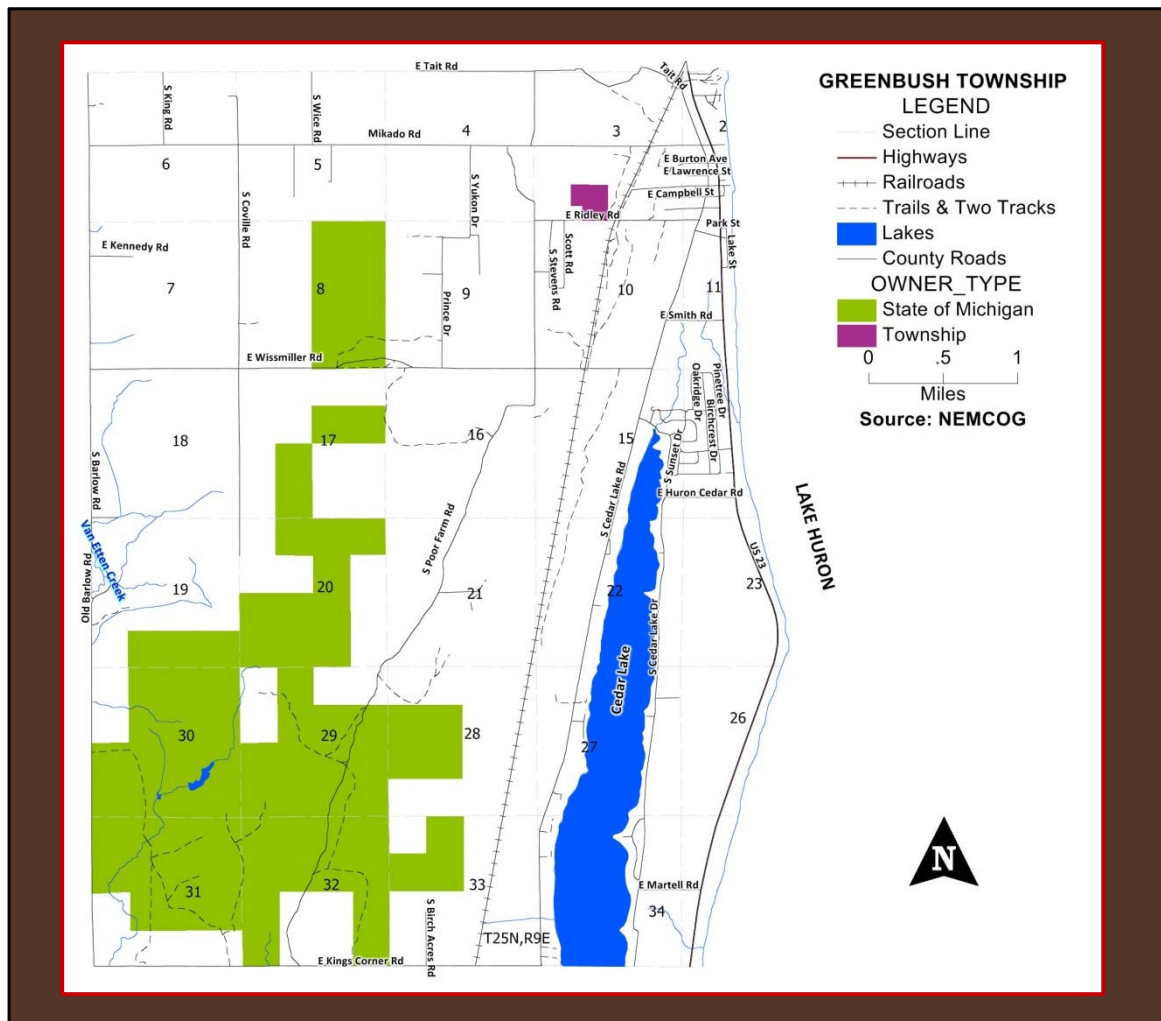


Master Plan

2016-2020

Township of Greenbush
Alcona County



Prepared by:

Greenbush Township Planning Commission

With the assistance of:

Northeast Michigan Council of Governments

Adopted: April 7, 2016

TOWNSHIP OF GREENBUSH 2016 MASTER PLAN

Township of Greenbush
Alcona County
Michigan

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Adopted: April 7, 2016

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Chapter 1: Introduction

Purpose and Planning Process

The purpose of the Greenbush Township Master Plan is to provide guidelines for future development within the community, while protecting the natural resources and rural township character. The Michigan Planning Enabling Act, P.A. 33 of 2008, states a Township may adopt, amend, and implement a master plan. The Michigan Planning Enabling Act states: *The general purpose of a master plan is to guide and accomplish, in the planning jurisdiction and its environs, development that satisfies all of the following criteria:*

- A. *Is coordinated, adjusted, harmonious, efficient, and economical.*
- B. *Considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development.*
- C. *Will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare.*
- D. *Includes, among other things, promotion of or adequate provision the following:*
 1. *A system of transportation to lessen congestion on streets.*
 2. *Safety from fire and other dangers.*
 3. *Light and air.*
 4. *Healthful and convenient distribution of population.*
 5. *Good civic design and arrangement and wise and efficient expenditure of public funds.*
 6. *Public utilities such as sewage disposal and water supply and other public improvements.*
 7. *Recreation.*
 8. *The use of resources in accordance with their character and adaptability.*

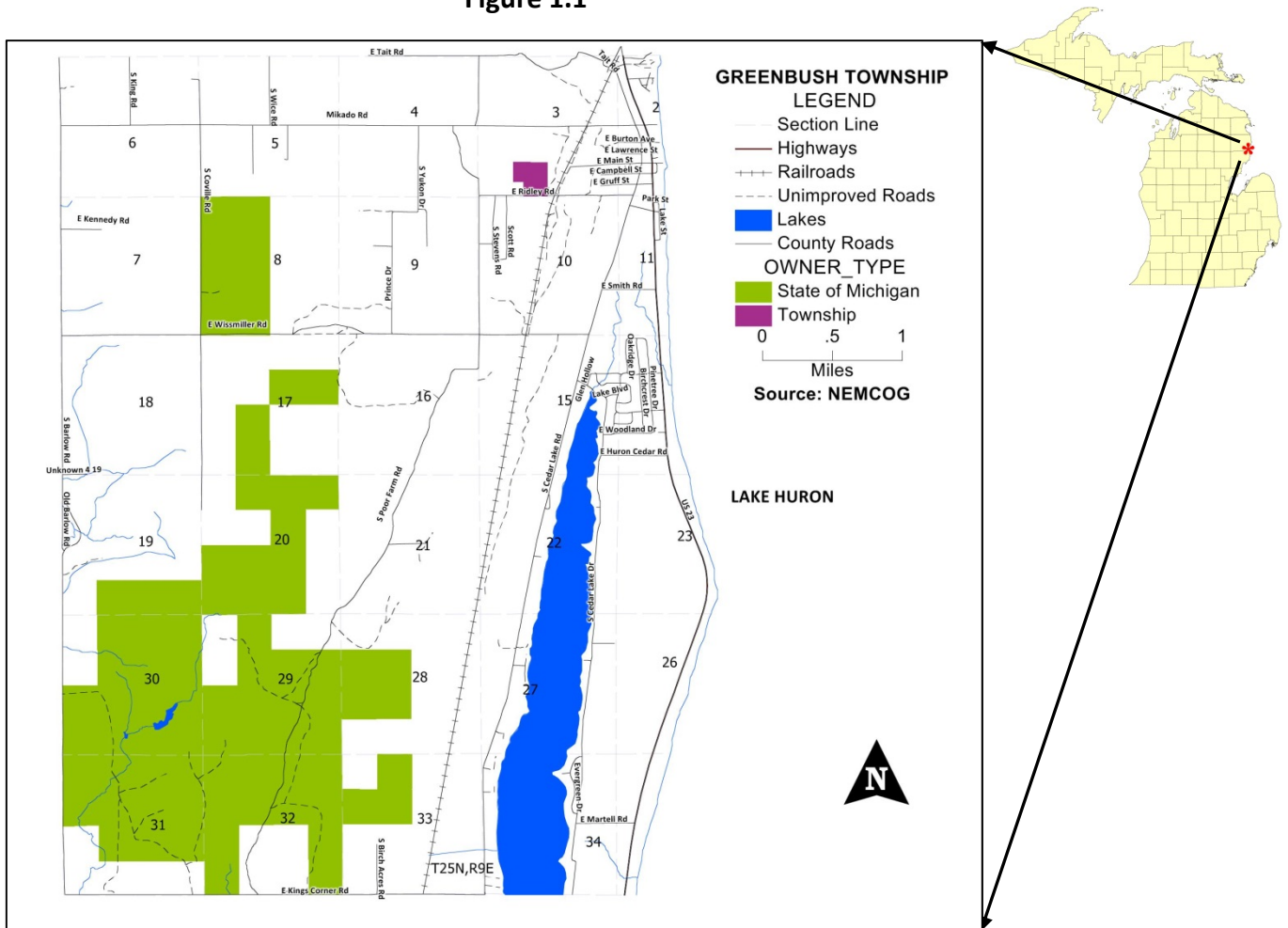
This plan presents background information on social and economic data, natural resources, existing community services and facilities, and existing land uses. The background information is used to identify important characteristics, changes and trends in Greenbush Township. A community survey and special community workshop were used to gather input from residents and landowners. Based on information gathered at this workshop and the background data, the Township Planning Commission developed goals and objectives. These goals and objectives, along with a series of maps including soils, ownership, existing land use, and zoning, provide the basis for the Future Land Use Map. The future land use map recommends locations for various types of future development within the Township.

The Master Plan was developed by the Greenbush Township Planning Commission with the assistance from the Northeast Michigan Council of Governments (NEMCOG). This plan looks at a twenty year planning horizon, with required revisits every five years or sooner if needed. A series of planning workshops were held over the two-year period. All workshops were open meetings with public welcomed and encouraged to comment on the plan.

Location and Regional Setting

Greenbush Township is located in the southeastern corner of Alcona County, in the northeastern region of Michigan’s Lower Peninsula. The Township is 4.5 miles by 6 miles and for a total of 26 square miles. Water resources are integral to the township’s quality of life given its eastern boundary is Lake Huron and portions of Cedar Lake are located in the township. Residential development is clustered around Cedar Lake and Lake Huron with a high percentage being seasonal dwellings. The prevalent land cover is lowland and upland forests. US-23 traverses the eastern part of Greenbush Township and is used by residents to access services in Tawas and Alpena..

Figure 1.1



The Status of Planning and Zoning in Greenbush Township

Over three decades ago, the Township of Greenbush established a planning commission and developed its first master plan. Following the master plan the township exercised its legal right to establish and administer local zoning as authorized by the Township Rural Zoning Act (PA 184 of 1943.) A zoning ordinance regulating land use activities was enacted by the Greenbush Township Board. The ordinance has been amended several times since its initial adoption with the most recent being a major update in 2015. The ordinance has provided guidance in regulating the location, density and standards for local development. Greenbush Township re-established a Planning Commission under State of Michigan Public Act 33 of 2008, as amended.

Greenbush Township has recognized the importance and need for developing an updated Master Plan in compliance with the Michigan Planning Enabling Act, P.A. 33 of 2008. Two key issues are to provide a legal foundation for the Township Zoning Ordinance and to manage development within the Township. By documenting existing conditions such as environment, socio-economic, community services, transportation, recreation, and land use within a master plan, the Township will be able to formulate appropriate land use goals and policies to guide development and serve as the basis for enforceable zoning. The master plan will in turn be used as a basis for re-examining the Township's zoning districts and land use development controls.

History of Greenbush

By 1854 land hunters swarmed upon Lake Huron shores to locate pine for the government. Morris and McDougal of New York state were to buy land near Greenbush. They began their lumbering operation along the bluff where the Greenbush Golf Course is now located. The camp became known as McDougal's Landing. William Conklin from New York built the first sawmills in 1867. The mill was located below the hill where the Greenbush Inn once stood. By 1868 lumber and fishing brought many families to the area. School began in 1869. A school house was built in 1870 and soon the Village of Greenbush began.

In 1869 Alcona was organized as a county. Greenbush Township was one of the first three townships to organize. The other two were Harrisville and Alcona. A store was built in 1865 with a post-office in the back. The Town Hall was built in 1879 and is still in use. William Conklin was the first Greenbush Supervisor. A solid dock was constructed in 1871 at the end of Main Street, and extended one quarter of a mile into Lake Huron. The new dock was used to load lumber directly onto ships and was used by commercial fishermen for boat docking. The dock enabled Greenbush to become a refueling station for ships traveling Lake Huron.

Greenbush and Harrisville were connected by telephone in 1885. Long distance telephone service was added in 1903. Electricity generated by dams located on the AuSable River was brought into the community in 1917. In 1901, the D&M Railroad ran west of the community of Greenbush and a depot was built for passenger and freight service. Passenger service ran until the 1950's.

Township of Greenbush Master Plan

In 1905 Carl E. Schmidt of Detroit bought thousands of acres of land and families followed. He developed Greenbush along Lake Huron. Many homes were built in the village. The Federal Land and Gravel Co. built their first cook-camp around 1912. Automobiles appeared in 1913. "City Folks" came to Greenbush around 1915 to build summer homes.

The Michigan Cedarcraft Company of Greenbush built a factory on Depot Street, creating rustic furniture and cabins. Carl E. Schmidt was the owner. In 1930, a new shoreline drive was proposed. Schmidt gave his land right-of-way bordering Lake Huron. Scenic Route 23 was completed in 1937 to Alpena, opening the area to business and tourism.

Chapter 2: Socio-Economic Profile

Population

The US Census showed that Greenbush Township experienced a population six percent decrease of its population (loosing 90 year round residents) from 2000 to 2010. In fact, all communities in Alcona County experienced population losses during the past decade, with the county as a whole loosing 777 year round residents. **See Table 2.1.** With an area of 26.1 sq. mi., the township has a population density of 54.2 persons per square mile. By comparison, the County has a population density of 15.8 persons per square mile.

In comparison, the highest percentage losses were experienced by Millen Township (12.7 percent), Alcona Township (11.1 percent), Mitchell Township (11.1 percent), and Curtis Township (10.3 percent). While Curtis Township and Alcona Township lost the highest number of people (142 and 121 respectively). Haynes Township experienced the lowest percentage of population loss of only two people.

Municipality	2000 Population	2010 Population	Percent Change	Numeric Change
Greenbush Township	1,499	1,409	-6.0%	-90
Alcona Township	1,089	968	-11.1%	-121
Caledonia Township	1,203	1,161	-3.5%	-42
Curtis Township	1,378	1,236	-10.3%	-142
Gustin Township	832	795	-4.4%	-37
Harrisville Township	1,411	1,348	-4.5%	-63
Hawes Township	1,167	1,107	-5.1%	-60
Haynes Township	724	722	-0.3%	-2
Mikado Township	1,043	947	-9.2%	-96
Millen Township	463	404	-12.7%	-59
Mitchell Township	396	352	-11.1%	-44
City of Harrisville	514	493	-4.1%	-21
Village of Lincoln	364	337	-7.4%	-27
Alcona County	11,719	10,942	-6.6%	-777
Source: U.S. Bureau of the Census				

Seasonal Population

In 2010, the Census reported that 45.5 percent of the housing units in Greenbush Township were classified as seasonal. Because the decennial U.S. Census is conducted in April, the numbers only reflect those persons who live in the county on a year-round basis, and persons owning the seasonal residences are not “counted” in the township. It is understood the

summer population in the township is significantly higher than the population reported in the US Census. However, obtaining accurate numbers of seasonal residents and tourists is difficult. A rough estimate of the number of county seasonal residents can be calculated by multiplying the number of seasonal housing units (680) by the township's average number of persons per household (2.08), for a total of 1,414 seasonal persons. This figure does not include those seasonal visitors or tourists staying in area motels, campgrounds or family homes. Therefore, it is quite possible the population can double during peak summer vacation times. This temporary spike in population increases the need for public safety and services.

Age Distribution

2010 Census data shows that 69 percent of the township’s population was 45 years old or older. This percentage has increased over the past few decades and is likely to continue as current residents age in place. Combined with an out-migration of younger families and an in-migration of retirees, the median age for the township is increasing at a higher rate than the county, State of Michigan and US. The median age of residents in Greenbush Township increased from 51.7 to 57.9 during the period 2000-2010, (see **Table 2.2**). By comparison, Alcona County increased from 49 to 55.2 and the State’s median age increased from 35.5 to 38.9 years during the period 2000-2010. Furthermore, the median age of the township is 20 years older than the US.

Governmental Unit	2000	2010
Greenbush Township	51.7	57.9
Alcona County	49.0	55.2
Michigan	35.5	38.9
United States	35.3	37.2
Source: U. S. Bureau of the Census		

In conclusion, shifts in the township’s demographic make-up are changing the population structure. Long term trends indicate the median age will continue to increase at a faster rate than the State of Michigan and US. The rate has increased with the down turn in the economy, as young families move to other areas for employment. An aging population needs access to social and medical services. The community’s emergency response services will likely experience an increase in demands.

Household Characteristics

Table 2.4 presents information on household characteristics gathered in the 2010 US Census. Information includes total number of households, average household size, householder living alone, householder 65 years & older living alone, and households with an individual 65 years & older. According to the 2010 Census, of the 676 households in Greenbush Township, 203 were reported as householders living alone. Of the 203 households, there were 112 householders living alone and 65 years and older. The average household size was 2.08 as compared to Michigan where the average household size was 2.49.

Township of Greenbush Master Plan

Table 2.3													
Age Distribution By Municipality For Alcona County - 2010													
Community	< 5 Yrs.	%*	5-19 Yrs.	%*	20-24 Yrs.	%*	25-44 Yrs.	%*	45-64 Yrs.	%*	65 Yrs. & >	%*	Median Age
Greenbush Township	53	3.8	148	10.5	32	2.3	200	14.1	482	34.2	494	35.0	57.9
Alcona Township	18	1.9	89	9.2	23	2.4	96	9.9	299	30.9	443	45.8	63.0
Caledonia Township	32	2.8	165	14.2	32	2.8	173	14.9	363	31.2	396	34.2	56.7
Curtis Township	33	2.7	155	12.6	35	2.8	161	13.0	437	35.4	415	33.6	56.4
Gustin Township	42	5.3	150	18.9	33	4.2	168	21.2	242	30.4	160	20.1	45.3
Harrisville Township	46	3.4	188	13.9	34	2.5	195	14.4	483	35.9	402	29.8	53.8
Hawes Township	31	2.8	168	15.2	35	3.2	182	16.5	378	34.1	313	28.3	52.9
Haynes Township	14	1.9	101	14.0	16	2.2	100	13.8	270	37.4	221	30.6	56.1
Mikado Township	27	2.9	174	18.4	32	3.4	165	17.4	342	36.1	207	21.8	49.4
Millen Township	9	2.2	30	7.4	9	2.2	52	12.9	172	42.5	132	32.6	56.6
Mitchell Township	8	2.3	25	7.0	9	2.6	38	10.8	160	45.5	112	31.9	59.4
City of Harrisville	18	3.7	73	14.9	14	2.8	99	20.1	143	29.0	146	29.7	51.6
Village of Lincoln	18	5.3	57	16.8	23	6.8	78	23.1	74	21.9	87	25.8	43.2
Alcona Co.	331	3.0	1,466	13.4	304	2.8	1,629	14.8	3,771	34.5	3,441	31.5	55.2
Michigan		6.0		20.8		6.8		24.7		27.9		13.8	38.9

*Figure shows the percentage each age grouping represents of the local unit's total population.
Source: U.S. Bureau of the Census

Township of Greenbush Master Plan

Table 2.4					
Greenbush and Alcona County: Household Characteristics - 2010					
MUNICIPALITY	Total Households	Avg. Household Size	Householder Living Alone	Householder Alone 65 yrs. & Older	Household w/ Individual 65 yrs. & older
Greenbush Twp.	676	2.08	203	112	336
Alcona Township	496	1.95	158	91	292
Caledonia Twp.	534	2.17	145	85	265
Curtis Township	595	2.08	189	94	285
Gustin Township*	339	2.33	108	59	124
Harrisville Twp.	588	2.19	149	71	237
Hawes Twp.*	497	2.22	136	76	215
Haynes Township.	342	2.11	98	50	151
Mikado Township	407	2.31	107	39	142
Millen Township	200	2.00	68	28	87
Mitchell Twp.	184	1.91	63	30	79
City of Harrisville	231	1.96	89	47	106
Village of Lincoln	160	2.11	69	37	66
Alcona County	5,089	2.13	1,513	782	2,319
Michigan	-----	2.49	-----	-----	-----
Source: U.S. Bureau of the Census					
* Count includes parts of Lincoln					

School Enrollment and Educational Attainment

According to the *2009-2013 American Community Survey 5-Year Estimates*, 197 persons in Greenbush Township over the age of three years were enrolled in school, 140 in kindergarten to 12th grade, and 29 in college. Of the 1,268 persons 25 years and older, 90.4 percent were high school graduates, while 6.0 percent attended school into the 9th- 12th grade with no diploma and 3.6 percent had completed less than the 9th grade. Thirty percent had received some college with no degree, 8.2 percent had Associate's degrees, 9.9 percent had earned a Bachelor's degree, and 6.0 percent had earned a graduate or professional degree. Greenbush Township has a greater percentage of residents with a bachelor's degree or higher than Alcona County, but a lower percentage than the State as a whole. (**Table 2.5 & Figure 2.2**).

