

Part B
COMMUNITY PROFILE DESCRIPTIONS RELATED TO HAZARD RISK

(See Appendix A for additional detail)

1.0 COUNTY PROFILE SUMMARY

1.01 Muskegon County

Muskegon County is located in the western portion of Michigan's Lower Peninsula along Lake Michigan's shoreline. It is bordered by Oceana County to the north, Newaygo County to the northeast, Ottawa County to the south, Kent County to the southeast and Lake Michigan to the west. The county has an area of 504 square miles, or approximately 322,560 acres, 27 miles of Lake Michigan waterfront, 20 inland lakes, and more than 400 miles of river. The 2010 U.S. Census counted 172,188 persons, 65,778 households, and 45,366 families. The U.S. Census for the year 2000 counted 170,200 persons, 63,330



households, and 44,267 families. From 2000 to 2010, the population grew about 1.17%. The population is projected to increase by .58% in 2015 to 173,191. For the 65,788 households counted in 2010, the median income was \$40,670. The county has a population density of 344.9 persons per square mile and there were 73,561 housing units at an average density of 147.3 housing units per square mile. In terms of race, the 2010 Census states that Muskegon County consists of 82.6% White, 15.9% Black or African American, 1.9% American Indian, .9% Asian, .1% Pacific Islander, 1.8% some other race, and 2.8% from two or more races. 4.8% of the population is Hispanic or Latino.

1.02 History and Development

The earliest recorded history of the Muskegon area reflects that it was inhabited by the Ottawa and Pottawatomi tribes. Perhaps the best remembered of the Indian inhabitants of this area was Ottawa Indian Chief Pentalouan. The name "Muskegon" is derived from the Ottawa Indian term "Masquigon" meaning "marshy river" or "swamp". The "Masquigon" river is identified on French maps as early as the late 17th century, suggesting that French explorers and fur traders had reached western Michigan by that time. The first known Frenchmen in the area were Father Jacques Marquette, who traveled through the area in 1675 on his way to St. Ignace, and a party of French soldiers under LaSalle's lieutenant, Henry de Tonty, who passed through in 1679. If the French established trading posts in the area, their locations are not known. The earliest known resident of the county was a fur trader and trapper named Edward Fitzgerald, who settled in the area in 1748. Between 1810 and 1820, several French Canadian fur traders established posts around Muskegon Lake.

Muskegon County was organized in 1837 from portions of Ottawa (3/4) and Oceana (1/4) Counties. At the time of its incorporation in 1859, Muskegon County had six townships (Muskegon, Norton, Ravenna, White River, Dalton, and Oceana.). The development of the area, with vast numbers of white pines, coincided with its timbering activities during the turn-of-the-century lumber boom. When the lumber industry reached its peak in the 1880's, there were over 47 sawmills on Muskegon Lake's 12 square mile body of water and another 16 on White Lake in northern Muskegon County, establishing Muskegon as the "Lumber Queen of the Midwest."

Following the lumber era, at the end of the nineteenth century, Muskegon County directed its economic growth to industry; including paper and cement manufacturing, production of chemicals, engines, and bowling equipment. The County also experienced a mini oil boom in the late 1920's when oil was accidentally discovered in the search for salt. Today the county is a major metropolitan center and a major producer of agricultural products (wheat, corn, dairy and livestock). The beaches of Lake Michigan and the inland fishing and water sport opportunities make tourism a major part of the economy. The Lake Michigan shoreline is accessible at eleven dune-filled public parks.

The county is also home to a number of state parks, a state game area, and Manistee National Forest. It has over 151,000 acres of forest, of which over 12,000 acres are national forest and over 8,000 acres are dedicated as state game and wildlife areas. The county's outdoor recreation opportunities are year-round with mild summers for water-based recreation, camping, and hiking. The winter brings approximately 80 inches of snow on average for winter outdoor recreation such as snowmobiling, sledding, skating, hockey, and ice fishing. There are also a variety of man-made recreational and tourism destinations that make Muskegon County attractive to visitors including a number of events and festivals.

1.03 Climate

Muskegon has a quasi-marine or continental climate. Because the county borders Lake Michigan and prevailing winds are westerly, much of the time air reaching the county has passed over a large amount of water, making for a quasi-marine climate. When the wind changes, however, and is coming from the east or southeast, the air moves over a large amount of land and the climate becomes continental. Because of the prevailing westerly winds, the influence of the lake is strong. Winters are milder, summers are cooler, and snowfall is greater than they would be if the lake were not there.

The influence of Lake Michigan on temperature is shown by the higher maximum and minimum temperatures in January at Muskegon as compared to those at Grand Rapids in Kent County. Grand Rapids is used for comparison because there is no weather station in the eastern part of Muskegon County and because climate at Grand Rapids is considered representative of the eastern part of Muskegon. The highest temperature ever recorded, according to the Michigan State Climatologist's Office, at Muskegon was 98 degrees in June 1995 and the lowest was -14 degrees in November 1950. At Grand Rapids, the highest temperature of record was 102 degrees in June 1953 and the lowest was -22 degrees in January 1951. Also, temperatures in April and May are lower at Muskegon. The latest freezing temperature ever recorded at Muskegon was on May 20 and at Grand Rapids was on May 27. In fall, the average date of the first 32 degree temperature is October 19 at Muskegon and October 6 at Grand Rapids.

The influence of Lake Michigan on precipitation is shown by the higher precipitation measurements. Average total precipitation per year is 33.42 inches in Muskegon and 38.18 in Grand Rapids. The average number of days with snow cover per year is 80 in Muskegon and 74 in Grand Rapids. Average annual snowfall in Muskegon County is about 91.94 inches, as compared to about 74.40 inches in Grand Rapids.

