



Clay Township 2021 Master Plan Update



Adopted By Clay Township Planning Commission:
March 24, 2021

Adopted By Clay Township Board of Trustees:
April 5, 2021

PREPARED FOR:

Clay Township Planning Commission
4710 Pointe Tremble,
Clay Township, MI 48001

**RESOLUTION 2021-05
2021 Master Plan Update By
Clay Township Board of Trustees
CLAY TOWNSHIP, ST. CLAIR COUNTY, MICHIGAN**

At a regular meeting of the Township Board of Trustees of the Township of Clay, County of St. Clair, State of Michigan, Clay Township Meeting Hall, Clay Township, MI on Monday April 5, 2021 at 7:00 pm with the following in attendance:

PRESENT: J. Arthur Bryson, Supervisor; Cynthia Valentine, Clerk; Kristi Hiltunen, Treasurer
Trustees: Mark Borchardt, Maureen Boury, Chris O'Regan and Joanne Shirkey
ABSENT: None

The following preamble and resolution was offered by Trustee Mark Borchardt and supported by Trustee Maureen Boury:

WHEREAS, the Clay Township Planning Commission may prepare and adopt a Master Plan for the physical development of the Township, and is empowered by the Michigan Planning Enabling Act of 2008, and

WHEREAS, Clay Township has contracted with a professional planning consultant to assist the Planning Commission with the technical assessments necessary to make the Master Plan Update for the Township, and;

WHEREAS, Clay Township has collected public input through open houses, an online survey, and other methods throughout the update process, and;

WHEREAS, the Planning Commission held a Public Hearing on its proposed Master Plan Update on November 17, 2020, and again on March 24, 2021 and;

WHEREAS, the Township Board elects to assert its option to adopt the Master Plan Update, which is provided for in the Michigan Planning Enabling Act;

NOW, THEREFORE BE IT RESOLVED, that the Clay Township Board of Trustees hereby adopts this Master Plan Update for the Township, along with the text, maps, charts, graphs, and other descriptive materials contained in the plan.

UPON ROLL CALL VOTE ON THE ADOPTION OF THE RESOLUTION, THE FOLLOWING VOTED:

AYES: J. Arthur Bryson, Supervisor; Cynthia Valentine, Clerk; Kristi Hiltunen, Treasurer
Trustees: Mark Borchardt, Maureen Boury, Chris O'Regan and Joanne Shirkey
NAYS: None
ABSENT: None

This Resolution was adopted by the Clay Township Board of Trustees on April 5, 2021.


Cynthia Valentine, Clay Township Clerk

CERTIFICATION

The undersigned Clerk of the Township of Clay hereby certifies that the foregoing constitutes a true and complete copy of a Resolution adopted by the Clay Township Board of Trustees of the Township of Clay, County of St. Clair, Michigan at a meeting held on April 5, 2021 at which seven (7) members of the Township Board were present and voted as indicated, that said meeting was held in accordance with the Open Meetings Act of the State of Michigan, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.


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Cynthia Valentine, Clay Township Clerk



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1. Introduction

Planning Process & Purpose

PURPOSE OF A MASTER PLAN

This Master Plan Update represents an opportunity to affirm and update the course for new development and redevelopment in Clay Township as identified and described in the 2012 Master Plan. This Plan contains the community's vision, goals, objectives, and strategies and it is intended to guide future decision-making processes related to land use and development, as well as overall community quality of life.

The Master Plan addresses future land uses and community development, and other community features in a coordinated fashion. It portrays a clear statement of community goals and objectives, establishes a vision of the future, and includes plans to achieve the vision. If followed carefully, the Master Plan will have a lasting impact on the built and natural environment. Decisions made when the Plan is developed will likely be implemented over short-term, medium-term, and long-term timelines as specified in the Implementation Plan.

The Master Plan is long-range in its view and is intended to guide development in the township over a period of 10 to 20 years, with reviews and any necessary updates occurring every five years to maintain consistency with the Michigan Planning Enabling Act of 2008. The information and concepts presented in the Master Plan are used to guide local decisions on public and private uses of land and the provision of public facilities and services. A sound Master Plan promotes a land use pattern that reflects a community's goals. It establishes long-range general policies in a coordinated and unified manner, which can be continually referred to in decision-making.

Lastly, the Master Plan aims to provide a complete picture of the historic and ongoing land use and development-related issues facing Clay Township so that the reader has a full understanding of what is occurring within the township.



Above: Museum on Harsens Island (Giffels Webster, 2019)

Community Vision

The 2012 master plan outlined a broad vision for Clay Township to “Create a local vacation destination full of recreational opportunities, while protecting the environmental, historical, cultural, and residential character of the community”. While the document does provide this vision and suggest it be used to help guide decision-making, there is little discussion how this can be applied uniquely to individual areas of the community; therefore, the overall vision for Clay Township is now organized based on the following principles that inform several corresponding goals.

VISION: A HEALTHY AND BEAUTIFUL COMMUNITY PLANNED, PRESERVED AND MANAGED BASED ON THESE PRINCIPLES:

Residential Character. Clay Township will maintain, support and enhance its varying residential areas based on the character and desires of each area. The township will strive to protect these residential areas from negative external impacts of other uses. The township will also foster ways to improve multiple modes of access for residents throughout the township. Lastly, the township will plan for and encourage a variety of housing types to serve all people at different stages in life.