Township of Greenbush Master Plan

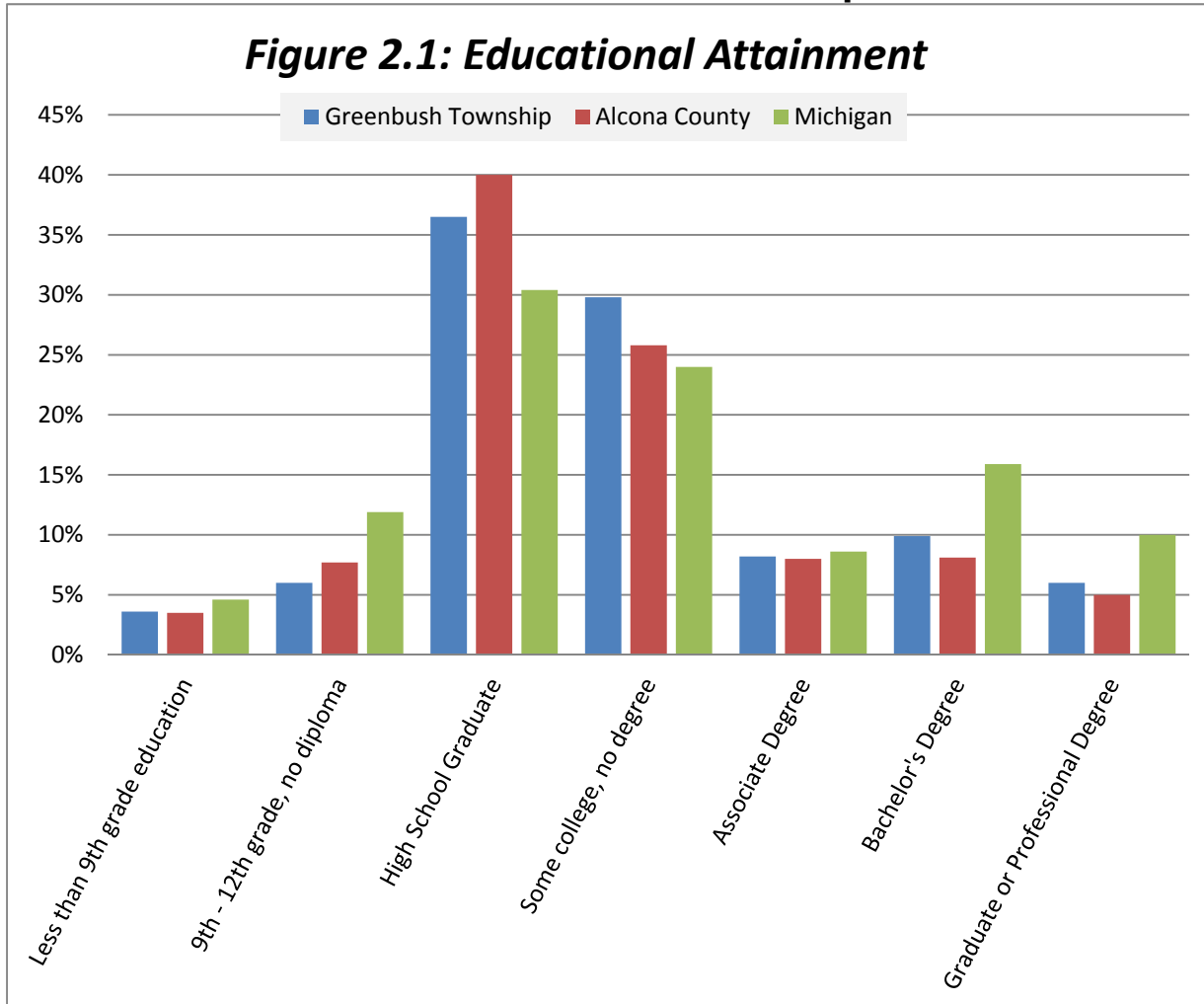
Table 2.5 Educational Attainment			
	Greenbush Township	Alcona County	State of Michigan
Population 25 years and over	1,268	8,717	6,594,586
Less than 9 th grade education	3.6%	3.5%	3.4%
9 th – 12 th grade, no diploma	6.0%	9.6%	7.7%
High school graduate	36.5%	40.0%	30.4%
Some college, no degree	29.8%	25.8%	24.0%
Associate degree	8.2%	8.0%	8.6%
Bachelor's degree	9.9%	8.1%	15.9%
Graduate or professional degree	6.0%	5.0%	10.0%
Percent high school graduate or higher	90.4%	86.9%	88.9%
Percent bachelor's degree or higher	15.9%	13.0%	25.9%
Source: 2009-2013 American Community Survey 5-Year Estimates			

Disability Status

Data shown in **Table 2.6** from the *2009-2013 American Community Survey 5-Year Estimates* gives an indication of disabled people who reside in Greenbush Township, Alcona County and Michigan. 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. The percent population of persons with disabilities is much higher for Greenbush Township and Alcona County than Michigan as a whole. The same is true for the population 18 to 64 years of age. Statistics for 65+ years are comparable for all three entities.

Table 2.6 Alcona County Disability Status of Civilian Non-Institutionalized Persons					
LOCAL UNIT	% Disabled persons	% Disabled under 5 Years	% Disabled 5-17 Years	% Disabled 18-64 Years	% Disabled 65+ Years
Greenbush Township	21.8%	--	--	16.5%	36.9%
Alcona County	21.7%	--	7.2%	18.6%	33.9%
Michigan	13.7%	0.8%	6.3%	11.9%	36.5%
Source: 2009-2013 American Community Survey 5-Year Estimates					

Figure 2.1: Educational Attainment



Housing Characteristics

The US Census reports a wide variety of housing characteristics. Housing characteristics for Alcona County are found in **Table 2.7**. In 2010, there were 1,496 housing units in the Greenbush Township. The total number of units includes single and multiple family housing types. Certain characteristics contrast sharply with the State as a whole. For example, 45.5 percent of the housing units in Greenbush Township were seasonal as compared to 47.2 percent in Alcona County and 5.8 percent statewide. Within the County the percent of seasonal housing units ranged from 18.2 percent in the City of Harrisville to 72.3 percent in Mitchell Township. In Greenbush Township, 45.2 percent (676 out of 1,496) of the total were occupied.

Of the occupied housing units 91.9 percent (621 of the 676) were owner occupied as compared to 72.1 percent in the State as a whole. The owner vacancy rates in the township were 6.6 percent, approximately three times higher than in 2000.

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Table 2.7						
Housing Counts and Occupancy Status in Alcona County						
Area Name	2010					
	Total	Occupied	Vacant	Percent Vacant	Seasonal	* Percent Seasonal
Greenbush Township	1,496	676	820	54.8	680	45.5
Alcona Township	1,366	496	870	63.7	806	59.0
Caledonia Township	1,155	534	621	53.8	576	49.9
Curtis Township	1,700	595	1,105	65.0	1,013	59.6
Gustin Township	497	339	158	31.8	94	18.9
Harrisville Township	874	588	286	32.7	205	23.5
Hawes Township	1,071	497	574	53.6	489	45.7
Haynes Township	627	342	285	45.5	240	38.3
Mikado Township	653	407	246	37.7	192	29.4
Millen Township	540	200	340	63.0	314	58.1
Mitchell Township	765	184	581	75.9	553	72.3
City of Harrisville	329	231	98	29.8	60	18.2
Village of Lincoln	236	160	76	32.2	47	19.9
Alcona County	11,073	5,089	5,984	54.0	5,222	47.2
* Percent of total housing - Source: 2010 US Census Bureau						

According to the US Census, 3.8% of the housing in Greenbush Township was built prior to 1939, and 25 percent was built between 1940 and 1959. Much of the construction occurred between 1960 and 1979 (45.4%) and 1980 and 1999 (26.7%). Information reported in the *2009-2013 American Community Survey 5-Year Estimates* found 62.3 percent of the housing units were heated with natural gas, 15.8 percent heat with bottled, tank or LP gas and 6.7 percent heat with electricity and 15.2 percent heat with wood or other fuel. Data from *2009-2013 American Community Survey 5-Year Estimates* found the median house value was \$131,100 in Greenbush Township as compared to \$102,800 for Alcona County and \$121,700 for the entire State.

Income

According to the U.S. Census, American Community Survey, Greenbush Township's median household income is \$42,529, which is higher than the County, but lower than the State. The same patterns can be found for Median Family Income and Per Capita Income where the township is higher than Alcona County, but lower than Michigan. **See Table 2.8.**

Township of Greenbush Master Plan

Table 2.8			
Median Household Income for Greenbush Township, Alcona County & State			
	Greenbush Township	Alcona County	Michigan
Median Household Income	\$42,529	\$37,189	\$48,411
Median Family Income	\$49,141	\$45,424	\$60,793
Per Capita Income	\$25,595	\$22,719	\$25,681
Source: 2009-2013 American Community Survey 5-Year Estimates, U.S. Census Bureau			

Poverty

Information from the American Community Survey shows poverty rates in Greenbush Township, Alcona County and Michigan (**Table 2.9**). The percent of families, individuals and individuals 65 years and over living in poverty is lower in the township than in Alcona County and Michigan. However, the families with female head of household, the percentage is much higher in Greenbush Township than the other two entities.

Table 2.9			
Poverty Rates: Greenbush Township, Alcona County and Michigan			
	Greenbush Township	Alcona County	Michigan
Families	10.0%	11.1%	12.0%
Families with female head of household	43.2%	26.4%	34.3%
Individuals	13.6%	15.1%	16.8%
Individuals 65 years and over	7.5%	8.2%	8.2%
Source: 2009-2013 American Community Survey 5-Year Estimates, U.S. Census Bureau			

Labor Force

Employment and Unemployment

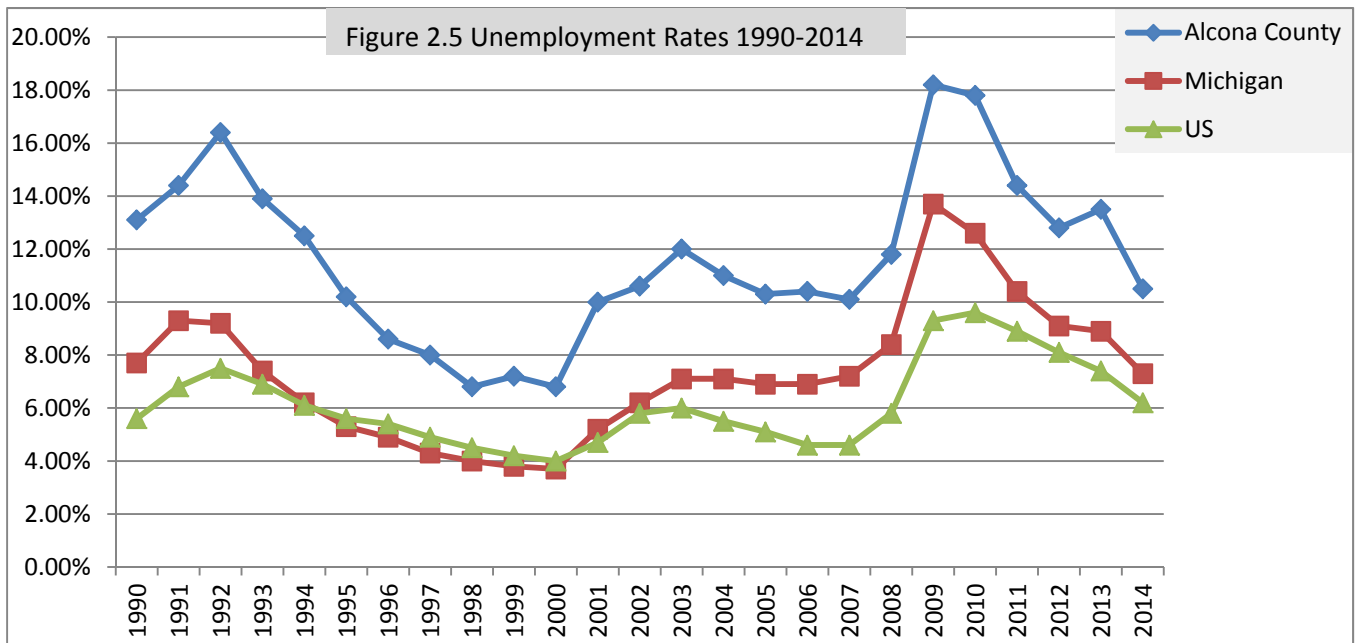
The civilian labor force is defined as all civilian individuals over age 16 who are employed or actively seeking employment. Labor force numbers can change rather quickly in response to economic conditions. During prolonged periods of unemployment, unsuccessful job seekers can drop out of the work force by going back to school, leaving the area in search of work elsewhere or by stopping the search for work.

Table 2.10 presents information on labor force, employment and unemployment for Alcona County from 2004 to 2014. Unemployment rates experienced a significant increase in 2009 as a result of the “Great Recession” in 2008. Jobless rates peaked in 2009 and have dropped to the typical long term rates. The number of persons in the labor force and employed began to fall in 2006. The economic downturn continued to feed this trend. Even though jobless rates have fallen to 10.5% in 2014, the labor force and number of person employed has not returned to 2006 levels. As seen in **Figure 2.5**, unemployment rates in Alcona County generally mirror those in the State and U.S., however, they are consistently at a higher level.

Township of Greenbush Master Plan

Year	Labor Force	Employment	Unemployment	Jobless Rate
2014	3,836	3,435	401	10.5%
2013	3,817	3,303	514	13.5%
2012	3,717	3,242	475	12.8%
2011	3,808	3,260	548	14.4%
2010	3,880	3,188	692	17.8%
2009	4,353	3,563	791	18.2%
2008	4,361	3,845	516	11.8%
2007	4,339	3,901	438	10.1%
2006	4,481	4,013	468	10.4%
2005	4,316	3,871	445	10.3%
2004	4,197	3,736	461	11.0%

Source: Michigan Labor Market Information



Wage and Salary Employment

For residents of the township and county, the largest employment sectors are retail trade, services and public administration. Note, the information reflects where township residents work, not job located within the township. Manufacturing employment in 2014 was 9.7 percent of the wage and salary employment. Employment in "other" sectors ("other" includes construction, transportation and communications, wholesale trade, mining & finance, insurance and real estate) accounted for much lower percentages of the wage and salary employment (**Table 2.11**).

Township of Greenbush Master Plan

Table 2.11 Total Employees by Major Employment Type (2014)				
Category	Greenbush Township		Alcona County	
	Total	Percent	Total	Total
Agricultural, Forestry, Fishing (SIC Range 01-09)	2	1.61	52	2.04
Mining (SIC 10-14)	0	0.00	4	0.16
Construction (SIC 15-17)	13	10.48	137	5.37
Manufacturing (SIC 20-39)	12	9.68	189	7.41
Transportation and Communications (SIC 40-49)	12	9.68	83	3.26
Wholesale Trade (SIC 50-51)	3	2.42	35	1.37
Retail Trade (SIC 52-59)	18	14.52	542	21.26
Finance, Insurance And Real Estate (SIC 60-69)	5	4.03	124	4.86
Services (SIC 70-89)	35	28.23	942	36.96
Public Administration (SIC 90-98)	21	16.94	423	16.59
Unclassified (SIC 99)	0	0.00	18	0.71
Source: NEMCOG				

Commuting to Work

The vast majority of residents of the Greenbush Township drive alone to work (**Table 2.12**). According to the *2009-2013 American Community Survey 5-Year Estimates*, 7.0 percent of workers worked from home, but due in advancements in technology allowing greater flexibility in worker location in the past decade, that number has increased and will likely continue to increase. The mean travel time to job was 19.3 minutes which shows many individuals travel outside the township for work.

Table 2.12 Greenbush Township Work Commute		
Mode of Transportation	Number	Percent
Drove Alone	76	75.5%
Carpooled	3	9.6%
Public Transportation (includes taxi)	0	0.9%
Walked	26	6.3%
Worked at home	15	7.0%
Source: 2009-2013 American Community Survey 5-Year Estimates U.S. Bureau of the Census		

Chapter 3: Community Services and Facilities

Key factors that contribute to the quality of life of a community are the type and variety of services available to residents and visitors. Unlike more populated communities, smaller rural communities do not have the financial resources to provide many of the services that would normally be considered essential. In the case of fire and ambulance, many rural communities work cooperatively with adjacent communities to provide essential services. The potential location for future development should be analyzed according to the availability of certain utilities, services or facilities. Although these services may be sufficient for the needs of the current population, future development may increase the demand to upgrade or expand the services and facilities to maintain a satisfactory living environment.

This chapter will explore the location and extent of existing services. Services are provided in many ways by public or quasi-public agencies or by private enterprise. Each service provider makes the service available to the best of its capabilities. The resulting service levels determine the capacity of a given location to attract various types of land development.

Township Government

The Greenbush Township Hall is located at 5039 Campbell Rd. in Greenbush. Current local officials are Edward Roddy, Supervisor; David W. Dailey, Clerk; Patricia Dailey, Treasurer; Gary Abraham, Trustee; and Sara J. Olin, Trustee. The Zoning Administrator is C. Lee Major, Jr. The Township has a five member Planning Commission and a seven member Zoning Board of Appeals.

Water Supply and Sewage Disposal

Public drinking water is not available in Greenbush Township. Residents rely on on-site private wells for domestic drinking water. Private drinking water wells are regulated by the District Health Department under the Public Health Code. Wells for facilities such as schools or motels serving the public fall under regulations of the Federal and State Safe Drinking Water Acts, where isolation distance, minimum yield and water quality testing requirements are more stringent than for a private residential well.

Residents throughout the Township rely on private on-site septic tanks and drain-field sewage systems. For such systems to function properly, a suitable distance must be maintained from all types of water sources including groundwater supplies, lakes, rivers and wetlands, and more importantly, the drain-field must have appropriate soil conditions to function properly. If these criteria are not fulfilled, surface water sources and groundwater supplies could be in danger of receiving nutrients, bacteria and other pollutants.

Utilities

Natural gas service is provided by DTE in more densely populated areas of the Township. Consumer's Energy provides electricity to the Township.

Frontier and Ameritech provide local telephone service to Greenbush Township. Charter Cable provides cable television service in more populated areas of the Township. Residents outside of cable service area must rely on satellite TV or TV antennas.

Roads

The road pattern is attributed to natural features, such as extensive wetlands, old shorelines, and lakes. The northern one third has standard north-south and east-west roads that tend to follow section lines. Roads in the eastern parts of the Township relate to Cedar Lake, Lake Huron and US-23. Subdivisions, adjacent to Cedar Lake, have many local roads. Roads are sparse in the remaining parts of the township, primarily due to extensive wetland complexes. Roads in this area tend to be unimproved dirt roads with seasonal and two tracks common. As well the southern regions have essentially no east-west roads, except for Kings Corner Road, which follows the southern boundary of the Township.

The Michigan Center for Geographic Information maintains the Framework data set that contains up-to-date road information for each county. According to the Framework, in Greenbush Township there are 82 miles of road including over 6.2 miles of state trunkline (US-23), and 12.8 miles of county primary roads (Mikado Road, Kings Corner Road and Barlow Road), see **Figure 3.1**. There are over 38 miles of county local roads; 5.3 miles of unclassified county roads and approximately 22 miles of trails and two-tracks. The Alcona County Road Commission is the agency responsible for maintenance, snow removal and improvements.

Public Transit

There is no countywide dial-a-ride bus service available in Alcona County. However, Thunder Bay Transportation, based in Alpena, provides limited specialized transportation services in the County. The Thunder Bay Regional Ride, in cooperation with medical care facilities in the region, provides inter-county transportation for medical and other needs. Limited statewide passenger service is available from Indian Trails Bus Lines. The County is supporting a multi-county transportation authority. The system will function under Thunder Bay Transportation and is designed to provide a higher level of public transportation than currently available in the County.

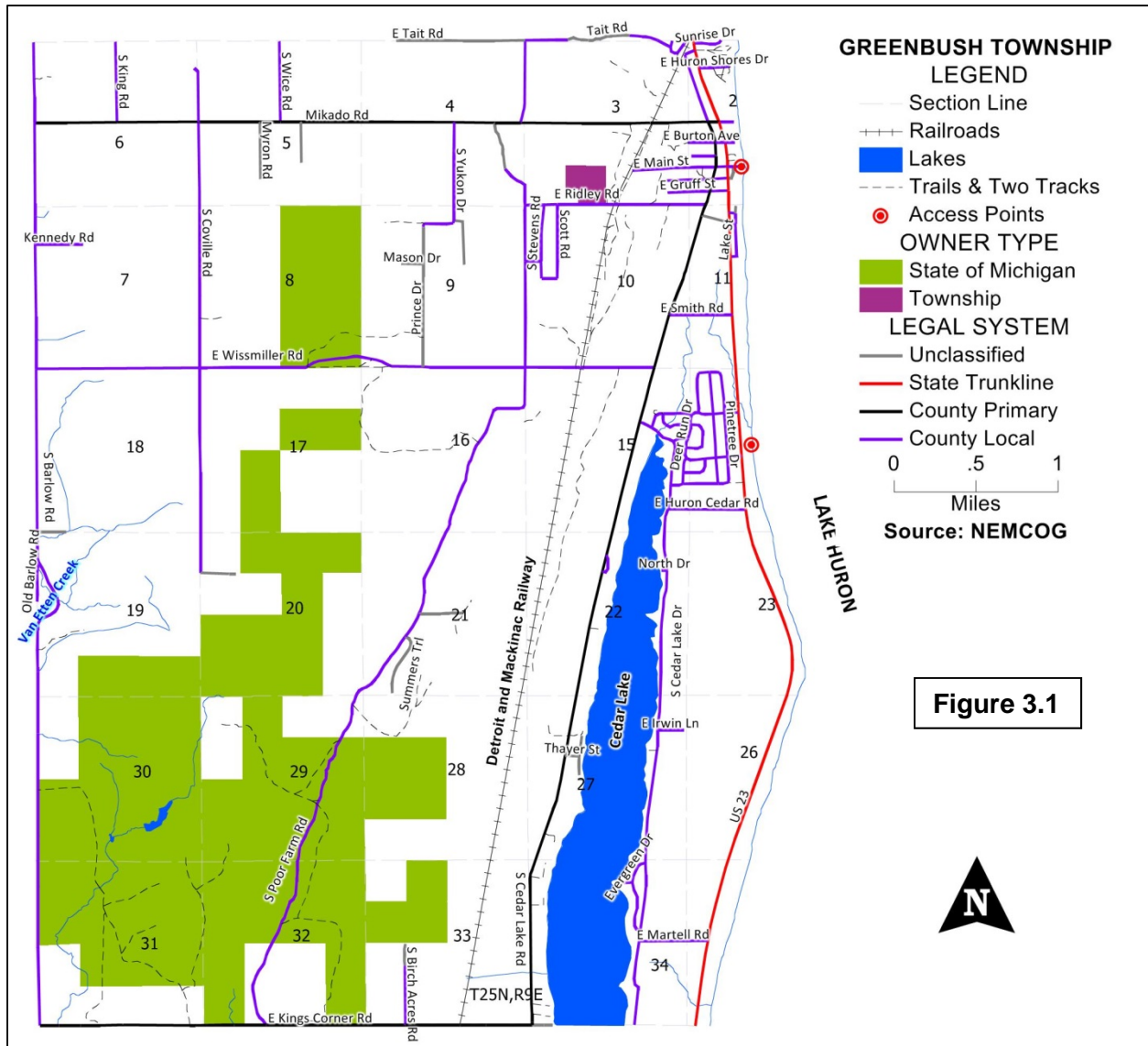
Air Service

Alcona County's only public airport is located in the City of Harrisville, handling small aircraft. Regional air service is available at Alpena County Regional Airport (Phelps Collins) which is a U.S. Customs Port of Entry. Regional airports are located in Traverse City, Midland, Grand Rapids and Flint. Large aircraft maintenance and air freight service is provided at the Wurtsmith Airport in Oscoda. The Michigan Air National Guard maintains a Combat Readiness Training Center at the airport in Alpena. Air-freight service is provided by United Express, United Parcel Service and Federal Express.

