is important to analyze demographics, housing, economic conditions, services and facilities, cultural and natural resources, and existing land use. Preceding chapters of this Joint Master Plan have documented the above characteristics.

The Planning Commissions for Alpena County, and Green, Ossineke, and Wilson Townships commissioned a countywide survey that was available online to both county and surrounding area residents. The survey was coordinated with the joint multi-jurisdictional Recreation Plan. The combined survey was available on each jurisdiction's website as well as noticed in the local paper and in a news article. Press releases were issued to inform the public about the availability of the survey. 281 completed surveys were received.

Participants were asked a number of different questions, including the identification of assets and negative issues within Alpena County and a number of different questions regarding government services, community facilities, natural resources, housing, economic development, transportation, and quality of life. Lastly, participants were asked to provide suggestions on improvements that could be undertaken by Alpena County in the future. With guidance from the survey results, the County and Township Planning Commissions established the following goals, objectives, and action strategies.

### SURVEY SUMMARY (ALPENA COUNTY AS A WHOLE)

#### RESPONDENTS:

- 281 respondents with 6.4% of respondents from Green Township (18 surveys), 1.1% from Ossineke Township (3 surveys), and 7.8% from Wilson Township (22 surveys)
- 93.8% Full-Time Residents
- 2.9% Seasonal Residents
- 3.3% Non-Residents
- 89.3% of respondents own their own home with 6.6% of homes located in Green Township, 1.1% of home located in Ossineke Township, and 8.1% of homes located in Wilson Township.
- 61.1% of respondents were 50 years and older, and 18.7% were aged 30-39 years
- 72.7% have lived or owned a home in Alpena County for more than 11 years
- 33.2% of respondents were retired, and 30.2% of respondents have professional/managerial occupations
- 53.1% of respondents work in the City of Alpena, and 45.1% work in Alpena County



## **INFORMATION FLOW**

- 64.3% of respondents stated they get information from the newspaper
- 56.6% of respondents get information from social media (Facebook, Twitter)
- 55.7% of respondents get information from family and friends
- 54.8% of respondents get information from the internet
- 51.1% of respondents get information from the radio

## **ALPENA COUNTY ASSETS**

The residents in Alpena County value the county's rural, small town atmosphere and the vast amount of natural resources, including Lake Huron, the Thunder Bay River, local lakes, forests, beaches, and waterfront. Residents also value the quality and abundance of recreational opportunities that include hunting, fishing, biking, and walking. The friendly people, the availability of arts and culture, the educational and historic assets, cleanliness, Downtown Alpena, retail and restaurant opportunities, affordability, the Marine Sanctuary, and low crime were also listed as assets.

The following illustrate a number of positive issues about living in Alpena County that were identified by survey participants.

**SATISFACTION:** About 89.1% of respondents are satisfied or very satisfied living in Alpena County.

**QUALITY OF LIFE:** About 51.6% of respondents feel the quality of life has improved during their time in the county, noting the attraction of diverse businesses, redevelopment of downtown and the marina area, additions of a splash pad and senior housing, a long-term hospital commitment, DDA improvement efforts, an increase in tourism, park and beach accessibility, fishing and hunting improvements, and the expansion of the hospital, airport, and drone program.

However, about 30.3% feel the quality of life has stayed the same, while 18.1% feel it is worse, noting an increase in crime and drugs, a failure of the court and justice systems, loss of businesses, government officials not listening to the public's concerns, a lack of growth, narrow political views, a lack of forward thinking, poverty, an increase in taxes and a cut in services, vacant stores and buildings, high water rates, and poor medical care since the hospital was sold. About 61.2% of respondents believe there are adequate services for the elderly.

**SENSE OF COMMUNITY:** About 73.9% of respondents believe the people in Alpena County share a sense of community, citing people will help one another when needed, an increase in participation in government, free community events, communities come together to address problems and create opportunities, and an increase in volunteerism. Out of the respondents who felt there was not a sense of community, they noted there was an "us vs. them" attitude, there is only a sense of community if you are from the area, a lack of awareness about different communities, a lack of diversity, a divide based on political parties, and a lack of intergovernmental cooperation.

**RESIDENTS:** About 88.4% of respondents believe their community should try to attract more young people and families.

**CURRENT ECONOMIC STATE:** Over 80% of the respondents feel the current economic state of Alpena County is stable, good, or excellent, while 14.6% feel it is bad. About 68.1% of respondents feel the housing market is stable or stronger. However, over 60% of respondents felt there were not adequate job opportunities in Alpena County. About 83.8% of respondents feel they have enough money to meet their daily needs (housing, food, clothing, etc.), while 16.2% feel they do not have enough money.

**QUALITY OF PUBLIC SERVICES:** About 76.4% of respondents feel the quality of services provided by their local government is adequate (31.2%), good (37.1%), or excellent (8.1%). About 16.3% feel the services are poor, citing government officials are not open to newer, better ways of doing things, there is a lack of knowledge on boards and in government offices, there is a lack of intergovernmental cooperation (e.g. legal battle over water and sewer rates), high taxes for the amount of services provided, and government officials do not listen to the public.

**SOLID WASTE:** About 63.6% of respondents are satisfied with the solid waste disposal methods in the county. Respondents cited they would like more recycling and composting options, recycling options with trash pickup, and more county clean up days.

**RECYCLING:** Approximately 67.0% of respondents use the recycling program in Alpena County. Respondents who do not use the program cited it had an inconvenient location, was expensive, and had inconvenient hours. Suggestions for improvements include providing information about the recycling program, providing recycling services for all materials including glass, sorting recyclable at the facility instead of relying on residents, providing curbside pickup, and deterring people from throwing garbage in the bins.

**LEVEL OF DEVELOPMENT:** Over 80.6% of respondents believe Alpena County has to sustain physical development in order to improve, citing a future plan should be developed, there should be available infrastructure (e.g. alternative energy, water, sewer, gas, and electrical), and vacant buildings should be filled before building new ones. Respondents were relatively evenly split about the overall level of development in the county (48.8% too little and 47.0% about right). About 3.3% of respondents feel there is too much development. Respondents noted development would bring more job opportunities, there has been a loss of businesses, vacant buildings could be redeveloped to attract businesses, a need for more density in downtown, a need for more market rate apartments, and outdated government policies are preventing development. About 80.8% support the concept of controlled growth and about 82.5% support proactive economic development efforts to promote growth.

**RESIDENTIAL DEVELOPMENT:** About 65.3% of respondents believe residential growth should be encouraged. Respondents cited the county has a lack of newer, affordable homes for all income levels, residential development would add value to the community by attracting industries and younger generations, and residential growth needs to be slow and carefully planned and located. Respondents who did not support residential growth cited it would ruin the small town atmosphere, and the county does not have demand for residential development since the population is decreasing.

Respondents would like to see single-family and multi-family homes, planned unit developments, mixed-use developments, apartments, condominiums and townhouses, senior and assisted living developments, subdivisions, and low-income housing to combat blight. Respondents recommended eliminating houses on ½ acre lots, redeveloping the old factories and businesses into apartments, having high density residential development in the downtown, and having more market rate apartments.

The quality and range of housing was rated poor by 27.5% of respondents, excellent by 2.4%, and good or moderate by 62.3%. Respondents noted older homes, unmaintained rental properties, a lack of affordable housing across all income levels, and a need for subsidized and fair market value rentals. About 56.0% of respondents supported market rate rental housing, noting market rate rentals are unaffordable with wages in Alpena, and lower end rentals are needed. Over 50% of respondents believe low-cost housing for senior citizens should be available in the county, while only 44.4% of respondents support low-cost housing for low income families.

**COMMERCIAL DEVELOPMENT:** About 81.7% of respondents support the growth of commercial development. Respondents cited development would bring jobs and diverse businesses, it will generate more tax revenue, and vacant properties can be redeveloped. Respondents who did not support commercial development cited it takes up farmland, and there is already too much traffic. Respondents would like to see restaurants, retail businesses, hotels, chain businesses, a nature center, and personal service businesses. Respondents were concerned governmental regulations were repelling businesses.

**INDUSTRIAL DEVELOPMENT:** About 55.0% of respondents believe industrial development should be encouraged, citing it will increase the tax base, bring jobs, should be clean and not noisy, and not disturb the land. Respondents who did not support industrial development noted it causes pollution, health and impact problems, destroys the small town atmosphere, the trucks will cause the road to deteriorate, current industrial properties clutter the waterfront, low wages, and companies expect tax abatements. Respondents recommended manufacturing, light and heavy industrial, tech industries, and clean energy development.

**TAX ABATEMENTS:** Over 60% of respondents favored the use of tax abatements to attract and retain new jobs and businesses, citing as long as the tax abatements are reasonable, enforceable, and provide jobs. Respondents who did not support tax abatements cite the tax burden would be transferred to the community, tax abatements have not worked in the past, corporations only stay until the abatements run out, and corporations should be even contributors to the community.

**PUBLIC TRANSPORTATION:** Over 55% of respondents believe public transportation is adequate. Respondents recommended more public transportation options, more routes to outlying areas, and making it more affordable.

**LAW ENFORCEMENT:** Over 70% of respondents are satisfied with law enforcement services. Ones that were not satisfied cited there is too much law enforcement, the HUNT team needs to do a better job, there should be more neighborhood watch groups, excessive traffic enforcement, a lack of traffic enforcement on big trucks, poor coverage in outlying areas, and a need for more patrols.

**FIRE PROTECTION:** Over 85% of respondents are satisfied with fire protection in the county. Respondents noted possibly combining fire departments to efficiently use resources, and concerns about response times and outdated equipment.

**EMERGENCY MEDICAL SERVICES:** Over 62.3% of respondents are satisfied with emergency medical services, citing the ambulance should not leave the county, the services could consider combining to efficiently use resources, and low response times.

**TELECOMMUNICATIONS:** About 52.4% believe the cellular network is adequate, noting there needs to be more service providers and there are areas with poor service/no service (southwest portion of the county, Werth Road, Hubbard Lake, Beaver Lake, Grand Lake, Bear Point Subdivision, etc.).

Only 35.1% of respondents feel there is adequate high speed internet access in the county, noting poor service in rural areas, its high cost, and a need for more providers.

**CULTURAL AND HISTORIC RESOURCES:** The respondents (90.3%) felt the county or townships should help protect the cultural and historic resources.

**TOURISM/RECREATION:** About 95.3% of respondents believe tourism and recreation should be encouraged, citing the natural resources, museums, and cultural diversity should be promoted, and efforts need to be coordinated. Respondents noted it will bring money into the community, there is a need for more non-motorized trails, and it will provide things for people to do. The respondents (95.2%) believe their local governments should maintain and improve its park system and facilities, while only 58.0% felt the park system and facilities should be expanded.

**WAYFINDING:** About 42.6% of respondents felt the county does not need additional wayfinding signage, noting additional signage should only be considered when new destinations are developed.

#### **ALPENA COUNTY ISSUES**

There was a wide range of concerns expressed by the respondents. The most noted concerns were a lack of jobs, poor road conditions, traffic congestion, problems with local politics, a lack of shopping, dining, and entertainment options, problems with local government services, governmental resistance to progress, and healthcare. Other concerns included a lack of cultural diversity, drugs, blight/vacant buildings, odors from local businesses, crime, a lack of affordable housing at varying income levels, a lack of intergovernmental cooperation, a lack of affordable public transportation, homelessness, the water dispute, and taxes.

Compared to the county's previous master plan public input survey, the list of concerns are similar. However, crime was the most noted concern in the previous survey, while a lack of jobs was the most noted concern in this survey.

**COMMUNITY PROBLEMS:** Respondents noted air quality, unsightly or unsuitable business operations, a lack of affordable housing, and property taxes were small problems. Road condition and lack of employment were seen as medium problems, and the quality of medical services was seen as a big problem. Respondents were split on whether decreasing property values were not a problem (30%) or a small problem (30%).

**GOVERNMENT:** About 37.6% of respondents feel their local government is responsive to their needs, while 31.7% feel it is not. Respondents who felt their needs were not met noted a lack of cellphone service and high speed internet, the government does not help small businesses, a lack of government communication with the public, and expensive water and sewer services. Respondents recommended governments address the issues that are draining their resources, and effectively work with other governments.

About 86.4% of respondents believe their local government should collaborate with other local units of government to provide services. However, about 33.5% of respondents believe their local government works and plans well with other entities (37.2% believe it does not). Respondents cited the water dispute

lawsuit as an example of how local governments do not work together and the E911 Partnership as an example of how they do work together. Respondents recommend combining emergency services, water and sewer, and planning and zoning endeavors.

**BLIGHT:** About 59.2% of respondents believe blight is an issue in the county, noting better landscaping and enforcement of blight ordinances would help.

Identified areas with blight include:

- Washington Avenue
- Corner of 9<sup>th</sup> and Oldfield
- Along M-32 between Hillman and Alpena
- Carney Road
- Wilson Township: M-32 Corridor near Emerson
- Industry across from fairgrounds
- North U.S. 23
- Between Commercial and Merchant Streets
- King Settlement to Manning Hill
- Over 2<sup>nd</sup> Avenue Bridge
- Tawas Street
- Chisholm and 11<sup>th</sup> Street
- Abandoned houses in the city
- Chisholm and 11<sup>th</sup>
- Chisholm Street
- Along U.S. 23 South between Werth Road and Squaw Bay
- 11<sup>th</sup> Avenue between Ripley Boulevard and Tawas Street
- Behind Neiman's grocery store
- Properties in Wilson Township
- North Alpena
- 2<sup>nd</sup> Avenue
- Between town and Squaw Bay
- West of town across from Home Depot and toward Fed Ex
- Empty stores downtown
- Lay Road

**MEDICAL FACILITIES:** Over 55% of respondents are not satisfied with medical facilities in Alpena County, noting long wait times for appointments, a lack of specialty doctors, outdated facilities, no urgent care, and worse medical care/services since the hospital sale.

**ROADS:** About 45.9% of respondents are satisfied with road maintenance, construction, and conditions in their community, noting potholes, the roads outside of the city are neglected, there is not enough grading, spraying, or paving (paved roads are returning to gravel), and there is a need for bike lanes and infrastructure improvements. About 68.7% of respondents were satisfied with snow removal, noting a need for quicker plow times, sidewalks are not cleared of snow, and snow is pushed into driveways.

The most identified road segments needing improvements include:

- S. Partridge Point Road needs more grading or to be paved
- Indian Reserve Road
- Creation of a north and south corridor around Bagley and M-32 areas
- Need to paint lines on roads
- Intersection at 1<sup>st</sup> and Water
- Remove one way traffic from 2<sup>nd</sup> Avenue
- 11<sup>th</sup> Avenue
- Need shorter detour routes if M-32 is shut down
- 1<sup>st</sup> Avenue
- M-32 and Herron Road intersection
- Traffic signal at U.S. 23 and Golf Course Road
- Mich-e-ke-wis Park Road
- Tennis Road going into Jack's Landing
- Manning Hill Road
- Better maintenance of gravel roads
- Wolf Creek
- Northpoint Shores
- Carney Road between M-65 and Manning Hill Road
- Gutches Road



- 2<sup>nd</sup> Avenue
- Ontario Street from Franklin Street to Garden Street
- Bloom Road
- Train tracks at Lafarge
- M-32/Washington by the river
- Wall Avenue
- 3<sup>rd</sup> Avenue between Hobbs and Ripley
- Ford Avenue
- Roads in subdivisions
- Need sidewalk/paved path on Ripley from U.S. 23 to 1<sup>st</sup> Street
- Enger Road
- Taylor Hawks Road
- North Partridge Point Road
- Elvere Road
- Park Road where Manning Hill Park is located
- Gilchrist, Ralph, Thomas, Parker
- Monaghan Pt. Road
- Side Streets between State and Washington Avenue
- U.S. 23
- One way section of Washington and 2<sup>nd</sup> Avenue
- M-32
- Pearl Road
- Ripley by the fairgrounds
- Long Rapids Road
- Margaret Road Bridge over Devil's River
- Princeton Street
- Lake Winyah
- North Herron Road
- Ridley Street
- Bagley Street- need multiple lanes and bridge widening
- Pohl Road
- Genschaw Road
- 9<sup>th</sup> Street
- 4<sup>th</sup> Avenue
- Behind Perch's neighborhood
- Misery Bay Road
- Pave more of the gravel roads around Long Lake
- Replace the bridge over the river on Bagley
- Bussie Road
- Beaver Lake
- El Cajon Beach Road
- Johnson Street
- Samp Road
- Michigan Avenue
- Need sidewalk/paved path along Hobbs Drive
- Reider School
- Salina Road
- Cousineau Road
- North Point Road
- Taylor Street
- Maple Lane
- Need better signage
- Bolton Road
- Dunbar Street
- Princeton Subdivision
- Resurface Golf Course Road
- F-41 Road
- Prevo Road
- Hobbs Drive
- Elden Drive
- Wessel Road
- Long Lake Avenue
- Thunder Bay Avenue
- Bike path along U.S. 23 is too rough. Driveway ramps are too steep.
- Widening of State Street
- Spratt
- Add a signal on Hamilton Road and U.S. 23 North
- Wegmeyer Road
- Gordon Road
- Weiss Road
- Boilore
- Four way stop at Walnut and Miller/Johnson Street Intersection
- Commercial
- Repair joints on 13<sup>th</sup> Street concrete (fairgrounds area)
- Campbell Street
- Walnut Street
- Dietz Road

**Additional suggestions offered to the county:**

- Alpena is about 25 years behind the times compared to the progress and growth of other communities. Change is inevitable or you start moving backwards.
- There are not enough offerings in Alpena County. Too little to do, too few restaurants and venues, and too far away from larger towns/cities.
- The City of Alpena and the townships need to work together to succeed. Officials need to agree to move forward and promote growth for the future of Alpena.
- Local government has a chance to foster growth and build it the right way so it is controlled, sustainable and achievable. Start funding police, fire, healthcare, roads, and schools. The first thing someone looks at before relocating or expanding or starting a business is the services—are they adequate? Funding and building up these services are key.
- Alpena is a great place to raise a family and enjoy the outdoors. The conservative hinderance to our community's progression discourages people from wanting to move or live here. If you don't have a family or were born here then why would I want to move to Alpena? Alpena is the hub of Northern Michigan, but the community is always reactive and not proactive. We cater to our older citizens and do not do enough for the younger generation. There are wonderful places that cater to youth, but they do not have enough resources to provide all the services that are needed. It's appalling to see all the millages for seniors and just one to benefit youth. Then, when you look into the youth millage, the Plaza Pool receives a majority of the funds and this only serves the seniors. The world is changing and people's perceptions are different than they were 5 years ago and Alpena needs to examine the direction it wants to go....either a senior haven or progressive community that wants to attract and retain younger professionals. Local politicians and business leaders should educate themselves on pressing issues like the Marijuana Reform laws and actually look into the benefits of tax implications and not just how they perceive the issues. This is only one example and there are many.
- Surgeries are not offered in Alpena County.
- Have to travel to Gaylord for native plants.
- There should be cooperation to build a better Alpena County.
- Mich-e-ke-wis Beach should be developed for swimming, picnics, kite-flying, seasonal fairs, markets, another dog park, ice skating, and a small sledding hill built from the snow dumped from city streets.
- The efforts by the CVB are to be commended, the Chamber of Commerce, not so much. Local governments should give money to the CVB, not the Chamber of Commerce.
- Local governments should share services to save money and use the saved money for other projects or services.
- People are not welcoming of outsiders
- Finding jobs and getting interviews is difficult, even with degrees.
- Too much growth can ruin a community.
- Need to bring families to the county to sustain growth.
- Alpena messed up the parking downtown when they changed one section to back in only.
- Anyone that comes to town should visit the NOAA center or museum. The movie theater is terrible.
- The parks should have means to getting more money besides from grants.
- We have the basic needs, time to get some of the services we want.
- Medical care is lacking. Any serious condition is shipped out at the expense of the patient.
- High taxes in the county. Should be making better use of the funds. Ridiculous water rates in the township.

- Beautiful shoreline is being wasted without development. The loss of air travel to Minneapolis was a travesty. Have to drive to Traverse City to fly west.
- Don't be a retirement community. There is no money in retirement.
- Use and improve existing commercial resources to help with growth. Provide more options for housing buying and renting, so places like the hospital and local businesses can attract potential new employees to relocate in Alpena to grow their operations (no more subsidized housing). People making over \$40,000 have very, very few nice rental options.
- Decisions to develop the city and county need to be carefully vetted by many people. There needs to be a careful balance between development and the natural resources.
- Additional hotel lodging would enable the Apex to run tournaments and events to utilize it more. Need more than fast food restaurants. Trolleys should run tours to points of interests. Paint the lighthouse at the river entry. Construct a roadside park on Squaw Bay to Mark 45<sup>th</sup> parallel for pics, and listed events in the city.
- Cost of living continues to rise, and employers are giving low wages or less hours. To provide a decent life, a two person home needs to have 3 jobs.
- Get someone from the outside to plan. Native Alpena people are bias. A large company funding the changes has been useful in other Michigan communities.
- Need more year round family friendly activities. Also, job opportunities and benefits could be better in this area.
- Need an allergist in town.
- We should develop the riverfront. We also need to work on public access and attractiveness for Lake Huron. Shoreline is not welcoming (parking lots have potholes). There needs to be more seasonal rental cabins. The beach is littered with wood chip run off from DPI, which does not make the water look appealing. The sulfur spring is historical, but there isn't a sign, so tourists think we have a sewer issue.
- We need younger, more in tune council representatives with vision.
- Stop the water legal fight. With the amount both parties have spent on legal help, they could have come up with an agreement with that money.
- Need more student housing at ACC.
- Money needs to be set aside for stray/feral pets in the city limits.
- Poor medical treatment in Alpena. Must leave for all medical treatment all the time.
- An advisory board made up of a cross-section of the community to include citizens, business owners, city officials, etc. to brainstorm ideas and target surveys to the community.
- Very little area in town where you can see Lake Huron and the river.
- Welcome growth and change. Get over the fear that Alpena will become Traverse City.
- Quit spending so much on plaza pool.
- Little economic change in the area except for businesses closing. Would like to see growth in Alpena compared to Gaylord and Traverse City.
- The City and Alpena Township need to come together on the water and sewer issue. Let the City take over the water/sewer system, then it would be fair to all the citizens.
- Commercial and residential growth seems to be a chicken and egg problem: companies are reluctant to come to Alpena because of low population and wages, but wages and population are low because of the lack of businesses and economy. Alpena should be doing more to encourage rapid commercial growth and a younger work force instead of continuing to cement our place as a retirement community.
- Hire and retain employees to maintain and improve Alpena.
- Use the old GMC dealership as a parking garage. Incorporate the trolley to transport city workers at prime start/stop times for a small fee.

- Get rid of the shallow water intake at the water plant, move it to the Rockport area, move the waste treatment plant from the harbor.
- Plant trees and landscape. Institute an architectural program at ACC. Hire professional, progressive city planners and zoning staff. Lower the breakwater.
- Work together, form a body so all interests are represented on a regular basis to work with Target or research what promotional efforts have worked in other areas to bring them to Alpena. The intergovernmental body is too political

## GREEN TOWNSHIP SURVEY RESULTS

### SURVEY SUMMARY

- 18 surveys received
- 18 Full-time Residents
- 100.0% of respondents own their own home in the township with 47.1% owning property and 17.7% owning a business or business property
- 94.0% of respondents have lived or owned property in the township for 11+ years
- 64.6% of respondents are age 50 and older
- 29.4% of respondents are retired, 29.4% occupy the professional/managerial category, 17.6% occupy the farmer category
- 66.7% of respondents work in Alpena County, 25.0% work in the City of Alpena

### INFORMATION FLOW

- 82.4% of respondents stated they get information from the newspaper
- 76.4% of respondents get information from family and friends
- 58.8% of respondents get information from the radio
- 47.1% of respondents get information from social media (Facebook, Twitter)

### TOWNSHIP ASSETS

The residents of Green Township value the rural, small town community and the area's water resources. The countryside, safety, friendly people, sense of community, and recreation opportunities were also listed as assets.

The following illustrate a number of positive issues about living in Green Township that were identified by survey participants.

**SATISFACTION:** 94.1% of respondents are satisfied or very satisfied living in Green Township with 76.5% noting Alpena shares a sense of community. Respondents who did not believe there was a sense of community noted if you were not from Alpena, people were not welcoming or open to new ideas.

**QUALITY OF LIFE:** 58.8% of respondents noted the quality of life in the area has improved, noting growth in the downtown, improvement in roads, and the attraction of Meijer and Walmart. Respondents who believed the quality of life had become worse noted an increase in drug problems. Respondents believe it is very important to live near the woods, have access to hunting and fishing, have clean air, have good soil for crops, a rural atmosphere, a change of seasons, and nearby family.

**RESIDENTS:** Over 80% of respondents believe the township should attract young people and families. About 62.5% of respondents believe there are adequate services for seniors in the county.

**SERVICE PROVISION:** Over 80% of respondents believe the services provided by the township are adequate, good, or excellent, noting the township officials and staff will try to resolve situations. About 58.8% of respondents noted the township is respondent to their needs.

**GOVERNMENT:** Over 85% of respondents believe the township should collaborate with other local governments to provide services with about 58.8% of respondents noting Green Township plans and works well with other entities. Respondents recommended combining emergency services and working on plans.

**LAW ENFORCEMENT:** Over 80% of respondents are satisfied with law enforcement in the county, noting the rural areas are poorly covered and a need for more road patrols.

**FIRE PROTECTION:** Over 85% of respondents are satisfied with fire protection in the county, noting there is a need for more manpower.

**EMERGENCY SERVICES:** About 75.0% of respondents were satisfied with emergency medical services in the county, noting the ambulance leaves the county too much.

**SOLID WASTE:** About 70.6% of respondents are satisfied with the solid waste disposal methods in the township.

**RECYCLING:** Approximately 64.7% of respondents use the recycling program in Alpena County. Suggestions for improvements include providing information about the recycling program, providing recycling services for all materials including glass, sorting recyclables at the facility instead of relying on residents, and providing a drop off location in Green Township.

**DEVELOPMENT:** 81.3% of respondents believe the amount of development in the township is just right. Respondents who felt there was too little development cited a lack of jobs to retain youth, a lack of stores and restaurants, and a lack of infrastructure. Over 65% of respondents supported the concept of controlled growth and proactive economic development, noting growth was not a problem in the township. About 68.7% of respondents noted residential and commercial development should be encouraged in the township. Respondents supported single-family homes, low income housing, and condos for residential development, and restaurants, factories, hometown businesses (e.g. craft and antique shops), and service businesses for commercial development. Respondents noted commercial businesses would generate more taxes and jobs, but would take up farmland. About 50% of respondents supported the encouragement of industrial development noting it should remain within limits to combat air and noise pollution, and be located away from waterfronts. Respondents suggested low polluting manufacturing jobs that have higher level workers in the same building.

**PARTIAL TAX ABATEMENTS:** About 68.8% of respondents supported partial tax abatements to attract and retain new jobs and businesses.

**HOUSING:** About 74.9% of respondents believe housing is good or moderate in the township. Respondents cited there is a need for more low income housing (50% of respondents oppose low cost housing for low income families) and there are too many old, outdated homes. About 50.0% of respondents do not support the development of market rate rental housing as a priority. About 43.8% of respondents believe low cost senior housing should be available in the county.



**TOURISM/RECREATION:** All respondents believe tourism and recreation should be encouraged, and the county and township’s cultural and historic resources should be protected. Over 90% believe the township should continue to maintain and improve its park system and facilities with 56.3% supporting the expansion of the park system and facilities.

**WAYFINDING SIGNAGE:** About 62.5% of respondents do not feel additional signage is needed.

**PUBLIC TRANSPORTATION:** Over 55% of respondents feel public transportation is adequate in the township. Respondents who were not satisfied cited a lack of service to the county’s rural areas.

### **TOWNSHIP ISSUES**

There was a wide range of concerns expressed by the respondents. The most noted concerns were the poor road conditions and the slow economic growth in the township (lack of jobs and businesses). Other concerns included a need for high quality, high speed internet, a lack of available medical care, drug problems, a lack of zoning enforcement/zoning bias, and a lack of cultural diversity.

The following illustrates a number of potential issues about living in Green Township that were identified by survey participants.

**COMMUNITY PROBLEMS:** Respondents noted road conditions are a medium problem in the township. The lack of employment and unsightly/unsuitable business operations were seen as small problems.

**BLIGHT:** Respondents (56.3%) believe blight is an issue in the township, citing a lack of enforcement of the blight ordinance. Areas of blight are on file with the township.

**TELECOMMUNICATIONS:** Approximately 56.3% of respondents do not think high speed internet service is adequate in the county.

Approximately 56.3% of respondents indicated the county’s cellular service is not adequate noting there are dead spots (lack of infrastructure) and poor service in rural areas.

**MEDICAL FACILITIES:** Over 60% of respondents are not satisfied with the medical facilities in Alpena County. Suggestions included attracting an urgent care and specialty facilities.

**ROADS:** Over 60% of respondents are not satisfied with road conditions, maintenance, and construction. Respondents cited the roads outside of the city are neglected, there are too many unpaved roads, the road commission needs more knowledge about how to build or grade a road, and a lack of grading or spraying. About 62.5% of respondents are satisfied with snow removal with some noting a need for more timely plowing.

The most identified road segments needing improvements include:

- Tennis Road going into Jack’s Landing
- Manning Hill Road
- Carney Road between M-65 and Manning Hill Road
- Taylor Hawks Road
- Elevere Road
- Park Road
- Salina Road
- Cousineau Road
- Salina Road

**Additional suggestions offered to the township:**

- Attract more restaurants and entertainment venues
- Difficult to find jobs and get interviews
- Increase the services
- Attract medical care to the county to reduce the expense to patients

## OSSINEKE TOWNSHIP SURVEY RESULTS

**SURVEY SUMMARY**

- 3 surveys received
- 2 Full-time Residents
- All respondents own their own home in the township with 66.7% owning property
- All respondents have lived or owned property in the township for 20+ years
- All respondents are aged 60-69 years old
- 66.7% of respondents are retired with two respondents noting they have a skilled trade/craft occupation or a farming occupation
- All respondents who declared an occupation work in Alpena County

**INFORMATION FLOW**

- 66.7% of respondents get their information from the newspaper, radio, and friends/family.

**TOWNSHIP ASSETS**

The residents of Ossineke Township value the area's natural resources, including the open space, lakes, and forests. Other assets included the people and the summer weather.

The following illustrate a number of positive issues about living in Ossineke Township that were identified by survey participants.

**SATISFACTION:** All respondents are satisfied or very satisfied living in Ossineke Township with 33.3% noting Alpena shares a sense of community.

**QUALITY OF LIFE:** All respondents noted the quality of life in the area has stayed the same. About 66.7% of respondents believe there are adequate services for the elderly in the county. Over 65% of respondents believe the township should attract young people and families.

**ROADS:** Over 65% of respondents are satisfied with road conditions, maintenance, and construction. The most identified road segments needing improvements include Wolf Creek and Beaver Lake Road. About 66.7% of respondents are satisfied with snow removal.

**LAW ENFORCEMENT:** About 33.3% of respondents are satisfied with law enforcement in the county.

**FIRE PROTECTION:** Over 65% of respondents are satisfied with fire protection in the county.

**EMERGENCY SERVICES:** About 33.3% of respondents were satisfied with emergency medical services in the county.

**RECYCLING:** Approximately 66.7% of respondents use the recycling program in Alpena County. Respondents who do not use the program cited it is too expensive, is inconveniently located, and has inconvenient hours.

**DEVELOPMENT:** Respondents were split on the amount of development in the township noting it was too little or it was about right. Respondents cited there were more businesses 20-30 years ago. About 33.3% of respondents supported the concept of controlled growth and proactive economic development. About 66.7% of respondents believe residential growth should be encouraged in the township, citing support for subdivisions. About 66.7% of respondents believe commercial development should be encouraged in the township, citing a need for a hardware store. About 33.3% of respondents believe industrial development should be encouraged in the township.

**TOURISM/RECREATION:** About 66.7% of respondents believe tourism and recreation should be encouraged, citing there is a lot to offer, but there is a lack of awareness. About 33.3% of the respondents believe the county and township's cultural and historic resources should be protected. Over 65% believe the township should continue to maintain and improve its park system and facilities instead of expanding them.

**WAYFINDING SIGNAGE:** Respondents were split on whether additional wayfinding signage is needed in the township (33.3% yes, 33.3% no).

**PUBLIC TRANSPORTATION:** Over 65% of respondents feel public transportation is adequate in the township.

## **TOWNSHIP ISSUES**

There was a wide range of concerns expressed by the respondents that included the hospital, housing, road conditions, flooding, units of government not working together, and the train noise.

The following illustrates a number of potential issues about living in Ossineke Township that were identified by survey participants.

**SERVICE PROVISION:** About 33.3% of respondents believe the services provided by the township are adequate with about 33.3% noting the services are poor. Respondents were evenly split about whether the local government is responsive to their needs (33.3% yes, 33.3% no).

**SOLID WASTE:** About 33.3% of respondents are satisfied with the solid waste disposal methods in the township.

**GOVERNMENT:** About 66.7% respondents believe the township should collaborate with other local governments to provide services with about 33.3% of respondents noted Ossineke Township plans and works well with other entities.

**COMMUNITY PROBLEMS:** Respondents noted road conditions and lack of employment are small problems in the township. One respondent noted the water quality, quality of services for seniors, decreasing property values, and quality of recreational opportunities were small problems. One respondent believed air quality and a lack of affordable housing were big problems in the township. Respondents were split on how big of a problem the following were: unsightly or unsuitable business

operations (small and big problem), and quality of medical services and property taxes (small and medium problems).

**BLIGHT:** Respondents were split on whether blight is an issue in the township (33.3% yes, 33.3% no), identifying north of the river as an area of blight.

**HOUSING:** Respondents were split on the quality of housing in the township (33.3% believe it is moderate, 33.3% believe it is poor). About 33.3% of respondents do not support the development of market rate rental housing as a priority. Additionally, 33.3% of respondents believe low cost senior housing and low cost housing for low income families should be available in the county.

**PARTIAL TAX ABATEMENTS:** About 33.3% of respondents supported partial tax abatements to attract and retain new jobs and businesses.

**TELECOMMUNICATIONS:** Approximately 66.7% of respondents do not think high speed internet service is adequate in the county.

Approximately 66.7% of respondents indicated the county's cellular service is not adequate noting there is poor service in the rural areas.

**MEDICAL FACILITIES:** Over 65% of respondents are not satisfied with the medical facilities in Alpena County.

## **WILSON TOWNSHIP SURVEY RESULTS**

### **SURVEY SUMMARY**

- 22 surveys received
- 19 Full-time Residents
- 95.5% of respondents own their own home in the township with 27.2% owning property and 18.2% owning a business or business property
- 72.8.0% of respondents have lived or owned property in the township for 11+ years
- 59.1% of respondents are age 50 and older
- 47.6% of respondents are retired and 28.6% are self-employed
- 63.6% of respondents work in the City of Alpena, 36.4% work in Alpena County

### **INFORMATION FLOW**

- 66.7% of respondents stated they get information from family and friends
- 61.1% of respondents get information from the internet
- 50.0% of respondents get information from the radio
- 44.4% of respondents get information from social media (Facebook, Twitter)

### **TOWNSHIP ASSETS**

The residents of Wilson Township value the rural, small town community and the area's natural resources. The forward thinking government, parks, safety, friendly people, reasonable future development, shopping opportunities, and recreation opportunities were also listed as assets.

The following illustrate a number of positive issues about living in Wilson Township that were identified by survey participants.

**SATISFACTION:** 89.5% of respondents are satisfied or very satisfied living in Wilson Township with 60.0% noting Alpena shares a sense of community. Respondents who did not believe there was a sense of community noted the sense of community seems disjointed and there is a large group that does not participate in creating a sense of community.

**BLIGHT:** Respondents (55.6%) believe blight is not an issue in the township. Identified blighted areas include houses on Washington Avenue.

**RESIDENTS:** Over 88% of respondents believe the township should attract young people and families. About 50% of respondents believe there are adequate services for seniors in the county.

**SERVICE PROVISION:** About 90% of respondents believe the services provided by the township are adequate, good, or excellent, noting it is difficult to contact people in most public offices and the township's county commissioner is not receptive to the public. About 45% of respondents noted the township is respondent to their needs.

**LAW ENFORCEMENT:** Over 83% of respondents are satisfied with law enforcement in the county, noting a need for enforcement of illegal drug manufacturing and trafficking.

**FIRE PROTECTION:** All of the respondents are satisfied with fire protection in the county, noting the township seems reasonably well-equipped and trained.

**EMERGENCY SERVICES:** About 82.4% of respondents were satisfied with emergency medical services in the county.

**SOLID WASTE:** About 57.9% of respondents are satisfied with the solid waste disposal methods in the township.

**RECYCLING:** Approximately 68.4% of respondents use the recycling program in Alpena County. Ones who do not use the program suggested providing information about it.

**PARTIAL TAX ABATEMENTS:** About 82.4% of respondents supported partial tax abatements to attract and retain new jobs and businesses if the business can be successful.

**HOUSING:** About 66.7% of respondents believe housing is excellent, good or moderate in the township. About 47.1% of respondents oppose low cost housing for low income families. About 33.3% of respondents support the development of market rate rental housing as a priority. About 66.7% of respondents believe low cost senior housing should be available in the county.

**TOURISM/RECREATION:** About 88% of respondents believe tourism and recreation should be encouraged. About 94.4% of respondents believe the county and township's cultural and historic resources should be protected. Over 94% believe the township should continue to maintain and improve its park system and facilities with 38.9% supporting the expansion of the park system and facilities.



**WAYFINDING SIGNAGE:** About 50% of respondents do not feel additional signage is needed, noting additional signage would be needed as new destinations are developed.

**PUBLIC TRANSPORTATION:** Over 66.7% of respondents feel public transportation is adequate in the township. Respondents who were not satisfied cited a lack of service.

## **TOWNSHIP ISSUES**

There was a wide range of concerns expressed by the respondents. The most noted concerns were the poor road maintenance, a lack of support for new ideas, and the slow economic growth in the township (lack of jobs and businesses). Other concerns included crime, a lack of quality healthcare, a lack of a sense of community and public involvement, and a lack of government transparency.

The following illustrates a number of potential issues about living in Wilson Township that were identified by survey participants.

**COMMUNITY PROBLEMS:** Respondents noted water quality, a lack of employment, and quality medical services as big problems. Road conditions, decreasing property values, and the quality of services for seniors are medium problems in the township. Air quality, unsightly or unsuitable business operations, property taxes, and the quality of recreational opportunities were seen as small problems. Other problems include a lack of residents' support for development near them, drugs, the operation costs for the plaza pool, and water rates.

**QUALITY OF LIFE:** 42.1% of respondents noted the quality of life in the area has become worse, noting a loss of businesses, a lack of quality jobs, modernization of the area including promotion of the area's tourism opportunities and natural resources. Respondents who believed the quality of life had improved cited some economic growth in the township and an increase in local businesses.

**GOVERNMENT:** About 95% of respondents believe the township should collaborate with other local governments to provide services with about 50% of respondents noting Wilson Township does not plan or work well with other entities (e.g. water issue between the city and township).

**DEVELOPMENT:** 58.8% of respondents believe the amount of development in the township is too little, noting a large number of vacant buildings, and a need to attract the Thunder Bay River Center and manufacturing businesses to the township. Over 80% of respondents supported the concept of controlled growth and proactive economic development.

**RESIDENTIAL:** About 55.6% of respondents noted residential development should be encouraged including rental homes, apartments, condos, and single-family homes.

**COMMERCIAL:** About 66.7% of respondents noted commercial development should be encouraged in the township to attract jobs and keep the tax base stable. Respondents suggested specialty shops, restaurants, and a nature center.

**INDUSTRIAL:** Over 55% of respondents supported the encouragement of industrial development with some noting a preference for light industrial or manufacturing.

**TELECOMMUNICATIONS:** Approximately 72.2% of respondents do not think high speed internet service is adequate in the county, noting the expense and lack of accessibility in rural areas.

Approximately 50% of respondents indicated the county's cellular service is adequate noting there are dead spots, a lack of infrastructure, and poor service.

**MEDICAL FACILITIES:** Over 72% of respondents are not satisfied with the medical facilities in Alpena County, noting patients are frequently transferred elsewhere and the hospital is buying out local practices.

**ROADS:** Over 60% of respondents are not satisfied with road conditions, maintenance, and construction. Respondents cited the need for more road funding, a lack of plowing and maintenance of gravel roads, and a lack of short detour routes if M-32 is closed due to an accident. About 61.1% of respondents are satisfied with snow removal.

The most identified road segments needing improvements include:

- M-32 and Herron Road intersection
- Indian Reserve
- North Herron Road
- 3<sup>rd</sup> Avenue
- Tawas Street between 7<sup>th</sup> and 4<sup>th</sup> Streets
- Bussie Road
- Taylor Hawks Road
- Long Rapids Road
- Prevo Road
- State Street from Ripley to Chisholm
- Wegmeyer Road
- Prevo Road
- Johnson Street

**Additional suggestions offered to the township:**

- Need more industry, retail shops, better medical treatment, better roads, and a more transparent government.
- Need more intergovernmental cooperation to further development in the area.
- Need to attract families for sustained growth. For example, if doctors with their families move to the area and the families are not happy, they will not stay.
- Too much is spent on plaza pool

## ALPENA COUNTY GOALS, OBJECTIVES, AND ACTION ITEMS

### COMMUNITY CHARACTER AND QUALITY OF LIFE

A community's "character" is an intangible item which identifies the attributes that make a community unique. While a community's character continually changes over time, attempting to preserve it can be a very important part of maintaining a community's cultural heritage and traditions. A community's "quality of life" are those factors, when taken in totality, help define the viability of a community as a place to live, work, and play.

#### **GOAL 1: MAINTAIN AND ENHANCE THE OVERALL QUALITY OF LIFE-FOR ALPENA COUNTY AND ITS RESIDENTS.**

##### **OBJECTIVES**

**Objective 1:** Promote Alpena County's quality of life to attract and retain families and individuals.

**Objective 2:** Encourage public feedback and input regarding ongoing efforts to improve the County's quality of life.

**Objective 3:** Build the sense of place through the implementation of programs throughout the community.

**Objective 4:** Utilize recreational amenities to enhance the overall quality of life in the county.

##### **ACTION ITEMS**

**Action 1:** Hold quarterly reviews of annual goals and objectives to ensure effective implementation of the Master Plan's goals and objectives.

**Action 2:** Create a public engagement policy for each local government to use.

**Action 3:** Research funding opportunities to enhance the county's overall quality of life.

**Action 4:** Support the development and promotion of recreational events and programs that use the existing recreational facilities.

**Action 5:** Support community groups that expand or develop new community events.

**Action 6:** Encourage and support the County concerning the improvement(s) and maintenance of the county parks and recreational facilities.

#### **GOAL 2 - MAINTAIN AND ENHANCE THE APPEARANCE AND CHARACTER IN ALPENA COUNTY.**

##### **OBJECTIVES**

**Objective 1:** Encourage all communities to preserve the integrity of existing neighborhoods by protecting them from the intrusion of incompatible uses.

**Objective 2:** Enhance community gateways through the implementation of land use controls, landscaping, and screening.

**Objective 3:** Strive to balance future growth and development in the county, while maintaining its rural character.

**Objective 4:** Investigate the implementation of conservation-based open space or cluster development options as a means to protect community character.

## **ACTION ITEMS**

**Action 1:** Actively engage in strategic planning to ensure the Master Plan's goals and objectives are met.

**Action 2:** Research the development of beautification efforts to enhance the appearance of public facilities and gateways into the County.

**Action 3:** Work with the County Board of Commissioners and participating Township Boards to expand community clean up days and recycling programs.

**Action 4:** Encourage public feedback and input through online forums and public meetings.

**Action 5:** Investigate the feasibility of burying utility lines, where appropriate.

**Action 6:** Support local government's efforts in enforcing blight ordinances and regulations since counties cannot enact blight ordinances.

**Action 7:** Encourage local governments to adopt uniform blight and nuisance ordinances.

## **GOVERNMENT SERVICES**

Governmental institutions should continually seek ways to operate in a transparent and cost effective manner. The efficient and consistent delivery of services to the public, and the cooperation and collaboration between local governments are critical to achieve this goal. Open lines of communication with the public will help assure constituents this is being pursued.

## **GOAL 1 - COOPERATE AND COLLABORATE WITH OTHER LOCAL GOVERNMENTS, NEIGHBORING COUNTIES, AND LOCAL BUSINESSES AND ORGANIZATIONS.**

### **OBJECTIVES**

**Objective 1:** Implement methods to coordinate and collaborate with the County Board of Commissioners, local governments, neighboring counties, businesses, and appropriate departments, agencies, and organizations.

**Objective 2:** Research techniques to generate economies of scale and cost savings through collaboration and coordination with other units of government.

**Objective 3:** Encourage and support the county's involvement on the Thunder Bay National Marine Sanctuary Advisory Council.

**Objective 4:** Participate in the Pure Michigan campaign for Alpena County and Sunrise Coast.

**Objective 5:** Participate in the US-23 Heritage Route program, the Up North Trails Initiative, and Alpena: Sanctuary of the Great Lakes.

### **ACTION ITEMS**

**Action 1:** Support the uniform development and adoption of land use controls among local governments.

**Action 2:** Develop and implement procedures for consistent and timely exchange of information between the County Planning Commission and the townships' and city's Planning Commissions, including but not limited to sharing all local zoning ordinance amendments submitted to the County Planning Commission.

**Action 3:** Implement active communication techniques between all local planning commissions.

**Action 4:** Recognize communities for outstanding planning and zoning efforts.

**Action 5:** Determine the feasibility of joint meetings, the use of intergovernmental committees, the creation of multi-jurisdictional planning commissions, and areas of coordination and cooperation between the county, neighboring counties, and/or local planning commissions. If feasible, participate in annual joint meetings with the townships and the city, and schedule a summit for all Planning Commissions in the county.

**Action 6:** Encourage the County Board of Commissioners to continue participating in the Michigan Association of Counties meetings and on the Alpena Intergovernmental Council. Schedule an initial joint meeting of the Michigan Townships Association with the County Board. Encourage the Township Boards to participate in the Michigan Township Association meetings.

**Action 7:** Consider cross-jurisdictional issues when reviewing community master plans and zoning ordinances.

## **GOAL 2 – EFFECTIVELY COMMUNICATE WITH THE PUBLIC.**

### **OBJECTIVES**

**Objective 1:** Support the County Board of Commissioners efforts to inform the public about the scope and value of County services.

**Objective 2:** Encourage feedback from a wider array of County residents on issues impacting Alpena County, including but not limited to improvement of infrastructure and community facilities, public safety services, and types of residential, commercial, and industrial developments.

**Objective 3:** Increase public awareness about the County Planning Commission.

### **ACTION ITEMS**

**Action 1:** Implement annual strategic planning sessions and encourage public participation.

**Action 2:** Solicit public feedback from all demographic sections in the county.

**Action 3:** Publish and promote planning-related information and resources.

## **GOAL 3 - ENSURE EFFECTIVE AND EFFICIENT COUNTY AND TOWNSHIP RESPONSES TO PUBLIC NEEDS.**

### **OBJECTIVES**

**Objective 1:** Work with the County Board of Commissioners to determine efficient methods to deliver county services.

**Objective 2:** Collaborate with the County Board of Commissioners regarding future planning issues in Alpena County.

**Objective 3:** Work with the County Board of Commissioners to ensure continued funding and support for the Alpena County Planning Commission.

### **ACTION ITEMS**

**Action 1:** Implement annual strategic planning sessions to organize efficient service delivery.

**Action 2:** Work with the County Board of Commissioners to implement the Master Plan's goals and objectives.

**Action 3:** The County Planning Commission will ensure Township Boards are aware of the value of master plans and/or assist the townships in implementing the goals and objectives from their master plans.



**Action 4:** Work with the County Board of Commissioners to ensure funding for adequate training for Planning Commission members and staff.

**Action 5:** Consider cross-jurisdictional issues when reviewing community master plans and zoning ordinances.

#### TRANSPORTATION SERVICES

Another essential part of ensuring a vital and healthy community is to maintain and improve the transportation system. The maintenance and expansion of transportation systems is complex and expensive. Changes in transportation infrastructure can have a profound impact on a community's environmental conditions and land use patterns. Therefore, it is necessary to continually and carefully plan for improvements.

#### GOAL 1 - DEVELOP, MAINTAIN, AND FUND A SAFE AND EFFICIENT MULTI-MODAL TRANSPORTATION SYSTEM.

##### OBJECTIVES

**Objective 1:** Plan and prepare for the future transportation needs of the entire county.

**Objective 2:** Support the County Road Commission in its efforts to plan and implement road improvements across the County.

**Objective 3:** Support, fund, and promote the implementation of the Road Inventory Asset Management System, the Alpena Area-Wide Transportation Plan, and the US-23 Heritage Route Management Plan.

**Objective 4:** Promote new commercial development at designated hubs and corridors in the Master Plan.

**Objective 5:** Encourage the continued development of public transportation options for the benefit of county residents.

**Objective 6:** Support the enhancement of the deep water port in the City of Alpena to better facilitate commercial shipping and tourism.

**Objective 7:** Support the continued development and expansion of the Alpena County Regional Airport as a regional commercial hub.

**Objective 8:** Maintain and improve rail service in Alpena County.

**Objective 9:** Advocate for uniform transportation access control across the county.

**Objective 10:** Promote the use of planning and zoning techniques to maintain the rural appearance of Alpena County and protect high quality recreation lands.

**Objective 11:** Determine the feasibility of developing and implementing a countywide wayfinding program designed to enhance tourism opportunities and promotion.

**Objective 12:** Continually maintain, implement, and promote the County Recreation Plan.

##### ACTION ITEMS

**Action 1:** Support the implementation of land use controls and techniques, such as clustering, shared parking, access management, and landscaping, to regulate commercial development and discourage linear strip development along state highways and primary county roads.

**Action 2:** Work with the County Board of Commissioners, the County Road Commission, local communities, property owners, developers, residents, and other entities to ensure road maintenance priorities are established and implemented.

**Action 3:** Work with the County Board of Commissioners and the County Road Commission to implement more frequent maintenance activities, such as dust control, road grading, road striping, and snow removal.

**Action 4:** Ensure planned transportation system improvements are included in the County Capital Improvements Plan and the Township Planning Commissions' Capital Improvement Plans.

**Action 5:** Determine the feasibility of developing a wayfinding program with the County Board of Commissioners and the County Road Commission. If feasible, conduct public education sessions about the merits of the wayfinding program.

**Action 6:** Work with the Thunder Bay Transportation Authority to ensure sufficient public transportation options for County residents and to educate the public about the public transportation services.

**Action 7:** Work with the City of Alpena and private facility owners to enhance the deep water port to better facilitate commercial shipping and tourism.

**Action 8:** Support participation in the Small Harbors Coalition and the Port Cities Collaborative.

**Action 9:** Determine ways to develop and expand the Alpena County Regional Airport.

**Action 10:** Improve rail service in Alpena County.

**Action 11:** Encourage and support the adoption of uniform transportation access control by local governments.

**Action 12:** Work with the County Board of Commissioners, County Road Commission, Township Boards, Michigan DNR, user groups, and the public to expand and improve the county's recreational trails.

**Action 13:** Work with the County Board of Commissioners and local governments to promote, develop, and/or maintain public water access sites.

**Action 14:** Address dockage and boating issues on inland lakes.

## **NATURAL AND CULTURAL RESOURCES**

The protection of a community's natural environment is imperative in maintaining quality of life and ensuring future generations live in healthy surroundings. A clean and attractive environment helps attract new businesses, residents, and tourists. Economic development and environmental protection are both necessary for a healthy community. Arts and culture generate significant cognitive, emotional, and social benefits in addition to creating a local identity and sense of place. Furthermore, arts and culture stimulate local and regional economies through the revitalization of commercial corridors, the generation of jobs and spending, and the attraction of tourists, businesses, and employees.

## **GOAL 1 – PRESERVE AND CONSERVE THE NATURAL ENVIRONMENT THROUGH THE PROTECTION OF GROUNDWATER, SURFACE WATER, AIR QUALITY, FISHERIES AND WILDLIFE, FORESTS, FARMLAND, WATERFRONT LANDS, WETLANDS, AND SCENIC VISTAS.**

## OBJECTIVES

**Objective 1:** Work cooperatively with communities, agencies, and organizations to develop studies and institute programs that address watershed, woodlands, wildlife, and ecosystem management.

**Objective 2:** Support studies that identify techniques to protect critical resources, wildlife habitat, water resources, ecological corridors, scenic areas and vistas, and other important ecological resources.

**Objective 3:** Encourage the adoption of zoning ordinance language to protect greenbelts, farmlands, forestlands, groundwater, and surface water.

**Objective 4:** Encourage the preservation of open spaces at strategic locations throughout the County.

**Objective 5:** Encourage the county and townships to effectively administer and enforce regulations, such soil erosion and sedimentation control, and to adopt needed ordinances, such as stormwater control.

**Objective 6:** Support natural resource education and technical programs to assist landowners, businesses, and communities.

**Objective 7:** Determine effective methods to work with local governments for natural resource protection.

## ACTION ITEMS

**Action 1:** Work with the County Board of Commissioners and Township Boards to develop local ordinances and policies to protect the county's natural resources, and to inform the public about the natural resource protections and regulations.

**Action 2:** Develop zoning ordinance language to protect greenbelts, farmlands, forestlands, groundwater, and surface water. Encourage local governments to adopt them and to cooperate with adjacent local units for the protection of these resources.

**Action 3:** Encourage the development of appropriate stormwater protection regulations.

**Action 4:** Encourage local officials to meet to ensure proper enforcement of existing regulations.

**Action 5:** Determine the feasibility of implementing wellhead protection zones in appropriate areas.

**Action 6:** Determine effective techniques and methods to preserve open spaces and scenic vistas in the county.

**Action 7:** Determine the feasibility of purchase of development rights or conservation easements as land use tools. Provide this information to the public.

**Action 8:** Work with the Conservation District, MSU Extension, the County Drain Commissioner, and Northeast Michigan Council of Governments (NEMCOG) to develop natural resource education and technical programs to assist landowners, businesses, and communities.

**GOAL 2 - RECOGNIZE THE IMPORTANCE OF AGRICULTURAL LANDS AS AN ECONOMIC BASE, AND THE HERITAGE AND WAY OF LIFE IN ALPENA COUNTY.**

**OBJECTIVES**

**Objective 1:** Promote agricultural growth and recognize the importance of all farms in Alpena County.

**Objective 2:** Encourage and support the preservation of farmland and woodlands, where feasible.

**Objective 3:** Discourage the conversion of farmland into other more intensive uses. Recognize farmland as contributing to the scenic and rural character of the County.

**Objective 4:** Discourage residential and farming land use conflicts.

**Objective 5:** Encourage the use of “Purchase of Development Rights”, “Transfer of Development Rights”, Clustering, and Conservation Easements to help farmers retain their agricultural acreage.

**Objective 6:** Recognize farmland as part of the County’s active economic base and potential source of jobs for county residents.

**Objective 7:** Support the maximization of the most beneficial agricultural use of agricultural lands in Alpena County, while encouraging environmentally sensitive farming practices to protect water quality without unnecessarily limiting the economic rights of agricultural landowners.

**Objective 8:** Encourage agricultural landowners to work cooperatively with supportive public agencies, such as MSU Extension, the Conservation District, USDA, and National Resource Conservation District.

**Objective 9:** Encourage farmers to produce, process, and market wholesale and retail products grown on their property.

**Objective 10:** Educate residents and local officials on Michigan’s Right to Farm Act.

**Objective 11:** Encourage the use of Generally Accepted Agricultural Management Practices (GAAMPs).

**Objective 12:** Establish Alpena County as a regional “local food hub.”

**ACTION ITEMS**

**Action 1:** Work with local, regional, and state organizations to preserve the economic viability of farming through the attraction of “value-added” industries for agricultural products.

**Action 2:** Encourage the adoption of zoning ordinances to include regulations that encourage and promote agricultural tourism activities, preserves large tracts of farmland, and creates rural residential transition zones to minimize residential and farmland land use conflicts.

**Action 3:** Encourage the use of “Purchase of Development Rights”, “Transfer of Development Rights”, Clustering, and Conservation Easements to help farmers retain their agricultural acreage. Provide this information to local residents.

**Action 4:** Support the development of web-based and print marketing local food promotions.

### **GOAL 3 - PRESERVE THE HISTORIC RESOURCES IN THE COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Work cooperatively with communities, agencies, and organizations to develop studies and institute programs that protect historic resources.

**Objective 2:** Support the creation of historic districts within the County.

**Objective 3:** Encourage private efforts to protect valuable historic resources.

**Objective 4:** Support historic resource education to assist landowners, businesses and communities.

#### **ACTION ITEMS**

**Action 1:** Collaborate with the County Board of Commissioners to promote the development of local ordinances and policies to protect historic resources in Alpena County.

**Action 2:** Encourage county and local officials to meet to ensure proper enforcement of existing regulations.

**Action 3:** Research and promote the adoption of zoning ordinance language to protect historic resources.

**Action 4:** Work with agencies and officials to inform the public about the benefits of historic preservation.

**Action 5:** Determine the feasibility of creating historic districts in the County.

**Action 6:** Encourage the inclusion of properties on the National Historic Register.

**Action 7:** Support the expansion of the Thunder Bay National Marine Sanctuary.

### **GOAL 4 – SUPPORT, PROMOTE, AND ADVANCE ARTS AND CULTURE IN ALPENA COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Encourage and support community organizations in developing cultural arts activities and educational programs.

**Objective 2:** Broaden awareness about the value of arts and culture in the community.

**Objective 3:** Support the expansion of arts and cultural organizations, activities, and programs to allow for their growth and prosperity in service to the community.

#### **ACTION ITEMS**

**Action 1:** Assist with educating the public about arts and culture opportunities.

**Action 2:** Assist with promoting and marketing the arts and cultural organizations, activities, and programs.

#### **COMMUNITY SERVICES AND FACILITIES**

In addition to the transportation infrastructure, other types of facilities, infrastructure, and services (e.g. water, sewer, fire, police, schools, etc.) constitute the foundation of a community. Well designed and managed infrastructure and services greatly adds to the community's livability. The continued maintenance of these facilities is essential and requires constant oversight. The expansion of infrastructure and services is extremely expensive and places additional funding burdens on the public.



Expansions that are not carefully planned can inadvertently cause environmental degradation and undesirable sprawl.

**GOAL 1 - MAINTAIN AND EXPAND, AS NEEDED, THE COMMUNITY FACILITIES, INFRASTRUCTURE, AND SERVICES TO ACCOMMODATE THE NEEDS OF RESIDENTS AND BUSINESSES.**

**OBJECTIVES**

**Objective 1:** Include planned improvements to community facilities and public infrastructures in an adopted County Capital Improvements Plan.

**Objective 2:** Secure state and federal funding for infrastructure improvements.

**Objective 3:** Identify services in need of attention during annual goal setting sessions.

**Objective 4:** Solicit public input regarding upgrades to community facilities.

**Objective 5:** Support the investigation into determining the need to create a water and sewer authority that oversees the public water and sewer services within the populated areas of the county and adjacent communities.

**Objective 6:** Collaborate with all of the dam owners in the county to assess the condition of the dams.

**ACTION ITEMS**

**Action 1:** Assist in the development and implementation of an annual Capital Improvements Plan.

**Action 2:** Participate in the Northeast Michigan Council of Governments' annual Community Economic Development Strategy (CEDs) process.

**Action 3:** Coordinate with the County Board of Commissioners regarding the need to maintain and improve the community facilities and infrastructure.

**Action 4:** Assist with conducting annual goal-setting sessions that include discussions about community facilities and infrastructure.

**Action 5:** Work with local governments to investigate joint utility authorities.

**GOAL 2 – ENSURE THE EFFICIENT DELIVERY OF EMERGENCY SERVICES IN THE COUNTY.**

**OBJECTIVES**

**Objective 1:** Encourage the efficient deployment of law enforcement services in the County.

**Objective 2:** Encourage expanded levels of Fire Department and Emergency Medical Service volunteers.

**Objective 3:** Support the planning efforts to upgrade the existing public safety equipment to ensure provision of efficient services, decrease response times to public safety incidents, and future telecommunication needs for public safety services.

**Objective 4:** Support the ongoing improvement of 9-1-1 operations.

**Objective 5:** Support Emergency Management operations.

**Objective 6:** Support the coordination of public safety services between communities to efficiently use tax dollars.

**Objective 7:** Determine the feasibility of collaborating or consolidating public safety services between local governments.

**Objective 8:** Support planning efforts for the present and future needs of the county jail.

#### **ACTION ITEMS**

**Action 1:** Encourage collaboration between the County Board of Commissioners, Alpena County Sheriff's Office, Michigan State Police, City of Alpena Police Department, Michigan DNR, and Coast Guard to ensure adequate law enforcement coverage within the County.

**Action 2:** Encourage collaboration to ensure adequate staffing of fire departments and emergency medical services.

**Action 3:** Incorporate future upgrades to the county's public safety equipment and telecommunications needs into the County Capital Improvements Plan.

**Action 4:** Support funding and training for the County 9-1-1 operations.

**Action 5:** Maintain and improve the 9-1-1 telecommunications facilities.

**Action 6:** Support continued funding and training for Emergency Management operations.

**Action 7:** Collaborate with Emergency Management regarding planning efforts. Participate in Emergency Management exercise operations.

**Action 8:** Work with the County Board of Commissioners and the Alpena County Road Commission to ensure the county road network provides quick and efficient travel for public safety vehicles.

**Action 9:** Encourage the implementation of land use controls that require sufficient private road access for emergency vehicles.

**Action 10:** Encourage the County Board of Commissioners to determine the feasibility of collaborating or consolidating public safety services with local governments.

### **GOAL 3 - ENCOURAGE THE EXPANSION OF THE COUNTY AS THE QUALITY MEDICAL SERVICES HUB IN NORTHEAST MICHIGAN.**

#### **OBJECTIVES**

**Objective 1:** Support the growth and expansion of Mid-Michigan Medical Center, other medical facilities, and the healthcare network within the county.

#### **ACTION ITEMS**

**Action 1:** Encourage and support the recruitment and retention of primary care providers and medical specialists.

**Action 2:** Encourage and support programs that focus on medical and behavioral prevention services.

### **GOAL 4 – ENSURE EFFICIENT AND ACCESSIBLE SOLID WASTE DISPOSAL METHODS IN ALPENA COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Encourage and support solid waste efforts by the Montmorency-Oscoda-Alpena Landfill Authority.

**Objective 2:** Support and promote the Alpena County Resource Recovery Facility.

**Objective 3:** Provide information to the public about solid waste and recycling options available in the County. Encourage local recycling efforts.

**Objective 4:** Encourage gasification efforts at the landfill.

#### **ACTION ITEMS**

**Action 1:** Determine the best locations to place recycling drop-off sites in the county.

**Action 2:** Work with the Montmorency-Oscoda-Alpena Landfill Authority and the Alpena County Resource Recovery Facility to educate the public about the available solid waste and recycling options.

### **GOAL 5 - SUPPORT THE CONSTRUCTION OF EFFICIENT COMMUNICATION NETWORKS WITHIN THE COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Determine methods to improve coverage for cell phone service in the County.

**Objective 2:** Research methods to upgrade available Internet services to high-speed capability.

**Objective 3:** Work with other agencies to diversify the internet and cell phone service providers.

#### **ACTION ITEMS**

**Action 1:** Work with Target Economic Development Corporation, Alpena County Emergency Management, and private vendors to upgrade cell phone coverage in the County.

**Action 2:** Work with Target Economic Development Corporation and private vendors to provide high speed Internet in the County.

**Action 3:** Determine the feasibility to develop and deploy countywide fiber optics or wireless internet networks.

**Action 4:** Collaborate with and support the Alpena County Fiber Optics Consortium.

### **GOAL 6 - SUPPORT THE GROWTH OF THE EDUCATIONAL SECTOR IN THE COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Support the expansion of college-level educational opportunities.

**Objective 2:** Assist with maintaining high quality primary and secondary education.

#### **ACTION ITEMS**

**Action 1:** Encourage increased funding from the State of Michigan for public schools.

**Action 2:** Support the expansion and growth for all degree and certificate programs at Alpena Community College and its affiliates.

### **RECREATION**

Alpena County is fortunate to have many natural resources and recreational opportunities to add to its quality of life and to make the county a more enjoyable place to live and work. The area's many recreational facilities and opportunities are also very important in attracting tourists, new residents, and businesses. Maintaining and improving recreational facilities and opportunities is vital for present and future generations.

## **2019 JOINT RECREATION PLAN GOALS**

The following goals and objectives are from the 2019 Joint Recreation Plan. Specific action items can be found in the plan at the following website:

[http://www.discovernortheastmichigan.org/downloads/combined\\_alpena\\_recreation\\_plan\\_2019\\_final\\_alpenacounty.pdf](http://www.discovernortheastmichigan.org/downloads/combined_alpena_recreation_plan_2019_final_alpenacounty.pdf)

### **SHARED RECREATION GOALS**

Alpena County, the Charter Township of Alpena, Green Township, Ossineke Township, and Wilson Township share the following recreational goals.

**GOAL 1: TO PROTECT, PROMOTE, AND PRESERVE THE COMMUNITIES, NATURAL RESOURCES, AND JOBS OF OUR AREA.**

**GOAL 2: TO ENSURE LOCAL GOVERNMENT INVOLVEMENT IN THE DEVELOPMENT, MAINTENANCE, AND PROMOTION OF OUR RECREATIONAL ASSETS AND OUR NATURAL RESOURCES AND RECOGNITION BY ALL AGENCIES IN OUR AREA THAT RECREATION IS FUNDAMENTAL TO THE QUALITY OF LIFE FOR RESIDENTS.**

**GOAL 3: TO BE AN ACTIVE PARTNER IN REGIONAL COLLABORATIONS TO PLAN, MAINTAIN, DEVELOP, AND PROMOTE NEW RECREATIONAL OPPORTUNITIES.**

**GOAL 4: TO IMPROVE THE QUALITY OF LIFE THAT IS CRITICAL TO OUR RESIDENTS' HEALTH, THE BUSINESS ENVIRONMENT, AND ATTRACTION OF OUR AREA TO THOSE VISITING AND CONSIDERING MOVING HERE.**

**GOAL 5: TO ENSURE ALL PEOPLE HAVE ACCESS TO RECREATION OPPORTUNITIES AND FACILITIES REGARDLESS OF AGE, SEX, INCOME, CULTURAL BACKGROUND, HOUSING ENVIRONMENT, OR ABILITIES.**

**GOAL 6: TO PRESERVE AND CONSERVE THE AREA'S NATURAL RESOURCES, PROTECT THEM FROM INVASIVE SPECIES AND DEGRADATION, RECOGNIZING THAT THEY ARE CRITICAL TO THE LONG-TERM SUSTAINABILITY OF OUTDOOR RECREATIONAL ACTIVITIES AND QUALITY OF LIFE.**

**GOAL 7: TO ENSURE THAT AREA RESIDENTS ARE INVOLVED IN THE RECREATION PLANNING PROCESS.**

### **ALPENA COUNTY OBJECTIVES AND ACTION ITEMS FROM THE 2019 RECREATION PLAN**

#### **General Objectives**

**Objective 1:** Encourage the pursuit of outside funding sources, such as State and federal grants, for recreational development and improvements.

**Objective 2:** Work in cooperation with communities and agencies to ensure access is available to surface water resources, such as lakes, rivers, Lake Huron and Misery Bay, for activities such as boating, fishing, kayaking, canoeing, swimming, ice fishing, snowmobiling, and ice boating.

**Objective 3:** Continue to work with land conservancies and public agencies to identify key parcels and set aside undeveloped properties for parks, nature preserves, and future recreational needs.

**Objective 4:** In a cooperative effort, designate snowmobile routes that connect communities to regional snowmobile networks by working with the appropriate local unit of government,

snowmobile groups, the County Road Commission, County Sheriff Department and the Michigan Department of Natural Resources.

**Objective 5:** Support the integration and expansion of non-motorized transportation facilities to link neighborhoods, communities, commercial areas and cultural destinations, parks, schools and regional parks and trails.

**Objective 6:** Promote Alpena as a trail destination. The Recreation Commission OR another organization or committee that includes economic development representatives could work together to develop and promote trails. Work with local businesses, health professionals and the hospital to promote biking and walking for health. Support efforts to tie together the various trail systems, existing and proposed such as a South Bay Trail loop as well as the Thunder Bay River water trail project.

**Objective 7:** Encourage improvements to non-motorized recreation trails such as cross-country ski trails, bike trails and horseback riding trails. Work with state agencies and local governments to continue to improve and enhance regional multi-use trails for year round use including the North Eastern State Trail (NEST) and the Alpena to Hillman Trail. Non-motorized transportation may be in the form of on-road bicycle facilities, sidewalks, side-paths, and shared use off-road paths. Great trails have great amenities and there would be need to add rest stops, benches, overlooks, interpretive signs and local access sites along the trails.