Resilient Outdoor Lifestyle. Clay Township offers unique aquatic-based natural resources and recreation opportunities for residents and visitors from the region that have evolved over a long period time and will continue to be protected. The township will continue to ensure these regional amenities enhance the livability and viability of township residents, businesses and other stakeholders. This includes the ability to withstand and emerge from environmental threats and challenges, the reasonable use by visitors, and improved access for recreation, observation, tourism and education. Additionally, there will be a continued township focus on adding value and meaning to the public realm through community events and neighborhood-scale revitalization projects that support recreational opportunities for residents of the community.

Open Access. Clay Township will foster ways of improving multiple modes of access for residents and visitors of all ages and ability throughout the township. This includes direct, safe and comfortable routes for pedestrians and bicyclists through both the mainland and island portions of the township. Given the unique situation of having two residential islands, the township acknowledges a need for reliable ferry access to both islands, and the importance of dynamic traffic messaging and contingency plans should island access issues occur. Lastly, the township will support continued infrastructure and operational improvements to regional mass transit, and the promotion and support of blueways through the township in order to leverage the benefits of open access for all.

Prosperous Local Economy. The township’s proximity and ease of access to Detroit and Port Huron, together with its abundant water access, make it a desirable location for doing business. The township will look to strengthen existing businesses, which include several historic industrial uses and essential services, and attract new businesses that align with the needs, vision and goals of the township and adjacent communities. This includes the constant monitoring and analysis of zoning and other potential impediments to desirable development. The township will also seek to support the DDA and the many residents that are employed outside of the township through regional coordination and transportation improvements.

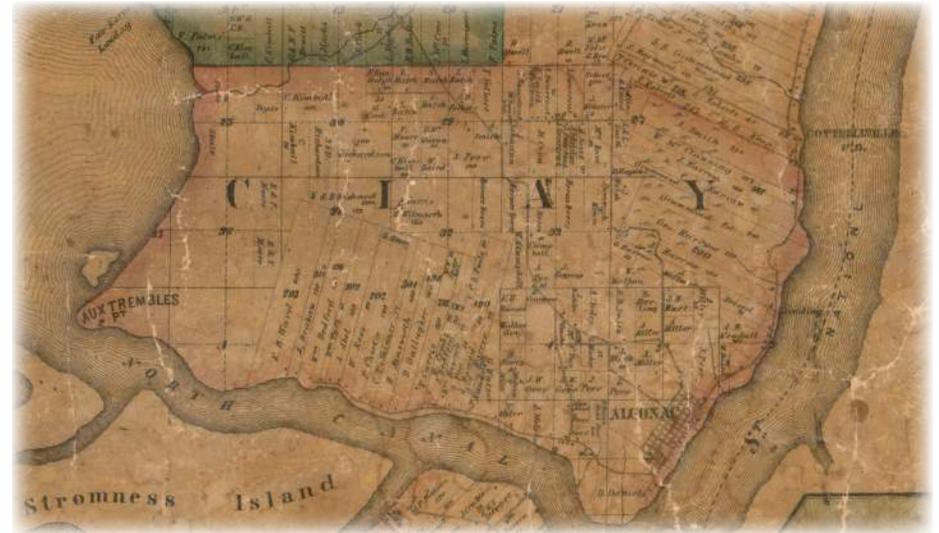
2. Community Planning History

Historic Setting

Clay Township is one of the four larger townships that originally comprised St. Clair County, the others at the time being Cottrellville, St. Clair, and Desmond Townships. Clay was organized as a township in 1822 under the name of Plainfield and remained so until 1828, when it was renamed Clay as there was another Plainfield Township located in Allegan County, in West Michigan. The settlement of the township dates before the organization of St. Clair County, with a number of early pioneers. Several events led to the creation of the current configuration of Clay Township. Cottrellville Township once included the entire territory of Clay. In 1828, the residents of Clay voted to separate from Cottrellville, and shortly after, in 1837, Ira Township was formed, taking the west part of Clay Township that existed at the time. Algonac was laid out in 1836, with some records indicating that it may have been platted in 1843. Algonac was incorporated by the St. Clair County Board of Supervisors in 1867 and by an Act of the Michigan Legislature in 1893.

Algonac Clay Historical Society

The non-profit Algonac Clay Historical Society provides a wealth of historical information on Clay Township, which is thoroughly documented in the Society's award-winning six-volume *The Chronicle*. The Historical Society consists of two museums, over 10,000 artifacts, and is run by local volunteers, with assistance from Clay Township and the City of Algonac. One of the museums is the Algonac Clay Historical Museum, which opened in 1997 is located on the City of Algonac waterfront at 1240 St. Clair River Drive. This museum is operated out of the historic 1849 Bostwick Building and in 1949 became the new home of the Clay Township Library, which was founded in 1929 by the Clay Township Library Association of Algonac. One block south of the Historical Museum is the Maritime Museum, which was donated to the Historical Society by Fifth Third Bank in 2012. This museum celebrates the area's nautical contributions through pictures, videos of stories, and several model boats, including a 1949 Chris Craft.



Above: 1859 Map of Macomb and St. Clair County (Library of Congress)

Impact of Transit

In 1894, the Rapid Railway System constructed transit lines out Gratiot Avenue to Mt. Clemens, later extending the lines to Port Huron by way of St. Clair River communities. With the success of this transit line as a new, faster means of reaching waterfront communities, summer residents built permanent homes and cottages along Anchor Bay and the St. Clair River between New Baltimore and Marine City. An additional line, the Shore Line System, was built from Detroit to Mt. Clemens in 1900, then extended along the St. Clair River to Port Huron. This line was purchased by the Rapid Railway System in 1901.