Railroads

Lake State Railroad provides daily freight handling service to Alpena.

Township of Greenbush Master Plan



Marine

There is Great Lakes port facility located in the City of Harrisville. The Harrisville Harbor provides docking facilities with 195 boat slips, fuel and pump-out facilities. Public restrooms/shower facilities, volleyball courts, horseshoe pits, pavilion, grills, picnic tables and playground are associated with the harbor. This recreational harbor is part of the State of Michigan’s Harbor of Refuge network.

Public Land, Public Facilities, & Recreation

The Mackinaw State Forest covers nearly five square miles mostly in the south central part of the Township. Much of the land is classified as wetlands, lowland conifers and lowland hardwoods, and is primarily for hunting, wildlife viewing, timber production, and wildlands recreation, see **Figure 3.1**. Other public ownership includes two Greenbush Township parks. A 34-acre park located south and west of Greenbush has picnicking facilities, ball fields, a

children's playground and nature trails. The other park is located on Cedar Lake and has a swimming beach, picnic area, and restrooms. A designated Lake Huron beach access with a paved parking lot is located off US-23 in Section 14. This site provides access for people interested in walking the beaches and is a prime kayak access site for the Huron Shores Blueways coastal water trail. The end of Main Street is the other kayaking access point for the coastal water trail.

Schools

Greenbush Township, Curtis Township and a large part of Mikado Township are located in the Oscoda Area School District. School facilities are located in the community of Oscoda in Iosco County. The Oscoda School District is located in the Iosco Intermediate School District. The Greenbush Academy is a church school, located in the community of Greenbush. Some students attend Alcona Schools and Hale Area Schools through the "school of choice" program.

Kirtland Community College (KCC) located in Roscommon and Alpena Community College (ACC) located in Alpena are two-year institutions serving the higher education needs of area residents. Alpena Community College's main campus is located in City of Alpena. ACC's Huron Shores Campus in Oscoda serves in the surrounding area. ACC offers two-year degrees, one-year certificates, and customized training. The college offers Associate in Arts, Associate in Science, Associate in Applied Science and Associate in General Studies Degrees.

Kirtland Community College offers associate degrees and certificate programs in automotive, business, cosmetology, criminal justice, health occupations, industrial technologies, and office information systems as well as associate/transfer degrees in arts, fine arts, business, administration, criminal justice, computers and science.

The Madeline Briggs University Center at Alpena Community College houses offices of accredited four-year institutions who are cooperating with ACC to make completion programs for selected bachelor's and master's degrees available in Northeast Michigan. These institutions include Spring Arbor University, Central Michigan University, and Northwood University.

Libraries and Museums

The Alcona County Library has branches located in Harrisville, Lincoln, Caledonia and Mikado, with the Harrisville Branch serving as the "headquarters" branch.

The Greenbush School is a one-room school and an official registered Michigan historic site, having served the community from 1870 until 1947. While not located in the Township, the Alcona Historical Society operates three museums: Sturgeon Point Lighthouse, Bailey School and the Lincoln Depot.

Medical Facilities

There are no medical facilities located in Greenbush Township. Clinics, doctor and dentist offices are located in other communities such as Oscoda, Tawas, Harrisville, Lincoln and Alpena. The Alcona Health Center is located in Lincoln and the VA Health Center is located in Oscoda.

For health care services not available at these facilities, residents travel to Alpena Regional Medical Center in Alpena, Munson Healthcare Hospital in Grayling, Tollfree Memorial Hospital in West Branch, Tawas St. Joseph Hospital in Tawas City and Munson Medical Center in Traverse City.

Health Services

District 2 Health Department, including home health aide and physical therapy, provides public health care services. Hospice services may be obtained from Hospice of Northeast Michigan in Alpena and Huron Home Health Care and Hospice in Tawas City. Lincoln Haven Health Care Center provides 24-hour nursing care with a family atmosphere. Alcona County Senior Citizens Center in Lincoln provides senior citizen services.

Northeast Michigan Community Mental Health provides support services to developmentally disabled persons as well as persons needing mental health services. The Northeast Michigan Community Mental Health service area covers Alcona, Alpena, Montmorency and Presque Isle Counties.

Public Safety

There are no municipal law enforcement agencies in Greenbush Township. The law is enforced by the Alcona County Sheriff’s Department and supplemented by the Michigan State Police, Alpena Post. The Michigan State Police added a satellite office in the Village of Lincoln in 1999. The Township of Greenbush has a constable who’s duties are liquor control and code enforcement.

Ambulance service is provided by Alcona County, which pays for the costs through the Ambulance Fund millage. There are currently two full time emergency medical service stations operating in Alcona County. Station 1 is located at 2600 E M-72, Harrisville MI 48740. Station 2 is located at 2300 S state, Glennie MI 48737. Both are currently rated at the advanced level.

Greenbush Township Fire Department fire hall is located on Campbell Road across the street from the township hall. The U.S. Forest Service is responsible for fire protection in the Huron National Forest and the Department of Natural Resources (DNR) is responsible for fire protection on State forested land. Both the Forest Service and DNR work closely with local fire fighters whenever the danger of woodland and urban fires is elevated. Additionally, all fire departments have mutual aid with each other. The County has an “all encompassing:” mutual aid agreement with the adjoining counties of Iosco, Alpena, and Oscoda, which provides for assistance outside the realm of normal emergency services. There are no full time fire departments in Alcona County.

Greenbush Fire Department 2036 Campbell Rd Greenbush, MI 48738 Staff: 12 part paid Service Area: 28 sq. mi Population Served: 1,400
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Other Public Facilities

The Alcona County Courthouse and Alcona County Sheriff Department, with associated facilities, are located in the City of Harrisville. The Alcona County Road Commission offices and garage are located in the Village of Lincoln. There is a DNR field office, which is no longer open to the public, located in Lincoln.

Postal Service

Residents of the Township are served by the Oscoda Post Office. However, a satellite post office, located US-23 in Greenbush, has a ½ time employee and provides post office boxes and sells stamps.

Media

Residents are able to access local radio stations from Alpena, Harrisville, Oscoda, and Tawas. Central Michigan Public Radio Station also provides coverage in Alcona County. Television stations from Cadillac, Traverse City, Flint and Bay City provide local news and weather coverage. Cable television service is provided by Charter Communications. The Alcona County Review, located in Harrisville, is the newspaper of record. The Alpena News and Bay City Times provide regional news to county residents.

Chapter 4: Natural Resources

Overview

The greatest attractions for residents and visitors of northern Michigan are the area's environment and the rural nature of this portion of the State. Recreational activities such as hunting, fishing, golfing, snowmobiling, boating and a multitude of other outdoor activities attract people from other parts of Michigan, as well as from other states. Many long-time visitors decide to purchase a second home and eventually move to the area upon retirement. Because of the abundant outdoor recreation opportunities, the natural environment is a major aspect of the economic base and an income generator.

At the same time, the environment places constraints on human activities. Certain critical and sensitive parts of the natural landscape cannot be altered without causing impacts. Increased flooding can result from the filling of wetlands and increased soil erosion due to land clearing are but two examples. In long term planning it is essential for future development respect the different characteristics of the natural environment. Preserving the attractiveness of this part of the State, preventing potential hazards related to undue alteration of the land, and maximizing the economic benefits of the tourist and recreation industry are key to the sustainability of the community.

Climate

Typical of northern Michigan, the distinct four seasons offer an ever changing landscape. Long snowy, cold winters, and moderately warm summers are separated by a cool, green spring and a cool colorful fall. Located in the northeastern part of the northern Lower Peninsula, the eastern boundary of the township is formed by Lake Huron. Given this geographic location, the weather is influenced by the moderating effect of Lake Huron.

According to the USDA Soil Survey of Alcona County, the average annual precipitation is 29.46 inches (includes water equivalent of snowfall). Precipitation is heaviest during the summer months with 60 percent of the annual precipitation from April through September. The average annual snowfall is 49.5 inches. Records show a long term average of 93 days when there is at least one inch of snow on the ground. Of course, the number of days varies greatly from year to year. The average daily temperature ranges from 67.9 °F for the month of July to 20.0 °F during January. The average mid-afternoon relative humidity is 61 percent. Since humidity levels are highest at night, the average relative humidity at dawn is 83 percent.

Severe Weather

Data from the National Oceanic and Atmospheric Administration shows that from 1950 through 2011 there were 185 severe weather events recorded in Alcona County. Damages from these events in Alcona County and the surrounding region are estimated at nearly 13 million dollars.

Although relatively rare, tornados have occurred in Alcona County. The lower frequency of tornadoes occurring in Michigan may be, in part, the result of the colder water of Lake Over the past 49 years, 12 tornados touched down in Alcona County, causing over \$3,121,000 in property damage. Strong winds and thunderstorm winds are a common severe weather that affects Alcona County. Annually, thunderstorms will occur on an average of 24 days per year and on average one or two thunderstorms per year will have severe winds.

Winter weather hazards consisting of heavy snow, freezing rain and blizzards are the most prevalent seasonal hazards in Alcona County and can be expected to occur several times every year. Since 1993, 54 winter storm events, which included heavy snowstorms and blizzards, have been recorded in Alcona County. In 1993 heavy snowstorms, freezing rain and or blizzards occurred 8 times while in 1995 only one heavy snow storm was recorded.

Topography

Greenbush Township's is classified as relatively level with sandy ridgeline of higher ground running parallel to the Lake Huron shoreline. The highest point in the township has an elevation of 750 feet above sea level and is located in section 4, along Yukon Drive just south of Mikado Road. The lowest elevations are 577 feet above sea level at the shoreline of Lake Huron.

Geology and Landforms

The geology of Greenbush Township, as well as the entire northern Lower Peninsula, can be described in terms of the surface geology (glacial landforms created thousands of years ago) and bedrock geology (sedimentary bedrock laid down over 300 million years ago). The hills, valleys, wetlands, forests, lakes and rivers all attribute their presence and location in the township to the surficial and bedrock geology. This section will describe the quaternary geology (glacial and postglacial landforms) and the underlying bedrock geology.

Bedrock Geology

The foundation of the Lower Peninsula and parts of the Upper Peninsula, beneath the mantel of glacial deposits, consists of sedimentary bedrock formed in ancient seas between 200 and 500 million years ago. Over the 300 million years, sedimentary bedrock, located beneath the glacial deposits, was created during the Late Mississippian ages of the Paleozoic Era. The bedrock was formed in ancient seas which covered the area some 310- 345 million years ago. The shallow marine seas deposited layers of silt, clay, sediments, marine animals, plants, coral, and other calcareous materials. These deposits formed sandstone, shale, limestone, and dolomite bedrock.

The uppermost bedrock in Greenbush Township is Coldwater Shale. Layers of bedrock beneath the Coldwater Shale include Sunbury shale, Berea sandstone, Bedford shale and Antrim Shale. Antrim shale contains rich deposits of natural gas. In recent years, intensive exploration has resulted in numerous producing wells throughout the region.

Glacial Geology

Starting some 2 million years ago, during the Pleistocene Epoch, continental glaciers formed in the Hudson Bay area. Four times, over the two million year period, massive glaciers advanced south across what is today Michigan. The advancing glaciers scraped and broke apart bedrock of the Canadian Shield to the north and sedimentary bedrock of the Michigan Basin. The glacial ice, one to two miles thick, incorporated rocks and soil into the debris laden ice and pushed material in front of it. Each advance and retreat of these continental glaciers took over 100,000 years. Time periods between glacial activities, called interglacial periods, were much warmer and lasted over 300,000 years.

The last glacial period, called the Wisconsinan Period, created the landscape of hills, valleys, rivers, lakes, swamps we know today. When the debris laden ice melted, boulders, rocks, cobble, sand, gravel, silt, clay and loam were deposited across the landscape. In some areas the materials were deposited in unsorted masses called till plains, ground moraines and end moraines. Water flowing from the melting glaciers also sorted materials, creating outwash channels, sand deltas, kames and eskers. Fine materials, captured in the fast moving glacial meltwater, settled to the bottom of expansive glacial lakes creating lacustrine clay and silt plains. **Figure 4.1** shows the formation of glacial landforms.

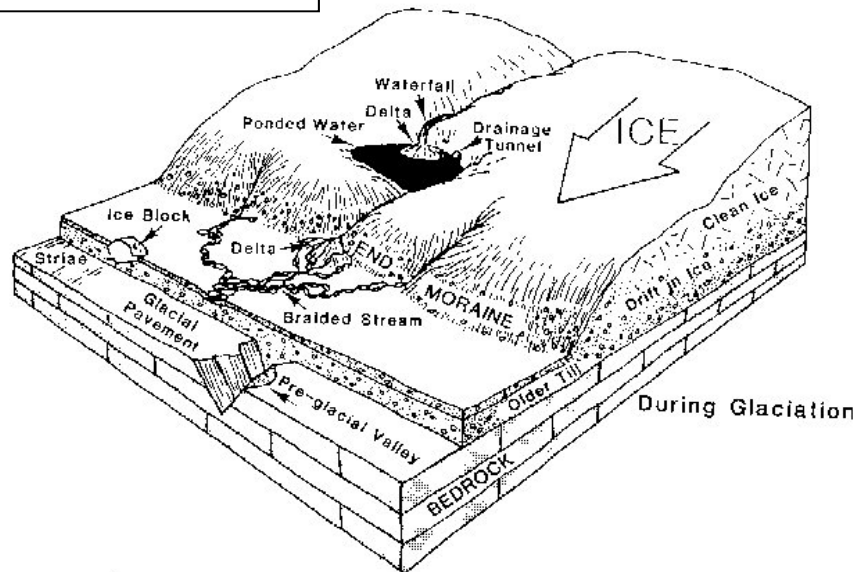
An area of ice contact outwash sand and gravel, deposited by meltwater streams in front of the end moraine or the margins of an active glacier, can be found in the northwestern part of the Township. This area consists of low hills and has the highest elevations in the township. See **Figure 4.2**.

As the continental glaciers melted, water flowed across the landscape creating landforms and pooling into the expansive pro and post glacial lakes. These emerging lake basins were the beginnings of our Great Lakes. During different periods, the glacial great lakes were both much higher and lower than the lake levels we have grown accustomed to in recent times. Subsequent to the glacial ice melting from Greenbush Township, it was inundated by high waters of Lake Algonquin (11,800 to 10,500 years ago, Lake Nipissing (6,000 to 4,000 years ago) and Lake Algoma 3,000 years ago. **Figure 4.3** shows the relative elevations of lacustrine or water borne deposits related to higher lake levels associated with glacial lakes. Landforms and soils in eastern part of the Township were heavily influenced by these different post glacial lake stages. Large areas of lacustrine sand and gravel are located west of Cedar Lake and in the community of Greenbush. Numerous sand and gravel mining operations have been located within these deposits. The land between Cedar Lake and Lake Huron is classified as dune sand, deposited long after the glacier melted and when the post glacial great lakes were receding.

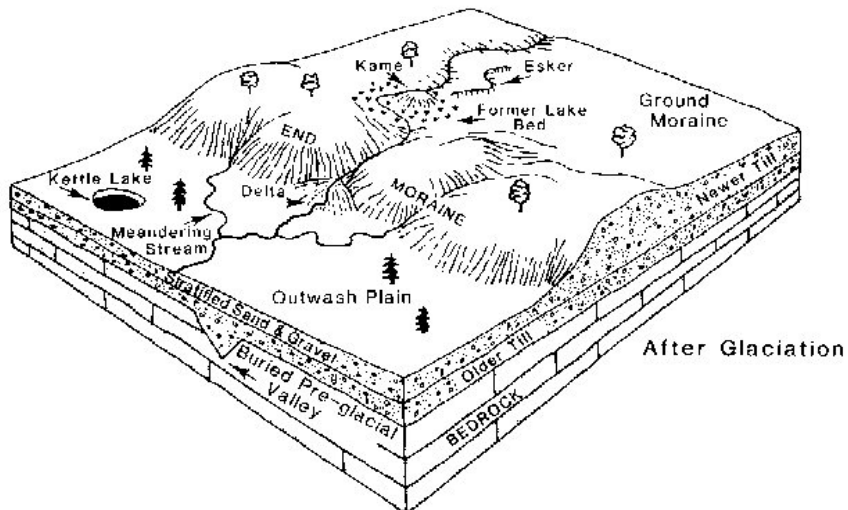
Some of the best examples of ancient glacial great lake shorelines can be found in coastal regions of Alpena and Alcona Counties. Dune and swale complexes are a series of alternating old beach ridges and linear depressions that parallel the Lake Huron shoreline. Near the lake shore the ridges are covered with oak, pine and aspen while lowland conifers and brush can be found growing in the wet depressions. The width of the ridges and associated swales is dependent upon the underlying geology and length of time in which the lake levels receded.

The distance between old beach ridges can range from less than 100 feet to a mile or more. A large dune and swale complex is located between Cedar Lake and Lake Huron. Other old shorelines (long sandy ridges) can be found west of Cedar Lake. For example, S. Poor Farm Road runs along one of these old shorelines. See **Figure 4.4**

Figure 4.1: Formation of Glacial Landforms by William R. Farrand

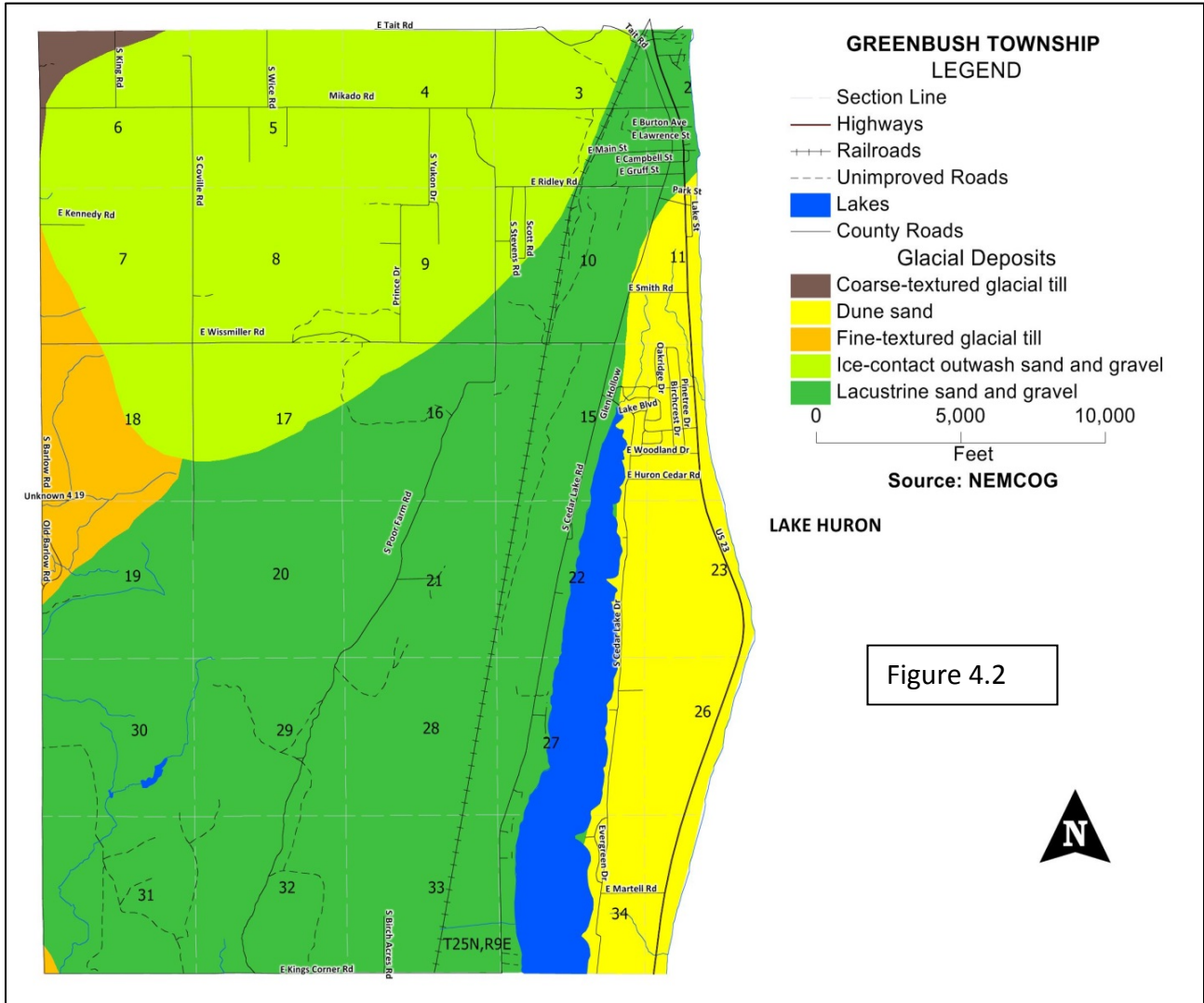


Features originating at a glacier front occur in a definite order.



Landforms of continental glaciation are unmistakable.