**Trail Objective 1:** Add amenities and access points along the NEST.

**Trail Objective 2:** Improve the surface and accessibility for the Alpena to Hillman Trail.

**Trail Objective 3:** Add amenities, trailhead and access points along the Alpena to Hillman Trail.

**Trail Objective 4:** Work with and coordinate the many volunteers that are maintaining existing trail.

**Trail Objective 5:** Work with the DNR to find the best location for mountain bike trails on existing DNR land.

**Trail Objective 6:** Non-motorized transportation facilities and trail connections:

- Connect from Alpena south to Oscoda (NOTE: A Coastal Zone Management Grant has been awarded to do trail planning in this corridor in 2019.) Connect to Partridge Point, Ossineke and Negwegon State Park.
- Connect to Norway Ridge via Werth Road and a connection from the Alpena to Hillman Trail.
- Create a connection from Alpena to Rockport and Long Lake County Park.
- Work with the DNR to find a solution to the 2 mile gap of trail corridor between M-65 and Salina Road and then improve trail from M-65 to Hillman.
- Connect Alpena to Hillman Trail with Optimist Acres and Alpena Sno-drifters barn.

**Trail Objective 7:** Water Trails:

- The Huron Blueway trail is planned but needs to be marketed; the County could facilitate a group to mark, sign, and promote this trail.
- Thunder Bay River water trail mapping project is wrapping up the mapping work in 2018. Look at public access and consider improvements, signage, maps and marketing.
- Need a livery to provide boats for both the Lake Huron/Thunder Bay water trail, the Thunder Bay River and the water trail in Lake Besser in the City.

**Trail Objective 8:** Create a trailhead for Norway Ridge and the Alpena to Hillman Trail from M-32.



**Objective 8:** Consider re-activating the Recreation Commission to build, manage, and maintain regional trail systems and coordinate with trail groups. Trail opportunities exist for all trail user groups (ATV/ORV, motorcycle, equestrian, non-motorized, bicycling, mountain biking, water trails, snowmobiles, and hiking).

**Objective 9:** Support and encourage improvements to area indoor and outdoor recreational, historical and cultural facilities and programs in accordance with locally adopted recreation plans or other officially adopted documents.

**Objective 10:** Create a Karst Discovery Trail that you could drive and or bike ride to each site. Consider purchase of the karst property along the NEST on Maple Grove Road as a day use park and trail destination. Work with the Michigan Karst Conservancy.

**Objective 11:** Encourage more and safer enjoyment of hunting and fishing.

**Objective 12:** Continually seek input from the public for planning future recreation needs and to promote safe use of recreational opportunities.

### **County Parks Objectives**

**Objective 1:** Increase usage of the campgrounds through improved advertising and working with local and state tourism organizations

**Objective 2:** Continue to make improvements to camp sites and associated facilities to improve user experience

**Objective 3:** Address Americans Disability Act (ADA) guidelines when making improvements to campground facilities

**Objective 4:** Expand family oriented activities and activities for kids

**Objective 5:** Improve boating and fishing opportunities

**Objective 6:** Provide opportunities for winter recreation at Manning Hill Park

**Objective 7:** Develop partnerships with community service clubs, organizations and agencies to assist with maintenance and improvements to parks

**Objective 8:** Seek funding from a variety of sources to support operations and capital investments.

**Objective 9:** Conduct water quality testing

### **Plaza Pool Objectives**

**Objective 1:** Enhance marketing and advertising efforts to increase awareness of public pool access to Alpena County residents

**Objective 2:** Provide a variety of programming offered to all age groups, abilities and fitness levels, including, education as to the health benefits of swimming

**Objective 3:** Develop partnerships with local clubs and area businesses to facilitate new user groups

**Objective 4:** Seek funding from a variety of sources to support operations and capital investments

**Objective 5:** Continue to explore opportunities to operate the pool in an energy efficient and cost-effective manner

**Objective 6:** Continue to make needed improvements to the facilities, including addressing ADA guidelines

### **Northern Lights Arena Objectives**

- Objective 1:** To continue to focus NLA as one of the economic centers for growth in the County of Alpena
- Objective 2:** Continue to explore opportunities to operate the arena and facilities in an energy efficient and cost effective manner
- Objective 3:** To become the center of Winter Sports in Northeastern Michigan, involving every form of ice-skating indoors and outdoors, cross-country skiing, snowmobile head point on the State and Regional Rails to Trails programs, snowshoeing trails, plus other opportunities
- Objective 4:** Seek development of a modern toboggan run to elevate Alpena as a destination for winter tourists
- Objective 5:** Continue to provide the community with excellent arena space for special events requiring large areas and seating for 1,000 to 1,500 persons
- Objective 6:** To seek funding and sponsorships for various programs for all age groups and families to use the assets of NLA to improve the quality of life in Alpena
- Objective 7:** To continue to raise funds and/or seek funding for capital improvement of the facility and supporting projects
- Objective 8:** Continue to make needed improvements to the facilities, including addressing ADA guidelines
- Objective 9:** In the summer, serve as the head point in Alpena for bikers and hikers using the rail to trails program
- Objective 10:** Work with Alpena County, Alpena Community College, APlex, local government and other groups to implement the Woodward Avenue Vision Plan and Center of Recreation

### **County Fairgrounds Objectives**

- Objective 1:** Continue to provide the site for the Alpena County Fair and other community activities and events
- Objective 2:** Provide opportunities for camping, open space, outdoor recreation and water access to the Thunder Bay River
- Objective 3:** Continue to make needed improvements to the facilities, including addressing ADA guidelines
- Objective 4:** Seek funding from a variety of sources to support operations and capital investments
- Objective 5:** Develop partnerships with public and private entities to expand opportunities for community use of Fairground facilities

### **RESIDENTIAL DEVELOPMENT**

Diverse and well-maintained housing choices are another vital component of a community since the strength of a local economy is based, in part, on the affordability and selection of the housing stock. As a strong economy is essential in a healthy community, adequate housing choices must be available for residents to feel economically secure and to attract new citizens to the area. A broad mix of demographics in a community provides for a well-rounded economy, which adds to the community's quality of life. Housing choices impact more than what type of structure an individual buys. The ability to access and afford housing choices impacts overall community development by influencing factors, such as church attendance, community organizations, the ability to access quality education, and convenient shopping opportunities. Therefore, a local community should actively encourage desirable residential development.

**GOAL 1 - PROVIDE SUITABLE HOUSING OPPORTUNITIES FOR ALL INCOME LEVELS AND AGE GROUPS, WHILE PRESERVING AND ENHANCING THE EXISTING SMALL-TOWN AND RURAL CHARACTER.**

**OBJECTIVES**

**Objective 1:** Assist in ensuring there is adequate and suitable housing available to all residents. Investigate the use of State and federal funding programs to meet these objectives.

**Objective 2:** Support new residential construction or the renovation of existing houses to meet the needs of all residents regardless of income.

**Objective 3:** Encourage a mix of housing developments in the County.

**Objective 4:** Balance new residential growth with the existing rural character of the County.

**Objective 5:** Assist in maintaining the tranquil quality of existing residential areas.

**Objective 6:** Encourage the maintenance of the existing housing stock to keep residential areas in good repair, appearance, usefulness and safety.

**Objective 7:** Encourage the development and installation of fiber optic/WiFi in residential areas.

**ACTION ITEMS**

**Action 1:** Support local governments in implementing zoning ordinance language to protect residential areas from intrusion by incompatible uses.

**Action 2:** Encourage quality infill development that is compatible with the existing housing stock and rural character, and will strengthen the residential areas.

**Action 3:** Determine effective techniques to preserve and maintain older homes as owner-occupied, single-family dwellings. Provide this information to the public.

**Action 4:** Collaborate with and support the county housing program.

**Action 5:** Work with the County housing program and local building departments to use incentive programs and legal approaches to eliminate structures in disrepair

**Action 6:** Support local governments in implementing zoning ordinance language to direct medium and high density residential development to lands with the capacity to support such development and that are adequately served by public services.

**Action 7:** Work with the County Board of Commissioners to pursue grant funding to encourage restoration and rehabilitation of older homes.

**Action 8:** Promote neighborhood enhancement programs (e.g. street tree plantings, clean-up days, neighborhood gardens, community pride programs, etc.).

**Action 9:** Work with local units to explore the possibility of secondary dwelling units in the County.

**Action 10:** Work with the County housing program and appropriate agencies to pursue affordable housing funding programs.

**Action 11:** Plan for the mixing of residential uses with commercial and office uses where possible.

**Action 12:** Support local governments in developing zoning ordinance language to implement minimum size standards for single- and multi-family housing.

**Action 13:** Support the implementation of rental housing programs to ensure high standards are maintained in single- and multi-family rental housing.

**Action 14:** Research housing preservation options through the implementation of historic preservation techniques.

**Action 15:** Advise local governments to develop standards that regulate the construction and use of wind turbines.

## ECONOMIC DEVELOPMENT

A strong economy is essential to a healthy community. Residents must have the opportunity to earn family-sustaining wages to be productive community members. A strong economy does not usually happen without the local community actively seeking ways to encourage desirable development. The U.S. and world economies are changing rapidly, which is profoundly affecting local economies. Alpena County has seen first-hand how quickly communities can lose high-paying employment due to new technological advances and competition from abroad. It is imperative, therefore, to plan ahead to ensure a vital economic future.

**GOAL 1 - PROVIDE FOR ECONOMIC GROWTH THAT CREATES A DIVERSIFIED ECONOMIC BASE AND IMPROVES THE COMPETITIVENESS OF THE COUNTY'S ECONOMY THROUGH THE ENHANCEMENT OF EMPLOYMENT OPPORTUNITIES AND THE PROFITABILITY OF BUSINESSES AND INDUSTRIES, WHILE MAINTAINING THE COMMUNITY CHARACTER AND ENVIRONMENT.**

### OBJECTIVES

**Objective 1:** Encourage local governments, community organizations, and the public to provide input on ongoing strategies to build Alpena's status as a regional marketplace in Northeast Michigan.

**Objective 2:** Support and cooperate with regional economic development organizations to determine techniques and methods to promote and develop all of Northeast Michigan.

**Objective 3:** Support reasonable land use and development regulations, and the development of infrastructure and facilities necessary to support economic development.

**Objective 4:** Encourage economic expansion through the promotion and attraction of new businesses to the State designated Renaissance Zones.

**Objective 5:** Support the attraction of health-related businesses and services to the Alpena area.

**Objective 6:** Strengthen the partnership between the county and the Alpena Combat Readiness Center to seek ways to expand the center's training activities.

**Objective 7:** Strive to balance economic development, while preserving the rural character of the County.

**Objective 8:** Encourage a diverse mix of new businesses.

**Objectives 9:** Promote the design concept of compact development to maximize potential land uses.

**Objective 10:** Encourage the consideration of public or private parking needs for all expansions and new developments.

## **ACTION ITEMS**

**Action 1:** Support the implementation of zoning ordinance language to protect commercial areas from intrusion by incompatible uses.

**Action 2:** Support the implementation of zoning ordinance language to concentrate future development in desired areas.

**Action 3:** Work with the appropriate economic development agencies to promote business retention, expansion, and diversification.

**Action 4:** Promote worker education and training programs.

**Action 5:** Work with the appropriate agencies to expand high-speed telecommunication coverage in the County.

**Action 6:** Determine the feasibility of creating Downtown Development authorities, Corridor Improvement authorities, or Tax Increment Finance authorities in the appropriate areas to improve local economic conditions.

**Action 7:** Support the implementation of streetscape projects to increase the attractiveness of commercial areas.

**Action 8:** Work with Target Alpena Development Corporation to implement existing business retention programs, and to encourage economic expansion through the promotion and attraction of new businesses.

**Action 9:** Support the expansion of economic opportunities at the Alpena County Regional Airport.

**Action 10:** Continue to investigate and implement methods to develop high speed telecommunication service in rural areas, while maintaining a rural character.

**Action 11:** Encourage the expansion of the infrastructure required to make the County attractive to commercial, industrial, and home-based business.

**Action 12:** Determine the feasibility of creating a County Brownfield Authority.

## **GOAL 2 - SUPPORT THE RETENTION AND EXPANSION OF JOBS.**

### **OBJECTIVES**

**Objective 1:** Assist in developing goods, services, recreation, and employment opportunities needed to retain families and individuals.

**Objective 2:** Support development that expands family sustaining job opportunities.

**Objective 3:** Encourage partnerships between community organizations, Alpena Community College, and Michigan Works to ensure education and training programs meet the needs of the area's present and future employers.

### **ACTION ITEMS**

**Action 1:** Support efforts to attract "daily shopping need" types of businesses into walkable locations.

**Action 2:** Encourage the development of all businesses.

**Action 3:** Encourage entrepreneurial training programs to assist residents in starting and maintaining small businesses.



### **GOAL 3 - EXPAND COMMERCIAL DEVELOPMENT OPPORTUNITIES IN THE COUNTY.**

#### **OBJECTIVES**

**Objective 1:** Diversify business opportunities through efforts to make Alpena County a vibrant community and desirable place to live and work.

**Objective 2:** Balance new commercial growth with the existing rural character of the County.

**Objective 3:** Work with the Chamber of Commerce, Target Alpena Development Corporation and the business community to develop and maintain healthy and vibrant community centers.

**Objective 4:** Determine the feasibility of developing a business incubator in the County.

**Objective 5:** Support development of the County's Renaissance Zones.

**Objective 6:** Encourage the retention of basic services for County residents.

#### **ACTION ITEMS**

**Action 1:** Form public-private partnerships to improve the local economy.

**Action 2:** Seek out and encourage the establishment of businesses that serve to fill the year-round needs of the County.

**Action 3:** Support the maintenance of identifiable central business districts.

**Action 4:** Support the development of mixed land uses in appropriate areas.

**Action 5:** Encourage the development of home-based businesses.

**Action 6:** Develop innovative planning and zoning techniques, such as design standards, to maintain the rural character of the County.

**Action 7:** Investigate tax incentive and abatement programs to encourage commercial development.

**Action 8:** Support zoning regulations that establish and enforce standards to require businesses to maintain an aesthetically desirable appearance.

**Action 9:** Investigate and support business façade improvement programs.

**Action 10:** Encourage small neighborhood businesses to serve residents and support a walkable environment.

**Action 11:** Encourage and support a coordinated effort for marketing and recruitment of small businesses.

### **GOAL 4 - PROMOTE AND ENCOURAGE TOURISM AND AGRICULTURAL-BASED TOURISM ACTIVITIES.**

#### **OBJECTIVES**

**Objective 1:** Promote cultural, historical, industrial, and environmental attractions to a broad market.

**Objective 2:** Establish Alpena County as a year-round tourism destination.

**Objective 3:** Promote eco-tourism and agricultural tourism opportunities.

## **ACTION ITEMS**

**Action 1:** Work with local governments, the Chamber of Commerce, and the Convention and Visitor’s Bureau to develop strategies to market the area as a tourism destination.

**Action 2:** Encourage community organizations to develop strategies that build on the idea of Alpena County as a destination.

**Action 3:** Support the promotion of the Alpena area as the “Sanctuary of the Great Lakes.”

**Action 4:** Promote sustainable, year-round tourism through the implementation of spring, summer, fall and winter festivals, and other activities that will attract people to the County.

**Action 5:** Support the tourism marketing and promotion efforts for regional entities, such as the US-23 Heritage Route, the Sunrise Coastal Coalition, and the Michigan Arts & Culture Northeast.

**Action 6:** Support the development and expansion of the Thunder Bay National Marine Sanctuary and Underwater Preserve.

**Action 7:** Support the improvements to recreational facilities in the County.

**Action 8:** Encourage the sale of local produce in the County’s commercial areas and through home-based businesses.

**Action 9:** Work with local, regional, and state organization to attract “value-added” industries for agricultural products.

**Action 10:** Determine the feasibility of developing a tourism-oriented wayfinding program.

## **GOAL 5 - INVESTIGATE AND SUPPORT OPPORTUNITIES FOR THE EXPANSION OF THE COUNTY’S INDUSTRIAL BASE.**

### **OBJECTIVES**

**Objective 1:** Provide the necessary services, facilities, and programs to expand industrial development opportunities in Alpena County.

**Objective 2:** Initiate public education opportunities regarding the nature and economic impact of industrial development.

**Objective 3:** Balance new industrial growth with the existing rural character of the County.

**Objective 4:** Determine suitable locations for industrial development.

### **ACTION ITEMS**

**Action 1:** Support the implementation of zoning ordinance language to protect industrial areas from intrusion by incompatible uses.

**Action 2:** Support the implementation of zoning ordinance language to direct industrial development to land that has the capacity to support such development and is adequately served by public roads and utilities.

**Action 3:** Research tax incentive and tax abatement programs to encourage industrial development.

**Action 4:** Encourage infrastructure expansion, where needed, to make the county attractive to industrial development.

## GREEN TOWNSHIP GOALS AND OBJECTIVES

The Green Township Planning Commission developed the goals and objectives of this master plan to provide guidance to the Planning Commission and Township Board.

### AGRICULTURAL LANDS

#### **GOAL 1: RECOGNIZE THE IMPORTANCE OF AGRICULTURAL LANDS AS AN ECONOMIC BASE AND WAY OF LIFE IN GREEN TOWNSHIP.**

**Objective 1:** Maintain and provide for the preservation of farmland and woodlands, where feasible.

**Objective 2:** Discourage the conversion of farmland into other more intensive uses. Recognize farmland as contributing to the scenic and rural character of the Township.

**Objective 3:** Maximize the most beneficial agricultural use of agricultural lands in Green Township, while encouraging environmentally sensitive farming practices to protect local surface and ground water quality without unnecessarily limiting the economic rights of agricultural landowners.

**Objective 4:** Encourage agricultural landowners to work cooperatively with supportive public agencies, such as the local Michigan State University Extension, Alpena-Montmorency Conservation District, USDA, and National Resource Conservation District offices.

**Objective 5:** Research the creation and adoption of a farmland preservation ordinance.

**Objective 6:** Recognize the importance and encourage the continued opportunity to purchase fresh foods produced on local agricultural land.

**Objective 7:** Continually meet with local farmers to understand trends in local agriculture and modify zoning to accommodate. Be especially responsive to economic development opportunities for farmers that will help ensure long term success of this important industry.

### RECREATION, PUBLIC LANDS, AND OPEN SPACE

#### **GOAL 1: PRESERVE OPEN SPACE AND PRESERVE AND IMPROVE ACCESS TO PUBLIC LANDS AND WATER, RECREATIONAL TRAILS AND PUBLIC PARKS FOR THE ENJOYMENT OF RESIDENTS, VISITORS AND FUTURE GENERATIONS.**

**Objective 1:** Continually update the Township Recreation Plan, as needed, to identify and prioritize needed community recreational facilities.

**Objective 2:** Support the continued existence of and access to public lands in the Township.

**Objective 3:** Pursue outside funding sources, such as grants, for land acquisition and recreational development.

**Objective 4:** Encourage the preservation of open space.

**Objective 5:** Retain and improve public water access sites for residents, seasonal residents and visitors.

**Objective 6:** Facilitate the establishment of snowmobile route to enhance the winter recreational base.

**Objective 7:** Support the expansion, creation and maintenance of non-motorized recreation trails such as cross-country ski trails, bike trails and horse riding trails on both public and private lands.

**Objective 8:** Support the expansion and creation of motorized recreation trails such as ORV and ATV trails on public and private land in locations appropriate for such uses.

**Objective 9:** Developments such as proposed subdivisions, site condominiums, planned unit developments, and commercial and light industrial developments should be encouraged to provide or participate in the development of recreational facilities and the preservation of open space through zoning and review procedures.

**Objective 10:** Recognize the importance of prime hunting lands within the Township and encourage the preservation of these lands.

**Objective 11:** Promote the existing recreational facilities in the township.

## NATURAL ENVIRONMENT

### **GOAL 1: PROTECT AND PRESERVE THE NATURAL ENVIRONMENT BY PROTECTING GROUNDWATER, SURFACE WATER, ENVIRONMENTALLY SENSITIVE AREAS, HIGHLY EROSION AREAS, WOODLANDS, WETLANDS, OPEN SPACE, FISH AND WILDLIFE.**

**Objective 1:** Encourage a land use pattern that is oriented to the natural features and water resources of the area. Evaluate type and density of proposed developments based on soil suitability; slope of land; potential for ground water and surface water degradation and contamination; compatibility with adjacent land uses; and impacts to sensitive natural areas like wetlands, greenways and wildlife corridors.

**Objective 2:** Limit and control the density and type of residential and commercial development adjacent to lakes, ponds, streams, and wetlands.

**Objective 3:** Maintain greenbelt areas adjacent to lakes, ponds, streams, and wetlands through development of a greenbelt section in the zoning ordinance.

**Objective 4:** Implement groundwater protection and stormwater management regulations in the zoning ordinance, while encouraging the continued natural use of wetlands as groundwater recharge, stormwater filtering and stormwater holding areas.

**Objective 5:** Limit development on steeply sloped areas. Require erosion control measures where construction is permitted. Require slope stabilization and revegetation on disturbed slopes or in extraction areas.

**Objective 6:** Limit development on poorly drained soils and soils with severe limitations for septic systems.

**Objective 7:** Discourage the establishment of new oil and gas wells and/or encourage environmentally sound practices by oil and gas well developers so as not to negatively affect water quality of the Township.

**Objective 8:** Discourage any commercial or industrial practice that will negatively affect air, water and environmental quality.

**Objective 9:** Preserve topography such as slopes, valleys and hills by limiting the amount of cut and fill during site development.

**Objective 10:** Encourage the integration of wetlands, woodlands and meadows into site development as aesthetic and functional features.

**Objective 11:** Encourage the retention of agricultural lands, forest lands and ecological corridors through available mechanisms such as open space and farmland agreements, forest stewardship programs, and conservation easements, as well as zoning incentives or through the development of a Purchase of Development Rights and Transfer of Development Rights program.

**Objective 12:** Encourage the use of native plant species and naturalized landscape designs, where appropriate, to enhance the communities' existing character.

**Objective 13:** Encourage and support sound wildlife management practices at the local and State level.

## COMMUNITY CHARACTER

### **GOAL 1: MAINTAIN THE DESIRABLE ASPECTS OF THE COMMUNITY CHARACTER OF GREEN TOWNSHIP WHILE WORKING TOWARD RESOLVING THE PROBLEMATIC ASPECTS.**

**Objective 1:** Utilize the existing resources of Green Township in a productive manner to maintain the community character and address problems.

**Objective 2:** Increase employment opportunities for young adults in order to allow them to remain and prosper in Green Township.

**Objective 3:** Work toward attracting young adults and families to the area to offset the aging population.

**Objective 4:** Work toward attracting young people with professional backgrounds to the area.

**Objective 5:** Encourage local programs that seek to alleviate poverty and associated issues.

**Objective 6:** Encourage social, governmental, and economic practices which maintain the rural, tranquil community character of Green Township.

**Objective 7:** Work with larger communities in the area to provide them with a stable work base consisting of Green Township residents.

**Objective 8:** Work with local utilities, road commission, and internet service providers to provide broadband access to all homes and businesses. This is a critical need to retain and attract youth and talent to the area.

## PLANNING AND COMMUNITY DEVELOPMENT

### **GOAL 1: GUIDE FUTURE DEVELOPMENT IN A MANNER THAT WILL PROTECT EXISTING DEVELOPMENT; PRESERVE RURAL COMMUNITY CHARACTER; AND CONSERVE NATURAL RESOURCES AND ENVIRONMENT, YET MEETS THE LONG-TERM NEEDS OF THE COMMUNITY.**

**Objective 1:** Encourage innovative development options to increase the tax base while maintaining the essential character of the community.

**Objective 2:** Control the location of new development by designating appropriate areas for new residential, commercial, light industrial and resort/recreational land uses.



**Objective 3:** Continue to implement landscape requirements for new development, such as appropriate setbacks, retention of green space, buffer zones between differing land uses, and screened parking areas. Encourage roadside landscaping.

**Objective 4:** Develop open space residential and commercial development design standards to preserve scenic views, rural character, farmland, meadows, woodlands, steep slopes and wetlands with a target of preserving 50 percent of the land within a development.

**Objective 5:** Continue to apply standards in the site plan review process to encourage development with minimal negative environmental impact to protect land, air, and water resources.

**Objective 6:** Encourage through incentives the redevelopment of priority sites within the Township.

**Objective 7:** Improve regulations and standards to protect the community against high noise levels and exterior lighting glare.

**Objective 8:** Consider adopting access management standards for M-32 and M-65 if development becomes concentrated in certain areas.

**Objective 9:** Discourage the development of an interstate highway (limited access, multi-lane divided highway) through the Township.

**Objective 10:** Ensure the standards that regulate the placement and size of cellular, communication and transmission towers are updated to respond to any changes in State and Federal law.

**Objective 11:** Ensure the nuisance ordinance and enforcement procedures are adequate and being implemented consistently to eliminate issues of accumulating junk and abandoned vehicles thereby improving the quality of housing and protecting property values.

**Objective 12:** Make the redevelopment of abandoned sites a priority of the township.

**Objective 13:** Continue to enforce the sign section of the zoning ordinance to regulate the size and location of signs and billboards in an effort to minimize clutter, confusion, aesthetic degradation, and traffic hazards.

**Objective 14:** Enforce all Township ordinances in a consistent and fair manner.

**Objective 15:** Continue to engage in a site plan review process that assures consistent application of the zoning ordinance and streamlined review processes.

**Objective 16:** Ensure all appointed and elected officials participate in continuing education.

**Objective 17:** Create a consistent communications practice to ensure residents and business owners in the Township are aware of the Township's activities, how to get involved in the planning process, and what is required when seeking zoning approval.

**Objective 18:** Ensure all planning and zoning information is available 24/7 online.

**Objective 19:** Through the zoning ordinance, continue to require new commercial development to use landscaping and buffers, and encourage shared parking with adjacent businesses, and limited access points onto county roads.

## GOVERNMENT

### **GOAL 1: PROVIDE SERVICES IN AN EFFICIENT, ENVIRONMENTALLY RESPONSIBLE AND CARING MANNER TO MEET THE NEEDS OF RESIDENTS, PROPERTY OWNERS, BUSINESSES, AND VISITORS.**

**Objective 1:** Ensure a responsible fiscal policy and budget process to finance the Township government.

**Objective 2:** Ensure transparency in local government operations. Utilize a strong online presence for 24/7 access to development requirements.

**Objective 3:** Provide clear communications through a communications policy to ensure the public knows about Township operations, meetings, current projects, and how to get involved.

**Objective 4:** Promote intergovernmental and regional cooperation on issues of mutual concern.

**Objective 5:** Work cooperatively with adjacent townships in providing guidance and input on zoning decisions that impact the Township.

**Objective 6:** Continue to work with adjacent communities to provide emergency services to Township residents

**Objective 7:** Maintain communication with the Department of Natural Resources to provide input into the usage and management of the public lands in the Township.

**Objective 8:** Promote the involvement of volunteers in the governing process.

**Objective 9:** Utilize the proactive master planning process as a check and balance on decision-making.

**Objective 10:** Continue to monitor and assess Green Township facilities and review existing ordinances.

## INFRASTRUCTURE, COMMUNITY FACILITIES, AND COMMUNITY SERVICES

### **GOAL 1: IMPROVE THE TOWNSHIP'S TRANSPORTATION SYSTEM, PUBLIC UTILITIES, TELECOMMUNICATIONS SYSTEM, AND COMMUNITY FACILITIES AND SERVICES TO ACCOMMODATE THE NEEDS OF RESIDENTS AND VISITORS.**

**Objective 1:** Develop a capital improvements plan to address the long term needs for road improvements, Fire Department needs, recreational facilities, and a community center. Ensure the Planning Commission is involved in the annual Capital Improvements Program development.

**Objective 2:** Continue to maintain and, when necessary, expand the Township cemeteries.

**Objective 3:** Encourage the efficient use and maintenance of existing roadways and infrastructure.

**Objective 4:** Work with the Alpena County Road Commission to plan for upgrading of roads, maintenance of existing roads, and vehicular and pedestrian safety at intersections and on roadways.

**Objective 5:** Ensure that the transportation system is efficient and safely accessible for all users.

**Objective 6:** Direct development to areas with existing infrastructure and where infrastructure is not adequate require developers to fund the upgrading of infrastructure to support proposed new development.

**Objective 7:** Support the expansion of public transit to better serve the needs of senior citizens and other transit dependent Township residents.

**Objective 8:** Encourage utility companies to provide affordable options for fuel, electric, and telecommunications service to township residents.

**Objective 9:** Support the development of a community school as well as options for alternative education.

**Objective 10:** Encourage and work toward the development of affordable telecommunications options for Township residents.

**Objective 11:** Encourage and support efforts to provide child care, senior care, and expand health care options for the Township's residents.

**Objective 12:** Encourage a greater police presence in the Township to address growing social problems.

## RESIDENTIAL LAND USES

### **GOAL 1: ALLOW FOR SUITABLE HOUSING OPPORTUNITIES FOR ALL INCOME LEVELS AND AGE GROUPS, INCLUDING YEAR-ROUND RESIDENTS AND SEASONAL RESIDENTS.**

**Objective 1:** Designate areas appropriate for all types of residential development including single family, multi-family, elderly housing, condominium, low to moderate income rental complexes, and extended care facilities.

**Objective 2:** Explore options for more types of residential housing types including smaller minimum floor areas for residences and multi-use housing where appropriate.

**Objective 3:** To preserve open space and vital natural resources, encourage the development option of clustered single-family housing, in buildable portions of the Township.

**Objective 4:** Encourage new residential development to be sited in a manner that protects the rural character and scenic views by maintaining proper setbacks and providing landscaping screening as appropriate.

**Objective 5:** Discourage large scale residential development in the absence of documented demand for such development.

**Objective 6:** Encourage existing housing stock to be kept in good repair, appearance, usefulness and safety.

**Objective 7:** Require adequate buffers and transition areas between residential and non-residential uses to maintain property values and visual attractiveness.

**Objective 8:** Discourage areas of incompatible uses in order to preserve the integrity of existing residential areas.

## COMMERCIAL AREAS AND ACTIVITIES

### **GOAL 1: PROMOTE A VARIED AND APPROPRIATE BUSINESS ENVIRONMENT, AND ENCOURAGE RETENTION, EXPANSION AND ENHANCEMENT OF RURALLY-COMPATIBLE BUSINESSES TO MEET THE NEEDS OF RESIDENTS AND TOURISTS, WHILE PRESERVING THE NATURAL ENVIRONMENT AND RURAL CHARACTER OF THE COMMUNITY.**

**Objective 1:** Encourage the establishment of service providers in the Township to address the issues of health care, childcare, and the aging population.

**Objective 2:** Support the existing commercial establishments. Guide new commercial development into appropriate and desirable areas, through the master plan and zoning ordinance.

**Objective 3:** Seek out and encourage the establishment of businesses that serve to fill gaps in the services needed in the Township.

**Objective 4:** Encourage environmentally-friendly commercial establishments.

**Objective 5:** Through the Zoning Ordinance, establish and enforce standards to require businesses to maintain an aesthetically desirable appearance.

**Objective 6:** Develop and utilize innovative planning and zoning techniques, such as clustering, shared parking, access management, and landscaping to regulate commercial development along primary county roads.

**Objective 7:** Increase safety and reduce the visual impact of signs and billboards, by controlling their size, number, illumination, and configuration.

**Objective 8:** Make parking (public and private) needs a consideration for all expansions and new development.

**Objective 9:** Require landscape buffers where commercial uses are adjacent to residential uses.

**Objective 10:** Regulate home occupations and home based businesses to assure compatibility with existing residential areas.

**Objective 11:** Continue to promote businesses within Green Township through the creation and distribution of print materials.

**Objective 12:** Encourage the development of specialty shops and home businesses.

## INDUSTRIAL LAND USES

### **GOAL 1: ENCOURAGE THE ESTABLISHMENT OF ENVIRONMENTALLY-FRIENDLY LIGHT INDUSTRIES TO DIVERSIFY THE LOCAL ECONOMY AND TO CREATE MORE STABILITY AND SELF-SUFFICIENCY FOR THE COMMUNITY.**

**Objective 1:** Ensure that light industrial uses are developed in an environmentally sensitive manner, are harmonious with the existing community and are located in areas identified in the future land use plan.

**Objective 2:** Encourage light industries and high tech industries that do not pollute the air, soil, or water nor offend because of noise, odor, or visual impact to locate in zoned industrial areas within the Township. Due to the lack of public water and sewer, these industries should not require high water usage or generate large amounts of septic outflow.

**Objective 3:** Require landscape buffers where industrial uses are adjacent to other land uses.

**Objective 4:** Ensure that extractive development takes place in an environmentally sensitive manner. Require landscape buffers around extractive operations to screen adjacent properties and public roadways. Establish criteria for reclaiming extractive areas after the operation is complete.

## OSSINEKE TOWNSHIP GOALS AND OBJECTIVES

The Ossineke Township Planning Commission developed the goals and objectives of this master plan to provide guidance to the Planning Commission and Township Board.

### COMMUNITY CHARACTER AND QUALITY OF LIFE

A community's "character" is an intangible item which identifies the attributes that make a community unique. While a community's character will continually change over time, attempting to preserve it can be very important in maintaining a community's cultural heritage and traditions. A community's "quality of life" are those factors, when taken in totality, that help define the viability of a community as a place to live, work, and play.

#### **GOAL 1: MAINTAIN AND ENHANCE THE OVERALL QUALITY OF LIFE IN OSSINEKE TOWNSHIP.**

##### **OBJECTIVES**

**Objective 1:** Actively engage in strategic planning to implement the Master Plan's goals and objectives and to balance the township's rural character with its future growth and development.

**Objective 2:** Promote the quality of life in Ossineke Township to attract new families and individuals to the township.

**Objective 3:** Keep apprised of the Medical Marijuana issue and respond accordingly to changes in the Medical Marijuana law. Continue to educate Planning Commission members about the issue.

#### **GOAL 2: MAINTAIN AND ENHANCE THE APPEARANCE AND CHARACTER IN OSSINEKE TOWNSHIP.**

##### **OBJECTIVES**

**Objective 1:** Preserve the integrity of existing neighborhoods and residential areas by protecting them from the intrusion of incompatible uses.

**Objective 2:** Enhance community gateways and public facilities through the implementation of land use controls, beautification efforts, landscaping, and screening.

**Objective 3:** Enforce the zoning ordinance and actively engage in strategic planning to implement the Master Plan's goals and objectives and to balance the township's rural character with its future growth and development.

**Objective 4:** Investigate the implementation of design standards, conservation-based open space, cluster development, and/or other innovative planning and zoning techniques to protect community character.

**Objective 5:** Investigate and address blight issues in the township. Research effective techniques to address blight issues.

**Objective 6:** Utilize planning and zoning techniques to maintain the rural appearance in Ossineke Township.

### GOVERNMENT SERVICES

Governmental institutions should continually seek ways to operate in the most cost effective manner that will make the organization more efficient and transparent to its constituents. One of the most critical aspects in achieving this goal is the efficient and consistent delivery of services to the public. Cooperation and collaboration between local units of government is also an important part of achieving



this goal. Open lines of communication with the public will help to assure constituents that this is being pursued.

**GOAL 1: COOPERATE AND COLLABORATE WITH LOCAL UNITS OF GOVERNMENT, ORGANIZATIONS, AND AGENCIES.**

**OBJECTIVES**

**Objective 1:** Work with the Township Board to determine ways to effectively communicate with other local and regional governments, the Alpena County Planning Commission, and other departments, agencies, and organizations.

**Objective 2:** Explore the feasibility of holding joint meetings and/or the feasibility of creating a multi-jurisdictional planning commission with other local governments.

**Objective 3:** Determine ways to generate cost savings through coordination and collaboration other local units of government, local planning commissions, organizations, and agencies.

**Objective 4:** Determine the feasibility of developing and adopting uniform land use controls with other local governments.

**Objective 5:** Encourage the Township Board to participate in local meetings for the Michigan Township Association and the Alpena Intergovernmental Council.

**Objective 6:** Encourage the Planning Commission to participate with local and regional economic development efforts.

**Objective 7:** Work with the Thunder Bay Transportation Authority to educate the public about public transportation services.

**GOAL 2: EFFECTIVELY COMMUNICATE WITH THE PUBLIC.**

**OBJECTIVES**

**Objective 1:** Support the Township Board in expanding awareness about the township's services, including but not limited to the development of a township website.

**Objective 2:** Encourage public feedback on issues impacting Ossineke Township, including but not limited to the quality of life, appearance, character, infrastructure, community facilities, public safety, recreation, and residential and commercial developments.

**Objective 3:** Encourage public feedback from a diverse demographic of township residents.

**Objective 4:** Increase public awareness about the township's Planning Commission.

**Objective 5:** Encourage public participation at annual strategic planning sessions and during quarterly reviews of annual goals and objectives.

**Objective 6:** Provide information about purchase of development rights, transfer of development rights, clustering, and/or conservation easements to the public.

**Objective 7:** Develop a public communication and engagement policy to encourage public input.

### **GOAL 3: ENSURE AN EFFECTIVE AND EFFICIENT TOWNSHIP RESPONSE TO PUBLIC NEEDS.**

#### **OBJECTIVES**

**Objective 1:** Work with the Township Board to determine ways to efficiently deliver and make township services more accessible to the public.

**Objective 2:** Determine the feasibility of holding annual joint Planning Commission and Township Board meetings.

**Objective 3:** Collaborate with the Township Board on future township planning efforts and the Capital Improvement Program.

**Objective 4:** Work with the Township Board to implement the Master Plan's goals and objectives.

**Objective 5:** Work with the Township Board to ensure continued support and funding for the Ossineke Township Planning Commission.

**Objective 6:** Work with the Township Board to ensure funding for ongoing training for the Township Zoning Administrator.

**Objective 7:** Hold annual strategic planning sessions to organize the efficient delivery of services.

**Objective 8:** Hold a quarterly review of the annual goals and objectives to ensure effective implementation.

**Objective 9:** Work with the Township Board to electronically publish the Planning Commission's meeting agendas, notices, and minutes.

**Objective 10:** Consider cross-jurisdictional issues when reviewing community master plans and zoning ordinances.

### **GOAL 4: IMPLEMENT EFFECTIVE BLIGHT AND NUISANCE CONTROLS WITHIN THE TOWNSHIP.**

#### **OBJECTIVES**

**Objective 1:** Work with the Township Board, Zoning Administrator, and the Township Attorney to enforce the blight and nuisance regulations.

**Objective 2:** Determine the feasibility of working with neighboring governments to adopt and enforce uniform blight and nuisance regulations.

**Objective 3:** Work with the Township Board to increase public awareness about the blight and nuisance regulations.

**Objective 4:** Create incentives for redevelopment of priority sites.

#### **TRANSPORTATION SERVICES**

Maintaining and improving a community's transportation system is an essential part of a vital and healthy community. Transportation systems are complex and expensive to maintain and expand. Changes in transportation infrastructure can have a profound impact on a community's environmental conditions and land use patterns. It is therefore necessary to continually and carefully plan for ongoing improvements.

## **GOAL 1: DEVELOP, MAINTAIN, AND FUND A SAFE AND EFFICIENT MULTI-MODAL TRANSPORTATION SYSTEM.**

### **OBJECTIVES**

**Objective 1:** Include planned road system improvements in a Township Capital Improvements Plan.

**Objective 2:** Direct new commercial development to areas designated in the Master Plan and Zoning Ordinance.

**Objective 3:** Regulate commercial development along state highways and primary township roads through the implementation of land use techniques, such as clustering, shared parking, access management, and landscaping.

**Objective 4:** Implement land use controls to discourage linear strip developments along the state highway and primary township roads.

**Objective 5:** Support the County Road Commission in planning and implementing road improvements in the township.

**Objective 6:** Work with the Township Board, County Road Commission, local communities, property owners, developers, residents, and other entities to ensure road maintenance priorities are established and implemented, including but not limited to more frequent maintenance activities (dust control, road grading, road striping, and adequate and timely snow removal).

**Objective 7:** Work with the Township Board and County Road Commission to determine the feasibility of an east-west connector road through the township.

**Objective 8:** Determine the township's future transportation needs, including consideration of people of all abilities, income levels, and transportation needs.

**Objective 9:** Ensure walking and bicycling are viable transportation options in the township.

**Objective 10:** Work with the Township Board and County Road Commission to determine the feasibility of implementing a township-wide wayfinding program to enhance tourism opportunities and promotion.

**Objective 11:** Conduct public education sessions about the merits of a wayfinding program.

**Objective 12:** Work with the Township Board, County Road Commission, Michigan DNR, user groups, and the public to promote, maintain, and expand the township's recreational trails.

**Objective 13:** Maintain an updated township trails plan to establish a network of connected non-motorized and motorized trails across the township that identifies existing trails and proposes connector trails to link the existing system.

**Objective 14:** Work with the Thunder Bay Transportation Authority to ensure sufficient public transportation options for township residents.

### **NATURAL AND CULTURAL RESOURCES**

The preservation and conservation of a community's natural environment is imperative to maintaining the quality of life and ensuring future generations live in healthy surroundings. A clean and attractive environment attracts new businesses, residents, and tourists. Economic development and environmental protection are both necessary for a healthy community.

**GOAL 1: PRESERVE THE NATURAL ENVIRONMENT THROUGH THE PROTECTION OF GROUNDWATER, SURFACE WATER, AIR QUALITY, FISHERIES AND WILDLIFE, FORESTS, FARMLAND, WATERFRONT LANDS, WETLANDS, AND SCENIC VISTAS.**

**OBJECTIVES**

**Objective 1:** Work with local governments to protect and conserve natural resources.

**Objective 2:** Work cooperatively with communities, agencies, and organizations to develop studies and institute programs that address watershed, woodlands, wildlife, and ecosystem management.

**Objective 3:** Support studies that identify ways to protect critical resources, wildlife habitat, water resources, ecological corridors, scenic areas and vistas, and other important ecological resources.

**Objective 4:** Encourage the preservation of open spaces at strategic locations in the Township.

**Objective 5:** Determine effective techniques to preserve and conserve open spaces and scenic vistas in the township.

**Objective 6:** Meet with county and township officials to ensure proper administration and enforcement of regulations, such as soil erosion and sedimentation control.

**Objective 7:** Develop and adopt local ordinances and policies to protect natural resources in the township. Develop and adopt zoning ordinance language to protect greenbelts, farmlands, forestlands, groundwater, and surface water.

**Objective 8:** Encourage the development and enforcement of stormwater protection regulations.

**Objective 9:** Determine the feasibility of implementing wellhead protection zones in appropriate areas.

**Objective 10:** Determine the feasibility of purchase of development rights or conservation easements as land use tools in the township.

**Objective 11:** Work with the Township Board, Conservation District, MSU Extension, the County Drain Commissioner, and Northeast Michigan Council of Governments to develop and provide natural resource education (including information about protections and regulations), and technical programs to the public.

**GOAL 2: PRESERVE HISTORIC RESOURCES IN THE TOWNSHIP.**

**OBJECTIVES**

**Objective 1:** Work cooperatively with communities, agencies, and organizations to develop studies and institute programs to protect historic resources.

**Objective 2:** Work with the Township Board to develop local ordinances and polices to protect historic resources in the township.

**Objective 3:** Determine the feasibility of creating historic districts in the Township.

**Objective 4:** Encourage private efforts to protect valuable historic resources.

**Objective 5:** Work with agencies and officials to provide historic resource information to landowners, businesses, and communities.

**Objective 6:** Work with county and township officials to ensure enforcement of existing regulations.

**Objective 7:** Encourage the inclusion of properties on the National Historic Register.

**GOAL 3: RECOGNIZE THE IMPORTANCE OF AGRICULTURAL LANDS AS AN ECONOMIC BASE, HERITAGE, AND WAY OF LIFE IN OSSINEKE TOWNSHIP.**

**OBJECTIVES**

**Objective 1:** Work with local, regional, and state organizations to attract “value-added” industries for agricultural products to promote agricultural growth and preserve the economic viability of farming.

**Objective 2:** Maintain and preserve farmland and woodlands, where feasible.

**Objective 3:** Recognize all farms in the township are part of the economic base and provide jobs.

**Objective 4:** Recognize that farmlands contribute to the township’s scenic and rural character.

**Objective 5:** Discourage the conversion of farmland into more intensive uses, where appropriate.

**Objective 6:** Implement zoning ordinance language that creates rural residential transition zones to minimize residential and farmland use conflicts.

**Objective 7:** Encourage the use of “Purchase of Development Rights”, “Transfer of Development Rights”, Clustering, and Conservation Easements to help farmers retain their agricultural acreage.

**Objective 8:** Maximize the most beneficial agricultural use of agricultural lands in the township, while encouraging environmentally sensitive farming practices that protect water quality and do not limit the economic rights of agricultural landowners.

**Objective 9:** Encourage agricultural landowners to work cooperatively with supportive public agencies, such as MSU Extension, the Conservation District, USDA, and the National Resource Conservation District.

**Objective 10:** Allow farmers to produce, process, and market wholesale and retail products that have been grown on their property.

**Objective 11:** Amend the Zoning Ordinance to include regulations that encourage and promote agricultural tourism activities, and preserve large tracts of farmland.

**Objective 12:** Provide information to residents and local officials about Michigan’s Right to Farm Act.

**Objective 13:** Encourage the use of Generally Accepted Agricultural Management Practices (GAAMPs).

**Objective 14:** Address the issues related to improperly managed human waste on agricultural lands.

**COMMUNITY SERVICES AND FACILITIES**

In addition to the transportation infrastructure, other types of facilities, infrastructure and services (e.g. water, sewer, fire, police, schools, etc.) constitute the foundation of a community. Well designed and managed infrastructure and services significantly adds to the “livability” of a community. The continued maintenance of these facilities is essential and requires constant oversight. The expansion of infrastructure and services is extremely expensive and places additional funding burdens on the public. Expansions which are not carefully planned can inadvertently add to environmental degradation and undesirable sprawl.



**GOAL 1: CONTINUE TO MAINTAIN AND EXPAND, AS NEEDED, THE COMMUNITY FACILITIES, INFRASTRUCTURE, AND SERVICES TO ACCOMMODATE THE NEEDS OF RESIDENTS AND BUSINESSES.**

**OBJECTIVES**

**Objective 1:** Develop and implement an annual Capital Improvements Plan. Include planned improvements to community facilities and public infrastructure in the plan.

**Objective 2:** Hold annual meetings with the Township Board to coordinate the maintenance and improvement needs of the community facilities and infrastructure, and to identify services in need of attention.

**Objective 3:** Hold annual goal setting sessions to discuss the community facilities, infrastructure, and services.

**Objective 4:** Work with utility providers to ensure utility lines are appropriately buried, where feasible.

**GOAL 2: ENSURE EFFICIENT DELIVERY OF PUBLIC SAFETY AND EMERGENCY SERVICES IN THE TOWNSHIP.**

**OBJECTIVES**

**Objective 1:** Work with public safety and emergency personnel to decrease response times to public safety incidents in the township.

**Objective 2:** Encourage the Township Board to collaborate with the Alpena County Sheriff's Office, the Michigan State Police, and the Michigan DNR to ensure the township has adequate law enforcement coverage.

**Objective 3:** Encourage the Township Board to collaborate with the Fire Department to ensure adequate staffing for the fire department and emergency medical services.

**Objective 4:** Encourage an increase in the amount of Fire Department and Emergency Medical Service volunteers.

**Objective 5:** Coordinate efforts with Alpena County Emergency Management, law enforcement offices, fire departments, and emergency medical services to upgrade existing public safety equipment and to plan for future telecommunication needs.

**Objective 6:** Collaborate with other local governments regarding public safety services.

**Objective 7:** Work with Alpena County Emergency Management to implement central dispatch and emergency response needs.

**Objective 8:** Develop a Township Capital Improvements Plan to plan for future upgrades to the township's public safety equipment.

**Objective 9:** Work with the Township Board and the County Road Commission to ensure the township's road network is able to ensure efficient responses for public safety and emergency vehicles.

**Objective 10:** Consider implementing land use controls that require sufficient private road access for emergency vehicles.

**GOAL 3: ENSURE EFFICIENT AND ACCESSIBLE SOLID WASTE DISPOSAL AND RECYCLING METHODS IN OSSINEKE TOWNSHIP.**

**OBJECTIVES**

**Objective 1:** Support and encourage the solid waste efforts by the Montmorency-Oscoda-Alpena Landfill Authority.

**Objective 2:** Support and promote the Alpena County Resource Recovery Facility and encourage local recycling efforts.

**Objective 3:** Work with the Montmorency-Oscoda-Alpena Landfill Authority and the Alpena County Resource Recovery Facility to inform the public about solid waste and recycling options available in the Township.

**Objective 4:** Determine the best placement location(s) for recycling drop-off sites in the township.

**GOAL 4: SUPPORT THE CONSTRUCTION OF EFFICIENT COMMUNICATION NETWORKS WITHIN THE TOWNSHIP.**

**OBJECTIVES**

**Objective 1:** Work with Target Alpena Economic Development Corporation, Alpena County Emergency Management, and private vendors to determine ways to improve cell phone coverage in the township.

**Objective 2:** Work with Target Alpena Economic Development Corporation and private vendors to determine ways to upgrade available internet services to high-speed broadband capability.

**Objective 3:** Create an alliance with businesses and utility providers, including local power companies, to ensure permitting on power poles is accessible for local ISP's.

**Objective 4:** Work with other agencies to diversity the internet and cell phone service providers.

**Objective 5:** Collaborate with the Alpena County Fiber Optics Consortium.

**Objective 6:** Encourage the development and installation of broadband in residential areas.

**RECREATION**

Ossineke Township is fortunate to have many natural resources and recreational opportunities that enhance the township's quality of life and makes the community a more enjoyable place to live and work. The township's recreational facilities and opportunities are also very important in attracting tourists, new residents, and businesses. Maintaining and improving these recreational facilities and opportunities is vital for present and future generations.

**GOAL 1: MAINTAIN AND DEVELOP INDOOR AND OUTDOOR RECREATIONAL, HISTORICAL, AND CULTURAL OPPORTUNITIES, PROGRAMS AND FACILITIES FOR THE ENJOYMENT OF RESIDENTS, VISITORS AND FUTURE GENERATIONS.**

**OBJECTIVES**

**Objective 1:** Maintain and implement the township's Recreation Plan, which identifies and prioritizes needed community recreation facilities and improvements.

**Objective 2:** Pursue outside funding sources, such as State and federal grants, for recreation development, improvements, and land acquisition.

**Objective 3:** Provide ample and quality recreational sites for residents and visitors that include sufficient public amenities (e.g. restrooms, picnic tables, grills, etc.).

**Objective 4:** Ensure planned recreational amenities and improvements are designed for a variety of age groups and income levels.

**Objective 5:** Work with private landowners and State government to preserve and expand access to high quality recreation and hunting lands.

**Objective 6:** Cooperatively work with adjacent governments on recreational planning and developments.

**Objective 7:** Work with the Township Board to preserve and maintain public recreation areas and access sites, including but not limited to updating and maintaining playground equipment.

**Objective 8:** Determine the feasibility of a new multi-use indoor community or recreation center for year-round use.

**Objective 9:** Develop and implement zoning language to minimize land use conflicts between high quality recreation lands and other non-compatible uses.

**GOAL 2: SUPPORT THE EXPANSION AND MAINTENANCE OF THE TOWNSHIP'S MOTORIZED AND NON-MOTORIZED TRAIL SYSTEM.**

**OBJECTIVES**

**Objective 1:** Encourage improvements to the motorized and non-motorized recreation trails.

**Objective 2:** Cooperatively work with the appropriate local governments, snowmobile groups, the County Road Commission, the County Sheriff's Office, and the Michigan DNR to designate snowmobile routes that connect communities to the regional snowmobile network.

**Objective 3:** Work with local snowmobile groups and neighboring communities to maintain the designated snowmobile routes in an effort to enhance winter recreation in the township.

**Objective 4:** Work with the appropriate groups to investigate the continued expansion of recreational trails within and outside of the township.

**Objective 5:** Work with the appropriate local governments, user groups, County Road Commission, and Michigan DNR to develop new recreation trails.

**GOAL 3: MARKET OSSINEKE TOWNSHIP AS A RECREATION DESTINATION.**

**OBJECTIVES**

**Objective 1:** Research effective marketing and promotional techniques to market and promote the recreational amenities in and around the Township.

**Objective 2:** Work with community groups and Northeast Michigan Council of Governments to develop promotional trail tour maps for the township.

**Objective 3:** Develop a signage/wayfinding program for recreational facilities.

#### **GOAL 4: UTILIZE TOWNSHIP RECREATIONAL AMENITIES TO ENHANCE THE OVERALL QUALITY OF LIFE.**

##### **OBJECTIVES**

**Objective 1:** Develop and promote recreational events and programs that use existing recreational facilities.

**Objective 2:** Work with community groups to develop new or expanded community events.

**Objective 3:** Research the development or promotion of eco-tourism events.

#### **GOAL 5: ENSURE PUBLIC ACCESS TO WATER SITES.**

##### **OBJECTIVES**

**Objective 1:** Work with the Township Board to retain, maintain, and/or improve public water access sites.

**Objective 2:** Determine if there is a need to develop keyhole development regulations. Initiate opportunities to provide information to the public about keyhole development.

**Objective 3:** Work with appropriate agencies and departments to ensure the public has access to the water sites and private property owners are not encroaching on the sites.

**Objective 4:** Develop a wayfinding signage plan for the public water access sites.

**Objective 5:** Determine effective techniques to address dockage and boating issues on inland lakes through public input and the determination of the number of docks being constructed on the township's inland lakes.

#### **2019 JOINT RECREATION PLAN GOALS**

The following goals and objectives are from the 2019 Joint Recreation Plan. Specific action items can be found in the plan at the following website:

[http://www.discovernortheastmichigan.org/downloads/combined\\_alpena\\_recreation\\_plan\\_2019\\_final\\_alpenacounty.pdf](http://www.discovernortheastmichigan.org/downloads/combined_alpena_recreation_plan_2019_final_alpenacounty.pdf)

##### **SHARED RECREATION GOALS**

Alpena County, the Charter Township of Alpena, Green Township, Ossineke Township, and Wilson Township share the following recreational goals.

**GOAL 1: TO PROTECT, PROMOTE, AND PRESERVE THE COMMUNITIES, NATURAL RESOURCES, AND JOBS OF OUR AREA.**

**GOAL 2: TO ENSURE LOCAL GOVERNMENT INVOLVEMENT IN THE DEVELOPMENT, MAINTENANCE, AND PROMOTION OF OUR RECREATIONAL ASSETS AND OUR NATURAL RESOURCES AND RECOGNITION BY ALL AGENCIES IN OUR AREA THAT RECREATION IS FUNDAMENTAL TO THE QUALITY OF LIFE FOR RESIDENTS.**

**GOAL 3: TO BE AN ACTIVE PARTNER IN REGIONAL COLLABORATIONS TO PLAN, MAINTAIN, DEVELOP, AND PROMOTE NEW RECREATIONAL OPPORTUNITIES.**

**GOAL 4: TO IMPROVE THE QUALITY OF LIFE THAT IS CRITICAL TO OUR RESIDENTS' HEALTH, THE BUSINESS ENVIRONMENT, AND ATTRACTION OF OUR AREA TO THOSE VISITING AND CONSIDERING MOVING HERE.**

**GOAL 5: TO ENSURE ALL PEOPLE HAVE ACCESS TO RECREATION OPPORTUNITIES AND FACILITIES REGARDLESS OF AGE, SEX, INCOME, CULTURAL BACKGROUND, HOUSING ENVIRONMENT, OR ABILITIES.**

**GOAL 6: TO PRESERVE AND CONSERVE THE AREA'S NATURAL RESOURCES, PROTECT THEM FROM INVASIVE SPECIES AND DEGRADATION, RECOGNIZING THAT THEY ARE CRITICAL TO THE LONG-TERM SUSTAINABILITY OF OUTDOOR RECREATIONAL ACTIVITIES AND QUALITY OF LIFE.**

**GOAL 7: TO ENSURE THAT AREA RESIDENTS ARE INVOLVED IN THE RECREATION PLANNING PROCESS.**

#### **OSSINEKE TOWNSHIP GOALS & OBJECTIVES FROM THE 2019 RECREATION PLAN**

##### **Hubbard Lake Lions Park**

**Goal 1:** Continue to develop and improve Hubbard Lake Lions Park to provide multi-generational recreation opportunities for the enjoyment of year-round and seasonal residents, tourists and visitors.

**Objective 1:** Improve the recreation center of the Park by addressing needs of existing facilities.

**Objective 2:** Expand existing park facilities to meet existing demand, and/or encourage expanded use.

##### **Beaver Lake**

**Goal 1:** Enhance the recreational opportunities at Beaver Lake to encourage its establishment as a primary recreational facility in the Township.

**Objective 1:** Provide amenities to improve the overall usability of the park.

##### **Chippewa Hills Pathway**

**Goal 1:** Expand and improve the existing trail system so that it would become a destination point for hikers, cross country skiing, equestrian use and mountain biking.

**Objective 1:** Form a working relationship with the Department of Natural Resources, (Forest Resources Division, Wildlife Division and the Parks and Recreation Division), Thunder Bay Trails Association, and local equestrian clubs that will be conducive to reaching the expressed goal.

#### **RESIDENTIAL DEVELOPMENT**

A diverse and well-maintained selection of housing options is another vital component in a community. The strength of a local economy is based, in part, on the affordability and selection of the housing stock. As a strong economy is an essential element of a healthy community, adequate housing choices must be available for residents to feel economically secure. In order to have productive community members and attract new citizens, a local community needs a broad mix of demographics to develop a well-rounded economy. This helps enhance the quality of life and makes the community a more enjoyable place to live and work. Housing choices impact more than what type of structure an individual buys. Access to and the affordability of housing choices impact overall community development by influencing factors such as access to quality education, church attendance, community organizations, and convenient shopping opportunities. Therefore, a local community must actively seek ways to encourage desirable residential development.



**GOAL 1: PROVIDE SUITABLE HOUSING OPPORTUNITIES FOR ALL INCOME LEVELS AND AGE GROUPS, WHILE PRESERVING AND ENHANCING THE TOWNSHIP’S EXISTING RURAL CHARACTER.**

**OBJECTIVES**

**Objective 1:** Implement zoning language to protect and maintain the tranquil quality of the existing residential areas from the intrusion of incompatible uses.

**Objective 2:** Balance new residential growth with the township’s existing rural character.

**Objective 3:** Encourage quality infill development to strengthen residential areas that is compatible with surrounding housing stock and the township’s rural character.

**Objective 4:** Implement zoning language to direct medium and high density residential developments to areas with the capacity to support the developments and are adequately served by public services.

**Objective 5:** Pursue grant funding to encourage the maintenance, rehabilitation, and/or renovation of the existing housing stock and residential areas, so the housing stock may remain safe and in good repair, appearance, and usefulness.

**Objective 6:** Work with the county housing programs and local building departments to eliminate structures in disrepair through the use of incentive programs and legal approaches.

**Objective 7:** Work with the county housing programs and other appropriate agencies to explore and pursue affordable housing funding programs.

**Objective 8:** Work with the county housing programs, and county senior programs to identify appropriate locations for senior and assisted living housing.

**Objective 9:** Assist homeowners in preserving and maintaining older homes as owner-occupied, single family homes.

**Objective 10:** Ensure adequate and suitable housing options are available to all residents, including but not limited to permitting mixed residential uses with commercial and office uses.

**Objective 11:** Explore the development of residential renewable energy generation, including solar power and wind turbines in the Township.

**Objective 12:** Develop standards to regulate the construction and use of residential wind turbines.

**Objective 13:** Promote neighborhood enhancement programs, such as community pride programs, street tree plantings, clean up days, neighborhood gardens, etc.

**Objective 14:** Implement zoning language to allow secondary dwelling units in the township.

**Objective 15:** Implement historic preservation techniques to preserve housing options.

**Objective 16:** Develop zoning language to implement minimum size standards for single- and multi-family housing.

**Objective 17:** Research and implement effective rental housing programs to ensure high standards are maintained in single- and multi-family rental housing.

## ECONOMIC DEVELOPMENT

A strong economy is an essential element to a healthy community. Residents must have the opportunity to earn sustainable wages to be productive community members. A strong economy does not usually happen without the local community actively seeking ways to encourage desirable development. The U.S. and world economies are rapidly changing, which is profoundly affecting local economies. Ossineke Township has seen how quickly communities can lose high-paying employment due to new technological advances and competition from abroad. Therefore, it is imperative to plan ahead to ensure a vital economic future.

**GOAL 1: PROVIDE FOR ECONOMIC GROWTH THAT CREATES A DIVERSIFIED ECONOMIC BASE AND IMPROVES THE COMPETITIVENESS OF THE COUNTY'S ECONOMY BY ENHANCING EMPLOYMENT OPPORTUNITIES FOR RESIDENTS AND THE PROFITABILITY OF BUSINESSES AND INDUSTRIES, WHILE MAINTAINING THE COMMUNITY CHARACTER AND ENVIRONMENT.**

### OBJECTIVES

**Objective 1:** Balance economic development with the township's rural character.

**Objective 2:** Implement zoning language to protect commercial areas from the intrusion of incompatible uses.

**Objective 3:** Encourage a diverse mix of new businesses.

**Objective 4:** Work with Target Alpena Economic Development Corporation and other economic development agencies to implement existing business retention programs and to promote business retention, attraction, expansion, and diversification.

**Objective 5:** Continue working with the appropriate agencies to upgrade and expand the high speed telecommunication services in the township.

**Objective 6:** Plan and manage economic development through reasonable land use and development regulations, and the development of necessary infrastructure and facilities.

**Objective 7:** Implement zoning language to direct future developments to appropriate areas.

**Objective 8:** Collaborate with regional economic development organizations to determine techniques to promote and develop all of Northeast Michigan.

**Objective 9:** Encourage the expansion of the infrastructure needed to attract commercial, industrial, and home-based businesses to the township.

**Objective 10:** Promote the concept of compact development design to maximize potential land uses.

**Objective 11:** Consider public and private parking needs for all expansions and new developments.

**Objective 12:** Determine the feasibility of the creation of a Downtown Development Authority, Corridor Improvement Authority, and/or Tax Increment Financing Authority to improve local economic conditions.

**Objective 13:** Implement streetscape projects to increase the attractiveness of commercial areas.

**Objective 14:** Prioritize the redevelopment of sites that need improvements in the township. Provide marketing and incentives for developers.

**Objective 15:** Promote worker education and training programs.

## **GOAL 2: EXPAND COMMERCIAL DEVELOPMENT OPPORTUNITIES IN THE TOWNSHIP.**

### **OBJECTIVES**

**Objective 1:** Diversify business opportunities through the attraction and establishment of businesses that serve to fill gaps in the year-round needs of the township and support a walkable community.

**Objective 2:** Balance new commercial growth with the township's existing rural character.

**Objective 3:** Work with the business community to develop and maintain healthy and vibrant community centers. Maintain an identifiable central business district in the town of Hubbard Lake.

**Objective 4:** Investigate the development of a business incubator in the Township.

**Objective 5:** Encourage the retention of basic services for Township residents.

**Objective 6:** Explore the development of commercial renewable energy, including solar and wind facilities in the Township.

**Objective 7:** Maintain standards to regulate the construction and use of commercial wind turbines.

**Objective 8:** Form public-private partnerships to improve the area's economy.

**Objective 9:** Allow mixed land uses in appropriate areas and the development of home-based businesses.

**Objective 10:** Establish and enforce zoning standards in the zoning ordinance that require businesses to maintain an aesthetically desirable appearance.

**Objective 11:** Research a business façade improvement program.

**Objective 12:** Coordinate township efforts with other entities to market and recruit small businesses.

## **GOAL 3: RETAIN AND EXPAND THE TOWNSHIP'S EXISTING BUSINESSES AND JOBS.**

### **OBJECTIVES**

**Objective 1:** Create and implement programs and policies that provide activities for all age groups.

**Objective 2:** Support efforts to attract goods, services, childcare/daycare facilities, recreation, and business opportunities to retain and attract individuals and families.

**Objective 3:** Support development that expands sustainable job opportunities.

**Objective 4:** Encourage partnerships between community organizations, Alpena Community College, and Michigan Works to ensure education and training programs meet the needs of the area's current and future employers.

**Objective 5:** Encourage entrepreneurial training programs to assist residents with starting and maintaining small businesses.

**GOAL 4: PROMOTE AND ENCOURAGE TOURISM AND AGRICULTURAL-BASED TOURISM ACTIVITIES.**

**OBJECTIVES**

**Objective 1:** Establish and promote Ossineke Township as a year-round tourism destination through seasonal festivals, eco-tourism, agricultural-based tourism and other activities that draw people to the township.

**Objective 2:** Work with local communities, the Chamber of Commerce, and the Convention and Visitor's Bureau to develop marketing strategies that promote the township's tourism opportunities.

**Objective 3:** Work with local community organizations to develop strategies to build Ossineke Township into a destination place through the promotion of the township's cultural, historical, industrial, and environmental attractions.

**Objective 4:** Determine the feasibility of developing a tourism-oriented wayfinding program.

**Objective 5:** Permit the sale of local produce from the township's commercial areas and home-based businesses.

**Objective 6:** Continue to improve the township's recreational facilities.

**GOAL 5: INVESTIGATE AND SUPPORT OPPORTUNITIES TO EXPAND THE TOWNSHIP'S INDUSTRIAL BASE.**

**OBJECTIVES**

**Objective 1:** Provide the necessary services, facilities, and programs to expand industrial development opportunities in Ossineke Township.

**Objective 2:** Provide information to the public about the nature and economic impact of industrial development.

**Objective 3:** Balance new industrial growth with the existing rural character of the Township.

**Objective 4:** Determine suitable locations for industrial development in the township.

**Objective 5:** Implement zoning language to direct industrial development toward areas that have the capacity to support the development and are adequately served by public roads and utilities.

**Objective 6:** Implement zoning language to protect industrial areas from the intrusion of incompatible uses.

**Objective 7:** Investigate tax incentive and partial abatement programs to encourage industrial development.

**Objective 8:** Expand the township's infrastructure to attract industrial development.

## WILSON TOWNSHIP GOALS AND OBJECTIVES

The Wilson Township Planning Commission developed the goals and objectives of this master plan to provide guidance to the Planning Commission and Township Board.

### AGRICULTURE

#### **GOAL 1: RECOGNIZE THE IMPORTANCE OF AGRICULTURAL LANDS AS AN ECONOMIC BASE, HERITAGE, AND WAY OF LIFE IN WILSON TOWNSHIP.**

**Objective 1:** Maintain and provide for the preservation of farmland and woodlands, where feasible.

**Objective 2:** Discourage the conversion of farmland into other more intensive uses. Recognize farmland as contributing to the scenic and rural character of the Township.

**Objective 3:** Maximize the most beneficial agricultural use of agricultural lands in Wilson Township, while encouraging environmentally sensitive farming practices to protect local surface and ground water quality without unnecessarily limiting the economic rights of agricultural landowners.

**Objective 4:** Encourage agricultural landowners to work cooperatively with supportive public agencies, such as the local Michigan State University Extension, Alpena-Montmorency Conservation District, USDA, and National Resource Conservation District offices.

**Objective 5:** Encourage the use of “Purchase of Development Rights,” “Transfer of Development Rights,” Clustering, and Conservation Easements to help farmers retain their agricultural acreage.

**Objective 6:** Recognize farmland as part of the Township’s active economic base and potential source of jobs for Township residents.

**Objective 7:** Recognize the importance of small farms in Wilson Township.

**Objective 8:** Allow farmers to produce, process, and market at wholesale and retail the products grown on their property.

**Objective 9:** Amend Zoning Ordinance to include regulations which encourage agricultural tourism activities.

**Objective 10:** Educate residents and local officials on Michigan’s Right to Farm Act.

**Objective 11:** Encourage the use of Generally Accepted Agricultural Management Practices (GAAMPs) through local zoning.

**Objective 12:** Address the issues of improperly managed human waste used on agricultural lands.

### RECREATION, PUBLIC LANDS, AND OPEN SPACE

#### **GOAL 1: PRESERVE OPEN SPACE, AND PRESERVE AND IMPROVE ACCESS TO PUBLIC LANDS AND WATER, AND EXPAND AND IMPROVE RECREATIONAL TRAILS AND PUBLIC PARKS FOR THE ENJOYMENT OF ALL AGE GROUPS.**

**Objective 1:** Maintain an update the Township Recreation Plan that identifies and prioritizes needed community recreational facilities.

**Objective 2:** Implement the improvements proposed in the Wilson Township Recreation Plan.

**Objective 3:** Work cooperatively with agencies, organizations, neighboring communities, and Alpena County for recreational planning and development purposes.