The Detroit and Port Huron Shore Line Railway ran through Mt. Clemens, Chesterfield Township, New Baltimore, Anchorville, Fair Haven, Algonac, Marine City, St. Clair, and Marysville. An additional line, called the Short Cut, was built from Anchorville (present day Ira Township) directly east to Marine City. This route is identified today as Short Cut Road just to the north of Clay Township. The run from Detroit to Port Huron was a total of 64.5 miles and the fare was \$0.95 in 1900. The Shore Line Railway was taken over by the Detroit United Railway in 1901, but heavy competition led to its closure in 1926.



Above: Interurban Tracks through the flats; (Library of Congress)

Below: Shore Line Railway; 1903-04 (Trolley Rides in City and County D.U.R. brochure)



Impact of Transit

The interurban tracks going to Algonac from the Perch Point Stop (present day Ira Township Dyke Road M-29 by-pass) traveled on an arc from the north boundary of St. John's Marsh then turned south and traveled along the east boundary of the Marsh exiting it at the current DNR parking lot on the north side. The current gravel trail running to the north from the parking lot along the east side of the canal and Beaverdam Drain follows the former elevated location of the tracks. From the DNR parking lot, the tracks cross M-29 near Willow Court and ran along the south side of M-29. This accounts for the setback of utilities along M-29 from Willow Court, which is the west end of Pearl Beach, to the intersection of M-29 and Island Drive to the east. Prior to this connection, the only route from Fair Haven (present day Ira Township) to Algonac was around Beauvais Creek. In 1915, James W. Gilbert, on one of his many trips on the interurban through the north edge of the marsh, envisioned a road which would be built across the marshy river frontage, the 3.5 mile section of Dyke Road ultimately being built despite challenges to right-of-way acquisition, court injunctions by land owners, and skepticism by residents. The final section of the road from Pearl Beach to Algonac was dedicated in 1924, opening up the area to future growth.

Detroit Urban Railway

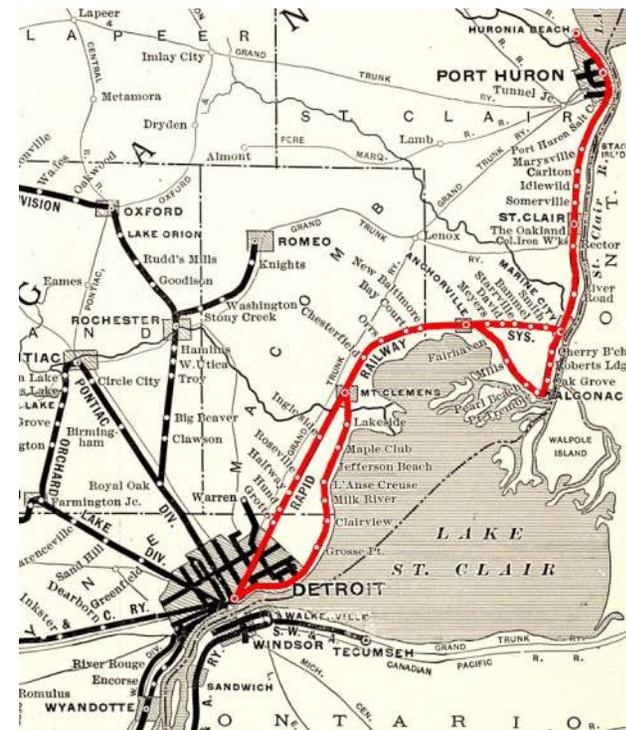
At the Clay Township Hall is the original restored Pearl Beach Waiting Station and a section of the railway track which served Pearl Beach beginning in 1892. One unique feature of this station was the carving of numerous names into the wood by passengers, often accompanied by the date and carver's home city.



Above: Restored Pearl Beach Waiting Station and a section of the railway track at Township Hall



Above: D.U.R. station at Pearl Beach (Algonac and Clay Township Images of America)



Above: Shore Line Railway; 1903-04 (Trolley Rides in City and County Detroit United Railway brochure)

Harsens Island and the Flats

The Clay Township area, extending into Canada to the southeast, is considered one of the largest fresh water deltas in the world, comprised of several major waterways: the St. Clair River, and the North, South, Middle, and Sni Bora Channels. There are numerous smaller channels, cuts, bays and water highways called the Big and Little Muscamoot, Goose, Baltimore, Fisher, Maybury, etc., and natural and dredged canals and ditches. Some waterways are navigable and some are not. The largest islands in the American portion of this delta are Harsens Island and Dickinson Island (formerly known as Laughton, then Stromness). There are several strings of small islands that extend from the large islands. This area is known as the St. Clair Flats and has historically been called the Venice of America.

Early missionaries and explorers called the lower St. Clair River area The Great Green Meadows. The land through which the river flows is level, so level that a traveler wrote over 100 years ago, “another barrel of water would overflow the fields.” An unusual natural feature is that the delta was formed by the St. Clair River. One would think that the silt would be deposited by Lake St. Clair, since the river is its outlet. However, geological investigation proves that the deposit of fine sand and clay is derived by the action of waves on the shores of Lake Huron and river tributaries, and from the St. Clair River itself, instead of Lake St. Clair, as would be expected.