Township of Greenbush Master Plan



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Figure 4.3
Pro & Post Glacial
Great Lake Levels

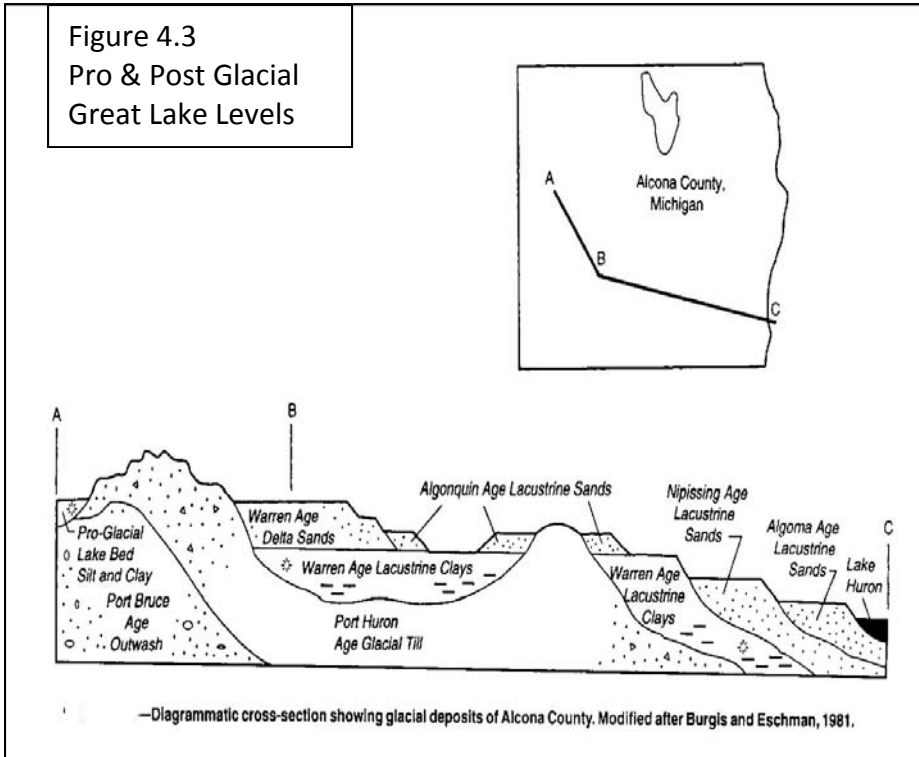
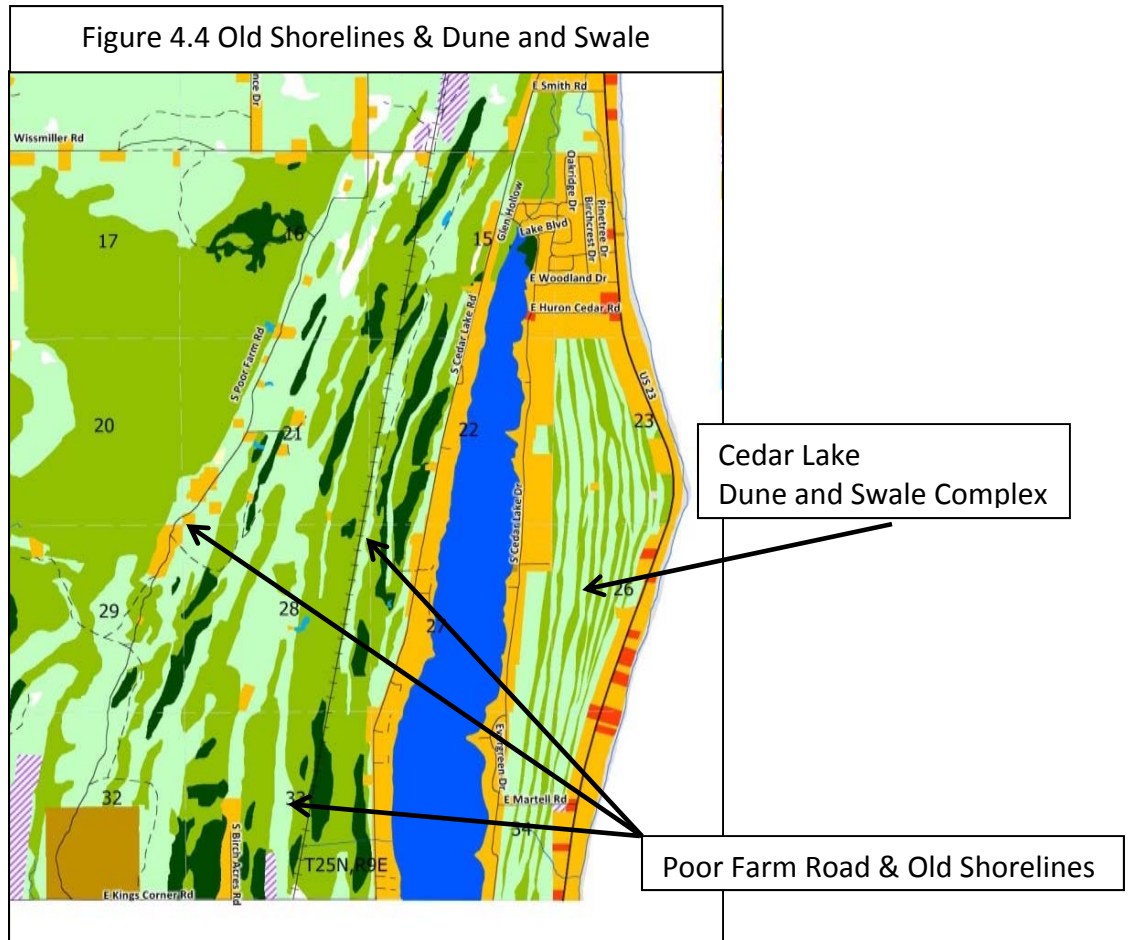


Figure 4.4 Old Shorelines & Dune and Swale



Soils and Constraints

When planning for types and intensity of land uses, soil types and slopes are two important factors that determine the carrying capacity of land. The construction of roads, buildings and septic systems on steeply sloped areas or areas with organic and hydric soils require special design considerations. In addition, costs for developing these sensitive areas are greater than in less constrained parts of the landscape. If developed improperly, the impacts to natural resources can be far reaching.

The Natural Resource Conservation Service completed a detailed soil survey of Alcona County. A digital or computerized version of the soil survey maps was acquired from the Michigan Department of Natural Resources, MIRIS program. The soil survey identified 153 different kinds of soil in the county. The soils range widely in texture, natural drainage, slope and other characteristics. Well drained and moderately well drained soils make up about 68 percent of the county, somewhat poorly drained soils make up about 20 percent, and poorly drained soils make up about 12 percent.

Hydric Soils and Steeply Sloped Areas

Figure 4.5 is a color thematic map that classifies hydric soils and soils on steep slopes. Lower density and less intensive development should be directed to these areas with severe building constraints. Hydric soils are saturated, flooded or ponded during part of the growing season and are classified as poorly drained and very poorly drained. Hydric soils have poor potential for building site development and sanitary facilities. Wetness and frequent ponding are severe problems that are difficult and costly to overcome. Sites with high water tables may be classified as wetlands and a wetlands permit would be required to develop these areas. The hydric soils are mainly located adjacent to streams and creeks. This connectivity of riparian wetlands and surface water features can be seen throughout the landscape. As can be seen there are extensive areas of hydric soils throughout the township.

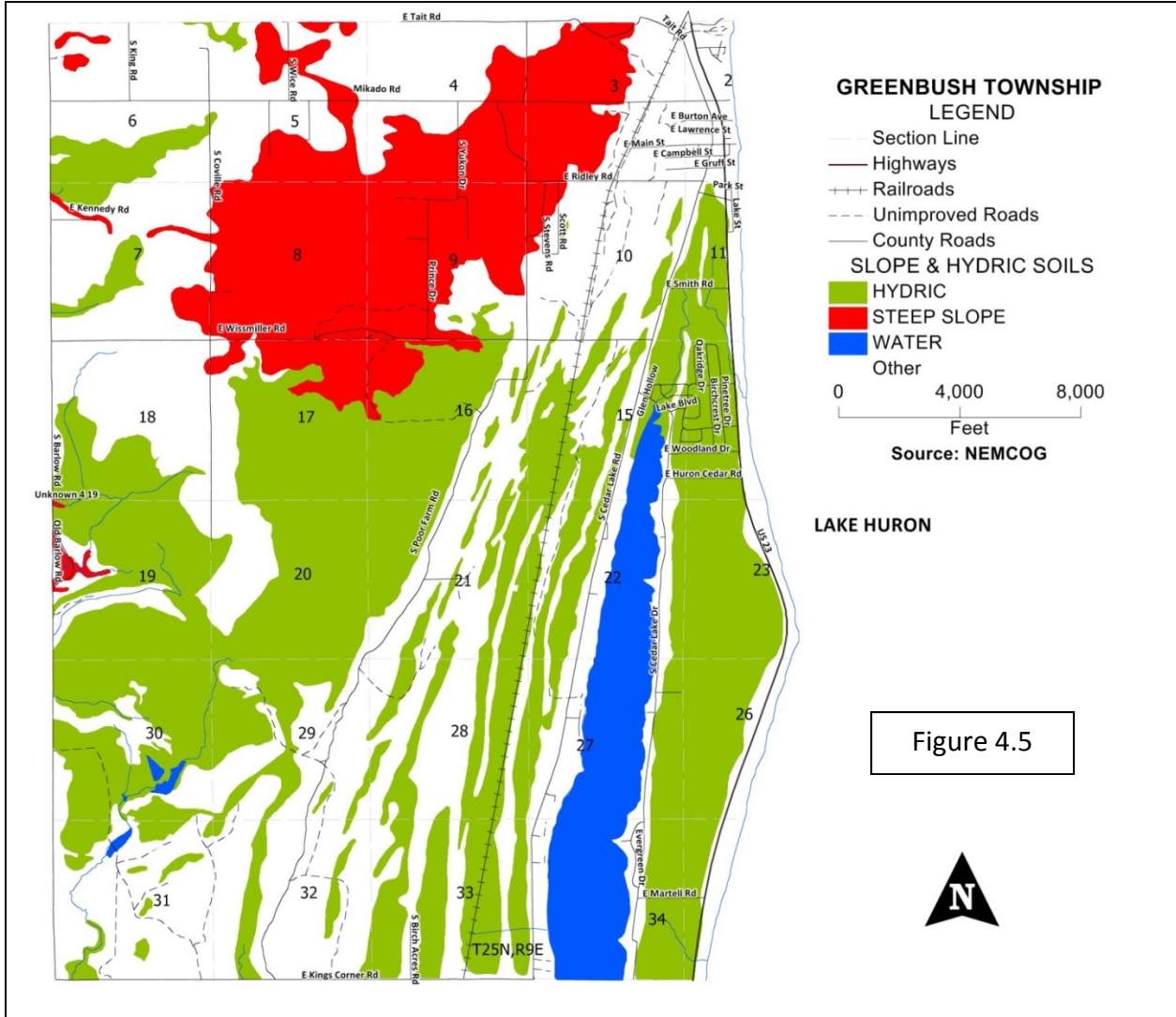
Hills and steeply rolling terrain may provide opportunities for spectacular views of the landscape. However, steeply sloped sites have severe building constraints, are more difficult and costly to develop. Maintenance costs tend to be higher on steeply sloped terrain. Special design standards such as erosion control measures, limiting size of disturbed areas, retaining natural vegetation, re-vegetation, slope stabilization and on-site retention of water run-off from impervious surfaces would all serve to minimize resource impacts. According to information presented in the Alcona County Soil Survey, areas with slopes 18 percent and greater are concentrated in the northwestern parts of the Township.

Building Site Development

The USDA soil survey rates soils for various uses such as building site development and identifies the limiting factors such as steep slopes or high water table. The rating system is not limited, somewhat limited, very limited. Using the rating system developed by USDA, soil limitations for buildings without basements have been mapped and are displayed in **Figure 4.6**. Areas with well drained soils and slopes less than 10 percent tend to have no limitations for

Township of Greenbush Master Plan

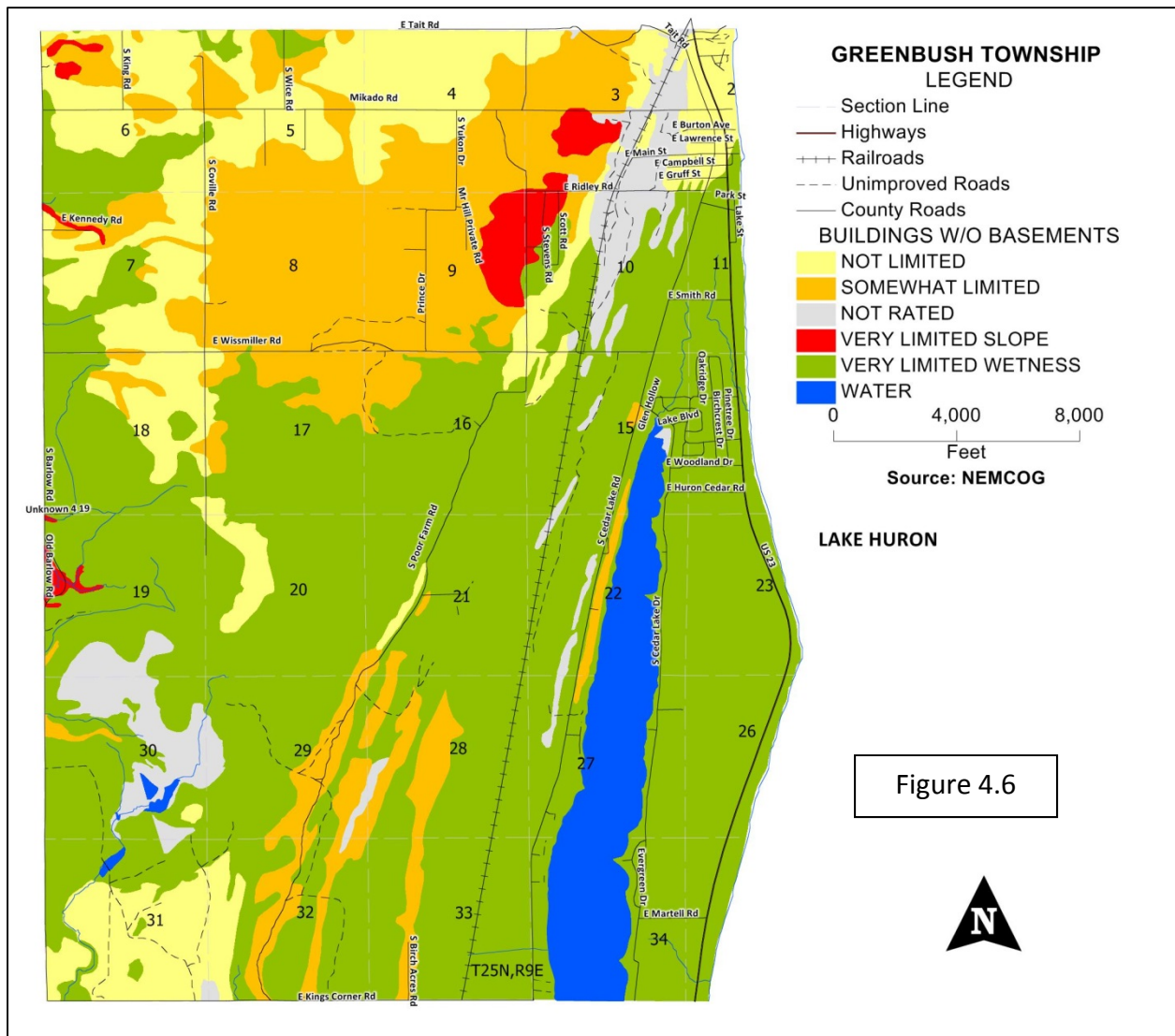
building development. Soils with no limitations or somewhat limited are found throughout the Township. Areas with slopes greater than 15 percent, high water tables, and organic soils are considered very limited for building development.



Forests

According to the Land Cover/Use Inventory, approximately 63 percent of the township is forested. It is important to note the process used to update the Michigan Resource Information System's (MIRIS) 1978 land use inventory. Using 2014 digital aerial photos and ancillary data such as the USDA soils survey and the National Wetland Inventory, forested areas were updated. However, no field checking of forest types and boundaries was conducted. As a result forest types are grouped into general categories of upland forest and lowland forest. Upland forests account for 57 percent and lowland forests account for 43 percent of the total forested areas. Generally, forests in the eastern part of the township, particularly when growing sandy

Township of Greenbush Master Plan



soils on old shorelines and dune sands, are aspen-birch, pine and oak forests. The northwestern part of the township has northern hardwood and aspen-birch forests intermixed in the farming areas.

The upland forest category includes a number of common forest types. Bigtooth aspen, quaking aspen, white birch, red maple and red oak are the primary tree species found in the aspen-birch type. Red oak, white oak, black oak and northern pin oak are the primary species growing in the oak forests. Northern hardwoods include species such as sugar maple, red maple, American beech, basswood and yellow birch. Red, jack and white pine forest types are included in the pine forest category.

Forest fires are identified as the number one natural hazard in the Alcona County Hazard Analysis Plan. Under dry spring conditions forest fires can occur in any forests type. However some forest types have higher risks. Jack and red pine forests have a high risk for wildfires. Oak, aspen-birch and white pine forests have a moderate risk for wildfires. Draughty, low fertility

Township of Greenbush Master Plan

sandy soils supported pre-settlement pine and oak forests that for thousands of years were perpetuated by wildfires. Today, residential development has occurred within the same wildfire prone areas.

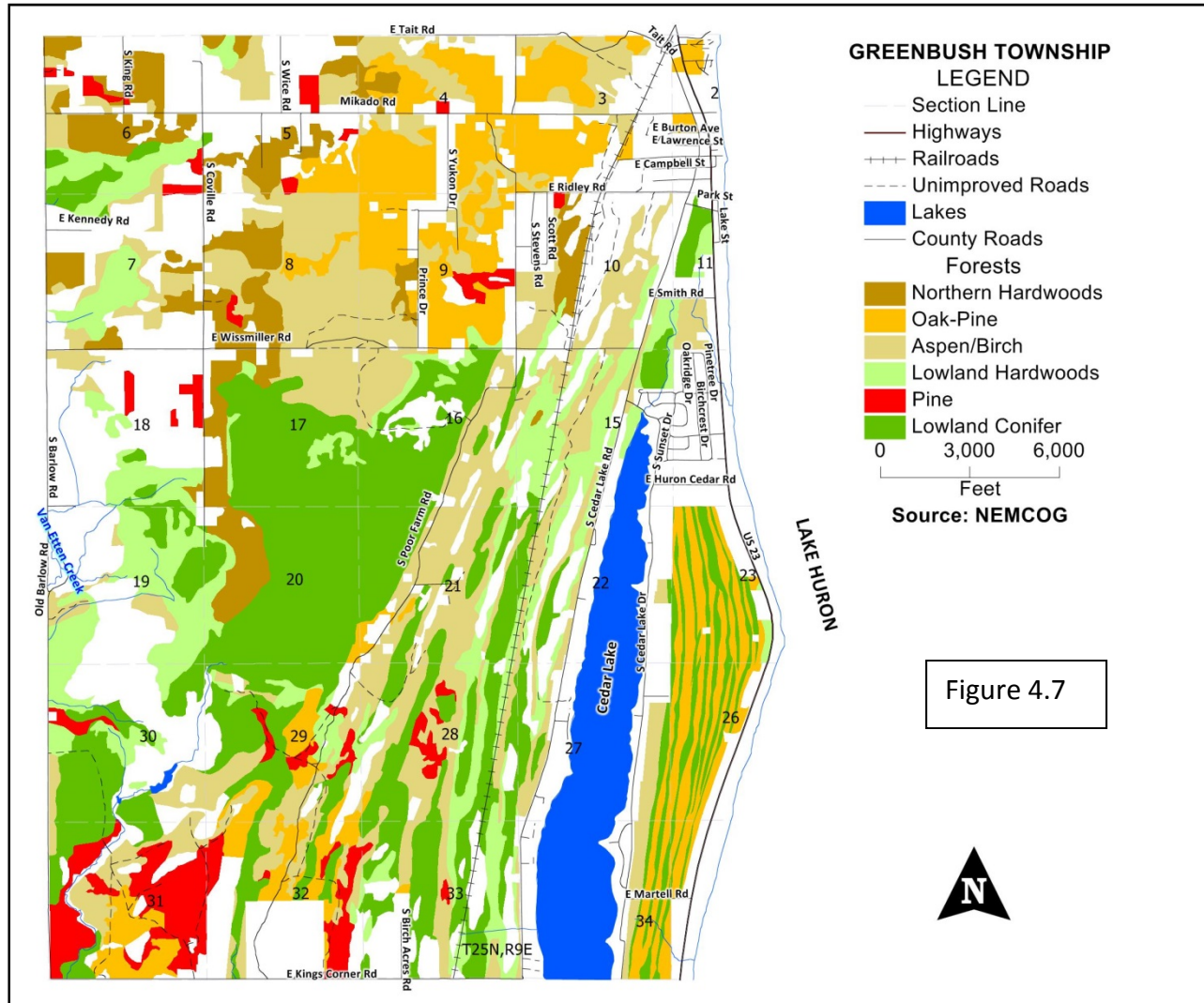
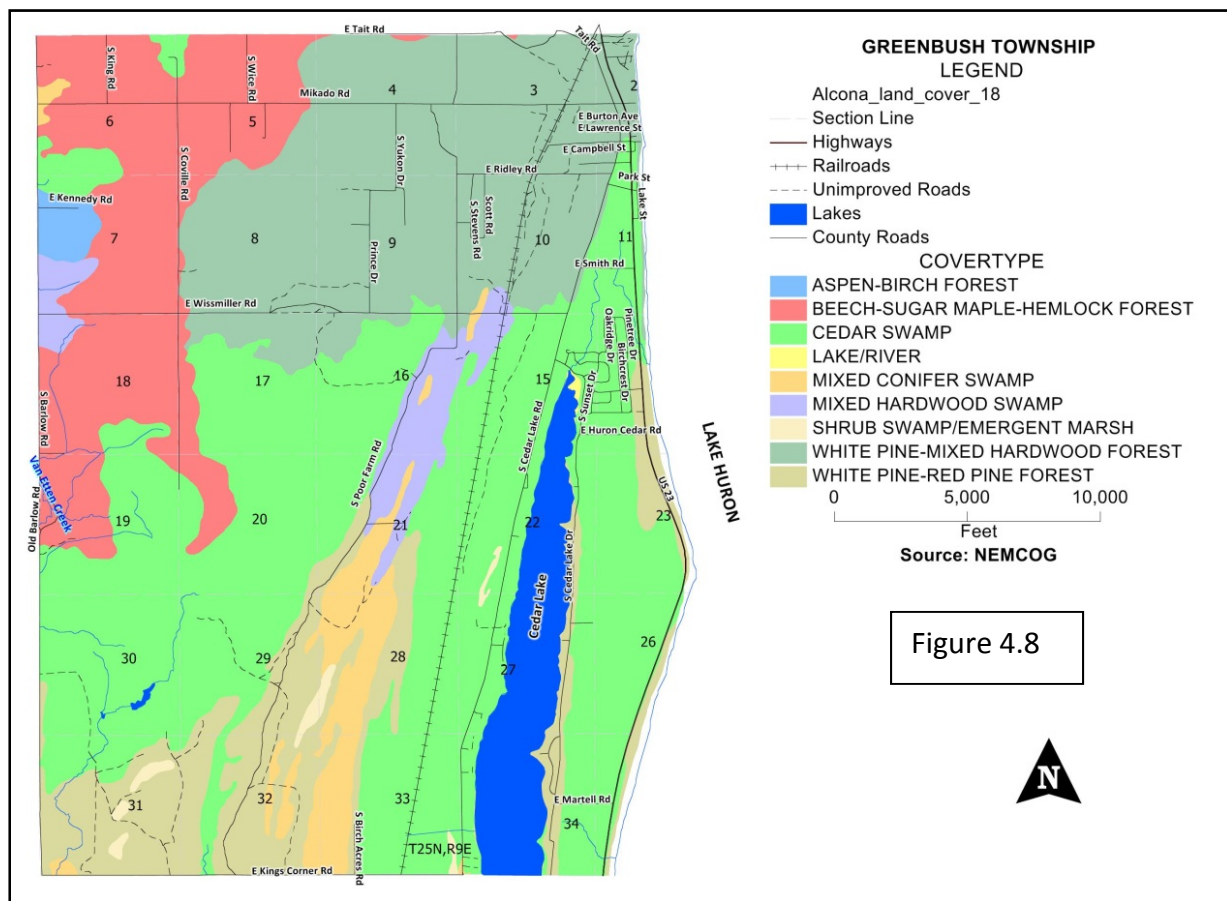


Figure 4.7

Poorly drained, lowland areas support northern white cedar, tamarack, balsam fir, black spruce, eastern hemlock, white pine, balsam poplar, trembling aspen, paper birch, black ash, speckled alder and shrub willows. Northern white cedar dominates the wetland areas where there is good lateral water movement and the soils are high in organic content. Lowland forests are typically located adjacent to water features and function as riparian forests and water quality buffers. The network of lowland forests, associated with rivers and creeks, also function as wildlife corridors and are the backbone of large regional ecological corridors. Lowland forests adjacent to the Great Lakes are prone to flooding during periods of high lake levels. Lowland forests adjacent to rivers and streams are prone to flooding during the spring snow melt, particularly when combined with heavy spring rains.