**Objective 4:** Support the continued existence of and access to public lands in the Township.

**Objective 5:** Preserve and maintain recreation areas, access sites, and prime hunting lands.

**Objective 6:** Continue the development of Wolf Creek Park according to the Recreation Plan.

**Objective 7:** Encourage the preservation of open spaces in the Township.

**Objective 8:** Identify and protect key scenic vistas and historic areas, sites, buildings, structures, and features.

**Objective 9:** Encourage proposed subdivisions, site condominiums, planned unit developments, and commercial and light industrial developments to provide or participate in the development of recreational facilities and the preservation of open space through zoning and review procedures.

**Objective 10:** Preserve all healthy trees growing on public property or public rights-of-way. Replace or add to the stock when needed.

**Objective 11:** Pursue outside funding sources (e.g. grants) for land acquisition and recreational development.

**Objective 12:** Encourage the expansion of snowmobile and ORV/ATV trails in the Township.

**Objective 13:** Market the recreational amenities in and around Wilson Township to residents and visitors

**Objective 14:** Develop a signage/wayfinding program for recreational facilities.

**Objective 15:** Retain and improve public water access sites for residents, seasonal residents and visitors.

## **NATURAL ENVIRONMENT**

### **GOAL 1: PROTECT AND PRESERVE THE NATURAL RESOURCES.**

**Objective 1:** Encourage a land use pattern that is oriented to the natural features and water resources of the area. Evaluate type and density of proposed developments based on soil suitability; slope of land; potential for ground water and surface water degradation and contamination; compatibility with adjacent land uses; and impacts to sensitive natural areas like wetlands, greenways and wildlife corridors.

**Objective 2:** Protect land resources and water quality related to our water bodies and wetlands. Limit and control the density of type of development adjacent to water areas.

**Objective 3:** Maintain greenbelt areas adjacent to ponds, streams, and wetlands to protect water quality and critical wildlife habitat.

**Objective 4:** Encourage the continued natural use of wetlands as groundwater recharge and stormwater holding areas.

**Objective 5:** Establish regulations and standards necessary to protect and preserve the quality of the air from degradation due to fumes, odors, smoke, dust and other pollutants.

**Objective 6:** Establish regulations and standards to protect the community against high noise levels and exterior lighting glare.

**Objective 7:** Preserve topography such as slopes, valleys and hills by limiting the amount of cut and fill during site development.

**Objective 8:** Encourage the integration of wetlands, woodlands, and meadows into site development as aesthetic and functional features.

**Objective 9:** Encourage the retention of agricultural lands, forest lands and ecological corridors through available mechanisms such as open space and farmland agreements, forest stewardship programs, and conservation easements, as well as zoning incentives or through the development of a Purchase of Development Rights and Transfer of Development Rights program.

**Objective 10:** Encourage the use of native plant species and naturalized landscape designs, where appropriate, to enhance the township's existing character.

**Objective 11:** Encourage and support sound wildlife management practices at the local and State level.

## COMMUNITY CHARACTER

### **GOAL 1: MAINTAIN THE QUALITY OF LIFE AND RURAL CHARACTER IN WILSON TOWNSHIP WHILE ADAPTING TO THE MODERN NEEDS OF RESIDENTS.**

**Objective 1:** Encourage social, governmental, and economic practices which maintain the tranquil community character of Wilson Township.

**Objective 2:** Diversify employment opportunities for all age groups to provide opportunities for community members to remain in Wilson Township.

**Objective 3:** Utilize the existing resources of Wilson Township in a productive manner to maintain the community character and address problems.

**Objective 4:** Protect and preserve the historic structures in Wilson Township.

**Objective 5:** Work with larger communities in the area to provide them with a stable work base consisting of Wilson Township residents.

**Objective 6:** Maintain a clean, healthy, and well-maintained living environment.

**Objective 7:** Engage in township beautification efforts.

**Objective 8:** Encourage cultural facilities and events that meet the needs of the entire community.

## PLANNING AND COMMUNITY DEVELOPMENT

### **GOAL 1: GUIDE FUTURE DEVELOPMENT IN A MANNER THAT WILL PROTECT EXISTING DEVELOPMENT; PRESERVE COMMUNITY CHARACTER, PROTECT THE HEALTH, SAFETY, AND WELFARE OF RESIDENTS, AND CONSERVE THE NATURAL RESOURCES AND ENVIRONMENT TO MEET THE TOWNSHIP'S LONG-TERM NEEDS.**

**Objective 1:** Encourage creative design and planning techniques which produce visual harmony while preserving special features and protecting vital natural resources.

**Objective 2:** Encourage planned land uses in coordination with public utility, facility, and service improvement programs.

**Objective 3:** Require planning review for the following types of public projects:

1. The acquisition or enlargement of any park, playground, or public open space.
2. The construction, acquisition, or authorization of public buildings or structures.

**Objective 4:** Update the Site Plan Review Process including but not limited to the following:

1. Encourage pre-application meetings.
2. Revise site plan review process which takes into account the character of the Township.
3. Incorporate standards in the site plan review process to encourage development with minimal negative environmental impact to protect land, air, and water resources.
4. Amend the site plan review process to assure consistent application of the zoning ordinance.

**Objective 5:** Require buffers like the construction of berms or vegetative screening to shield residential properties from adjacent, more intense non-residential development.

**Objective 6:** Develop open space development design standards to preserve scenic views, rural character, farmland, meadows, woodlands, and wetlands.

**Objective 7:** Research innovative development options to increase the tax base while maintaining the essential character of the community.

**Objective 8:** Revise Zoning Ordinance to be easily understandable, innovative, up-to-date and fit the Township vision. Create an ordinance that is easy to navigate and available online.

**Objective 9:** Encourage the general public, civic organizations and all commissions to provide input for Township decisions. Create a communications policy and plan.

**Objective 10:** Control the location of new development by designating appropriate areas for new residential, commercial, light industrial and recreational land uses.

**Objective 11:** Establish landscape requirements for new development, such as appropriate setbacks, retention of green space, buffer zones between differing land uses, screened parking areas, pedestrian/bicycle accommodations, and roadside landscaping.

**Objective 12:** Improve regulations and standards to protect the community against high noise levels and exterior lighting glare.

**Objective 13:** Develop a nuisance ordinance and enforcement procedures to eliminate issues of accumulating junk and abandoned vehicles thereby improving the quality of housing and protecting property values.

**Objective 14:** Develop signage standards in the Zoning Ordinance. Increase safety and reduce the visual impact of signs by controlling their size, number, illumination, and configuration.

**Objective 15:** Develop innovative zoning techniques that allow for a mix of residential and commercial uses as well as an expansion of home-based business and cottage industry.

**Objective 16:** Enforce all Township ordinances in a consistent and fair manner.

**Objective 17:** Continually incorporate educational opportunities for elected and appointed officials on topic related to land use planning and economic development.

## GOVERNMENT

### **GOAL 1: PROVIDE SERVICES IN AN EFFICIENT AND CARING MANNER TO MEET THE NEEDS OF RESIDENTS, PROPERTY OWNERS, BUSINESSES, AND VISITORS.**

**Objective 1:** Ensure a responsible fiscal policy and budget process to finance the Township government.

**Objective 2:** Engage in public input regularly to ensure government is responsible to the people.

**Objective 3:** Utilize the proactive master planning process as a check and balance on decision making.

**Objective 4:** Promote intergovernmental and regional cooperation on issues of mutual concern.

**Objective 5:** Work cooperatively with adjacent townships to coordinate planning and zoning decisions.

**Objective 6:** Expand and promote the use of the Township government website as a primary communications tool. Keep the information current and timely.

**Objective 7:** Maintain communication with the Department of Natural Resources to provide input into the usage and management of the public lands in the Township.

**Objective 8:** Promote the involvement of volunteers in the governing process.

**Objective 9:** Continue to work with adjacent communities to provide emergency services to Township residents.

**Objective 10:** Research grant funding opportunities in order to provide a higher level of service to Township residents.

**Objective 11:** Investigate the feasibility of funding staff positions to better address the needs of the Township government and the public.

**Objective 12:** Work cooperatively with community service organizations.

## INFRASTRUCTURE, COMMUNITY FACILITIES, AND COMMUNITY SERVICES

### **GOAL 1: IMPROVE AND MAINTAIN THE TOWNSHIP'S VEHICULAR AND PEDESTRIAN CIRCULATION ROUTES, COMMUNITY FACILITIES, PROGRAMS, SERVICES, AND PUBLIC UTILITIES TO ACCOMMODATE THE NEEDS OF RESIDENTS AND VISITORS.**

**Objective 1:** Develop a capital improvements plan to address the long term needs for road improvements, Fire Department needs, recreational facilities, and a community center.

**Objective 2:** Support the development of bicycle paths and pedestrian walkways.

**Objective 3:** Encourage the efficient use and maintenance of existing roadways and infrastructure.

**Objective 4:** Work with the Alpena County Road Commission to plan for upgrading roads, maintenance of existing roads, and vehicular and pedestrian safety at intersections and on roadways.

**Objective 5:** Support the development of an interstate highway to increase the economic viability of the region.

**Objective 6:** Direct development to areas with existing infrastructure and where infrastructure is not adequate require developers to fund the upgrading of infrastructure to support proposed new development.

**Objective 7:** Support the expansion of public transit.

**Objective 8:** Encourage the placement of utilities underground.

**Objective 9:** Encourage utility companies to provide affordable options for fuel, electric, cable, broadband, and telecommunications service to township residents and businesses.

**Objective 10:** Plan utility improvements to coincide with development, where possible.

**Objective 11:** Encourage development of corridor plans for all primary transportation routes.

**Objective 12:** Encourage and support the conversion of Alpena Community College into a 4-year institution.

**Objective 13:** Improve fire protection services.

**Objective 14:** Improve access to health services for Township residents.

**Objective 15:** Provide for implementation of renewable energy in commercial, institutional, and residential buildings.

**Objective 16:** Upgrade the public infrastructure to meet the needs of the residents.

## RESIDENTIAL LAND USES/HOUSING

### **GOAL 1: PROVIDE FOR SUITABLE HOUSING OPPORTUNITIES FOR ALL INCOME LEVELS AND AGE GROUPS.**

#### **PRESERVE AND ENHANCE THE EXISTING RESIDENTIAL CHARACTER.**

**Objective 1:** Designate areas appropriate for all types of residential development including single family, multi-family, elderly housing, condominium, low to moderate income rental complexes, and extended care facilities.

**Objective 2:** Utilize current housing stock, where possible, to meet the needs of all household types and income groups.

**Objective 3:** Encourage new residential development to be sited in a manner that protects the rural character and scenic views by maintaining proper setbacks and providing landscaping screening as appropriate.

**Objective 4:** Protect the residential areas from intrusion of incompatible uses.

**Objective 5:** Plan medium- and high-density residential development only in those areas that are suitable for such use in order to preserve open space and natural resources.

**Objective 6:** Encourage the maintenance of the existing housing stock to be kept in good repair, appearance, usefulness, and safety.

## COMMERCIAL AREAS AND ACTIVITIES

### **GOAL 1: PROMOTE A VARIED BUSINESS ENVIRONMENT, AND FOSTER GROWTH AND COOPERATION AMONG AREA BUSINESSES TO MEET THE NEEDS OF RESIDENTS AND TOURISTS, WHILE PRESERVING THE NATURAL ENVIRONMENT AND RURAL CHARACTER OF THE TOWNSHIP.**

**Objective 1:** Promote a varied business environment, which meets both seasonal and year-round needs.

**Objective 2:** Support the existing commercial establishments. Guide new commercial development into appropriate and desirable areas through the master plan and zoning ordinance.

**Objective 3:** Encourage the development of small business hubs throughout the Township to serve local needs.

**Objective 4:** Provide for streamlined permitting processes by having clear, predictable zoning requirements, permit forms, online availability, and prioritized redevelopment sites.

**Objective 5:** Amend the Zoning Ordinance to facilitate commercial development at and surrounding the airport.

**Objective 6:** Through the Zoning Ordinance, establish and enforce standards to require businesses to maintain an aesthetically desirable appearance.

**Objective 7:** Develop and utilize innovative planning and zoning techniques, such as clustering, shared parking, access management, and landscaping to regulate commercial development along primary county roads.

**Objective 8:** Regulate home occupations and home-based businesses to assure compatibility with existing residential areas.

**Objective 9:** Require landscape buffers where commercial uses are adjacent to residential uses.

**Objective 10:** Encourage entrepreneurial training programs to assist residents in starting and maintaining their own small businesses.

## ECONOMIC DEVELOPMENT

### **GOAL 1: DEVELOP AND PROMOTE THE GROWTH OF A DIVERSE ECONOMIC BASE TO SERVE THE EMPLOYMENT NEEDS OF THE TOWNSHIP AND REGION.**

**Objective 1:** Seek out and encourage the establishment of businesses that serve to fill gaps in the services needed in the Township.

**Objective 2:** Continue to improve recreational facilities within the Township and make Wilson Township a tourism destination.

**Objective 3:** Work with neighboring communities to promote year-round sustained tourism, i.e. spring, summer, fall and winter festivals and activities that will draw people to the region.

**Objective 4:** Form public-private partnerships to improve the local economy.

**Objective 5:** Strive to attract young people and young families to Wilson Township and develop the goods, services, recreation and employment opportunities needed to retain them.

**Objective 6:** Encourage home-based businesses and cottage industry in Wilson Township.



**Objective 7:** Encourage the expansion of the infrastructure, especially broadband, required to make Wilson Township attractive to commercial, industrial, and home-based business.

**Objective 8:** Encourage increased use and expansion of the airport.

**Objective 9:** Investigate tax incentive programs.

**Objective 10:** Research methods of using available local resources to create a self-sustaining community.

**Objective 11:** Partner with county and regional economic development efforts.

**Objective 12:** Ensure all Township officials are educated in zoning review processes, economic development opportunities, and business support services.

## INDUSTRIAL LAND USES

### **GOAL 1: ENCOURAGE THE RETENTION OF EXISTING INDUSTRIES AND ESTABLISHMENT OF NEW LIGHT INDUSTRIES TO DIVERSIFY THE LOCAL ECONOMY.**

**Objective 1:** Ensure industrial developments take place in an environmentally sensitive manner, and are harmonious with the existing community.

**Objective 2:** Encourage the light factory industries and high tech industries that do not pollute the air, soil, or water nor offend because of noise, odor, or visual impact to locate in the designated industrial areas.

**Objective 3:** Require adequate buffering and screening through appropriate landscaping and site design to minimize land use conflicts.

**Objective 4:** Amend the Zoning Ordinance to facilitate light industrial development at and surrounding the airport.

# Chapter 7

## Future Land Use

### ALPENA COUNTY

#### INTRODUCTION

Planning and zoning are the principal tools used by local communities to manage growth, preserve community character, protect property values, and enhance economic viability. Zoning ordinances are the primary method used by most communities to implement their master plan through the regulation of the type, intensity, and location of developments. Additional methods include capital improvement plans and recreation plans.

This chapter presents the status of planning and zoning in Alpena County (Table 7-1). Currently, the City of Alpena and all townships, except Wellington Township, have adopted a zoning ordinance. In January 2000, Alpena County re-established its County Planning Commission, which was dissolved in 1985. It is not the intention of this plan to compare the strengths and weaknesses of each community's key zoning regulations. Instead, the plan intends to provide a comprehensive perspective about planning and zoning within the county.

**TABLE 7-1 STATUS OF PLANNING AND ZONING IN ALPENA COUNTY**

Jurisdiction	Master Plan Adoption Date	Zoning Ordinance Adoption Date	Other Planning Documents
City of Alpena	2013 Currently being updated	2010	Recreation Plan 2016-2020 Currently being updated Annual Capital Improvement Plan
Alpena Township	2017	2020	Recreation Plan 2019-2023
Green Township	2014 Currently being updated	2009 Amended in 2017	Recreation Plan 2019-2023
Long Rapids Township	2009	1990 Amended in 2015	Recreation Plan 2016-2020
Maple Ridge Township	2010	1997	-
Ossineke Township	2013 Currently being updated	2015	Recreation Plan 2019-2023
Sanborn Township	2014	2015 Amended in 2017	Recreation Plan 2017-2021
Wellington Township	-	-	-
Wilson Township	2010 Currently being updated	2011 Zoning Map amended in 2013	Recreation Plan 2019-2023
Alpena County	2013 Currently being updated	No Zoning Authority	Recreation Plan 2009-2013

Source: NEMCOG

## FUTURE LAND USE PLANS AND ZONING DISTRICTS

The Future Land Use Plans for each jurisdiction in Alpena County presents the desired future land use in each jurisdiction to accommodate growth, while protecting the resources and community characteristics. Since future land use is a vision about how each community would like to develop, it should be noted the desired future land use plan may be adjusted in the future based on changing conditions within the community.

Section 33 of the Michigan Planning Enabling Act, PA 33 of 2008, as amended, calls for a plan to include a zoning plan for the control of height, areas, bulk, location and use of buildings and premises. The zoning plan identifies the current zoning districts and their purposes, as well as how the land use categories on the future land use map relate to the districts on the zoning map.

According to the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, comprehensive planning is the foundation of a zoning ordinance. Section 203 (1) of the Act states:

*"The Zoning Ordinance shall be based upon a plan designed to promote the public health, safety, and general welfare, to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, to conserve natural resources and energy, to meet the needs of the state's residents for food, fiber, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to insure that uses of land shall be situated in appropriate locations and relationships to avoid the overcrowding of population, to provide adequate light and air, to lessen congestion on the public roads and streets, to reduce hazards to life and property, to facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation, and other public requirements, and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous uses of land, resources, and properties. The zoning ordinance shall be made with reasonable consideration to the character of each district, its peculiar suitability for particular uses, the conservation of property values and natural resources, and the general and appropriate trend and character of land, building, and population development."*

Information about each jurisdiction's future land use categories and the equivalent zoning districts can be found below.

### **CITY OF ALPENA FUTURE LAND USE**

The City of Alpena has identified fourteen categories of land use needed to serve future development needs in the 2020 City of Alpena Comprehensive Plan (Figure 7-1). The proposed land use categories were developed in an effort to create a long-term plan for the development and redevelopment of the City of Alpena.

#### **RESIDENTIAL USES**

Several residential categories are included in the future land use plan. It is the intention of the plan to protect existing residential neighborhoods, while providing a variety of housing options to meet future needs.

##### **Single-Family and Two-Family Residential**

This category includes single- and two-family detached dwellings along with other related facilities such as parks, churches and schools. Infill development and redevelopment should be considerate of existing

neighborhood character. Lot sizes range from less than 0.1 acre (65'x65") to nearly one acre with the average size being approximately 0.2 acres (125'x65'). The community recognizes some larger homes have been divided into 3-4 family rental units. It is the intention to discourage further conversion of large single family homes into multi-family rental units and to encourage the re-conversion back into single- and two-family dwellings.

### **Multi-Family Residential**

This designation is intended to provide locations for apartments, townhouses and condominiums. This category is intended for residential development with a density greater than six units per acre. Higher density residential uses can generate a significant amount of traffic and, therefore, should be located directly adjacent to a major thoroughfare. Higher density residential uses can serve as a transition between non-residential districts and lower density residential areas.

### **Planned Development/Residential**

This designation encourages the use of the property as a residential Planned Unit Development (PUD). The PUD/Residential category allows residential uses in a manner that would encourage innovative or creative housing design. If designated within older neighborhood areas, the housing must complement the historical character of the City. The PUD could include a mix of densities such as attached or detached housing, as well as generous setbacks, open space, landscaped areas, and architectural design that is complementary to adjoining structures. The PUD could also include areas of non-residential use which are compatible to the residential uses.

## **COMMERCIAL USES**

Commercial activities, such as retail, service and office, are key components of a vibrant growing community. Along with generating employment and wealth, commercial centers provide access to goods and services for residents both local and regional. Commercial development generates tax revenue while helping to support community infrastructure improvements and services. The plan identifies a variety of commercial land use areas.

### **Office/Service**

This classification is intended for uses such as office buildings and for mixed-use service districts which may include office buildings, banks, services business, convention centers, public facilities, medical related facilities, social service agencies and churches. The designation could include privately owned facilities as well as public or quasi-public institutions.

### **Local Business**

This land use category is designed to provide opportunities for local services and convenience centers for the day-to-day needs of the surrounding neighborhood. Local business would not include intensive or highway commercial related uses. Protection of the abutting and surrounding residential land use is important, therefore uses that create hazards, offensive or loud noises, vibration, smoke, glare, large truck traffic, high traffic volumes or late hours of operation are not compatible. The designation would include commercial uses in predominately single-family residential neighborhoods where the prevailing land use is residential, and where the commercial use abuts local streets, not considered major thoroughfares.

### **Central Business District**

The Central Business District provides for commercial development that is pedestrian-oriented and offers a mix of uses within a central core. Downtowns provide convenient, safe access to shopping, restaurants,

nightclubs, theater, cultural events, parks and services for the local community and visitors. A strong orientation and connection to the waterfront is encouraged. Streets, designed to provide efficient traffic flow, as well as centralized parking are critical to accommodating a population orientated to automobiles. At the same time, the City must continue to focus on a walkable, pedestrian friendly environment. A vibrant downtown draws families into the community center for entertainment, cultural events and festivals. Upper story apartments and condominiums over first floor retail and office space, in conjunction with healthy adjacent residential neighborhoods, breathe life into the downtown and contribute to its vitality and viability. Small parks, benches, street cafes, river walks and public art add to the pedestrian atmosphere.

### **General Business**

This district is intended for the widest and most intensive variety of retail and service businesses. Typical uses in this district include drive-through restaurants, auto service establishments and commercial uses serving a regional clientele. The uses within this district are auto dependent and benefit from the exposure of high traffic volume thoroughfares. At the same time the City will work towards providing safe pedestrian access.

### **Mixed Use**

This designation could include areas proposed under a unified development scheme incorporating either a singular land use or a mixture of office, commercial or residential uses. The Planned Unit Development (PUD) may incorporate innovative or creative design that promotes open space, trails, bike paths and landscaping within a campus style plan as well as more densely developed urban designs. A PUD could also be incorporated within a multi-year long-range development plan.

### **INDUSTRIAL USES**

The industrial base has supported Alpena for the last 150 years. Industry infuses energy into the local economy by providing reasonable wages and generating tax revenues. The City has been actively recruiting smaller-scale light industry to diversify the industrial base and become less dependent on a few large-scale industries. The plan intends to support existing industrial land uses and provide areas for new light and heavy industrial development. Furthermore, the plan recognizes there are industrial sites within the community that are adjacent to or surrounded by residential uses. It is the long range vision of the planning commission to minimize industries' negative impacts on residential neighborhoods through ensuring buffering and screening, encouraging relocation of industrial uses to more appropriate locations in planned industrial areas and encouraging on-going efforts to reduce pollution levels. Some areas may transition from heavy industry to light industry or industrial into mixed-uses such as a mixture of office, commercial or residential uses.

### **Light Industrial**

The light industrial district is designed primarily to accommodate wholesale activities, warehouses and industrial operations whose external and physical effects are restricted to the immediate area and have a minimal effect on surrounding districts. This designation allows uses such as manufacturing, compounding, processing, packaging and assembly of finished or semi-finished products from previously prepared materials. "Clean" industries (research and high-tech) are included in this designation.

### **Heavy Industrial**

This category is designed to provide locations for general or heavy industrial activities such as those which involve the use of heavy machinery, extensive amounts of contiguous land, service by railroad lines or major thoroughfares, processing of chemicals or raw materials, assembly, generation of industrial waste, noise,

odor, or traffic problems of similar characteristics. These uses require service by large trucks, rail or deep port shipping. Heavy industrial uses should be adequately screened and buffered from adjacent residential uses.

## **COMMUNITY USES**

Alpena functions as a regional hub, drawing people into the community to access higher education, health services, recreation facilities and cultural activities. The community recognizes the importance of these facilities both for City residents and persons around the region. The plan designates areas to accommodate existing uses and potential expansion of uses.

### **Institutional**

This public and quasi-public designation includes government buildings, water treatment plant, sewage treatment facility, cemeteries, libraries, museums, indoor recreational facilities, community centers, hospitals, nursing homes, churches, schools and associated facilities, and colleges. City Hall and government buildings in the downtown are included in the Central Business District.

### **Park/Public Open Space**

This classification includes public parks, quasi-public parks and the City Marina. The category is designed to provide protection to existing recreation property and identifies areas planned for future recreation use.

## **NATURAL RESOURCES**

Water resources, natural areas and other environmentally sensitive areas are key elements of the quality of life for community residents.

### **Resource Conservation**

There are environmentally sensitive areas within the City that are not suitable for intensive development. Consistent with the natural resource goals and objectives, the plan designates those areas as resource conservation. It should also be recognized there are other environmentally sensitive areas not mapped as part of this land use plan. When development occurs in and around those sites, efforts should be made to minimize impacts and incorporate natural features into site development plans.

### **Water Resources**

Water is central to the daily life and community identity of the City of Alpena. The Thunder Bay River, Wildlife Sanctuary, Besser Lake and Lake Huron provide over twenty miles of waterfront and considerable opportunities for recreation. The plan recognizes the importance of water resources in the community's quality of life and the need to protect water quality.

## **SPECIAL ISSUE PLANNING AREAS**

### **Senior Citizen Issues**

On February 5<sup>th</sup>, 2006, an article in the "Bizjournals" recognized Alpena as the #1 place to retire in Michigan and 44<sup>th</sup> in the United States. An analysis of population trends shows people have known Alpena is a great place to retire for a long time. As the local population of "Boomers" reach retirement age and new retirees move into the area, the community must work toward accommodating an increased demand in senior and retirement housing and other services.



*Planning and development summary points:*

- Housing should be located close to shopping and services, be low maintenance, and offer a range of options and values.
- Market rate rental apartments, garden apartments, townhouses, and elder transition housing are lacking in Alpena. Public/private partnerships will be essential to achieve the desired outcome.
- Mixed-Use, Planned Development/Residential and Multi-Use Residential planning areas could accommodate this type of development.
- The community must adapt in order to make Alpena an “elder-friendly” place. For example, a high level of personal safety and security must be maintained. Transportation systems must be in place to facilitate in-town and out-of-town travel. Other businesses and services to meet senior’s commercial, health care, and lifestyle needs must be available. In addition to providing for the basic needs of senior citizens, recreational, cultural, social, and spiritual needs should be addressed. There must be supportive community systems in place which take seniors into consideration when decisions are made.

**Waterfront**

With over 20 miles of shoreline, including Lake Huron and the Thunder Bay River, waterfront is a key asset to the community. Based on public input, citizens would like to see a mix of uses along the waterfront.

*Planning and development summary points:*

- Continue to strengthen the connections between waterfronts and the City.
- Consider physical connections, visual connections, and spiritual connections to the water features.
- Make the connections easy by providing visual clues and connect activity points.
- Encourage a mix of uses such as hotels, restaurants, residential, parks, businesses, and industry.
- Transition that has occurred in recent years should be used as an example for the future (for example the Fletcher Mill Property).
- Continue to provide and improve pedestrian access to waterfronts.
- Continue to provide and improve boating access to water features.
- Develop a Comprehensive Waterfront Plan.

**Johnson/Miller Street Corridor**

The Johnson /Miller Street Corridor is a key entryway into the City. The corridor is the primary access point for persons going to the college and museum. As downtown attractions such as the Great Lakes Maritime Heritage Center and Old Town grow in popularity, this corridor will become increasingly important. As Johnson Street crosses 9th Avenue, the connection becomes fragmented, and visitors can become confused with directions to points of interest.

*Planning and development summary points:*

- Make the corridor a recognized and used entryway into Alpena.
- Maintain and enhance the campus-like setting of the corridor.
- Provide a better connection to downtown businesses and facilities.
- Provide visual and physical connections to the Thunder Bay River.
- Enhance landscaping to retain visual integrity and maintain slower traffic speeds.

- Maintain and enhance a pedestrian friendly environment by providing benches and small pocket parks; and strengthen pedestrian connections with the downtown.

### **Chisholm Street Corridor**

Chisholm Street is a primary commercial corridor and entryway into the City. Businesses located along this major thoroughfare are oriented to vehicular access. Because it is also Business US-23 and the major north-south state highway along the east coast, high traffic volumes make this one of the busiest streets in the City. The older commercial development with parking lots in the front of buildings, sidewalks, and numerous curb cuts results in a hardened urban landscape. The Comprehensive Plan recognizes this as a key commercial corridor and recommends the City supports development and redevelopment of businesses. The City of Alpena will coordinate with the Michigan Department of Transportation to implement changes along the Chisholm Street Corridor.

#### *Planning and development summary points:*

- Develop and implement an access management plan to improve safety and traffic flow.
- Develop and implement a Streetscape Plan to improve visual character, soften the urban edge, and incorporate multi-modal transportation.
- Develop a program, similar to the downtown building façade to continue to upgrade the visual character of the corridor.
- Improve pedestrian access along the corridor and provide benches and bike racks.

### **Downtown**

During the various community input sessions, people commented on the importance of the downtown to the identity of the community. Historically, the downtown was a regional draw as families came from surrounding farming communities to shop at the stores and do business. With the growth of “big box” retail outlets in Alpena Township, the downtown business district suffered, and its ability to draw people downtown diminished. The Downtown Development Authority and the City of Alpena have been working to improve the business climate and shopping experience in the downtown.

#### *Planning and development summary points:*

- Continue to explore grants and loan programs to make improvements to the downtown
- The City should continue to encourage and support residential growth in the District through the conversion of upper story living areas.
- The community needs to continue to strengthen the pedestrian environment through promoting the Walkable Community concept.
- Way-finding signs, benches, pocket parks and bike racks all add to the pedestrian experience.
- The downtown must strengthen its connections to the water, residential neighborhoods, attractions and community parks by providing trails, signs and visual clues.

### **Destination Alpena**

With its proximity to many natural amenities, waterfront location, full-service marina, and developed recreational system, Alpena is a natural haven for the outdoor enthusiast. In addition, it also has a number of “cultural” amenities available to capitalize upon. Amenities ranging from the Great Lakes Maritime Heritage Center/Thunder Bay National Marine Sanctuary and Underwater Preserve, the Besser Museum for Northeast Michigan, numerous historical sites, to two live performance theaters, blend

together with the area's natural amenities to create a destination that can appeal to a very wide range of people.

The City of Alpena recognizes the potential of the area being marketed as a destination location and has been partnering with a number of public and private agencies to facilitate this process.

*Planning and development summary points:*

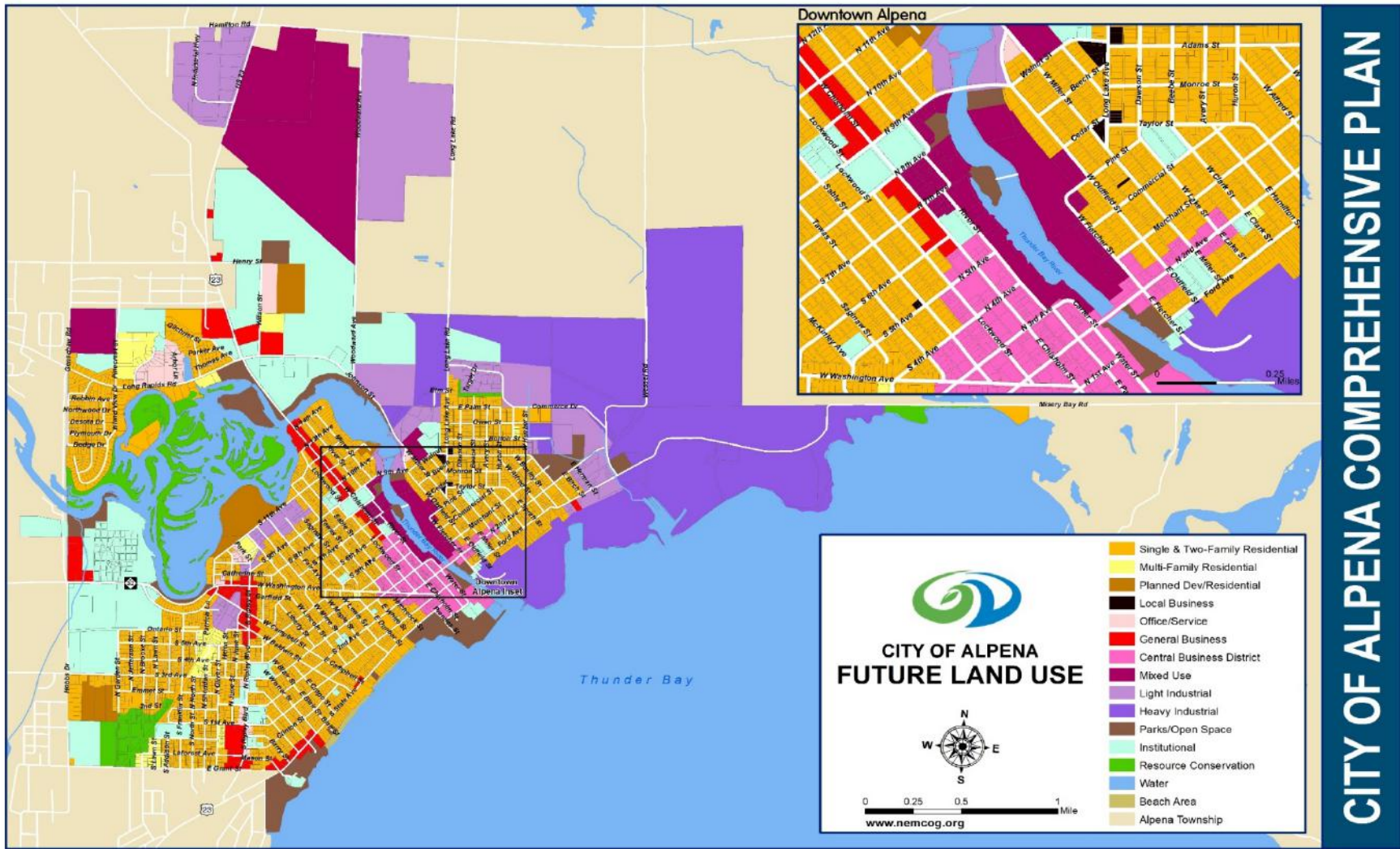
- Continue partnerships with the Alpena Area Convention and Visitors Bureau and other relevant agencies to develop consistent and coordinated marketing of the Alpena area.
- Implement the brand identity *Alpena: Sanctuary of the Great Lakes*.
- Work with the private sector to develop larger hotels, thereby increasing the total room count within the area.
- Continue to support the development of a waterfront campground within the area.
- Work with the appropriate public and private entities to market and promote the City of Alpena Marina as a first class marina and to provide the necessary amenities.

**Industrial Development**

Historically, heavy industry has been a linchpin of the local economy. As the twenty-first century begins, the total dominance of heavy industry over the local economy has waned. However, industrial development continues to provide employment opportunities and a significant tax base in the City. Therefore, the growth of new industry and the continuation of existing industry must be emphasized.

*Planning and development summary points:*

- Continue to work with economic linchpins Lafarge North America and DPI to expand and retain their industrial operations.
- Work with appropriate federal, state, and/or local entities to address and alleviate any environmental issues resulting from industrial development.
- Promote a range of industrial development in North and Commerce industrial parks.
- Continue brownfield redevelopment.
- Expanded college programs related to manufacturing should be developed at Alpena Community College.
- Retain existing manufacturing entities.



**CITY OF ALPENA COMPREHENSIVE PLAN**

**FIGURE 7-1 CITY OF ALPENA FUTURE LAND USE**

## **CITY OF ALPENA ZONING DISTRICTS**

The City of Alpena completed a comprehensive rewrite of its Zoning Ordinance in 2009. The new Ordinance was adopted by the Alpena City Council on January 18, 2010 with an effective date of March 1, 2010. The new Zoning Ordinance better reflects and supports the implementation of the goals and objectives and future land use contained in this Comprehensive Plan. Additionally, the Ordinance reflects changing conditions in the community and along the coastline.

Although many of the use districts remained the same or were consolidated, the City included major modifications, including the development of new districts and the inclusion of hybrid form based zoning in the Central business District (CBD), the new Commercial Corridor District (CCD) and in portions of the new Waterfront Development District (WD). These changes enable the Zoning Ordinance to provide new regulations that preserve the aesthetic and natural qualities of the City, while providing flexibility to accommodate innovative building and land use applications that enhance the quality of life for residents, create an attractive destination for visitors, and protect the abundant natural resources found in and around the community.

Following are the land use categories within which the 18 zoning districts and 3 overlay districts in the City of Alpena are organized (Figure 7-2):

### **RESIDENTIAL DISTRICTS**

The following districts are considered residential districts: One-Family Residential Districts (R-1 and R-2), Two-Family Residential District (RT), Multiple-Family Residential Districts (RM-1 and RM-2), Thunder Bay Junior High Neighborhood Overlay District. The principal purpose of these districts is to provide for a range of residential dwelling types at various densities for specific uses. These include: single family attached and detached, duplexes, multi-family structures and complexes, and condominium units. These may be developed utilizing standard subdivision, land division or site condominium regulations as permitted by state law.

### **NON-RESIDENTIAL DISTRICTS**

#### **Commercial**

The City of Alpena currently has the following commercially-related districts: Office Service District (OS-1), Central Business District (CBD), Commercial Corridor District (CCD), Local Business District (B-1), General Business District (B-2), and Commercial District (B-3). These commercial districts allow varying types and intensities of commercial establishments. OS-1 is intended to accommodate offices, banks and personal services and to serve as transitional areas between residential and commercial districts and to provide transition between major thoroughfares and residential districts. B-1 is intended to meet the day-to-day shopping needs of the adjacent residential districts. CBD provides for office buildings and retail stores within the City's traditional downtown. The new CCD provides specific development standards for unique commercial nodes along major corridors and high impact intersections within the City outside the downtown area. B-2 provides for more diversified businesses and is typically located along major thoroughfares. B-3 also provides for more diversified businesses which could result in external physical effect.



## Industrial

The City reduced the number of industrial districts from three to two, consolidating the two light industrial districts into a single I-1, Light Industrial, and re-designating the I-3 Heavy Industrial District, to the new I-2, General Industrial. The Light Industrial District (I-1) is intended to accommodate wholesale activities, warehouses, and industrial operations whose external physical effects do not affect the surrounding districts. The new General Industrial District (I-2) is designed for manufacturing, assembling, and fabrication activities whose external physical effects will be felt by surrounding districts and generally require state and/or federal environmental reviews and permits.

## SPECIAL ZONING DISTRICTS

The following special districts are overlay districts or multi-use districts that do not directly fall under the residential and non-residential categories listed above:

- **Thunder Bay Neighborhood Overlay** – Provides supplemental development standards for a vacant residential block and abutting properties to promote residential development compatible with the eclectic architecture of existing neighborhood residences dating from the late 1800's to the mid 1950's.
- **Downtown Overlay District** – Form based development standards applicable to the City's CBD district and portions of the Waterfront Development District (WD) located within the City's downtown, with the purpose of ensuring the compatibility of new, rehabilitated and existing downtown structures with one another utilizing specific standards for architecture, function and scale.
- **US 23 North Corridor Overlay** – Provision of common development standards along the principal entry corridor into the City from the north. The highway corridor consists of properties located in both the City of Alpena and Alpena Township.
- **Waterfront Development District (WD)** – A riverfront district providing public access along both sides and across the Thunder Bay River promoting mixed-use development of residential, commercial and water-related commercial/industrial uses.
- **Vehicular Parking District (P-1)** – Provides for the development of parking lots with specific design standards located as transitional zoning between business/industrial zones and abutting residential zones.
- **Conservation & Resources District (CR)** – District containing sensitive environmental habitats permitting limited development with strict development standards.
- **Parks & Recreation District (PR)** – Permits public recreational developments and protects existing public park and recreation lands for the use and benefit of the community.
- **Planned Unit Development (PUD)** – District provides development that does not readily comply within the typical zoning district classifications. Flexibility in use and development standards provides for creative design solutions unique to a property that provide the most efficient and effective use of the property to the benefit of the entire community.

One of the primary functions of a zoning ordinance is to promote development that directly assists in the implementation of the goals and objectives outlined in the Comprehensive Plan. The adoption of the new Zoning Ordinance in 2010 greatly facilitated this process. The City of Alpena lends itself naturally to the principles of New Urbanism – an approach to designing cities and neighborhoods, which attempts to reduce traffic and eliminate sprawl. Many of the goals of this plan can be addressed by implementing the 10 principles of New Urbanism: (1) Walkability (2) Connectivity (3) Mixed-Use and Diversity (4) Mixed Housing




(5) Quality Architecture and Urban Design (6) Traditional Neighborhood Structure (7) Increased Density (8) Smart Transportation (9) Sustainability and (10) Quality of Life.

The City’s new Zoning Ordinance incorporates many, if not all, of these principles through a combination of traditional and form based zoning techniques with a strong emphasis on the use of mixed use development, public non-motorized linkages, preservation of unique cultural and natural resources, and flexible design standards.

**Relationship Between Future Land Use Plan and Zoning Ordinance**

For the City Zoning Ordinance to effectively implement the overall development goals and objectives of the Comprehensive Plan, the established zoning districts must reflect and directly relate to the general land use categories of the Plan. The following chart illustrates the correlation between the Plan’s future land use categories and the corresponding zoning districts (Table 7-2).

<b>TABLE 7-2 RELATIONSHIP BETWEEN THE CITY OF ALPENA'S FUTURE LAND USE AND ZONING DISTRICTS</b>	
<b>Future Land Use Category</b>	<b>Corresponding Applicable Zoning District(s)</b>
<b>Single &amp; Two-Family Residential</b>	R-1, One Family Residential
	R-2, One Family Residential
	R-T, Two Family Residential
	TBO, Thunder Bay Overlay
<b>Multiple Family Residential</b>	RM-1, Multiple Family Residential
	RM-2, Multiple Family Residential
<b>Planned Development/Residential</b>	PUD, Planned Unit Development
<b>Local Business</b>	B-1, Local Business
<b>Office/Service</b>	OS-1, Office Service
<b>General Business</b>	B-2, General Business
	B-3, Commercial
	CCD, Commercial Corridor
	 US-23 North Corridor Overlay
<b>Central Business District</b>	CBD, Central Business
	WD, Waterfront Development
	DOD, Downtown Overlay
<b>Mixed Use</b>	CCD, Commercial Corridor
	WD, Waterfront Development
	CBD, Central Business
	PUD, Planned Unit Development
<b>Light Industrial</b>	I-1, Light Industrial
<b>Heavy Industrial</b>	I-2, General Industrial
<b>Parks/Open Space</b>	PR, Parks and Recreation
<b>Institutional</b>	All Residential & Business Zoning Districts
	Dependent on Specific Use.
<b>Resource Conservation</b>	CR, Conservation and Resources

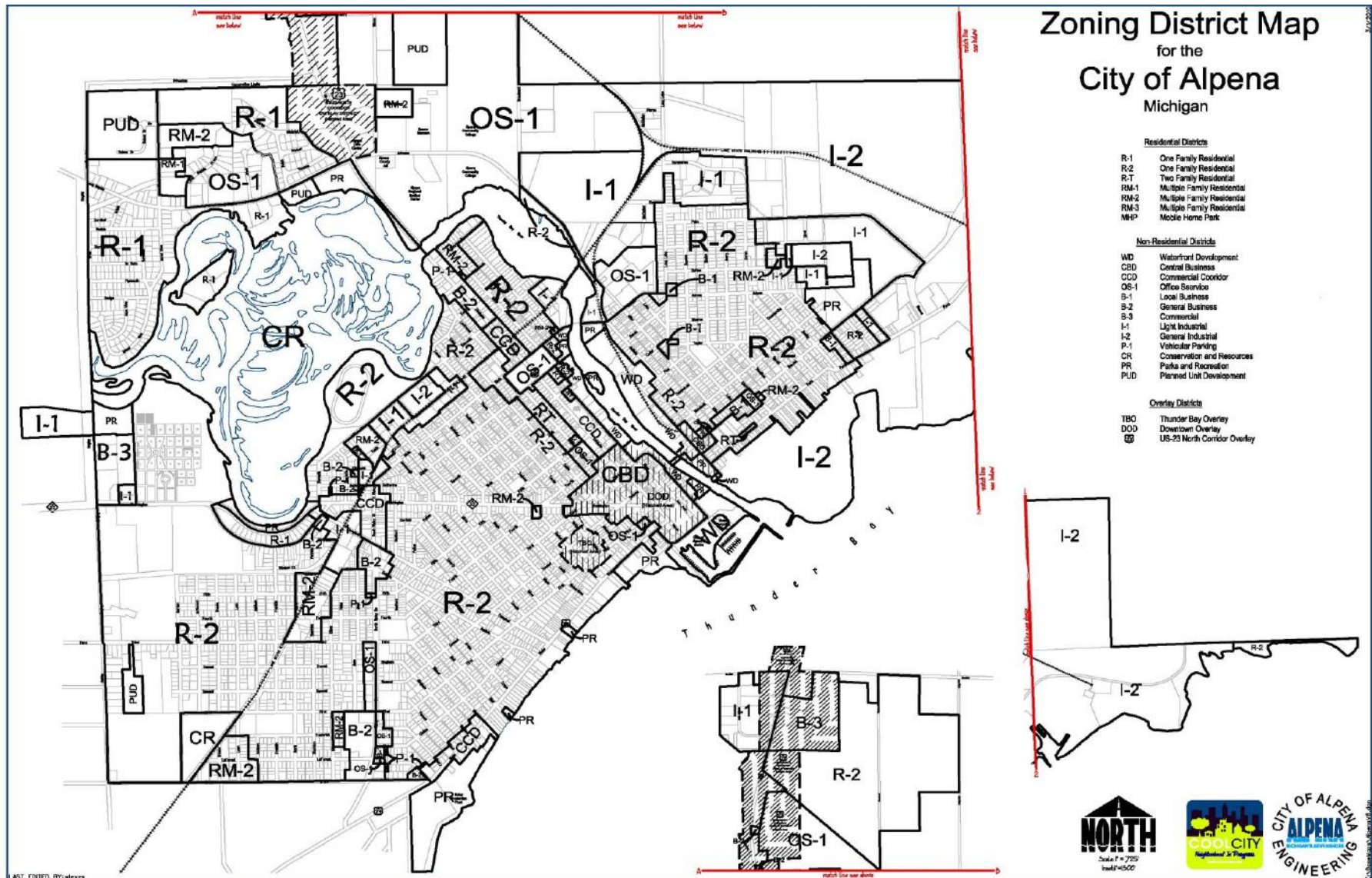


FIGURE 7-2 CITY OF ALPENA ZONING DISTRICT MAP

## **ALPENA TOWNSHIP FUTURE LAND USE**

Alpena Township has identified eight future land use categories in the 2017 Alpena Township Master Plan. These categories are listed below and depicted in Figure 7-3.

### **Environmental Conservation**

This category includes lands that were identified as having unique or fragile environmental characteristics. Land in the category is intended to be protected from potential dense development.

### **Forest/Recreation**

This category is intended to preserve the open and natural characteristics of the area and provide extensive hunting and recreational lands as well as provide areas for timber supply.

### **Agricultural**

The agricultural designation is based on the soil capability of the area and is intended to preserve good farm soils for productive agricultural activities.

### **Waterfront Residential**

Much of the existing residential development has occurred on shorelines and waterways. This designation is intended to identify areas that need special residential development standards to protect the water resources from the specific development problems found in waterfront areas.

### **Mixed Residential**

This category identifies areas of mixed second tier development around existing residential development.

### **Single Family Residential**

This designation is intended to preserve existing residential development where land has been subdivided in the township and to expand specific areas for future residential growth.

### **Commercial Development**

The primary areas designated for commercial development are the U.S. 23 South corridor to Partridge Point, the U.S. 23 North corridor to Bradbury Road, and the M-32 corridor to the Township boundary.

### **Industrial/Extractive**

Industrial and Extractive areas include land where industrial or mining activities currently exist or where land is zoned for that purpose. Commercial activities compatible with industrial are also recommended in this area. Uses should be environmentally-friendly and should use landscape buffers.

## **SPECIAL ISSUE PLANNING AREAS**

### **Parks and Community Recreation**

Public input for the 2017 Master Plan indicated residents are interested in maintaining and expanding the recreational opportunities in the township since outdoor recreation is important to the local economy. Key recreational assets include Rockport State Park, public access sites, and waterways.

*Planning and development summary points:*

- Work with adjacent communities, the Michigan DNR, and the Michigan DOT to develop non-motorized trails along the U.S. 23 corridor and within Alpena Township.
- Work with TBIPS, BLM, SHPO, NOAA, Michigan DNR, and Michigan DOT to develop a day use park on Thunder Bay Island that includes the lighthouse/keeper's house and foghorn building.
- Update and implement the management plan for the Nature Preserve on Misery Bay.

### **Resource Protection and Management**

Public input for the 2017 Master Plan indicated residents highly value and support the retention of the township's rural landscape, including its forests, wetlands, and farms.

*Planning and development summary points:*

- Work with other organizations to protect and manage the township's resources (e.g. Michigan DNR, Michigan EGLE, Michigan Coastal Management Program, Great Lakes Restoration Initiative, U.S. Fish and Wildlife Service, Huron Pines RC&D Council, Thunder Bay River Restoration Committee, etc.).
- Arrange lots and internal subdivision roads to hide development from adjacent roads and properties.
- Use woodlands, existing native vegetation, and the landscape to act as a screen for all types of development.
- Implement conservation cluster residential development, conservation easements, or fee simple purchase by local and state governments to protect and preserve wetlands.
- Maintain a vegetation buffer around wetlands.
- Prevent development in wetlands or associated buffer areas (e.g. roads, parking lots, buildings, septic systems, stormwater detention facilities, and lawns).

### **Corridor Redevelopment**

As developments age and new approaches to corridor development become available, redevelopment activities should occur along Alpena Township's three primary highway corridors, U.S. 23 South, U.S. 23 North, and M-32.

*Planning and development summary points:*

- Conduct corridor studies.
- Build coalitions with landowners and businesses.
- Develop corridor overlay zoning districts, mixed use zoning, and PUD's.
- Seek alternative funding sources.
- Implement action items from the *South Bay Corridor Plan*.
  - Revitalize businesses through new construction, reuse existing structures, and demolish deteriorated buildings.
  - Build multi-family housing (e.g. condominiums, townhouses, apartments, row houses, etc.).
  - Develop new parks with amenities that are appropriate to the park's location, including picnic areas, non-motorized trails, fishing, kayaking, etc.
  - Develop non-motorized trails to link the regional trail system.

## **Roads**

Funding to maintain county roads comes from the state, local sources, and the township.

### *Planning and development summary points:*

- Work with the County Road Commission to implement a coordinated asset management program with the goal of maintaining and improving the road network. It should be noted there are no intentions to upgrade the entire gravel road network to a paved road network.
- The township should consider adopting driveway, private road, and access management standards to address road safety, maintenance, and possible conversion from public ownership.

## **Hazard Mitigation**

The Alpena County Hazard Mitigation Plan ranks 25 different hazards based on their likelihood of occurrence, damage capacity, affected area, population impact (casualty potential), ability to mitigate, public awareness, response capability, interagency cooperation, and economic impacts. The township has a primary role in implementing mitigation strategies through government administration or regulatory actions/processes that influence how land and buildings are developed and built, how natural resources are preserved or restored, and how people and property are protected during and after a disaster or hazard event.

Alpena Township will continue to collaborate with Alpena County Emergency Management to implement the hazard mitigation strategies from the county's hazard mitigation plan.

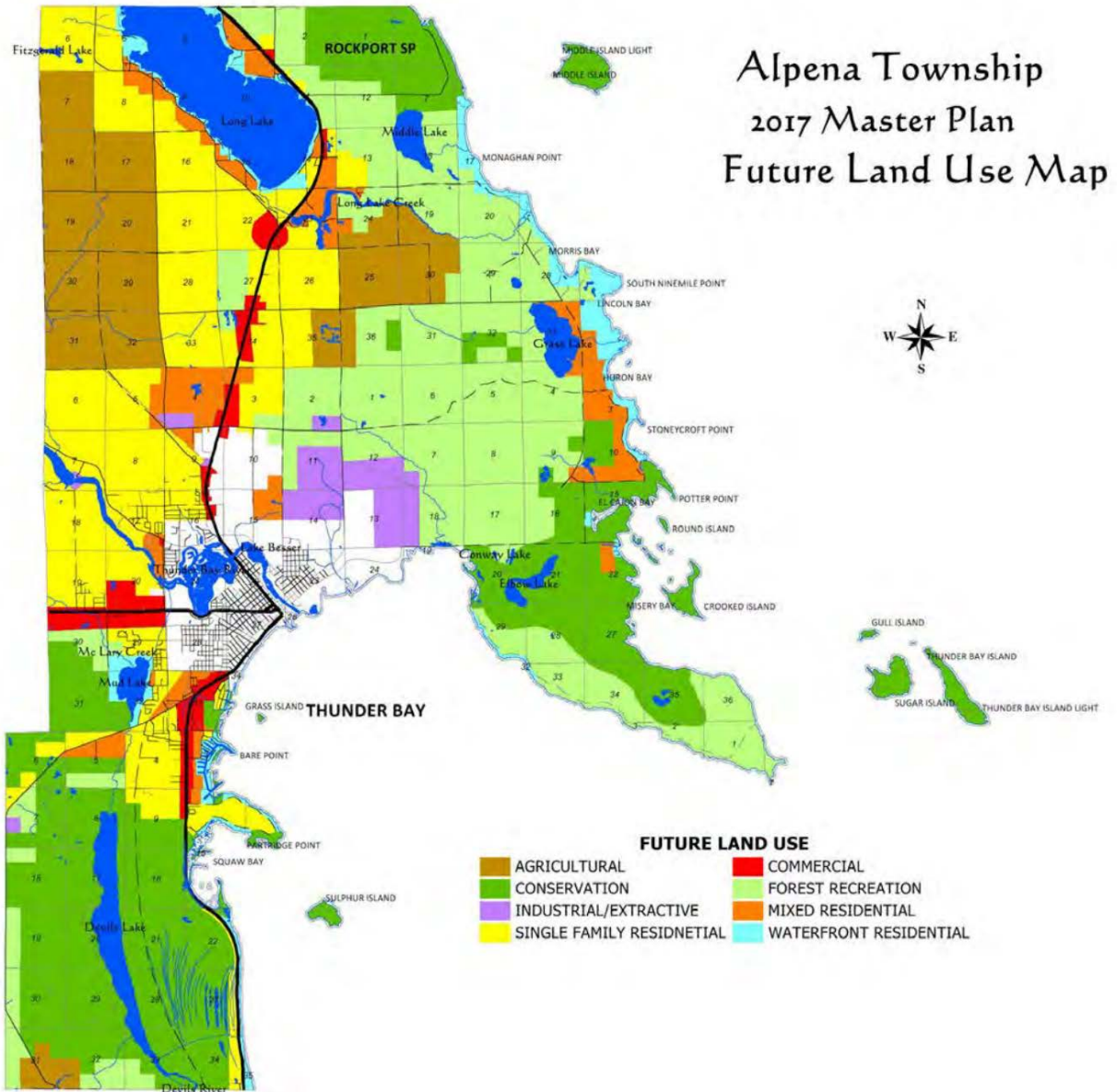
## **Open Space Development**

The sprawl of subdivisions tends to negatively impact rural character through the conversion of natural and agricultural open spaces to residential areas.

### *Planning and development summary points:*

- Preserve open space in subdivisions through the use of clustering homes and limiting the size of improved lawns. These preserved spaces should be made visible to adjacent roads and properties.
- Protect and preserve forests and farmlands through Purchase of Development Rights (PDR), conservation open space development standards, clustering requirements for residential uses, incorporating open space requirements into Planned Unit Development zoning, and offering tax breaks/incentives for continuing forestry and farming uses.





**FIGURE 7-3 ALPENA TOWNSHIP FUTURE LAND USE**

### ALPENA TOWNSHIP ZONING DISTRICTS

Alpena Township administers its own zoning ordinance. The township completed a comprehensive rewrite of its ordinance in 2020. The Ordinance was adopted on May 26, 2020 and took effect on June 5, 2020. There are thirteen zoning districts in the Ordinance.

The following are the land use categories within which the 13 zoning districts in Alpena Township are organized (Figure 7-4):



**C - Conservation District**

The C - Conservation District is intended to designate large tracts of land for recreational and resource conservation purposes. The district includes State-owned forest and park lands as well as privately held recreational property. In addition, the Conservation District includes environmentally sensitive areas, such as wetlands, offshore islands, sinkhole areas and other natural features which preclude intensive development.

<b>Lot &amp; Structure Standards</b>	
Lot Area	5 acres
Lot Width (min.)	300 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	35 ft.
Side (min.)	20ft. – at least one side; 40 ft. – total of two sides

**FR - Forest Recreation District**

The FR - 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 natural resources and provide enjoyment for both visitors and the community at large.

<b>Lot &amp; Structure Standards</b>	
Lot Area	40,000 sq. ft.
Lot Width (min.)	150 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	35 ft.
Side (min.)	20 ft. – at least one side; 40 ft. – total of two sides

**A - Agricultural District (A)**

The A - Agricultural District is designed to conserve large tracts of productive agricultural land for active farming use. The district is intended to include agricultural accessory uses, one- and two-family dwelling units, and other open space or low-density recreational uses consistent with an agricultural setting.

<b>Lot &amp; Structure Standards</b>	
Lot Area	40,000 sq. ft.
Lot Width (min.)	150 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	35 ft.
Side (min.)	20 ft. – at least one side; 40 ft. – total of two sides

**WR - Waterfront Residential District**

The WR - Waterfront Residential District is primarily established to provide residential sites and uses on Lake Huron, inland lakes, and streams within the Township in keeping with the Master Plan. In addition to waterfront residential uses, the district will allow as a special land use certain commercial and recreation developments which are water-related, providing such development is designed to be compatible with the residential character of neighboring properties. Further, all development plans are intended to insure the continued maintenance of high environmental quality in Township waters and shoreline areas.

<b>Lot &amp; Structure Standards</b>	
Lot Area	15,000 sq. ft.
Lot Width (min.)	100 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	25 ft.
Side (min.)	5 ft. – at least one side; 15 ft. – total of two sides
Side-Streetside (min.)	10 ft. when there is a common rear yard. For reversed corner lots – street side yard shall be equal to the front yard setback of the district.
Lots with Multiple Dwellings	For the purpose of said yard regulations, multiple dwellings shall be considered as one (1) building occupying one (1) lot.

**R-1 - One-Family Residential District**

The One-Family Residential District is designed to provide for one-family dwelling sites and the residentially related uses in keeping with the Master Plan of residential development in the township. The uses permitted by right and on special condition are intended to promote a compatible arrangement of land uses for homes, with the intent to keep neighborhoods relatively quiet and free of unrelated traffic influences.

<b>Lot &amp; Structure Standards</b>	
Lot Area	20,000 sq. ft.
Lot Width (min.)	100 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	25 ft.
Side (min.)	5 ft. – at least one side; 15 ft. – total of two sides
Side-Streetside (min.)	10 ft. when there is a common rear yard. For reversed corner lots – street side yard shall be equal to the front yard setback of the lot to the rear.
Lots with Multiple Dwellings	For the purpose of said yard regulations, multiple dwellings shall be considered as one (1) building occupying one (1) lot.

**R-2 - Rural Residential District**

The R-2 Rural Residential District is designed to provide single-family and two family home sites in areas more rural in character.

<b>Lot &amp; Structure Standards</b>	
Lot Area	20,000 sq. ft.
Lot Width (min.)	100 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	25 ft.
Side (min.)	5 ft. – at least one side; 15 ft. – total of two sides
Side-Streetside (min.)	10 ft. when there is a common rear yard. For reversed corner lots – street side yard shall be equal to the front yard setback of the lot to the rear.
Lots with Multiple Dwellings	For the purpose of said yard regulations, multiple dwellings shall be considered as one (1) building occupying one (1) lot.

**R-3 - Mixed Residential District**

The R-3 Mixed Residential District is designed to provide single-family and multiple family home sites in township areas where the character of existing uses is somewhat mixed, there being incidences of business among single-family residences.

<b>Lot &amp; Structure Standards</b>	
Lot Area	15,000 sq. ft.
Lot Width (min.)	100 ft. (The length of the lot shall not exceed four (4) times the width)
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	25 ft.
Side (min.)	5 ft. – at least one side; 15 ft. – total of two sides
Side-Streetside (min.)	10 ft. when there is a common rear yard. For reversed corner lots – street side yard shall be equal to the front yard setback of the lot to the rear.

**OS - Office Service District**

The OS Office Service District is intended to accommodate various office, professional, and personal service uses. This district can serve as a transitional area between the higher-intensity retail and commercial uses and the lower-intensity residential uses. This district is specifically intended to prohibit retail commercial establishments which require high volume, short-term parking.

<b>Lot &amp; Structure Standards</b>	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	20 ft.
Side (min.)	5 ft. – at least one side; 10 ft. – total of two sides; On the exterior side yard which borders on a residential district, there shall be provided a setback of not less than ten (10') feet on the side abutting the residential street.

**B-1 - Restricted Business District**

The B-1 Restricted Business District is designed to give the township a business district that is somewhat more selective than a General Business District, to provide for the establishment of neighborhood shopping areas, personal services and professional office areas that are primarily compatible with and of service to township residential uses.

<b>Lot &amp; Structure Standards</b>	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
<b>Setbacks</b>	
Front (min.)	25 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	20 ft.
Side (min.)	5 ft. – at least one side; 10 ft. – total of two sides; On the exterior side yard which borders on a residential district, there shall be provided a setback of not less than ten (10') feet on the side abutting the residential street.

**B-2 - General Business District**

The B-2 General Business District is designed to provide sites for more diversified business types and is often located so as to serve passerby traffic.

<b>Lot &amp; Structure Standards</b>	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
<b>Setbacks</b>	
Front (min.)	20 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	20 ft.
Side (min.)	5 ft. – at least one side; 10 ft. – total of two sides; On the exterior side yard which borders on a residential district, there shall be provided a setback of not less than ten (10') feet on the side abutting the residential street.

### B-3 - Community Business District

The B-3 Community Business District is established to cater to the needs of a larger consumer population and is generally characterized by an integrated or planned cluster of establishments served by a common parking area and generating large volumes of vehicular and pedestrian traffic.

Lot & Structure Standards	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
Setbacks	
Front (min.)	75 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	20 ft.
Side (min.)	50 ft. – total of 2 sides. No side setback shall be less than 10’.

### M-1 - Light Manufacturing District

The M-1 Light Manufacturing District is designed so as to primarily accommodate wholesale activities, warehouses, major repair operations, manufacturing and other industrial activities whose external, physical effects are such that it should be restricted to the area of the district and in no manner affects in a detrimental way any of the surrounding districts. Uses with external effects may be allowed by Special Use.

Lot & Structure Standards	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
Setbacks	
Front (min.)	30 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	20 ft.
Side (min.)	10 ft. – one side; 20 ft. – two sides



**M-2 - Mixed Manufacturing District (M-2)**

The M-2 Mixed Manufacturing District is designed primarily for manufacturing, assembling, and fabrication activities including large scale or specialized industrial operations, whose external physical effects will be felt to some degree to surrounding districts. The M-2 District is so structured as to permit the manufacturing, processing, and compounding of semi-finished products from raw materials.

<b>Lot &amp; Structure Standards</b>	
Lot Area	None
Lot Width (min.)	None (The length of the lot shall not exceed four (4) times the width); 200 feet for new lots with frontage on U.S. 23 or M-32
<b>Setbacks</b>	
Front (min.)	50 ft.
Waterfront (min.)	25 ft. from ordinary high water mark
Rear (min.)	40 ft.
Side (min.)	20 ft. – one side; 40 ft. – two sides

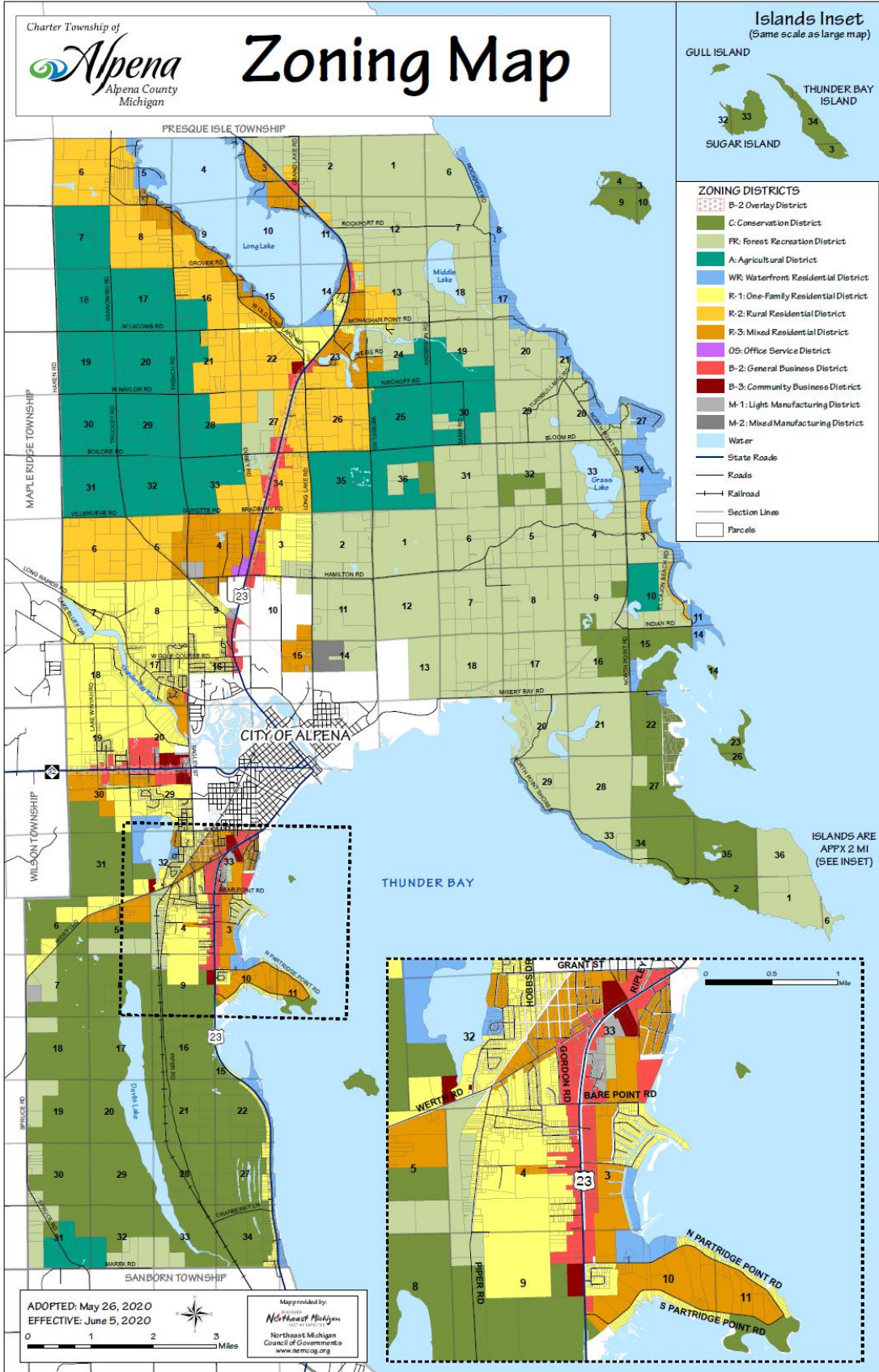


FIGURE 7-4 ALPENA TOWNSHIP ZONING MAP

## **GREEN TOWNSHIP FUTURE LAND USE**

The future land use plan may be used as a guide by the township when considering land use and development decisions. The future land use recommendations are based on environmental conditions, existing land uses, available community services and facilities, existing land division patterns, current zoning, and the community's goals and objectives. The preservation of the existing character in Green Township played a significant role in creating the future land use map by showing a strong correlation between existing land use and future land use, while designating generalized areas for commercial development to prevent these uses from occurring in areas of incompatible land use.

Green Township has identified seven different future land use planning areas to ensure existing land uses can continue, natural resources and farmlands are protected, and reasonable growth can be accommodated with minimal land use conflicts or negative environmental impacts (Figure 7-5). Some lots created prior to the Master Plan and the Green Township Zoning Ordinance may be smaller than the larger lots this plan recommends. Future development regulations should recognize these conditions and provide for the reasonable continuance of their use and character.

### **Medium Density Residential**

The Medium Density Residential development category is primarily designed to accommodate single-family dwellings on lots with a minimum size of one-quarter of an acre. The medium density residential category is intended to preserve existing residential development where land has already been subdivided into smaller lots.

The principal uses allowed in this district are single-family and two-family dwellings. Special uses may be allowed if designed to be compatible with the residential setting. Other compatible uses include home occupations contained within the dwelling, home child care facilities, bed and breakfast facilities, churches and associated structures, parks and playgrounds, schools and libraries, community buildings and publicly-owned buildings, clubs and lodges, museums, nature parks, and public utility buildings. The township requires site plan review and special approval for most uses other than individual single and two-family homes. The development of a waterfront residential overlay zone addresses issues relating to water quality and shoreline protection.