The earliest industry on the delta, Harsens Island, St. Clair Flats area, was fur trading between the French and Native Americans. As early as 1615 Frenchmen had come to the shores of the St. Clair River, then known as the River Huron, to trade for the fine furs trapped by the Native American tribes. Harsens Island later became British territory. The dividing line ran along the North Channel, but a later survey moved the line to the South Channel and gave it to the United States. At various times, this area has been under the control of France, Great Britain and the United States.



Above: Star Island House and at Tashmoo Park (Library of Congress)

Below: Tashmoo at the dock, (Library of Congress)



Harsens Island and the Flats

Harsens Island, the largest island on the delta, was named after Jacob Harsen, a gunsmith, who arrived there about 1778. He purchased the island from the Native Americans. Isaac Gravereat, Harsen's son in law, came with him. Gravereat died shortly after arriving, leaving his wife and four children with Harsen's family of 5 sons, Bernard, James, Francis, William and Jacob II and two daughters, Mary and Sarah. This is notable as these families were the first white settlers between Detroit and Mackinac.

A survey of the island was made after the deaths of Bernard and Mrs. Gravereat, which divided the island into five parts, approximately 640 acres each, a part for each of Jacob Harsen's surviving children. The four parts were sold off in various acreage sizes through the years including parts of the homestead acreage.



Above: Tashmoo at the dock, Star Island House and at Tashmoo Park (Library of Congress)

Harvey Stewart was the pioneer of the family of Stewarts who settled on the island early in the 1800s. Mary Gravereat was Stewart's second wife. He managed a distillery at that time. It was one of the first distilleries in Michigan, and at one time during the War of 1812 served as a British fort. The families living on the island moved to Detroit for a period during the War of 1812, but returned after a short time. The whiskey produced at the distillery was used for trade with the Native Americans who brought furs and wild meat to Stewart's settlement. Stewart was also Clay Township's first supervisor, serving from 1828 to 1833 and again in 1842. In 1818, Aura P. Stewart persuaded John K. Smith to teach at the first school on the island, and it became the first school in St. Clair County. While there were only three families on the island, pupils from across the channel brought enrollment to twelve. In addition to the Harsens and Stewarts, the principal families in the area were the Chartiers, Minnies, Basneys and the Hills.



Star Island House (Library of Congress)



Hotel Mervue (Library of Congress)

Harsens Island and the Flats

During this era, the North Channel was the main shipping channel, because it had the water depth for the ships of that time. There was a problem with a sand bar out in the bay at the outlet of the North Channel. The ships upon arriving at the bar would have to drop anchor. There were smaller boats that would be used to unload some of the cargo to reduce the ship's draft. The ships would then continue past the bar to deeper water with the smaller boats following. Upon reaching the deeper water, the cargo would be reloaded onto the ships and they would proceed. That is how Anchor Bay got its name.

From 1821 to the end of the century, the area was primarily used for agriculture on the higher, drier lands of Harsens and Dickinson Islands. However, there were periods when other enterprises contributed to the area. Beginning in 1840 and continuing until the Civil War, shipbuilding was a prominent activity on Harsens Island. The schooner *Island City* was built there in 1859, as well as a number of other ships, including several of the Newberry Fleet based in Detroit. Also, prior to construction of the St. Clair Flats Ship Canal along the South Channel in 1856, many people were employed to transfer cargo across the bar to and from ships anchored in Anchor Bay, as previously described.



The Old Club (Library of Congress)



Joe Bedore's Hotel (Library of Congress)

Harsens Island and the Flats

Dredging of the 6000-foot long ship canal on the South Channel initially took place in 1856, and the channel was widened and further deepened in 1857, 1872, and 1886. This is what opened the door to the resort era in the area by allowing steam ferries to service the route between Detroit and Port Huron. A number of resort hotels quickly developed along the South Channel, including the famous Joe Bedore's Hotel. At first, the White Star Steamship Line served the area, making no less than 13 stops in The Flats itself. Round trip fare between Detroit and Port Huron was 50 cents. The most famous steamship on this route was the Tashmoo, which was fondly referred to as the Glass Hack. From her launching in 1899 until the end of her service in 1936, the Tashmoo was the undisputed queen of the St. Clair Flats run.

The resort era overlapped the Prohibition era, and the island became very popular because of its proximity to the Canadian border. Nearly everyone in the area was a rumrunner of sorts in those days. It was almost impossible to catch anyone in the marsh and canals because there were so many places to hide. Unfortunately, a combination of events brought the Island's resort area to an end. The sinking of the Tashmoo, the end of prohibition, the automobile and the succession of costly hotel fires were among them. The only hotel surviving today is the Idle Hour, now a private club, the Idle Hour Yacht Club. In addition, The Old Club, organized in 1872 as the private Lake St. Clair Fishing and Shooting Club, is still in existence.

In 1921, a few men who had a vision of the future, ventured to lease a large acreage of marsh below Harsens Island for right of way for a road. Nearly one hundred acres were given to the County so the State could build this road which was a necessity. In March 1926, a group of residents met and formed the Green Drive Committee. The first committee consisted of Jules W. Bern, Chairman, Wm. H. Green, Jr., Louis W. Lindeman, Otto Helm, Wm. J. Windisch, Secretary, Jas. Clay, Wm Beyster and Jas. Bell. It was the efforts of these individuals and those who followed on the committee that resulted in the existence of Green Drive.