Pre-European Settlement Vegetation

The Michigan Department of Natural Resources has compiled pre-settlement vegetation maps of counties in Michigan. The maps were generated from information contained in the first government land survey notes in the 1800’s along with information such as current vegetation, land forms and soils. A review of the presettlement vegetation map of Greenbush Township shows areas were covered with pine and oak forests were located in the northern and south central parts of the township, see **Figure 4.8**. Northern hardwoods were concentrated in the northwestern areas of the community. These forests were growing on better soils as evidence by fact most of the active farms are located within the pre-settlement northern hardwoods forests. The southern parts and areas around Lake were mapped as lowland conifer. Given these maps are general in configuration, the many old shorelines or narrow linear sandy ridges that support upland forests weren’t delineated.

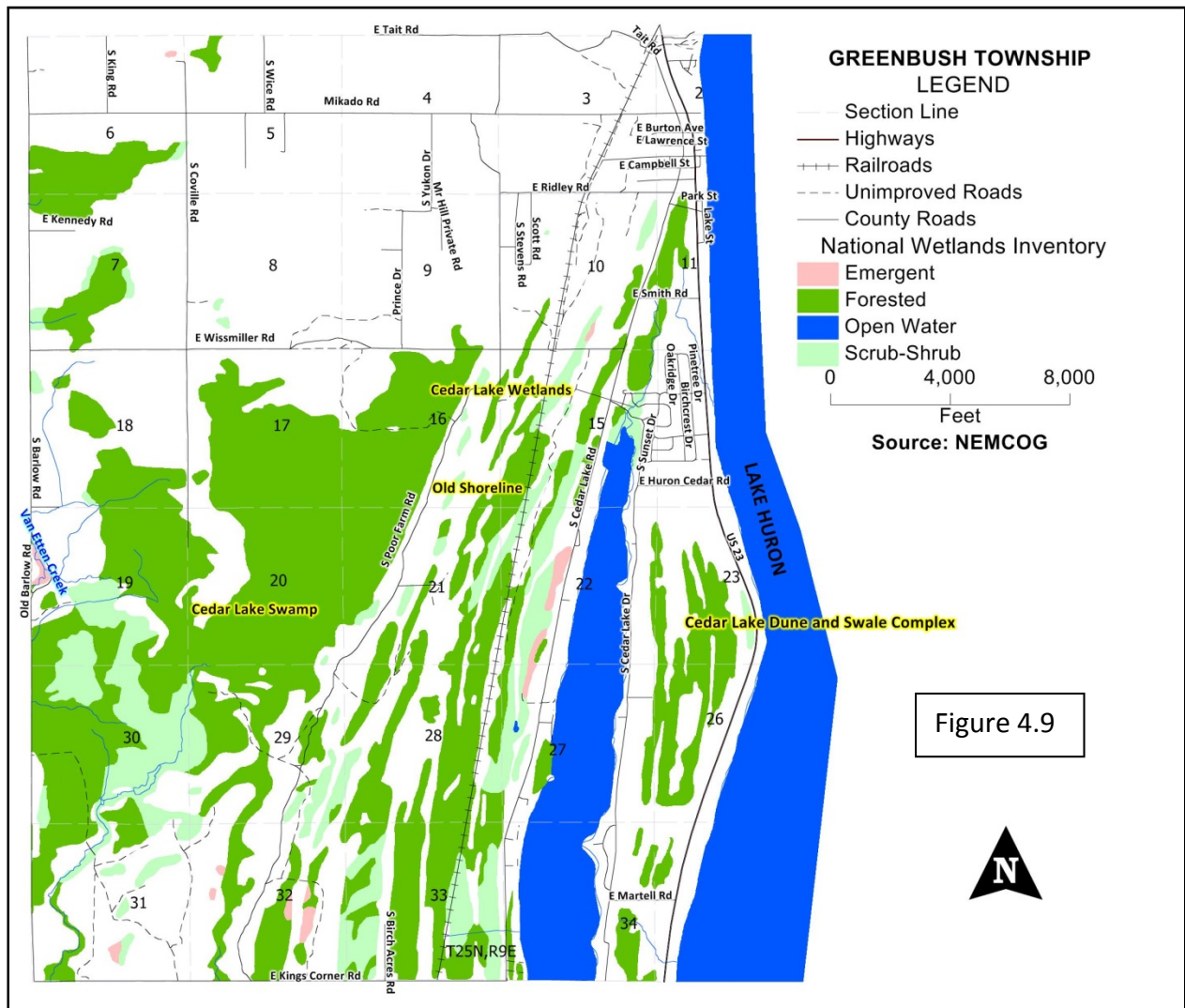


Wetlands

Poorly drained, lowland areas support northern white cedar, tamarack, balsam fir, black spruce, eastern hemlock, white pine, balsam poplar, trembling aspen, paper birch, black ash, speckled

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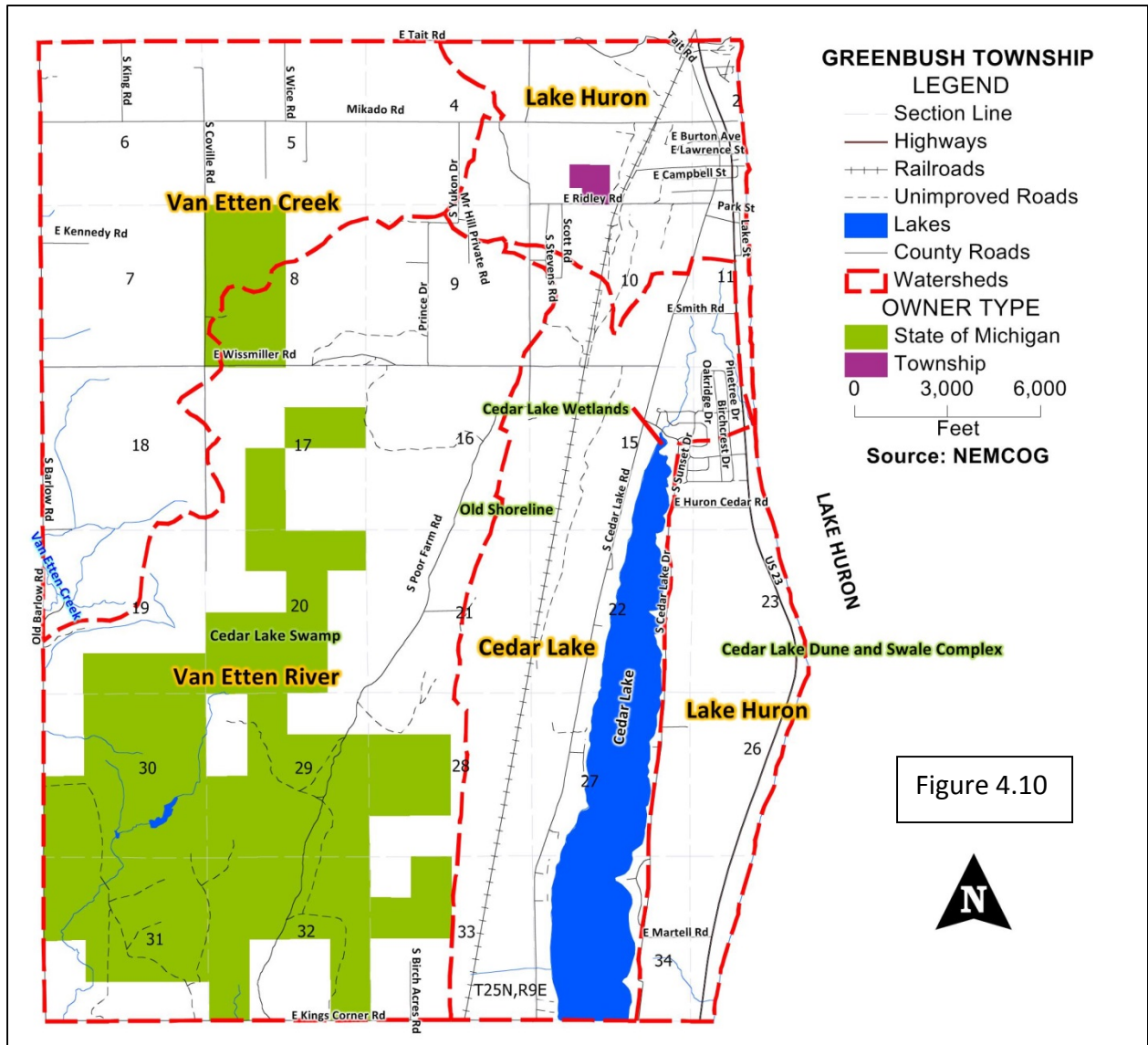
alder and shrub willows. Northern white cedar dominates the wetland areas where there is good lateral water movement and the soils are high in organic content. These lowland forests are typically located adjacent to water features and function as riparian forests and water quality buffers. Wetlands are common within the coastal lake plain and swales. The networks of lowland forests also function as wildlife corridors and are the backbone of large regional ecological corridors. Nonforested wetland types include lowland brush, marshes and bogs. Forested and nonforested wetlands are a finite resource in the County. Land use planning activities should focus on protecting and preserving these limited and critical resources. **Figure 4.9** is a color thematic map prepared from the US Fish and Wildlife Service National Wetlands Inventory that depict emergent, forested and scrub-shrub wetland areas.



Water Resources

According to the *Alcona County Resource Plan*, there are 233 bodies of water in Alcona County which, when combined, are over 13,000 acres of surface water. The combined length of all rivers and streams in the county is 301 miles. And, there is more than 68 miles of Lake Huron shoreline along the Coast of Alcona County.

Greenbush Township is located in the Lake Huron Watershed, **Figure 4.10**. It is part of four sub-watersheds, which include Van Etten Creek, Van Etten River, Cedar Lake and Lake Huron coastal. Surface waters, in particular Lake Huron and Cedar Lake, are key features within Greenbush Township; not only influencing the climate and community character, these water resources provide recreational opportunities and enhance property values. For these reasons alone, protection of water quality is critical to the long term community health. Other named water features include Van Etten, Jones and Sherman Creek.



In May of 2011, the Cedar Lake Improvement Board completed the Cedar Lake Watershed Management Plan. The watershed management plan was paid for by the lake riparians through a property tax assessment. The collaborative effort resulted in a watershed management plan that includes watershed description, watershed conditions, pollutant source assessment, linking pollutant load to water quality, watershed goals and objectives, and implementation strategy sections. The plan provides strategies for natural resource protection and restoration in the Cedar Lake watershed that will protect and improve the lake, property values, and recreational value for generations to come. According to the plan “the area draining to Cedar Lake is approximately 3,613 acres in size. Cedar Lake has 1,075-acres of surface water, and is approximately 5.9 miles long, averaging approximately 0.2 miles wide. The lake is shallow, about 5 feet deep on average with a limited area as deep as 14 feet.

It is extremely important that the quality of these surface waters be protected from the negative impacts of development. Lakes and river shorelines face increased pressure from development as more seasonal homes and retirement homes are built in the region. The recreation industry of region can be impacted by this development. There are other factors to consider as development and redevelopment occur near shorelines, such as nutrient delivery rates into lakes & streams, accidental spills of contaminants, erosion control, invasive species, habitat loss and even scenic view quality.

Fish and Wildlife

Alcona County has been known as a good deer range for many years. The large deer herd built up following the wildfires of the 1890's to 1920's, with the herd peaking in the late 1940's to early 1950's. Large areas of public hunting ground and the tremendous deer herd combine to attract a large number of hunters to the County.

Alcona County, along with four other neighboring counties (Alpena, Montmorency, Oscoda, and Presque Isle), is within the area which has been hit by an outbreak of Bovine Tuberculosis (T.B.) in the local deer herd and in other wild animals. The Michigan Department of Natural Resources (DNR) has created a special separate deer management unit to oversee the situation, called DMU452. In addition to deer hunting, small game hunting is very popular with the local residents of Alcona County, as well as with tourists. Grouse, woodcock, rabbit, waterfowl and squirrel attract these hunters due to excellent hunting conditions.

The township has several very distinct wildlife habitat areas. Riparian forests adjacent to creeks and lakes provide critical habitat for many species of wildlife and reptiles. The land and water interface is a long narrow, sometimes meandering, edge habitat. In Greenbush Township as well as throughout Michigan, natural undeveloped lakeshore habitat is one of the most endangered habitats. There is a continuing trend for lake lot owners to clear brush, aquatic weeds, dead trees and live trees that interfere with a wide-open view of the water. The native vegetation is replaced with well-manicured and chemically treated lawns down to the water's edge. This practice not only degrades critical wildlife habitat but also impacts water quality by diminishing the riparian zone's capacity to filter nutrients and its ability to stabilize shoreline erosion.

Forested and nonforested wetland complexes such as Cedar Lake Swamp provide habitat for feeding and nesting birds such as the red shouldered hawk, barred owl, red-headed woodpecker, pileated woodpecker, woodcock, wood duck and great blue heron. Deer, bear, raccoon, northern flying squirrel, water vole, and mink also frequent these areas. Numerous species of amphibians and reptiles, such as turtles, frogs, snakes, salamanders and newts can all be found in these extensive wetland complexes.

Many species of wildlife use the northern hardwood forest for nesting and feeding. The black-capped chickadee, yellow-bellied sapsucker, white-breasted nuthatches, gray squirrel and northern flying squirrel nest in hollowed out tree trunks. Ground nesting species such as the ruffed grouse and oven bird use this cover type. The sharp-shinned hawk, broad-winged hawk, red-eyed vireo, scarlet tanager, black-throated blue warbler, and blue jay nest in the canopy, while the eastern chipmunk, woodland jumping mouse, and gray fox nest beneath the ground or debris.

This pine oak forest provides food in the form of acorns, seeds and buds along with limited browse. Cover is by white pine and red pine trees. Whip-poor-will, , gray jay, red-eyed vireo, scarlet tanager, downy wood pecker, pileated woodpecker, blue jay, white-breasted nuthatch are a few birds that inhabit oak forests. Wild turkeys, gray squirrels, fox squirrels, black bear and white-tailed deer are typical game species found in the northern pine oak forests.

Squirrels, black-backed woodpeckers, fox, and numerous species of song birds utilize pine forests for cover and food sources. The gray jay, pine grosbeak, evening grosbeak, red crossbill, purple finch, boreal chickadee, and pine siskin frequent upland conifer stands during the winter months. The black-backed woodpecker nest in hollowed out tree trunks. The long-eared owl, solitary vireo, red crossbill, black-throated green warbler and evening grosbeak nest in the canopy, while the porcupine, long-tailed shrew, deer mouse, woodland jumping mouse and lynx nest beneath the ground or debris.

Lake Huron coastal habitats include the water interface, beaches, and adjacent uplands and wetlands. Coastal areas provide unique habitats for plants and animals. Most important are conifers forests along the coast, which create special conditions for migrating song birds in the spring time. Early spring insect hatches, in particular midges, provide high energy food sources for migrating birds.

Threatened & Endangered Species

Alcona County is home to a number of plants and animals that are threatened, endangered or are of special concern as identified in Michigan Natural Features Inventory (MNFI) database. Michigan Natural Features Inventory (MNFI) is a program of Michigan State University Extension that works in close cooperation with the Michigan Department of Natural Resources and The Nature Conservancy. The following list presents the endangered or threatened plant and animal species which can be found in Alcona County, and which are protected under the Natural Resources and Environmental Protection Act of the State of Michigan (Part 365 of

Township of Greenbush Master Plan

Public Act 451 of 1994, as amended). Species highlighted in green have a higher probability of being found within the township. This list also includes plant and animal species of special concern. While not afforded legal protection under the act, many of these species are of concern because of declining or relict populations in the State.

Table 4.1: Alcona County Element List			
Scientific Name	Common Name	Federal	State
Accipiter cooperii	Cooper's Hawk		SC
Accipiter gentilis	Northern Goshawk		SC
Buteo lineatus	Red-shouldered Hawk		T
Calypso bulbosa	Calypso or Fairy-slipper		T
Carex albolutescens	Greenish-white Sedge		T
Carex frankii	Frank's Sedge		SC
Carex nigra	Black Sedge		E
Cirsium hillii	Hill's Thistle		SC
Cirsium pitcheri	Pitcher's Thistle	LT	T
Cypripedium arietinum	Ram's Head Lady's-slipper		SC
Dalibarda repens	False-violet		T
Dendroica discolor	Prairie Warbler		E
Dendroica kirtlandii	Kirtland's Warbler	LE	E
Dry northern forest	Dry Woodland, Upper Midwest Type		
Dry-mesic northern forest			
Emys blandingii	Blanding's Turtle		SC
Festuca scabrella	Rough Fescue		T
Gavia immer	Common Loon		T
Glyptemys insculpta	Wood Turtle		SC
Great blue heron rookery	Great Blue Heron Rookery		
Haliaeetus leucocephalus	Bald Eagle	PS:LT,PDL	T
Hardwood-conifer swamp			
Panax quinquefolius	Ginseng		T
Percina copelandi	Channel Darter		E
Planogyra asteriscus	Eastern Flat-whorl		SC
Poor conifer swamp			
Poor fen	Poor Shrub/herb Fen, Upper Midwest Type		
Prunus alleghaniensis var. davisii	Alleghany or Sloe Plum		SC
Pterospora andromedea	Pine-drops		T
Rich conifer swamp			
Sistrurus catenatus catenatus	Eastern Massasauga	C	SC
Sterna caspia	Caspian Tern		T
Trimerotropis huroniana	Lake Huron Locust		T
dune and swale complex	Wooded		
Source: Michigan Natural Feature Inventory, MSU Extension. *LE = Listed endangered, LT = Listed threatened, PDL = Proposed delist, PS = Partial status (federally listed in only part of its range), C = Species being considered for federal status. ** E = Endangered, T = Threatened, SC = Special concern.			

Environmental Permits and Concerns

Surface Water - National Pollution Discharge Elimination (NPDES) Facilities

Anyone discharging, or proposing to discharge, waste or wastewater into the surface waters of the State is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES program is intended to control direct discharge into the surface waters of the State by imposing effluent limits and other conditions necessary which meet State and federal requirements. The NPDES program regulates pollutants discharged directly into waterways from wastewater sources. The Alcona County Road Commission holds a NPDES permit associated with the Cedar Lake Road, which expires 1/3/2016.

Air Discharge Permits

The ROP program is a national permitting system administered by each state. Each major source of pollution is subject to the program. A "major source" is a facility that is capable of emitting more than specific amounts of air contaminants. There are no air discharge permits in the Township.

Sites of Environmental Contamination

The Michigan Environmental Response Act (Part 201 of PA 451 of 1994, as amended) provides for the identification, evaluation and risk assessment of sites of environmental contamination in the State. The Environmental Response Division (ERD) is charged with administering this law. A site of environmental contamination, as identified by ERD, is "a location at which contamination of soil, ground water, surface water, air or other environmental resource is confirmed, or where there is potential for contamination of resources due to site conditions, site use or management practices. A search of the Department of Environmental Quality's web site database found there are no sites of environmental contamination in Greenbush Township.

Chapter 5: Existing Land Cover/Use

Prior to establishing goals and determining future land uses, a community must have an accurate assessment of existing land uses. This chapter presents information on both the types and location of land cover and uses. The process identifies both urban built-up land uses such as residential and commercial, along with natural land cover types like forests and beaches. As a result the final map presented in this chapter is a hybrid that combines land cover and land use.

General Land Division Patterns

As development occurs, larger tracts of land are subdivided into smaller parcels. Therefore, studying the existing pattern of land divisions is one way to analyze the status of land use and development. Eighty-one percent of the Township's land base is under private ownership, which consists of large tracts of forest land, wetlands and farmland, with subdivisions and small tracts of residential lands concentrated around Cedar Lake; along Lake Huron and US-23; and within the community of Greenbush. **Figure 5.1** is a color thematic map showing ownership grouped into size classes of less than 2 acres, 2 to 9.9 acres, 10 to 40 acres and greater than 40 acres. As can be seen nearly 60 percent of the land area is in ownerships greater than 40 acres in size and 29 percent of the land area is in parcels ranging from 10 to 40 acres in size. However, while large tract owners hold 60 percent of the land area, they account for less than 3 percent of the parcels.

Land Cover and Use

The existing cover/land use was mapped in 2015. The map of existing land use, shown as **Figure 5.2**, illustrates the distribution of land cover/uses throughout the Township. Michigan Resource Information Systems (MIRIS) land cover/use classification categories were used to map the existing land use. The map was updated with 2014 digital aerial imagery acquired from the USDA. Updated information was computerized to produce the existing land use map and statistics. Ancillary digital map data including parcels, soils, national wetlands inventory and gas wells were used to refine the update. **Table 5.1** presents the land uses, showing the number of acres and percent of the Township in each of the land use categories. Each of the land use categories is discussed later in this chapter.

Residential

As can be seen on the Existing Land Cover/Use Map (**Figure 5.2**) and **Table 5.1**, residential use ranks third in the amount of land currently in this use. Residential use occupies 12.6 percent (2,101 acres) of the land in the Township. Residential development is concentrated along Lake Huron, US-23 and around Cedar Lake. The balance is located on large and small tracts that are scattered throughout the Township.