Renovation and redevelopment of existing streamside properties is expected to continue as seasonal residences are replaced by year round homes. This renovation and redevelopment should be sensitive to the protection of native vegetation greenbelts.

Higher density residential uses, such as apartments, townhouses, condominiums, convalescent or nursing homes, or manufactured home developments, should be restricted due to a lack of public water and sewer service available in the township. If adequately engineered wastewater disposal systems are included as part of the design, higher density development can be considered. It is also important to note that under state law, manufactured homes are allowed in any residential area if the structure meets all requirements set for site-built homes.

### **Agricultural Residential**

Green Township has made it a high priority to continue the farming tradition of the community. Farmland not only contributes significantly to the scenic and rural character of the township, but also represents a way of life that the community's character is built upon. The Agricultural-Residential land use designation is the second most extensive land use category in the township and is intended to

encourage the continued existence and expansion of farms within the township. The agricultural areas are primarily located in the eastern portion of the township with smaller areas located in the northwest portion.

In this category, farm dwellings and agricultural accessory buildings are allowed, as well as crop production and the raising of livestock normally associated with farming activities. The plan recommends this category accommodate single-family dwellings at a low density. Plant nurseries, greenhouses, bed and breakfast inns, churches, and forest and wildlife preserves are also allowed.

Special uses are allowed if designed to be compatible with the primary uses. Where compatible with surrounding uses, private clubs, veterinary services, certain commercial establishments relating to agriculture, human care facilities, manufactured home developments, golf courses, publicly-owned buildings and publicly-owned parks are allowed with an approved site plan under the special approval process.

### **Farm and Forest**

Current land use patterns have produced large forested areas in the township, which has resulted in this land use category being the most extensive category recommended for the township. The presence of this landscape is a major factor in the township's community character and quality of life, and has prompted the township to place a high priority on maintaining quality natural resources and the community's character. Much of the land that is currently zoned Farm and Forest has been included in the Farm and Forest category. However, the boundaries were generally drawn around land that is forested in nature and not being used for agricultural purposes at the present time. The creation of this land use category allows the township to preserve large tracts of forested land, while still allowing farming operations outside of the Agricultural-Residential areas. The Farm and Forest areas are concentrated in the northwestern portion and the south-central portion of the township.

This category encourages forestry operations, resource management, wildland recreation activities, and farming operations combined with residential uses. The plan recommends this category accommodate single-family dwellings at a lower density. Larger residential lots provide privacy and tend to maintain ecological integrity of the natural resources. Other uses allowed for these areas include home child care facilities, hunting camps, parks, and playgrounds. In addition, recreational camps and clubs, golf courses and resorts and similar uses are allowed – some of these are special land uses. Gravel pits with site reclamation plans, sawmills, retail commercial enterprises related to recreational activities and home occupations are allowed under the special approval process, provided the activity is compatible with surrounding neighborhoods.

### **Neighborhood Business**

Much of the major retail and service needs of the township are met by facilities in the City of Alpena. However, Green Township wishes to set aside areas to accommodate neighborhood business services that will meet the immediate needs of residents. Uses that are allowed in neighborhood commercial zones (B-1 in the Zoning Ordinance) include retail and service stores without outside storage areas, professional offices, banks, public buildings, schools, restaurants, taverns, and fraternal organizations. In granting approval to such operations, buffer zones, access management, and parking are considered.

### **Highway Commercial**

Located at the intersections of M-32 and M-65 north, and M-32 and M-65 south, these areas are designed to serve local needs and motorists passing through Green Township (B-2 in the Zoning Ordinance). Highway commercial businesses, which are heavier traffic generators, are located to serve vehicular traffic. Development should consider access management, buffering, signs, and landscaping to maintain traffic safety and minimize any negative visual impacts of development along the main roads.

Compatible uses include gas stations, vehicle service and repair businesses, auto sales and service, retail operations that require large outside storage areas, public buildings, drive-in food and drink establishments, hotels, and motels. These areas are designated with a red asterisk on the Future Land Use map indicating these commercial areas are not restricted only to the parcels abutting the above intersections. As these commercial centers develop, they could expand out from these intersections, as needed.

### **Light Industrial**

The Light Industrial future land use category is designed to provide sites for wholesale activities, warehouses, retail operations that require large outside storage areas, light manufacturing operations, and gravel pits. Operations are subject to performance standards relative to impacts on the community. This district is compatible with a business district, but not compatible with residential districts without a required buffer.

Large scale industrial development is not accommodated in the township's future land use since there are existing industrial parks in adjacent communities (Alpena and Hillman) that provide the necessary utilities and services, and have available sites for industrial-type operations. Furthermore, the township's soil conditions, and the township's lack of a public water and sewer system make the township unsuitable for large scale industrial development.

### **Resource Conservation**

The Resource Conservation category is designed to provide protection to the environmentally sensitive areas in the township since the lands significantly contribute to the quality of life and rural character of the community. Locations recommended for the Resource Conservation category include a large area south of Fletcher Pond as well as a 400-foot buffered area along the riparian areas throughout the township.

The Resource Conservation areas should be protected from intense development without denying private property owners reasonable economic use of the land. This plan encourages the retention of contiguous resource areas, river greenbelts, wetlands, scenic areas and wildlife habitat. This land use category is implemented as an overlay zone in the areas along the Thunder Bay River and portions of Bean Creek. Varying uses are allowed, however, stricter setbacks and environmentally-conscious regulations, such as riparian greenbelts, are incorporated into these areas. No Resource Conservation overlay zone is currently in effect in the area south of Fletcher Pond.

## **SPECIAL ISSUE PLANNING AREAS**

### **Transportation Network**

With the exception of M-32, M-65, and portions of several county roads (Werth Road, Moores Landing Road, Jacks Landing Road, Manning Hill Road, and several roads around Beaver Lake), the transportation



network is mainly gravel base, secondary county roads. Green Township intends to work cooperatively with the Alpena County Road Commission to maintain and improve this road network.

### **Waterfront Residential**

Areas around the rivers in Green Township have been designated Resource Conservation to preserve water quality and property values. The Green Township Planning Commission has adopted waterfront greenbelt and waterfront setback regulations in the Zoning Ordinance to preserve the scenic beauty, property value, and environmental integrity of adjacent areas. The waterfront greenbelt applies to all property located within fifty (50) feet of the ordinary high water mark of a stream. The regulations require at least 70% of the lot width at the water line be kept in its natural vegetative state with a 50 foot wide strip of trees, shrubs, herbaceous plants or unmowed grass. No structures are permitted except those related to water use (e.g. boat launches, docks, and boathouses). No burning of leaves or stockpiling of grass, leaves or compost is allowed. In addition, setbacks for septic systems must meet those set by the District Health Department and no dredging or filling can occur without a soil erosion and sediment control permit.

Waterfront setback regulations are also contained within the Zoning Ordinance and apply to any property that borders on or contains a natural river, stream, pond, or lake, which is identifiable on the U.S. Geological Survey Maps of Green Township. The purpose of these regulations is to protect surface water resources and floodplains from adverse construction or alteration in order to:

1. Avoid structural encroachment of the natural waters and waterways, except in the situation of uses traditionally dependent upon direct water access.
2. Promote high water quality through the encouragement of an undisturbed natural area to trap nutrients and sediment from entering natural waters, and to prevent erosion.
3. Protect the natural environment of streams and lakes for wildlife habitat purposes and to preserve, to the extent practical, the natural image of landscapes.

The following regulations are contained within the Green Township Zoning Ordinance:

1. No fill or permanent construction shall occur in any floodway appurtenant to a natural river, stream, pond, or lake, which is identifiable on U.S. Geological Survey Maps of the 7' or 15' quadrangle series, and which is further identified as an area that is prone to annual flooding (i.e. a natural storage basin during high water levels). Fill can be approved if accomplished in such a way as to not reduce or diminish the water holding capacity of the natural floodway, and that such is documented by a Registered Professional Engineer or similarly qualified professional.
2. Permanent structures, parking lots, and other impervious surfaces, except boat docks, boat slips, ramps, or marinas, or other water-dependent uses, shall observe a minimum setback of seventy-five (75) feet from the documented 1986 High Water Mark in all Districts. Except for a potential interference in floodways, the setbacks of this paragraph shall not apply to drains or intermittent streams. An intermittent stream is one which holds water at some time during each year, but for not more that eight (8) months.
3. Ground decking and patios without railings and which are less than eighteen (18) inches



above the natural grade at the deck building line may extend into the setback area, but not nearer to the shoreline than twenty-five (25) feet. Railed decks and enclosed patios over eighteen (18) inches high shall observe the setback lines for main buildings, in the applicable zoning district. Walkways and pathways, if not wider than six (6) feet, and if perpendicular to the shoreline, are not restricted by this section.

### **Water and Wastewater**

According to information obtained from the USDA Soil Survey, much of the township has severe limitations for septic system drain fields. These limitations include depth to water table, wetness, poor filtering capacity and ability to perk water. Due to a lack of public water and sewer service, higher density residential uses (e.g. apartments, nursing homes, manufactured home developments, etc.) and high density commercial and industrial development should only be considered if adequately engineered wastewater disposal systems are included as part of the design.

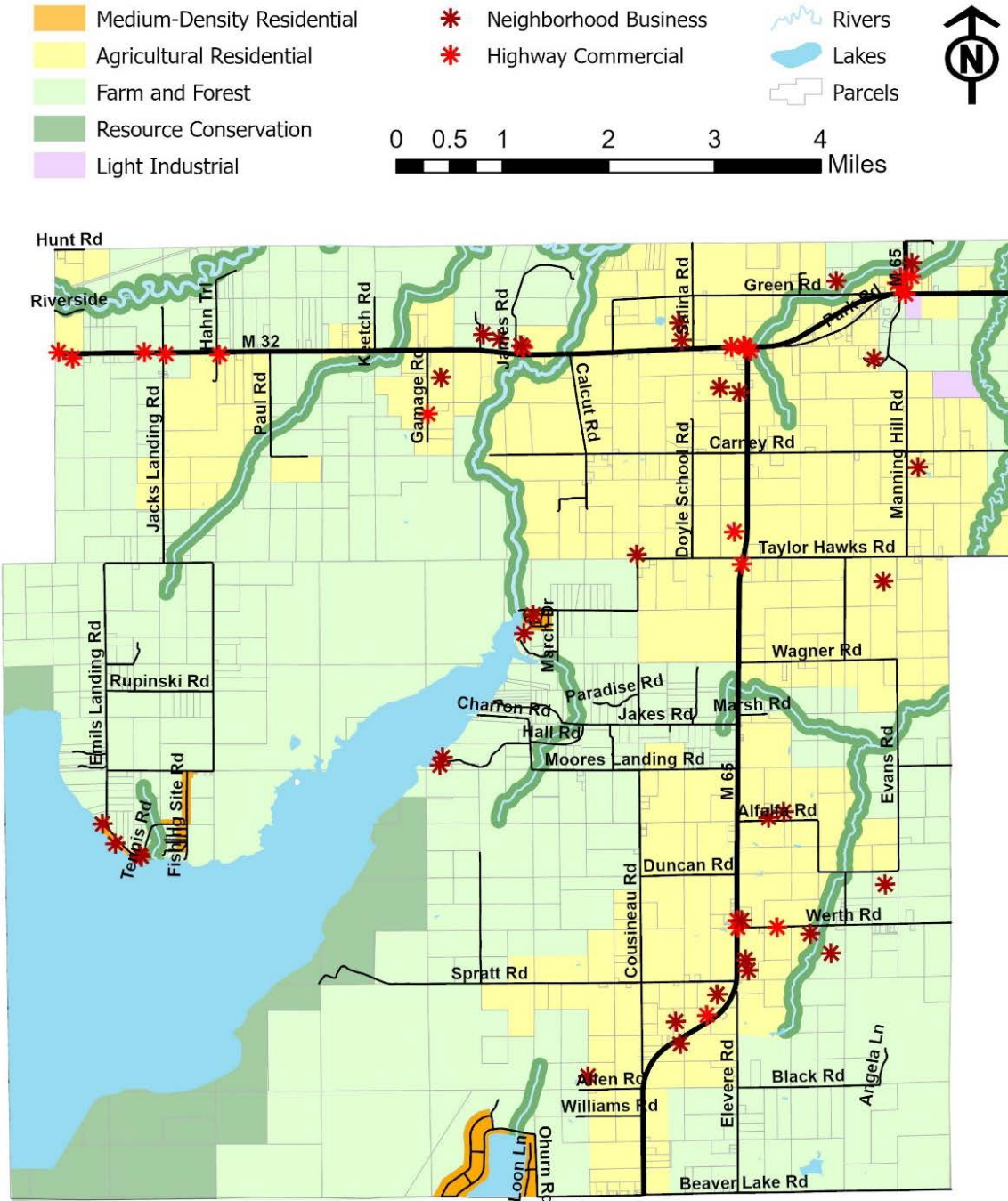
This plan also encourages upgrading individual septic systems to mounded or secondary treatment systems. The township should also pursue funding sources to assist landowners with upgrading septic systems or possibly developing cluster systems where appropriate.

### **Open Space Development**

Preserving existing forest and farmlands has been identified as a priority for Green Township. Methods other communities have employed to protect and preserve privately held forest and farmlands, while protecting a landowner's economic investment include the Purchase of Development Rights (PDR), Transfer of Development Rights (TDR), conservation open space development standards, clustering requirements for residential uses, and tax breaks or incentives for continuing forestry and farming use. The conservation open space residential and commercial development design standards are effective means to preserve scenic views, rural character, farmland, meadows, woodlands, steep slopes, and wetlands with a target of preserving 50% of the land within a development. It is recommended these alternatives be investigated for possible application in Green Township as a way to balance economic rights with wildland preservation goals.

# Green Township

## Future Land Use



Map created by the Northeast Michigan Council of Governments  
 Reviewed by the Green Township Planning Commission

**FIGURE 7-5 GREEN TOWNSHIP FUTURE LAND USE**

## **GREEN TOWNSHIP ZONING DISTRICTS**

Green Township is divided into nine districts (Figure 7-6).

### **R-1 – One-Family Residential District**

The purpose of this district and its accompanying regulations is to provide a stable and sound medium-density residential environment for single family housing neighborhoods free from other uses, except those which are (1) normally accessory to and (2) compatible with, supportive of, and convenient to the various types and compositions of families living within such residential land use areas.

- Minimum Lot Area: 16,900 sq. ft.
- Minimum Setbacks
  - Front: 20 ft.; 40 ft. on Loon Lane
  - Sides: 5 ft. except on the longest side of a corner lot where a 20 ft. corner side yard shall be provided and maintained. Principal buildings other than dwellings shall have interior side yards of not less than 10 ft. in width and shall have a corner side yard of 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: 65 ft.

### **R-2 - Agricultural District**

This zoning district provides for a mix of agricultural and residential use with limited commercial uses relating chiefly to agriculture.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft. on each side of any dwelling, except on the longest street side of a corner lot where a 20 ft. side setback shall be provided and maintained.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **R-3 - General Residential District**

The purpose of this district and its accompanying regulations is to provide a stable and sound residential environment for single-family and multiple-family dwelling units along with business uses which are (1) normally accessory to and (2) compatible with, supportive of and convenient to the various types and compositions of families living within such residential land use areas. The size of lots and parcels should be planned to be of such area and width so that they can sustain healthful and sanitary on-site water supply and wastewater disposal.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.; 65 ft. for multiple-family dwelling units with parking in the front yard.
  - Sides: 10 ft.; 20 ft. for corner lots and multiple-family dwelling units.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **RR - Recreational Residential District**

The purpose of this district is to accommodate single-family dwelling units along with certain low-impact public and private recreational uses along the waterfront.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.; 20 ft. for the longest street side of a corner lot where a 20 foot corner side yard setback shall be provided and maintained.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **FF-1 - Farm and Forest District**

This zoning district is provided to promote the proper use, enjoyment, and conservation of the forested and rural areas of the township by providing a district for residential, agriculture and forestry-related uses.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.; 20 ft. for the longest street side of a corner lot where a 20 foot corner side yard setback shall be provided and maintained, and for principal buildings other than dwellings.
  - Rear: 35 ft.
- Depth to width ratio: 4 to 1

### **B-1 - Neighborhood Business District**

The purpose of this district and its accompanying regulations is to provide for stable and sound neighborhood shopping areas, tourist services, personal services, and professional offices that are compatible with and of service to residential uses.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.; 20 ft. if a side yard abuts a lot with a residential use.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **B-2 - General Business District**

The purpose of this district and its accompanying regulations is to provide for a general commercial district which contains commercial uses of a more diverse nature which cater to the entire community and the needs of highway traffic.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.; 20 ft. if a side yard abuts a lot with a residential use.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **I - Industrial District**

The purpose of this district is to accommodate heavier commercial and light industry, wholesale activities, warehouses, and other industrial operations whose external physical effects are restricted to the area of the district and do not affect in a detrimental way any of the surrounding districts. It is the intent of this district to permit only those industrial operations having characteristics which emit a minimum amount of discernible noise, vibration, smoke, dust, dirt, glare, toxic materials, offensive odors, gases, electromagnetic radiation or any other physically adverse effects which are discernible beyond the lot lines of the parcel upon which the industrial activity is located. Since this area is not anticipated to be served by public water or sewer systems in the foreseeable future, development regulations will contain groundwater protection standards.

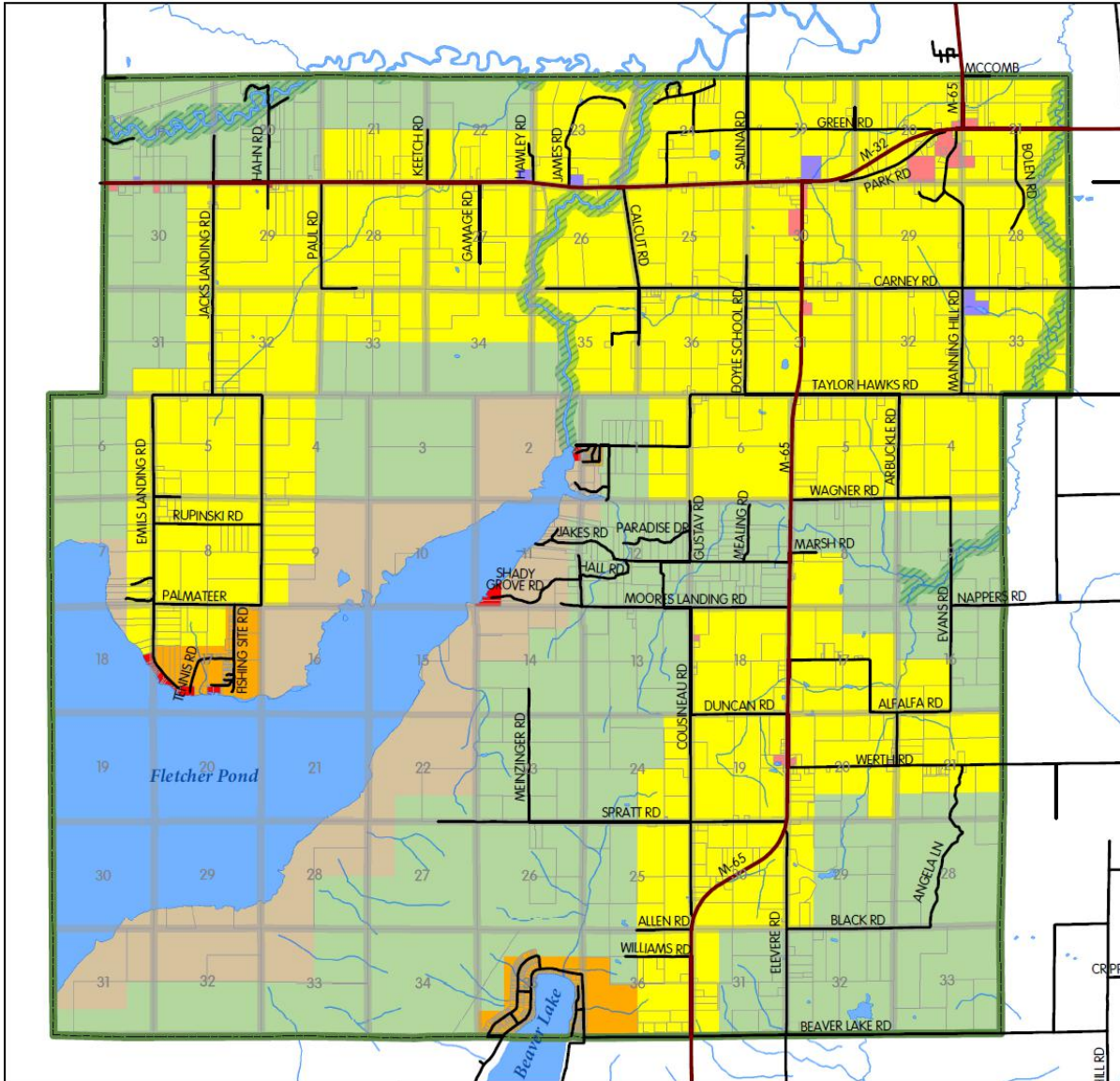
- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 40 ft.
- Minimum Lot Width: 100 ft.
- Depth to width ratio: 4 to 1

### **CR - Conservation and Resources Overlay District**

The intent of this district is to protect and conserve natural and scenic resources along river corridors in Green Township in order to promote environmental quality and retain community character. The Conservation and Resources Overlay District includes the river channel and extends landward radially or at right angles from the ordinary high water mark four hundred (400) feet on both sides of the Thunder Bay River and portions of Bean Creek.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 75 ft.
  - Sides: 10 ft.; 20 ft. for the longest street side of a corner lot where a 20 foot corner side yard setback shall be provided and maintained, and for principal buildings other than dwellings.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.
- Depth to width ratio: 4 to 1





**Zoning Districts**

- CR: Conservation & Resources Overlay
- R1: One-Family Residential
- R2: Agricultural
- RR: Recreational Residential
- FF: Farm & Forest
- B1: Neighborhood Business
- B2: General Business
- I: Industrial
- State Highways
- Roads
- Township Boundary
- Sections
- Water
- Parcels

**Green Township Zoning Map**



Alpena County, Michigan

Adopted 3/16/2009 Effective 4/2/2009



Green Township Hall  
14621 M-32  
Lachine, MI 49753  
989-379-2398

Prepared with the Assistance of:  
Northeast Michigan Council of Governments  
www.nemcog.org

Green Township Zoning Map last amended in 2018.

**FIGURE 7-6 GREEN TOWNSHIP ZONING MAP**



## **LONG RAPIDS TOWNSHIP FUTURE LAND USE**

Long Rapids Township has identified five future land use categories that are listed below and depicted in Figure 7-7.

### **Residential**

Residential development is primarily designed to accommodate single-family dwellings on a range of lot sizes. Home-operated businesses, two-family dwellings, multiple-family dwellings, and community uses (parks, churches, schools, libraries, cemeteries, and childcare facilities) may also be allowed in these areas if designed to be compatible with the residential setting.

### **Community Centers**

Community centers of Long Rapids and Lachine designate unincorporated areas that are intended to provide for a concentration of residential, commercial, and institutional uses in a small community setting. Community centers are primarily intended to provide for residential neighborhoods, convenience shopping, services, and community facilities. A variety of housing opportunities may be available in a community center, including single-family or multiple-family at medium to high densities. A variety of social and civic functions occur in a community center, including government offices, recreation facilities, churches, cemeteries, personal services, and retail trade. In some cases, low impact industrial uses may be appropriate when buffered from other less intense uses.

### **Agricultural**

Long Rapids Township has large productive agricultural areas. Sparsely scattered residential uses and home occupations may occur on lots one acre or larger. More intensive uses such as, golf courses, landing strips, kennels, livestock feed lots, farm implement sales, and similar uses would require special consideration and need Planning Commission approval.

### **Forest Recreation**

The forest recreation areas include areas used for timber harvesting, as well as extensive hunting and recreational pursuits. Privately owned lands within this land use category may be used for single-family residences (both year-round and seasonal) on lots at least one acre in size, hunting camps, forest products harvesting, recreational uses, and farming where soil conditions are suitable. The protection of forested land, wetlands, and non-forested open space is critical to preserving the rural character of Long Rapids Township.

### **Environmental Conservation**

Areas with unique or fragile environmental characteristics were identified during the planning process. These areas are intended to be protected from potential dense development and environmental degradation by appropriate zoning restrictions. These future land use recommendations do not restrict privately owned parcels from all development. Rather, the intent is to maintain a set of regulations as an “overlay zone” in areas adjacent to the Township’s waterways. These regulations would include greater setbacks from the water, natural greenbelt retention, larger parcel size and depth, and storm water control measures. The Township’s many sinkholes also deserve special protection from storm water runoff, waste material dumping, and erosion.

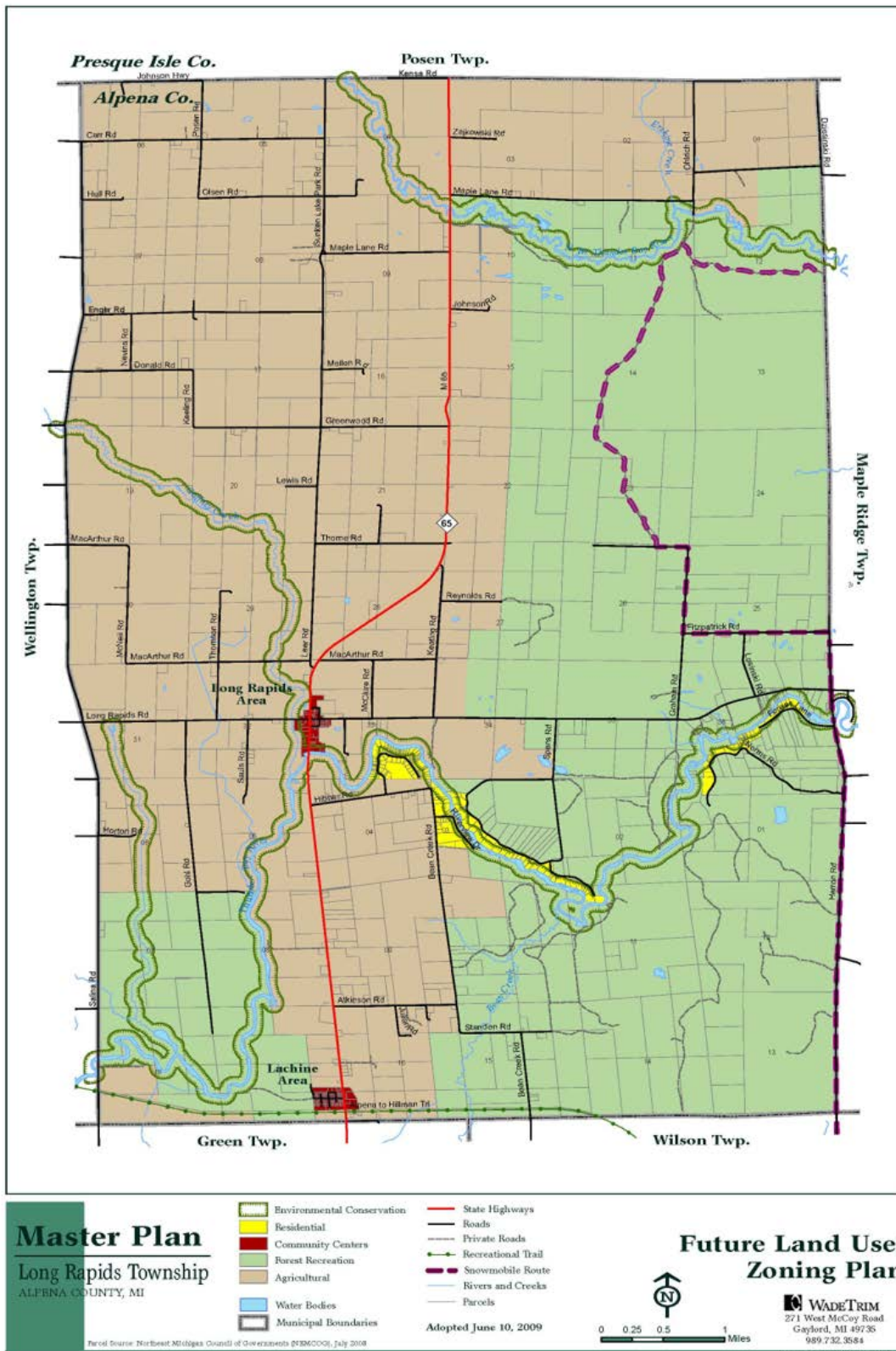


FIGURE 7-7 LONG RAPIDS TOWNSHIP FUTURE LAND USE

## **LONG RAPIDS TOWNSHIP ZONING DISTRICTS**

The current Long Rapids Township Zoning Ordinance was passed on September 13, 1990. Long Rapids Township is divided into six districts (Figure 7-8).

### **Agricultural District (AG)**

The Agricultural District is designed to protect and stabilize the essential characteristics of agricultural areas within the township, and to ensure proper maintenance of conditions for healthful and economically productive agricultural activities by preserving those areas which are predominately agricultural in nature, and which are most appropriate for present and future agricultural expansion. They are designed to prevent unwarranted premature urban development from encroaching upon legitimate agricultural areas, thus disrupting the agricultural resources, environment, and economy, including the tax base. It is essential that development in areas which are predominately agricultural be based on sound principles which realize the importance of such activities to the economy and welfare of the township.

- Minimum Lot Area: 1 acre
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.; if the side yard of a corner lot abuts a road or street, the side yard setback shall not be less than 40 ft.
  - Rear: 20 ft.

### **Forestry-Recreation District (FR)**

The Forestry-Recreation District is designed to promote the proper use and economic return from forest land and woodlot, and promote the conservation and enjoyment of the streams and the animal and vegetative resources of this district. To facilitate this goal, certain uses may only be provided by Special Approval.

- Minimum Lot Area: 1 acre
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.; if the side yard of a corner lot abuts a road or street, the side yard setback shall not be less than 40 ft.
  - Rear: 20 ft.

### **Residential District (R)**

The Residential District is designed to provide areas dedicated primarily to residential use, with each dwelling located on an individual lot or premises. The lots should be adequate in size to provide safe water/sewage disposal facilities and limit the spread of fire. It should also be set-back from public thoroughfare to provide safe exit from and entrance to the premises. Since certain property uses are generally accepted as compatible with residential developments, if properly integrated, the inclusion of such uses is provided by Special Use Approval.

- Minimum Lot Area
  - Single-family dwellings: 12,000 sq. ft.
  - Two-family dwellings: 15,000 sq. ft.
  - Multiple-family dwellings: 10,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.

- Rear: 20 ft.
- Minimum Lot Width
  - Single-family dwellings: 100 ft.
  - Two-family dwellings: 100 ft.
  - Multiple-family dwellings: 150 ft.

**Environmental Conservation Overlay District (EC)**

Consistent with the public policy of Long Rapids Township and in the interest of the residents of Long Rapids Township, the Township Board of Long Rapids Township finds that uncoordinated and unplanned land development within and around the wetlands, floodplains, watercourses and other environmentally sensitive lands within Long Rapids Township, which development, if allowed to continue, will result in; (1) loss, damage, despoiling, pollution or elimination of these natural environments; (2) increased potential for flooding of low lands causing damage to real and personal property and threatening human life; (3) the destruction of valuable ground water recharge areas which supply public and private water needs; (4) increased possibility for subsequent expensive construction of public water and/or wastewater systems and facilities; (5) loss of natural filtering processes which would otherwise protect and enhance the water quality of lakes and streams and; (6) loss of wildlife and fish habitats. These sensitive environments; if preserved and maintained in an undisturbed and natural condition, constitute important physical, aesthetic, recreation and economic assets to this community and its residents. It is public policy to encourage a coordinated and planned land and water management program in Long Rapids Township which will locate permanent structures and artificial obstructions so as not to interfere with the passage and natural flow of waters nor destroy the natural wetlands, floodplains and other environmentally sensitive lands of Long Rapids Township.

Therefore, it is the intent of the Environmental Conservation Overlay District (EC) to:

1. Reduce the danger to public health by protecting the quality and quantity of surface and groundwater supplies from conflicting land-use activities by providing sufficient storage, filtering and recharge of these resources.
2. Reduce the financial burdens imposed upon Long Rapids Township and the individuals therein caused by increased flooding, the need for new or expanded wastewater treatment facilities or public water supply systems or other public and private expenses which would otherwise not be required.
3. Permit and encourage land use developments which will not impede or alter the natural flow of surface and ground-water resources nor cause danger to life or property.
4. Permit and encourage land uses which are compatible with the preservation and maintenance of these sensitive environments and their natural functions, including the providing of fish and wildlife habitat.
5. Avoid increased runoff of surface waters from developed areas to prevent pollution from directly entering lakes, streams, or other public waters.
6. Provide sufficient land area to absorb and store abnormal flows of storm water in periods of heavy precipitation which would prevent expenditure of public funds in emergencies resulting from otherwise inadequate holding capacity if developed.

7. Prevent the placement of artificial fill or obstructions which restrict the natural flow and functions of floodplains, watercourses, wetlands, and other water-related environments.

The EC Overlay District includes all land area along rivers, streams or tributaries for a horizontal distance of 1/4 mile (1,320 feet) or to an appropriate physical boundary from the waters edge thereof. Those river systems include: Thunder Bay River, Gaffney Creek, and Bean Creek.

- Minimum Lot Area: 66,000 sq. ft. (220 x 300 ft. deep)
- Minimum Greenbelt: 100 ft. native vegetative strip from the water's edge (no permanent structure of any type is allowed within this area unless permitted by the provisions of Section 5.03 of the Zoning Ordinance).
- Minimum Lot Width: 220 ft. of shoreline frontage on parcels.

### **Commercial District (C)**

The Commercial District is designed to provide areas suitable for a variety of commercial and service establishments including personal, professional, and other services commonly associated with local commercial and business centers.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 20 ft.
  - Sides: 10 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **Industrial District (I)**

The Industrial District is intended for uses that manufacture, assemble, compound, and process raw or previously prepared materials.

- Minimum Lot Area: Four times the area covered by all or principal uses or structures.
- Minimum Setbacks
  - Front: 20 ft.
  - Sides: 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: 150 ft.



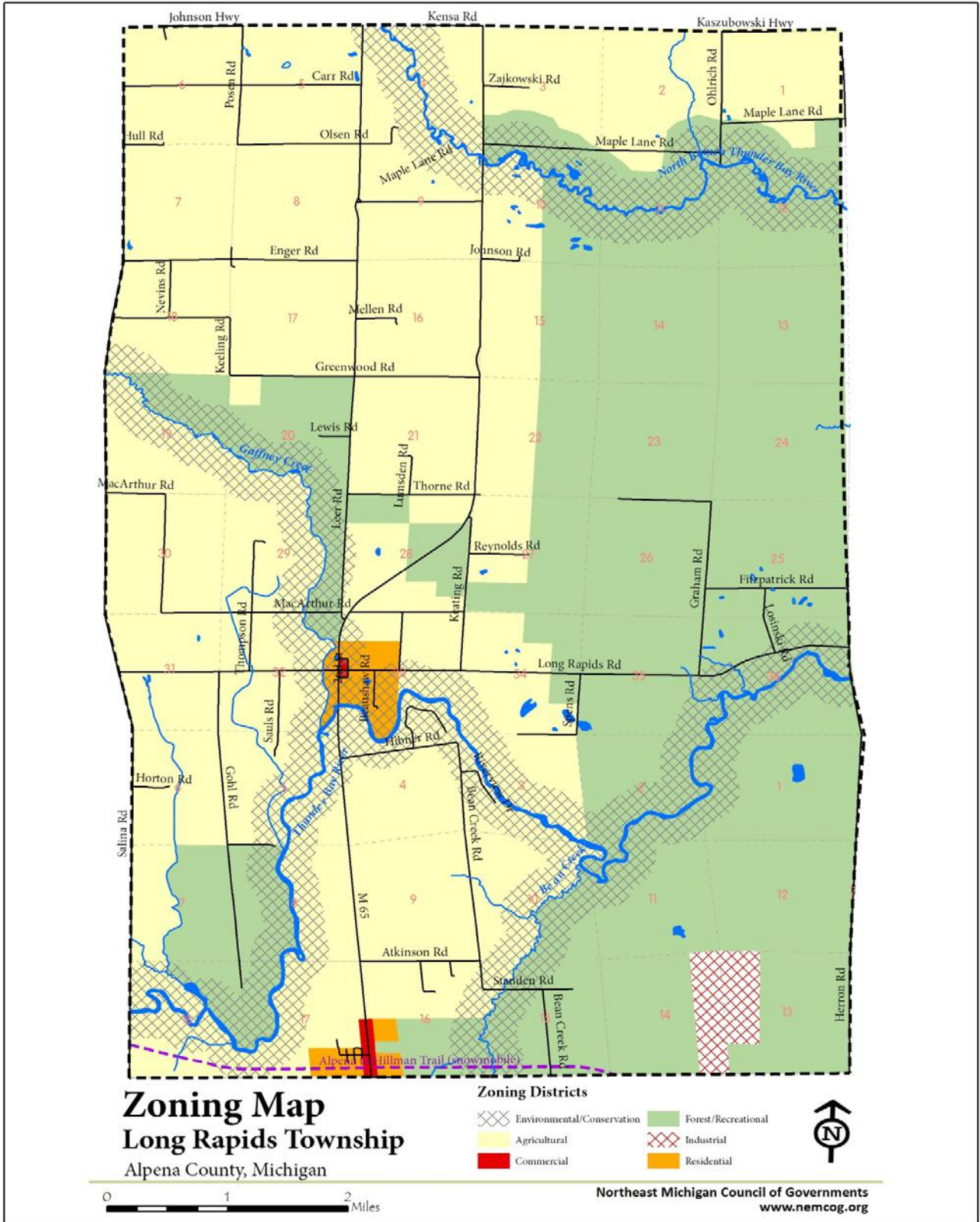


FIGURE 7-8 LONG RAPIDS TOWNSHIP ZONING DISTRICTS



## **MAPLE RIDGE TOWNSHIP FUTURE LAND USE**

Maple Ridge Township has identified seven future land use categories that are listed below and depicted in Figure 7-9.

### **High Density Residential**

The High Density Residential designation is intended to preserve existing residential development where land has already been subdivided into smaller lots. This category is primarily designated to accommodate single-family dwellings. Home occupations and community uses, such as parks, churches, schools, libraries, cemeteries, and childcare facilities may also be allowed in these areas if designed to be compatible with the residential setting.

### **Low Density Residential**

Low Density Residential development is primarily designed to accommodate single-family dwellings on larger lot size of approximately one to ten acres. Home operated businesses, two-family dwellings, multiple-family dwellings, and community uses (e.g. parks, churches, schools, libraries, cemeteries, and childcare facilities) may also be allowed in these areas if designed to be compatible with the residential setting.

### **Commercial**

Recommended uses for general commercial areas include retail stores, business and personal services, professional offices, lodging facilities, theatres, restaurants, bowling alleys, auto and farm equipment sales, and other similar uses.

### **Industrial/Utilities/Military/Transportation**

The largest land area in this category includes Alpena County Regional Airport and Alpena Combat Readiness Training Center. Utility uses such as the hydro-electric dam on the Thunder Bay River and Presque Isle Electric and Gas facility in Bolton are also included. Light non-polluting industries, warehouses, storage facilities, extractive operations, and similar uses are also allowed.

### **Forest/Recreation**

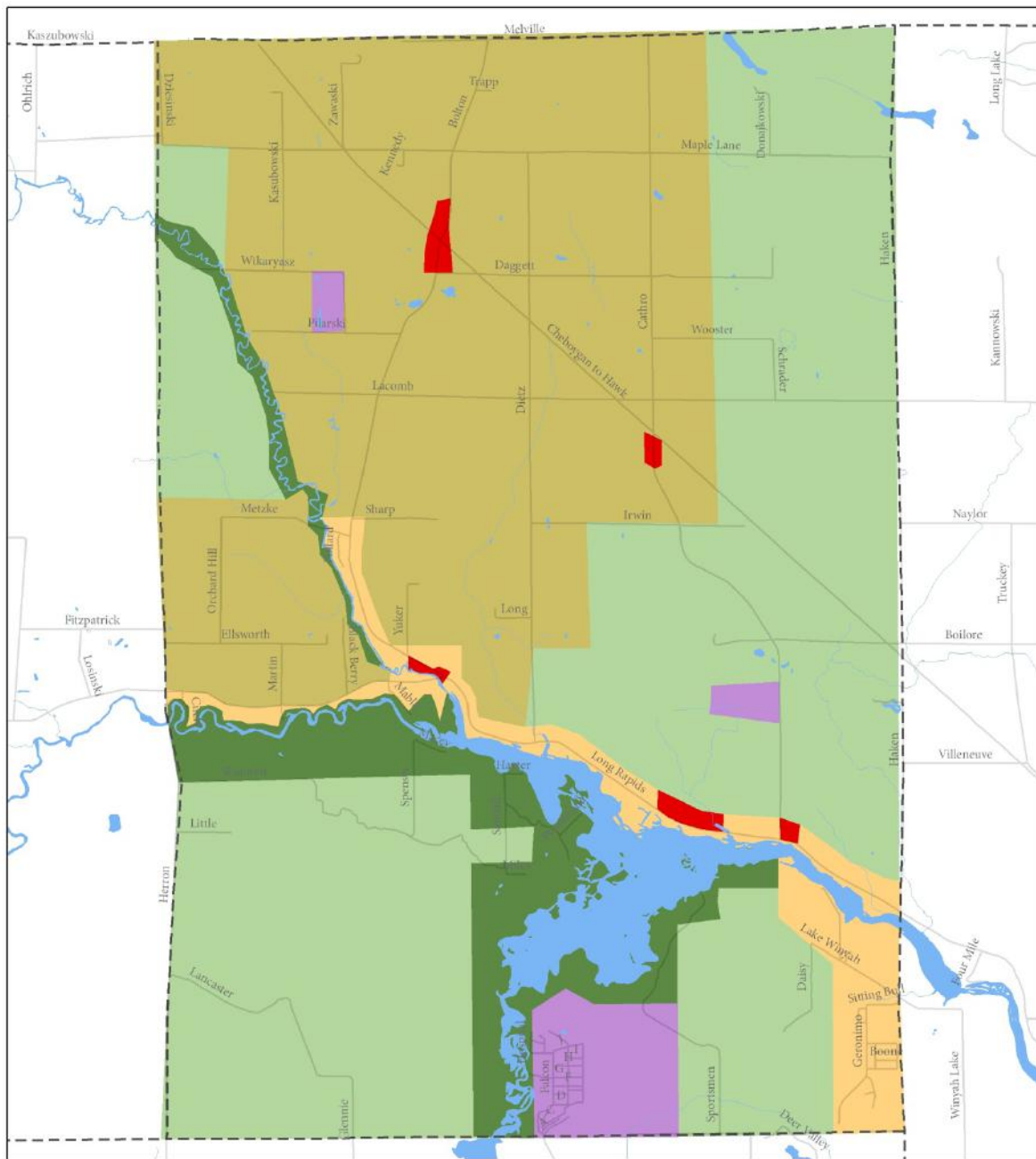
Many areas in the Township are existing forested lands. Preservation of these lands is intended for uses complimentary to forest and recreation activities such as: forestry and timber processing, hunting camps, single-family residences, and vacation homes on larger parcels, parks, and private retreats or resorts (as distinct from commercial establishments). Farming where soil and terrain conditions are suitable will also be allowed.

### **Agricultural**

Areas recommended for future agricultural development cover nearly all the northwest portion of the township as shown on the future land use map. These areas basically coincide with areas where active farming currently exists.

### **Environmental Conservation**

Areas with unique or fragile environmental characteristics are found in this category. These areas are intended to be protected from dense development and environmental degradation. The intention of this area is to maintain a set of regulations as an “overlay zone” in areas adjacent to the Township’s waterways.



- Future Land Use**
- General Future Land Use
- Residential
  - Agricultural
  - Forest; Farm/Forest
  - Conservation
  - Commercial
  - Industrial/Heavy Commercial

**Maple Ridge Township  
Future Land Use**  
Alpena County, Michigan



**FIGURE 7-9 MAPLE RIDGE TOWNSHIP FUTURE LAND USE**

## **MAPLE RIDGE TOWNSHIP ZONING DISTRICTS**

Maple Ridge Township adopted its current Zoning Ordinance in 1997. The township has nine zoning districts.

### **(R-1) One-Family Residential District**

This residential district is designed to provide for one-family dwelling sites and the residential related uses. The uses permitted by right and on special approval are intended to promote a compatible arrangement of land uses for homes, while keeping neighborhoods relatively quiet and free of unrelated traffic influences.

- Minimum Lot Area: 20,000 sq. ft.
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 10 ft.
  - Rear: 25 ft.
- Minimum Lot Width: 100 ft.

### **(R-2) Agricultural District**

The R-2 District is designed to serve farm and agricultural uses in areas which are rural and farm in character. The inclusion of farms and agricultural uses is most important in differentiating from R-1 Districts.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **(R-3) General Residential District**

The R-3 General Residential District is designed to provide for multiple-family structures which may be necessary to meet the needs of the apartment dwelling. This district is further intended to be a transition use district.

- Minimum Lot Area: 12,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft. or 150 ft.

### **(RR) Recreational Residential District**

The Recreation Residential District is designed to accommodate cottage and seasonal home developments. It is intended that the seasonal home areas be reasonably homogeneous by discouraging the mixing of recreation home areas with commercial resorts, business services, and major institutional or community services.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.

- Sides: 10 ft.
- Rear: 35 ft.
- Minimum Lot Width: 100 ft.

**(CR) Conservation and Resources District**

The Conservation and Resources District is designed to protect and conserve natural and scenic resources and promote environmental quality and preserve community character. The CR district applies to stream and river corridors, lakeshores, impoundment waters, and/or scenic highways, as deemed appropriate.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

**(FF-1) Farm and Forest District**

The Farm and Forest District is designed to promote the use of wooded and rural areas in a manner that will retain the basic attractiveness of natural resources, and provide enjoyment for both visitors, and the community at large. The intent of the district is to hold rural areas for resource purposes and to allow multiple uses of marginal farm-forest lands.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

**(B-1) Local Tourist Business District**

The B-1 Local Tourist Business District establishes a business district that is more selective than a general business district. It provides for the establishment of neighborhood shopping areas, personal services, and professional office areas that are compatible with, and of service to, residential uses. Tourist services are included as being character with the district.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

**(B-2) General Business District**

The B-2 General Business District is designed to provide sites for more diversified business types and are often located to serve passerby traffic.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.

- Sides: 5 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

**(I) Industrial District**

The Industrial District is designed to accommodate wholesale activities, warehouses, major repair operations, manufacturing, and other industrial activities. These activities are subject to certain performance requirements relative to their impact on the community and adjacent nonindustrial districts, even when in adjacent municipalities.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 10 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

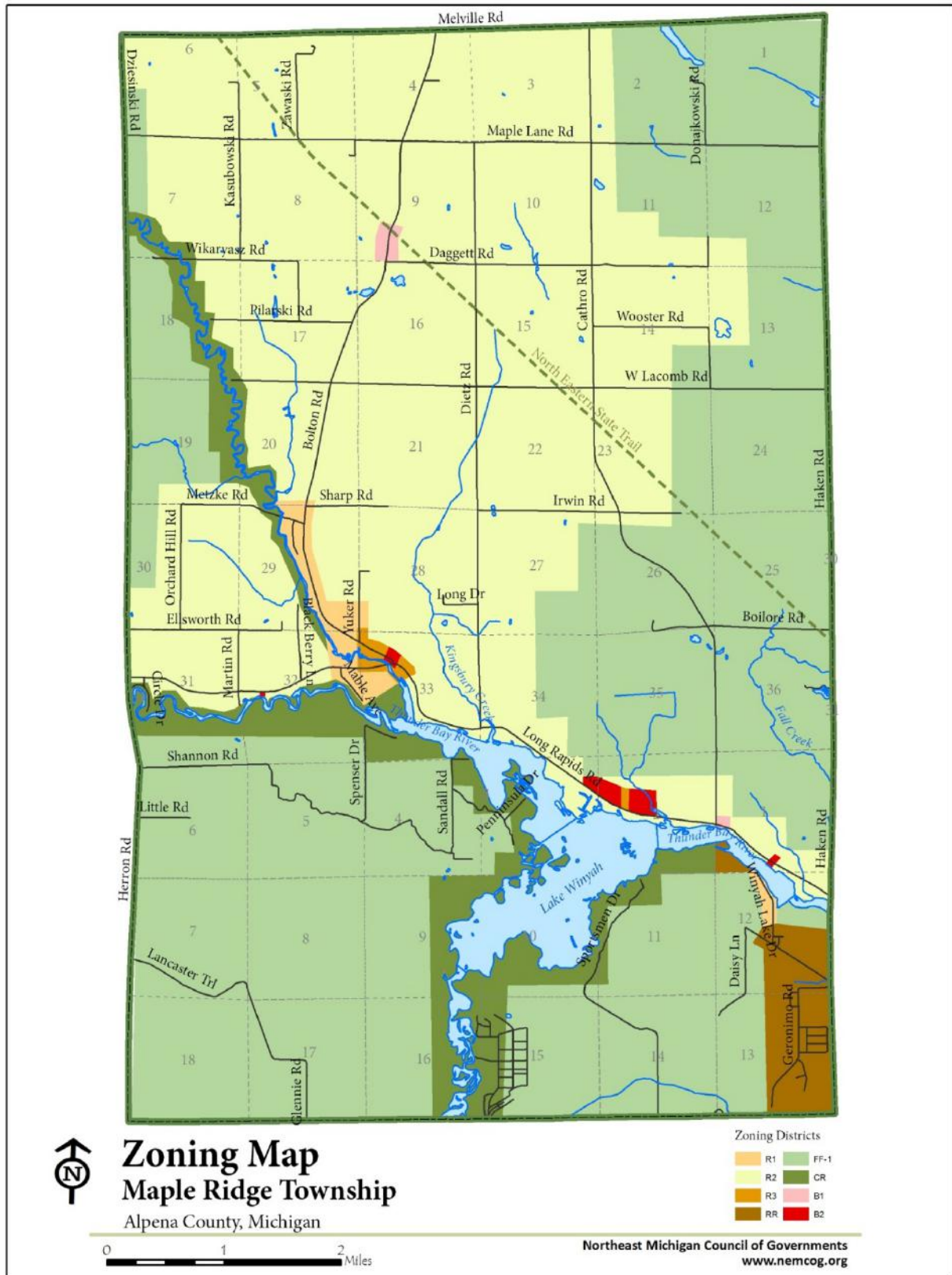


FIGURE 7-10 MAPLE RIDGE TOWNSHIP ZONING MAP



## **OSSINEKE TOWNSHIP FUTURE LAND USE**

Ossineke Township has identified five future land use categories intended to serve future development needs that are listed below and depicted in Figure 7-11. Some lots created prior to this Master Plan and the Ossineke Township Zoning Ordinance may be smaller than the recommended lot sizes called for by this plan. Future development regulations should recognize these conditions and provide reasonable continuance of their use and character.

### **General Residential**

The General Residential land use category is designed to accommodate single-family and multi-family structures, and residentially-related uses. This category is intended to preserve existing residential development on smaller lots as well as allow larger lots to be subdivided to accommodate higher density residential development in select areas of the township. Rather than designate new areas for higher density development, the township has elected to preserve already existing higher density development.

Typical uses are those usually found in residential neighborhoods, such as single-family and multi-family dwelling units, home-based businesses, nature parks/nature areas (public), public parks, playgrounds, recreation areas, family child care homes (6 or less), assisted living home nursing/convalescent homes, State-licensed residential facilities, and other uses considered compatible with residential uses and do not alter the existing character of the neighborhood. Very high density development should be restricted in the residential areas since there is a lack of public water and sewer service available in the township. The township should consider site plan review and approval for all Special Land Uses. Development should be discouraged from areas where the natural features present significant environmental constraints, such as wetland areas and areas with soils that are inadequate to accommodate septic systems. Buffers or physical separation should be considered to screen residential uses from incompatible land uses (industrial and commercial developments).

### **Recreational Residential**

The Recreational Residential land use category is designed to accommodate cottage and seasonal home developments in a recreational setting. This category is not intended to mix other types of uses, such as commercial or institutional, with the character of the recreational residential areas. Typical uses include single-family dwelling units, home occupations, historical facilities, nature parks/nature areas (public), public parks, playgrounds, recreation areas, family childcare homes (6 or less), and State-licensed residential facilities. This land use category is located on the western border of the township around Turtle Lake, on the southwestern portion of Beaver Lake, and west of the river around 3<sup>rd</sup> Street.

As development occurs, the township will investigate the feasibility of allowing lots to be smaller in size and clustered, which would result in higher density in certain areas of the district while also requiring larger, unbroken areas of land to be permanently set aside for open space or recreational land.

## **Business**

This category is intended to provide sites for a variety of retail and service businesses, which serve both regional and local clientele. The areas that have been designated for the Business land use category are located in the Hubbard Lake area along Hubbard Lake Road and Cecel, and on M-65 at the northern township boundary. The township recognizes that currently there are also residential uses located in these areas that will continue. However, as development opportunities arise, the township believes these areas are most suitable for commercial development.

There are two types of business activities identified for development in the township: Local Tourist Business and General Business. The Future Land Use Map does not differentiate between the two types of businesses. Local Tourist Business areas are more selective than the General Business area and are intended to allow for the establishment of small neighborhood businesses that meet the needs of local residents and tourists, and are not dependent on passerby traffic. The General Business areas are often located on roadways with high traffic volumes to serve the highway traffic, and should be separated from residential uses. Typical uses in the Local Tourist Business and General Business areas include bakeries, cabin courts, coffee shops, convention centers/conference centers/banquet halls, drinking establishments/taverns, hotels and motels, microbreweries, restaurants, rooming and boarding houses, veterinary clinics, art studios, museums and galleries, nature parks/nature areas, private clubs, public parks, playgrounds, recreation areas, retail businesses, professional offices, personal service businesses, schools, religious institutions, childcare center/nursery schools, healthcare/optical/dental clinics, and assisted living home nursing/convalescence homes.

Decisions regarding the type of business use will be made on a case by case basis through the site plan review process. Signage, lighting, and parking regulations will be considered to ensure these elements maintain the rural character of the township and are appropriate in the area per the Zoning Ordinance. In addition, adequate buffers should be provided to screen commercial uses from residential uses.

## **Farm and Forest**

The Farm and Forest land use category is designed to promote the use of wooded and rural areas in a manner that retains the basic attractiveness of the natural resources and provides enjoyment to residents and visitors. This category is intended to hold rural areas for resource purposes and to allow multiple uses of farm-forest lands. The intent is designed to encourage the continuation of farming and agricultural uses since farmland significantly contributes to the township's way of life, and scenic and rural character.

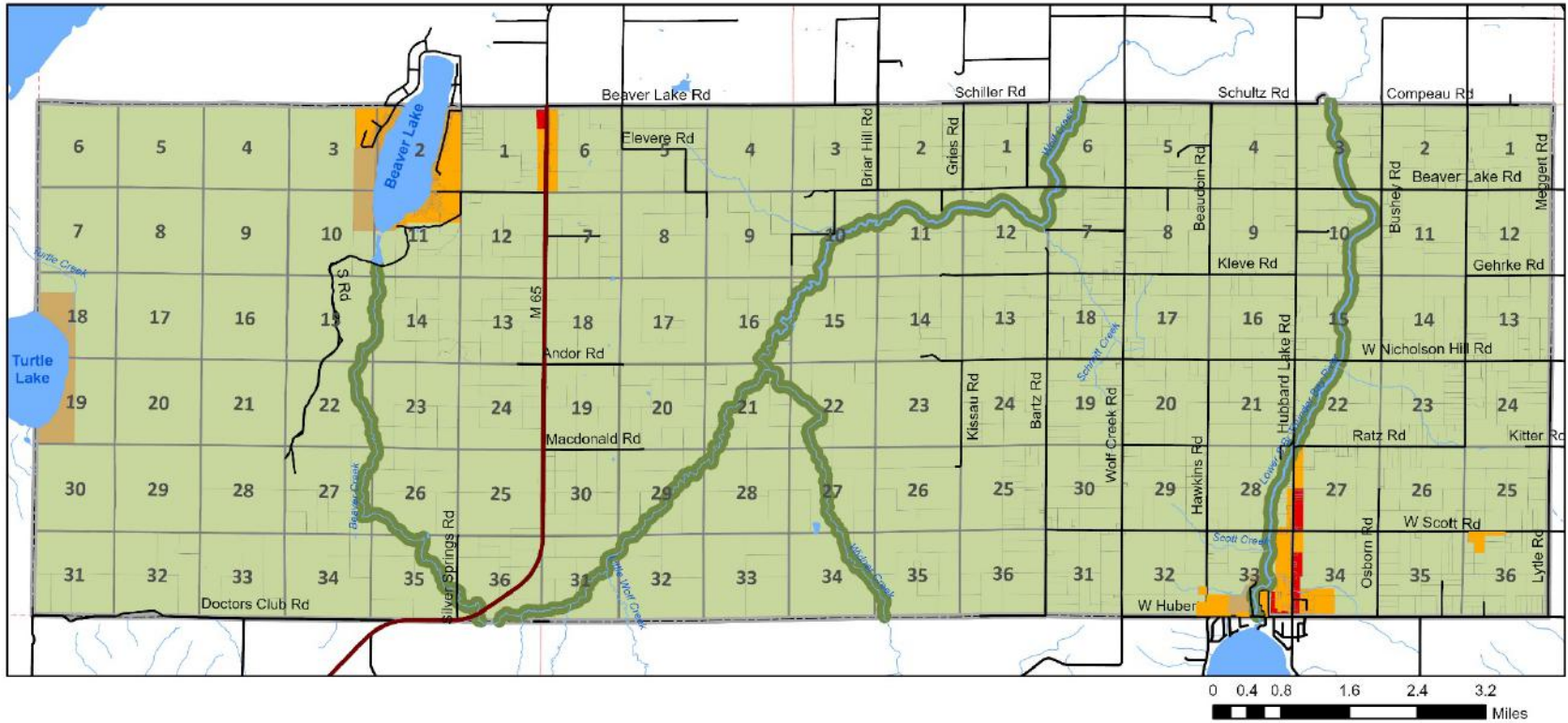
The agricultural areas are primarily located on prime agricultural land in the central and eastern portions of the township, while the forested land is predominantly found in the western third and central third of the township on soils that are not prime agricultural soils. Typical uses include single-family dwellings, home occupations, agricultural operations, processing, and storage, agricultural tourism uses, slaughterhouses, boarding stables and riding arenas, biofuel production facilities on farms, cider mills, roadside stands, u-pick operations, forestry/forest management, game preserves, greenhouses/nurseries/landscaping, lumber yards, veterinary clinics, archery

ranges, campgrounds, nature parks/nature areas, private clubs, public parks, playgrounds, recreation areas, RV parks, public utility facilities, wireless communications equipment and supportive structures, family child care homes (6 or less), assisted living home nursing/convalescent homes, state-licensed residential facilities, and rail yards.

The township recognizes the need to balance farmland preservation with the economic value from selling tracts of farmland for non-farm development. Therefore, this plan recommends the Township investigate innovative methods of farmland preservation that allow for low impact residential development. Non-farm developments should be directed to locate on less productive farmland and/or in areas where development is more concentrated and where land is already fragmented. This clustering of non-farm development leaves larger tracts of farmland intact. In addition, this plan recommends investigating the allowance of smaller lot sizes for non-farm development while requiring these clustering techniques to limit land use conflicts between new residential development and agricultural fields.

### **Conservation and Resources**

The Conservation and Resources category is an overlay zone in the designated land use areas to protect the environmentally sensitive areas adjacent to the township's rivers and streams since these areas significantly contribute to the township's quality of life and rural character. The Conservation and Resources areas are designed to encourage the retention of contiguous resource areas, river greenbelts, wetlands, scenic areas, and wildlife habitat, and discourage intense development without denying private property owners reasonable economic use of the land. In the Future Land Use Map, this category follows the water courses and are intended to be fluid lines that change with the water bodies' course. Typical uses within this overlay zone are the same as the Recreational Residential land use category. Maintaining vegetative buffers along the shoreline minimizes erosion, protects water quality, provides wildlife habitat, and maintains the aesthetic character of the township.



# Master Plan Ossineke Township Alpena County



- Future Land Use**
- Business
  - General Residential
  - Recreational Residential
  - Farm & Forest
  - Conservation and Resources

- Other Features**
- State Trunklines
  - Roads
  - Rivers & Streams
  - Water Bodies
  - Ossineke Boundary
  - Other Twp Boundary
  - Parcels

FIGURE 7-11 OSSINEKE TOWNSHIP FUTURE LAND USE

## **OSSINEKE TOWNSHIP ZONING DISTRICTS**

Ossineke Township adopted its current Zoning Ordinance on January 12, 2015 with an effective date of January 29, 2015. The township has seven zoning districts (Figure 7-12).

### **(R-1) One-Family Residential District**

This residential district is designed to provide for one-family dwelling sites and residentially related uses. This district is designed to accommodate a series of support uses typically regarded as part of the structure of low to medium density neighborhoods. These support uses contribute to neighborhood amenity by providing cultural, religious, or education services to residents. The uses permitted by right and as Special Uses are intended to promote a compatible arrangement of land uses for homes keeping neighborhoods quiet and free of unrelated traffic influences.

- Minimum Lot Area: 30,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.; if a side yard abuts a street, the side yard shall not be less than 40 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **(R-3) General Residential District**

The R-3 General Residential District is designed to provide for multiple-family structures which may be necessary to meet the needs of the apartment dwelling. This district is further intended to be a transition use district.

- Minimum Lot Area: 30,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.; if a side yard abuts a street, the side yard shall not be less than 40 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **(RR) Recreational Residential District**

The Recreation Residential District is designed to accommodate cottage and seasonal home developments. It is intended that the seasonal home areas be reasonably homogeneous by discouraging the mixing of recreational home areas with commercial resorts, business services, and major institutional or community services.

- Minimum Lot Area: 30,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.; if a side yard abuts a street, the side yard shall not be less than 40 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **(FF-1) Farm and Forest District**

The FF-1 Farm and Forest District is designed to promote the use of wooded and rural areas in a manner that will retain the basic attractiveness of natural resources, and provide enjoyment for both visitors, and the community at large. The intent of the district is to hold rural areas for resource purposes and to allow multiple uses of farm-forest lands. The intent is designed to serve farm and agricultural uses in areas which are rural and farm in character.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.; if a side yard abuts a street, the side yard shall not be less than 40 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **(B-1) Local Tourist Business District**

The B-1 Local Tourist Business District establishes a business district that is more selective than a general business district. It provides for the establishment of neighborhood shopping areas, personal services, tourist services, and professional office areas that are compatible with, and of service to, residential uses.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 0 ft.; parking lots may be permitted in the front yard provided there is at least a ten (10) foot buffer area between the road right-of-way and the off-street parking lot.
  - Sides: 5 ft.; if the side yard borders a residential district, there shall be a setback of not less than twenty (20) feet on the side abutting the residential district.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **(B-2) General Business District**

The B-2 General Business District is designed to provide sites for more diverse business types than B-1. This district is intended to cater to the business needs of the entire community and is often located to serve highway traffic.

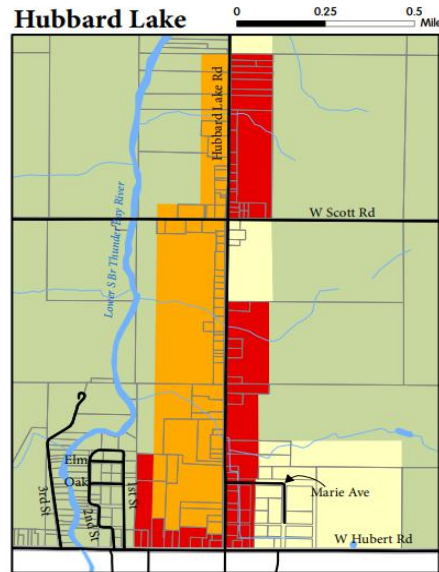
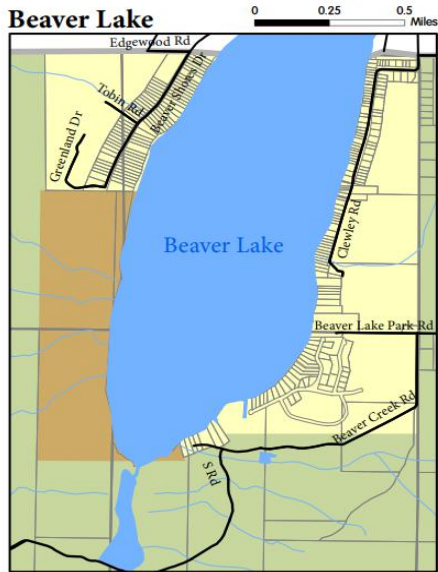
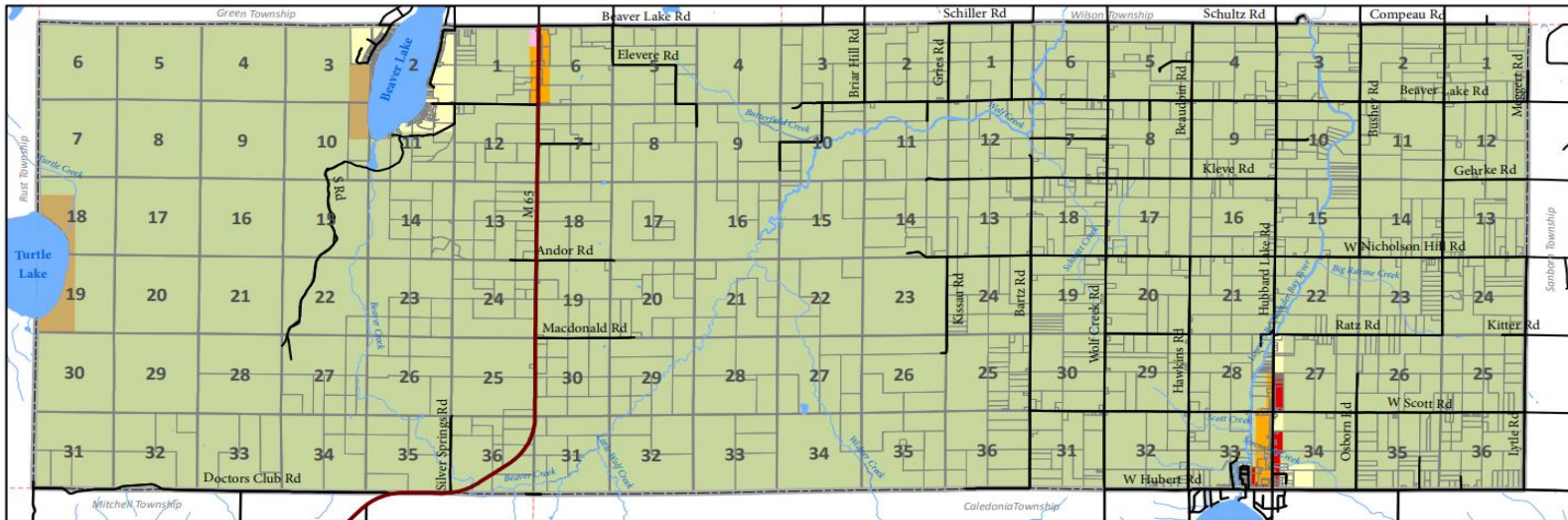
- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 0 ft.; parking lots may be permitted in the front yard provided there is at least a ten (10) foot buffer area between the road right-of-way and the off-street parking lot.
  - Sides: 5 ft.; if the side yard borders a residential district, there shall be a setback of not less than twenty (20) feet on the side abutting the residential district.
  - Rear: 20 ft.
- Minimum Lot Width: None



### **(I) Industrial District**

The Industrial District is designed to accommodate wholesale activities, warehouses, major repair operations, manufacturing, and other industrial activities whose external physical effects may need to be restricted to avoid detrimentally affecting the surrounding districts.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 10 ft.; if the side yard borders a residential district, there shall be a setback of not less than twenty (20) feet on the side abutting the residential district.
  - Rear: 20 ft.
- Minimum Lot Width: None



**Zoning Districts**

- R-1: One Family Residential
- R-3: General Residential
- R-R: Recreational Residential
- FF-1: Farm & Forest
- B-1: Local-Tourist Business
- B-2: General Business
- I: Industrial

**Other Features**

- State Trunklines
- Roads
- Rivers & Streams
- Water Bodies
- Ossineke Boundary
- Other Twp Boundary
- Parcels



**Zoning Districts**  
Ossineke Township  
Alpena County, MI

Adopted January 12, 2015  
Effective January 29, 2015

Map produced by Northeast Michigan Council of Governments  
www.nemcog.org

**FIGURE 7-12 OSSINEKE TOWNSHIP ZONING DISTRICTS**

## **SANBORN TOWNSHIP FUTURE LAND USE**

Sanborn Township has identified seven future land use categories in the 2014 Sanborn Township Master Plan. These categories are listed below and depicted in Figure 7-13.