View from Green Drive looking north (Giffels Webster, 2019)

Notable Subdivisions

The most well-known and symbolic development in the area is The Colony, with its gate house and simulated historic lighthouse that functioned as the water tower for the subdivision. The development was created by the Will St. John & Company of Detroit, with the plat approved in 1926. The land area was created by dredging canals, approximately 75 feet wide by six feet deep, on each side of the property. It was originally designed as a private gated community of 179 lots, all with either river or canal access. Mr. St. John also owned the entirety of the Pointe Tremble Prairie, which is now known as St. John's Marsh. A golf course, which no longer exists, also previously accompanied The Colony and the entrance to the golf course still exists where the DNR has erected a monument designated the St. John's Marsh Wildlife Area at the former golf course driveway entrance.

Two other major developments were formed by dredging canals and using the dirt for fill. The St. John Drive development was platted and approved by the township in 1935, consisting of 78 lots and the approximately one-mile long street. The Anchor Bay Drive development was created by Will and Luella St. John and Frank Wallace, with the plat approved in 1921 for 408 lots and a two-mile long street. Other developments in the area include the Avers Subdivision in Pearl Beach, approved in 1917 for 16 lots. The Ventura Beach development was approved in 1920.



Above: Colony Tower Historic Marker (Giffels Webster, 2019)

3. Regional Setting

Regional Influence

State Owned Land

Clay Township has three (3) major State owned and maintained land holdings and/or parks. These three (3) areas account for well over 7,000 acres of land within the township. The Algonac State Park is approximately 1,450 acres according to State records (1,300 in Clay Township), the St. Clair Flats consists to approximately 3,400 acres while the St. Johns Marsh is approximately 2,500 acres in size. St. Johns Marsh is an especially notable property as it was the first Michigan Department of Natural Resources land grant to occur in the state. Planning and funding efforts for habitat restoration of the Marsh are ongoing. While these acreages reduce the impacts typically associated with residential or commercial development and also preserve naturally significant areas along the coastlines, the township receives taxes from these properties, however the rates at which the state pays taxes on these properties are lower than a privately owned parcel of land.



Above: St. Johns Marsh Welcome Sign (Giffels Webster, 2019)

M-29 Corridor

Clay Township lies within the M-29 growth corridor, which runs the length of St. Clair County essentially along the coastline. The corridor is made up of a total of twelve (12) communities that account for approximately sixty (60) percent of the total county population. While I-94 provides the main access in and out of the township and county on a regional level, M-29 provides the main local access to many of the county's shoreline communities. The County recognizes the importance and impact of the presence of M-29 by establishing the M-29 corridor as the main growth area of the county over the next twenty (20) years.



Above: Clay Township DDA Welcome Sign (Giffels Webster, 2019)

Regional Planning

St Clair County Master Plan

The St. Clair County Master Plan establishes planning goals that help shape and direct the future of St. Clair County for the next 30 years, advocating for managed growth and change in order to preserve the rural character, unique features, and natural, cultural, and historic resources that make St. Clair County an attractive place to live, work, and play. The Five Master Plan Guiding Values are: Quality of Life, Great Places, Prosperity, Sustainability, and Innovation.

Since 2000, the St. Clair County Master Plan has advocated for communities to enact various tenets of Smart Growth. Smart Growth is town-centered, transit and pedestrian oriented, and has a greater mix of housing, commercial, and retail uses. It also preserves open space and many other environmental amenities. The County Master Plan also discusses countywide placemaking, the process of adding value and meaning to the public realm through community-based revitalization projects rooted in local values, history, culture, and natural environment. The Clay Township Park is a perfect example of a placemaking project, which began as a recent property purchase and has evolved into an attractive, active and passive recreation facility enjoyed by residents of all ages, including children on the playground and splash pad, volleyball and basketball games, and a walking path. In the winter, the basketball court is flooded to become an ice rink. The park also is well-lit to encourage evening use and provides a concession building and restrooms for visitors.

The Master Plan highlights the Blue Water Area Convention and Visitors Bureau's Discover the Blue marketing campaign, which was established in 2009. Clay Township and Algonac are one of the nine participating communities in the campaign, which is highlighted on the BWACVB website that informs visitors about activities in the area.



Above: Clay Township park path at Township Hall (Giffels Webster, 2019)

Regional Planning

St Clair County Master Plan

St. Clair River area of concern. The United States-Canada Great Lakes Water Quality Agreement (Annex 2 of the 1987 Protocol) defines AOCs as “geographic areas that fail to meet the general or specific objectives of the agreement where such failure has caused or is likely to cause impairment of beneficial use of the areas ability to support aquatic life.” In short, an AOC is an area that is suffering degradation of environmental resources.

The St. Clair River branches into several channels near its mouth at Lake St. Clair, creating a broad deltaregion. The Area of Concern (AOC) includes these important wetlands from St. Johns Marsh on the west (near Anchor Bay) to the north shore of Mitchell’s Bay in Ontario. See the AOC boundary map from the U.S. Environmental Protection Agency on the next page.

Agriculture is the predominant land use within the river’s watershed, but intensive development has occurred in and near the cities of Port Huron and Sarnia. The heaviest industrial concentration (including a large number of petrochemical facilities) lies along the Ontario shore near Sarnia. Several communities along the St. Clair River rely on the river as their primary source of drinking water, including Algonac. Industrial facilities such as petroleum refineries, manufacturing facilities, paper mills, and power plants need high quality water for successful operations as well.