Commercial

Commercial uses, primarily located along US-23, account for 0.4 percent (64 acres) of the township's land area.

Industrial and Extractive

Most of the areas classified as extractive are old sand and gravel mining operations. Currently, extractive activities are minimal. Extractive uses account for 409 acres or 2.4 percent of the Township. Other industrial uses cover 16 acres or 0.1 percent.

Institutional and Recreation

This category includes institutional and recreational uses, which cover 1.0 percent (183 acres) of the Township's land area. Included in this category are the township hall, township fire hall, parks and a golf course.

Farmland

Active farmland accounts for 834 acres or 5.0 percent of the Township. Farmland is concentrated in the northwestern parts of the Township.

Non-forested Uplands

The non-forested land category consists of herbaceous open and shrub land. As shown in **Table 5.1**, 686 acres or 4.1 percent of the Township is classified as non-forested. A majority of the non-forest areas are old farm fields.

Upland Forest

Upland forests ranks first in the amount of land cover, with 5,979 acres or 35.8 percent of the Township. Northern hardwoods include species such as sugar maple, red maple, American beech, basswood and yellow birch. Bigtooth aspen, quaking aspen, white birch, red oak, white pine, balsam fir and red maple are the primary tree species found in the aspen-birch type. Oak forests are mixed with red oak, red maple, white pine and aspen being the most common species. White, jack and red pine trees are found in the pine forest category.

Lowland Forests and Wetlands

Wetlands are defined as land that has sufficient water at, or near, the surface to support wetland or aquatic vegetation. These areas are commonly referred to as swamps, marshes and bogs. The wetland category comprises non-forested types such as lowland brush (tag alder and willow), sphagnum bogs, emergent vegetation in lakes and beaver floodings and wet meadows. Non-forested wetlands account for 1,044 acres or 6.3 percent of the Township.

Since the scope of the project did not allow for extensive field surveys typically part of a traditional forest inventory, ancillary data such as USDA hydric soils, National Wetlands Inventory, and USGS topographic data was used to help delineate upland versus lowland forest. Given this limitation, the forest cover mapping should be used for general planning purposes and in conjunction with other supporting information. Lowland forests rank second in the amount of land cover; and occupy 27 percent or 4,506 acres of the Township. Lowland forests

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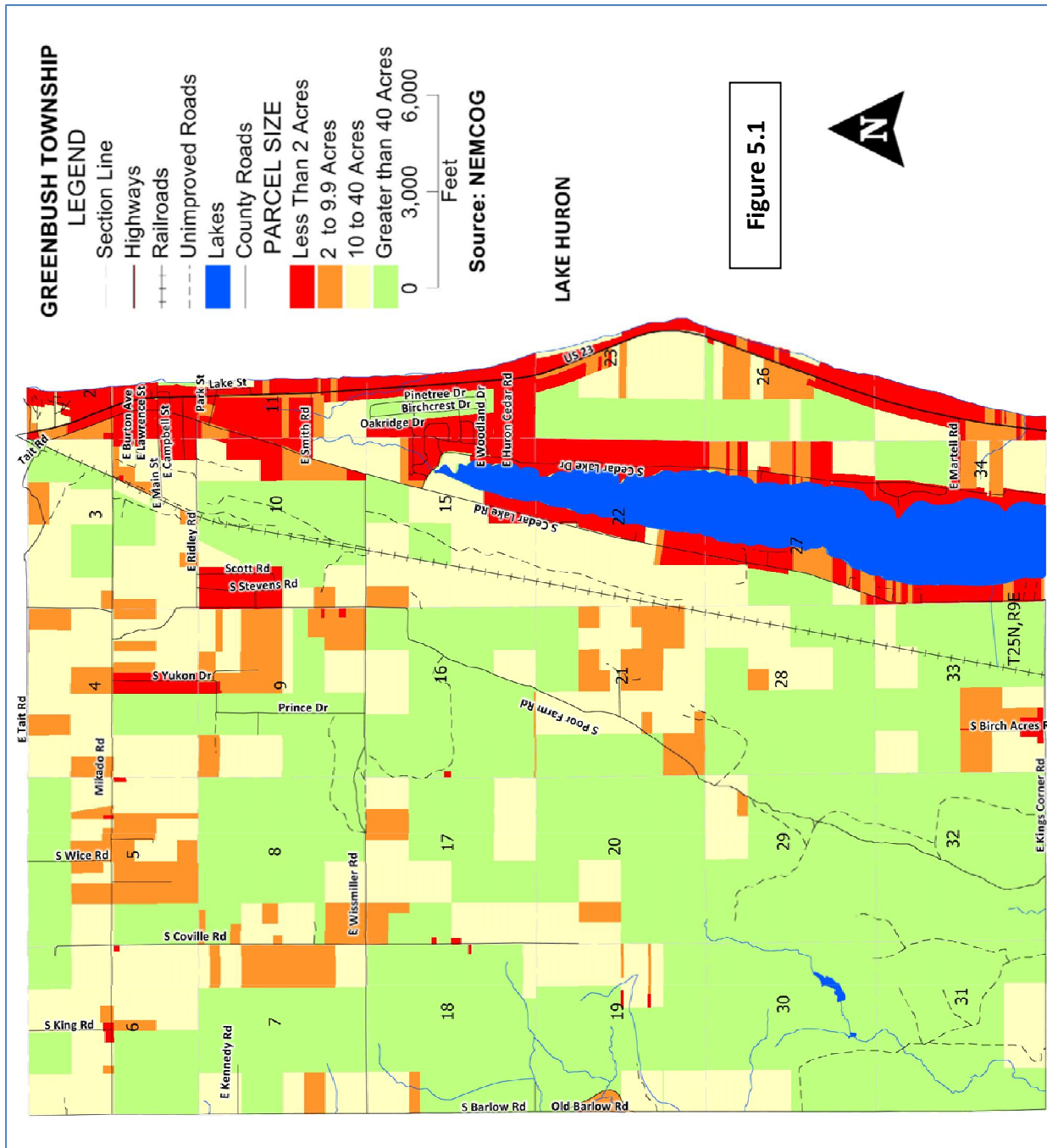
include lowland hardwoods like elm, black ash, red maple, balsam poplar, and quaking aspen. Lowland conifers, such as northern white cedar, black spruce, balsam fir, white spruce and eastern tamarack.

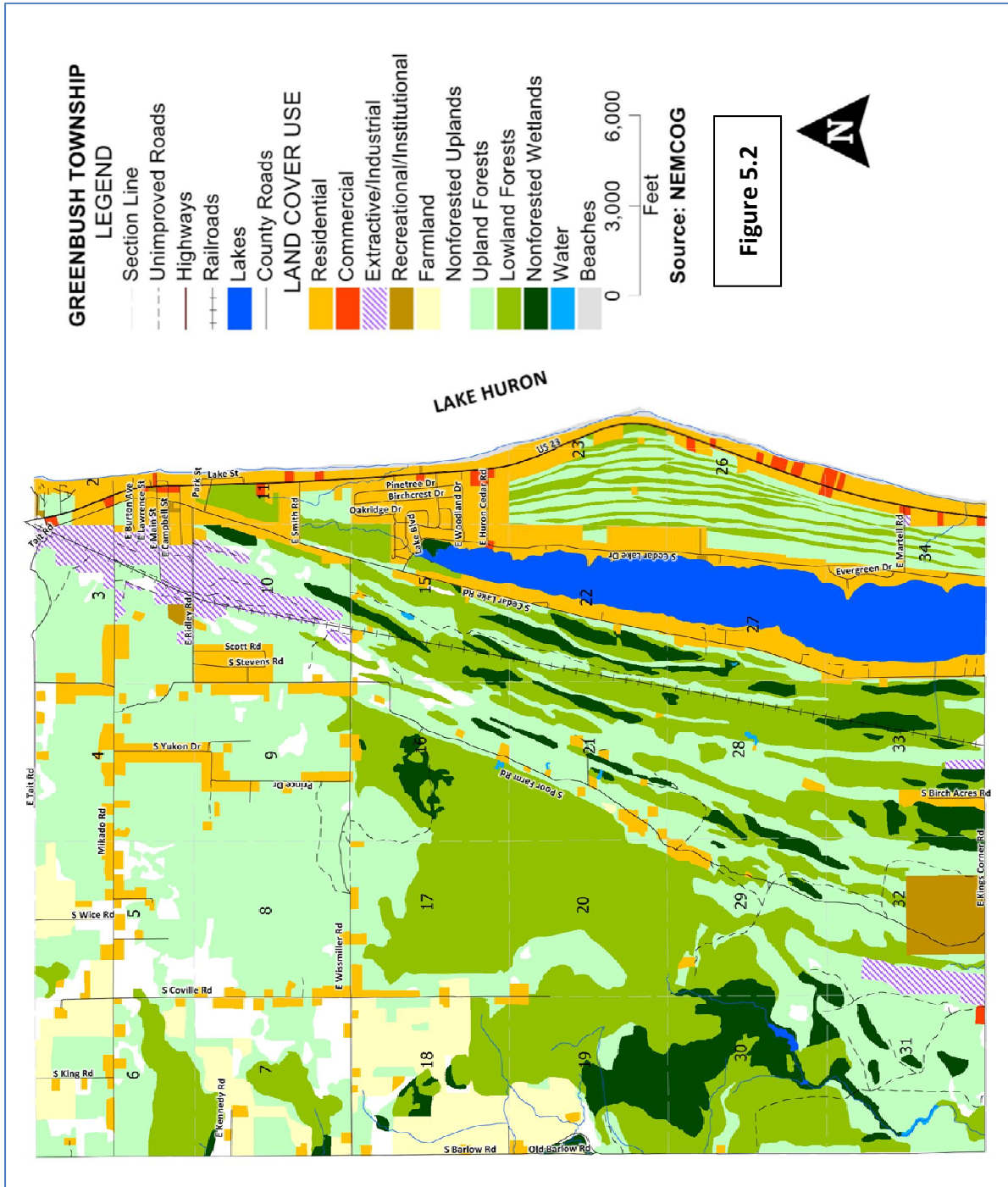
Two of the most important functions of wetlands and lowland forests are water quality protection and ecological corridors. As can be noted on the Existing Land Cover/Use Map, wetland areas are found adjacent to water features and within the lake plain. The network of wetlands receives surface water and subsurface water discharge, creating the many streams and creeks that in turn, flow into the area lakes. The interconnected resources exemplify how activities distant from major water bodies can still have an impact on the water quality.

Water and Beaches

Nearly five percent of the township is classified as water. Of course, if Lake Huron were included the acreage would be much higher. In some instances if water areas are covered with emergent wetland vegetation such as cattails and reeds, those sites are mapped as non-forested wetlands and not open water.

Table 5.1		
2015 Existing Land Cover/Use Statistics		
Land Use Category	Number of Acres	Percent of Township
Residential	2,101	12.6%
Commercial	64	0.4%
Extractive/Utilities	409	2.4%
Industrial	16	0.1%
Institutional	8	Less than 1%
Recreation	175	1.0%
Farmland	834	5.0%
Non-forested Uplands	686	4.1%
Upland Forest	5,979	35.8%
Lowland Forest	4,506	27.0%
Non-forested Wetlands	1,044	6.3%
Water	786	4.7%
Beaches and Bottomlands	93	0.6%
TOTAL	16,701	100.0%
Source: Northeast Michigan Council of Governments		





Chapter 6: Community Goals and Objectives

After reviewing the community input, existing conditions and trends, the planning commission has established the following goals and objectives. These goals and objectives will provide guidance to the Greenbush Township Planning Commission and Township Board.

Quality of Life

Goal: Maintain and enhance the overall quality of life in Greenbush Township.

Objectives:

1. *Strive to balance future growth and development in the Township while maintaining it's rural and resort character.*
 2. *Implement the master plan's stated objectives to improve the overall quality of life for township residents.*
 3. *Encourage public feedback regarding ongoing efforts to improve the Township's quality of life.*
 4. *Promote the quality of life in Greenbush Township in order to recruit new families to the Township.*
 5. *Continue to cooperate with the Alcona Commission on Aging for use of the Township Hall for senior meals and activities.*
 6. *Coordinate with Alcona County Sheriff Department and Michigan State Police to provide adequate township-wide police protection.*
-

Community Character

Goal: Maintain and enhance the appearance and character of Greenbush Township.

Objectives:

1. *Preserve the integrity of existing neighborhoods and residential areas by protecting them from the intrusion of incompatible uses.*
 2. *Protect and preserve local history, including historic buildings, residential neighborhoods and scenic features.*
 3. *Enhance community gateways through the implementation of land use controls, landscaping, screening and wayfinding.*
 4. *Implement landscaping and buffer standards in the zoning for new development and redevelopment.*
 5. *Encourage the maintenance and upgrade of private businesses and residences.*
 6. *Enforce the Township blight ordinance in a fair and consistent manner.*
 7. *Investigate the implementation of conservation-based open space or cluster development options as a means to protect community character.*
-

Planning and Community Development

Goal: 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.

Objectives:

1. *Implement the Greenbush Township master plan through the Township's zoning ordinance.*
2. *Enforce all ordinances in a consistent and fair manner.*
3. *Control the location of new development by designating appropriate areas for new residential, commercial, industrial, and resort/recreational land uses.*
4. *Concentrate new commercial, service and industrial uses along US-23 and in the community of Greenbush.*
5. *Concentrate more dense residential development such as single family subdivisions, multi-family residential and elder housing complexes around the community of Greenbush.*
6. *Areas with higher density developments should be served by parks, safe pedestrian crosswalks, sidewalks and non-motorized facilities to promote a walkable community atmosphere.*
7. *Implement landscape requirements for new development, such as appropriate setbacks, retention of green space, buffer zones between differing land uses, screened parking areas, and roadside landscaping.*
8. *Apply access management standards along US-23.*
9. *Increase safety and reduce the visual impact of on-site and offsite signs and billboards, by controlling their size, number, illumination, and configuration.*
10. *Provide regulations and standards to protect the community against high noise levels and exterior lighting glare.*
11. *Provide standards that regulate the placement and size of cellular towers, communication towers, transmission towers and wind turbine generators.*
12. *Provide waterfront regulations that have consistent special requirements and standards for development along designated waterfronts.*
13. *Implement open space residential, commercial and industrial 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.*
14. *Consider use of "Fire Wise" strategies for new subdivisions, condominium developments, and multi-family residential complexes, and any development requiring site plan review.*
15. *Periodically review blight ordinance and consistently enforce to work towards improving the quality of housing and protecting property values.*

Residential Land Uses

Goal: Allow for suitable housing opportunities for all income levels and age groups, including year-round residents and seasonal residents.

Objectives:

- 1. Designate areas appropriate for all types of residential development including single family, multi-family, elderly housing, condominium, low to moderate income housing, and extended care facilities.*
 - 2. New residential development should be constructed in a manner that protects the rural & resort character, and scenic views by maintaining proper setbacks and providing landscaping screening as appropriate.*
 - 3. Require adequate buffers and transition areas between residential and non-residential uses to maintain property values and visual attractiveness.*
 - 4. Encourage existing housing stock and neighborhoods to be kept in good repair, appearance, usefulness and safety.*
 - 5. Preserve the integrity of existing residential neighborhoods by protecting them from intrusion of incompatible uses.*
 - 6. To preserve open space and vital natural resources, provide the development option of clustered housing in buildable portions of the Township.*
 - 7. Encourage mobile home development within specially planned and developed mobile home parks.*
 - 8. Enforce zoning ordinance and building codes.*
-

Commercial Areas and Activities

Goal: Promote a varied business environment, and encourage the development and expansion of businesses to meet the needs of residents and tourists, while preserving the natural environment and rural character of the community.

Objectives:

- 1. Guide commercial development along US-23 and into commercial nodes within areas of greater density through the master plan and zoning ordinance.*
- 2. Promote design of commercial facilities in the township that is consistent with both its rural-residential and recreation identities.*
- 3. Develop and utilize planning and zoning techniques, such as clustering, shared parking, access management, and landscaping to regulate commercial development along primary county roads and US-23.*
- 4. Make parking (public and private) needs a consideration for all expansions and new development.*
- 5. Require landscape buffers where commercial uses are adjacent to other land uses.*

6. *Improve safety and reduce the visual impact of signs, especially billboards, by controlling their size, number, illumination, and configuration.*
7. *Work with existing businesses and attract new commercial enterprises. As the area increases in year-round residents, work to attract commercial activities to serve residents daily needs.*
8. *Regulate home occupations and home based businesses to assure compatibility with existing residential areas.*

Industrial Land Uses

Goal: Encourage the establishment of new light industries to diversify the local economy and to create more stability and self-sufficiency for the community.

Objectives:

1. *Ensure that industrial uses are developed in an environmentally sensitive manner, are harmonious with the existing community, and are located near access to state trunk lines.*
2. *Until adequate infrastructure is in place, direct industrial development requiring community water and sewer to neighboring communities with industrial parks or sites.*
3. *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, in industrial zoned 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 septage.*
4. *Strictly regulate any industry's impacts on the environment in regards to air quality, water quality, noise and traffic.*
5. *As the township's residential development increases, minimize conflicts between residential activity and extractive and industrial activities.*
6. *Require landscape buffers where industrial uses are adjacent to other land uses.*
7. *Develop guidelines to ensure that extractive development takes place in an environmentally sensitive manner.*
8. *Require landscape buffers around extractive uses to screen adjacent properties and public roadways.*
9. *Establish criteria and require reclamation extractive areas after the operation is complete.*

Infrastructure and Community Facilities

Goal: Improve the Township's transportation systems, safety, community facilities, and public utilities to accommodate the needs of residents and visitors.

Objectives:

1. *Work with the Alcona County Road Commission to fix drainage issues, to upgrade and maintain roads, and to address vehicular and pedestrian safety at intersections and on roadways.*
2. *Insure local roads are designed to carry the traffic volumes generated by the land-use activity they serve.*

3. *Develop standards for private roads and shared road access.*
 4. *Explore options for funding road maintenance.*
 5. *Use land use techniques, such as clustering, shared parking, access management, and landscaping, to regulate commercial development along the state highway and primary township roads.*
 6. *Develop a capital improvements plan to address the long term needs for road improvements, township hall maintenance, fire protection, emergency services, trails, and community recreation.*
 7. *Continue to maintain and upgrade Township Hall and fire station. Investigate outside funding sources such as grants, donations, low interest loans and foundations.*
 8. *Orient public facilities to accommodate and serve retired residents.*
 9. *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.*
 10. *Seek grants through federal, state and other funding sources for infrastructure improvements, community facility improvements, and economic development projects.*
 11. *Encourage the continued development of public transportation by working with the Thunder Bay Transportation Authority to ensure sufficient public transportation options for township residents.*
 12. *Promote, maintain, and expand recreational trails by working with County Road Commission, MDNR, MDOT, and user groups to connect community assets and connect with regional trail systems.*
-

Economic Development

Goal: 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:

1. *Strive to balance economic development with the rural and resort character of the Township.*
2. *Encourage a diverse mix of new businesses.*
3. *Work with county and regional organizations to develop strategies for marketing the area as a tourism destination with recreational, cultural and historic components.*
4. *Support the expansion of high speed telecommunication service in the Township.*
5. *Encourage the expansion of the infrastructure required to make the Township attractive to commercial, industrial, and home-based business.*
6. *Use reasonable land use and development regulations and assist in the expansion of infrastructure necessary to support economic development in a planned and managed way.*
7. *Support and cooperate with regional economic development organizations to explore ways that help promote and develop all of Northeast Michigan.*

Recreation and Public Lands

Goal: Preserve and improve access to public lands and water; expand recreational trails and improve public parks for the enjoyment of residents, visitors and future generations.

Objectives:

1. *Cedar Lake Park – Upgrade the playground equipment, upgrade public restrooms, and install new safety buoys at the beach.*
2. *Spencer Park –develop a lighted tennis court.*
3. *Connect parks, community centers and residential areas with non-motorized trails.*
4. *Work with the regional, state and federal agencies to create and expand recreation trails such as water, x-country skiing, hiking, biking, horse riding, ORV and snowmobile trails in the area.*
5. *Pursue grants and outside funding sources for community parks, land acquisition and recreational development.*
6. *Retain and where appropriate acquire public water access sites for residents, seasonal residents and visitors.*
7. *Through zoning and review procedures, proposed subdivisions, site condominiums, planned unit developments, commercial and industrial developments should be encouraged to provide or participate in the development of neighborhood parks.*
8. *Encourage creative design and planning techniques such as PUD's, clustering and conservation easements, for all new development so as to maintain open space and scenic vistas.*
9. *Update as needed the Township Recreation Plan that identifies and prioritizes needed community recreation facilities.*
10. *Maintain communication with the Department of Natural Resources to provide input into the usage and management of the public lands within the Township.*

Government

Goal: Provide services in an efficient, cost effective, environmentally responsible and caring manner to meet the needs of the residents, property owners, business people and visitors.

Objectives:

1. *Ensure a responsible fiscal policy and budget process to finance the Township government.*
2. *Seek the involvement of volunteers in the government process.*
3. *Investigate ways to generate economies of scale and cost savings through collaboration and coordination with other local units of government.*
4. *Support intergovernmental and regional cooperation on issues of mutual concern.*
5. *Continue to work with Alcona County to provide emergency services and police services to Township residents.*
6. *Continue to participate in local meetings of the Michigan Township Association.*
7. *The Planning Commission will work with the Township Board:*
 - a. *to deliver township planning and zoning services in a wise and efficient manner.*

- b. on planning for future issues impacting Greenbush Township.*
 - c. to ensure continued funding and support for the Greenbush Township Planning Commission.*
 - 8. Keep apprised of and continue to educate members of the Planning Commission regarding the Medical Marijuana issue.*
 - 9. Focus on cross-jurisdictional issues when reviewing community master plans and zoning ordinances.*
-

Goal: Communicate effectively with the public.

Objectives:

- 1. Inform the public about the scope and value of Township services.*
 - 2. Encourage public input on issues impacting Greenbush Township.*
 - 3. Encourage public feedback from a wider array of Township residents, including youth, young families, seniors and seasonal residents.*
 - 4. Due to the high percentage of seasonal and non-residential landowners use mailed or web based surveys to solicit community input.*
 - 5. Continue to use and update the Township's website to provide access to township government activities. This includes posting plans, ordinances, required forms and permits, and publishing Planning Commission and Township Board meeting agendas, notices, and minutes electronically.*
 - 6. Consider setting up a Township Facebook page to inform residents and businesses of activities.*
-

Goal: Implement effective blight and nuisance controls within the Township.