### **Neighborhood Residential**

The Neighborhood Residential future land use category is intended to preserve the existing residential development where land has already been subdivided into smaller lots. Single-family dwellings are the primary development type within this district. Other uses that are allowed if designed to be compatible with residential uses include home occupations contained within the dwelling, group homes, bed and breakfast facilities, parks and playgrounds, and community and publicly-owned buildings. Parking, lighting, landscaping, screening, signage, and other standards should be used to minimize conflicts with residential uses. It should be noted older, platted areas were created prior to the township's zoning ordinance and do not meet current zoning standards, but will be allowed to continue.

### **Corridor Residential**

The Corridor Residential district is located along major roadways to provide easy access to the passerby traffic. Primary uses are single-family dwellings and two-family dwellings. If designed to be compatible with residential uses and do not alter the existing neighborhood character, the following uses are permitted: group homes, home-based businesses and cottage industries, bed and breakfast facility, churches and associated structures, parks and playgrounds, schools, childcare uses, community buildings and publicly-owned buildings, public utility buildings, and publicly-owned and operated parks.

### **Commercial – Business**

The Commercial – Business district is designed to provide access to goods and services to local residents along major roads with high traffic volumes. Compatible uses include retail sales, gas stations/convenience stores, restaurants, personal services, and office uses. Access management, shared driveways and parking lots, stormwater management, groundwater protection, pedestrian access, landscaping, buffering, signage, billboards, traffic and pedestrian safety, and outdoor lighting should be considered in development plans. These areas are not intended for large scale, regional retail/shopping centers.

### **Light Industrial**

The Light Industrial District is intended to accommodate light industry with a limited need for water usage. The district is designed to provide sites for wholesale activities, warehouses, retail operations that require large outside storage areas, sawmills, and light manufacturing. This district is compatible with a business district, but is not compatible with a residential district without required buffers and other standards to minimize land use conflicts. Development standards should address access management, buffering, signs, stormwater management, groundwater protection, and landscaping.

### **Farm and Forest**

The Farm and Forest future land use category is intended to encourage the continued existence of farms in the township on prime agricultural soils and on large parcels. Primary uses include farm dwellings and agricultural accessory buildings, crop production, roadside stands, small scale forestry, raising livestock normally associated with farming activities, and single-family residential. Special uses are allowed if the design is compatible with surrounding uses. Permitted special uses include the following: plant nurseries, greenhouses, parks, bed and breakfast inns, churches, home occupations, golf courses, telecommunication towers, kennels, private clubs, veterinary services, human care facilities, essential

service buildings, publicly-owned buildings and publicly-owned parks. Buffers or physical separation from incompatible uses (commercial and industrial) are necessary when agricultural areas are located next to more intensive development.

### **Forest Recreation**

The Forest Recreation district is the most extensive future land use in the township since the forests and wetlands significantly contribute to the quality of life and rural character of the area. This district is designed to encourage the continuation of resource management (e.g. timber management), outdoor recreational activities (e.g. forestlands for hunting), and wildlands. Forestry activities associated with timber and wildlife management, low density residential development, seasonal cabins, public and private conservation areas, and hunting camps are primary uses in this district. If designed to be compatible with surrounding uses, the following uses are permitted: recreational camps and clubs, campgrounds, bed and breakfast operations, home occupations, home-based businesses, and resorts. Gravel pits with site reclamation plans would be allowed by a special approval if the activity is compatible with surrounding neighborhoods. Buffers or physical separation from incompatible uses (commercial and industrial) are necessary when forest recreation areas are located next to more intensive development.

### **Resource Conservation**

The Resource Conservation future land use category is designed to provide protection to environmentally sensitive areas and state recreation facilities with the goal of providing low intensity recreational opportunities. The district is intended to encourage the retention of large tracts of state lands, contiguous resource areas, river greenbelts, wetlands, scenic areas, and wildlife habitat. Primary uses include hunting, fishing, skiing, hiking, camping, birding, wildlife management, and forestry management. Development potential for public and private facilities is limited. Gravel pits with site reclamation plans would be allowed if the activity is compatible with surrounding neighborhoods and does not have a significant impact on the natural resources.

## **SPECIAL ISSUE AREAS**

### **Parks and Community Recreation**

Public input for the 2014 Master Plan indicated residents are interested in maintaining and expanding the recreational opportunities in the township since outdoor recreation is important to the local economy. Key recreational assets include Negwegon State Park, public access sites, and waterways.

#### *Planning and development summary points:*

- Work with adjacent communities, Michigan DNR, and Michigan DOT to develop the non-motorized trails along the U.S. 23 Corridor and within Ossineke.

### **Roads**

Funding to maintain county roads comes from the state, local sources, and the township.

#### *Planning and development summary points:*

- Work with the County Road Commission to implement a coordinated asset management program with the goal of maintaining and improving the road network. It should be noted there are no intentions to upgrade the entire gravel road network to a paved road network.

- The township should consider adopting driveway, private road, and access management standards to address road safety, maintenance, and possible conversion to public ownership.

### **Open Space Development**

The sprawl of subdivisions tends to negatively impact rural character through the conversion of natural and agricultural open spaces to residential areas.

*Planning and development summary points:*

- Preserve open space in subdivisions through the use of clustering homes and limiting the size of improved lawns. These preserved spaces should be made visible to adjacent roads and properties.
- Protect and preserve forests and farmlands through Purchase of Development Rights (PDR), conservation open space development standards, clustering requirements for residential uses, incorporating open space requirements into Planned Unit Development zoning, and offering tax breaks/incentives for continuing forestry and farming uses.

### **Community Facilities**

LaBell Subdivision on North Alphonse Street is serviced by a private community water system. All other development relies on individuals private water wells and septic systems. In the future, the township may need to install public water and sewer facilities to protect surface water and groundwater.

### **Resource Protection and Management**

Public input for the 2014 Master Plan indicated residents highly value and support the retention of the township's rural landscape, including its forests, wetlands, and farms.

*Planning and development summary points:*

- Retain forestlands, farmlands, and wetlands through conservation cluster residential development, conservation easements, or fee simple purchase by local and state governments.
- Reduce fuel build-up and the threat of wildfires through timber management and regeneration.
- Arrange lots and internal subdivision roads to use the natural landscape to hide homes, outbuildings, and lawns. Use woodlands and existing native vegetation as effective screens for all types of development.
- Locate roads, parking lots, buildings, septic systems, stormwater detention facilities, and lawns away from wetlands and their associated buffer areas.

### **Hazard Mitigation**

The Alpena County Hazard Mitigation Plan ranks 25 different hazards based on their likelihood of occurrence, damage capacity, affected area, population impact (casualty potential), ability to mitigate, public awareness, response capability, interagency cooperation, and economic impacts. The township has a primary role in implementing mitigation strategies through government administration or regulatory actions/processes that influence how land and buildings are developed and built, how natural resources are preserved or restored, and how people and property are protected during and after a disaster or hazard event.

Sanborn Township will continue to work with Alpena County Emergency Management to implement the hazard mitigation strategies from the county's hazard mitigation plan.



# Sanborn Township Future Land Use

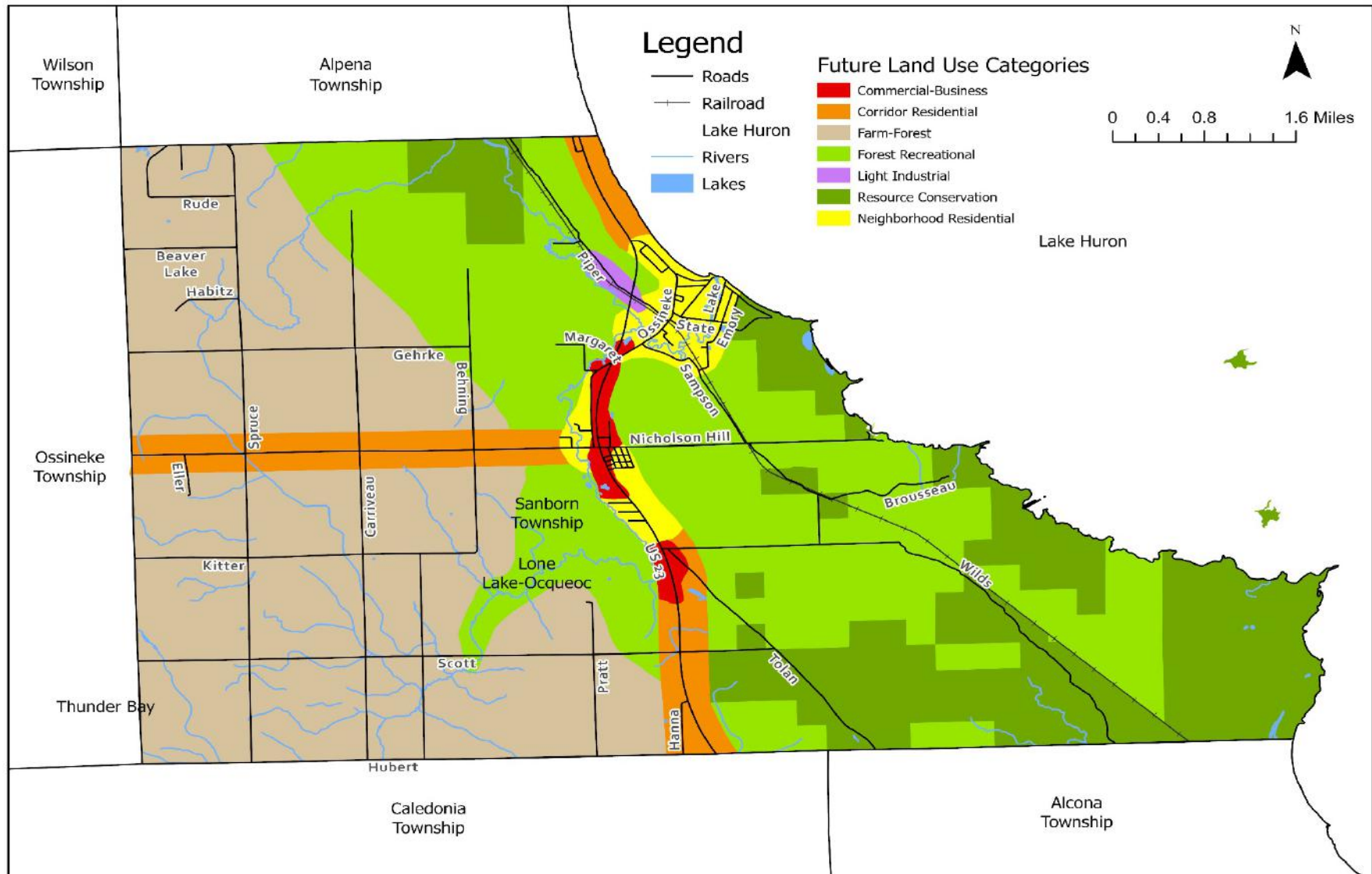


FIGURE 7-13 SANBORN TOWNSHIP FUTURE LAND USE



## **SANBORN TOWNSHIP ZONING DISTRICTS**

The current Sanborn Township Zoning Ordinance was adopted on March 9, 2015 with an effective date of March 21, 2015. The ordinance was amended in 2017.

### **(R-1) One-Family Residential District**

This residential district is designed to provide for one-family dwelling sites and residentially-related uses. This district is designed to accommodate a series of support uses typically regarded as part of the structure of low to medium density neighborhoods. These support uses contribute to neighborhood amenity by providing cultural, religious, or educational services to residents. The uses permitted by right and as Special Uses are intended to promote a compatible arrangement of land uses for homes keeping neighborhoods quiet and free of unrelated traffic influences.

- Minimum Lot Area: 12,000 sq. ft.
- Minimum Setbacks
  - Front: 25 ft.
  - Sides: 5 ft. one side with total of 15 ft.; if a side yard abuts a street, the side yard shall not be less than the required front yard.
  - Rear: 25 ft.
- Minimum Lot Width: 80 ft.

### **(R-2) General Residential District**

The R-2 General Residential District is designed to provide for multiple-family structures which may be necessary to meet the needs of the apartment dwelling. The district is further intended to be a transition use district.

- Minimum Lot Area: 12,000 sq. ft.
- Minimum Setbacks
  - Front: 25 ft.
  - Sides: 10 ft.; if a side yard abuts a street, the side yard shall not be less than the required front yard.
  - Rear: 25 ft.
- Minimum Lot Width: 80 ft.

### **(FR) Forest Recreational District**

The Forest Recreational District is designed to accommodate cottage and seasonal home developments. It is intended that the seasonal home areas be reasonably homogeneous by discouraging the mixing of recreational home areas with commercial resorts, business services, and major institutional or community services.

- Minimum Lot Area: 5 acres
- Minimum Setbacks
  - Front: 25 ft.
  - Sides: 20 ft.; if a side yard abuts a street, the side yard shall not be less than the required front yard.
  - Rear: 35 ft.
- Minimum Lot Width: 330 ft.

### **(FF) Farm and Forest District**

The Farm and Forest District is designed to promote the use of wooded and rural areas in a manner that will retain the basic attractiveness of natural resources and provide enjoyment for both visitors and the community at large. The intent of the district is to hold rural areas for resource purposes and to allow multiple uses of farm-forest lands. The intent is designed to serve farm and agricultural uses in areas which are rural and farm in character.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 25 ft.
  - Sides: 10 ft.; if a side yard abuts a street, the side yard shall not be less than the required front yard.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **(B-1) Restricted Business**

The B-1 Restricted Business District establishes a business district that is more selective than a general business district. It provides for the establishment of neighborhood shopping areas, personal services, tourist services, and professional office areas that are compatible with, and of service to, residential uses.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 25 ft.; parking lots may be permitted in the front yard provided there is at least a ten (10) foot buffer area between the road of right-of-way and the off-street parking lot. If the parking and loading spaces are located in the rear or side yard, the required front setback may be reduced to 20 ft. provided a reasonable sense of consistency is established with abutting properties.
  - Sides: 5 ft.; if a side yard borders a residential district, the side yard setback shall not be less than 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **(B-2) General Business District**

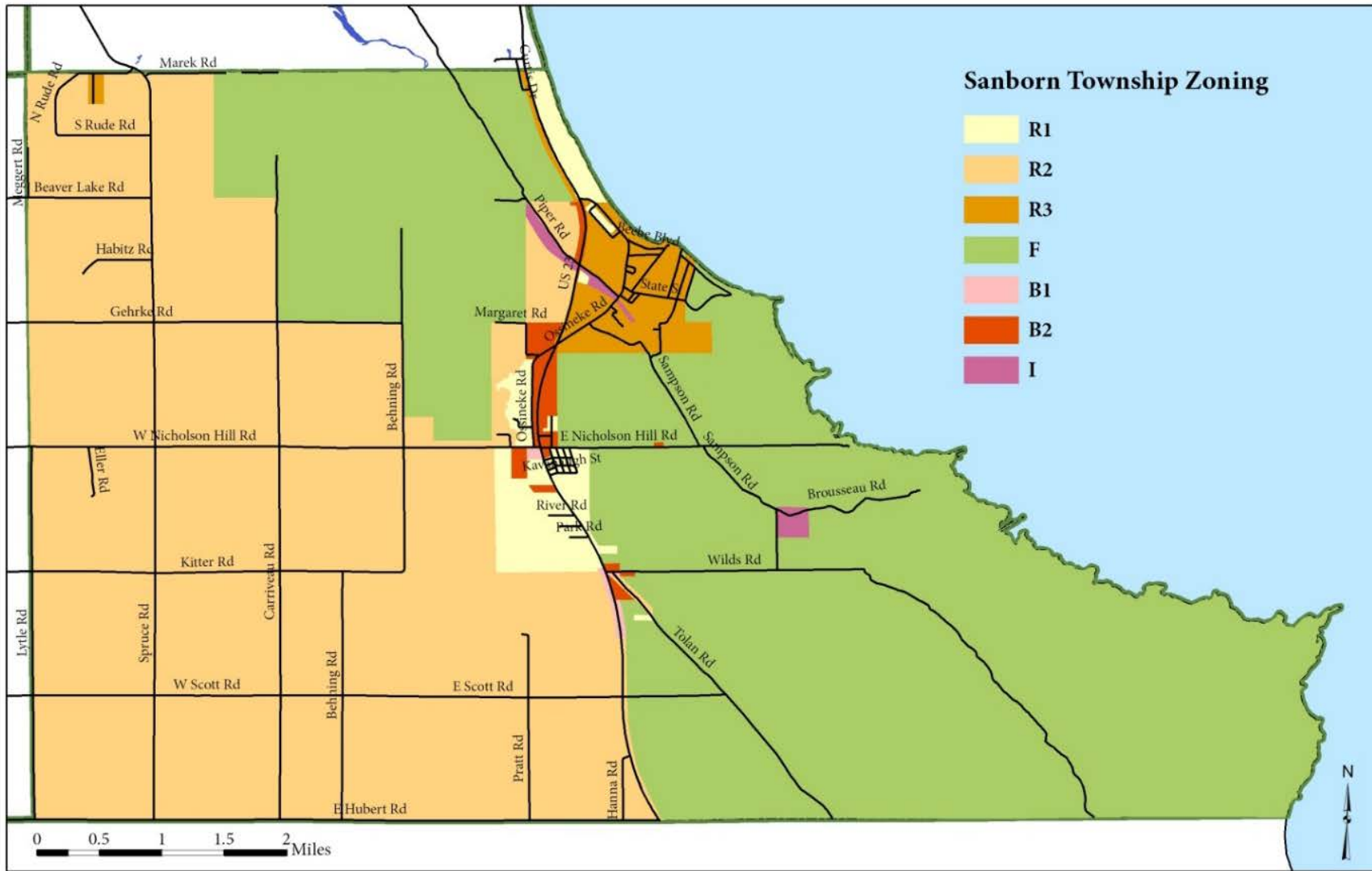
The B-2 General Business District is designed to provide sites for more diverse business types than B-1. This district is intended to cater to the business needs of the entire community and is often located to serve highway traffic.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 25 ft.; parking lots may be permitted in the front yard provided there is at least a ten (10) foot buffer area between the road of right-of-way and the off-street parking lot. If the parking and loading spaces are located in the rear or side yard, the required front setback may be reduced to 20 ft. provided a reasonable sense of consistency is established with abutting properties.
  - Sides: 5 ft.; if a side yard borders a residential district, the side yard setback shall not be less than 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

**(I) Industrial District**

The Industrial District is designed to accommodate wholesale activities, warehouses, major repair operations, manufacturing, and other industrial activities whose external physical effects may need to be restricted to avoid detrimentally affecting the surrounding districts.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None



**FIGURE 7-14 SANBORN TOWNSHIP ZONING DISTRICTS**

## WILSON TOWNSHIP FUTURE LAND USE

The future land use plan may be used as a guide by the township when considering land use and development decisions. The future land use recommendations are based on social and economic characteristics, environmental conditions, existing land uses, available community services and facilities, current zoning, and the community's goals and objectives. The plan identifies and defines the major future land use categories and approximate location for each use in the township (Figure 7-15). The boundaries on the map are not intended to indicate precise size, shape, or dimension. Instead, the boundaries portray a general land use arrangement, which may be refined as the community develops.

Wilson Township has identified nine different future land use planning areas to ensure existing land uses can continue, natural resources will be protected, the living environment is maintained and enhanced, and reasonable growth and development/redevelopment can be accommodated with minimal land use conflicts or negative environmental impacts. Some lots created prior to the Master Plan and the Wilson Township Zoning Ordinance may be smaller than the larger lots this plan recommends. Future development regulations should recognize these conditions and provide for the reasonable continuance of their use and character.

### General Residential

The General Residential land use category is primarily designed to accommodate single-family dwellings on lots which have a minimum width of 100 feet. This category is intended to preserve existing residential development on these smaller lots as well as to allow larger lots within these areas to be subdivided into 100-foot lots to accommodate the need for higher density residential development in select areas of the township.

Rather than designate new areas for this higher density development, the Township elected to preserve already existing higher density development. In some cases, the higher density areas have been expanded slightly to accommodate increased demand for smaller lot sizes in Wilson Township. The General Residential areas include the following:

- 1. Mosquito Lane west to the designated Neighborhood Business area and Conservation Recreation area adjacent to the Thunder Bay River (northeast portion of Wilson Township):** This area includes lots along Mosquito Lane, Gemini Lane, and Jupiter Lane as well as lots on the north and south sides of M-32. Most lots in this area are at least 100 feet wide and 200 feet deep. The lots along M-32 are much larger.
- 2. Fern Lane south of M-32 (northeast portion of Wilson Township):** The lots along Fern Lane are approximately 100 feet wide and 100 feet deep.
- 3. Miracle Drive north of M-32 (northwest portion of Wilson Township):** The lots in this area vary in size, but most are at least 100 feet wide.
- 4. Emerson Road south of M-32 (northwest portion of Wilson Township):** Lots east of Emerson Road and north of Harrison Road vary greatly in size, but the smallest lots are at least 100 feet wide.

5. **Bean Creek Road north of M-32 (northwest portion of Wilson Township):** Having at least 150 foot minimum widths, the lots along Bean Creek Road and along M-32 east to Emerson Road are slightly larger than most lots in the General Residential category.
6. **Indian Reserve Road (northeast portion of the Township south of Norway Ridge Trail and adjacent to the Conservation Recreation area along the Thunder Bay River):** The lots north and south of Indian Reserve Road are uniform in size and are 100 feet in width.
7. **Werth Road and Brilinski Road (southeastern portion of the Township):** These lots are 100 feet wide at a minimum and approximately 400 feet deep. Since this area abuts a Mixed Use: Light Industrial/Manufacturing and Commercial area, development regulations for the commercial and industrial lots should include appropriate screening and buffering to protect the adjacent residential area from effects of the commercial and light industrial uses.

Principal uses recommended for inclusion in the General Residential areas include those typically found in residential neighborhoods, such as single-family and two-family dwellings, home-based businesses and cottage industries, childcare uses, small parks, and other uses that are compatible with residential uses and do not alter the existing character of the neighborhood. Very high density development, such as multiple-family dwellings, should be restricted from these areas due to the lack of available public water and sewer service. The Township should consider site plan review and approval for all Special Land Uses. Development should be discouraged in areas where natural features present significant environmental constraints (e.g. wetland areas, soils that cannot accommodate septic systems, etc.).

This plan recommends maintaining a minimum lot width of at least 100 feet in the General Residential areas (as is required in the current Zoning Ordinance). The lots that do not meet the 100 foot minimum requirement shall be considered nonconforming lots and their use shall be continued. Setbacks should be established that are conducive to the density allowed in the areas. As setbacks are reviewed, the Township will consider the existing developments and establish setbacks accordingly. Areas within the General Residential category are currently zoned Single-Family Residential, Farm and Forest, Agricultural or Recreational Residential.

### **Recreational Residential**

The Recreational Residential land use category is a fairly small area located in the southeastern portion of the township adjacent to the Conservation Recreation area on the Thunder Bay River. This area is designed to accommodate cottage and seasonal home developments in a recreational setting. The allowed recreational amenities include parks, recreation lands, trails, and golf courses. This category is not intended to mix other type of uses (e.g. commercial or institutional) with the recreational residential character.

Since the area is designated as Recreational Residential, larger lot sizes of at least 100 feet minimum width and low impervious surface coverage should be required. As development occurs, the township will determine the feasibility of allowing lots to be smaller in size and clustered, which would result in high density development in certain areas of the district, while requiring larger, unbroken areas of land to be permanently set aside for open space or recreational land.



### **Mixed Use: Light Industrial/Manufacturing and Commercial**

The Mixed Use: Light Industrial/Manufacturing and Commercial category is designed primarily to accommodate airports, airport support activities, compatible establishments with airport activities, wholesale activities, warehouses, and industrial and manufacturing operations whose external and physical effects are restricted to the immediate area and have a minimal effect on surrounding districts. This designation allows uses, such as manufacturing, compounding, processing, packaging, assembly of finished or semi-finished products from previously prepared materials, industrial development support uses (e.g. training facilities), and research and high-tech industries (“clean” industries).

This land use category is located in three areas of the future land use map. First, the largest area is the airport and surrounding areas. The airport and the availability of water and sewer make this area a prime location for the type of mixed industrial and commercial establishments that typically develop around an airport. Currently, this area is zoned Farm and Forest, which makes most uses nonconforming. A small portion of the area along M-32 is zoned industrial. As zoning regulations are developed for this district, specific density and height regulations applying to an airport overlay zone will be adopted that are consistent with the current airport zoning ordinance adopted by Alpena County. Second, this future land use category is located on the corner of M-32 and King Settlement Road in the north-central portion of the township. Currently, this area is zoned as and used for industrial purposes. The last Mixed Use: Light Industrial/Manufacturing and Commercial area is located near the corner of Werth Road and Indian Reserve Road. Currently, this area is zoned as Industrial and General Business.

Development regulations relating to performance standards, signage, lighting, landscaping, outdoor storage, and parking should be addressed in revisions of the Zoning Ordinance. Buffering is an important issue in this district due to its close proximity to the Farm and Forest District, Conservation and Recreation areas, and a General Residential area (area on Werth Road).

### **Commercial**

This category is intended for a variety of retail and service businesses associated with roadways that have high traffic volumes and serve regional clientele. Two areas along the M-32 corridor have been designated for this type of general business use. The first and largest area is located at the eastern edge of the township near the airport. While the airport property has been designated as a Mixed Use: Light Industrial/Manufacturing and Commercial area, Wilson Township has determined general business uses are appropriate on the properties fronting both sides of M-32 from the airport to the eastern boundary of the township. The Township recognizes there are currently residential uses located in this area that will continue. However, as development opportunities arise, the Township feels this area is most suitable for commercial development due to traffic volumes, availability of water and sewer services, and the proximity to the airport. The second commercial area is along M-32 in the western portion of the township west of Miracle Drive. Currently, a small commercial center exists in this location. This area has been slightly expanded in the Future Land Use Map to allow a slightly larger commercial center that could serve both highway and neighborhood traffic. However, the expansion of this area is limited by the lack of available water and sewer services.

Commercial development in this district will be evaluated with an updated site plan review process. Signage regulations should be reviewed to determine appropriate area and height requirements. In addition, specific requirements for message boards and digital signage should be developed. Other development regulations that will be incorporated into this district include those related to lighting, landscaping, and buffering.

### **Mixed Use: Residential and Business**

The Mixed Use: Residential and Business designation recognizes there are portions of the township that are not divided into homogeneous land uses. In the past, various land uses developed out of necessity and prevailing development patterns at that time. Since then the trend has been to separate incompatible land uses. Wilson Township recognizes areas with a mixture of business and residential developments naturally occur around commercial or industrial areas, and can serve as either transition areas from commercial development to rural areas or as small commercial areas that serve the needs of local residents. The areas designated for this type of mixed use are as follows:

1. **M-32 (south side) west of Indian Reserve Road to western edge of section 27:** These lots are 100 feet wide or more, and serve as a transition zone between the mixed industrial and commercial areas surrounding the airport and the general residential areas along M-32. The area is currently zoned partially residential and partially farm and forest.
2. **M-32 in sections 19, 20, and 29:** This area allows limited business development along M-32 to serve passerby traffic, but the lack of water and sewer services limits development intensity. The area is currently zoned for general business and industrial on the north side of M-32 and general residential on the south side.
3. **M-32 (north and south sides) between Kaiser Road and Emerson Road:** This area extends outward from the area designated as commercial. It serves as a transition zone from the commercial center to the surrounding residential and farm/forest areas. Currently, this area is predominantly zoned residential with some general business near Miracle Drive.
4. **M-32 (south side) along western Township line:** A commercial use presently exists in this area and the Township would like to see that commercial use continue.
5. **Werth Road/Spruce Road intersection:** This area is currently zoned for general business. A mixed business and residential category is more compatible with the surrounding farm and forest land.
6. **Werth Road/Herron Road intersection:** One corner of this intersection is currently zoned for General Business. Its location in an agricultural portion of the township that is generally unserved by local businesses makes it a prime location for a small commercial center. On the Future Land Use map, the entire intersection is designated as future mixed use, but this area does not need to be limited to only the parcels directly on the intersecting roads.
7. **Wolf Creek Road and Dege Road intersection:** The area is currently zoned for business use. Its location in a commercially unserved area of the township makes it a prime location for a small commercial center. The general area around the intersection is designated as mixed use, but this area does not need to be limited to only the parcels directly on the intersecting roads.

Commercial development within this designation should be consistent in design with existing residential development (e.g. building setback, building form, massing, etc.). Permitted commercial land uses in this category should be low impact with standard business hours that are compatible with residential uses. Signage, lighting, and parking regulations should be incorporated to ensure these elements blend into

the residential aspects of the neighborhood. Signage should be small, and ground mounted with a low maximum height. Lighting should be designed to direct downward to avoid encroaching onto neighboring property, and to avoid interfering with pedestrian or traffic visibility. Parking should be located either in the rear or side yards. In addition, adequate buffers should be provided to screen commercial uses from residential uses. As the Zoning Ordinance is updated, development regulations will be incorporated to ensure compatibility between uses.

### **Neighborhood Business**

The Neighborhood Business category permits the establishment of small neighborhood businesses that meet the needs of local residents and are not dependent upon passerby traffic. While this category is similar to the Mixed Use: Residential and Business category, it is intended to be applied to single lot uses in appropriate areas in the township rather than as a mixed business/residential center.

Uses that would be allowed in neighborhood business areas include low impact uses, such as retail and service stores without outside storage areas, professional offices, public buildings, schools, restaurants, taverns, and fraternal organizations. In addition, businesses which meet the needs of tourists would also fit into this category.

Signage, lighting, and parking regulations should be incorporated to ensure these elements maintain the rural character of the township. Signage should be small, and ground mounted with a low maximum height. Lighting should be designed to direct downward to avoid encroaching onto neighboring property, and to avoid interfering with pedestrian or traffic visibility. Parking should be located either in the rear or side yards. In addition, adequate buffers should be provided to screen commercial uses from residential uses. As the Zoning Ordinance is updated, development regulations will be incorporated to ensure compatibility between uses.

Currently, one area has been designated as neighborhood business: the area along M-32 east of the Thunder Bay River and adjacent to the general residential area. This land is currently zoned for local and tourist business. The lack of other areas designated as Neighborhood Business does not preclude that land use category from applying to other portions of the township. As new areas of neighborhood businesses develop that have not been designated on the Future Land Use Map, the locations of these developments will be evaluated on a case by case basis for compatibility with the surrounding neighborhoods.

### **Conservation and Recreation**

Wilson Township recognizes the presence of environmentally sensitive lands which significantly contribute to the quality of life and rural character of the community. The Conservation and Recreation category is designed to protect environmentally sensitive areas and significant recreational areas. Locations for the Conservation and Recreation category include the following:

1. Paxton Quarry (Herron Road) and Optimist Acres south of M-32 (between King Settlement Road and Herron Road).
2. Land surrounding the Sportsmen's Club (east of the airport).
3. A 400-foot buffer around the significant riparian areas of the township (including the Thunder Bay River, Wolf Creek, King Creek, Butterfield Creek and Bean Creek).

The Conservation and Recreation areas should be protected from intense development without denying private property owners reasonable economic use of the land. This plan encourages the retention of contiguous resource areas, river greenbelts, wetlands, scenic areas, and wildlife habitat. This land use category could be implemented as an overlay zone in the designated areas. The uses of the underlying districts would be allowed; however, stricter setbacks and environmentally-conscious regulations, such as riparian greenbelts, should be incorporated into this overlay zone.

Lands within the 400-foot riparian buffer are currently zoned Conservation and Resources. It should be noted the 400-foot buffer along Bean Creek on the western edge of the township is a continuation of the 400-foot buffer around Bean Creek that is zoned as a Conservation and Resources overlay district in neighboring Green Township. Land surrounding the Sportsmen's Club is currently zoned Farm and Forest, while the Paxton Quarry and Optimist Acres are zoned Industrial.

In this zone, larger minimum lot widths should be considered, while discouraging long, narrow lots. A waterfront setback from the ordinary highwater mark should be established within the designated areas in the 400-foot riparian buffer for all structures except pump houses, recreational docks, stormwater and erosion control devices, recreational watercraft, yard furniture, boardwalks and/or steps allowing access to the shore, and similar structures. Maintaining a natural strip of vegetation along the shoreline is very important in maintaining the aesthetic character and ecological integrity of the shoreline. These vegetative buffers should be encouraged or required to minimize erosion, protect water quality, and provide wildlife habitat.

### **Agricultural**

The Agricultural land use designation is one of the most extensive future land use categories in the township and the township has made it a high priority to continue the community's farming tradition. Farmland significantly contributes to the scenic and rural character in the township as well as represents a way of life the community is built on. This land use is intended to encourage the continued existence and expansion of farms. The agricultural areas are primarily located on prime agricultural land in the central, southern, and western portions of the township.

This category allows farm dwellings, agricultural accessory buildings, crop production, and the raising of livestock normally associated with farming activities. The plan recommends this category accommodate low density single-family dwellings. Childcare facilities, educational facilities, plant nurseries, greenhouses, bed and breakfast inns, churches, recreation areas, clubs and lodges, residential wind turbine generators, solar farms, and forest and wildlife preserves are also allowed. Additionally, home occupations and cottage industries are encouraged to diversify the local economy and to provide families with options to supplement their farming income in order to continue farming in the township. Some of these uses will be designated as Special Land Uses, which may be allowed if they are designed to be compatible with the primary uses.

Wilson Township hopes to encourage ancillary agricultural uses and agricultural tourism through the development of zoning regulations that are more conducive to allow these uses. Such uses include farm markets, roadside stands, bakeries that sell goods primarily grown on-site, educational tours, family-oriented animated barns, gift shops for agriculturally-related products, historical exhibits, meeting spaces, petting farms, picnic areas, playgrounds, wagon rides, nature trails, small-scale entertainment, and restaurant operations related to the agricultural use of the site.

This plan also recommends allowing Planned Unit Developments (PUD) in this district and the Farm and Forest District to allow design and use flexibility on a given site, while protecting present and future residents from the adverse effects of unplanned or unregulated development. This approach allows the applicant to utilize innovative designs and methods to control the effects of development. Allowing the township and developers to work together to set flexible design parameters can result in low intensity development designed around natural features and clustering of residences, creating neighborhood business opportunities, and considering the needs, desires, and character of the township.

One of Wilson Township's goals is to keep both large and small tracts of farmland operational with the recognition that farmland preservation and the economic value from selling farmland for non-farming purposes needs to be balanced. Therefore, this plan recommends the township determine innovative farmland preservation methods that allow for low impact residential development. Non-farm development should be directed to less productive farmland and/or in areas where development is more concentrated and land is already fragmented. This clustering of non-farm development leaves larger tracts of farmland intact. This plan recommends investigating the allowance of smaller lot sizes for non-farm development, while requiring these clustering techniques. This also limits land use conflicts between new residential development and agricultural fields.

### **Farm and Forest**

The Farm and Forest land use category is the most extensive in the township and is a major factor in the character and quality of life. This category is designed to promote the use of wooded and rural areas to retain the value of the natural resources, while providing enjoyment to residents and visitors, and maintaining property owners' economic benefit. Since this category encompasses both farming and forested areas, the recommendations for the agricultural future land use category also apply to the farming portions of this land use category (e.g. allowing planned unit developments).

The boundary was generally drawn around areas that are predominantly forested or are agricultural areas that include forested areas. The Farm and Forest lands are located on the eastern third and the northern quarter of the township, and along a northeastern to southwestern trend in the western portion of the township. Most of these lands do not have prime agricultural soils.

This category encourages forestry and forest product operations in combination with agricultural and residential uses. Residential clustering should be encouraged to preserve large tracts of forestlands. Most of the land in this category is currently zoned as either Farm and Forest, or Agricultural.

### **General Zoning Considerations**

A review of the zoning ordinance was completed in 2008 and recommendations for improvements included but are not limited to the following:

**GENERAL PROVISIONS:** Revisions are needed to address fence regulations, signage, and landscaping. Sections addressing administration and enforcement also need to be updated.

**PERMITTED AND SPECIAL LAND USES:** A thorough review of permitted and Special Land Uses in all districts is needed.

**SITE PLAN REVIEW:** The site plan review process is one of the most useful and powerful tools in the ordinance. Good site plan review regulations allow the community to ensure the requirements of the ordinance are being followed and to ensure adequate and necessary conditions or restrictions are placed on land uses to mitigate any possible negative impacts.

The site plan review section should adequately address the site plan review process in Wilson Township. The ordinance needs to be clear as to whether a sketch, plot plan, or site plan is required and which entity reviews and approves each type of plan (e.g. Zoning Administrator or Planning Commission). All commercial and industrial developments should be required to submit a professionally designed site plan. In addition, the applicant should provide copies of the site plan to each member of the Planning Commission and the Zoning Administrator.

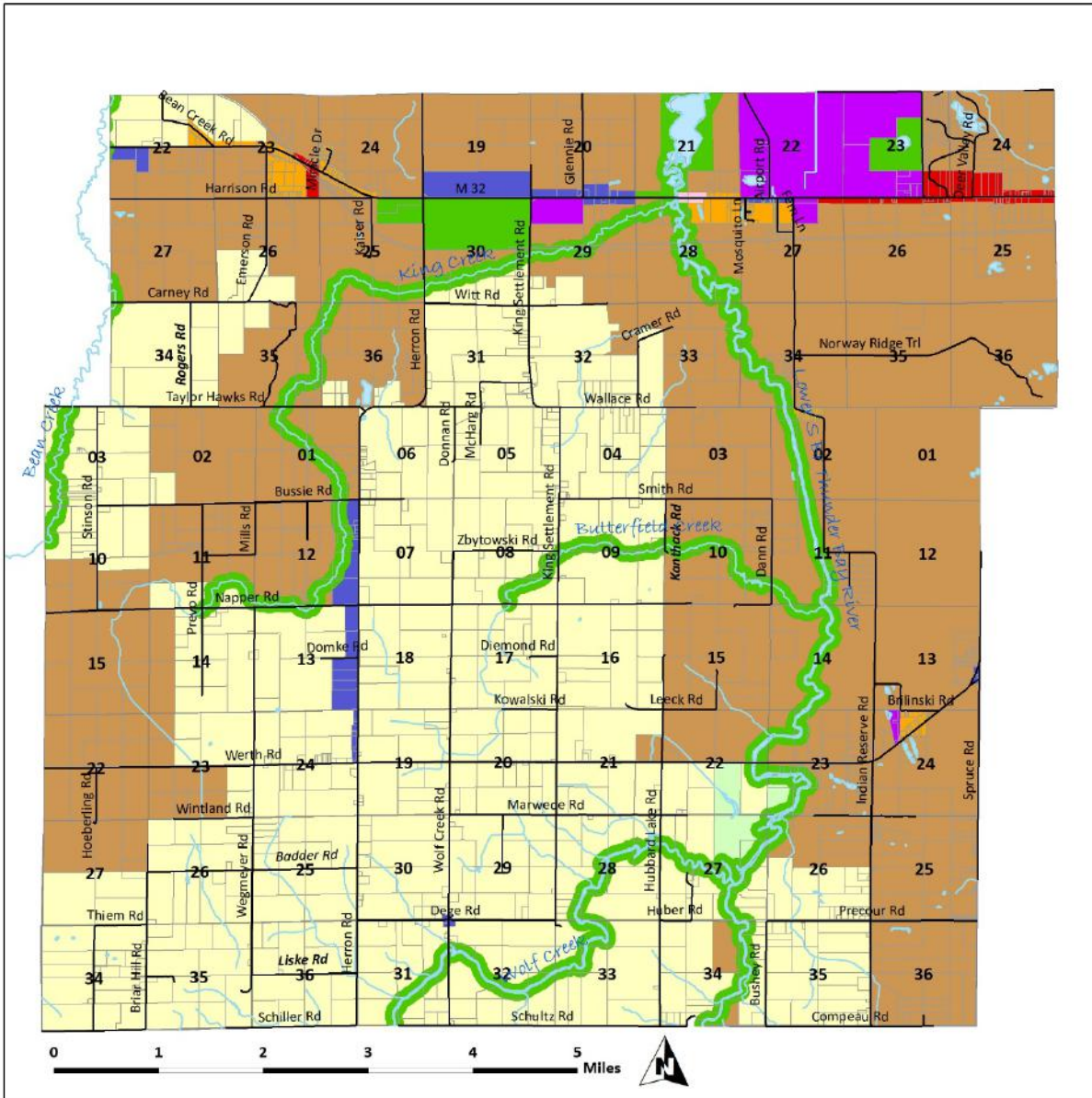
Additionally, better site plan review standards should be incorporated into the Zoning Ordinance to provide the Planning Commission with a basis to make fair and consistent decisions. A statement of findings and conclusions for each decision should be drafted to show whether the proposal was approved because it met all of the standards or was denied because it failed to meet the approval standards. This will provide protection to the Township in the event a decision is challenged in court.

The site plan review section should also contain provisions for amendments to an approved site plan, the expiration of a site plan, conditional approvals, performance guarantees, and cases in which the requirement of a site plan is waived. A further recommendation is to have the Planning Commission Chairman, Zoning Administrator, and the applicant sign the final, approved site plan.

It is highly recommended a pre-application provision be incorporated into the site plan review process to tailor the site plan requirements to each proposal since land uses vary on the level of detail and amount of information that is needed to evaluate land use impacts. Pre-application conferences are an easy, inexpensive, and effective way for developers and Township representatives to discuss land use proposals and township ordinance requirements. The pre-application conference allows developers to alter proposals to meet township conditions prior to application submission.

**SUPPLEMENTAL REGULATIONS:** The Zoning Ordinance should contain more comprehensive Site Development Standards for more intense Special Land Uses (Supplemental Regulations). This section contains specific criteria for unique or intense special land uses, such as cellular towers, pits and quarries, car washes, outdoor commercial storage facilities, drive-through restaurants, site condominiums, and sexually-oriented businesses. However, the current text addressing these issues is inadequate.





# Wilson Township Future Land Use

- General Residential
- Recreational Residential
- Agricultural
- Farm & Forest
- Neighborhood Business
- Mixed Use: Business & Residential
- Commercial
- Mixed Use: Light Industrial/Manufacturing & Commercial
- Conservation & Recreation

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MAP UPDATED: 2020

FIGURE 7-15 WILSON TOWNSHIP FUTURE LAND USE

## **WILSON TOWNSHIP ZONING DISTRICTS**

Wilson Township's original zoning ordinance was adopted in May 1974. A comprehensive revision was completed in September 2011. The zoning map was amended in 2013 (Figure 7-16).

### **R-1 One-Family Residential District**

This residence district is designed to provide for one-family dwelling sites and residentially related uses. The uses permitted by right and on special approval are intended to promote a compatible arrangement of land uses for homes, keeping neighborhoods relatively quiet and free of unrelated traffic influences.

- Minimum Lot Area: 20,000 sq. ft.
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 10 ft.
  - Rear: 25 ft.
- Minimum Lot Width: 100 ft.

### **R-2 Agricultural District**

The R-2 District is designed to serve farm and agricultural uses in areas which are rural and farm in character.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **R-3 General Residential District**

The R-3 General Residential District is designed to provide for multiple-family structures which may be necessary to meet the needs of apartment dwellers. This district is further intended to be a transition use district.

- Minimum Lot Area: 20,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **RR Recreation Residential District**

The Recreation Residential District is designed to accommodate cottage and seasonal home developments. It is intended that the seasonal home areas be reasonably homogeneous by discouraging the mixing of recreation home areas with commercial resorts, business services, and major institutional or community services.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 100 ft.

### **CR Conservation and Resources District**

Because there exists in the Township, certain natural and scenic resources that should be protected and conserved to promote environmental quality and community character, this CR District is intended to apply to stream and river corridors, lake shores, impoundment waters, and/or scenic highways, as deemed appropriate.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 10 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **FF Farm and Forest District**

The FF Farm and Forest District is designed to promote the use of wooded and rural areas in a manner that will retain the basic attractiveness of natural resources, and provide enjoyment for both visitors, and the community at large. The intent of the District is to hold rural areas for resource purposes, and to allow some multiple uses of marginal farm-forest lands.

- Minimum Lot Area: 40,000 sq. ft.
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 35 ft.
- Minimum Lot Width: 150 ft.

### **B-1 Local and Tourist Business District**

The B-1 Local and Tourist Business District establishes a Business District that is more selective than a General Business District. It provides for the establishment of neighborhood shopping areas, personal services, and professional office areas that are compatible with, and of service to, residential uses. Tourist services are included as being in character with the District.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **B-2 General Business District**

The B-2 General Business District is designed to provide site for more diversified business types and are often located to serve passerby traffic. Tourist services are included as being in character with the District.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **B-3 Business-Light Manufacturing District**

The B-3 District is designed to provide sites for light manufacturing and wholesale storage and as a distribution area to retail stores or industrial users. These sites do not necessarily have to abut or be adjacent to a primary or secondary county road, but must have access to these roads without passing through a residential district, provided the entrance and exit are approved in written form by the County Road Commission.

- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 5 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **I Industrial District**

The Industrial District is designed to accommodate wholesale activities, warehouses, major repair operations, manufacturing, and other industrial operations, subject to certain performance requirements relative to their impact on the community and adjacent non-industrial districts.

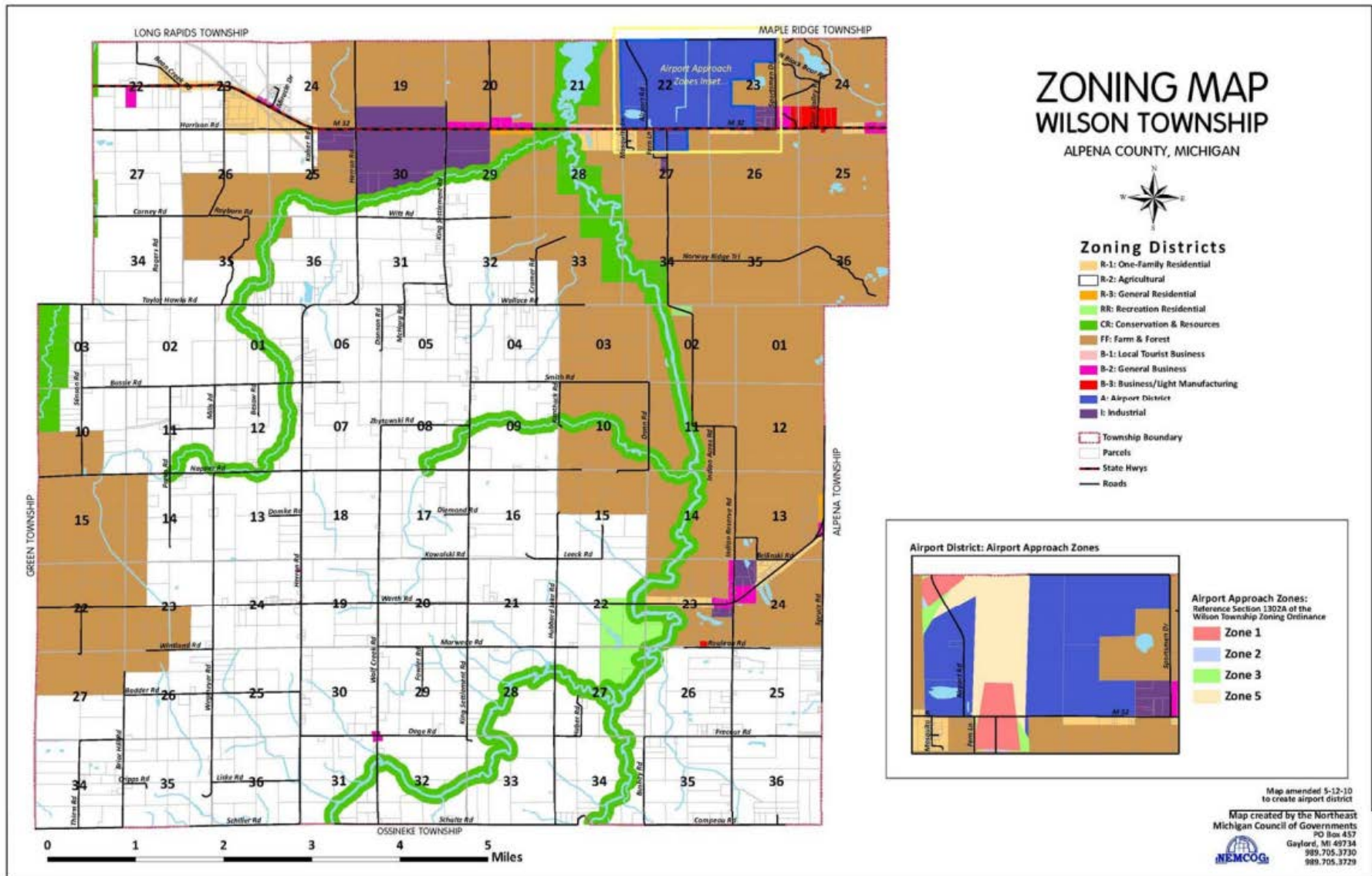
- Minimum Lot Area: None
- Minimum Setbacks
  - Front: 30 ft.
  - Sides: 10 ft.
  - Rear: 20 ft.
- Minimum Lot Width: None

### **A Airport District**

The Airport District is designed so as to primarily accommodate airport activities, logistical activities, wholesale activities, warehouses, military operations, animal care, human care and social assistance facilities, limited forest products and agricultural activities, public facilities, commercial and office activities, and limited manufacturing operations whose external, physical effects are restricted to the area of the district and in no manner affect in a detrimental way any of the surrounding districts. The Airport District contains an airport approach zones overlay which regulates density, land use, vegetation, lighting, and utilities in the parcels or portions thereof located within zones 1 through 5 of the Airport Approach Plan and are located within the Airport Zoning District.

- Minimum Lot Area: 1 acre
- Minimum Setbacks
  - Front: 40 ft.
  - Sides: 20 ft.
  - Rear: 20 ft.
- Minimum Lot Width: 150 ft.





**FIGURE 7-16 WILSON TOWNSHIP ZONING MAP**



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# Chapter 8

## Implementation and Adoption

### PLAN COORDINATION & REVIEW

As required by the Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended), notification of the intent to develop the Alpena County, Green Township, Ossineke Township, and Wilson Township Joint Master Plan was sent on **INSERT DATE** to all adjacent communities and other relevant entities to request cooperation and comment. **A copy of the notice letter, affidavit of mailing, and entities notified can be found in Appendix B.**

After the draft plan was completed by the Planning Commissions for Alpena County, Green Township, Ossineke Township, and Wilson Township with assistance from NEMCOG, a draft was transmitted to the Alpena County Board of Commissioners, Green Township Board of Trustees, Ossineke Township Board of Trustees, and Wilson Township Board of Trustees for approval to distribute the plan for review and comment. The draft plan was transmitted on **INSERT DATE** to entities notified at the initiation of the plan development. After the required comment period, a public hearing notice and notice of plan adoption of the final plan was transmitted to all required entities. **A copy of all relevant information can be found in Appendix B.**

### PUBLIC HEARING

**A public hearing on the proposed Joint Master Plan for Alpena County, Green Township, Ossineke Township, and Wilson Township, as required by the Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended) was held on INSERT DATE.** Section 43 of the Act requires that 15 days' notice of the public hearing be given in a publication of general circulation in the municipality. **A notice of the public hearings was published in the Alpena News. Copies of the public hearing notice are reproduced in Appendix B.** The purpose of the public hearing was to present the proposed Master Plan and to accept comments from the public.

### PLAN ADOPTION

The Alpena County Planning Commission formally adopted the Master Plan on **INSERT DATE** and the Alpena County Board of Commissioners passed a resolution of adoption on **INSERT DATE**.

The Green Township Planning Commission formally adopted the Master Plan on **INSERT DATE** and the Green Township Board of Trustees passed a resolution of adoption on **INSERT DATE**.

The Ossineke Township Planning Commission formally adopted the Master Plan on **INSERT DATE** and the Ossineke Township Board of Trustees passed a resolution of adoption on **INSERT DATE**.

The Wilson Township Planning Commission formally adopted the Master Plan on **INSERT DATE** and the Wilson Township Board of Trustees passed a resolution of adoption on **INSERT DATE**.

## **PLAN IMPLEMENTATION**

The Joint Master Plan was developed to provide a vision for the county's and three townships' future. It will serve as a tool for decision making on future development proposals. The plan will also act as a guide for future public investment and service decisions, such as the local budget, grant applications, road maintenance and development, future capital improvements, community group activities, tax incentive decisions, and administration of utilities and services.

On an annual basis, the Planning Commissions for Alpena County, and Green, Ossineke, and Wilson Townships will review the goals and objectives of the Master Plan and identify and prioritize three to four working strategies per year. These identified priority items will be the focus of activity throughout that particular year in each jurisdiction. This will allow the county and townships to work on a proactive basis to better accomplish the goals identified in the Joint Master Plan.

The Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended) recommends all master plans be reviewed and updated, as necessary, every five years. The Planning Commissions for Alpena County, and Green, Ossineke, and Wilson Townships will review the Master Plan on a five-year schedule and develop updates, as necessary.

## **GRANTS AND CAPITAL IMPROVEMENT PLAN**

The Master Plan can also be used as a guide for future public investment and service decisions, such as the local budget, grant applications and administration of utilities and services. Many communities prioritize and budget for capital improvement projects, such as infrastructure improvements, park improvements, etc. A Capital Improvements Program (CIP) establishes a five year schedule for all anticipated capital improvement projects in the community. A CIP includes cost estimates and sources for financing each project. It can therefore serve as both a budgetary and policy document to aid in the implementation of a community's master plan.

## **RECREATION PLAN**

Alpena County, and Green, Ossineke, and Wilson Townships will actively update the Recreation Plan every five years to be eligible for recreation grant funding and to implement planned recreation improvements. Background information presented in this Master Plan would serve as part of the recreation plan with additional work to include information about existing recreational facilities, and recreation goals and an action program for existing and proposed facilities. Grant funds would be pursued for recreation projects identified in the Recreation Plan.

# APPENDIX A

## Coastal Resiliency

The following pages describe Alpena County's coastal resiliency in regards to planning for coastal and climate trends.

# PLANNING FOR COASTAL AND CLIMATE TRENDS

## THE IMPORTANCE OF PLANNING IN COASTAL COMMUNITIES

It is no secret that the Great Lakes are one of the most unique and precious environmental systems in the world. In fact, “the Great Lakes basin contains more than 20% of the world’s surface freshwater supplies and supports a population of more than 30 million people.”<sup>1</sup> Michigan is home to nearly 3,300 miles of Great Lakes shoreline, along with 36,000 miles of rivers and streams, and 11,000 inland lakes.<sup>2</sup>

Yet in general, riparian land (land adjacent to a water body) throughout Michigan is not adequately protected from development pressures.<sup>3</sup> Coastal communities especially have an important role to play in protecting the Great Lakes. In 2001, the Michigan Department of Environmental Quality (DEQ), now the Department of Environment, Great Lakes & Energy (EGLE), acknowledged “fragmentation of coastal habitats, loss of agricultural and forest lands, increased impervious surfaces and resulting stormwater runoff, and the increased development in coastal hazard areas, wetlands, and Great Lakes Islands, could be improved through better coastal land-use planning.”<sup>4</sup>

Planning for coastal areas at the local level requires knowledge of both local conditions and state and federal regulations. This chapter aims to address these needs for Alpena County and provide clear, well-founded recommendations for future land-use planning.

## OVERVIEW OF COASTAL DYNAMICS AND THE GREAT LAKES

The Great Lakes function differently than other inland water bodies and tidal oceans. Understanding these dynamics can help Alpena County plan for naturally occurring changes along the shoreline.

### How are Great Lakes Water Levels Measured?

Great Lakes water levels are measured via the International Great Lakes Datum (IGLD), a reference system of benchmarks at various locations on the lakes that approximate sea level. Great Lakes water levels are expressed as measurements above this reference elevation.

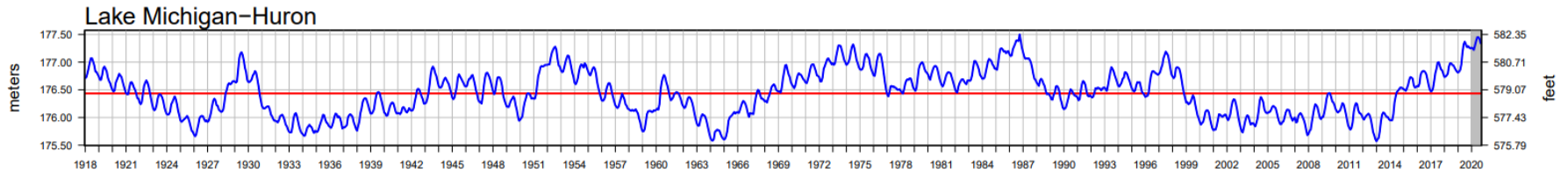
<sup>1</sup> Mackey, S.D. 2012: Great Lakes Nearshore and Coastal Systems. In: U.S. National Climate Assessment Midwest Technical Input Report. J. Winkler, J. Andresen, J. Hatfield, D. Bidwell, and D. Brown, coordinators

<sup>2</sup> Ardizzone, Katherine A. and Mark A. Wyckoff, FAICP. Filling the Gaps: Environmental Protection Options for Local Governments, 2<sup>nd</sup> Edition. 2010.

<sup>3</sup> As cited by Norton 2007 – Michigan Department of Environmental Quality. 2001. 309 Enhancement Grants Assessment/Strategy. Lansing, MI: DEQ Coastal Management Program.

<sup>4</sup> Ibid

**Figure 1. Lake Michigan-Huron Water Level Changes, 1918 – 2020**



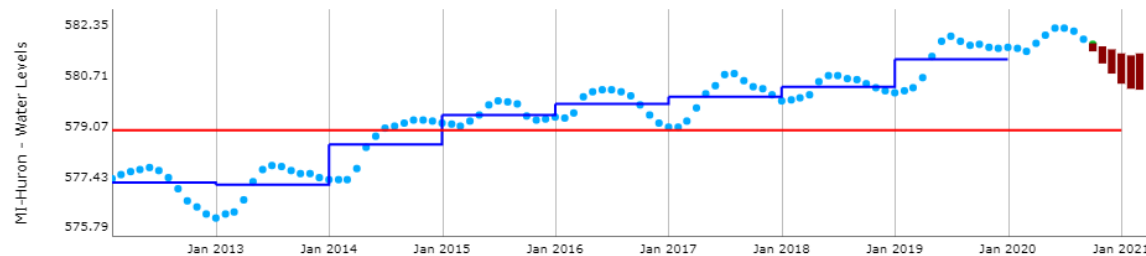
Source: <http://lre-wm.usace.army.mil/ForecastData/GLBasinConditions/LTA-GLWL-Graph.pdf>

*Changing Water Levels of the Great Lakes*

Great Lakes water level changes result not from the moon’s gravitational pull, but from cyclical changes in rainfall, evaporation, and river and groundwater inflows.<sup>5</sup> These factors work together to raise and lower the water levels of the Great Lakes in small increments daily, and larger increments seasonally and over the course of years and decades. Long-term water levels fluctuate by multiple feet. Figure 1 illustrates the water level of Lake Huron from 1918 to 2020 (Lake Michigan and Lake Huron are technically considered one lake). However, under certain climate conditions, water levels can dramatically fluctuate over short periods of time. For example, following the extreme winters of 2014 and 2015, water levels in Lake Michigan rose between three to four feet from an all-time low (576 feet) set just a year earlier.

The Great Lakes have just experienced a period of rising lake levels (see Figure 2). Since the early 2000s, water levels had remained low, but historical patterns over the last century indicated that higher water levels were sure to return.<sup>6</sup> After a period of lows in 2013, Lake Huron’s water level in July of 2020 averaged 582.2 feet, which was 34 inches above its long-term average

**Figure 2. Lake Michigan-Huron Water Levels**



Source: [glerl.noaa.gov/data](http://glerl.noaa.gov/data)

<sup>5</sup>Norton, Richard K., Meadows, Lorelle A. and Meadows, Guy A. (2011) “Drawing Lines in Books and on Sandy Beaches; Marking Ordinary High Water on Michigan’s Great Lakes Shorelines under the Public Trust Doctrine.” Coastal Management, 39: 2, 133 – 157, First published on 19 February 2001 (iFirst).

<sup>6</sup>Meadows, Guy A., and Meadows, Lorelle, A., Wood, W.L., Hubertz, J.M., Perlin, M. “The Relationship between Great Lakes Water Levels, Wave Energies, and Shoreline Damage.” Bulletin of the American Meteorological Society Series 78:4. (1997): 678-683. Print.



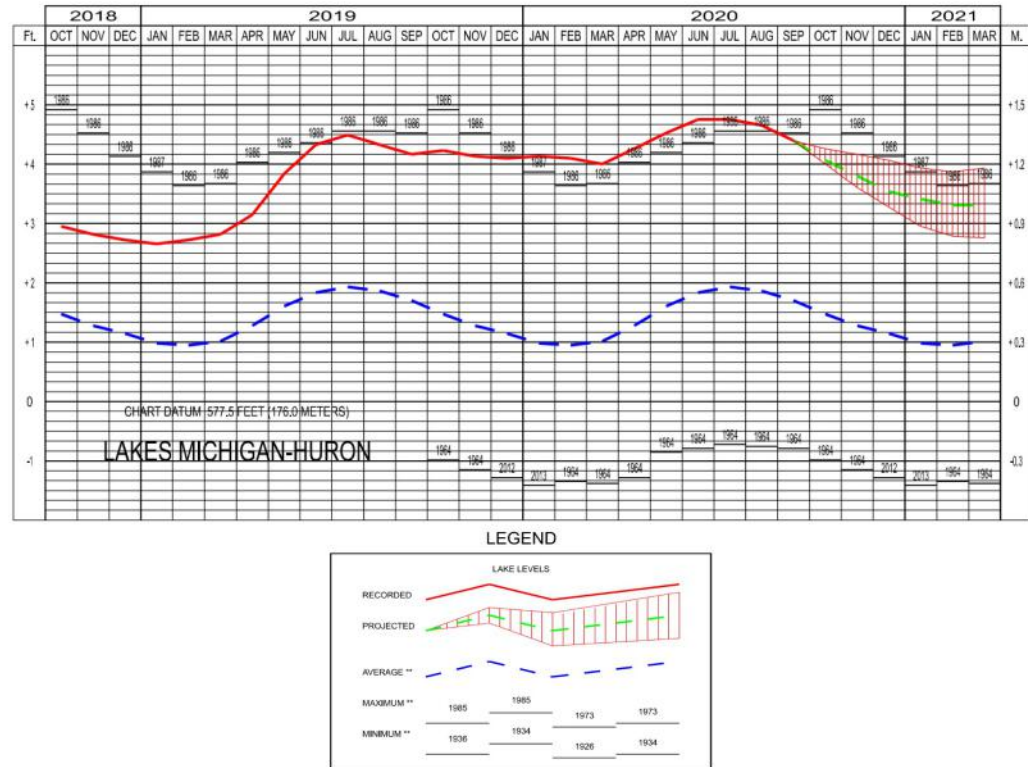
level for the month. According to a recent U.S. Army Corps of Engineers summary, based on current conditions, Lake Huron is expected to see lake levels decline through March, 2021, after seeing record highs throughout 2020 (see Figure 3).

It is important to note that changes in water levels are not solely responsible for the movement of the shoreline landward and lakeward over time. The velocity and height of waves, erosion of shorelines, and the pace of fluctuating water levels also contribute to coastal dynamics on the Great Lakes.

*Wave Energy and Height*

The Great Lakes experience high-energy waves and wave setup along the coastline. High-energy waves are high in speed and strong in intensity and are primarily created as fast winds move across the surface of the water for extended distances.<sup>8</sup> “Wave setup” is the height of the water as waves reach the shore. High wave setup results as regional storms create high winds on the Great Lakes.<sup>9</sup> Powerful and tall waves can quicken the rate of erosion and damage structures near the shoreline.<sup>10</sup> In Alpena County, the prevailing winds are predominantly from the west (May to August and September to March) and north (March to May).

**Figure 3. Lakes Michigan-Huron Water Levels—September 2020**



<sup>7</sup><http://www.lre.usace.army.mil>

<sup>8</sup>National Oceanic and Atmospheric Administration. “Coastal Currents” Ocean Services Education, NOAA, 25 March 2008. Web. Accessed July 2015.

<sup>9</sup>Norton, Richard K, Meadows, Lorelle A. and Meadows, Guy A. (2011) “Drawing Lines in Law Books on Sand Beaches: Marking Ordinary High Water on Michigan’s Great lakes Shorelines under the Public Trust Doctrine”, Coastal Management, 39: 2, 133 – 157, First published on: 19 February 2001 (iFirst)

<sup>10</sup>Ibid.

### *Erosion*

The shorelines of Lake Huron are mostly made of gravel and sands that easily erode during times of high-energy waves.<sup>11</sup> Coastal erosion can cause flooding and damage infrastructure along bluffs and beaches. Erosion is caused mainly by storms and winds, and is exacerbated when lake levels are high.<sup>12</sup>

### *Quickly Changing Conditions*

The Great Lakes are contained in gradually shifting and tilting basins. This tilting results as the Earth slowly decompresses and rebounds from the immense weight of the glaciers that created the Great Lakes.<sup>13</sup> This shifting causes water levels to change more quickly in some places than others, because the shape of the water basin varies along the coast.<sup>14</sup> This attribute of the Great Lakes makes it difficult to predict the pace of shoreline movement. Therefore, it is safest to plan for great variability and rapid change in water levels.<sup>15</sup>

## CLIMATE CHANGE AND THE GREAT LAKES

Powerful waves, erosion, and changing shorelines on the Great Lakes have been well-documented throughout history, and each has implications for planning efforts along the coast. Climate change exacerbates these natural processes and requires preemptive planning in coastal communities. This section will discuss climatologist predictions of increased precipitation and storminess in the Great Lakes region, variable lake water levels, and rising water temperatures. First, it is important to understand the global context of climate disruption.

### *Global Changes in Climate*

Climate and weather are directly related, but not the same thing. Weather refers to the day-to-day conditions in a particular place, like sunny or rainy, hot or cold. Climate refers to the long-term patterns of weather over large areas. When scientists speak of global climate change, they are referring to changes in the generalized, regional patterns of weather over months, years and decades. Climate change is the ongoing change in a region's general weather characteristics or averages. In the long term, a changing climate will have more substantial effects on the Great Lakes than individual weather events.

Evidence collected over the last century shows a trend toward warmer global temperatures, higher sea levels, and less snow cover in the Northern Hemisphere. Scientists from many fields have observed and documented significant changes in the Earth's

<sup>11</sup>Ibid.

<sup>12</sup>Meadows, Guy A., and Meadows, Lorelle, A., Wood, W.L., Hubertz, J.M., Perlin, M. "The Relationship between Great Lakes Water Levels, Wave Energies, and Shoreline Damage." *Bulletin of the American Meteorological Society Series 78:4.* (1997): 675-683. Print.

<sup>13</sup>Dorr, J. A. and D. F. Eschman. 1970. *Geology of the Great Lakes.* Ann Arbor: University of Michigan Press.

<sup>14</sup>Wilcox, D. A, Thompson, T.A., Booth, R.K., and Nicholas, J. R., 2007, *Lake-level variability and water availability in the Great Lakes: U.S. Geological Survey Circular 1311*, 25 p

<sup>15</sup>Ibid.

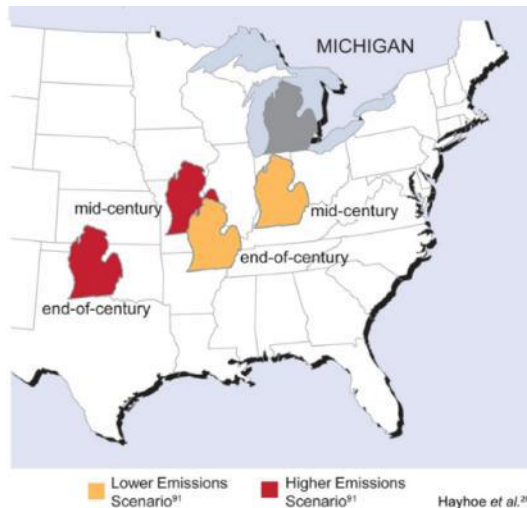
climate.<sup>16</sup> Warming of the climate system is unequivocal and is now expressed in higher air and ocean temperatures, rising sea levels, and melting ice.<sup>17</sup>

To help predict what the climate will be in the future, scientists use computer models of the Earth to predict large-scale changes in climate. These General Circulation Models (GCMs) have been improved and verified in recent years, resulting in relatively reliable predictions for climate changes over large regions.<sup>18</sup> Scientists downscale these techniques to predict climate change for smaller regions.

*Climate Change on the Great Lakes*

The Great Lakes Integrated Sciences and Assessments Program (GLISA) is a consortium of scientists and educators from the University of Michigan and Michigan State University that provides climate models for the Great Lakes region in support of community planning efforts like this Master Plan.

Figure 5.



Model projections of summer average temperature and precipitation changes in Illinois and Michigan for mid-century (2040-2059), and end-of-century (2080-2099), indicate that summers in these states are expected to feel progressively more like summers currently experienced in states south and west. Both states are projected to get considerably warmer and have less summer precipitation.