According to the International Joint Commission (IJC), a “Beneficial Use Impairment” is a change in the chemical, physical, or biological integrity of the Great Lakes system sufficient to cause any of 14 different use impairments or other related uses, such as the microbial objective for waters used for body contact recreational activities. The figure to the upper-right identifies the remaining beneficial use impairments on the American side of the river as of the end of 2015.

- Restrictions on Fish and Wildlife Consumption
- Tainting of Fish and Wildlife Flavor (*Removed 2012*)
- Bird or Animal Deformities or Reproductive Problems
- Degradation of Benthos (*Removed 2014*)
- Restrictions on Dredging Activities (*Removed 2009*)
- Restrictions on Drinking Water Consumption or Taste/Odor
- Beach Closings (*Removed 2016*)
- Degradation of Aesthetics (*Removed 2012*)
- Added Costs to Agriculture or Industry (*Removed 2011*)
- Loss of Fish and Wildlife Habitat

Source: Environmental Protection Agency, September 2015

Above: Beneficial Use Impairments Chart (EPA, 2015)

In recent years, significant progress has been made to clean up the St. Clair River and remove beneficial use impairments. As of September 2015, only 5 BUIs remained. The IJC, the Bi-national Public Advisory Council (BPAC), and other stakeholders have been working toward getting the St. Clair River AOC delisted.

Regional Planning

St Clair County Master Plan

Resilient Communities. St. Clair County has a long history of dealing with the impacts associated with changes in climate and extreme weather situations, from more frequent and severe flooding, to changes in annual snowfall amounts, to the infestation of non-native invasive species, to the increase in total number of high heat index days and more numerous poor air quality days. These changes have a real impact on the county's built, natural, and social environments and they affect people's lives.

As changes in climate and other environmental hazards occur, it is expected there will be significant impacts to the various components that comprise the built, natural, and social environments within local communities. This means that roads, bridges, flood and stormwater control systems, forests, watersheds, public health systems, buildings, and other aspects of our communities will be impacted in both positive and negative ways.

In 2005, St. Clair County adopted its first multi-jurisdictional Hazard Mitigation Plan, which includes hazard profiles and a full risk and vulnerability assessment for the county. The Hazard Mitigation Plan was updated in 2015. It will be critical going forward to review the Hazard Mitigation Plan on an annual basis and update it accordingly.

The vulnerability assessment looks at such points as population concentrations, age-specific populations, development pressures, types of housing, presence of agriculture, sprawl, and other issues that may make St. Clair County more vulnerable to specific hazards.

Potential hazards should generally be evaluated by assessing the following factors:

- **LIKELIHOOD OF OCCURRENCE:** The frequency with which a hazard occurs
- **SPEED OF ONSET:** How quickly a hazard can impact a community.
- **POPULATION AFFECTED:** Determines how widespread the effects of a hazard will be by the amount of people affected.
- **POTENTIAL FOR CAUSING CASUALTIES:** The number of potential fatalities that are likely if a particular hazard event occurs.
- **ENVIRONMENTAL IMPACT:** Impacts include damage to hydrological systems, wildlife habitats, sensitive ecosystems, groundwater, and vegetation incurred from a hazard event.
- **ADEQUACY OF WARNING SYSTEMS:** Describes the scale and magnitude of the warning systems required to adequately notify people of a hazard event.
- **COROLLARY EFFECTS:** Describe a hazards ability to cause other hazards



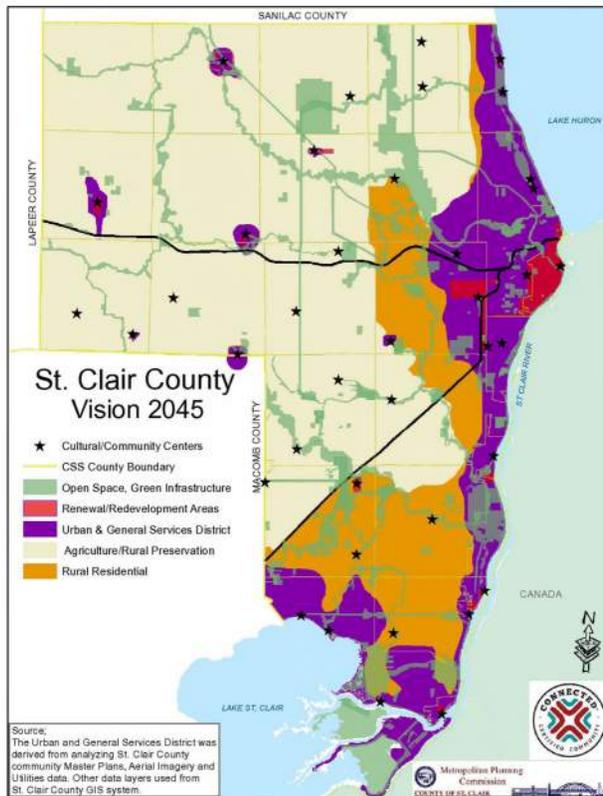
Above: Partially flooded dock on Harsens Island, June 2019 (Giffels Wester, 2019)