1.04 Agriculture

Agriculture began in Muskegon County in about 1845 by the early lumberjacks. As the land was cleared, farms were established but many of them were soon abandoned because the soils were sandy. Growing food for home use was the main concern of the first

farmers. Agriculture was stimulated by the influx of settlers and by the building of roads and railroads. Farms increased in number and by 1870 there was a surplus of crops that could be sold outside the county.

According to the 2007 Census of Agriculture, 79,663 acres or about 25% of land in the county was farmland, up 8% from the 2002 Census when 73,918 acres was used as farmland. 72.99% or 58,146.02 acres of farmland was cropland (includes five components: cropland harvested, crop failure, cultivated summer fallow, cropland used only for pasture, and idle cropland), 13.47% or 10,730.61 acres was woodland, and 13.55% or 10,794.34 acres was used for other uses (wetlands, rural residential land, or land generally of low value for agricultural purposes). Of the 58,146.02 acres used for cropland, 43,994 acres were used for corn for grain, forage (land used for all hay and haylage, grass silage, and greenchop), corn for silage, soybeans for beans, and wheat for grain. These crops are considered the top crops in terms of acres of farmland used. Milk and dairy products; fruits, tree nuts, and berries; vegetables, melons, potatoes, and sweet potatoes; and grains, oilseeds, dry beans, and dry peas are also important parts of the agriculture in the county.

1.05 Industry and Transportation

Manufacturing is important and varied in Muskegon County, employing about 25.2% of the civilian workforce or about 17,360 people according to 2007-2011 American Community Survey Estimates. The port of Muskegon, located on Muskegon Lake, is the gateway of the western part of Michigan to the St. Lawrence Seaway and world trade. As such, it is the greatest economic asset of the area. Other major industries in terms of employees and number of establishments are healthcare and social assistance; retail trade; accommodation and food services; and administrative and support and waste management and remediation services.

Muskegon County is well served by a series of freeways, state highways, major roads and local roads. The County's primary link to other metropolitan areas in southern Michigan is by Interstate 96, which terminates as it enters the City of Norton Shores and changes to BR-31 (Seaway Drive). Other regional access routes are provided by US-31, which is the primary north-south road for communities along the coast of Lake Michigan; a small section of M-37, which runs north-south through Casnovia Township; and M-46 (Apple Avenue), which is a state highway providing access to townships and communities to the east. M-120, which begins in the City of Muskegon and terminates in Hesperia on the Oceana and Newaygo county line at M-20, provides access to the northeast section of Muskegon County. Other roads include B-15, B-23, B-31, B-35, B-72, and B-86. A total of 693 miles of roads are maintained by the Muskegon County Road Commission, 374 of which are primary roads. There are 513 miles of local roads within the jurisdictions of the cities and villages of Muskegon County.

Important road bridges in the county include: U.S. 31, Business Route U.S. 31, and B-86 (Fruitvale Road) over the White River; U.S. 31, M-120, and B-31 (Maple Island Road) over the Muskegon River; and Henry Street and Lake Harbor Road over Mona Lake. Major railroad bridges are found crossing the Muskegon River in the City of Muskegon, and above Seaway Drive in Muskegon Heights and Norton Shores.

Muskegon County is serviced by Michigan Shore and Marquette Rail short-line railroads, both of which are owned by Genesee & Wyoming, Inc. There are freight services available from Muskegon, Muskegon Heights and Norton Shores. Lake Express offers ferry service between Muskegon and Milwaukee. Muskegon County Airport serves the air

transportation needs of the County and occupies 1,200 acres in Norton Shores. Airport services include commercial passenger (SkyWest operating as United Airlines) service to Chicago, freight service, and general aviation activity.

1.06 Physiography

The physiography of Muskegon County is mostly a result of the Wisconsin, or latest, glacial period. The glacial ice that once covered the state melted about 8 to 12 thousand years ago. As this ice melted, a covering of raw soil materials was left on the surface of the county. This glacial deposit ranges from about 150 feet to more than 400 feet in thickness.

The present surface of the county ranges from nearly level to rolling and hilly. Along the shore of Lake Michigan is a belt of strongly rolling sand dunes. These dunes are post-glacial in origin but are now generally stationary. After vegetation covers these dunes, a soil profile begins to develop. For several miles inland, smaller dunes are scattered throughout the poorly drained areas of the lake plain.

A wide plain with little relief lies east of the dunes. Rolling to hilly areas are toward the eastern side of the county and in the extreme northwestern part. Parts of the central plain are somewhat broken by stream channels and lake basins. Post-glacial sand dunes dominate the area. Most of the county ranges from 600 to about 800 feet above sea level but a small area in Casnovia Township is more than 800 feet above sea level.