Figure 4.

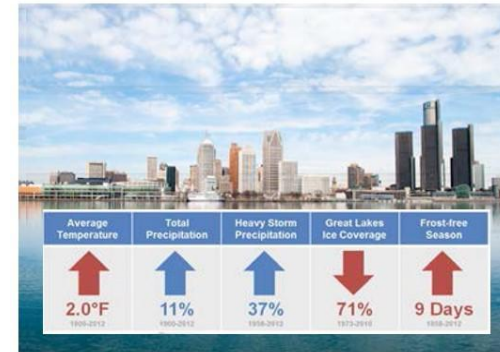
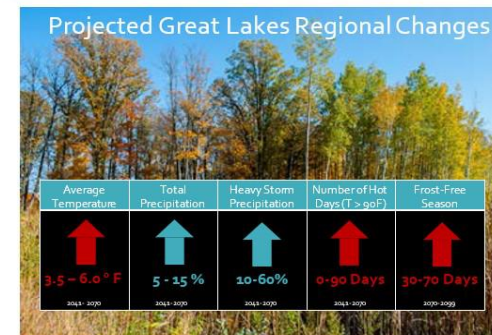


Figure 4 illustrates the historical and predicted climate changes from GLISA for the Great Lakes region. According to GLISA, the Great Lakes region experienced a 2.3° Fahrenheit increase in average air temperatures from 1951 to 2017.<sup>19</sup> An additional increase of 3° to 6° F in average air temperatures is projected by 2050. Although these numbers appear relatively small, they are driving very dramatic changes in Michigan’s climate and greatly impact the Great Lakes.



The National Climate Assessment for 2009 included a number of illustrations to help us understand the extent and character of anticipated climate change impacts.<sup>20</sup> One of these illustrations, Figure 5, shows Michigan under several emissions scenarios, each leading to changes in Michigan’s

<sup>16</sup>Intergovernmental Panel on Climate Change. (2007). Observed changes in the climate and their effects. Eb. Accessed July 2015.

<sup>17</sup>Ibid.

<sup>18</sup>Intergovernmental Panel on Climate Change (2013). What is a GCM? Web. Access July 2015

<sup>19</sup>Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed April 2019.

<sup>20</sup>U.S. Global Change Research Program. Global Climate Change in the United States, 2009. Cambridge University Press, Cambridge, MA.

climate. Just by maintaining current emission levels, Michigan’s climate will feel more like present-day Arkansas or Oklahoma by the end of the century.<sup>21</sup>

### *Increased Precipitation and Storminess*

There is strong consensus among climate experts that storms greater in number and intensity will occur in the Great Lakes region as a result of climate change.<sup>22</sup> This is already happening as “the amount of precipitation falling in the heaviest 1% of storms increased by 35% in the Midwest from 1951 to 2017.”<sup>23</sup> As storms drop more precipitation and generate stronger sustained winds, the Great Lakes will see stronger and higher waves. In addition to direct damage caused by storms, sustained increases in the number of storms and their intensity can both directly and indirectly pollute waters by overloading sewage and stormwater capabilities.<sup>24</sup> Increases in the intensity of storms also quickens the pace of erosion on Great Lakes shorelines. In fact, the Federal Emergency Management Agency (FEMA) projects approximately 28% of structures within 500 feet of a Great Lake shoreline are susceptible to erosion by 2060.<sup>25</sup>

### *Variability of Lake Water Levels*

The natural ups and downs in the water levels of Lake Huron will continue regardless of the impacts of climate change.<sup>26</sup> However, climate change is likely to augment this natural process, resulting in more variable water levels as warmer air temperatures result in fewer days of ice cover and faster evaporation.<sup>27</sup> In other words, lake levels will rise and fall faster and with less predictability than in the past. Fortunately, much of Michigan’s coastal infrastructure was built in previous decades during times of high water levels.<sup>28</sup> However, fast-rising waters can erode shorelines, damage infrastructure, and cause extensive flooding in inland rivers.<sup>29</sup> When lake levels fall, access to infrastructure like docks may be restricted and navigation hazards in shallow waters may be exposed. Low lake levels pose a threat to coastal vegetation and can reduce the pumping efficiency of drinking water intake pipes.<sup>30</sup> Additional ramifications of changing lake levels include a drop in water supply,<sup>31</sup> restricted fish habitats,<sup>32</sup> more invasive

<sup>21</sup>Ibid.

<sup>22</sup>Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed December 2019.

<sup>23</sup>Ibid.

<sup>24</sup>Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.

<sup>25</sup>The Heinz Center. (2000). Evaluation of Erosion Hazards. Web. Accessed July 2015.

<sup>26</sup>Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.

<sup>27</sup>Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.

<sup>28</sup>Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.

<sup>29</sup>Ibid.

<sup>30</sup>Ibid.

<sup>31</sup>Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.

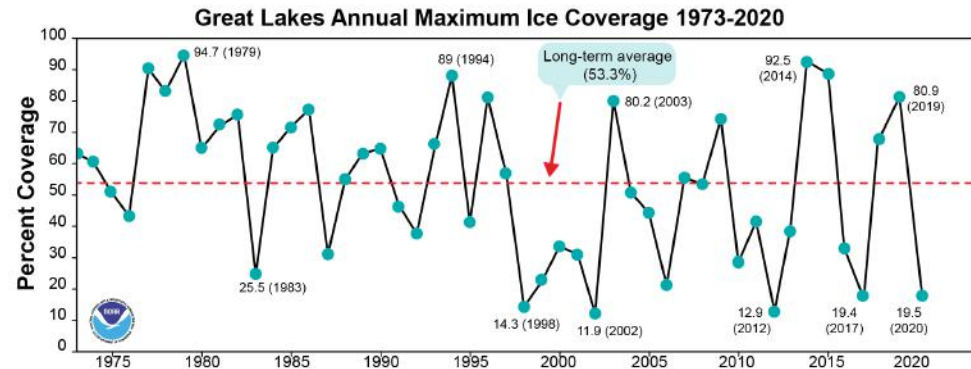
<sup>32</sup>Ibid.

species,<sup>33</sup> faster erosion, and an overall decline in beach health.<sup>34</sup> Climate change is likely to augment the natural highs and lows of lake levels, causing more variability and a faster rate of change, making each of these potential ramifications both more likely and less predictable.

### Water Temperature

Climatologists predict there will be fewer days below freezing in Michigan and other Great Lakes states. As temperatures remain warm for a greater part of the year, the winter season will shorten and the lake ice cover that accompanies winter weather will decline. In general, annual average ice cover on the Great Lakes underwent a shift from higher amounts prior to the 1990s to lower amounts in recent decades. However, there remains strong year-to-year variability, and high ice years are still possible.<sup>35</sup> Figure 6 illustrates the variability in ice coverage in the Great Lakes between 1973 and 2020.

Figure 6.



Lake ice cover allows heat radiation from the sun to be reflected, so when ice declines, the surface water temperature will increase as more heat is absorbed by the water. In the Great Lakes, average summer lake surface temperatures have been increasing faster than the surrounding air temperatures, with Lake Superior surface temperatures increasing by 4.5°F between 1979 and 2006.<sup>36</sup>

The associated impacts of rising water temperatures include changes to where fish and other aquatic animals can live, increased vulnerability to invasive species, and increased risk of algae blooms.<sup>37</sup> Rising water temperatures also enable winds to travel faster across the surface of the lake, increasing the vulnerability of coastal communities to damaging waves as storms and winds increase.<sup>38</sup> Lastly, ice cover protects the shoreline during winter storms. With less ice cover, the shoreline is more susceptible to erosion and habitat disruption.

<sup>33</sup>Ibid.

<sup>34</sup>Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.

<sup>35</sup>Great Lakes Integrated Sciences and Assessments (2019) Temperature. Web. Accessed April 2019.

<sup>36</sup>Ibid.

<sup>37</sup>Dinse, Keely. Preparing for extremes: The Dynamic Great Lakes. Michigan Sea Grant. Web. Accessed July 2015.

<sup>38</sup>Cruce, T., & Yurkovich, E. (2011). Adapting to climate change: A planning guide for state coastal managers – a Great Lakes supplement. Silver Springs, MD: NOAA Office of Ocean and Coastal Resource Management.



## DEFINING VULNERABILITY IN ALPENA COUNTY

The effects of climate change have been felt by everyone. With planning and preparation, communities can weather the storms and recover, becoming even better places to live and thrive. Through community-wide planning, resilient communities actively cultivate their abilities to recover from adverse situations and events, working to strengthen and diversify their local economies and communication networks, increase social capital and civic engagement, enhance ecosystem services, improve human health and social systems, and build local adaptive capacity.

### *Building Community Resilience*

As defined by the Urban Sustainability Directors Network, community resilience is the ability of a community to anticipate, accommodate and positively adapt to or thrive amidst changing climate conditions or hazard events and enhance quality of life, reliable systems, economic vitality and conservation of resources for present and future generations. The Rockefeller Foundation emphasizes equity as an important component of resilience, stating that community resilience is the capacity of people — particularly the poor and vulnerable — to survive and thrive no matter what stresses or shocks they encounter. Communities that are resilient are able to learn from adversity and adapt quickly to change. In general, the most important qualities of resilient communities are: (1) Reflective, (2) Flexible, (3) Integrated, (4) Robust, (5) Resourceful, (6) Redundant and (7) Inclusive. The Rockefeller Foundation has identified 12 indicators within these qualities that make for a resilient community (see inset). However, it is important to acknowledge that Alpena County is unique, and not all of these indicators or characteristics may be necessary for the community to be “resilient.”

### **According to the Rockefeller Foundation, a Resilient Community has...**

1. Minimal human vulnerability
2. Diverse livelihoods and employment
3. Effective safeguards to human life and health
4. A collective identity and mutual support
5. Comprehensive security and rule of law
6. A sustainable economy
7. Reduced exposure and fragility
8. Effective provision of critical services
9. Reliable mobility and communication
10. Effective leadership and management
11. Empowered stakeholders
12. Integrated development planning



The following is a community vulnerability assessment focused on Alpena County. This assessment begins with an overview of regional climate trends and predicts societal impacts, then transitions to detailed assessments of the community's vulnerabilities to extreme heat and flooding events. Although the assessment is concentrated on these two specific types of events, many of the considerations and societal impacts identified would be present in other stresses and shocks within the community (e.g., a winter storm).

In completing the assessment, a variety of factors are considered, such as demographics, environmental conditions, locations of critical facilities and essential services, and the built environment. This assessment informs recommendations for reducing identified community vulnerabilities through policies, programs and projects, which will inevitably lead to a more resilient community.

### *Climate Variability*

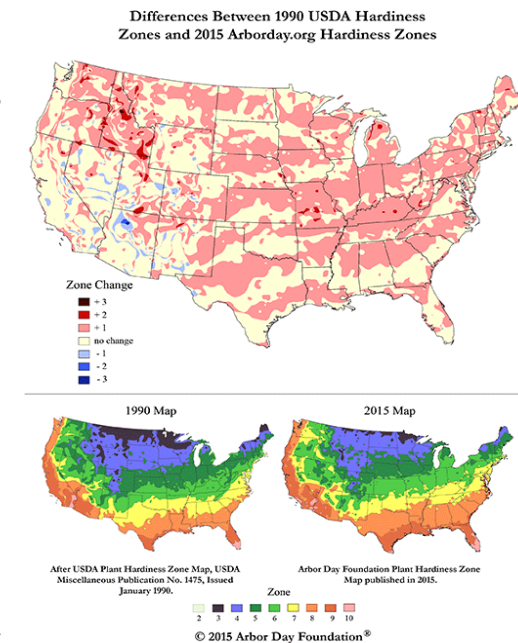
Based on the most recent models, the climate of Alpena County will continue to warm, with greater increases in average temperatures during the winter months and at night. There are a variety of weather impacts expected with this change in average temperatures. Some of the potential impacts of climate change in the county are listed below:

- Storms are expected to become more frequent and more severe
- Increases in winter and spring precipitation
- Less precipitation as snow and more as rain
- Less winter ice on lakes
- Extended growing season (earlier spring/later fall)
- More flooding events with risks of erosion
- Increases in frequency and length of severe heat events (heat waves)
- Increased risk of drought, particularly in summer

It is important to note that increased flooding and more intense drought are not mutually exclusive nor contradictory. In the Great Lakes region, scientists are predicting more intense rain events in the fall and winter along with more intense droughts in the summer months.

These changes in climate could have a number of both positive and negative effects in Alpena County. For example, an extended growing season could help support new crops and increase crop yields for area farmers. On the other hand, the highly variable weather conditions — such as severe storms and flooding mixed with summer droughts — present big challenges to farming.

**Figure 7.**





*Local and Regional Hazards: Severe Weather in Alpena County*

The following text summarizes the major weather-related hazards in Alpena County. Oftentimes, severe weather events result in negative impacts to the local economy and to vulnerable populations in the community. According to the Alpena County 2014 Hazard Mitigation Plan:

Since January of 2006, 13 winter storm events have been recorded in Alpena County. Winter storms consisting of rapid snow accumulation, high winds, cold temperatures and low visibility are common seasonal hazards that can be expected to occur in Alpena County several times every year. The highest seasonal snowfall in recorded history at Alpena County Airport was 146 inches during the 1985 season.

The following snowfall extremes, based on the time period of the Midwest Regional Climate Center's published record, are:

- Greatest monthly total: 48.1 (recorded December 2008)
- Greatest seasonal total: 146.0 inches (recorded during 1985)

Severe winds (winds in excess of 58 miles per hour) also pose a threat to Alpena County's economic, social and environmental well-being. According to the National Weather Service, the northern Lower Peninsula can expect 3-4 severe wind events each year. Strong winds and thunderstorm winds are the most prevalent severe weather events that affect Alpena County. From 1955 to 2002, there have been 64 severe wind events recorded in Alpena County causing over \$100,000 in damage. Records from October of 2006 through May of 2012 show there were nine strong wind events, with six of those associated with thunderstorm activity. Total estimated damage was \$71,000. Strong winds are most likely in the summer months of June July and August, but can and have occurred at any time of year.

In regard to flooding, Alpena County's 2014 Hazard Mitigation Plan notes that two of the county's three hydro dams are high hazard due to their location, dam pool size and normal/max storage. In addition to these dams, the plan also cites riverine and urban flooding as a community threat, especially around the Washington Bridge on US-23 crossing the Thunder Bay River. Alpena County's flood hazard areas were last mapped by FEMA in 2011.

There are three key rationales to support regulation of floodprone areas: "(1) to protect the unwary from investing in or occupying floodprone property; (2) to protect other riparian landowners (upstream, downstream, or cross-stream) from higher flood levels due to ill-considered encroachment on floodplains by their neighbors; and (3) to protect the community from the costs of rescue and disaster assistance. The first two related to classical nuisance law while the third more closely related to public resource protection."

-From Rutherford H. Platt's *Disasters and Democracy: The Politics of Extreme Natural Events*. Three rationales originally proposed by University of Chicago Law Professor Allison Dunham in 1959.

## VULNERABILITY ASSESSMENTS

Communities interested in becoming more resilient assess their vulnerabilities and make action plans to reduce their sensitivities and exposures to hazards of all kinds. This Community Vulnerability Assessment has been compiled by the Land Information Access Association (LIAA) to provide a wide variety of useful information aimed at improving climate resilience by reducing human and community vulnerabilities.

### *Vulnerability = Exposure + Sensitivity*

A Vulnerability Assessment is designed to identify and help prioritize adaptation strategies in the community planning process. A model that defines vulnerability as “exposure plus sensitivity” is used to complete the assessment.<sup>40</sup> “Exposure” refers to hazards in the natural or built environment, while “sensitivity” refers to the degree to which a community or certain segments of a community could be impacted by an event. This concept has been used recently in a variety of studies, such as equity and adaptation assessments conducted by the NAACP,<sup>41</sup> vulnerability and its relationship to adaptation,<sup>42</sup> and hazard-specific vulnerability assessments aimed at measuring exposure, sensitivity, and resilience.<sup>43</sup>

By assessing the potential for exposure to a hazard and the sensitivities of specific populations, maps are generated that identify the community’s areas with relatively greater vulnerability (that is, where exposure and sensitivity overlap). This tool provides direction for community planners and public health workers in reducing risks to human health by understanding where the areas of vulnerability lie and why the vulnerability exists.

For the purposes of this tool, based on the greatest risks in Michigan and most likely predicted climate changes, the vulnerability assessments for Alpena County were limited to extreme heat waves and flooding. However, climate change is predicted to result in increases of other

*Exposure* refers to hazards in the natural or built environment, while *sensitivity* refers to the degree to which a community or certain segments of a community could be impacted by an adverse event.

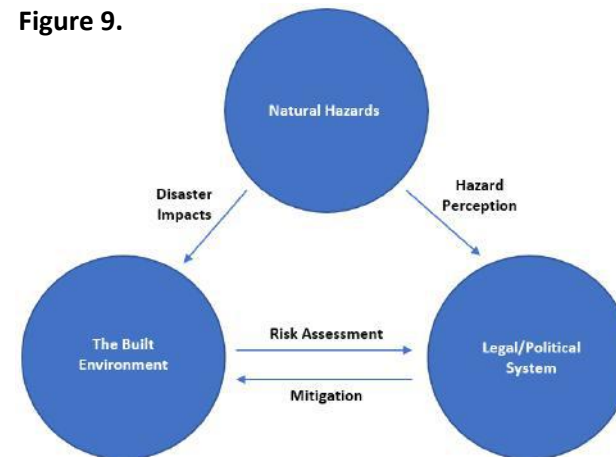


Figure 9.

Figure from *Disasters and Democracy* (Platt, 1999)

<sup>40</sup>Foundations for Community Climate Action; Definition Climate change Vulnerability in Detroit. University of Michigan. December 2012.

<sup>41</sup>Equity in Building Resilience in Adaptation Planning. National Association for the Advancement of Colored People (NAACP).

<sup>42</sup>Adger, W.N. (2006). “Vulnerability.” *Global Environmental Change* 16 (3): 268-281. Adger, W.N., N. Arnell, and E. Tompkins (2005). “Adapting to climate change-perspectives across scales.” *Global Environmental Change* 15(2): 77-86.

<sup>43</sup>Polsky, C., R. Neff, and B. Yarnal (2007). “building comparable global change vulnerability assessments: the vulnerability scoping diagram.” *Global Environmental Change* 17(3-4): 472-485.

exposures that should also be considered in community planning and development (e.g., high winds, severe winter storms).

Our assessments were based in part on data obtained from the American Community Survey (ACS), a continuing survey program operated by the U.S. Census Bureau. This data includes information on housing, income and education characteristics of the population in geographic areas called “Block Groups,” which contain between 600 and 3,000 individuals. Data from the 2010 Census was also used, including population age and racial composition collected at the Census “Block” level, which is the smallest available geographic area for demographic data.

### *Heat Vulnerability*

Community vulnerability to heat events varies spatially on local, regional and national scales. In Michigan communities, there are varying degrees of vulnerability to heat based on proximity to the Great Lakes, access to air conditioning, and surrounding environmental factors like tree canopy and impervious surfaces.

Studies have shown that heat-related mortality generally occurs in areas of the community that are warmer, less stable, and are home to more disadvantaged populations.<sup>44</sup> One study found that neighborhoods with the highest temperatures and the least amount of open space and vegetation were also likely to be the most socioeconomically disadvantaged.<sup>45</sup> The same study also found the strongest protective factor for residents was access to air conditioning in the home and in other places, as well as having access to transportation.

A 2012 literature review conducted by researchers at the University of Michigan indicates that children under five and persons over age 65 are highly sensitive to heat events, as are persons living in lower-income Census tracts and minority populations. Living alone, being confined to bed, having a mental illness, not leaving home daily, living on higher floors of multistory buildings, and suffering from alcoholism are additional factors that are associated with increased risk of heat-related mortality.

Many Michigan communities are rural and suburban. There have been limited studies conducted on how heat events impact rural and suburban communities, but one study notes that rural populations may exhibit patterns of vulnerability different from those of urban populations.<sup>46</sup>

### *Heat Sensitivity Assessment*

To create the sensitivity and exposure maps, as well as the resulting vulnerability maps, the project team relied on methodologies developed at the University of Michigan’s Taubman College of Architecture and Urban Planning in a 2012 report.<sup>47</sup>

<sup>44</sup>Foundations for Community Climate Action: Defining Climate Change Vulnerabilities in Detroit. University of Michigan. December 2012.

<sup>45</sup>Semenza JC, Rubin CH, Falter KH, et al. Heat-related deaths during July 1995 heat wave in Chicago. *N Engl J Med* 1996; 335:84-90.

<sup>46</sup>Mapping Community Determinants of Heat Vulnerability. *Environ Health Perspectives* 117: 1730-1736 (2009). Doi:10.1289/ehp.0900683 available via <http://dx.doi.org/>[Online 10 June 2009]

<sup>47</sup>Foundation for Community Climate Action: Defining Climate Change Vulnerability in Detroit (December 2012) University of Michigan’s Taubman College of Architecture and Urban Planning.

**Table 1. Needs of Stakeholders and Participants in Disaster Recovery**

Immediate and long-term needs	
<b>Individuals and families</b>	Housing
	Restoration of employment
	Health and welfare
	Restoration of schools and other educational facilities
<b>Business and industry</b>	Reconstitution of business, business recovery
	Rehiring of workers
	Insurance supplementation or coverage of uninsured losses
	Business altruistic activity
<b>Communities and local government</b>	Restoration of utilities and lifeline services
	Support of nonprofit charitable organizations
	Infrastructure repair and replacement
	Supervision of local recovery
	Debris removal
	Post-disaster planning
<b>State and federal government</b>	Repair or replacement of state-owned infrastructure or facilities
	Repair or replacement of federally-owned infrastructure or facilities

To conduct the heat sensitivity assessment of Alpena County, the project team used a geographic information system (GIS) for spatial data analyses to show the relative distribution of people most at risk. Five factors have been identified as primary contributors to the sensitivities and risks of people exposed to a heat wave, including: people over 65 years of age; people living alone; people over 25 with less than a high school education; minority populations; and people living below the poverty line. Using U.S. Census data, the project team identified the percentages of people living in each area (by Block Group or Block) for each sensitivity factor.

People who are older have greater sensitivity to extreme heat events. The technical literature also indicates that older age is associated with higher hospital admission rates in heat waves. The Percent of Population 65 and Older (Maps 1.1, 2.1, 3.1) depicts the relative concentration of older adults in the community by Census Block.

Another sensitivity factor is living alone, which serves as a measure of social isolation. Although living alone is not necessarily a risky thing, people who are socially isolated are at greater risk during an extreme heat event. Isolated people may not be able to recognize symptoms of heat-related illness and take proper action. In this case, the project team used the American Community Survey data for Census Block Groups, broken out into individual Census Blocks for geographic representation (Blocks with no population were not included). Maps 1.2, 2.2 and 3.2 depict the concentrations of people living alone.

Literature suggests that minorities are at greater risk during extreme heat events for various reasons, including less reliable access to health care, transportation and other social supports needed to reduce heat exposures.<sup>48</sup> Census Blocks were used to map the relative percentages of non-white populations in the county (see Maps 1.3, 2.3 and 3.3).

Two socioeconomic factors associated with increased heat-related morbidity and mortality are the percentage of the people living in poverty

Cited in *Disaster Policy & Politics* (Sylves, 2008). Original source: *Introduction to Emergency Management* (Haddow & Bullock, 2006).

<sup>48</sup>Waugh and Tierney (eds.) *Emergency Management: Principles and Practices for Local Government*. Chapter 13: Identifying and addressing social vulnerabilities by Elaine Enarson.



and percentage of people without a high school diploma. In general, persons living at or below the poverty line have less access to air conditioning or cooling options for their residences. This could limit a person's access to relief from an extreme heat event. Census Block Groups were used to map the relative percentages of households living below the poverty threshold in Alpena County (please see Maps 1.4, 2.4 and 3.4).

Similarly, University of Michigan researchers found studies that demonstrate a direct link between low education attainment and poor health as well as income.<sup>49</sup> There is also an established correlation between lower educational attainment and income. Based on these findings, Census Block Groups were used to map the relative percent of persons 25 years and older with less than a high school education in Alpena County (see Maps 1.5, 2.5 and 3.5).

To complete the heat sensitivity assessment, a cumulative score for all five sensitivity factors for each Census Block was created. In each of the sensitivity factors, the percentages were grouped into five categories (ranging from a very low percentage of people to a relatively high percentage living with the identified sensitivity). The five categorical groupings were generated by the GIS software ArcMap using natural breaks in the data (groupings). A ranking of 1 to 5 was assigned to each of the categories, ranging from 1 for the lowest percentage to 5 for the highest. Finally, the team combined the scores within each Census Block. Thus, the most sensitive Census Blocks could be scored up to 25. The sensitivity is color-coded for ease of identifying areas with the greatest sensitivity.

The Alpena Sensitivity to Excessive Heat Maps (Maps 1.6, 2.6 and 3.6) provide reasonably detailed depictions of locations where the highest percentages of at-risk residents live. This does not mean these community residents are in immediate danger. Rather, the map provides planning officials a new way of identifying areas where heat waves could present serious problems for a significant number of citizens. These are populations that could be sensitive to extreme heat events.

The Census data used likely double-counts some people, such as in cases where a person is both a minority and over 65; this may overestimate the severity of the sensitivities in some locations. Conversely, the sensitivity analysis may underestimate risk in some areas because it leaves out several key sensitive populations, such as those with preexisting health concerns that denote vulnerability to heat (for example, cardiovascular disease or psychiatric disorders), since such health data is not often available publicly. Emergency managers, hospitals, and community health departments may have additional data available that can be included as the community looks to better understand its sensitive populations. To further improve the analysis, additional variables could be collected through local surveys and observations, such as the degree of social connections among individuals within a community, or materials used in housing.<sup>50</sup>

<sup>49</sup>Currier FC, Heiner KS, Samet JM, et al. Temperature and mortality in 11 cities of the eastern United States. *American Journal of Epidemiology*. 30 (2001): 1126-8.

<sup>50</sup>Mapping Community Determinants of Heat Vulnerability. *Environ Health Perspectives* 117: 1730-1736 (2009). Doi:10.1289/ehp.0900683 available via <http://dx.doi.org/>[Online 10 June 2009]

### Heat Exposure Assessment

When larger communities experience heat waves, air temperatures can vary significantly from place to place both during the day and at night. Some of these differences can be attributed to the varying types of land cover found throughout the community. For example, temperatures can be significantly lower at night in locations with a heavy tree canopy and very little pavement, versus locations with little greenery and lots of pavement.

Impervious surfaces such as paved parking lots, roadways, and buildings absorb large amounts of heat from the air and from sunshine that is then radiated back into the surroundings, and this heat continues to radiate even after the sun has set. Conversely, tree canopy and other vegetation tend to help cool an area through evaporation and transpiration of water, and by providing shade. In places with a high percentage of impervious surface and little tree canopy, the immediate surroundings can be much warmer. Urban areas typically have higher heat indexes (combinations of temperature and humidity) than surrounding suburban or rural areas. This condition has been termed the Urban Heat Island Effect.<sup>51</sup>

People living in settings with an Urban Heat Island Effect suffer greater exposures to heat over longer periods of time (e.g., warmer nights), making them more vulnerable to health impacts. Studies of the Urban Heat Island Effect (whereby air temperatures in an urban area are 2° to 9° F higher than in a nearby rural area) have shown that the albedo, or reflectivity, of an urban area is one of the most important determinants in reducing the magnitude of the heat island.<sup>52</sup> Increasing the tree canopy cover can also reduce air temperature by 2° to 5° F. Green roofs (vegetative plantings on roofs) may also decrease the Urban Heat Island Effect and decrease stormwater runoff and building energy use. Added benefits from increasing albedo and vegetation include reductions in ground level

## FOUR PHASES OF DISASTER MANAGEMENT

### Mitigation

Mitigation involves deciding what to do where a risk to the health, safety, and welfare of society has been determined to exist, and then implementing a risk-reduction program.

### Preparedness

Preparedness involves developing a response plan and training first responders to save lives and reduce disaster damage, identifying critical resources, and developing necessary agreements among responding agencies, both within the jurisdiction and with other jurisdictions.

### Response

Response entails providing emergency aid and assistance, reducing the probability of secondary damage, and minimizing problems for recovery operations.

### Recovery

Recovery involves providing the immediate support during the early post-disaster period necessary to return vital life-support systems to minimum operational levels and continuing to provide support until the community returns to normal.

From *Disaster Policy & Politics* (Sylves, 2008)

<sup>51</sup>Basu and Samet. (2002) Relation between Elevated Ambient Temperature and Mortality: A Review from the Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD.

<sup>52</sup>Kolokotroni M, Giridharan R. Urban heat island intensity in London: An investigation of the impact of physical characteristics on changes in outdoor air temperature during summer. *Solar Energy* 2008;82(11):986–998.

ozone pollution and reduced energy costs associated with air conditioning use.<sup>53</sup>

To complete a heat exposure assessment, the project team focused on the Urban Heat Island Effect, and two separate exposure maps were created. The first exposure map depicts the percentage of impervious surfaces within each Census Block, as used in the sensitivity assessment (Maps 1.7, 2.7 and 3.7). These percentages are divided into five categories using the GIS software's natural breaks calculation. Since exposure is lowest in areas with the lowest percentage of impervious surfaces, those scored a 1, with a rating of 5 assigned to areas with the highest percentage of impervious surfaces.

The second exposure factor is percentage of tree canopy. Here, tree canopy is mapped within each Census Block (Maps 1.8, 2.8 and 3.8) and scored using a similar five-category process. The highest percentage of tree canopy (and therefore the lowest heat exposure) received a score of 1, and the areas with the least amount of tree canopy received a 5.

The project team combined the results of the two exposure maps to provide a single Community Excessive Heat Exposure Map (Maps 1.9, 2.9 and 3.9), which provides a reliable depiction of where the Urban Heat Island Effect would be most or least intense during a heat wave. Officials in Alpena County can use these maps to better assess where new vegetation and tree canopy would be helpful to reduce the heat impact.

#### *Composite Heat Vulnerability Map*

The Alpena Heat Vulnerability Map is a simple additive combination of the overall sensitivity map and the overall exposures map (see Maps 1.10, 2.10 and 3.10). The resulting vulnerability index depicts where concentrations of exposures and sensitive populations create a higher risk for community residents. In general, those areas with a composite score of 8 to 9 (red) have residential populations that may be particularly vulnerable to extreme heat events.

## HEAVY RAIN AND FLOODING

Climate scientists say that Alpena County and northeast Lower Michigan can expect more frequent storms of increasing severity in the decades ahead. The total amount of rainfall per year is also likely to increase. However, climate models suggest the precipitation will be more concentrated in the winter, spring and fall seasons and there will be more localized, intense storms at almost any time of year. The potential for substantially larger rain events raises concerns over the potential for harm to human health and damage to buildings and infrastructure.

In assessing vulnerability to flooding, community planners evaluate potential exposures as well as sensitivity. Buildings, roads, bridges, sewer lines and other infrastructure located in a flood zone are exposed to greater risks. Where flowing floodwaters have the greatest energy, structures may be undercut, collapse or move, and soils will erode. Even areas outside of an identified floodplain are subject to flooding from heavy downpours. Where the soils have low permeability and physical drainage is inadequate, water will accumulate and cause ponding during large storm events. Appropriate planning and land-use regulations

<sup>53</sup>Akbari H. Shade trees reduce building energy use and CO2 emissions from power plants. *Environmental Pollution* 2002;116:S119–S126. [PubMed: 11833899]

can help reduce exposures caused by poor site selection. The sensitivity of structures can be modified to reduce risk of damage by applying flood-resistant design standards.

#### *Exposure to Flooding Hazards*

The Digital Elevation Model Maps (Maps 1.11, 2.11 and 3.11) offer a useful view of the topography of Alpena County, including the most prominent drainage patterns. On this map, the darkest green colors identify the lowest elevations, while the darkest brown colors identify the highest elevations. FEMA Flood Zones are shown on Maps 1.12, 2.12 and 3.12.

## COASTAL HAZARD ANALYSIS

As part of this master planning process, LIAA and the University of Michigan analyzed shoreline and riverine ecosystem and physical dynamics to help Alpena County manage its shoreline and riverine areas. This chapter presents a brief summary of the team’s framework, results and recommendations.

#### *Overview of Research Framework*

The Research Framework for this study employs scenario planning to assess environmental and land-use conditions under different climate futures. Scenario planning, in general, identifies driving forces to inform a range of scenarios that are then analyzed and evaluated. In this context, the project team identified natural forces, especially increasing storminess and lake-level fluctuations causing increased problems with flooding. These forces informed the creation of multiple climate futures. Each climate future was tested and evaluated for impacts on the environment and land use in the community.

#### *Climate Future Definitions*

Rather than presenting a prediction of what the future will bring, each of the following “climate futures” lays out a possible future that might occur. These varying climate futures — all of which are reasonably anticipated possibilities — are arranged from a least impactful to a most impactful condition in terms of the potential for wave damage and flooding hazards they would bring. The following descriptions outline the key assumptions made in defining each of the climate futures as compared to the others. Maps 1.13, 2.13 and 3.13 show the estimated land areas that would be affected by waves and flooding under these three climate futures.

“Lucky” Future: Under the Lucky Climate Future, Great Lakes water levels will stay relatively low. Although there will be wave and wind action, major storm events and wave impacts will not encroach on properties landward of current beaches. A Lucky Future projection, indicating the land areas that would be affected by high-energy waves along the shorefront and/or adjacent riverine flooding under these conditions, is shown in yellow.

“Expected” Future: Under the Expected Climate Future, Great Lakes water levels will continue to fluctuate according to long-term decadal patterns, including recent extreme storm events incorporated into the ongoing Great Lakes Coast Flood Study by the Federal Emergency Management Agency (FEMA). Given those ongoing fluctuations, this Climate Future accounts for periods when Great Lakes still-water elevations are closer to the long-term average. In addition, this Climate Future anticipates the so-called “100-year storm event” (or 1% storm) becoming more like a 20- or 50-year storm event (i.e., an expected storm within the normal community planning time horizon) because of increased storminess. The Expected Future projection is shown in orange.

“Perfect Storm” Future: Under the Perfect Storm Climate Future, Great Lakes water levels will continue to fluctuate according to decadal patterns, consistent with assumptions made for the Expected Future. However, for this Perfect Storm Climate Future, the estimated still-water elevation is set higher than the long-term average and closer to the long-term high (583 feet). In addition, this Climate Future anticipates the occurrence of a so-called “500-year storm event” (or 0.2% storm) occurring within the planning time horizon while lake levels are high. The Perfect Storm Future projection is shown in red.

#### *Management Scenarios*

Under the scenario planning algorithm, one can analyze the potential for development impacts in the City of Alpena and Alpena Township. There are three rows that each describe a different development scenario (Tables 4 and 5). The first row shows the impact on the number of current structures (i.e., current development). The second row shows the impact if the community experiences a full buildout of residential development according to its existing zoning code.

The final row in Tables 4 and 5 summarizes the number of structures that could be constructed if the municipalities were to implement best practices into their land use regulations. The BMPs modeled in this management option are:

- 50-foot buffers around any inland water (rivers, lakes and streams).
- 50-foot buffers around any wetland 5 or more acres in size, as defined by the State of Michigan’s Final Wetland Inventory data.
- A complete restriction of any development within a wetland 5 or more acres in size, as defined by the State of Michigan’s Final Wetland Inventory data.

#### *Scenario Planning to Assess Land Use and Environmental Conditions*

The three Climate Futures were used to create distinct scenarios, which can then be analyzed for selected conditions as noted above. This array of scenarios represents a range of conditions the county could reasonably encounter in the foreseeable future regarding potential wave and flooding impacts, given changing natural conditions and the development management decisions

made in response. For analysis here, each scenario focuses on potential impacts to land use and environmental conditions in the county. Land-use impacts include the acreage, parcels, and structures that would be at risk under different futures.

## LAND USE RESULTS

### *Structures Impacted*

Tables 2 and 3 illustrate the number of structures that are at risk of being impacted by flooding in each of the three climate futures. The three scenarios demonstrate the extent to which the community is exposed to a certain level of risk, highlighting potential options for land use planning going forward. For example, one community may find that the potential impact in the Lucky scenario is within the amount of risk the public is willing to take. Others may want to use particular land use strategies for one climate scenario while implementing separate policies for another. Alpena County and the two coastal municipalities used as examples in this analysis should proactively engage the public to determine the feasibility of accomplishing sustainable policies and initiatives for one or more of the at-risk areas.

Shown in Tables 2 and 3, the number of impacted structures in the city and township increases significantly from “Lucky” to “Perfect Storm”. The increase is more pronounced in Alpena Township than the city. While 381 structures are at risk in the township when the lake levels are low and the storm impact is fairly average, the total number of structures at risk increases by 119% to 835 structures in the Perfect Storm scenario.

**Table 2. Total Number of Structures Impacted by Flooding, City of Alpena**

Zoning District	Lucky	Expected	Perfect Storm
Residential	145	171	234
Non-residential	34	37	49
<b>Total Number of Structures</b>	179	208	283



**Table 3. Total Number of Structures Impacted by Flooding, Alpena Township**

Zoning District	Lucky	Expected	Perfect Storm
Residential	378	684	823
Non-residential	3	6	12
<b>Total Number of Structures</b>	<b>381</b>	<b>690</b>	<b>835</b>

#### *Structures Impacted in Different Buildout Scenarios*

Up to 283 structures may be impacted in the city and 835 in Alpena Township depending on the severity of the Climate Future experienced. Tables 4 and 5 illustrate how many more structures would be affected in different buildout scenarios. As previously mentioned, the first buildout scenario is based on current zoning. The latter buildout employs best management practices, thereby reducing potential damages from storm events. Tables 4 and 5 summarize how many more structures could be added in the city and township based on two buildout analyses. One can see that for the city and township, there is room for much more development in both buildout scenarios. However, as Tables 4, 5, 6, 7, 8 and 9 illustrate, the amount of risky development is significantly reduced in the Best Management Practices (BMPs) scenario.

**Table 4. Development Scenario Impacts, City of Alpena**

	Total	Lucky	Expected	Perfect Storm
<b>Current Development</b>	5,244	179	208	283
<b>Buildout According to Current Zoning Ordinance</b> (Additional Structures Impacted)	6,452	340	391	483
<b>Build-out According to Best Management Practices</b> (Additional Structures Impacted)	6,094	290	337	422

**Table 5. Development Scenario Impacts, Alpena Township**

	Total	Lucky	Expected	Perfect Storm
<b>Current Development</b>	6,739	381	690	835
<b>Buildout According to Current Zoning Ordinance</b> (Additional Structures Impacted)	15,982	544	1016	1302
<b>Build-out According to Best Management Practices</b> (Additional Structures Impacted)	13,833	520	967	1243

Tables 6 and 7 show how much tax revenue the city and township could add if they were to build out under the two different scenarios. The City of Alpena could add relatively the same amount of tax revenue in both scenarios. However, the city reduces its potential lost revenue by about \$100,000 for each of the climate futures. The township’s potentially impacted tax revenue does not differ greatly between a full buildout and a buildout based on BMPs. However, shown in Tables 8 and 9, the potential damages between each of the buildout scenarios is more drastic, especially for the city.

**Table 6. Tax Revenue of Affected Properties, City of Alpena**

	Total	Lucky	Expected	Perfect Storm
<b>Tax Revenue</b>	\$8 million	\$382,778	\$504,882	\$613,542
<b>Buildout According to Current Zoning Ordinance</b> (Potential Additional Tax Revenue Impacted, average)	\$10.9 million	\$639,819	\$816,167	\$944,977
<b>Build-out According to Best Management Practices</b> (Potential Additional Tax Revenue Impacted, average)	\$10.2 million	\$542,552	\$718,901	\$847,710

**Table 7. Tax Revenue of Affected Properties, Alpena Township**

	Total	Lucky	Expected	Perfect Storm
<b>Tax Revenue</b>	\$8.5 million	\$507,199	\$1 million	\$1.3 million
<b>Buildout According to Current Zoning Ordinance</b> (Potential Additional Tax Revenue Impacted, average)	\$17.7 million	\$777,477	\$1.6 million	\$2 million
<b>Build-out According to Best Management Practices</b> (Potential Additional Tax Revenue Impacted, average)	\$8.8 million	\$718,578	\$1.5 million	\$1.9 million

Table 8. Potential Property Damages for Different Flooding Scenarios, City of Alpena

	Lucky	Expected	Perfect Storm
<b>Damages</b>	\$71,250	\$481,489	\$1.8 million
<b>Buildout According to Current Zoning Ordinance</b> (Additional Damages, average)	\$804,131	\$2.1 million	\$4.6 million
<b>Build-out According to Best Management Practices</b> (Additional Damages, average)	\$453,756	\$1.5 million	\$3.6 million

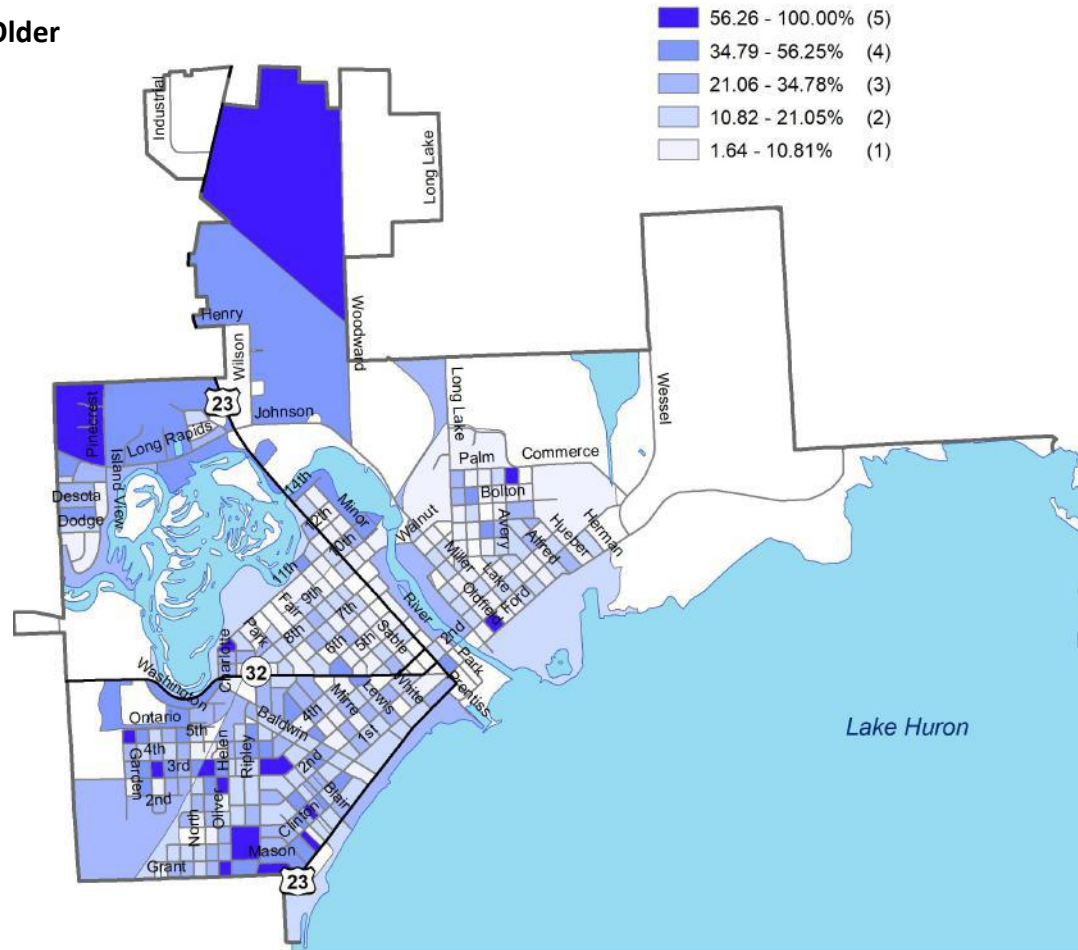
Table 9. Potential Property Damages for Different Flooding Scenarios, Alpena Township

	Lucky	Expected	Perfect Storm
<b>Damages</b>	\$23.1 million	\$23.3 million	\$40.3 million
<b>Buildout According to Current Zoning Ordinance</b> (Additional Damages, average)	\$28.3 million	\$37.7 million	\$69 million
<b>Build-out According to Best Management Practices</b> (Additional Damages, average)	\$28 million	\$35.5 million	\$65.3 million

## City of Alpena

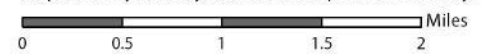
### Map 1.1

Percent of Population 65 Years and Older  
(male and female)



Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

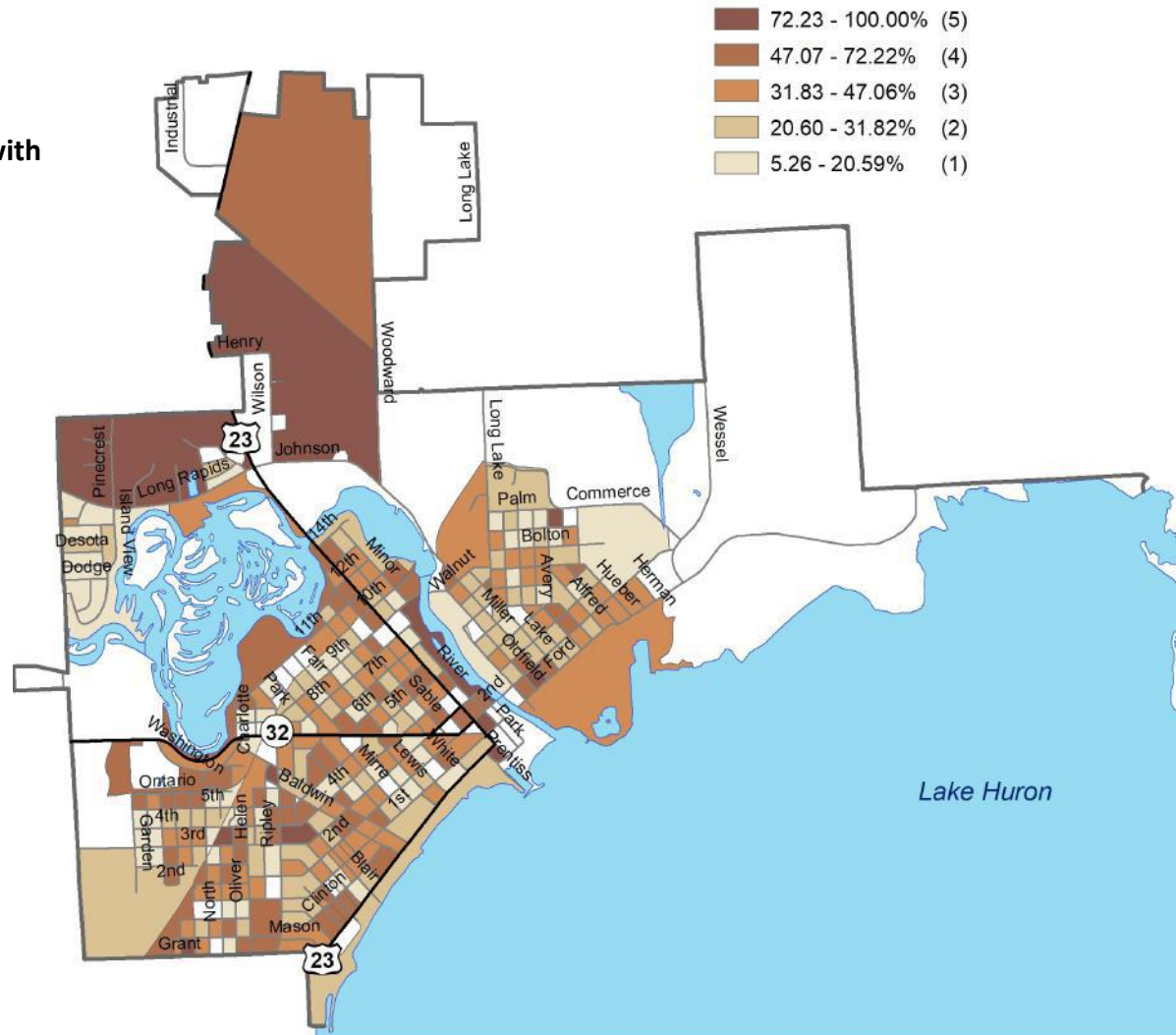
Prepared May 2020 by LIAA for the Alpena Community.



### City of Alpena

#### Map 1.2

Percent of Households with People Living Alone



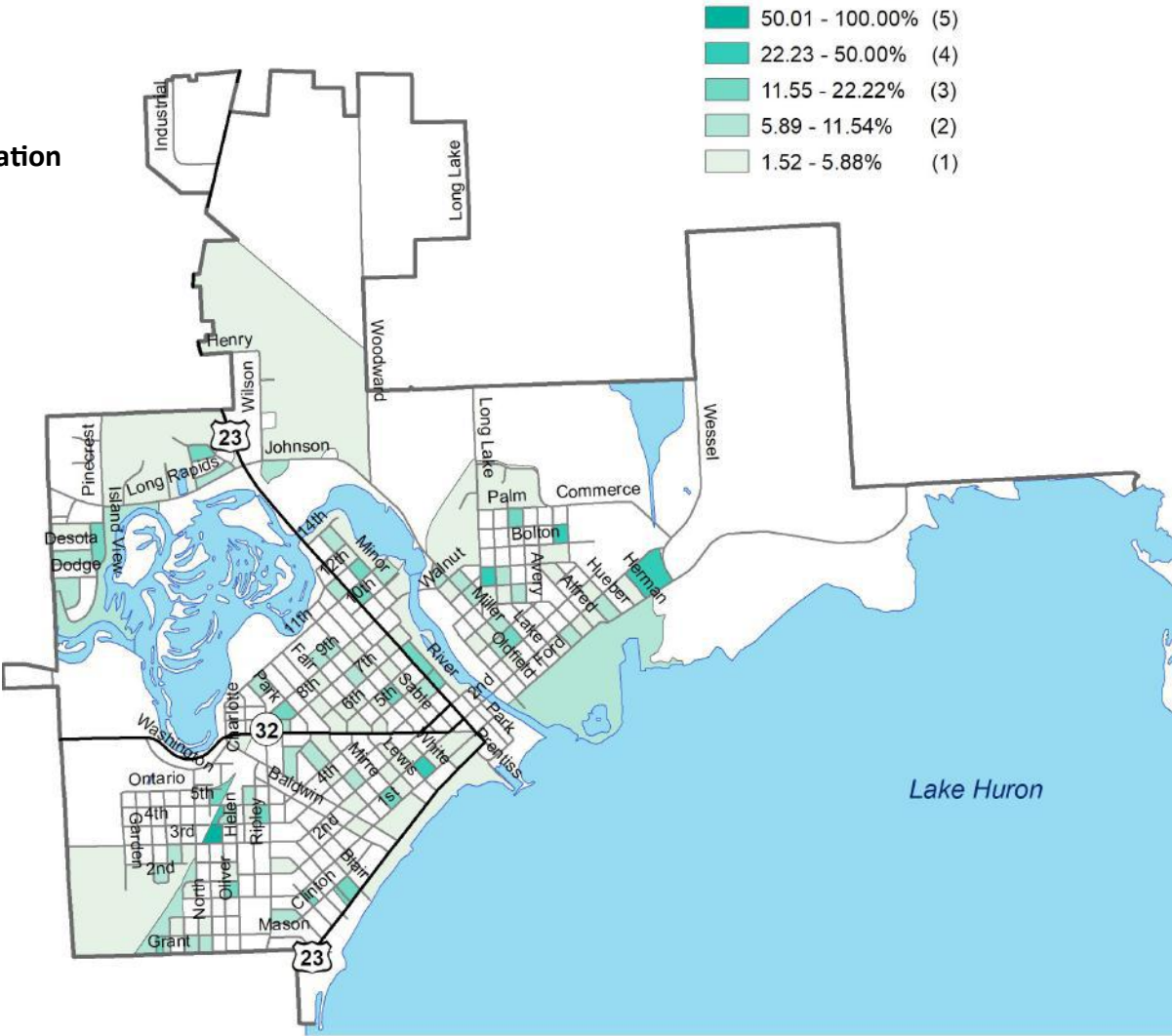
Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



### City of Alpena

**Map 1.3**  
Percent of Non-white Population



Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.  
0 0.5 1 1.5 2 Miles

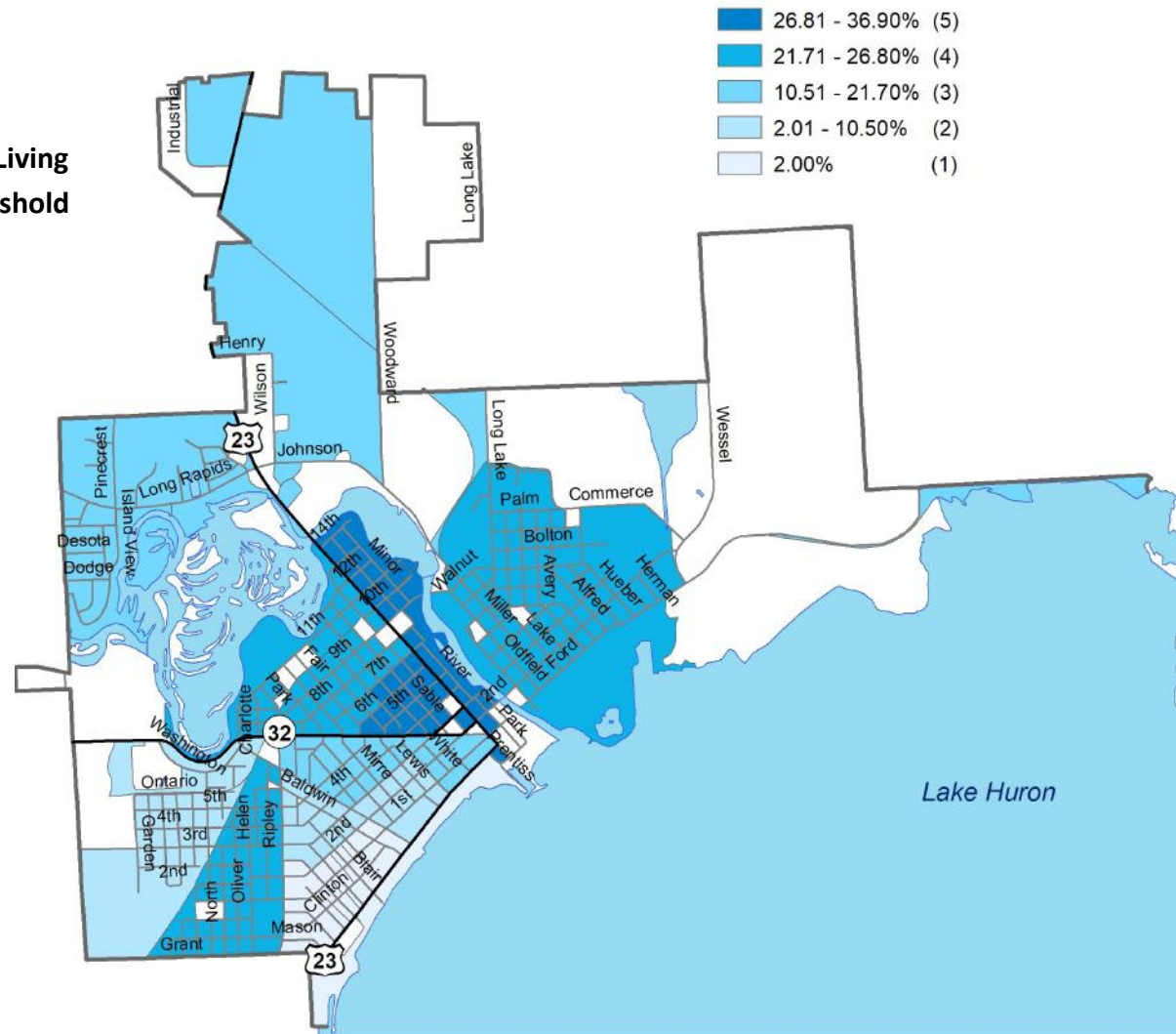




## City of Alpena

**Map 1.4**

Percent of Households Living Below the Poverty Threshold



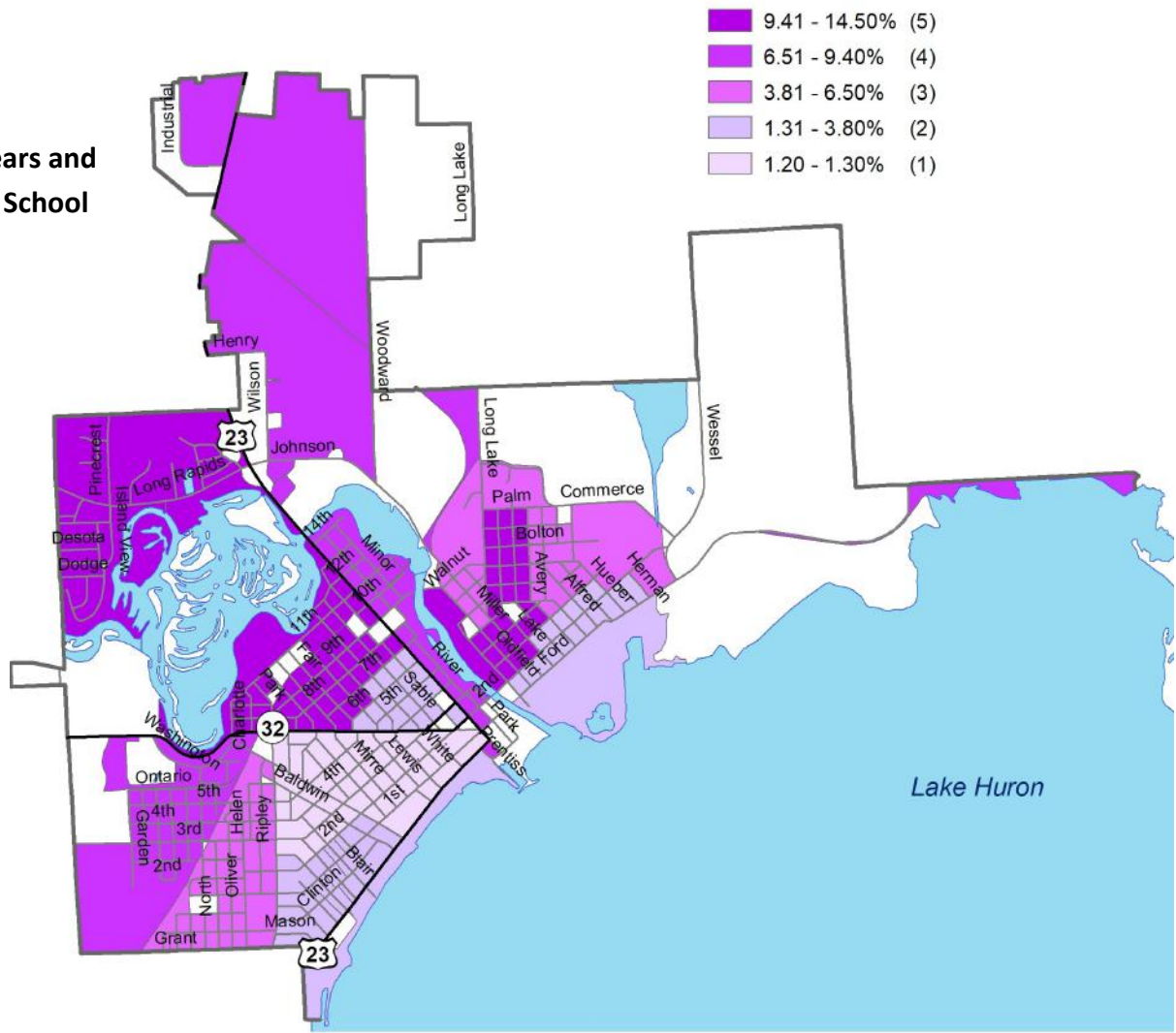
Data Sources:  
 NEMCOG,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



### City of Alpena

**Map 1.5**  
**Percent of Population 25 Years and Older with Less than a High School Education**



Data Sources:  
 NEMCOG,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

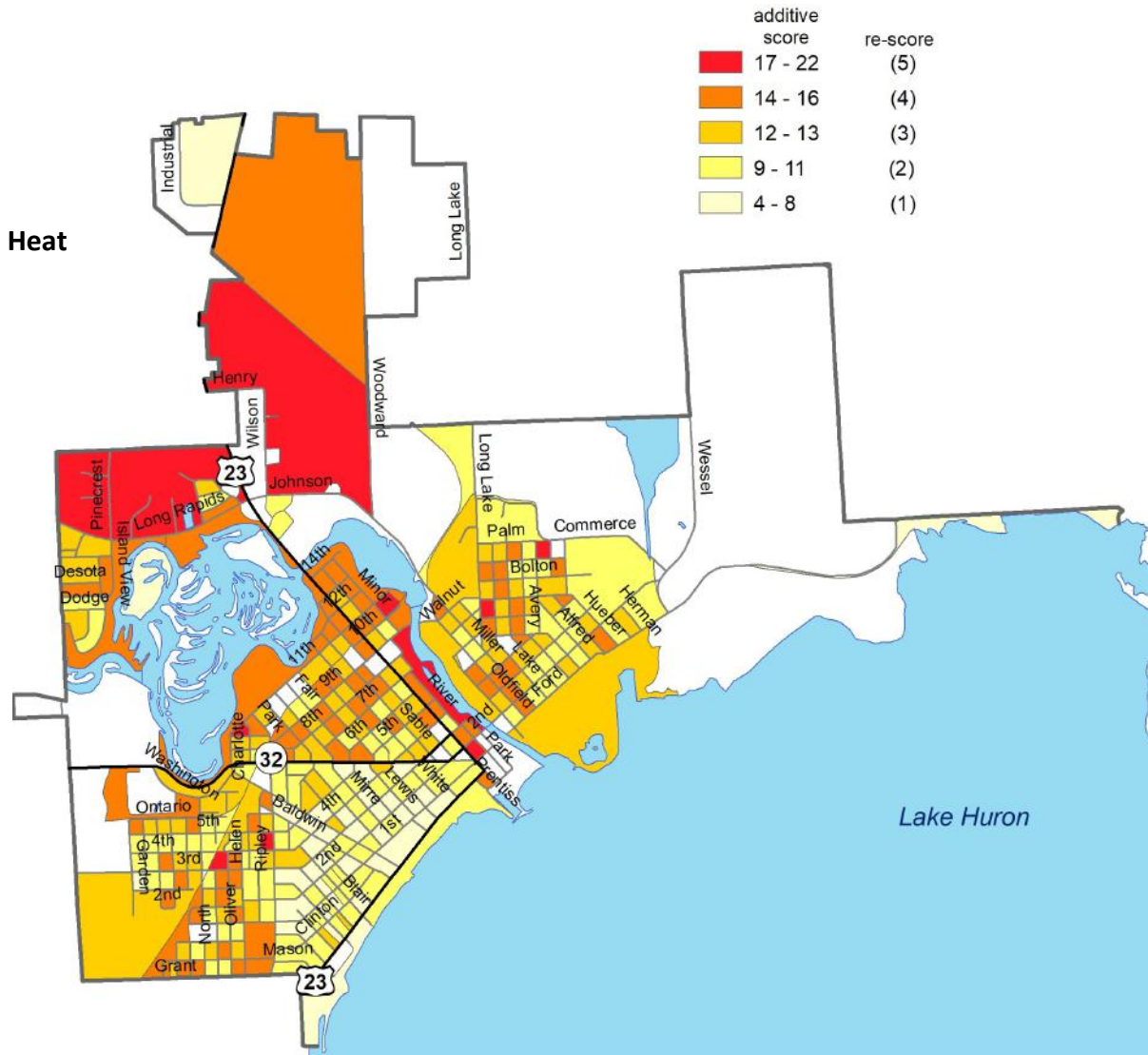
Prepared May 2020 by LIAA for the Alpena Community.

0 0.5 1 1.5 2 Miles



City of Alpena

**Map 1.6**  
**Relative Sensitivity of**  
**Populations to Extreme Heat**  
**Events**



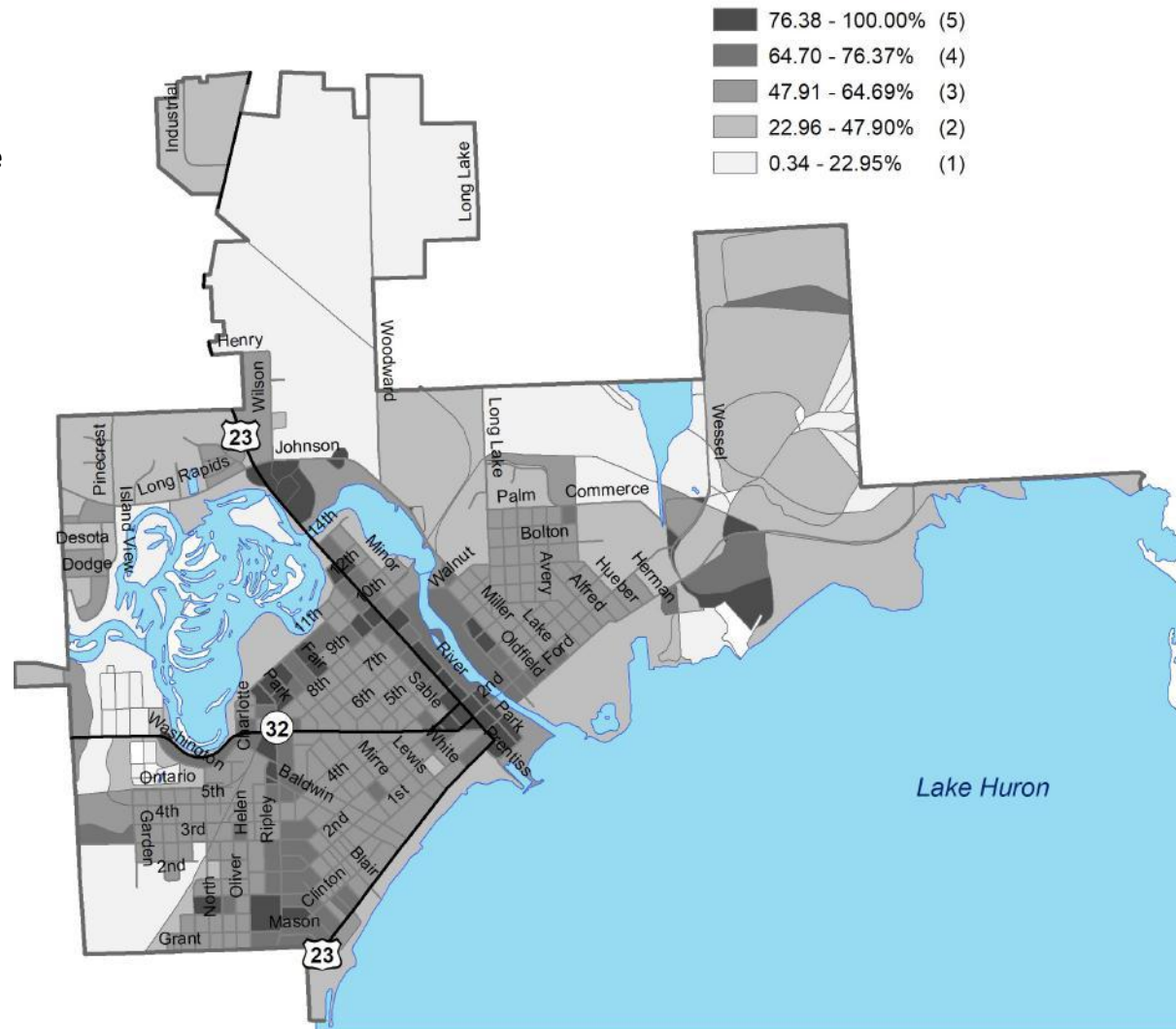
Data Sources:  
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 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



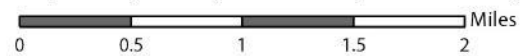
## City of Alpena

**Map 1.7**  
Percent Impervious Surface



Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

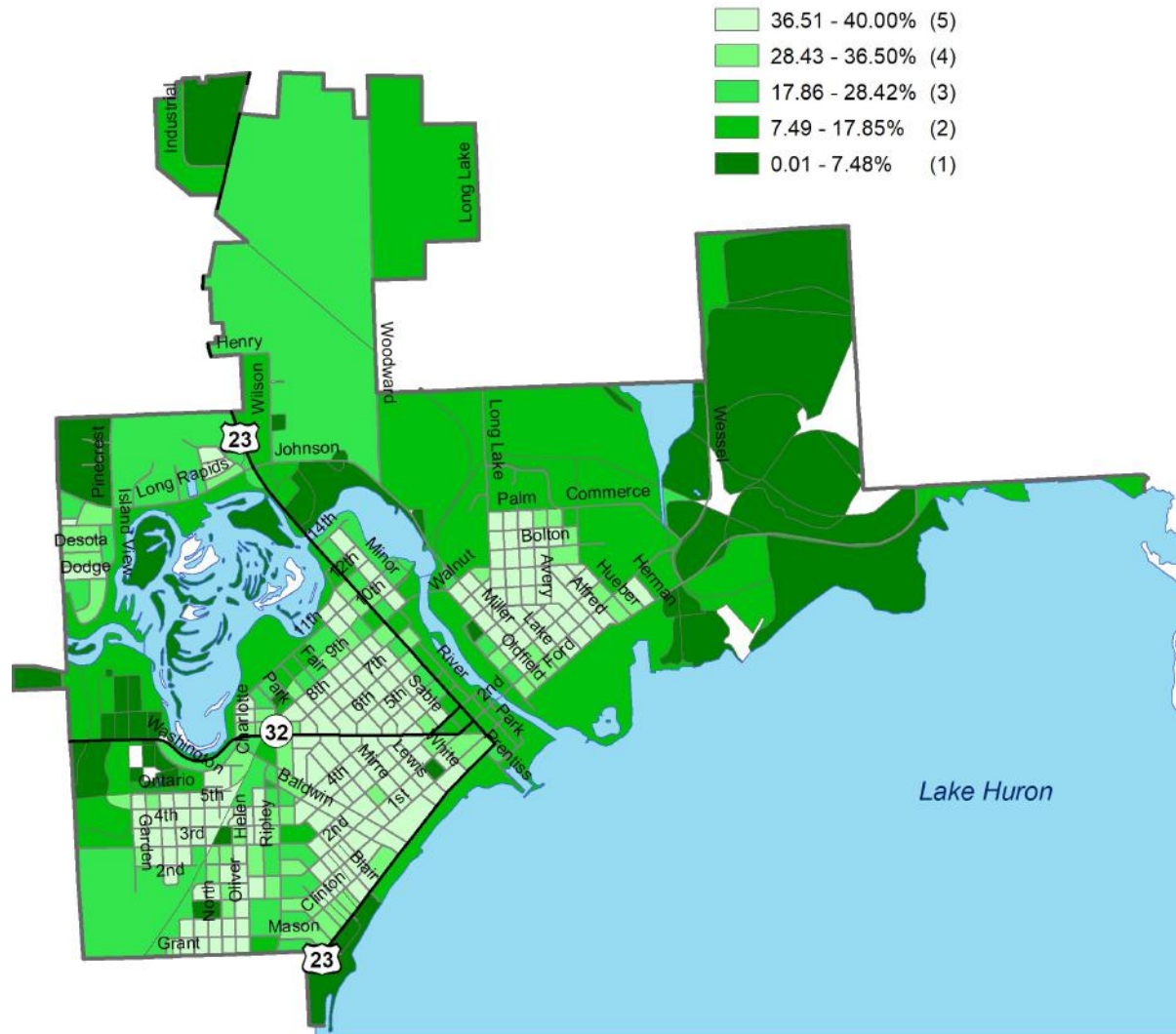
Prepared May 2020 by LIAA for the Alpena Community.