Regional Planning

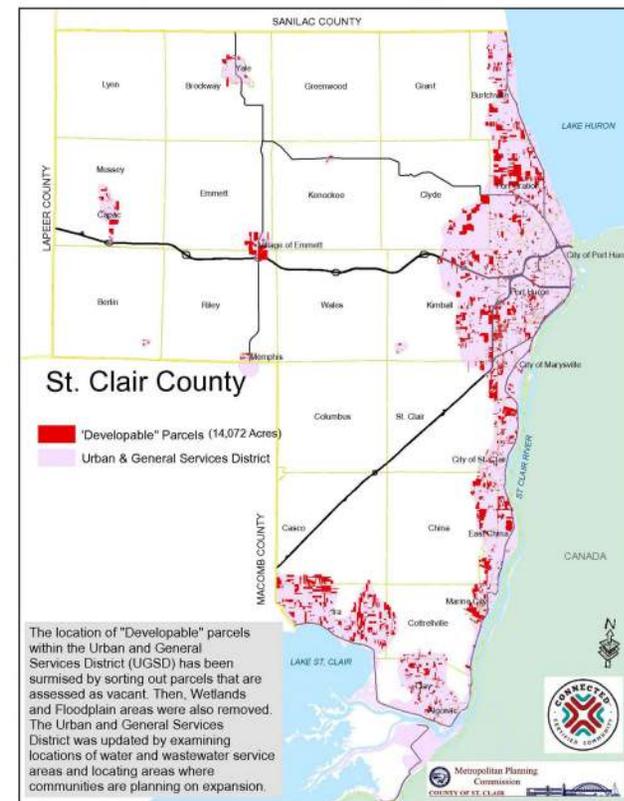
St. Clair County Future Land Use

Chapter 5 of the County Master Plan includes countywide community visioning. Within this chapter, alternatives for future land use are presented as a Future Land Use Plan and Generalized Zoning map that appear to primarily follow existing conditions. However, the St. Clair County Vision 2045 map recommends an “Urban & General Services District” for the majority of Clay Township exclusive of state-owned areas, and designates Pearl Beach as a Cultural/Community Center.

On mainland Clay Township, this District covers much of the north-south core of the township, and within this District develop-able parcels have been identified as vacant, without wetlands or floodplain, and in proximity to existing or planned expansions of water and wastewater service areas. Based on the Vision map, there appears to be significant growth opportunities planned for Clay Township, which should influence the Future Land Use Plan completed as part of this Update. The County Master Plan states that “with planned developments and proper provision of public services, the District has more than sufficient land area to accommodate all of the growth excepted within St. Clair County to 2045.



Above: St. Clair County Vision 2045 from St. Clair County Master Plan



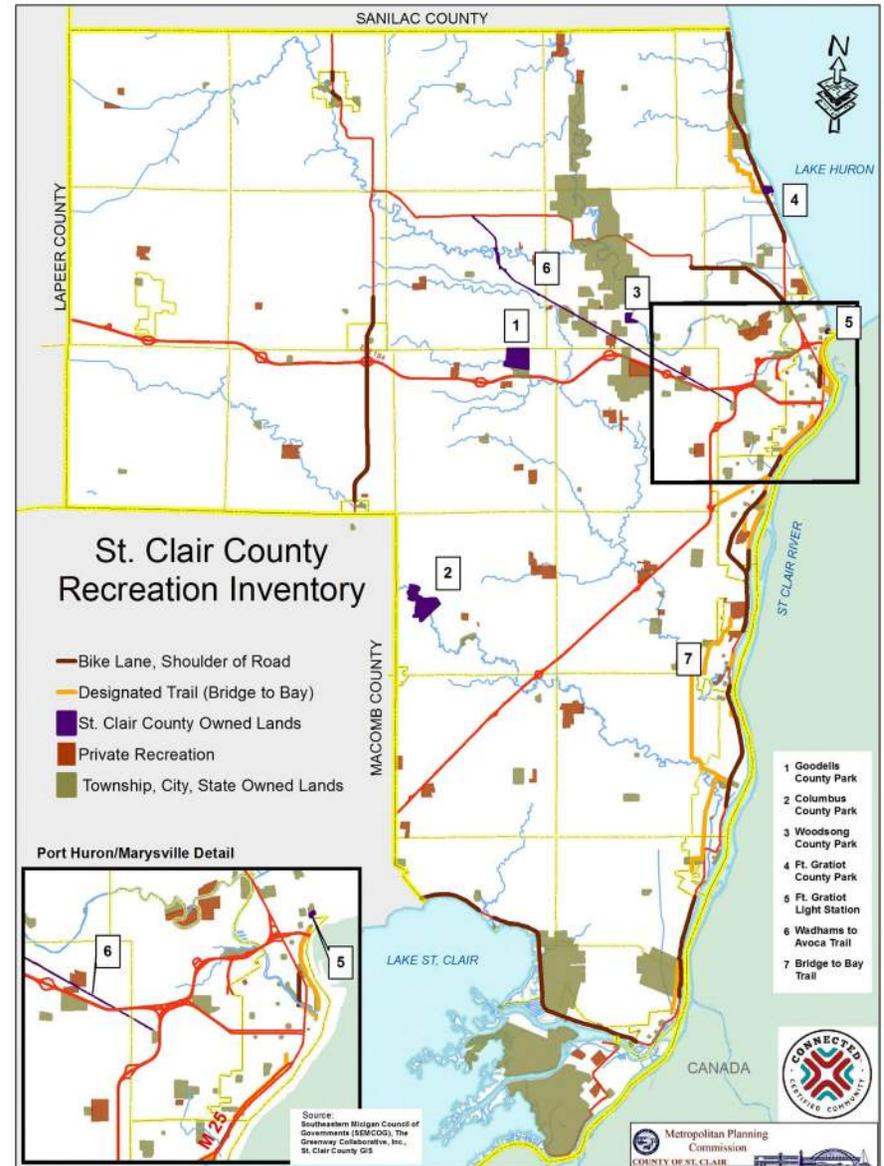
Above: St. Clair County "Developable" Parcels and Urban & General Services District from St. Clair County Master Plan

Regional Planning

St Clair County Master Recreation Plan 2017-2021

The St. Clair County Master Recreation Plan for 2017 to 2021 covers all parks and recreation facilities and programs owned and operated by the St. Clair County Parks and Recreation Commission. The majority of parks and facilities are well to the north of Clay Township. However, the County Recreation Inventory includes state-owned lands, a greenway along M-29, and Blueways for Clay Township.