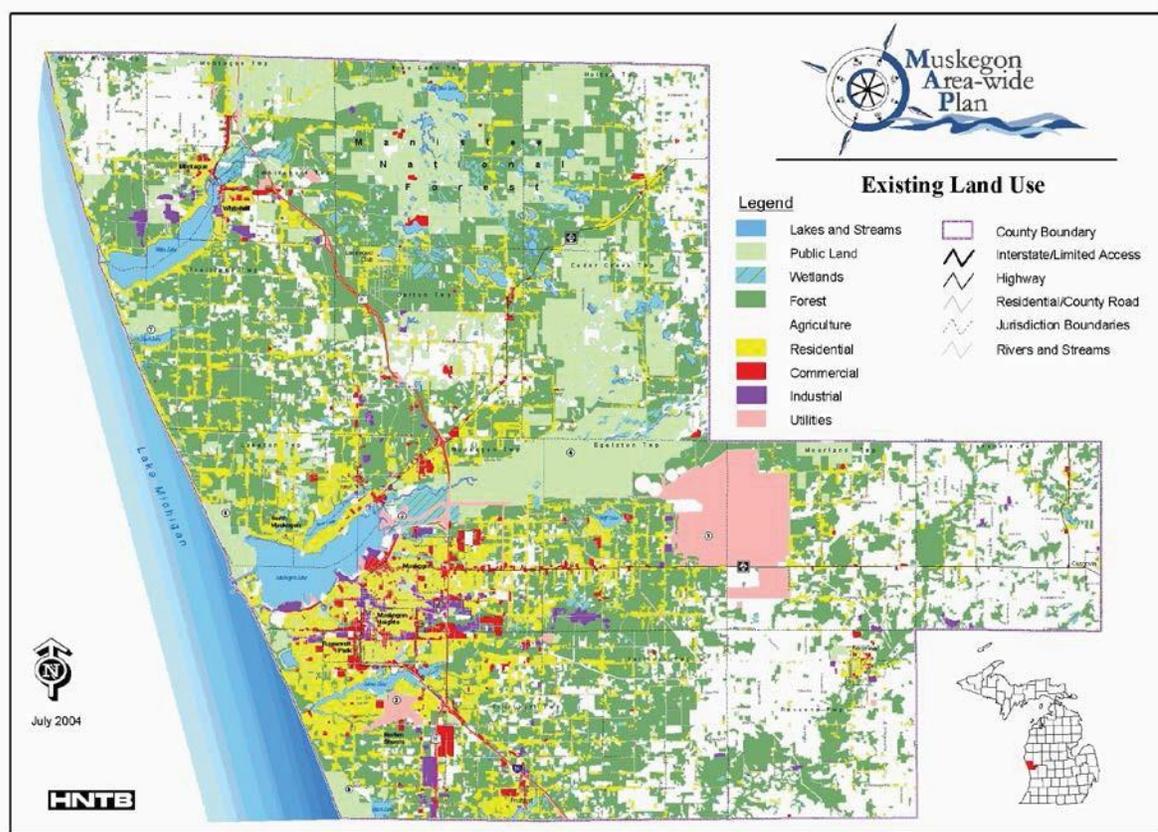
The central plain of Muskegon County is a part of the bed of glacial Lake Chicago. The deposits in this lake bed are sandy, underlain by clayey deposits in many areas. Another broad, gently undulating lake plain is in the northeastern part of the county. This plain is mainly in Holton Township, but it extends into the western part of Newaygo County. The soil material of this lake plain is finer textured than that of the plain in the central part of the county.

The principal morainic areas of the county are: most of Casnovia Township; a smaller area north of the valley of the Muskegon River; and an area that begins at a point north of Whitehall and extends for several miles south and east of that town.

1.07 Lakes and Rivers

The five primary water systems that drain Muskegon County include Grand River, Lake Michigan, Mona Lake/Black Creek, Muskegon Lake/River, and White Lake/River. Crockery Creek and Spring Lake/Norris Creek, both tributaries of the Grand River, drain the southeastern and southern parts of the county. The Mona Lake basin, including Little Black and Black creeks, drains much of the southern half of the county. The Muskegon River bisects the county and empties into Muskegon Lake, an inlet of Lake Michigan. Its main tributary within the county is Cedar Creek, which drains large portions of Cedar Creek and Holton townships. The White River drains much of the northern portion of the county and empties into White Lake, another Lake Michigan inlet. In addition, much of the western area of the county drains directly into Lake Michigan, including the Lake Michigan Shoreline, Duck Lake/Creek, Flower Creek, and Little Black Lake.

The abundant water in the numerous lakes and streams is one of the greatest assets in Muskegon County. The three major lakes, inlets of Lake Michigan, are Muskegon Lake, Mona Lake, and White Lake. Many other lakes, mostly north of the Muskegon River, provide areas for homes, recreation, youth camps, and other recreational facilities. A 1962 inventory lists 262 lakes and ponds in the county covering 11,453 acres.



Sources:

- "Soil Survey - Muskegon County, Michigan", Soil Conservation Service, United States Department of Agriculture, October, 1968.
- "Muskegon Area-wide Plan Update", Muskegon County Comprehensive Plan, WMSRDC, 2013.
<http://www.nass.usda.gov/census/census97/profiles/mi/mip061.pdf>
<http://www.fedstats.gov/mapstats/more.data/26121.html>
http://en.wikipedia.org/wiki/Muskegon_County
<http://www.infomi.com/county/muskegon/>
- American Fact Finder, 2007-2011 5 year estimates- industry by occupation for the civilian population 16 years and over
- American Fact Finder, 2011 County Business Patterns, Muskegon County
- 2007 Census of Agriculture, Muskegon County Profile

Part B Continued
COMMUNITY PROFILE DESCRIPTIONS RELATED TO HAZARD RISK

(See appendix A for additional detail)

2.0 CITY PROFILE SUMMARIES

2.01 Montague City

Montague City sits to the north of White Lake and to the northwest of the City of Whitehall. It lies in the northern portion of Muskegon County and is situated on a hill overlooking White River and its sister city, Whitehall. Settlement of the area began in 1855 when Nat Sargent built the first house. The town was officially incorporated into a village in 1883 and a city in 1935. It was named after William Ferry Montague, who was one of the town fathers.



The 2010 population of the city was 2,361 with an estimated peak seasonal population of 2,577. 865 residents commuted to work and 494 were school-aged. The city had 1,182 total housing units, of which 1,006 were occupied and 176 were vacant. 92 of the vacant homes were for seasonal, recreational or occasional use. Important critical facilities of the city include the Montague Police and Fire departments, Montague Maintenance Garage, Montague Area High School and Middle School, St. James Lutheran Church, Montague City Hall, and Muskegon Area District Library Montague Branch. Major infrastructure includes U.S. 31 Business Route and the U.S. 31 Business Route bridge over the White River. Hayes Lemmerz International is the largest employer in Montague with over 600 employees, followed by Montague Area Public Schools with 137. White Lake is the most prominent geographic feature of the city.