City of Alpena

**Map 1.8**  
Percent Tree Canopy



Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

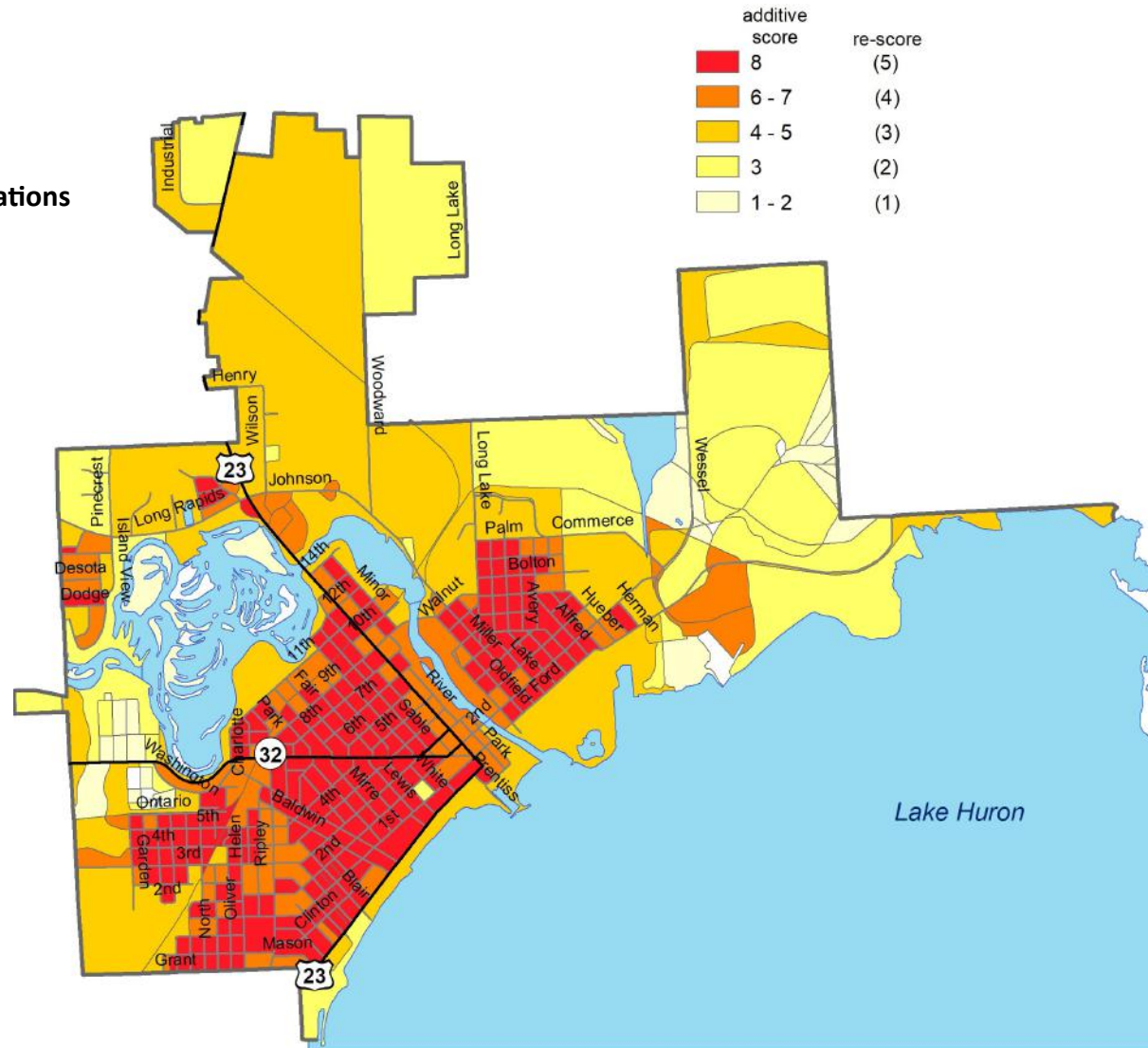
Prepared May 2020 by LIAA for the Alpena Community.



## City of Alpena

### Map 1.9

Relative Exposure of Populations to Extreme Heat Events



Data Sources:  
 NEMCOG, MTRI,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

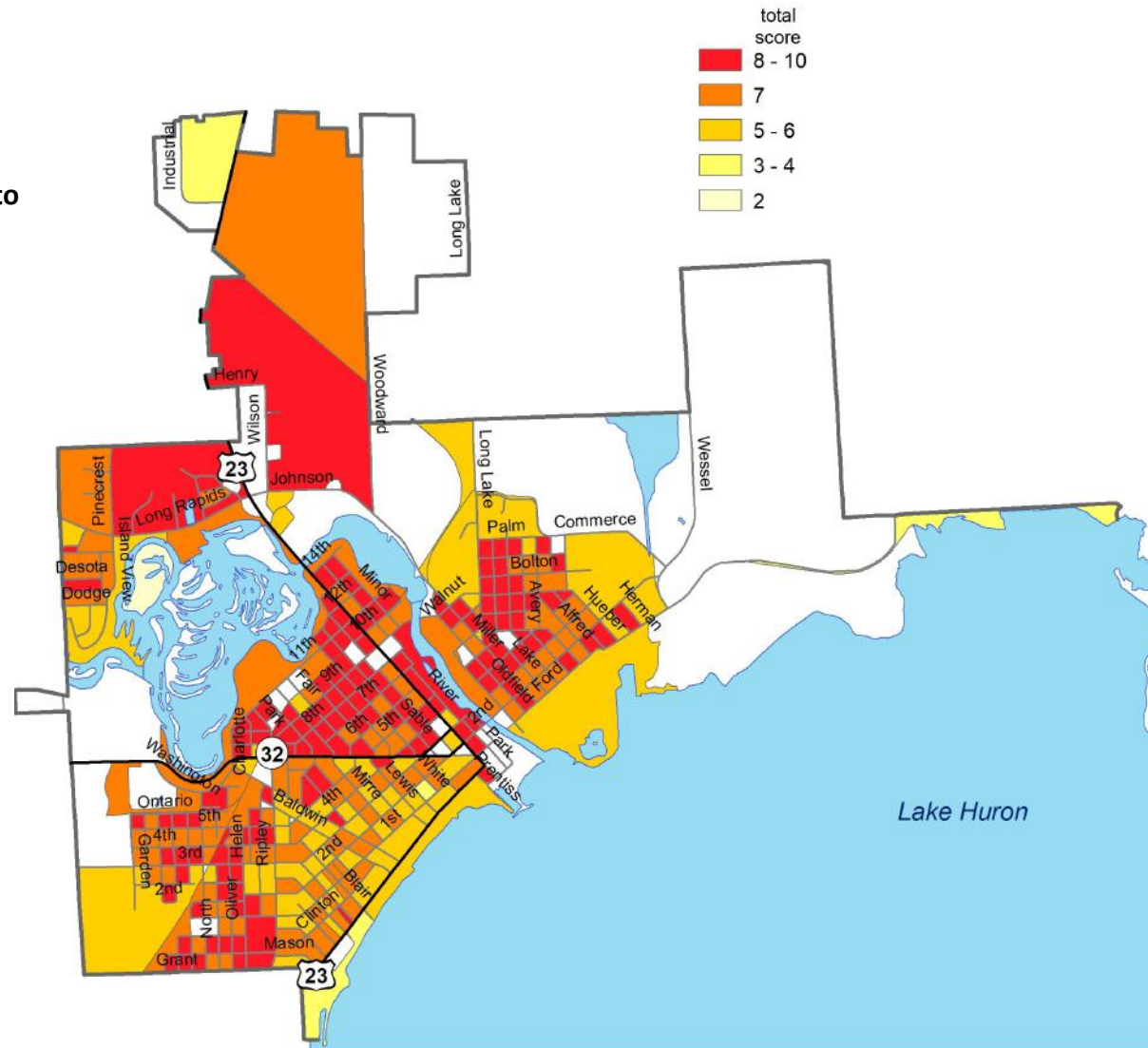
Prepared May 2020 by LIAA for the Alpena Community.





City of Alpena

**Map 1.10**  
**Population Vulnerable to**  
**Extreme Heat Events**



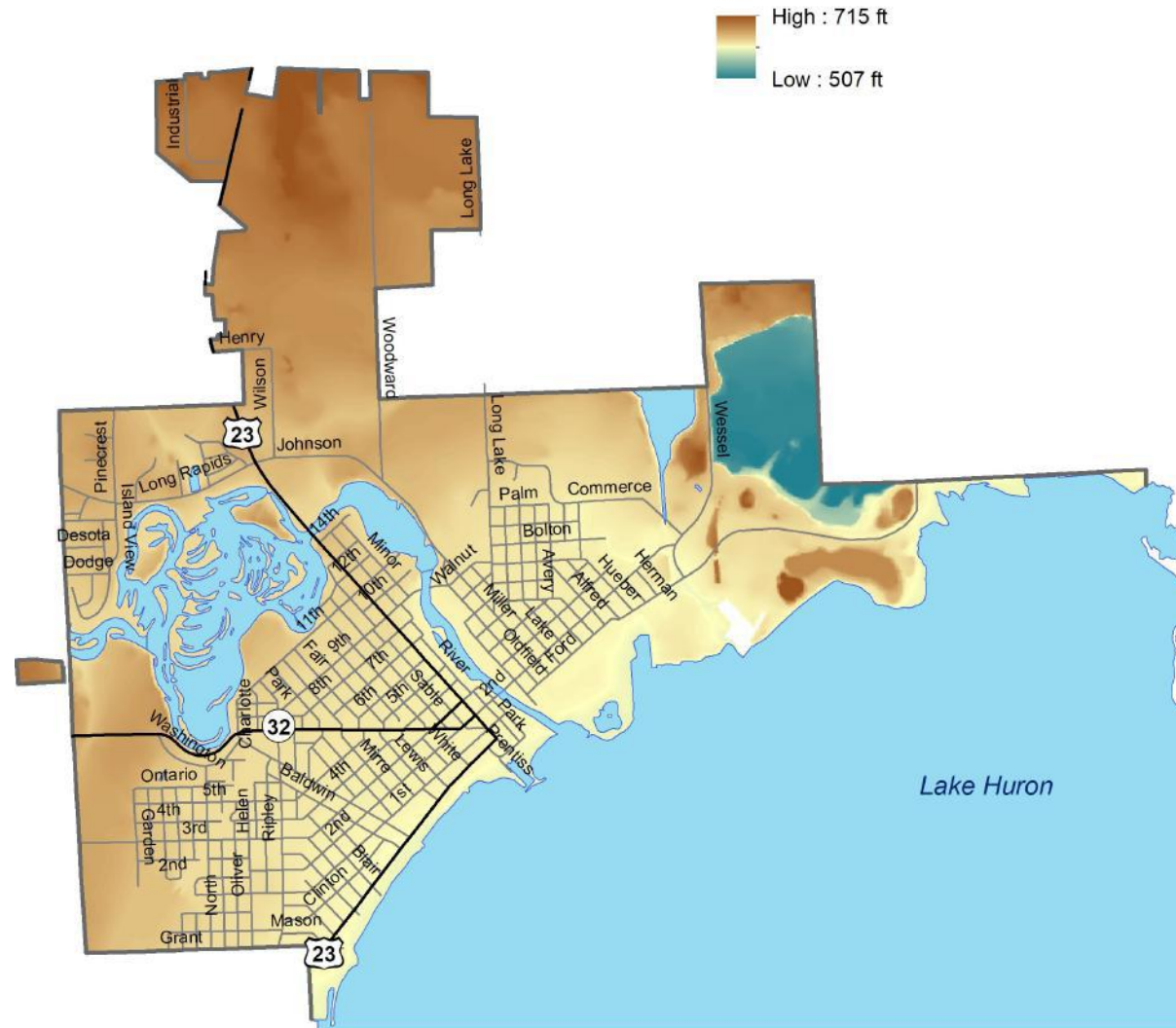
Data Sources:  
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 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



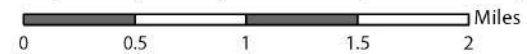
## City of Alpena

**Map 1.11**  
Digital Elevation Model



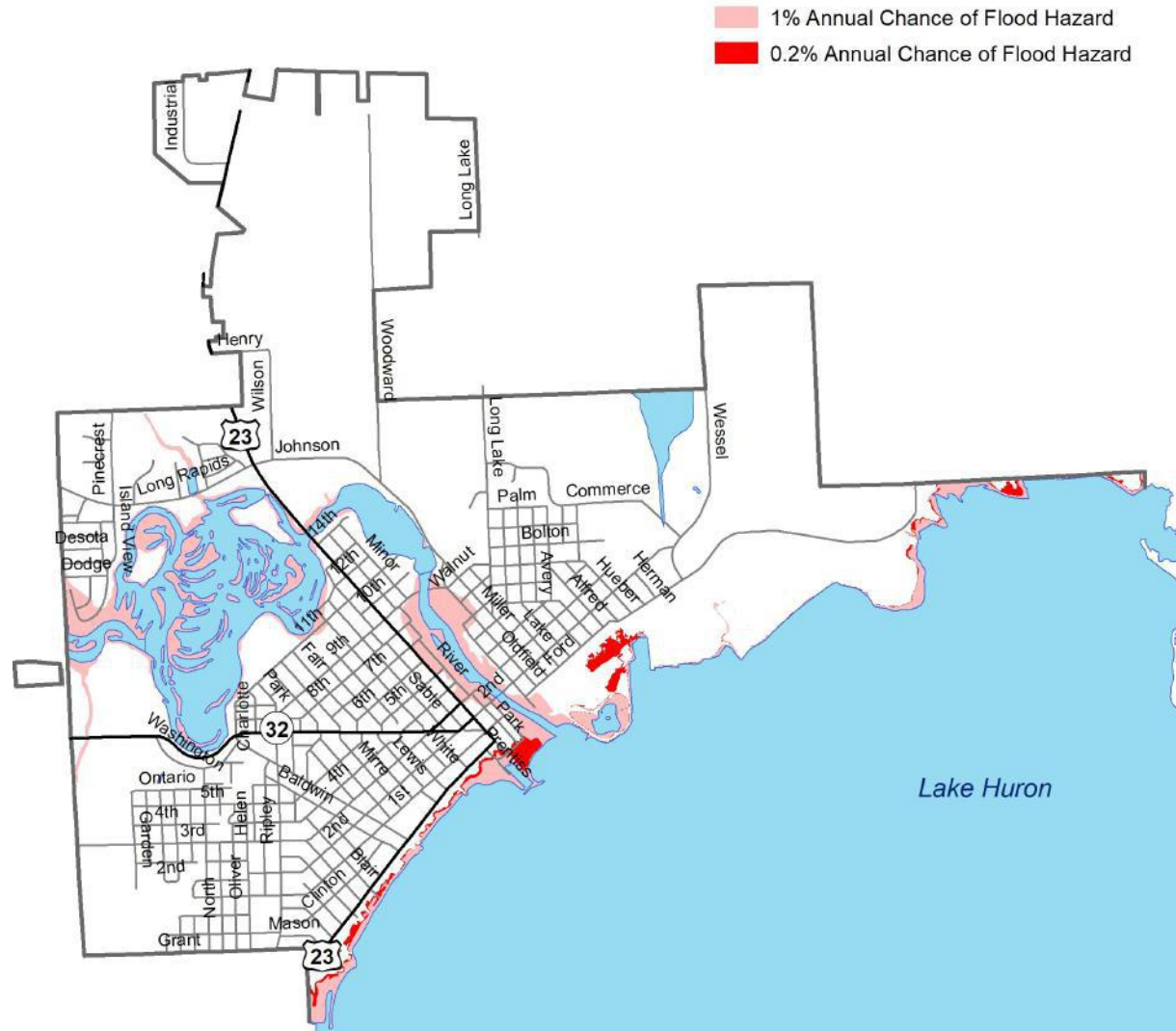
Data Sources:  
NEMCOG, USDA Geospatial Data Gateway,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



### City of Alpena

**Map 1.12**  
FEMA Flood Zones



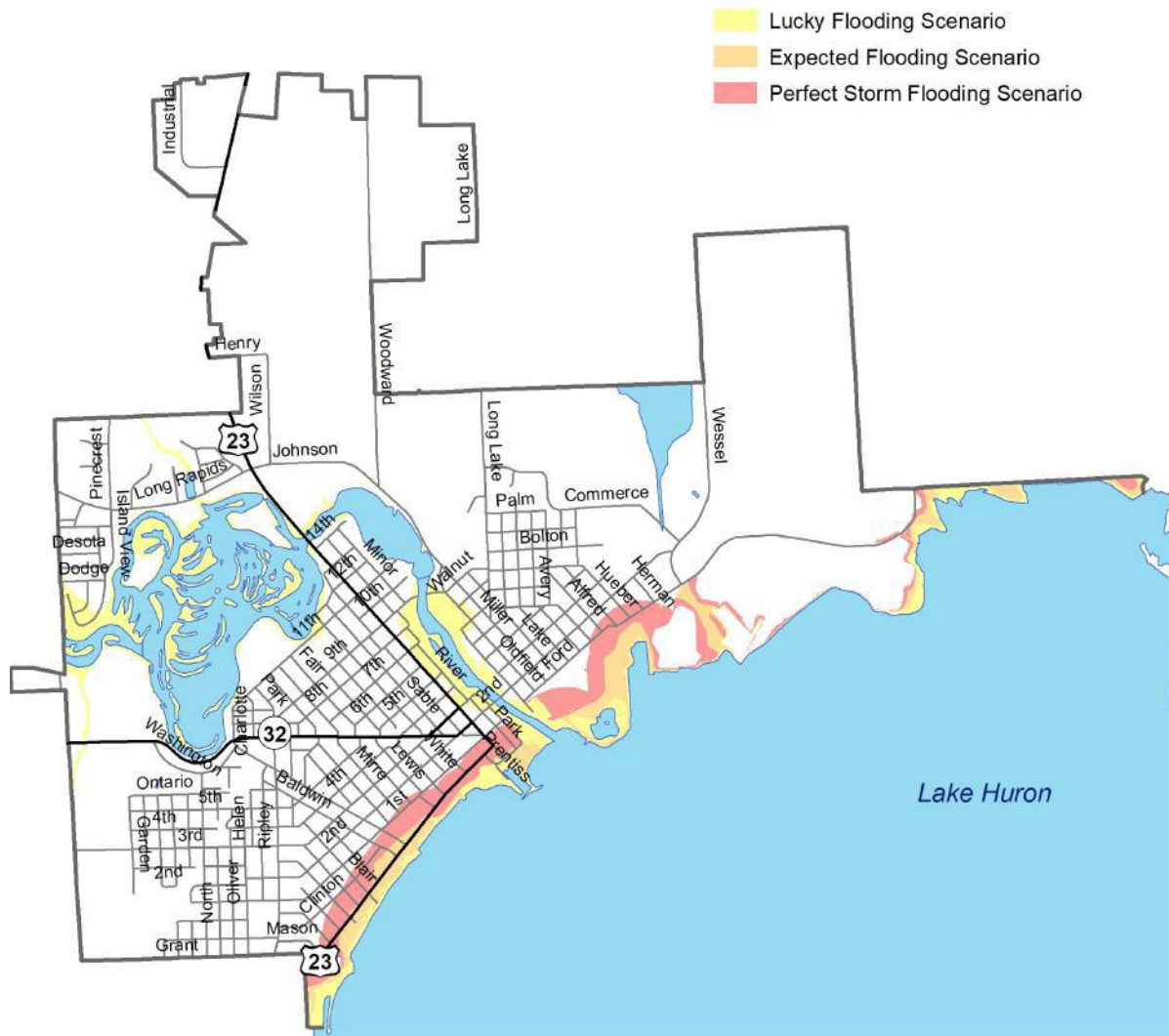
Data Sources:  
NEMCOG, FEMA,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



### City of Alpena

**Map 1.13**  
Future Climate Scenarios



Data Sources:  
NEMCOG, U.M.,  
Michigan Geographic Data Library.

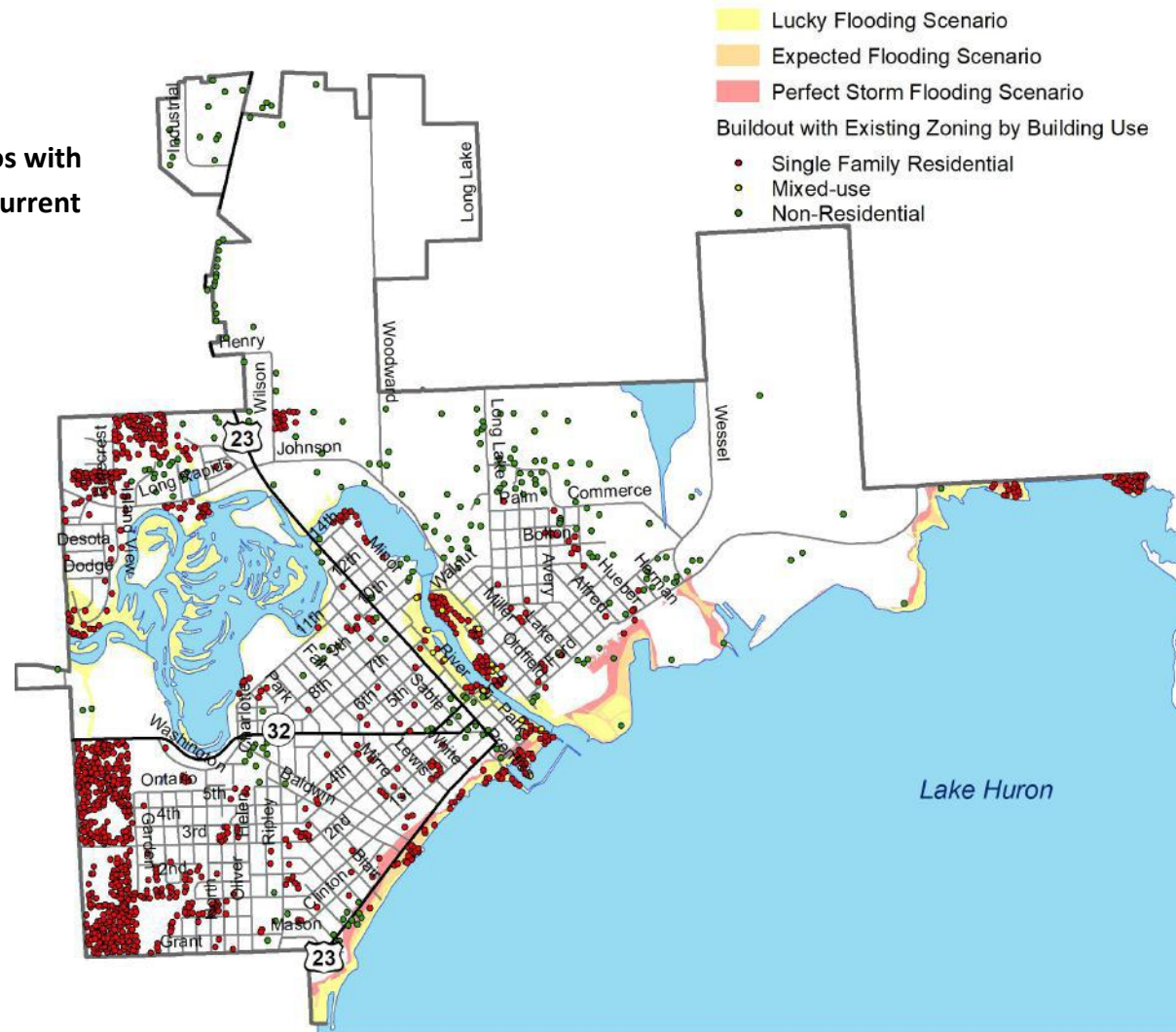
Prepared May 2020 by LIAA for the Alpena Community.





### City of Alpena

**Map 1.14**  
Future Climate Scenarios with  
Buildout According to Current  
Zoning



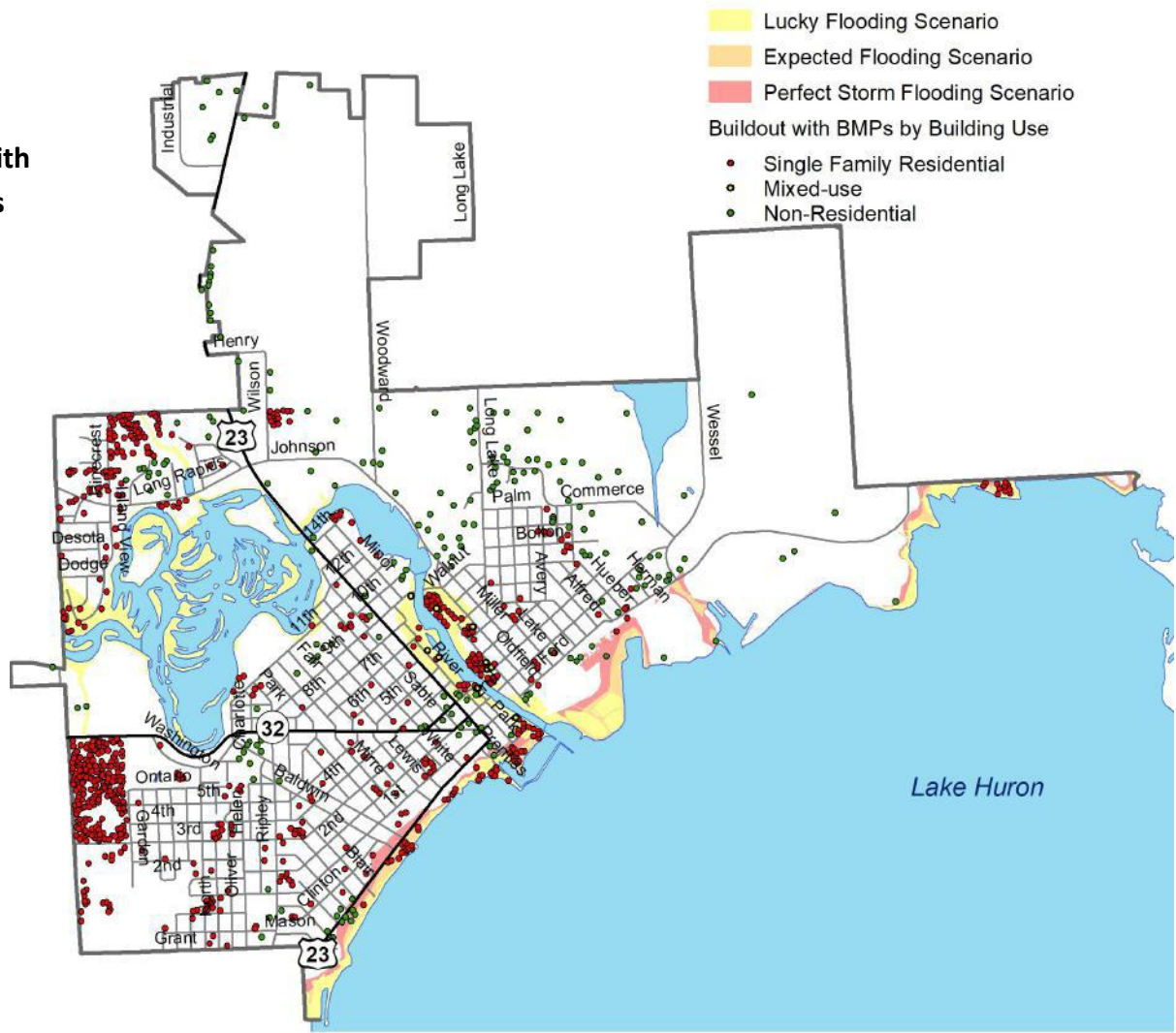
Data Sources:  
NEMCOG, U.M.,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.



City of Alpena

**Map 1.15**  
**Future Climate Scenarios with**  
**Buildout According to BMPs**



Data Sources:  
 NEMCOG, U.M.,  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community.  
 0 0.5 1 1.5 2 Miles

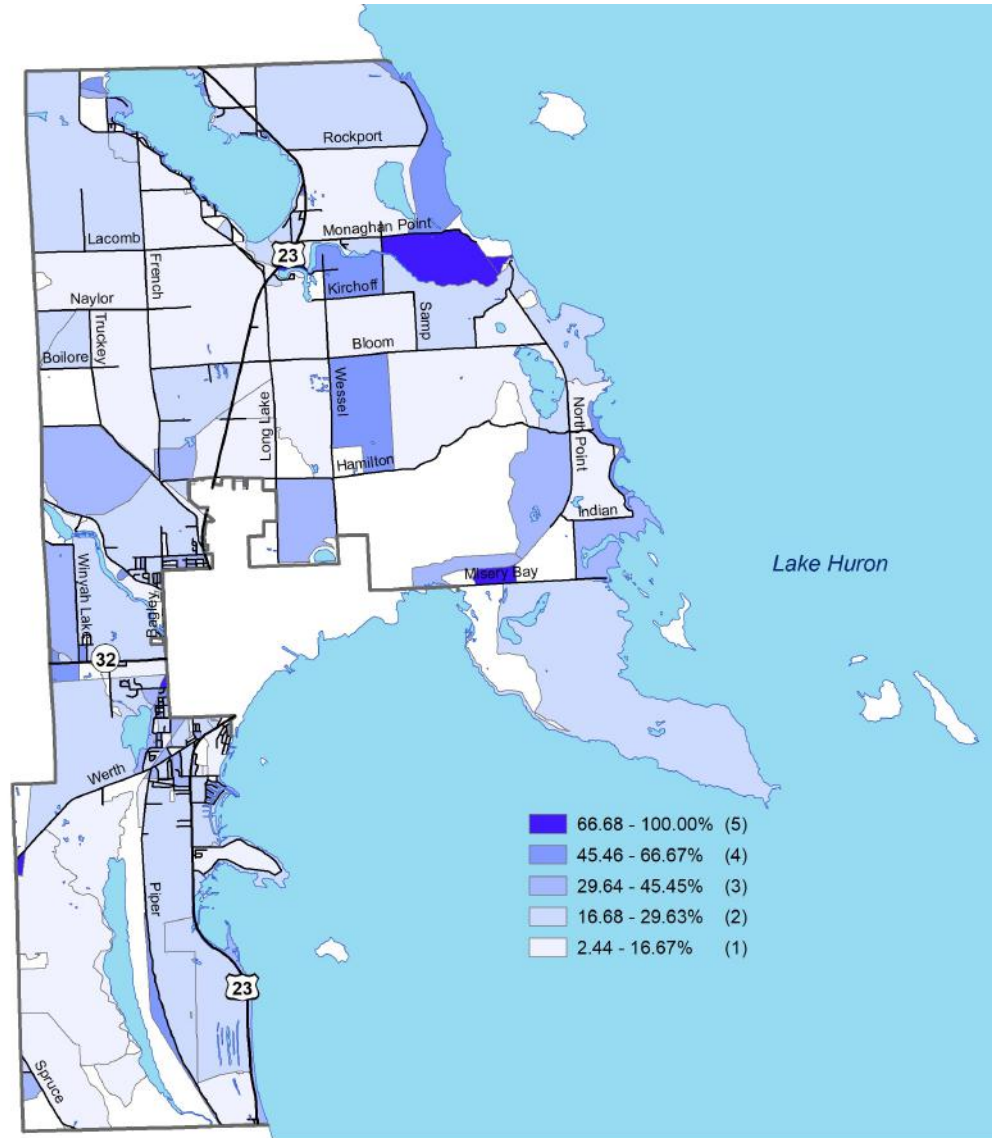




Alpena Township

**Map 2.1**

**Percent of Population 65 Years and Older  
(male and female)**



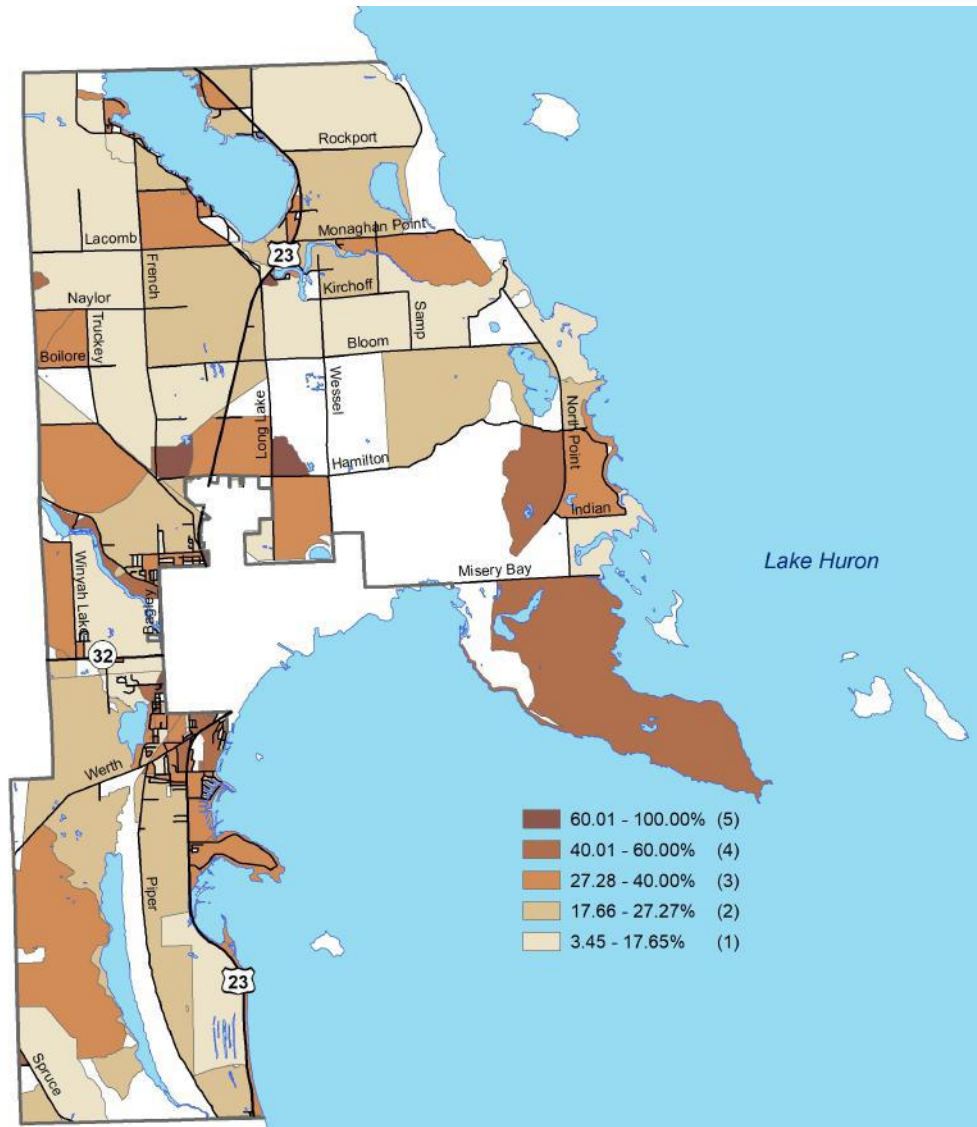
Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.2

#### Percent of Households with People Living Alone



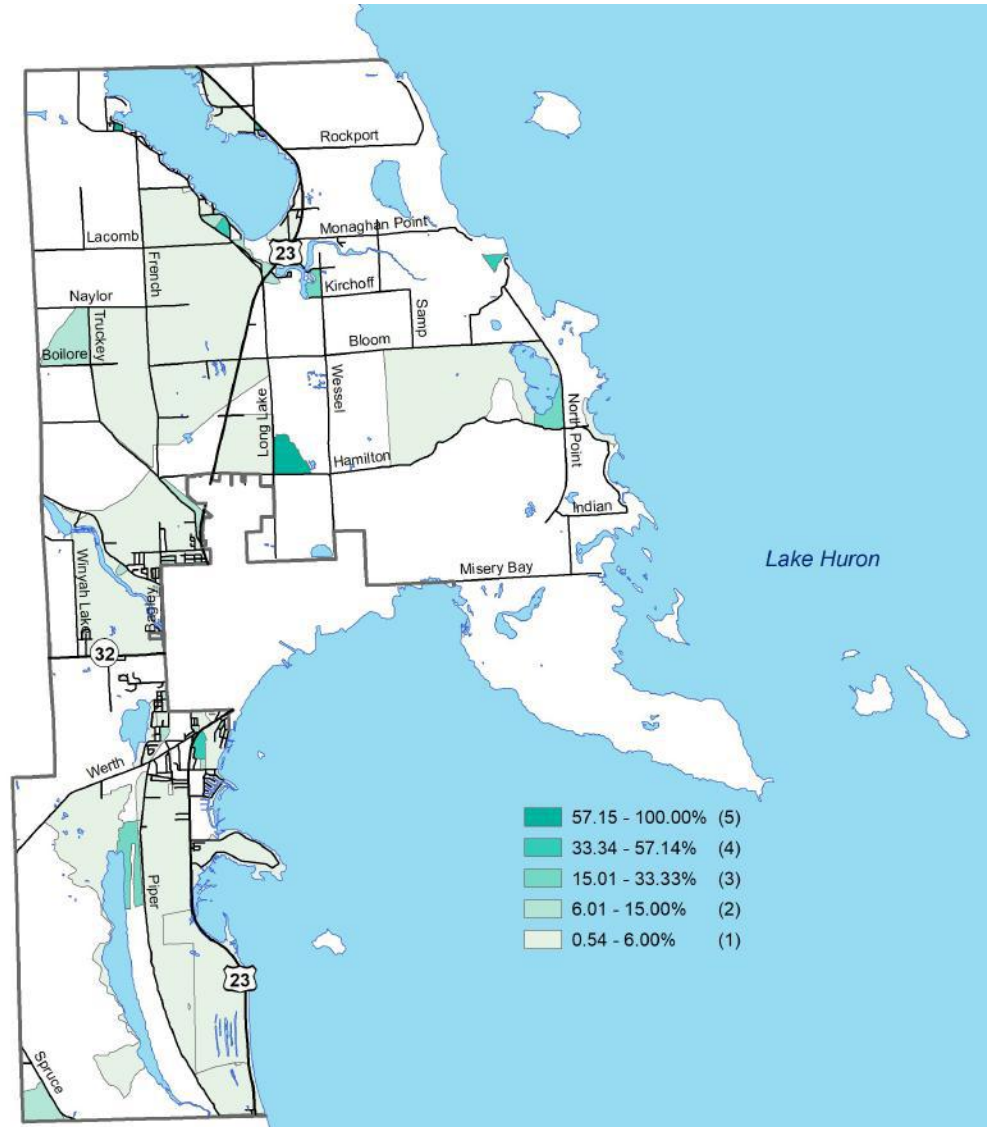
Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.3

#### Percent of Non-white Population



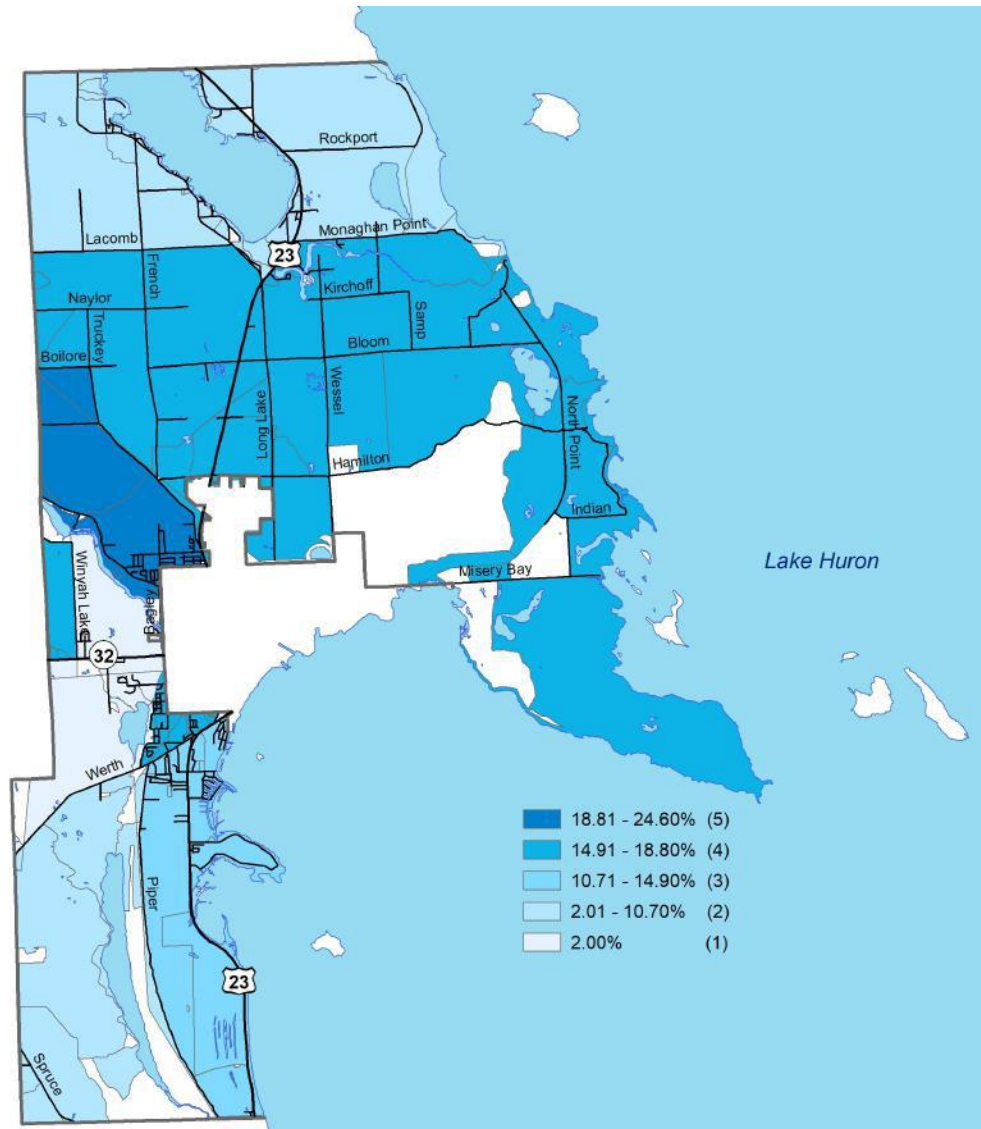
Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles

## Alpena Township

### Map 2.4

#### Percent of Households Living Below the Poverty Threshold



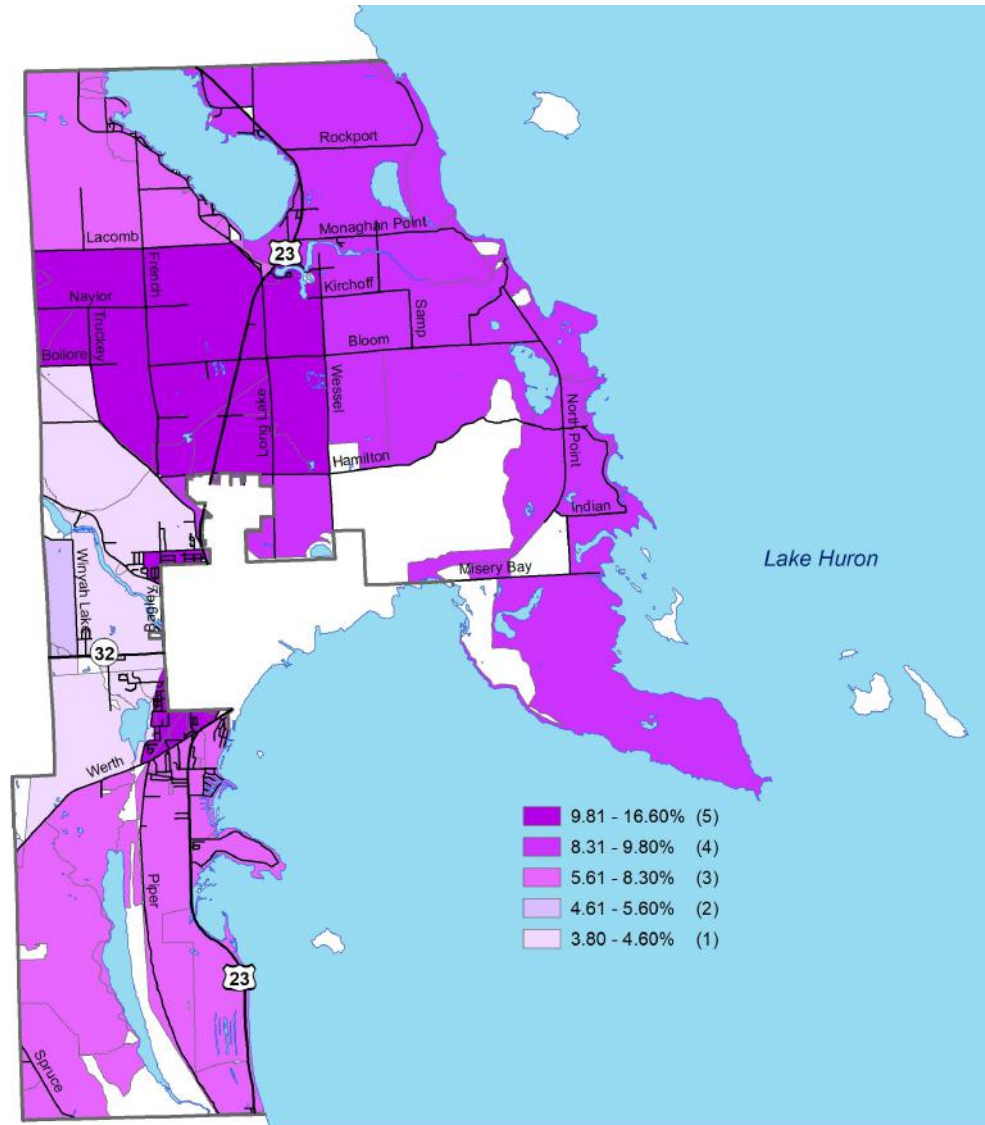
Data Sources:  
 NEMCOG,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
 0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.5

Percent of Population 25 Years and Older with Less than a High School Education



Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

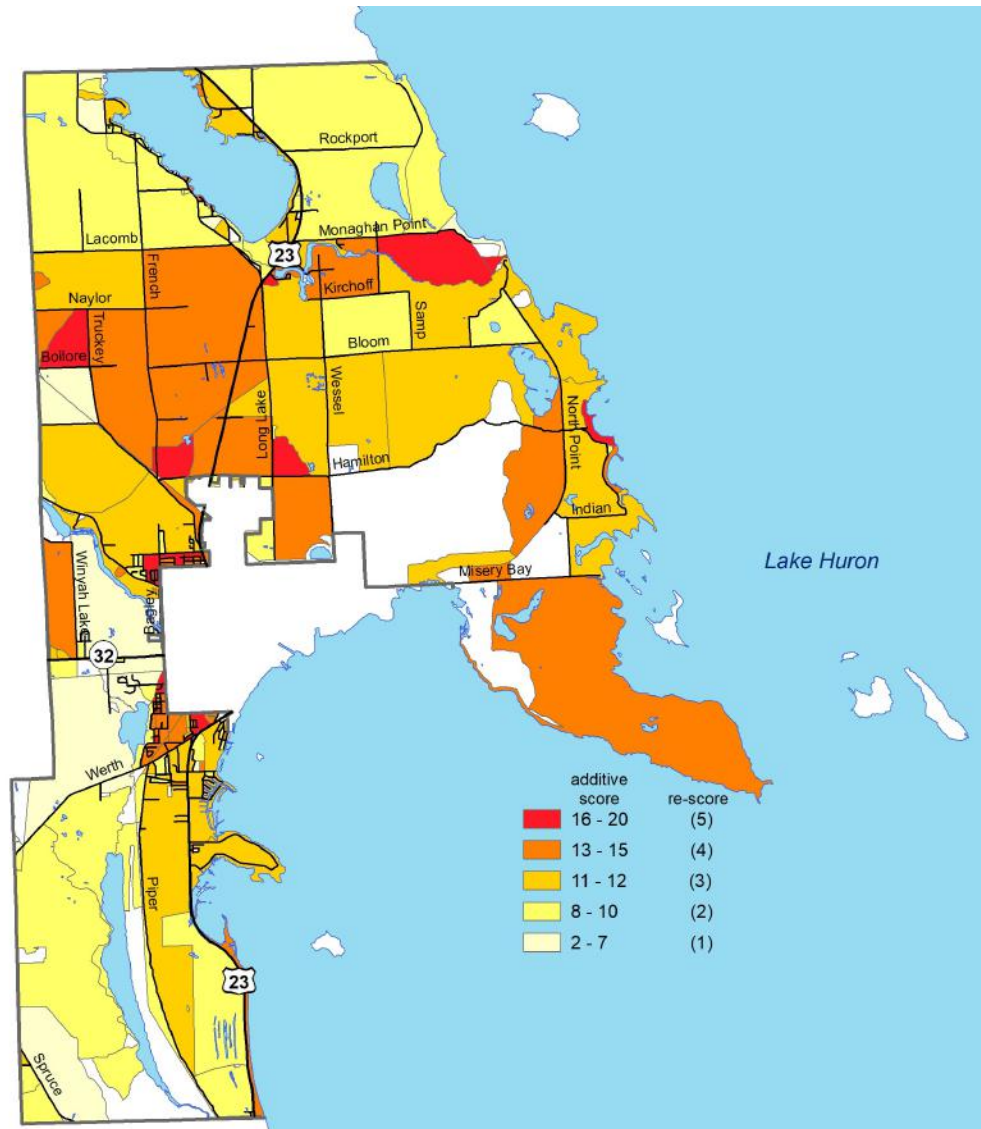
Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles



## Alpena Township

### Map 2.6

Relative Sensitivity of Populations to Extreme Heat Events



Data Sources:  
 NEMCOG,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library

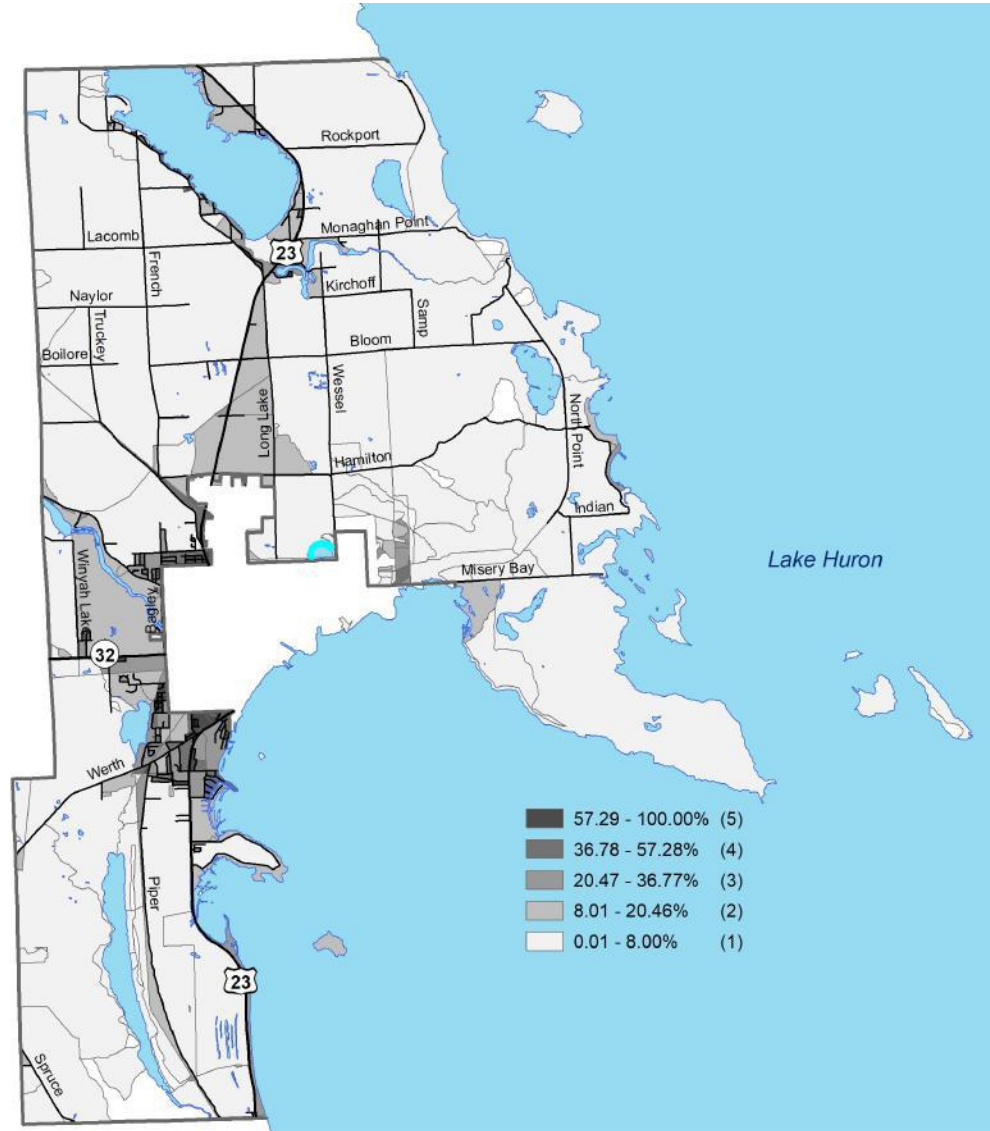
Prepared May 2020 by LIAA for the Alpena Community. N  
 0 1.5 3 4.5 6 Miles ↑



## Alpena Township

### Map 2.7

#### Percent Impervious Surface

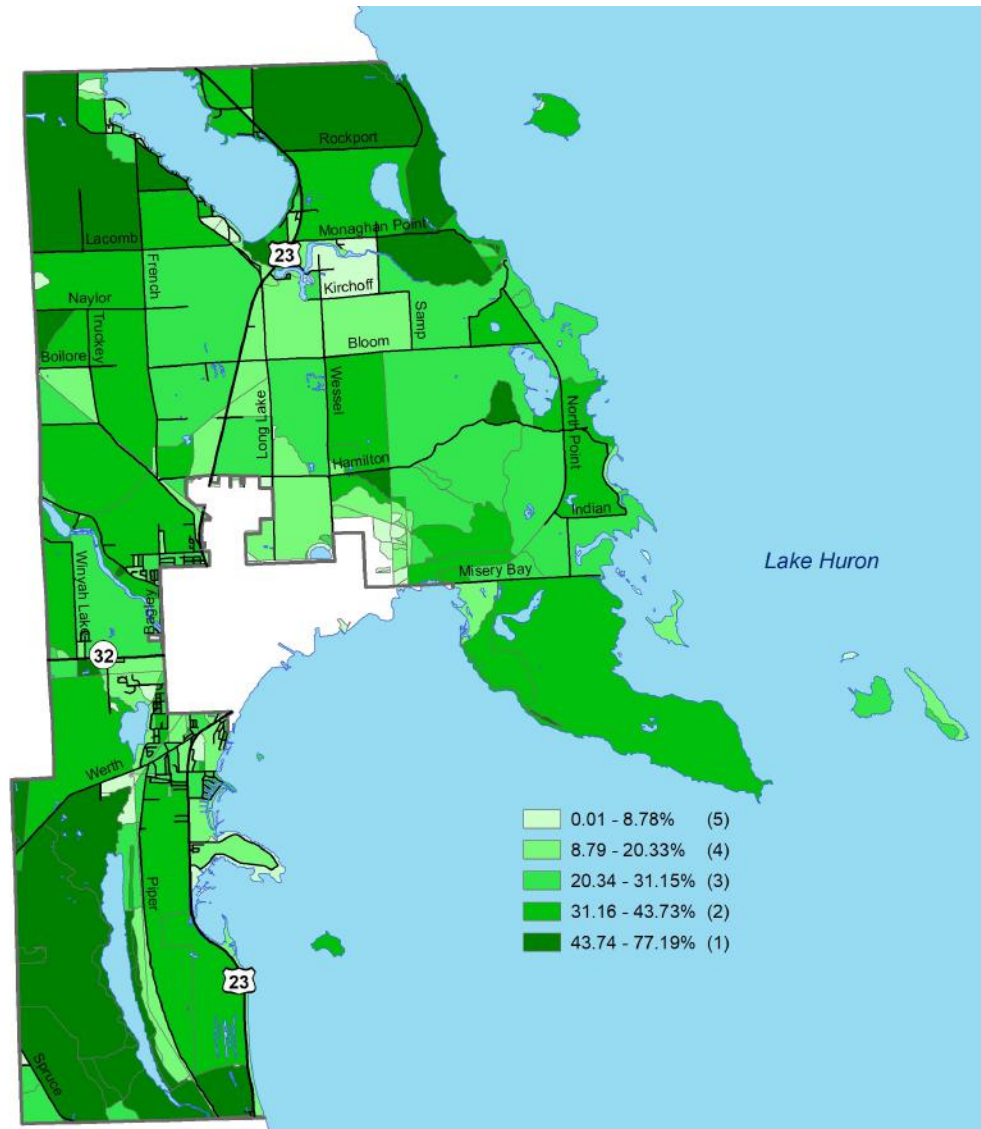


Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles

## Alpena Township

**Map 2.8**  
Percent Tree Canopy



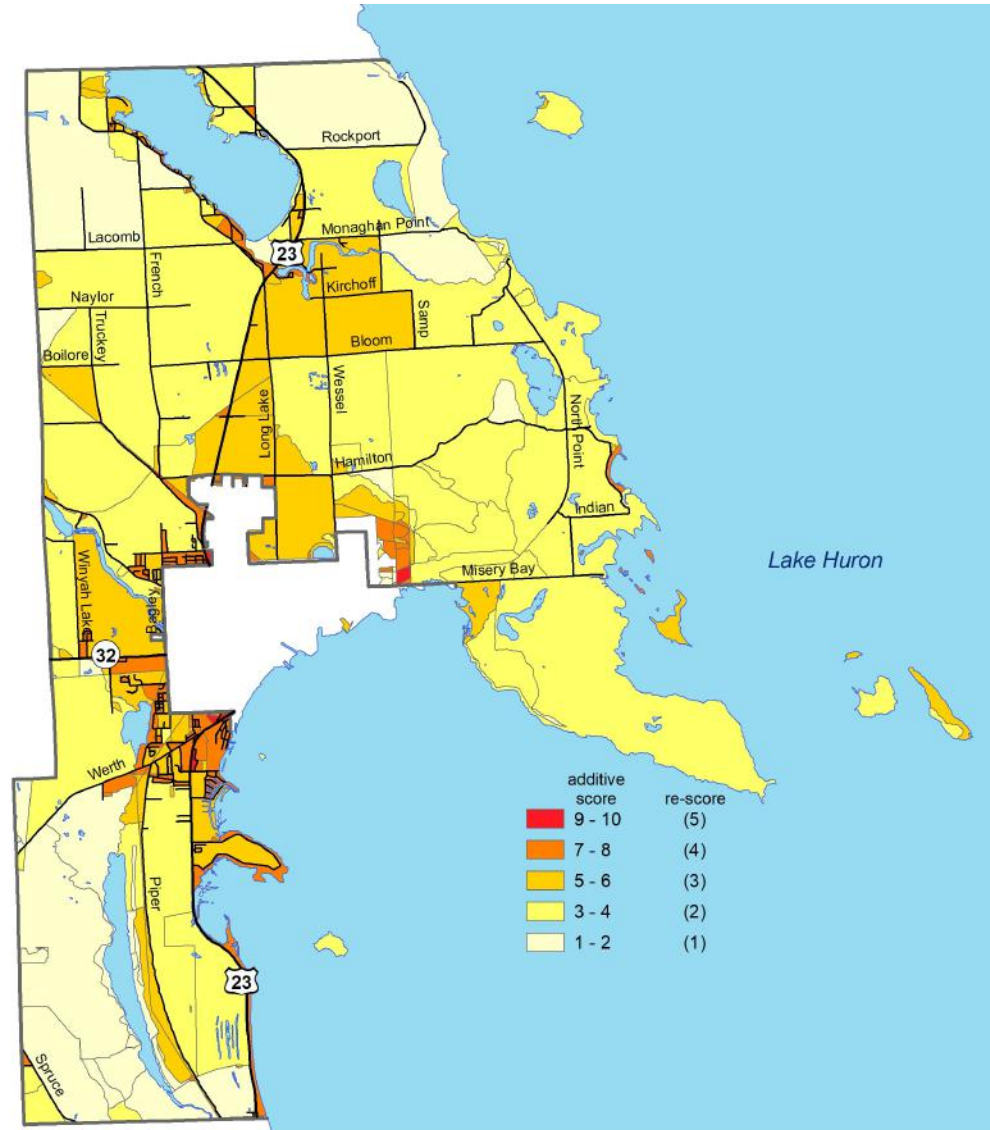
Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.9

#### Relative Exposure of Populations to Extreme Heat Events

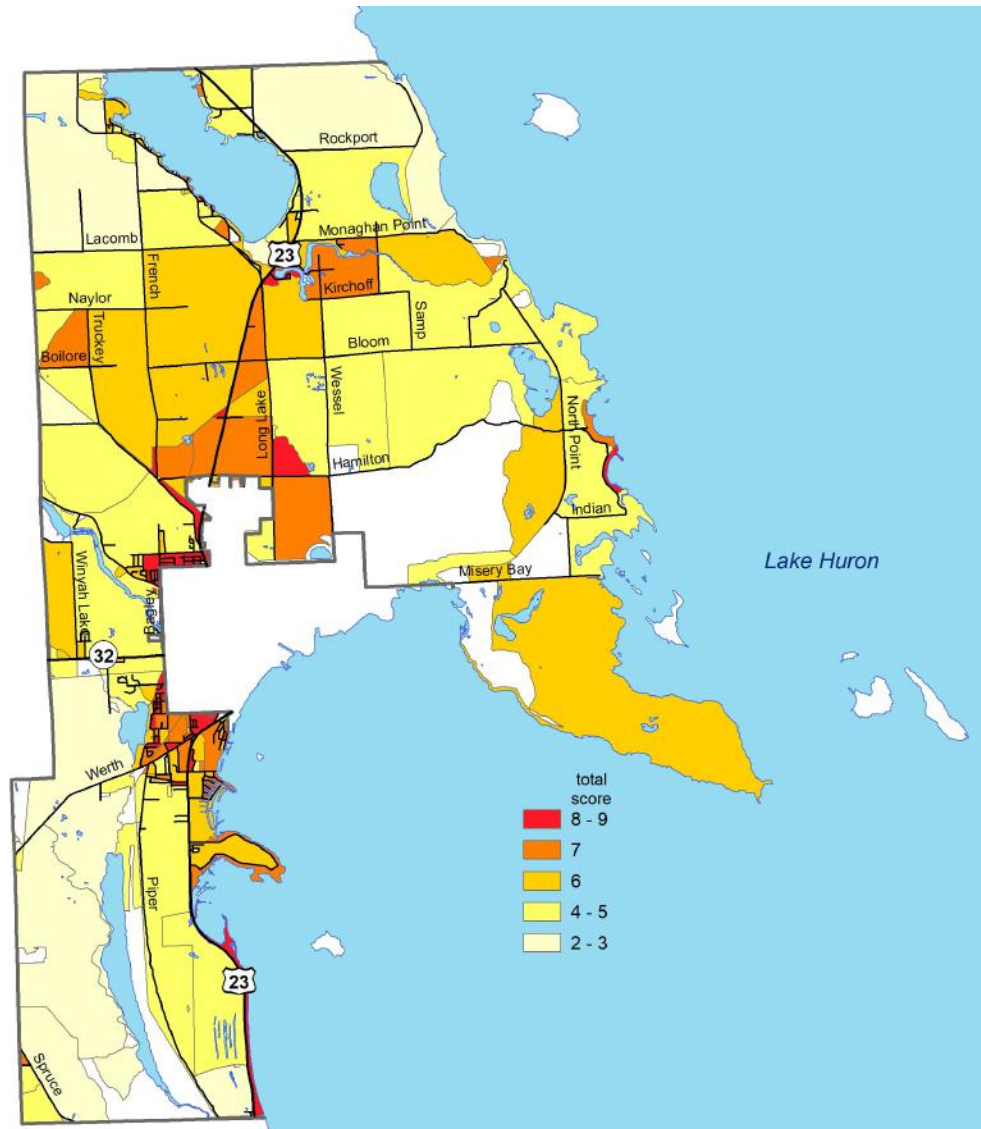


Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles

## Alpena Township

**Map 2.10**  
**Population Vulnerable to Extreme Heat Events**

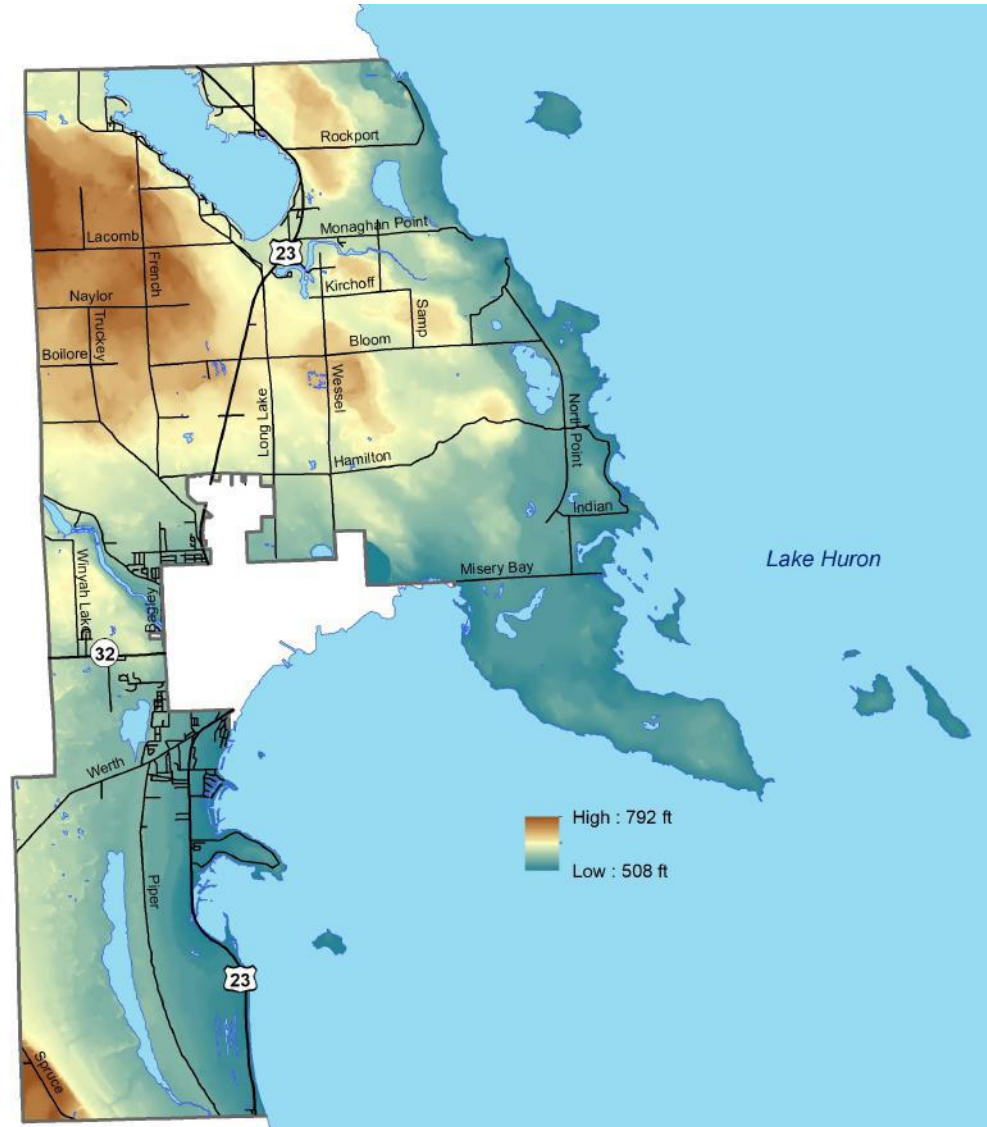


Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

**Map 2.11**  
Digital Elevation Model



Data Sources:  
NEMCOG, USDA Geospatial Data Gateway,  
Michigan Geographic Data Library.