Objectives:

- 1. Use effective zoning regulations to control blight and nuisances.*
 - 2. The Township Board, Planning Commission, staff and Township Attorney will implement effective procedures, such as Civil Infraction, to enforce the blight and nuisance ordinances.*
 - 3. Increase public awareness regarding the need for blight and nuisance regulations.*
-

Overall Resource Conservation Goal

Goal: The overall goal of Resource Conservation is to preserve and maintain the ecological, visual, forest, wetland and scenic resources of the Township, preserve the environment and maintain and enhance the overall quality of life for Township residents.

Why protect nature in our community?

- Natural areas enhance the quality of life for residents and help define community identity by connecting residents to the natural landscape.
- Healthy, functioning natural areas provide recreational opportunities including hiking, fishing, bird watching, and nature study.
- Natural landscapes soften the hard edge of urban built-up areas with the greenery of leaves, the many colors of flowers and fruits, the smell of blossoms and the sounds of birds.
- Parks and open space enhance the economic value of the area. Open lands cost less in services than other uses, and add to the value of properties nearby.
- Natural landscapes have many environmental benefits- they control erosion, help retain stormwater, help clean the air of pollutants, protect surface water quality, mitigate global warming by absorbing carbon dioxide and other greenhouse gases, and help shelter and cool our homes. All of these services are provided absolutely free.
- Future generations will enjoy the legacy of today's efforts to protect our natural heritage.
- Spiritual Values – "A sense of place, a sense of wellbeing, a quiet place to look inward, feeling at one with the earth," there are many ways people express the spiritual values associated with spending time in natural areas.

Collaboration

There are great benefits to communities working together. Watersheds, streams, ecological corridors and wildlife have a complete disregard for political boundaries. The interconnected web of life, the "green infrastructure" was established long before the land area was divided into political units. Without question, the actions of one community can have a direct impact on the resources in an adjacent community. Therefore, it is imperative that adjacent communities coordinate land use planning and development activities. Working together to protect critical area-wide resources and to improve and re-establish degraded ecological corridors is a win-win scenario for all communities.

Goal: Use a collaborative approach to protecting and managing natural systems by forming partnerships with local, regional, state and federal agencies, adjacent units of governments, county government, and resource organizations.

Objectives:

1. *Participate in organized efforts to manage and protect the community's natural and water resources including, state forest lands, private forest lands, Cedar Lake and Lake Huron.*
2. *Work with the Cedar Lake Improvement Board to implement the 2011 Cedar Lake Watershed Management Plan.*
3. *Encourage local organizations, businesses, government agencies, educators and private citizens to become active participants in natural resource protection in the community through voluntary conservation programing.*
4. *Work cooperatively with communities, agencies and organizations to develop studies and institute programs that address watershed, woodlands, wildlife, invasive species control and ecosystem management.*
5. *Support studies that identify ways in which to protect critical resources, wildlife habitat, water resources, ecological corridors, scenic areas and vistas, and other important ecological resources.*
6. *Invite guest speakers (DNR, Cooperative Extension, US Fish and Wildlife Service, NOAA, Natural Resource Conservation Service, Alcona Conservation District, Northeast Michigan Council of Governments, Huron Pines RC&D Council, Audubon, Chamber of Commerce, etc.) to lecture or hold discussions on all aspects of the natural environment.*
7. *Work with local libraries to make resource reference and educational materials available to residents of the community.*

Farm and Forest Lands

Goal: Support the retention of the community's forestry and agricultural land bases and insure they are a component of the economic diversity of the Township.

Objectives:

1. *Support and provide for the preservation of woodlands and farmland through master plan and zoning.*
 2. *Encourage the retention of agricultural lands, forest lands and ecological corridors through available mechanisms such as open space/cluster development and farmland agreements, forest stewardship programs, and conservation easements, as well as zoning incentives.*
 3. *Use legal tools to discourage intensive development in productive farm and forest lands.*
 4. *Implement zoning regulations that encourage and promote agricultural tourism activities.*
 5. *Allow farmers to produce, process, and market at wholesale and retail the products grown on their property.*
 6. *Educate residents and local officials on Michigan's Right to Farm Act.*
 7. *Encourage the use of Generally Accepted Agricultural Management Practices (GAAMPs).*
 8. *Participate in the Michigan Department of Natural Resources Forestry Planning activities for lands within the Township.*
-

Resource Conservation

Local planning and zoning are some of the primary tools communities can use to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, and to conserve natural resources and energy.

Goal: Develop planning & zoning strategies that recognize the land's environmental constraints; consider level of infrastructure available/needed; and support concept of sustainable development.

Objectives:

1. *Plan for a land use pattern that is oriented to the natural and water resources of the community by evaluating type and density of proposed developments based on:
 - a. *soil suitability;*
 - b. *slope of land;*
 - c. *potential for ground water and surface water degradation and contamination;*
 - d. *compatibility with adjacent land uses; and*
 - e. *impacts to sensitive natural areas like wetlands, greenways and wildlife corridors.**
2. *Encourage the use of native plants for reforestation, wildlife habitat, street and neighborhood trees, landscaping, parks and roadside corridors, by providing a list of recommended native plants.*
3. *Enact guidelines for, and encourage the use of cluster development that follows a creative design, retains open areas, indigenous vegetation, and other natural features.*
4. *Review model ordinance language in the DEQ Filling the Gaps publication and consider use of resource overlay zones; environmental assessment requirements; fees for professional reviews; sensitive areas protection, PUD/cluster development, conservation cluster residential development; site plan review standards; shoreline protection provisions; recommended setback distances; stormwater management guidelines; greenbelt provision language; groundwater protection standards; and coordinated permit review and approval procedures.*
5. *Provide zoning and development design standards to supplement State and Federal laws pertaining to wetlands and water resource protection.*

Goal: Support the long term conservation of the natural environment by protecting groundwater, surface water, environmentally sensitive areas, shorelines, and highly erodible areas; and supporting proper management of woodlands, wetlands, open space, fish and wildlife.

Objectives:

1. *Limit development density on steeply sloped areas. Require erosion control measures where construction is permitted. Require slope stabilization and revegetation on disturbed slopes or in extraction areas.*

2. *Preserve topography such as slopes, valleys and hills by limiting the amount of cut and fill during site development.*
3. *Direct development away from wetlands, environmentally sensitive areas and high risk erosion areas.*
4. *Encourage the preservation and management of plant communities that provide critical habitat for resident and migratory wildlife species.*
5. *Encourage the retention of agricultural lands, forest lands and ecological corridors.*
6. *Integrate preservation of wetlands, woodlands, meadows, critical wildlife habitat and important ecological corridors into site development as aesthetic and functional features.*
7. *Encourage the use of native plant species and naturalized landscape designs, where appropriate, to enhance the community's existing character.*
8. *In recognizing the importance of trees in the suburban environment, encourage the retention of existing native trees and the establishment of street and shade trees in residential neighborhoods and commercial developments.*
9. *Support the control of invasive species to prevent the spread of invasive species.*
10. *Promote responsible use of water access sites, Lake Huron shoreline and public lands.*
11. *Support natural resource education and technical assistance programs that assist landowners, businesses and communities.*
12. *Sponsor local workshops that focus on water quality, woodlands, wetlands, threatened and endangered species, and wildlife habitat.*
13. *Work with county departments to effectively administer and enforce regulations such soil erosion and sedimentation control and adopt needed ordinances such as storm water control.*
14. *Due to negative impact to groundwater and surface water resources, discourage the establishment of large Confined Feeding Operations (CFOs).*
15. *Support continued efforts to identify non-protected areas within the community that present opportunities for protection; prioritize those areas to maximize biodiversity and community benefits; and preserve priority areas using zoning, stewardship programs, voluntary conservation, conservation easements, purchase of development rights and fee simple purchase.*

Water Resource Protection

Goal: Preserve and improve surface water and groundwater resources that are essential to the Township's short-term and long-term economic viability and the overall quality of life for Township residents.

Objectives:

1. *Preserve the scenic and fragile nature of waterfront property from the negative impacts caused by intensive development and provide areas for public access and enjoyment.*
 - a. *Consider development of a waterfront overlay zoning district.*
 - b. *Implement zoning regulations that recognize the unique character and sensitive nature of waterfront property.*

- c. Encourage conservation easements on waterfront properties considered to hold scenic shoreline qualities.*
 - 2. Regulate the density and type of residential and commercial development adjacent to lakes, ponds, streams, and wetlands.*
 - 3. Evaluate incorporating a waterfront greenbelt protection section in the zoning ordinance.*
 - 4. Review keyhole development regulations for waterfront areas.*
 - 5. Coordinate with the Health Department in implementing regulations to require regular inspection and maintenance of septic tanks and other environmental alterations.*
 - 6. Adopt area-wide stormwater management ordinances to regulate the conveyance, containment and treatment of stormwater run-off.*
 - 7. Support the use of land and construction of new buildings in ways that protect groundwater from contamination by ensuring storage and use of hazardous substances occurs only in places with adequate secondary containment, separation from wells, and away from drains that discharge into soil.*
 - a. Review and if necessary amend the zoning ordinance standards related to groundwater protection.*
 - b. Protect groundwater from pollution by addressing secondary containment, drain discharge location, and setback from wells in Site Plan Review standards.*
 - c. Provide educational materials to citizens and stakeholders on protecting groundwater and on the outcome of groundwater monitoring.*
 - d. The Planning Commission and Zoning Administrator will coordinate the Site Plan Review, and compliance inspections with the Health Department and Drain Commissioner.*
 - 8. Work cooperatively with private landowners in partnership with local, regional and state agencies to restore and protect natural buffers along the edges of streams, lakes and wetlands.*
 - 9. Support the establishment of a program to provide technical assistance to waterfront landowners to: enhance greenbelts, improve wildlife habitat, protect water quality, promote “water friendly” lawn maintenance, maintain septic systems and protect threatened and endangered species.*
 - 10. Assemble water resource educational packets on topics such as septic maintenance, establishing and maintaining greenbelts, lakescaping for water quality and wildlife, proper fertilizer use, and shoreline erosion control.*
 - Make an application to local foundations to cover costs associated with assembling the educational packets.*
 - Distribute the packets to waterfront landowners.*
-

Chapter 7: Future Land Use

The final step in completing a Master Plan is to determine the types, location and intensities of development that will occur over the next twenty years. With the establishment of a Future Land Use Plan, Greenbush Township intends to ensure that existing land uses such as residential and forest recreation can continue; irreplaceable resources such as water, wetlands, farmlands and forestlands will be protected; and reasonable growth, including residential, commercial and industrial, can be accommodated with minimal land use conflicts or negative environmental impacts. While future land uses are difficult to predict, a future land use plan still provides a scenario which Greenbush Township can use as a guide when considering land use and development decisions.

Future land use recommendations are based on social and economic characteristics, environmental conditions, existing land uses, available community services and facilities, current zoning, community input and community goals and objectives. The future land use plan illustrates the proposed physical arrangements of land use within Greenbush Township. It identifies and defines the major future land use categories as well as the approximate locations for each use. The boundaries reflected on the map are not intended to indicate precise size, shape or dimension; rather they portray a general land use arrangement, which may be refined as the community develops. The plan is prepared to serve as a guide for the Township regarding current issues, land use decisions, investments, public improvements and zoning decisions. The plan is also intended to be a working document which will provide for the orderly development of the Township, assist the community in its efforts to maintain and enhance a pleasant living environment, protect important natural resources and foster economic development and redevelopment.

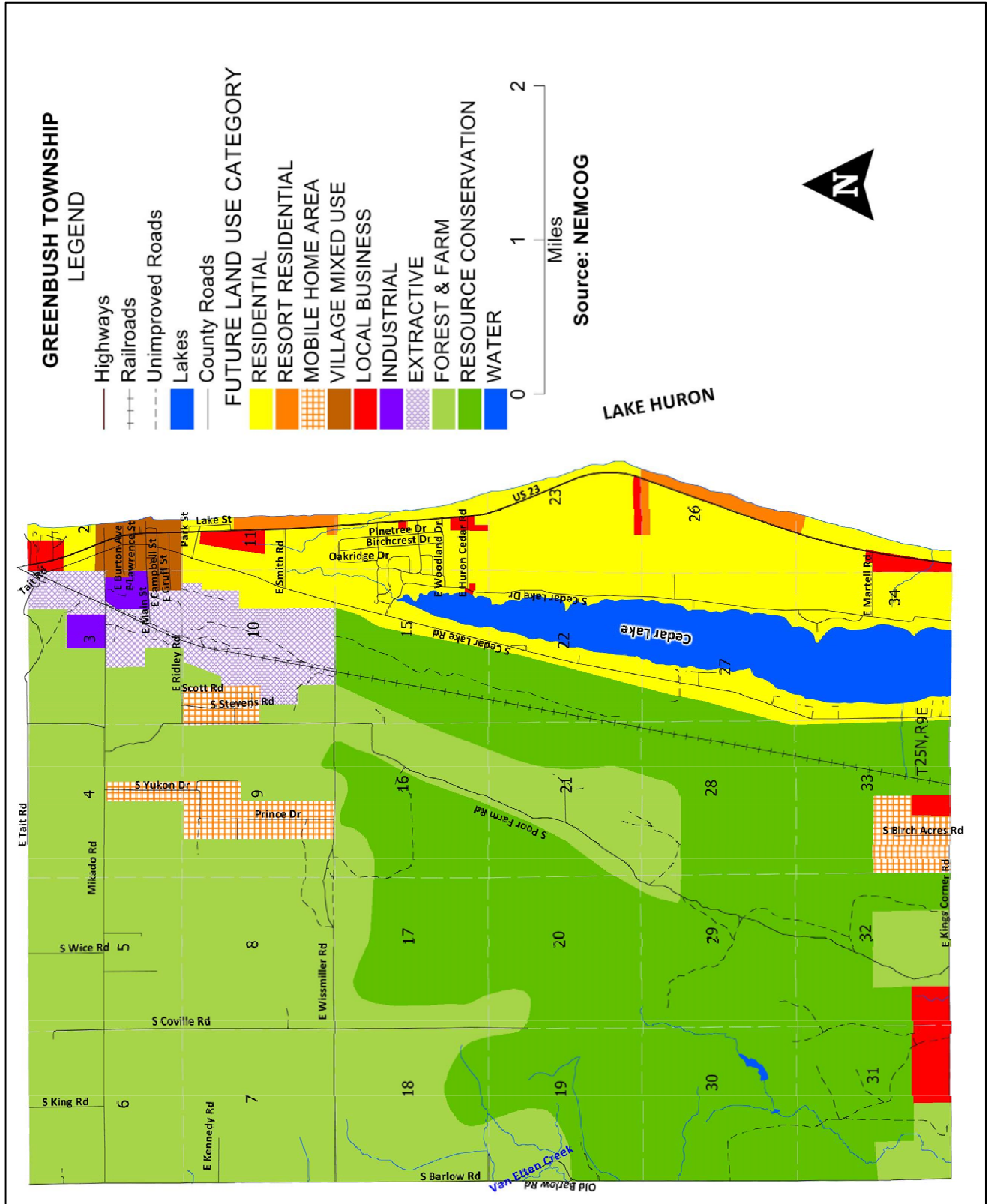
Future Land Use Planning Areas

The community has identified nine categories of future land use to serve future development needs. **Figure 7.1** is the future land use map of Greenbush Township that depicts the locations of planning areas. This section will provide explanations of each land use planning area, including purpose, recommended development density and compatible uses. This future land use plan recognizes that existing parcels within future land use planning areas may be less than the recommended minimum lot size. The plan does not intend to restrict the construction of new residences or continued residential use of these existing parcels.

Future Land Use Planning Areas

- Residential
- Resort and Residential
- Mobile Home Area
- Village Mixed Use
- Local Business
- Industrial
- Extractive
- Farm and Forest
- Resource Conservation

Township of Greenbush Master Plan



Residential

Location and Setting: The Residential category is intended to preserve existing residential development where land has already been subdivided into smaller lots and to expand specific areas for future residential growth. These areas are concentrated around the community of Greenbush, along the Lake Huron shoreline, around Cedar Lake and the lands between Cedar Lake and Lake Huron. These areas are currently zoned (R-1) Low Density Residential District. See **Figure 7.1** for locations of residential future land use planning areas.

Uses: Principal uses are single family dwellings and two-family dwellings, nature areas, parks, playgrounds, public or private schools, *home occupations* and accessory buildings. Where designed to be compatible with residential uses, other uses to be considered are golf courses, cemeteries, religious institutions, planned unit developments, public facilities, cottage industries, and manufactured housing communities.

Development Density: The residential development category is primarily designed to accommodate single-family dwellings on lots with a typical size of 12,000 sq. feet. There are locations in the residential future land use area with development constraints related to wetlands and poor drainage. It is anticipated development density will be lower on properties with such constraints. Older platted subdivision areas contain lots created prior to implementation of the zoning ordinance. These lots-of-record are smaller than minimal lot sizes in current residential zoning requirements. Future development regulations should recognize these conditions and provide for the reasonable continuance of their use and character.

Other Development Considerations: Due to a lack of public water and sewer service available, higher density residential uses, such as apartment, townhouse, condominium, mobile home park, convalescent or nursing home and manufactured home developments should require special development and design standards. 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. Additionally, the Township has designated a Mobile Home Park District (R-4) in the zoning ordinance to accommodate wide range of manufactured homes.

RESORT RESIDENTIAL

Location and Setting: The Resort Residential future land use area is intended to preserve existing residential development and small family owned resorts where land has already been subdivided into smaller lots. These parcels are located along the Lake Huron shoreline. A high percentage of dwellings are classified as seasonal use. Zoning districts within this area are Tourist Residential (R-2), Low Density Residential (R-1) and Multiple Family Residential (R-3).

Uses: Principal uses include single family dwellings, home occupations, public or private schools, townhouses and accessory buildings. Where compatible with residential uses, other uses to be considered include bed and breakfasts, cabin courts, hotels & motels, resorts; vacation lodges, nature areas, parks, religious institutions, public facilities, condominiums, cottage industries manufactured housing community and two-family dwelling (duplex).

Development Density: The recommended density is one dwelling unit per 12,000 sq. ft. Older platted subdivision areas contain lots created prior to implementation of the Township zoning ordinance. As a result, some lots (called lots of record) do not meet current zoning standards. These lots-of-record, when located in areas with high water tables or karst bedrock near the surface, present challenges for locating individual water wells and septic systems. In order to provide adequate separation zones for individual water wells and septic systems within older platted areas it is important to follow lot coverage and setback standards.

Other Development Considerations: Additional provisions are recommended to be incorporated into the Zoning Ordinance to allow for a cluster development pattern to avoid or minimize development impacts on environmentally sensitive areas, forests or farmland. It is not anticipated that municipal water or sewer service will be available over the next planning horizon. Establishment and/or maintenance of waterfront greenbelts, keyhole restrictions and waterfront setbacks should be addressed in the zoning ordinance.

MOBILE HOME AREA

Location and Setting: Greenbush Township has designated three areas for mobile homes, see Future Land Use Map, **Figure 7.1**. The properties are currently zoned for Mobile Home Area (MHA) in the Township’s zoning ordinance. In recent years, residences are converting to site built homes.

Uses: The MHA is designated for manufactured housing/mobile home parks. Primary uses would include residential, home occupations, nature areas and parks. Other uses if designed to be compatible with principal uses would include golf courses, cemeteries, religious institutions, resource extraction, and cottage industries.

Development Density: The category is primarily designed to accommodate manufactured housing. Minimum lots sizes of 12,000 square feet are recommended in these areas.

Other Considerations: No municipal water or sewer service is currently planned for this area. Due to the lack of community water and sewer, intensive smaller lot developments will be dependent on adequately addressing the water and waste disposal issues. Provisions in the Zoning Ordinance allow for a cluster development pattern to avoid or minimize development impacts on environmentally sensitive areas and forests.

VILLAGE MIXED USE

Location and Setting: The Greenbush Township master plan recognizes the importance of the unincorporated older community center of Greenbush. Participants in community visioning session associated with this planning effort identified the significance of this older community center and the need to sustain and expand upon historic development patterns. **Figure 7.1** shows location of Village Mixed Use (VMU) future land use planning area. The VMU category is designed to accommodate a mix of residential, business, institutional and public service uses. The designated area encompasses the unincorporated community of Greenbush and includes the above mentioned mixed uses. The existing commercial uses are primarily retail and service types of uses.

Uses: Areas within the VMU are zoned R-1, R-2, and Commercial and uses will therefore be associated with those zoning districts. This plan does not recommend merging zoning districts into a new mixed use district, but does recognize that boundaries of zoning will change. For example, the commercial district may expand as demand for small scale commercial development increases in the future. The intention is to maintain the community identity of Greenbush and have a small commercial center serving the needs of residents, tourists and persons passing through on US-23. Compact growth with an emphasis on walkable-pedestrian friendly development should be supported.

Other Considerations: A variety of residential housing types such as single family detached, duplexes, multi-family and retail with second story residential would be appropriate in the Village Mixed Use development. Compatible uses such as retail and service stores without outside storage areas, professional offices, banks, public buildings, schools, restaurants, taverns, fraternal organizations and neighborhood parks were envisioned for the community.

This area will serve vehicular traffic and therefore, access management and parking should be considered during the site plan review process. Frontage roads, back alleys, shared parking facilities, connection of adjacent parking lots and parallel local roads would allow for safe movement of vehicles between locations while limiting in-out traffic movement onto the highway. Buffers should be used to separate commercial from existing or new residential uses. Stormwater management, groundwater protection, pedestrian access, landscaping, buffering, signage, traffic and pedestrian safety, and outdoor lighting should be considered in development plans. Development in the Village Mixed Use area should have a pedestrian friendly environment.

State law grants the authority to regulate billboards along state and federal highways to townships, cities and villages, but not to counties. Township has adopted sign and billboard to maintain traffic safety and minimize any negative visual impacts of commercial development.

LOCAL BUSINESS

Location and Setting: While much of the commercial services for Greenbush Township residents are met by businesses located in Oscoda and Alpena, the Township wishes to set aside areas to accommodate future local commercial uses. At the present time commercial development is limited in the Township. Business areas are located along US-23 and include a convenience store, restaurant, small retail and service businesses. Commercial activity is related to resort and recreational sectors with peak times being May through October. Due to the limited year round population, local retail-service businesses have a difficult time surviving, as noted by the vacant buildings at the present time. The areas identified as local business in the future land use plan are planned to accommodate small commercial and service

enterprises. The areas are currently zoned Commercial and R-1 Residential.