2.02 Muskegon City

The City of Muskegon is located on the shores of Lake Michigan and along side Muskegon Lake, which connects Muskegon River to Lake Michigan. It lies to the south of the city of North Muskegon, and to the north of Muskegon Heights, Roosevelt Park, and Norton Shores. French explorers named the city in the late 1600's from the Indian word Masquigon meaning "marshy river." The first recorded settlers were Louis Baddaeu and Joseph Troutier, who opened up trading posts in 1834 and 1835. The lumber boom of the 1860's was good to the town, giving it village status in 1861. City status was obtained in 1869.



In 2010, the city had a total population of 38,401 and an estimated seasonal peak population of 38,818. 11,835 residents commuted to work and 7,617 were school-aged. There were a total of 16,105 housing units in the city, 2,138 of those units were vacant and 13,967 were occupied. Of the vacant homes, 175 are for seasonal, recreational or occasional use. Critical facilities in the city include the City of Muskegon Police Department, the Muskegon County Sheriff Department, the Marquette, Robinson, and Terrace stations of the Muskegon Fire Department, two public works yards, a pumping station, seventeen community shelters, eight community medical facilities, and five other critical facilities. There are many major employers in the city, the top three of which are Mercy General Health Partners, the County of Muskegon, and Muskegon Public Schools.

Critical infrastructure consists of four major roads, Michigan Shore railroad, four bridges, two power stations, a water filtration plant, a water and sewer maintenance facility, two transit systems, a coast guard station, and an army reserve center. Major geographic features of the city include the Lake Michigan shoreline and beach, coastal sand dunes, Muskegon Lake, and Muskegon River. There are also 4-6 small lakes and ponds, 4-6 small creeks, and dense residential, industrial, and commercial areas.

2.03 Muskegon Heights City

The City of Muskegon Heights is a southeastern suburb of the Muskegon urban area, incorporated in 1903. It is surrounded by the cities of Norton Shores and Muskegon and lies in the southwestern portion of Muskegon County. Its origin goes back to 1890 when local business leaders were looking to stimulate the economy after the lumber boom ended. They formed the Muskegon Improvement Company and purchased 1,000 acres. The land was then sold in lots by lottery and the proceeds were used to underwrite new businesses. The successful improvement project, and proximity to the City of Muskegon, precipitated a station spot for the Chicago and Western Michigan Railroad Company in 1902.



The city had a 2010 population of 10,856 with a peak summer population of 10,877. 2,649 commuted to work and 2,720 residents are school-aged. There were 4,842 total housing units, 846 of those were vacant, while 8 of the vacant housing units are for seasonal, recreational or occasional use. Important critical facilities of the city include the Muskegon Heights Police and Fire departments, Muskegon Heights City Hall, a Muskegon Area District Library Muskegon Heights Branch, and Muskegon County Family Independence Agency (FIA). No major employers were identified within the city. Major infrastructure includes Muskegon Heights Water and Sewer, Muskegon Area Transit System, U.S. 31 Business Route, Michigan Shore railroad. Major geographic features within the city include dense residential and industrial areas and 1-2 small lakes and ponds along with 1-2 small creeks.

2.04 North Muskegon City

North Muskegon is located just inland from Lake Michigan, to the north of Muskegon City and Muskegon Lake and to the south of Bear Lake. It lies in the southwestern portion of Muskegon County. Like most of the cities and villages in the area, the lumber boom was responsible for the formation of the city. It was originally named Reedsville after the first settler, Archibald Reed, but was later re-named North Muskegon in 1881 when it was deemed a village. City stature came in 1891.



The 2010 census population was 3,786 with a peak seasonal population of 3,899. 1,580 commuted and 727 residents were school-aged. The city had a total of 1,834 housing units, 213 of which were vacant. Of those 213, 49 were for seasonal, recreational or occasional use. Critical Facilities include the city's Police and Fire Departments, the Department of Public Works, City Hall, and Muskegon Area District Library Walker Branch. No major employers were identified within the city. Infrastructure in the city includes Michigan Highway M-120, Michigan Shore railroad, and a power transmission line. Major geographic features consist of Muskegon Lake, Bear Lake, Muskegon River, and dense residential and light commercial areas.

2.05 Norton Shores City

Norton Shores is located just to the south of Muskegon around Mona Lake, which has access to Lake Michigan. The city, which was once Norton Township and before that Nortonville during the lumber boom, sits in the southwest portion of Muskegon County and is bordered by Ottawa County to the south, Lake Michigan to the west and Fruitport Township to the east. It was named after Colonel S. Norton who built a sawmill and settled in the area around 1846. It was chartered as a City in 1967.



Norton Shores had a 2010 total population of 23,994 and a peak seasonal population of 24,596. 10,477 commuted and 4,561 residents were school-aged. The total number of housing units in the city was 10,939, of which 962 were vacant. Of those 962 vacant, 252 were for seasonal, recreational or occasional use. Critical facilities include the city's Police Department, two fire stations, a public works yard, a community medical facility, City Hall, and Muskegon Area District Library Norton Shores Branch. Major employers include Meijer Inc. and Knoll, each employing over 400 people. Major infrastructure in the city includes two highways, Michigan Shore railroad, two prominent bridges over Mona Lake, the Muskegon Heights water filtration plant, a dam at Black Lake, Muskegon County Airport, and the United States Coast Guard Air Facility. Lake Michigan's shoreline and costal sand dunes are major geographic features in the area. Others include Mona Lake, 10-12 other small lakes and ponds, 8-10 creeks, and dense residential and moderate commercial areas.