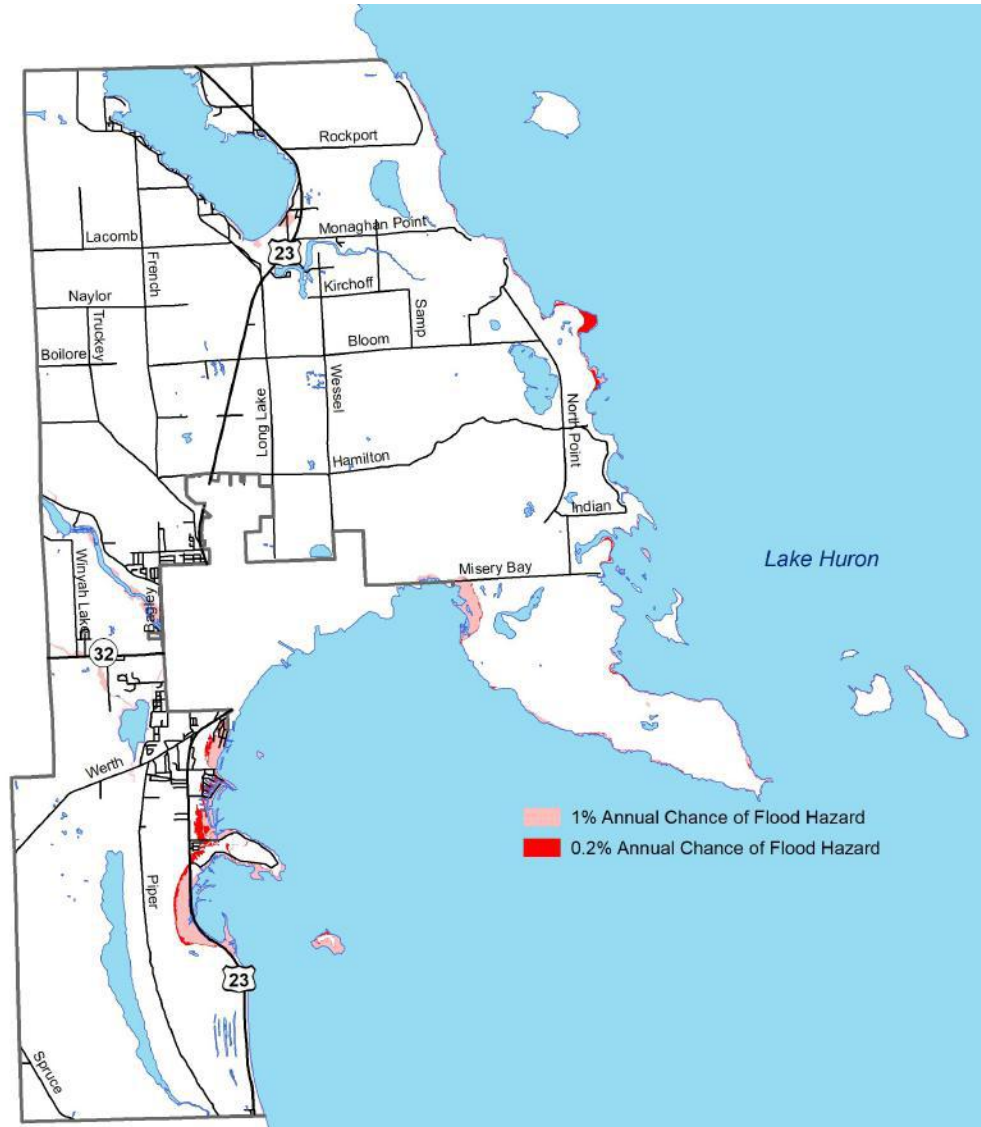
Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑



## Alpena Township

### Map 2.12

#### FEMA Flood Zones



Data Sources:  
NEMCOG, FEMA,  
Michigan Geographic Data Library.

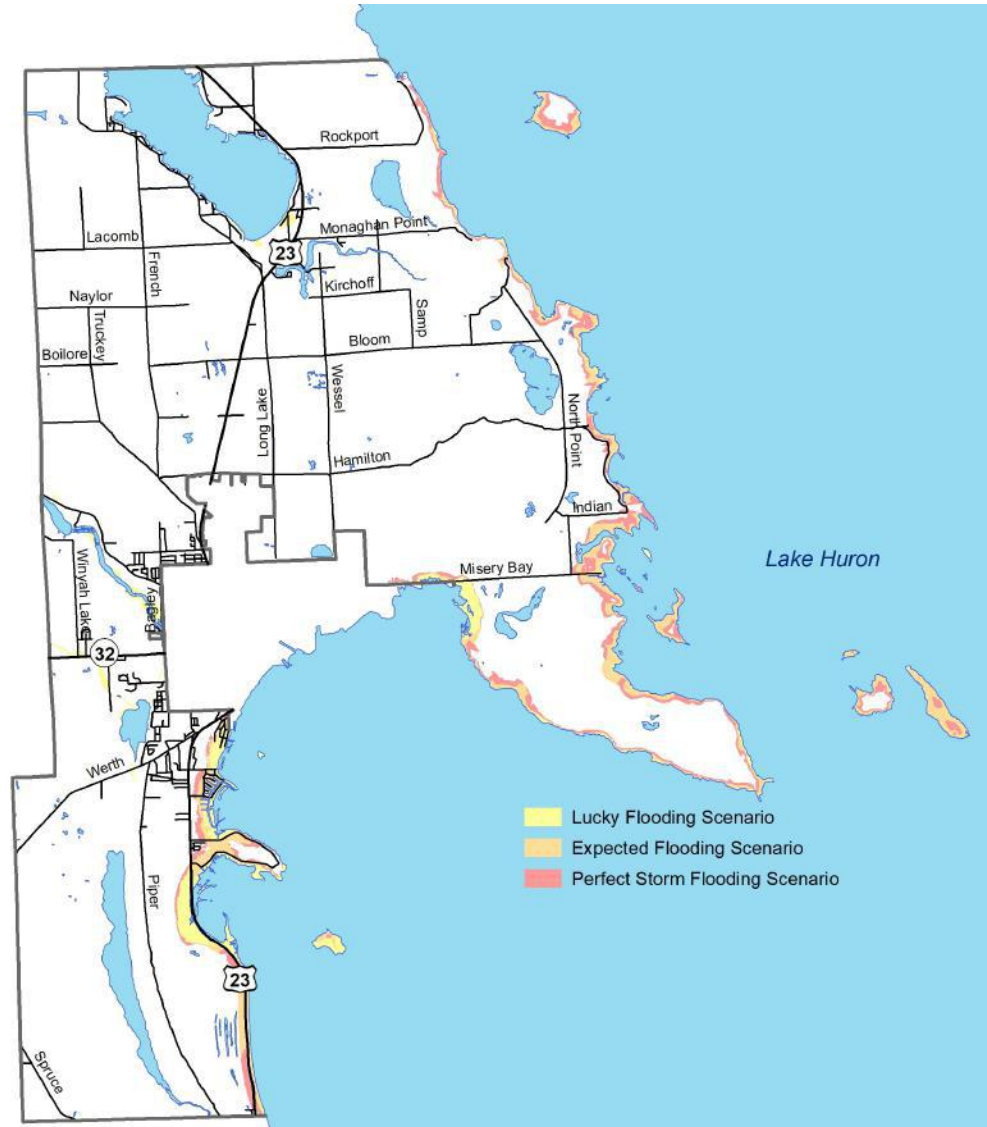
Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles



## Alpena Township

### Map 2.13

#### Future Climate Scenarios



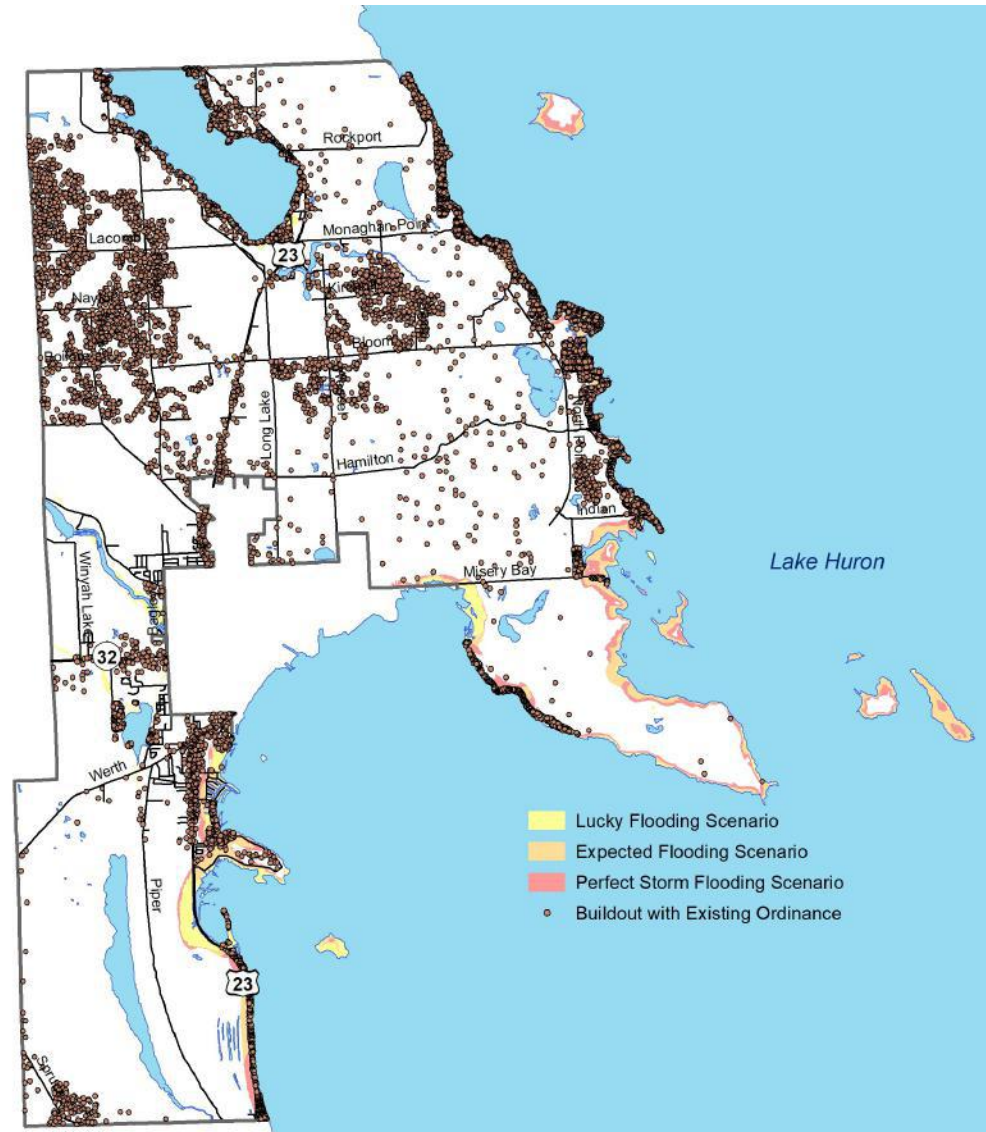
Data Sources:  
NEMCOG, U.M.,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.14

#### Future Climate Scenarios with Buildout According to Current Zoning



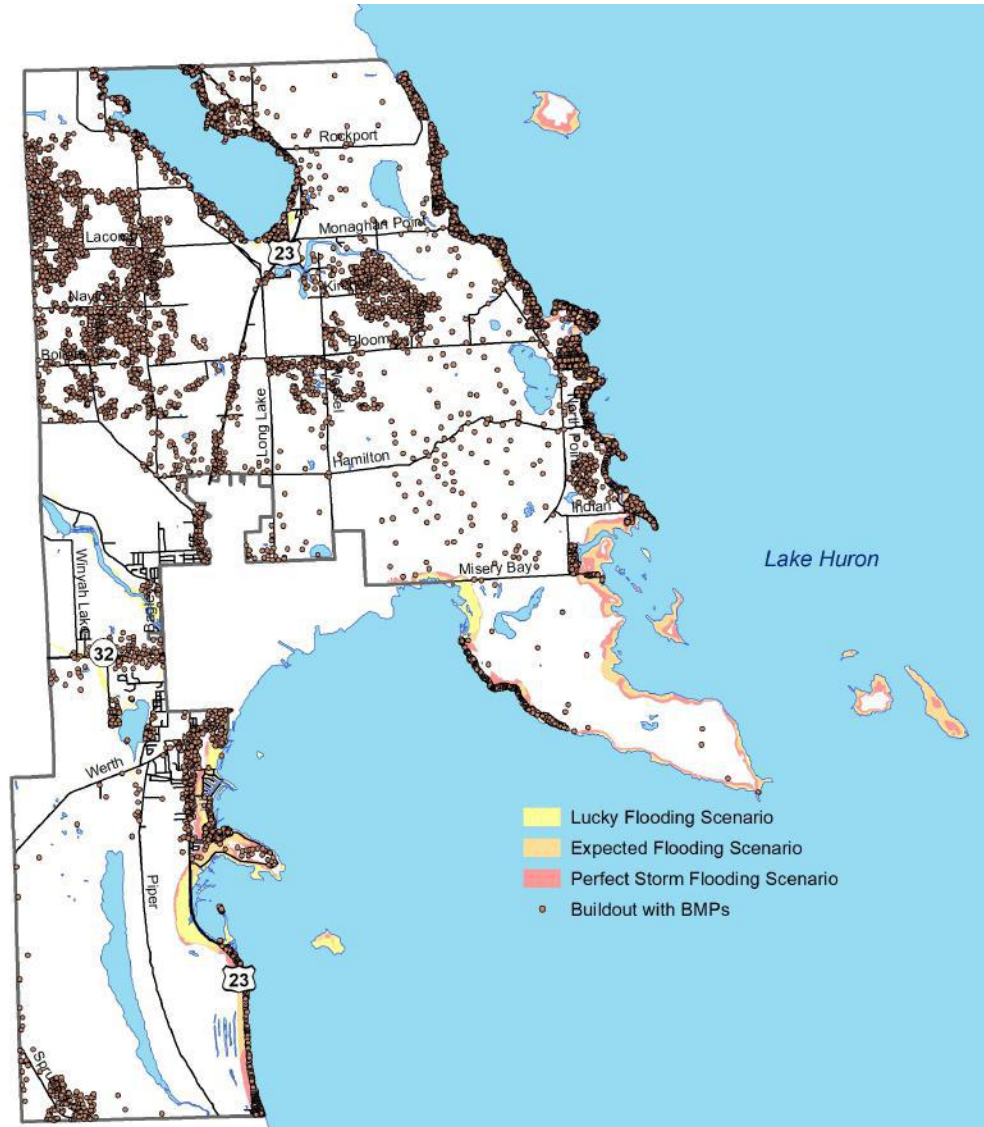
Data Sources:  
NEMCOG, U.M.,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

## Alpena Township

### Map 2.15

#### Future Climate Scenarios with Buildout According to BMPs

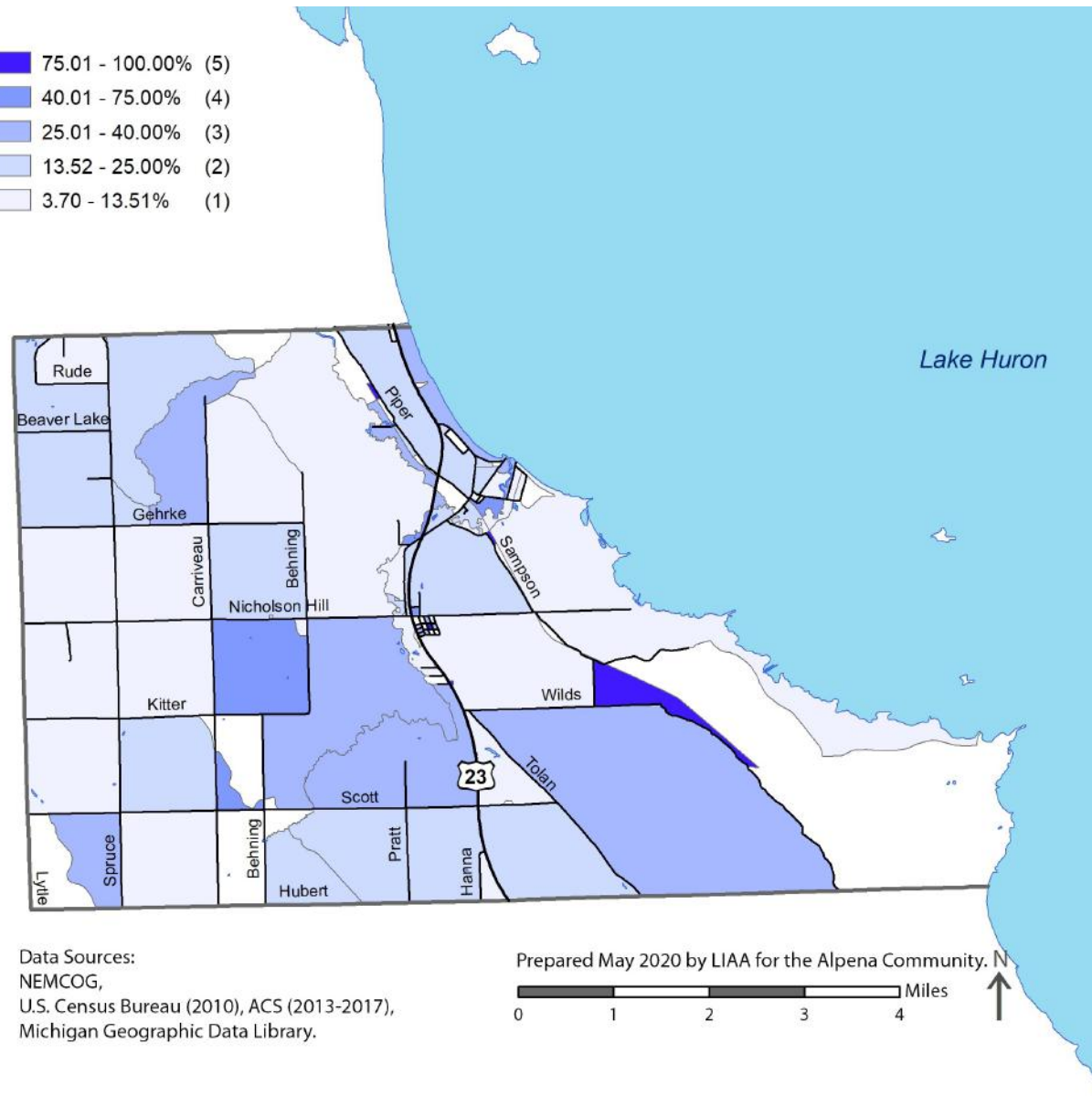


Data Sources:  
NEMCOG, U.M.,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1.5 3 4.5 6 Miles ↑

### Sanborn Township

**Map 3.1**  
**Percent of Population 65**  
**Years and Older (male**  
**and female)**

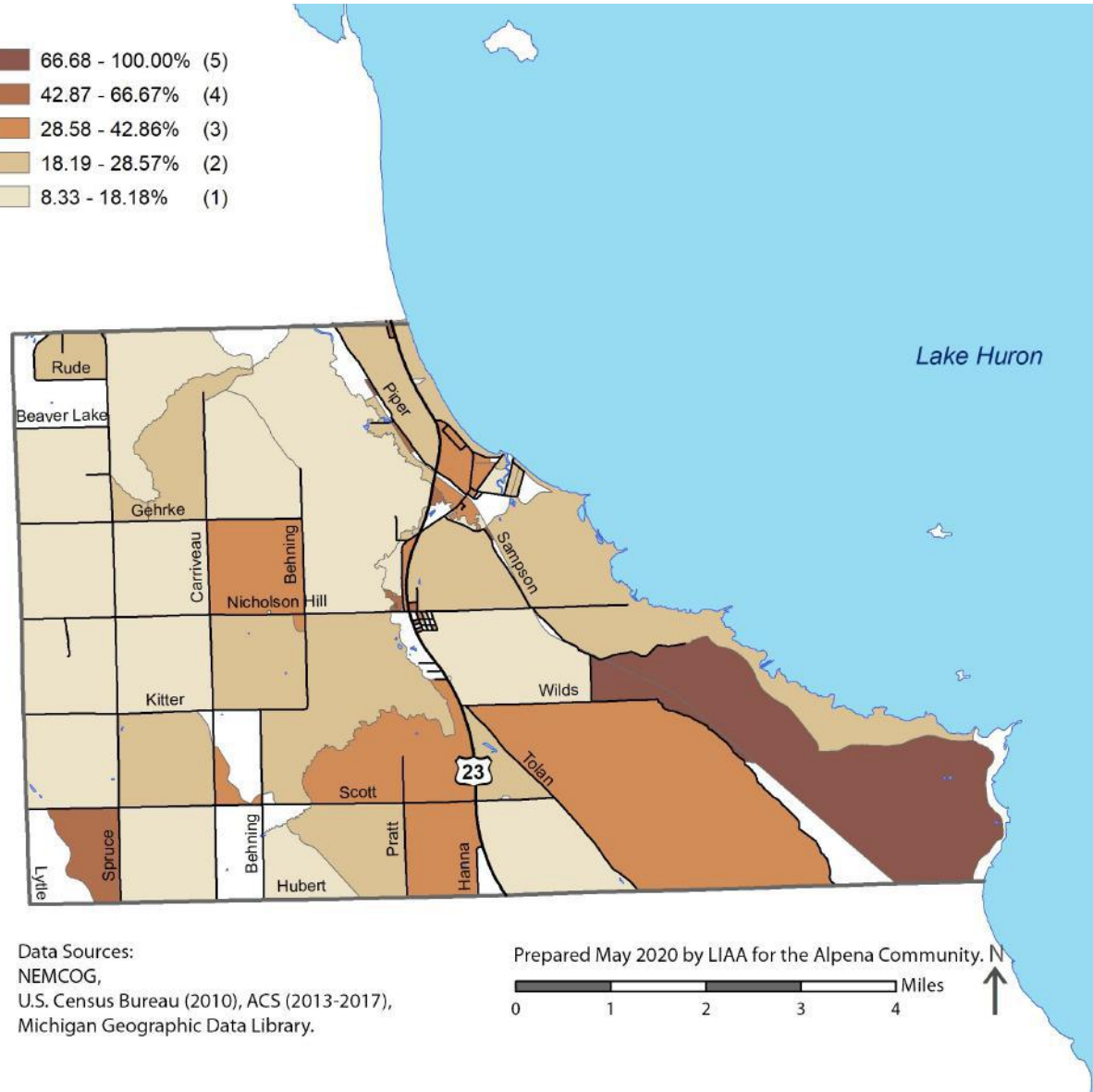


Data Sources:  
 NEMCOG,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
 Miles

Sanborn Township

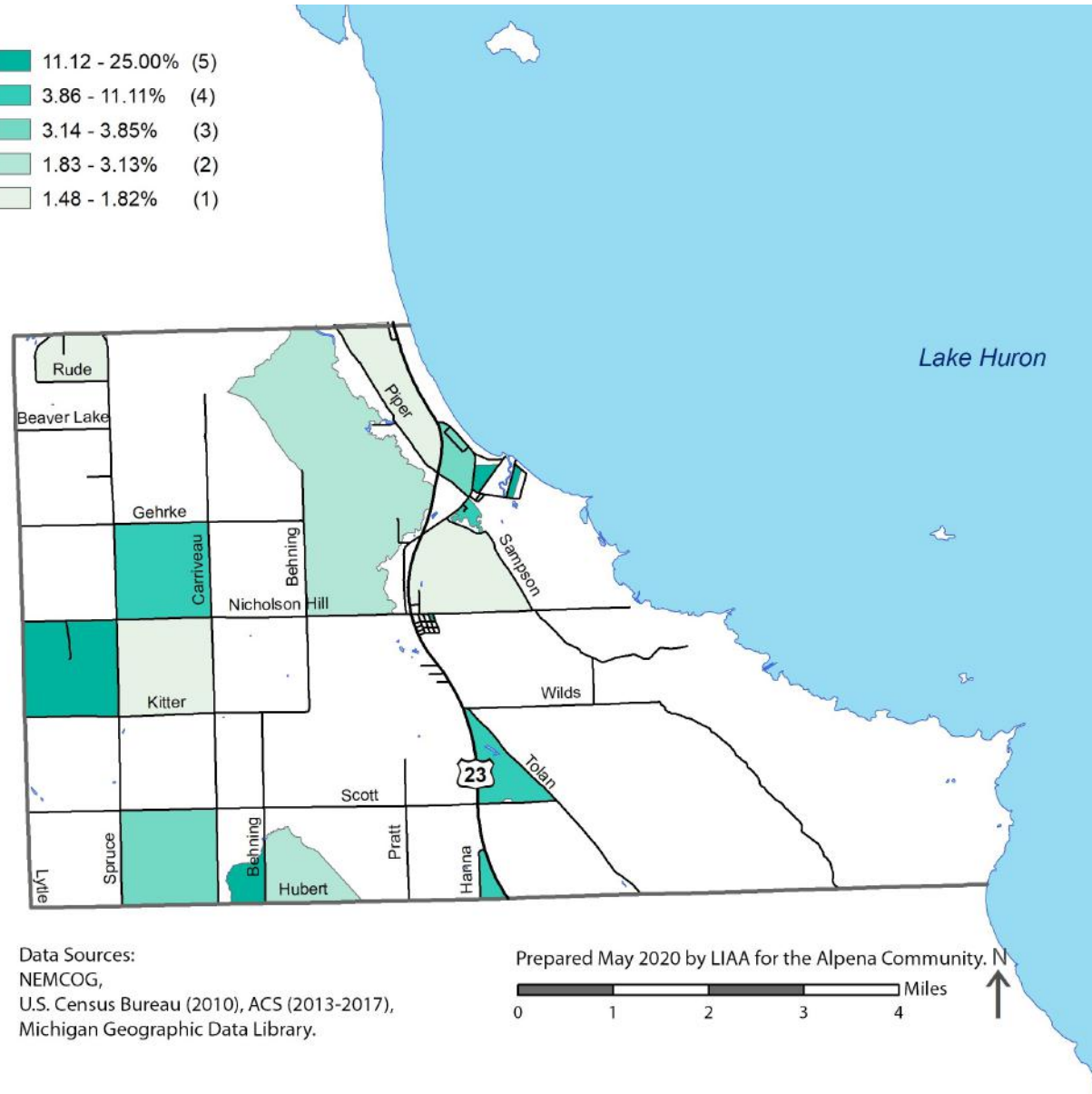
**Map 3.2**  
**Percent of Households**  
**with People Living**  
**Alone**





### Sanborn Township

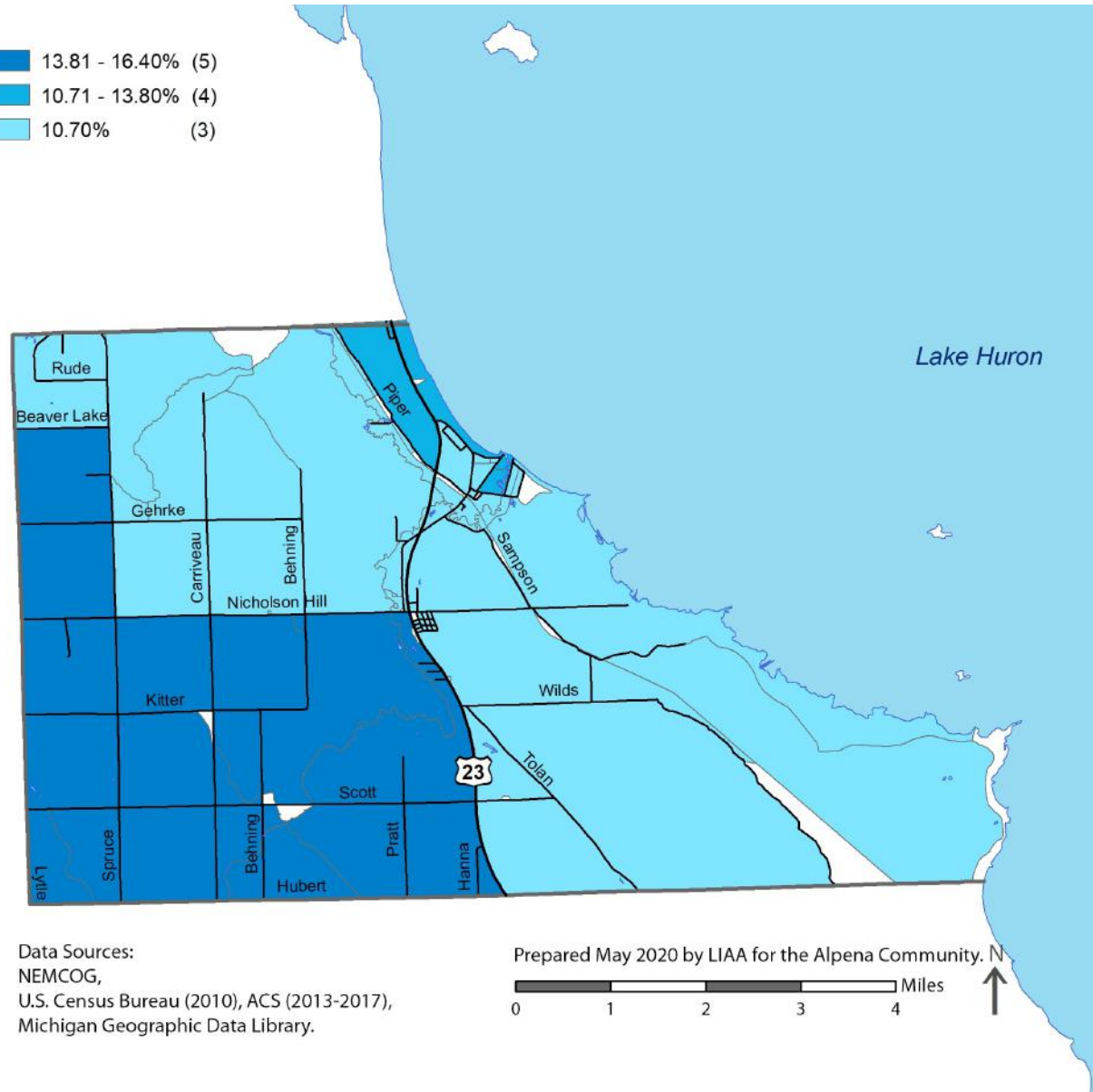
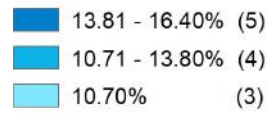
**Map 3.3**  
**Percent of Non-white Population**





### Sanborn Township

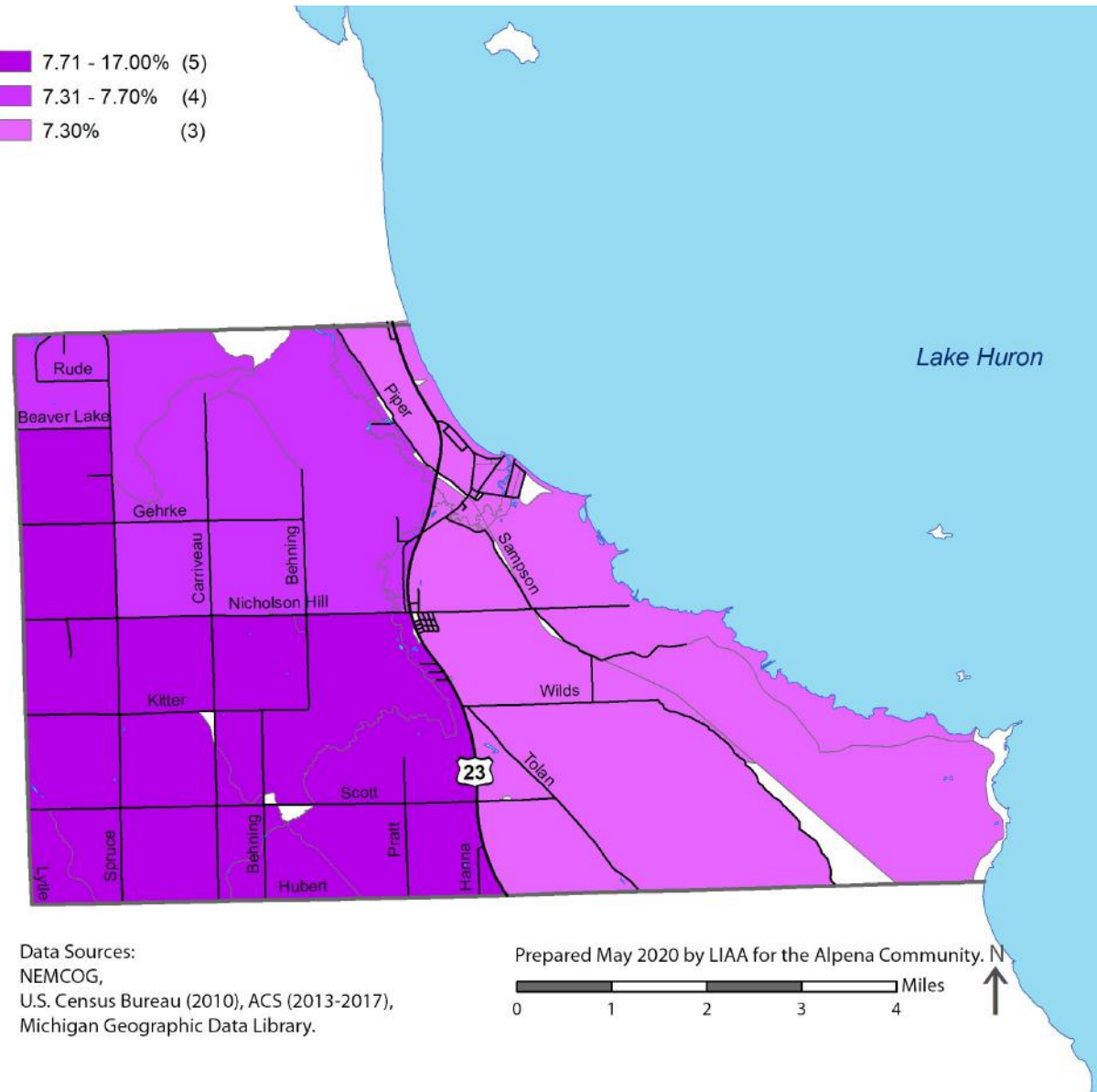
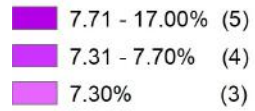
**Map 3.4**  
Percent of  
Households Living  
Below the Poverty  
Threshold



Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

## Sanborn Township

**Map 3.5**  
**Percent of Population 25**  
**Years and Older with**  
**Less than a High School**  
**Education**



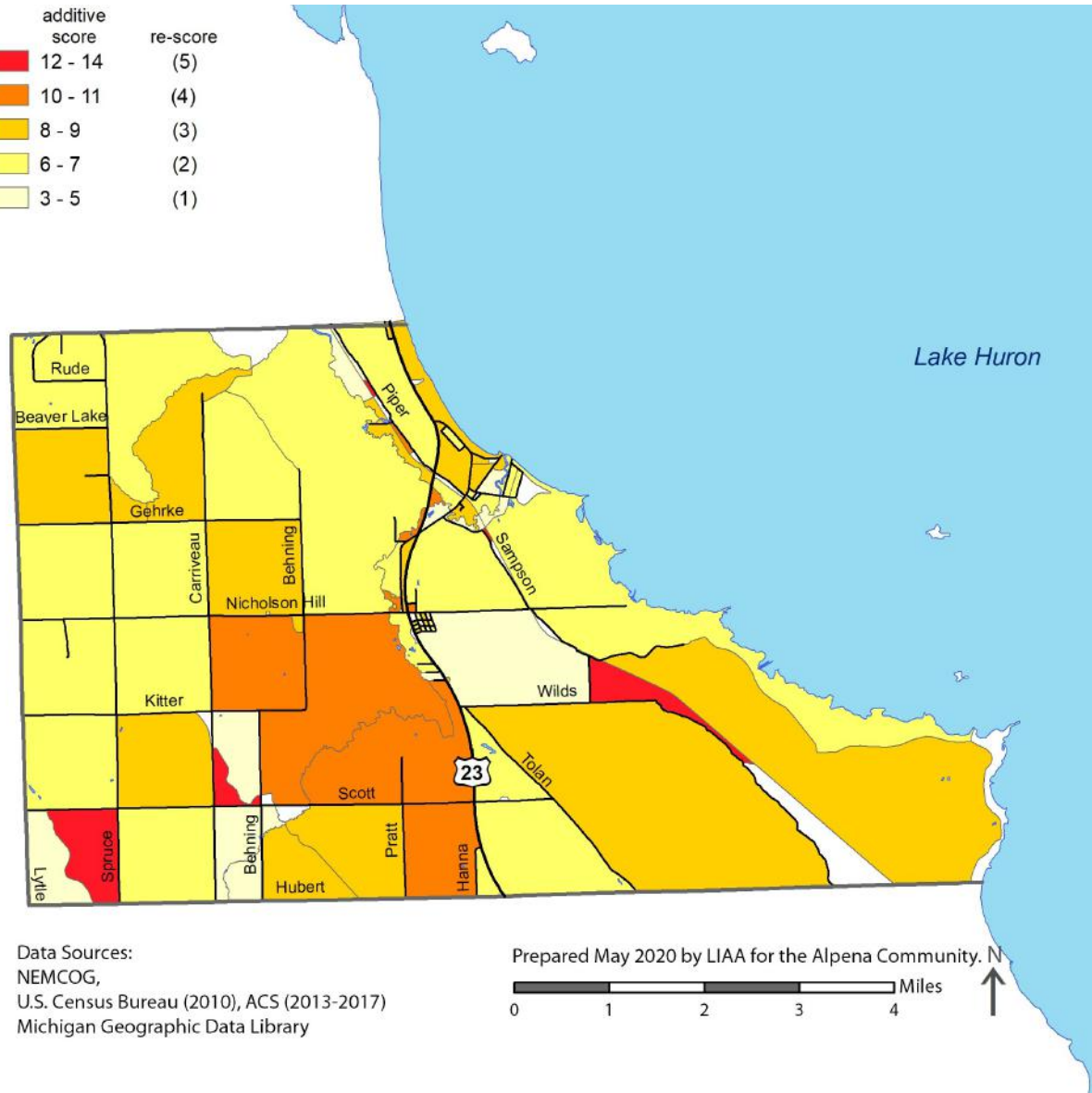
Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1 2 3 4 Miles

### Sanborn Township

**Map 3.6**  
**Relative Sensitivity of**  
**Populations to**  
**Extreme Heat Events**

additive score	re-score
12 - 14	(5)
10 - 11	(4)
8 - 9	(3)
6 - 7	(2)
3 - 5	(1)

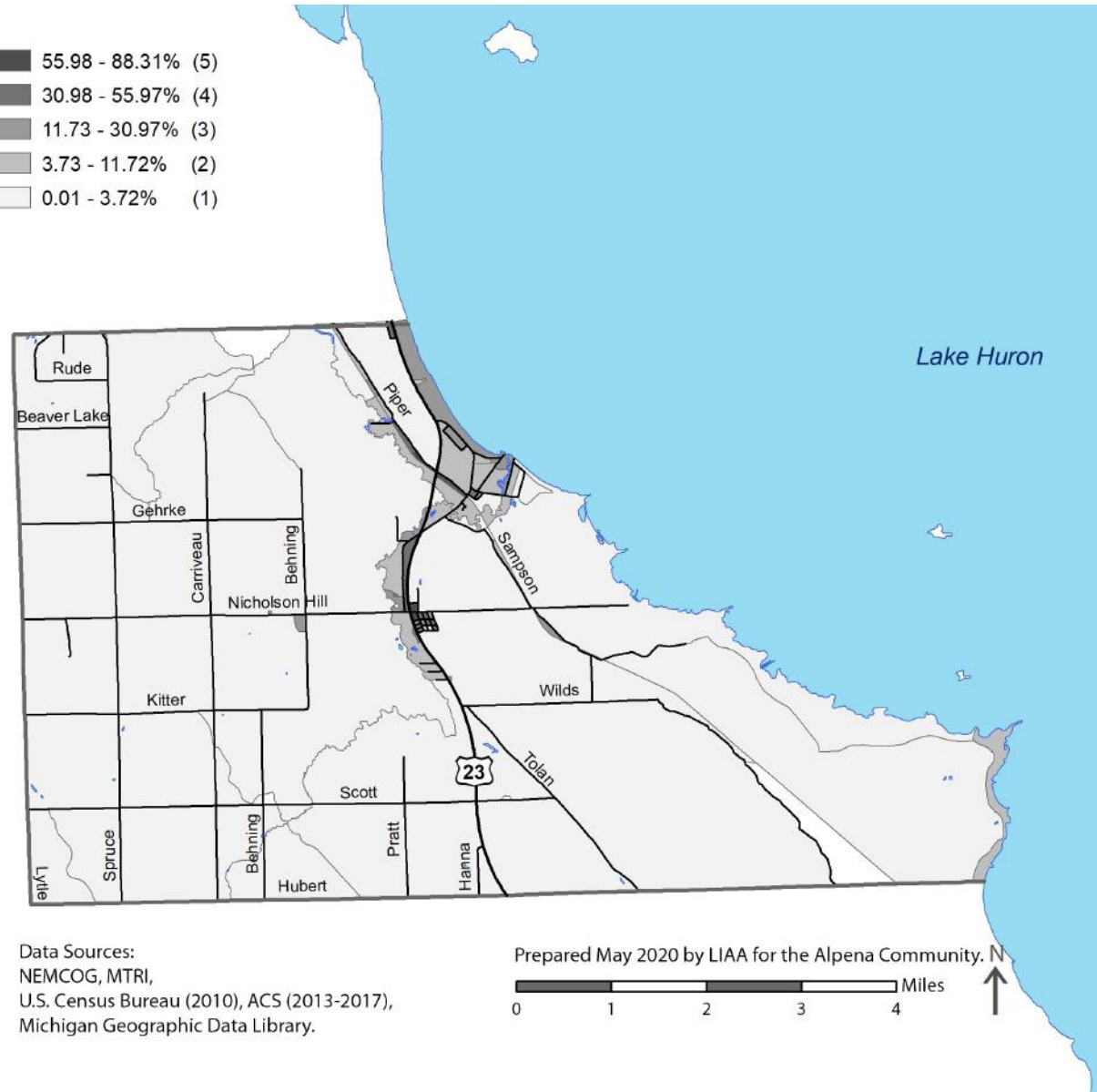
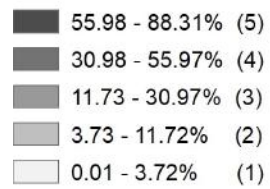


Data Sources:  
NEMCOG,  
U.S. Census Bureau (2010), ACS (2013-2017)  
Michigan Geographic Data Library

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1 2 3 4 Miles ↑

### Sanborn Township

**Map 3.7**  
**Percent Impervious Surface**

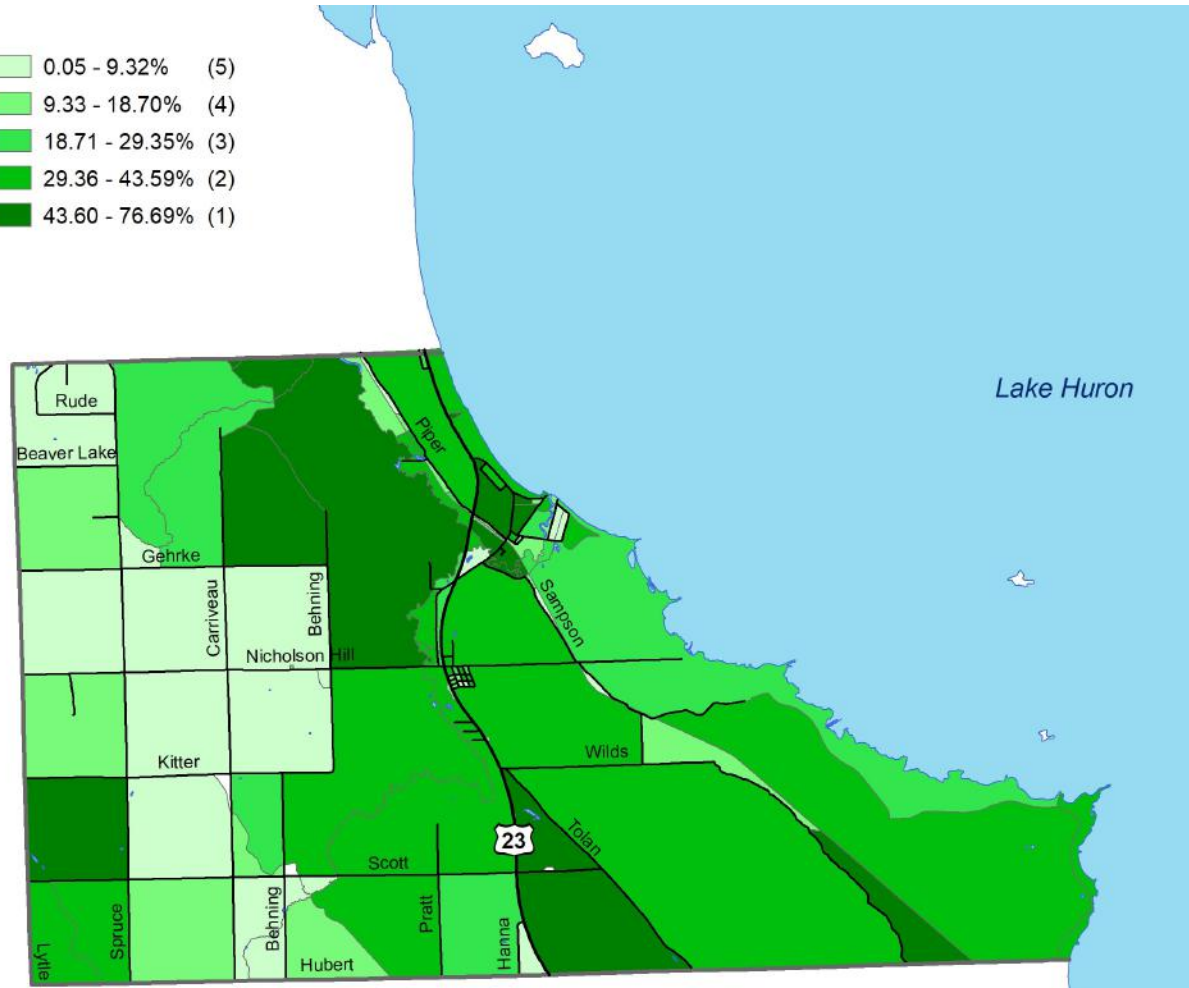


Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.

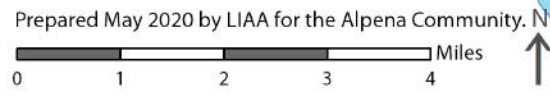
Prepared May 2020 by LIAA for the Alpena Community. N  
0 1 2 3 4 Miles

### Sanborn Township

**Map 3.8**  
Percent Tree Canopy



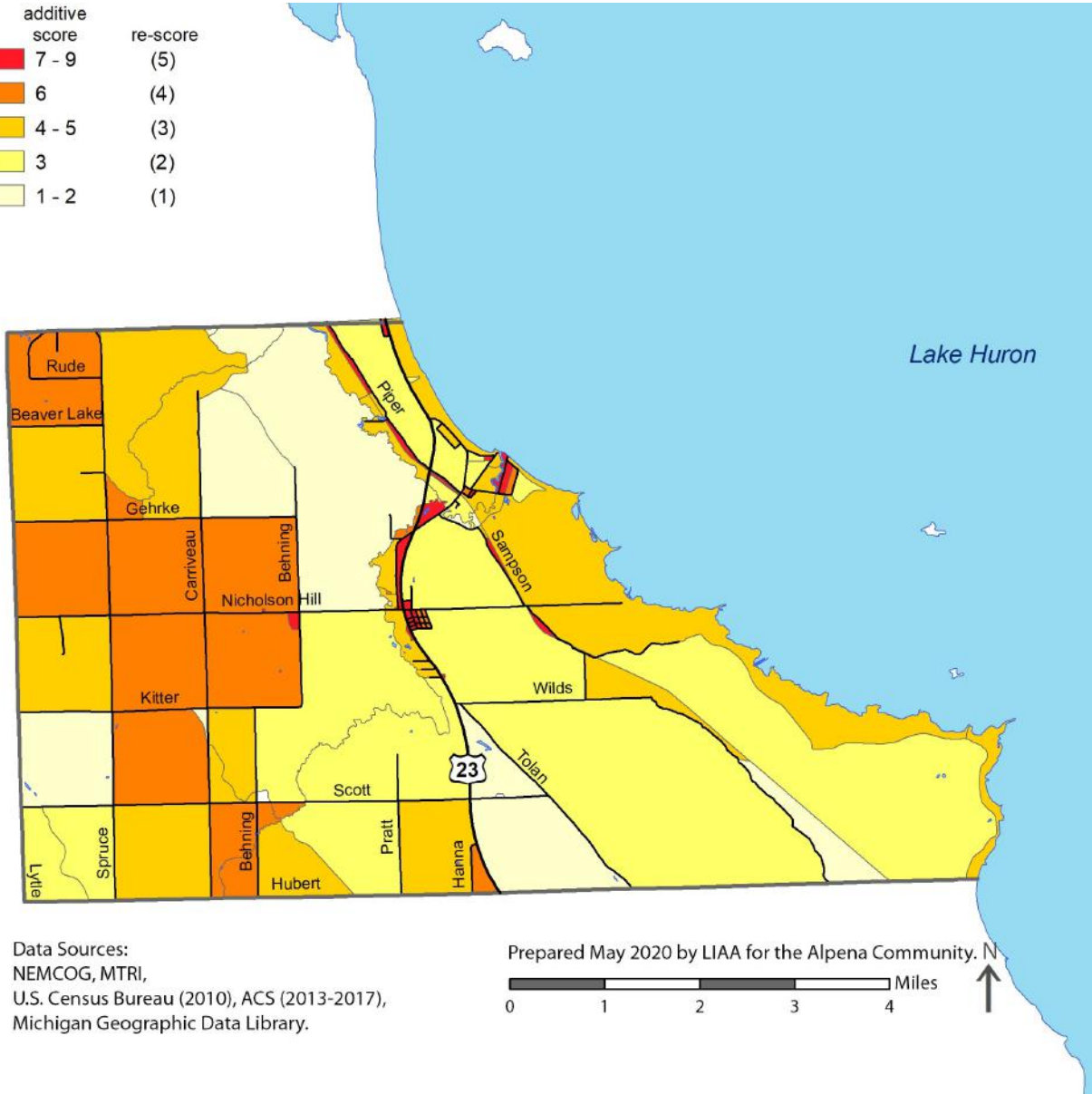
Data Sources:  
NEMCOG, MTRI,  
U.S. Census Bureau (2010), ACS (2013-2017),  
Michigan Geographic Data Library.



### Sanborn Township

**Map 3.9**  
**Relative Exposure of**  
**Populations to Extreme**  
**Heat Events**

additive score	re-score
7 - 9	(5)
6	(4)
4 - 5	(3)
3	(2)
1 - 2	(1)



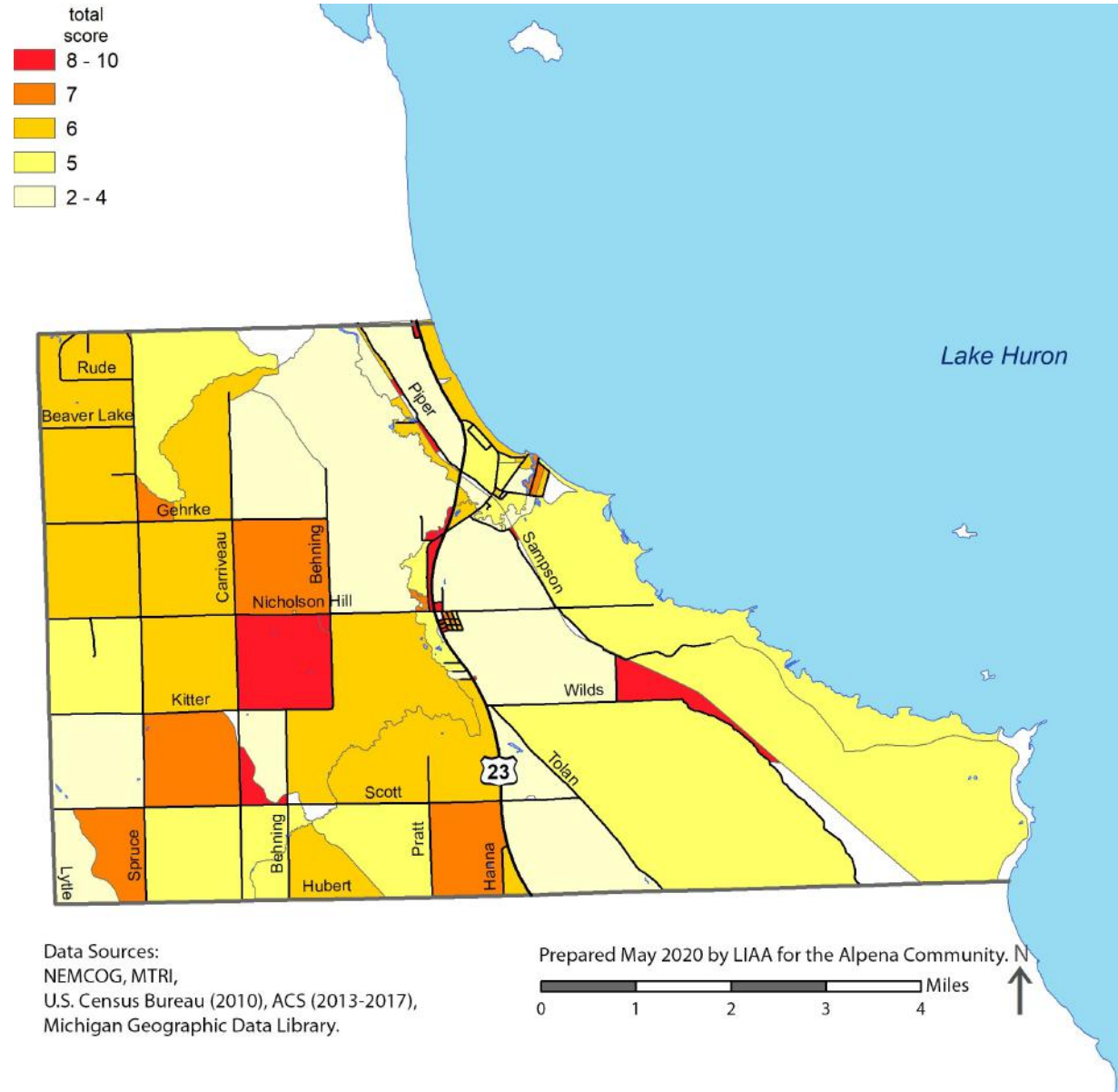
Data Sources:  
 NEMCOG, MTRI,  
 U.S. Census Bureau (2010), ACS (2013-2017),  
 Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
 0 1 2 3 4 Miles



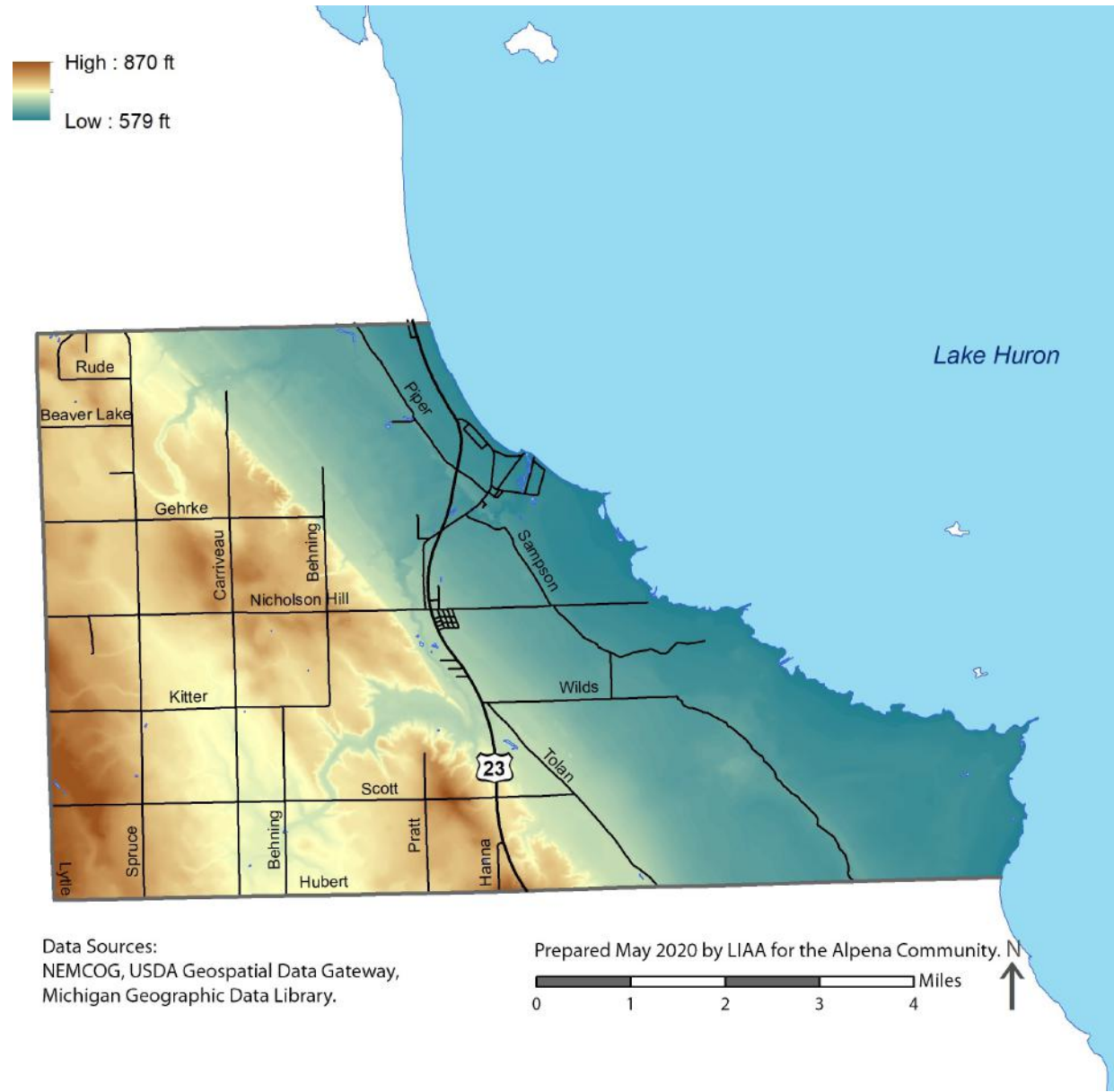
### Sanborn Township

**Map 3.10**  
Population  
Vulnerable to  
Extreme Heat  
Events



## Sanborn Township

**Map 3.11**  
Digital Elevation Model

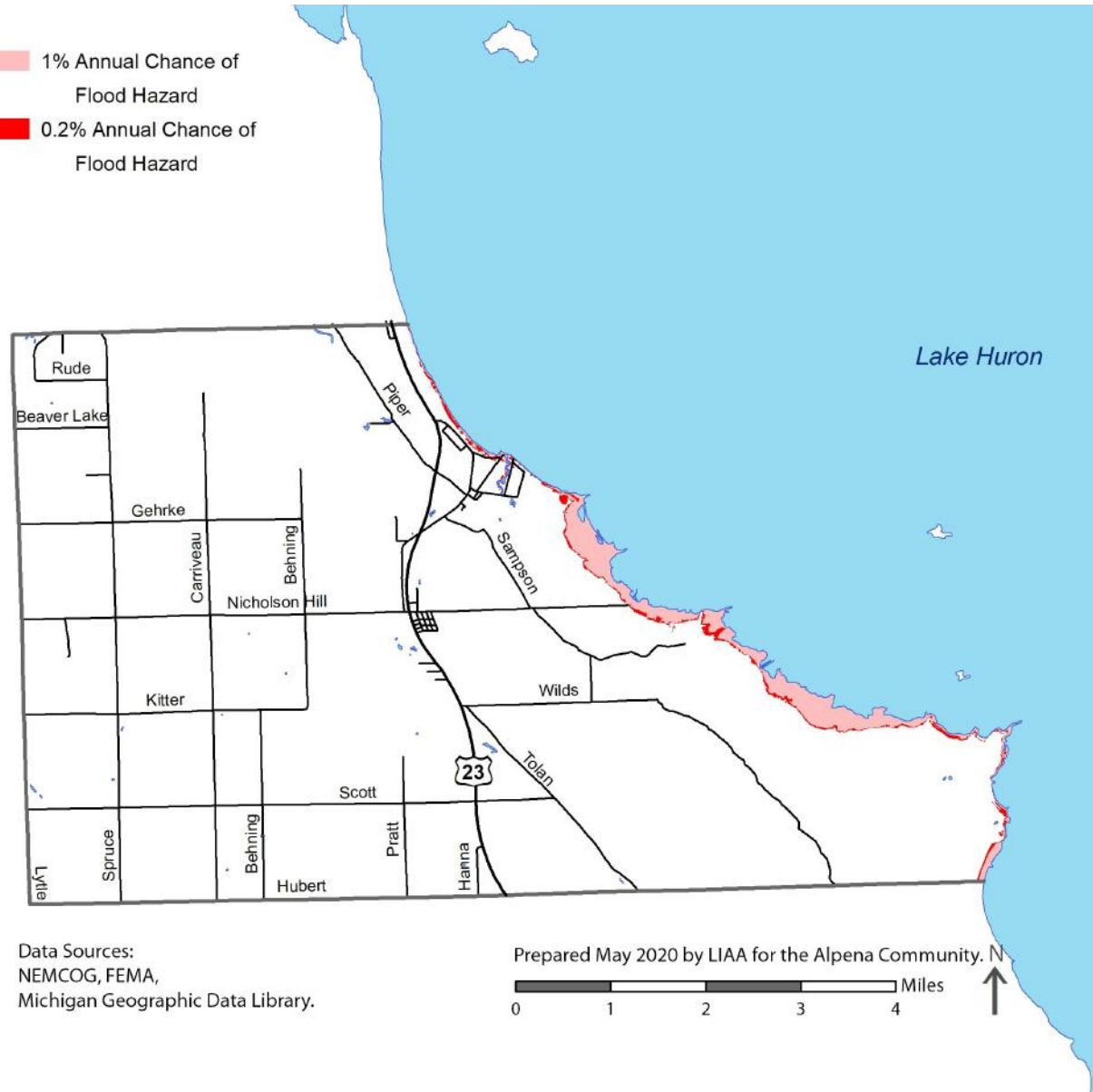


Data Sources:  
NEMCOG, USDA Geospatial Data Gateway,  
Michigan Geographic Data Library.

### Sanborn Township

**Map 3.12**  
FEMA Flood Zones

- 1% Annual Chance of Flood Hazard
- 0.2% Annual Chance of Flood Hazard

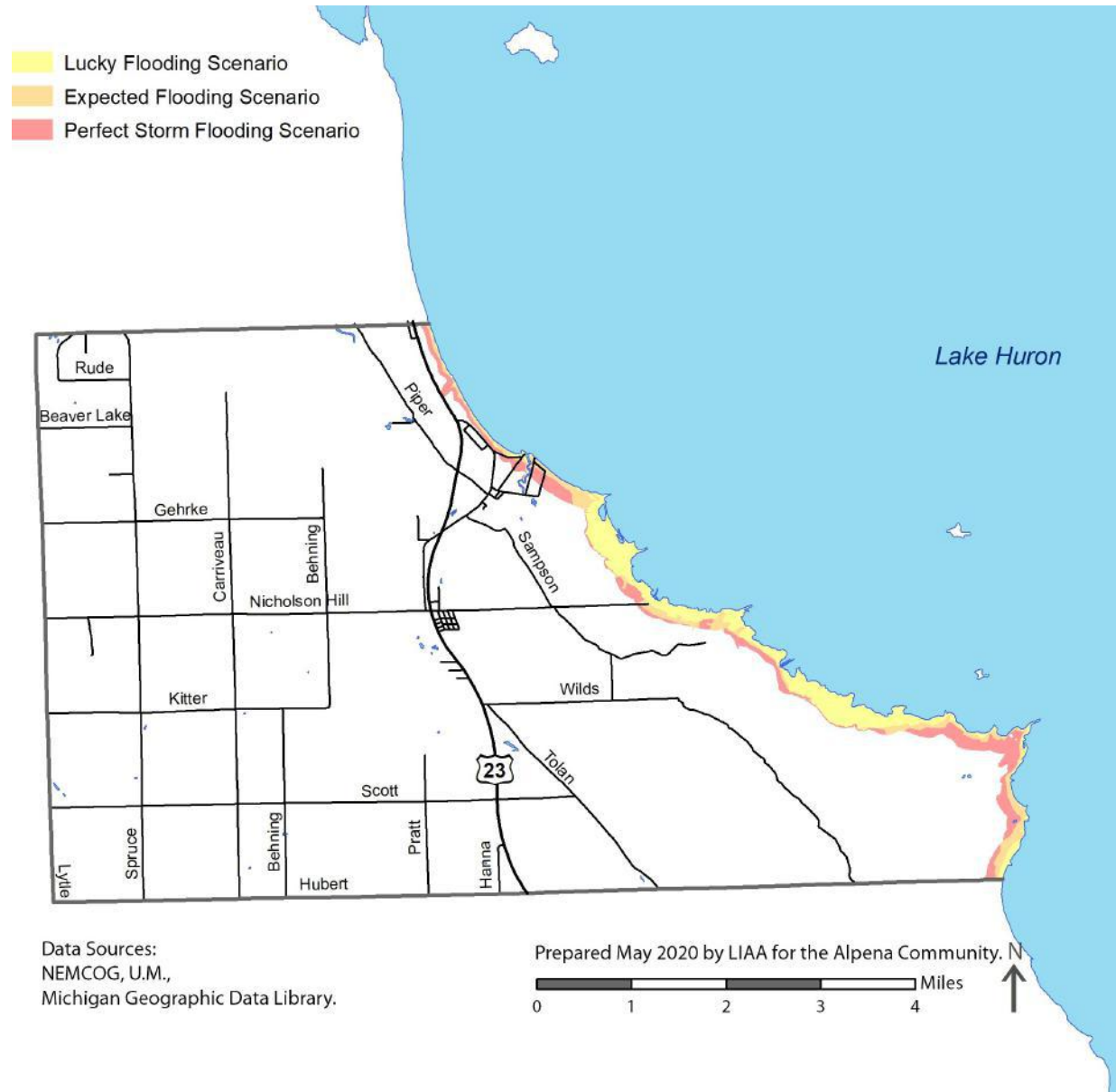


Data Sources:  
NEMCOG, FEMA,  
Michigan Geographic Data Library.

Prepared May 2020 by LIAA for the Alpena Community. N  
0 1 2 3 4 Miles

## Sanborn Township

**Map 3.13**  
Future Climate  
Scenarios



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