Uses: Commercial developments in rural, recreational based tourism townships serve local residents and visitors. Due to the rural character, distance from population centers and low population levels, these areas are not intended for large scale, regional retail/shopping centers. Compatible uses include Commercial, retail, office, education, human care, social assistance and public facilities. The review process for development projects is set forth in the zoning ordinance and provides for a more streamlined review process for less intensive uses that completely fit the given zoning district, and a more thorough review for projects that are more intensive and will be compatible with the given district only if special standards are met.

Development Density: Commercial lots along major roads with higher traffic volumes and higher speed limits should have widths that can accommodate recommended driveway spacing in MDOT's access management guidebook for local communities. For example, at speed limits of 55 mph, driveways should be spaced at least 455 feet apart. As an alternative, narrower lots would be acceptable if frontage roads or shared driveways are incorporated into the development. Access management will preserve the safety and efficiency of travel; preserve community character; advance economic development goals; and protect the substantial public investment in roads and highways. Current zoning requires a minimum lot size of 12,000 square feet. Commercial lots will vary in size depending upon the location and business types.

Other Considerations: Businesses should have adequate buffers separating operations from residential and resource 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. Roadside landscaping to maintain traffic safety and minimize any negative visual impacts of development should be required along the main roads. State law grants the authority to regulate billboards along state and federal highways to townships, cities and villages, but not to counties. Therefore the Township has chosen to regulate billboards along US-23 and primary county roads.

INDUSTRIAL

Location and Setting: The community has identified the need to improve employment opportunities and expand the local tax base. Industrial future land use areas are designated in purple on the Future Land Map, **Figure 7.1**. These areas will accommodate light industry with limited need for water usage. The Township acknowledges there are industrial parks in neighboring communities, and therefore in the short term, until appropriate infrastructure has been put in place industrial/manufacturing development requiring public water and sewer should be guided to these existing industrial parks.

Uses: The industrial future land use category is designed to provide sites for wholesale activities, warehouses, retail operations that require large outside storage areas, sawmills, and light manufacturing. The review process for development projects is set forth in the Zoning Ordinance. The process should provide a more streamlined review process for less intensive uses that fit the given zoning district and a more thorough review for projects that are more intensive and require special standards. Developments 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 required buffers and other standards to minimize land use conflicts.

Development Density: Recommended minimum lots sizes would be 12,000 ft. sq.

Other Development Considerations: Development standards should address access management, buffering, signs, stormwater management, groundwater protection and landscaping to maintain traffic safety and minimize any negative visual impacts of development along the main roads. Manufacturing and warehousing development should be located on all-season roads. Larger scale development often needs municipal water and sewer or may need a satellite water or sewer system. Due to the lack of community water and sewer, intensive development will be dependent on adequately addressing the water and waste disposal issues.

EXTRACTIVE

Location and Purpose: Sand and Gravel mining operations flourished in past decades, primarily because of rich deposits associated with lacustrine sand and gravel and the proximity to rail service. Much of the deposits have been mined out and the community is left with old barrow pits with limited current uses. The future land use areas are shown on **Figure 7.1** Future Land Map.

Uses: Compatible uses include resource extraction, forest products processing, wood product mfg. (not mills), wireless communications equipment & support structures, septic services, and portable and temporary hot and cold mix asphalt plants, ready-mix concrete plants, and similar uses. The plan recommendations in no way intend to infringe upon their continuance or expansion.

Development Density: Recommended minimum lots sizes would be 12,000 sq. ft. per.

Other Development Considerations: The plan recognizes that extractive land use areas could be converted to other uses provided zoning requirements are met and the proposed use would not negatively impact surrounding uses. Since sand and gravel mining operations have been abandoned on some sites, these areas present opportunities for redevelopment into other uses such as residential, commercial, and industrial. This plan recognizes sand and gravel deposits may be located throughout the Township and that these deposits have not been identified as part of this planning process. If deposits are discovered, the landowner must apply for a zoning change, if the land is not zoned Extractive. The Township zoning ordinance should regulate development, operation and rehabilitation for extractive operations. Gravel pits with site reclamation plans would be allowed as uses by special approval, provided the activity is compatible with surrounding neighborhoods. No municipal water or sewer service is planned for these areas. Buffers or physical separation from incompatible uses (commercial and industrial) are necessary

FOREST & FARM

Location and Purpose: Greenbush Township recognizes forests and farmlands contribute significantly to the quality of life and the rural up-north character, which are valued by residents and visitors. The existing land cover is a combination of upland forests, farmland, upland openings, low density residential and forested wetlands. Designated areas in the Township are shown on the future land use map, **Figure 7.1**. The future land use designation is intended to encourage the continued existence of forestlands and farmlands within the Township. This category supports the continuation of resource management and outdoor recreational activities.

Uses: Along with low density residential uses, forestry activities associated with timber and wildlife management and farming activities are considered compatible in this area. If designed to be compatible with surrounding neighborhoods tourist accommodations like bed & breakfasts and resorts; more intensive forestry and agricultural uses such as bulk seed, feed, fertilizer and nursery stock outlet, farm product sales, grain elevators, forest products processing, and wineries/distilleries/breweries; educational facilities; cottage industries and wind energy facilities would be allowed as special uses.

Development Density: Larger lots provide privacy and tend to maintain ecological integrity of the natural resources. To protect sensitive areas and maintain larger tracts available for other uses, the plan recommends this category accommodates dwellings at an average density of one unit per 5 acres.

Other Development Considerations: No municipal water or sewer service is planned for these areas. Buffers or physical separation from incompatible uses such as commercial and industrial are necessary. The plan further recommends using open space development options, native vegetation greenbelts, and landscaping requirements in the Zoning Ordinance.

RESOURCE CONSERVATION

Location and Purpose: Greenbush Township recognizes extensive areas of forests and wetlands contribute significantly to the quality of life and the rural character, which are valued by township residents and visitors. The Resource Conservation category includes all of the State forest lands and privately owned lands with extensive areas of wetlands, lowland forests and flood plains associated with the coastal lake plain ecosystem. This category covers 36 percent of the township and is currently zoned forest recreation, with small areas R-1 and R-3 Residential. Road access is limited and with many seasonal roads. Landscape in the Resource Conservation future land use area provides the backbone of a regional green infrastructure system and functions as stormwater retention, water quality buffers, critical wildlife habitat and recreation areas. Locations recommended for this category are shown as dark green on the future land use map, **Figure 7.1**.

Uses: This plan encourages the retention of large tracts of lands, contiguous resource areas, river greenbelts, wetlands, scenic areas and wildlife habitat. The Resource Conservation category is designed to provide protection to environmentally sensitive areas, while allowing for limited and low density residential development to occur. Primary uses are hunting, fishing, skiing, hiking, camping, birding, wildlife management and forestry management. Forestry harvesting should be limited to winter months when the ground is frozen to protect the soil, and appropriate measures should be taken to prevent erosion into adjacent waterways.

Development Density: The Conservation category is designed to provide protection to environmentally sensitive areas, while allowing for very limited and low intensity development to occur. Development potential for both public and private facilities is very limited (see soil constraints maps in Chapter 4. This development would be consistent with recreational and conservation uses. A development density of one dwelling per 20 to 40 acres is recommended for the category.

Other Development Considerations: To protect sensitive areas and maintain larger tracts available for other uses, clustering based on density equivalents (one house per twenty acres) should be encouraged. This future land use plan recognizes that existing parcels within the planning area may be less than the recommended minimum lot size. The Township does not intend to restrict the construction of new residences or continued residential use of these existing parcels.

SPECIAL ISSUE AREAS

Community Parks and Recreation

The community also supports development of non-motorized trails and snowmobile trails. This plan recommends Greenbush Township work with adjacent communities, MDNR and MDOT to develop these trails. Demographic trends show the median age is some is approximately 20 years “older” than Michigan and the US. Recreational facilities and activities designed to accommodate the elderly population will become increasingly important. Greenbush Township should collaborate with local, regional and state organizations to address this growing need.

Parks

Greenbush Township owns and maintains Cedar Lake Park and Spencer Park. The community is committed to maintaining and upgrading the facilities at both parks. In order to afford improvements, the Township will pursue grants from agencies and foundations.

Roads

Money for maintaining county roads comes from state and local sources. The Township pays part of the cost of upgrading roads. The Township intends to work cooperatively with the County Road Commission to implement a coordinated asset management program to maintain and improve the road network. To address safety and maintenance, it is recommended the Township have driveway, private road and access management standards.

Open Space Development

The sprawl of subdivisions tends to destroy rural character by converting forest and agricultural lands to suburban characteristics of homes with manicured lawns. Through the use of clustering homes and limiting the size of improved lawns to smaller development pads, developers can preserve substantial areas of space in each subdivision.

Methods communities have employed to help protect and preserve privately held forest and farm lands, while protecting a landowner's economic investment, include the Purchase of Development Rights (PDR), conservation open space development standards, clustering requirements for residential uses, and tax breaks or incentives for continuing forestry and farming use. 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. It is recommended that these alternatives be considered in Greenbush Township as a way to balance economic rights with wildlands preservation goals. Incorporating open space requirements into Planned Unit Development zoning is a means of achieving this goal.

Waterfront Development

Renovation and redevelopment of existing waterfront properties is expected to continue as seasonal residences are replaced by year round homes. When redevelopment of waterfront properties occur, such as increasing structure sizes or tear downs and rebuilds, zoning

standards can focus on bringing the structures into conformity such as addressing required lot setbacks and establishing waterfront greenbelts. Size of accessory buildings should be in proportion to residential buildings. Where infill development occurs in previously platted areas, waterfront setbacks can be consistent with adjacent existing structures, but should be no closer than 25 feet from the ordinary high water mark. Development standards such as waterfront setbacks, building elevation above ordinary high water mark, building heights, protection of views and native vegetation greenbelts should be considered. No municipal water or sewer service is currently planned for this area.

Keyhole developments funnel second tier development landowners into a small lakefront lot. Without proper development standards, shoreline erosion, surface water pollution, increased noise and conflicts between lake users do occur. The Township should evaluate regulating keyhole development or high-density second-tier development with shared private waterfront access. .

Community Facilities

All development relies upon individual private water wells and septic systems. Surface and groundwater protection is a primary goal of Greenbush Township's long range planning effort. Constraints analysis in Chapter 4 - Natural Resources found extensive areas with limited development potential due to wetness, and poor filtering. This plan recognizes existing small lot development along waterways and in older subdivision may someday require public or common water and sewer facilities. With limited local financial, it would be necessary to pursue grant funding to implement community water or sewer facilities.

Resource Protection and Management

This plan supports the retention of managed public and private forestlands and wetlands in the township. Timber management and regeneration of mature stands are keys to reducing fuel build-up and threats of wildfires. A technique for maintaining a forested atmosphere is to hide development from adjacent roads and properties. Arranging lots and internal subdivision roads to use hills and ridges is an effective way to hide homes, outbuildings, and lawns. Use of woodlands and existing native vegetation may also make very effective screens for all types of development.

Wetlands are an important resource in the Township. The protection and preservation of these plant communities is encouraged. Wetlands can be preserved through use of conservation cluster residential development, conservation easements or fee simple purchase by local and state government. An adequate natural vegetation buffer should be maintained around all wetlands. Other types of development such as roads, parking lots, buildings, septic systems, stormwater detention facilities and lawns are not considered acceptable uses within the wetlands or associated buffer areas.

Hazard Mitigation

The Alcona County Hazard Mitigation Plan ranked wildfires as the number one hazard, followed by shoreline flooding, riverine flooding, severe winds, and winter weather hazards. Wildfire prone forest types, such as jack pine-oak are present on sandy ridges in the south central parts of the township. Shoreline flooding can be an issue along Lake Huron and in the adjacent wetlands. Where possible the community should work towards minimizing the threats of the identified hazards.

Hazard Mitigation Guidelines

Prevention. Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

Natural Resource Protection. Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

Emergency Services. Actions that protect people and property during and immediately after a disaster or hazard event. Services include warning systems, emergency response services, and protection of critical facilities.

Chapter 8: Adoption and Implementation

Plan Coordination and Review

As required by the Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended), notification of intent to develop the Township of Greenbush Master Plan was sent on April 16, 2015 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 at the end of this chapter.

After the draft plan was completed by the Township of Greenbush Planning Commission with the assistance of NEMCOG, a draft was transmitted to the Township Board for approval to distribute the plan for review and comment. The draft plan was transmitted on January 16, 2016 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 at the end of this chapter.

Public Hearing

A public hearing on the proposed Master Plan for the Township of Greenbush, as required by the Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended) was held on April 7, 2016. Section 43 of the Act requires that 15 days' notice of the public hearing be given in a publication of general circulation in the community. A notice of the public hearings was published in the Alcona County Review on March 16, 2016. Copies of the public hearing notice are reproduced at the end of this chapter.

Plan Adoption

The Township of Greenbush Planning Commission formally adopted the Master Plan on April 7, 2016. The Township Board passed a resolution of concurrence for the Master Plan on April 12, 2016.

Plan Implementation

The Master Plan was developed to provide a vision of the community's 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, community group activities, tax incentive decisions, and administration of utilities and services.

On an annual basis, the Township of Greenbush Planning Commission will review the goals and objectives of the Master Plan and identify and prioritize three to four working objectives per year. These identified priority items will be the focus of the Planning Commission's activity throughout that particular year. This will allow the Planning Commission to work on a proactive basis in order to better accomplish the goals identified in the Comprehensive Plan.

The Michigan Planning Enabling Act of 2008 (P.A. 33 of 2008 as amended) recommends that all master plans be reviewed and updated, as necessary, every five years. The Township of Greenbush Planning Commission will review the Master Plan on a five-year schedule and develop updates as necessary.

Zoning Plan

The Master Plan will serve as the foundation upon which the City Zoning Ordinance is based. Section 33 of P.A. 33 of 2008, as amended, requires the Master Plan to contain a Zoning Plan – an explanation of how the land use categories on the future land use map relate to the districts on the zoning map. This zoning plan requirement is addressed throughout Chapter 7: Future Land Use.

Many of the goals and objectives stated in the Master Plan can be addressed by implementing changes to the Zoning Ordinance. To accomplish many of these objectives, the Township must consider new standards of design as new development and infill development of underutilized areas occurs. Plans for updated zoning regulations were discussed within each Future Land Use section in Chapter 7. In addition, general recommendations for zoning updates were discussed in Chapter 7. To summarize, current zoning standards and allowable uses in each district will be reviewed and evaluated to determine if changes are needed in order to facilitate the development of sustainability of traditional neighborhoods and more flexible and innovative non-residential areas that will allow Harrisville to maintain its existing character and provide for innovative approaches for new development and re-development.

Regulations will be reviewed to ensure that they are consistent with the existing character of traditional neighborhoods and do not create an abundance of nonconforming structures. Regulations will be considered which allow a mixed use within neighborhoods to encourage the development of shops and recreational opportunities. Allowing this range of uses and densities contributes to the sustainability of a community in a changing economy. Regulations will be researched and incorporated which offer a predictability of development by emphasizing building height and size, architecture and façade treatments, parking location, and the relationship of building to street. Information will be consolidated in a concise format using pictures instead of text. Chapter 6 addresses many general and specific goals and objectives that will be achieved through zoning updates.

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) typically looks six years into the future to establish a schedule for all anticipated capital improvement projects in the community. A CIP includes cost estimates and sources for financing for 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

The Township of Greenbush does not have a DNR-approved Recreation. If the community decides to make large investments into its park system, it would be advised to develop and submit a community recreation to the Michigan DNR. The DNR-approved recreation plan enables a community to apply for recreation grants through the MDNR.

Official Documentation

The following pages contain the official documentation of the master planning process.

376-4903), a nonprofit organization that provides free eyeglasses through a voucher

(Send your senior questions to: Savvy Senior, P.O. Box 5443, Norman, OK 73070, or visit SavvySenior.org.)

march 4	
Part Timers	70 20
Prince-Monnier	60 30
All or Nuthin	55 35
Awesome Four	52 38
Wine Tards	44 46
Eilf-Bubliz	32 58
Splits Happen	22 68
Men's high game: Dave Glazar, 236. Men's high series: Allan Worthington, 591.	
Men's high handicap game and series: Allan Worthington, 266 and 687.	
Women's high game and series: Lynn Gibson, 211 and 553.	
Women's high handicap game and series: Kathy Eilf, 249 and 674.	

march 6	
Rosebuds	142 68
Tigerlilys	142 68
Marigolds	126 84
Bluebells	105 105
Mums	93 96
Buttercups	88 122
Daffodils	83.5 126.5
Violets	51 159
High game: Carla James, 178.	
High series: Annette Kane, 478.	
High team game and series: Tigerlilys, 313 and 864.	

march 8	
Alcona Abstract	43 17
Alcona Dredge	37 23
Lincoln Prec.	36 24
Stoney Acres	36 24
Ark Plumbing	34 26
Alcona Tool	29 31
Back Alley Bar	14 46
JB's Auto	11 49
High game and series: Carla James, 209 and 612.	
High handicap game: Annette Brueggeman, 247.	
High handicap series: Carla James, 720.	

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Do You Have News We Can Use?
Calendar of Events
 The Review's Calendar of Events is a free service and is published in chronological order as space allows. If it *has* to be published by or on a certain date, it is considered paid advertising.

- This forum is for events and programs open to the general public.
- Calendar items are short, concise announcements of an event happening in or around Alcona County.
- Entries *must* have the day and date, time, location, brief description and cost if any. An entry may also include one or two telephone numbers for more information. If a telephone number is *not* to be published, it must be noted clearly. Otherwise it *will* be published. (Entries are also automatically added to the Review's website *Calendar of Events* at no charge.)
- Submissions can be mailed to: P.O. Box 548, Harrisville, Mich. 48740; Faxed to: (989) 724-6655; dropped at the Review office ~ 111 N. Lake Street, Harrisville; or e-mailed to: subscribe@alconareview.com or editor@alconareview.com.

Please include a contact name & telephone number with each submission in case there are questions.

PUBLIC HEARING NOTICE
Township of Greenbush
Master Plan
 The Township of Greenbush Planning Commission will hold a public hearing on the draft Master Plan at 7 p.m. on April 7, 2016, at the Greenbush Township Hall located at 5039 Campbell Rd, Greenbush. The draft Master Plan can be reviewed at: www.greenbushtownship.com. Written comments may be submitted to Mark Swanson, Planning Commission Chair, 2700 S. Poor Farm Rd., Greenbush, MI 48738. E-mail: mcswanon1@yahoo.com

Minor
March 12

Boys	130 65
Girls	65 130
Boy's high game and series: Triston Robinson, 98 and 195.	
Boy's high handicap game and series: Triston Robinson, 235 and 469.	
Girl's high game and series: Areean Monnier, 49 and 74.	
Girl's high handicap game and series: Areean Monnier, 235 and 446.	

Major
March 12

Pin Busters	249 200
Lucky 7's	229 221
Team 2	212 237
Ace	210 240
Boy's high game and series: Cory Hoffman, 213 and 536.	
Boy's high handicap game: Jake Tanner, 275.	
Boy's high handicap series: Jeremy Lickey, 711.	
Girl's high game and series: Emily Hoffman, 175 and 495.	
Girl's high handicap game and series: Emily Hoffman, 235 and 628.	

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**RESOLUTION OF ADOPTION
TOWNSHIP OF GREENBUSH PLANNING COMMISSION
Township of Greenbush 2016 Master Plan**

WHEREAS: Township of Greenbush, Alcona County, Michigan re-established a Planning Commission under State of Michigan Public Act 33 of 2008, as amended, and;

WHEREAS: The Township of Greenbush Planning Commission is required by Section 31 of P.A. 33 of 2008, as amended to make and approve a master plan as a guide for the development within the Township, and;

WHEREAS: The Township of Greenbush Planning Commission, in accordance with Section 39(2) of the Act, notified the adjacent communities and the Alcona County Board of Commissioners of the intent to develop a plan and, in accordance with Section 41(2) of the Act, distributed the final draft to adjacent communities and the Alcona County Board of Commissioners for review and comment, and;

WHEREAS: The plan was presented to the public at a hearing held on April 7, 2016, before the Planning Commission, with notice of the hearing being published in the Alcona County Review on March 16, 2016 in accordance with Section 43(1) of the Act;

NOW THEREFORE BE IT RESOLVED THAT,

The content of this document, together with all maps attached to and contained herein are hereby adopted by the Township of Greenbush Planning Commission as the Township of Greenbush Master Plan on this 7th day of April, 2016.

Motion: Dave Dailey

Second: Wayne Muncie

Ayes: Mark Swanson, Wayne Muncie, Dave Dailey, Tim Giannetti

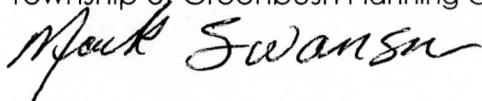
Nays: None

Absent: Ted White

Certification

I hereby certify that the above is a true and correct copy of the resolution adopted at the April 7, 2016, meeting of the Township of Greenbush Planning Commission.

Mark Swanson, Chair
Township of Greenbush Planning Commission



RESOLUTION OF CONCURRENCE
Greenbush Township Board
Township of Greenbush Master Plan

WHEREAS: Township of Greenbush, Alcona County, Michigan re-established a Planning Commission under State of Michigan Public Act 33 of 2008, as amended, and;

WHEREAS: The Township of Greenbush Planning Commission is required by Section 31 of P.A. 33 of 2008, as amended to make and approve a master plan as a guide for the development within the Township, and;

WHEREAS: The Township of Greenbush Planning Commission, in accordance with Section 39(2) of the Act, notified the adjacent communities and the Alcona County Board of Commissioners of the intent to develop a plan and, in accordance with Section 41(2) of the Act, distributed the final draft to adjacent communities and the Alcona County Board of Commissioners for review and comment, and;

WHEREAS: The plan was presented to the public at a hearing held on April 7, 2016, before the Planning Commission, with notice of the hearing being published in the Alcona County Review on March 16, 2016 in accordance with Section 43(1) of the Act;

WHEREAS: The plan was adopted by the Planning Commission on April 7, 2016;

NOW THEREFORE BE IT RESOLVED THAT,

The Township Board of the Township of Greenbush does hereby concur with the action of the Planning Commission by means of passing this resolution on the _____ day of April, 2016.

Motion: Treasurer Dailey Second: Abraham

Ayes: Olin Clerk Dailey Abraham Treasurer Dailey

Nays:

Absent: Roddy

Certification

I hereby certify that the above is a true and correct copy of the resolution adopted at the April 12, 2016 meeting of the Township Board of the Township of Greenbush.

David E. Dailey
Township of Greenbush Clerk

Resolution # 05-16