2.06 Roosevelt Park City

Roosevelt Park, a one square mile suburb community, was formed in 1946 and named after President Franklin D. Roosevelt. It was one of the many residential suburbs in the nation that were formed shortly after WWII. It is surrounded by the cities of Muskegon and Norton Shores.



The total population in 2010 was 3,831, with a peak seasonal population of 3,853. 1,584 commuted and 764 residents were school-aged. The total number of housing units in the city was 1,925, of which 194 were vacant. Of those 194 vacant, 10 are for seasonal, recreational or occasional use. Critical facilities in Roosevelt Park include the city's Police Department and City Hall. The city's two major employers are CWC Castings Division of Textron Inc. and Michigan Spring & Stamping. Critical infrastructure consists of the Michigan Shore railroad. Major geographic features include dense residential and moderate commercial areas.

2.07 Whitehall City

The city of Whitehall is located in northern Muskegon County just southeast of the city of Montague. It is bordered by Whitehall Township to the east and Fruitland Township to the south. The city is named for its location at the edge of White Lake. The recorded history for Whitehall began around 1859 when Charles Mears, a lumber tycoon, and Giles B. Slocum platted the land. Originally named Mears, the area benefited from its strategic location for floating and distributing lumber. It grew into a village in 1867 and then into a city in 1942.



Whitehall’s total population in 2010 was 2,706, with a seasonal peak population of 2,790. 1,190 commuted and 522 residents were school-aged. Whitehall had 1,288 total housing units, 135 of the total housing units were vacant and, of those vacant, 38 were for seasonal, recreational or occasional use. Critical facilities in the city include police and fire departments, four community medical facilities, City Hall, and the White Lake Community Library. Major employers include Howmet Corporation and Hilite International. Vital or critical infrastructure includes US-31 Business Route, US-31 Business Route bridge over White River, City of Whitehall Water and Sewer, and Mill Pond Dam. Major geographic features in the area include White Lake, 6-8 small lakes and ponds, 6-8 small creeks, and dense residential and light commercial areas.

3.0 VILLAGE COMMUNITY PROFILES

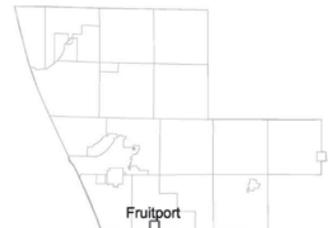
3.01 Casnovia Village

Casnovia Village is located in the eastern most portion of Muskegon County in Casnovia Township. Half of the village is in Kent County (Tyrone Township). The settlement was founded by tavern keeper Lot Fulkerson in 1850 and became a village in 1875. The name Casnovia means “new home” and comes from the Latin root words of casa meaning “home” and nova meaning “new”. The village of Casnovia had a 2010 total population of 319, with a peak seasonal population of the same amount. 184 commuted to work and 63 residents were school-aged. There were 131 total housing units, 10 of which were vacant, and none used for seasonal recreational or occasional use. The village’s only critical facility is the village hall and there are no major employers or critical infrastructure. There are 1-2 small creeks.



3.02 Fruitport Village

The Village of Fruitport is located on the southern border of Fruitport Township in the extreme southern portion of Muskegon County. It is at the end of the north branch of Spring Lake and is bordered by Ottawa County to the south. The town was originally founded by Edward Crow in 1868 and named Crawville. The town was incorporated into a village in 1891. The current name comes from the fact that it is a port and that the area is fertile fruit growing land. The total population in 2010 for the village was 1,093, and the peak seasonal population was 1,110. 464 commuted and 211 residents were school-aged. There were 476 total housing units, 36 of which were vacant. Of those vacant, 7 were for seasonal, recreational, or occasional use. The village DPW building and Muskegon Area District Library Fruitport Branch are the only two critical facilities and there is no major infrastructure. Major geographic features include Spring Lake and 2-4 small creeks.



3.03 Lakewood Club Village

Lakewood Club is located in the northwest portion of Dalton Township in the northern tier of Muskegon County. The Village originated in 1812 as a resort association founded by the Mayo brothers. It was popular enough by 1914 that a seasonal post office was set up. The post office became permanent in the 1940’s when the area became residential. Official village status



came in 1967. In 2010, the total population was 1,291, with a peak seasonal population of 1,339. 646 commuted and 303 residents were school-aged. The village is home to 507 total housing units, 49 of which are vacant. Of those that are vacant, 17 are for seasonal, recreational or occasional use. The lone critical facility is the village hall and the power transmission line is the only critical infrastructure. Major geographic features include moderately dense residential usage and Fox Lake.

3.04 Ravenna Village

Ravenna village is located in Ravenna Township in the southeastern portion of Muskegon County. Like many other towns in the area, Ravenna was settled when the first sawmill was built (1844). In spite of the fact that E.B. Bostwick built it, the town was named after the Ohio home town of the surveyor who platted the land in 1882. Ravenna was incorporated into a village in 1922. The total population in 2010 was 1,219, with a peak seasonal population of 1,222. 478 commuted and 292



residents were school-aged. There were 476 total housing units, of which 22 are vacant. Of the 22 vacant, 1 is for seasonal, recreational or occasional use. There is neither a police precinct nor a fire station in the Village of Ravenna and the only critical facilities are the village hall and Muskegon Area District Library Ravenna Branch. B-35 is the only major road and also the only identified critical infrastructure in the village. The major geographic feature in the village is Crockery Creek.

4.0 TOWNSHIP COMMUNITY PROFILES

4.01 Blue Lake Township

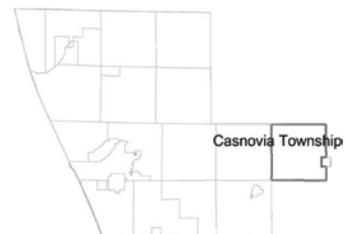
Blue Lake Township is located in the northern portion of Muskegon County. It is bordered by Dalton Township to the south, Oceana County to the north, Whitehall and Montague townships to the west, and Holton Township to the east. The first supervisor of the township was Austin P. Ware who settled in the area in 1864. The township was incorporated in 1865, and is named after Big Blue Lake which is its largest lake. The



total population in 2010 for the township was 2,399, with a seasonal peak population of 2,716. 1,045 commuted and 615 residents were school-aged. There were 975 total housing units, 153 of which were vacant. Of those vacant housing units, 109 were for seasonal, recreational or occasional use. The township has no police precinct but does have its two fire stations and a township hall. Critical facilities in the township include county roads B- 23and B-86, two dams, and a natural gas pipeline. Scattered rural housing, dense forest, Big Blue Lake, Wolverine Lake, White River, 50-60 small lakes and ponds, and 20-25 small creeks are among the major geographic features in the township.

4.02 Casnovia Township

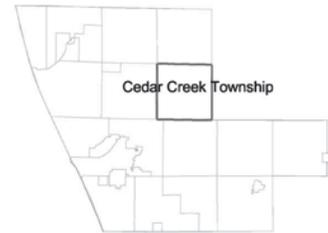
Casnovia is Muskegon County’s eastern-most township and is bordered by Newaygo County to the north, Ottawa County to the south and east, and Moorland Township (Muskegon County) to the west. Settlers are believed to have arrived as early as 1848 but the township was not organized until 1852. The first township meeting was held April 4, 1853. According to the 2010 census, the population was 2,805 including the Village of



Casnovia and had a peak seasonal population of 2,843. 1,322 commuted and 692 residents were school-aged. The township has 1,022 total housing units, 78 of which are vacant. Of those 78 vacant housing units, 13 are for seasonal, recreational or occasional use. The township fire department and the township hall are the only critical facilities identified. Critical infrastructure includes two state highways (M-46 and M-37), one county road (B-35), and a power transmission line. Major geographic features in the township consist of scattered rural housing and moderate residential areas, moderate forest, moderate farmland, Half Moon Lake, 14-16 small lakes and ponds, and 20-25 small creeks.

4.03 Cedar Creek Township

Cedar Creek Township lies on the eastern side of Muskegon County and is bordered by Newaygo County to the east, Holton Township to the north, Dalton Township to the west, and Egleston Township to the south. It was incorporated in 1861. According to the 2010 census, the total population was 3,186, with a peak seasonal population of 3,403. 1,572 commuted to work and 652 residents were school-aged. There were 1,409 total housing units, 202 of which were vacant. Of those 202 vacant, 83 are for seasonal, recreational or occasional use. Critical facilities in the township include the DNR Muskegon Field Office and the township hall. State highway M-120 runs through the township, along with county-designated B-31 and Michigan Shore railroad. There is also a power transmission line and a natural gas pipeline. Major geographic features include scattered rural housing, dense forest, Muskegon River, Hornungs Duck Lake, 26-30 small lakes and ponds, and 12-16 small creeks.



4.04 Dalton Township

Dalton Township, incorporated in 1859, is located in the northern portion of Muskegon County and is bordered by Blue Lake Township to the North, Muskegon Township to the south, Cedar Creek Township to the east, and Fruitland Township to the west. The total population in 2010 including Lakewood Club Village was 9,300, with a peak seasonal population of 9,714. 4,149 commuted and 2,094 were school-aged. There were 3,748 total housing units, of which 380 were vacant. Of those vacant 150 are for seasonal, recreational or occasional use. Critical facilities in the township include the fire department, a public works yard, the township hall, Muskegon Area District Library Dalton Branch, and Muskegon County Road Commission. Traversing the township are US-31, M-120, B-23, Michigan Shore railroad, a power transmission line, and a natural gas pipeline. Midget Private Airport is also among the township’s critical infrastructure. Major geographic features include scattered housing, moderate residential areas, moderate forests, Twin Lakes, 24-26 small lakes and ponds, and 8-10 small creeks.



4.05 Egelston Township

Egelston Township sits in the southern tier of Muskegon County and is bordered by five townships; Cedar Creek and Bridgeton (Newaygo County) to the north, Sullivan to the south, Moorland to the east, and Muskegon to the west. It was incorporated in 1859. The 2010 census population was 9,909, with a peak seasonal population of 10,010. 4,028 commuted and 2,272 residents were school-aged. The township had 3,882 total housing units, of which 262 are vacant. Of those



vacant, 37 are for seasonal, recreational or occasional use. Over ¼ of the housing supply is comprised of mobile homes. Critical facilities include the police and fire departments, the township hall, Muskegon Area District Library Egelston Branch, and Muskegon County Road Commission. Infrastructure in the township includes M-46 and B-31, Muskegon County Wastewater Management-Metro Site, Egleston Township Sewer and Maintenance, a power transmission line, a natural gas pipeline, and Muskegon Wastewater Lagoon Dam. Dense forests, sewage lagoons, Wolf Lake, Muskegon River, 5-7 small lakes and ponds, and 8-10 small creeks are among Egelston Township's major geographic features.

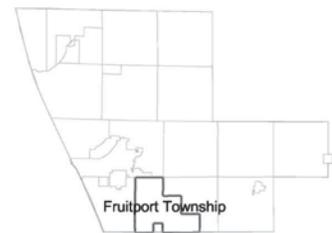
4.06 Fruitland Township

Fruitland Township, the county's largest township by size, partially contains Michigan's Adventure Amusement Park on its east side and abuts Lake Michigan on its west side. It is bounded by White Lake, Whitehall City and Whitehall Township to the north, Laketon Township to the south, and Lakewood Club Village and Dalton Township to the east. The earliest recorded history indicates that a French Canadian trader, Joseph LaFramboise, established a trading post at the mouth of Duck Lake in 1790-1800. The township was officially organized by the Muskegon County Board of Supervisors in 1869 and was named for its successful culture of fruits of all kinds. According to the 2010 Census, there was a total population of 5,543, with a peak seasonal population of 6,554. 2,209 commuted and 1,179 residents were school-aged. The township had 2,592 total housing units, 495 of which were vacant. Of those vacant, 383 are for seasonal, recreational or occasional use. The township hall is the only critical facility in the township. Critical infrastructure includes US-31 and a power transmission line. Scattered housing and moderate residential areas, moderate forests, the Lake Michigan Shoreline, White Lake, Duck Lake, 10-12 small lakes and ponds, and 8-10 small creeks make up the major geographical features of the township.



4.07 Fruitport Charter Township

Fruitport Charter Township is located in the southern portion of Muskegon County and is bordered by Sullivan Township to the east, Muskegon City and Muskegon Township to the north, Ottawa County to the south, and the City of Norton Shores to the west. The first settler arrived in 1836, but it wasn't until 1867 that the area separated from Norton Township and then incorporated as a township in 1868. In 2010, the township, including Fruitport Village, had a total population of 13,598, with a peak seasonal population of 13,733. 6,249 commuted and 2,938 residents were school-aged. The total number of housing units was 5,389, 286 of which are vacant. Of those vacant, 51 are or seasonal, recreational or occasional use. The township has its own police and fire departments. The township hall is also a critical facility in the township. Critical infrastructure includes I-96, US-31, B-72, B-31, and the Fruitport Township water and sewer departments along with a natural gas pipeline. Scattered housing and moderate residential areas, moderate forests, Spring Lake, 8-10 small lakes and ponds, and 10-12 small creeks make up the major geographic features in Fruitport Township.



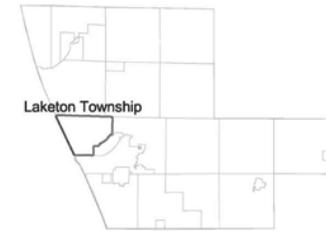
4.08 Holton Township

Holton Township is located in the northeastern corner of Muskegon County. It is bordered by Oceana County to the north, Dalton Township to the south, Newaygo County to the east, and Blue Lake Township to the west. Originally an Indian Reservation, it was organized into a township in 1871. In the year 2010, the total population was 2,515, with a peak seasonal population of 2,646. 961 commuted and 541 residents were school-aged. There were 1,050 total housing units, 134 of which were vacant. Of those vacant, 48 were for seasonal, recreational or occasional use. About ¼ of the housing supply was comprised of mobile homes. The fire department, township hall, and Muskegon Area District Library Holton Branch make up the important or critical facilities in the township. M-120, B-86, B-31, Michigan Shore railroad, and a power transmission line are all listed as vital or critical infrastructure. Major geographic features in the township include scattered rural housing with moderate residential areas, dense forest, Deer Lake, 14-16 small lakes and ponds, and 10-12 small creeks.



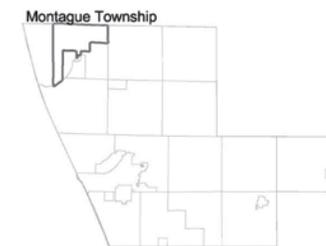
4.09 Laketon Township

Laketon Township is located along the shores of Lake Michigan and is bordered by Fruitland Township to the north, Muskegon and North Muskegon to the south, and Muskegon Township to the east. The township, organized in 1865, has a 2010 census population of 7,563, with a peak seasonal population of 7,773. There are 3,178 total housing units, 256 of which are vacant. Of those 256, 81 are used for seasonal, recreational or occasional use. The township has three community shelters and a township hall listed as critical facilities but has no vital or critical infrastructure. Major geographic features consist of scattered housing and moderate residential areas, moderate forest, Lake Michigan shoreline, coastal sand dunes, Muskegon Lake, Bear Lake, 8-10 small lakes and ponds, and 6-8 small creeks.



4.10 Montague Township

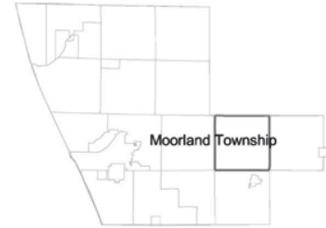
Montague Township is located in the northwest portion of Muskegon County and was incorporated in 1874. It is bordered by Oceana County to the north; White Lake, Whitehall Township, and the cities of Whitehall and Montague to the south; Blue Lake Township to the east; and White River Township to the west. The 2010 census recorded 1,600 as the total population, with a peak seasonal population of 1,683. There are 684 total housing units, 66 of which are vacant. Of those vacant, 32 are for seasonal, recreational or occasional use.



The only identified important or critical facility is the township hall. Vital or critical infrastructure includes US-31, US-31 Business Route, Old US-31, B-15, and B-86. Other critical infrastructure consists of a power transmission line, Ottiger Airport, and a natural gas pipeline. Scattered rural housing and moderate residential areas, moderate forest and farmland, White Lake, White River, 6-8 small lakes and ponds, and 14-16 small creeks are all major geographic features in the township.

4.11 Moorland Township

Moorland Township sits in the southeast portion of Muskegon County. It is bordered by Ravenna Township to the south, Casnovia Township to the east, and Egelston Township to the west, and Newaygo County to the north. Settlers arrived in the area as early as 1857 and the township was organized in 1860 when the first officers were elected. According to the 2010 census, the total population was 1,575, with a peak seasonal population of 1,583. The township has 618 total housing units, of which 44 are vacant. Of those 44 vacant, 3 are for seasonal, recreational or occasional use. The fire department and the township hall are the two identified critical facilities in Moorland Township. Vital infrastructure includes roads M-46, B-35, Muskegon County Solid Waste Management, a power transmission line, and a natural gas pipeline. Major geographic features in the area include scattered rural housing, moderate forest, moderate farmland, a sewage Lagoon, 3-5 small lakes and ponds, and 10-12 small creeks.



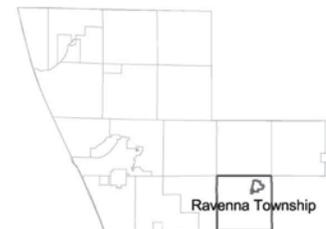
4.12 Muskegon Charter Township

Muskegon Charter Township is located near the center of Muskegon County. It is bordered by Dalton and Cedar Creek townships to the north; the cities of Muskegon and North Muskegon and Laketon Township to the west; Fruitport Township to the south; and Egelston Township to the east. In 1837, Muskegon Township was organized as a subdivision of Ottawa County. One of the earliest settlers, Henry Pennoyer, was elected as the first Township Supervisor in 1838. In 2010, Muskegon Township's total population was 17,840 with a peak seasonal population of 17,886. There are 7,191 total housing units, of which 384 are vacant. Of those 384 vacant, 18 are for seasonal, recreational or occasional use. Muskegon Township has one police precinct, two fire stations, and one public works yard. It also has eight community shelters, a community medical facility, a township hall, and the Muskegon Area District Library Muskegon Township Branch. Among its vital or critical infrastructure are US-31, M-120, M-46, Michigan Shore railroad, two bridges along US-31, a power transmission line, and Northside Airport. Major geographic features include scattered housing and moderate residential areas, moderate forest areas, Muskegon River, 4-6 small lakes and ponds, and 8-10 small creeks.



4.13 Ravenna Township

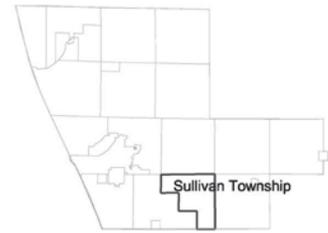
Ravenna Township lies in the southeastern-most portion of Muskegon County. It is bordered by Moorland Township to the north, Ottawa County to the south and east, and Sullivan Township to the west. E.B Bostwick was the first to locate land in the township in 1844. The township was organized in 1849 when the first town meeting was held. The 2010 census population is 2,905, including the Village, with a peak seasonal population of 2,927. There are 1,100 total housing units in the township, 62 of which are vacant. Of those vacant, 8 are for seasonal, recreational or occasional use. Important or critical facilities include the fire station, one community shelter, and the township hall. Roads B-72, B-35, and a power transmission line are the listed vital or critical infrastructure in the township. Major geographic features in the area are scattered rural housing, moderate forest, moderate farmland, Crockery Creek, 1-3 small lakes and ponds, and 14-16 small creeks.



4.14 Sullivan Township

Sullivan Township is located in the southern portion of Muskegon County and was incorporated in 1891. It is bordered by Ottawa County to the south, Egelston Township to the north, Ravenna Township to the east, and Fruitport Township to the west. The 2010 census gives a total population of 2,441, with a peak seasonal population of 2,454. There are 978 total housing units in the township, of which 46 are vacant. Of those vacant, only one is for seasonal, recreational or occasional use. The

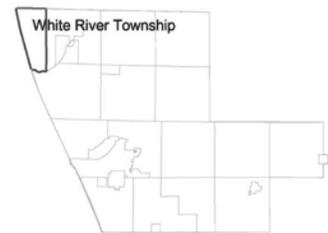
township hall is the only listed critical facility in the township. Critical infrastructure includes roads B-72, B-31, and a power transmission line. Major geographic features in the area include scattered rural housing, moderate forest area, 4-6 small lakes and ponds, and 6- 8 small creeks.



4.15 White River Township

White River Township is located in the northwestern corner of Muskegon County. Lake Michigan borders it to the west, Oceana County to the north, White Lake to the south, and Montague Township to the east. It is difficult to get an accurate history of the township because all records were burned in 1859 to make a fresh start, one free of debt, but the date of incorporation (1848) is known. The 2010 census shows a total population for White River Township of 1,335, with a peak

seasonal population of 2,195. There are 907 total housing units, of which 383 are vacant. Of those vacant, 340 are for seasonal, recreational or occasional use. Critical facilities in the township include one community medical facility and the township hall. Vital infrastructure includes county road B-15, and a power transmission line. Major geographic features consist of scattered rural housing, moderate forests, moderate farmland, the Lake Michigan shoreline, White Lake, 6-8 small lakes and ponds, and 10-12 small creeks.



4.16 Whitehall Township

Whitehall Township is located in the northwest portion of Muskegon County and is bordered by the City of Whitehall to the west, Montague Township to the north, Fruitland Township to the south, and Blue Lake Township to the east. It was formed in 1874 when Oceana Township was split into two separate townships: Montague to the north and Whitehall to the south. According to the 2010 census, Whitehall Township's total population was 1,739, with a peak seasonal population of 1,787.

There are 723 total housing units in the township, 50 of those are vacant. Of those 50 vacant, 19 are for seasonal, recreational or occasional use. Over ¼ of the housing supply is comprised of mobile homes. Critical facilities include the township hall and Muskegon County Road Commission Garage. Highway U.S.



31, its bridge over White River, a power transmission line, and the Silver Creek Pond Dam are among vital or critical infrastructure. Major geographic features in the township include scattered housing and moderate residential areas, moderate forests, White River, 4-6 small lakes and ponds, and 2-4 small creeks.