St. Clair County has an abundance of shoreline and inland rivers. Along Lake Huron, the St. Clair River, and Lake St. Clair is a total of 58 miles of shoreline, with 34.3 miles along the St. Clair River and 11.3 miles along Lake St. Clair. Within the County are 149 miles of primary rivers and 810 miles of tributaries. In 2010, the County Parks and Recreation partnered with the County Metropolitan Planning Commission to develop The Blueways of St. Clair, which includes 16 water trails, water access points, and public land.



Source: St. Clair County Recreation Inventory from St. Clair County Master Plan

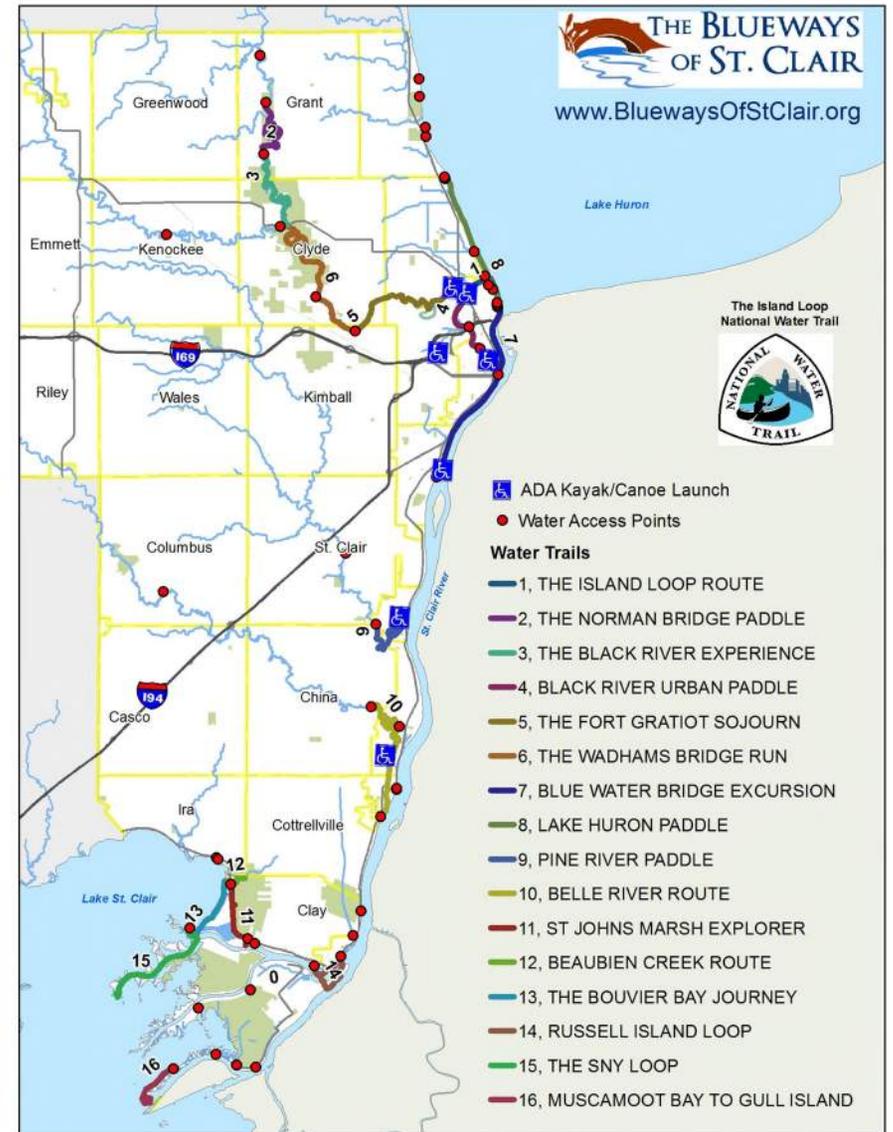
Regional Planning

St Clair County Master Recreation Plan

The Parks and Recreation Commission receives funding from a Countywide parks and recreation millage, grants, donations, and fees. Several millage approvals or renewals have been passed dating back to 1994, with the most recent millage renewal occurring in 2016. The Commission distributes 25% of millage revenues to local governments for parks and recreation programs and facilities. From 1994 to 2016, that County has collected over \$50.6 million from the millage, with a total of \$750,818 being distributed to Clay Township during that time based on population. The majority of millage revenue (75%) goes towards parks and recreation facilities that serve a countywide audience, as stated in the Master Recreation Plan.



Above: Clay Township Shoreline near Pearl Beach (Giffels Webster, 2019)



Above: St. Clair County Water Trails from St. Clair County Master Plan

Regional Planning: St Clair County

Blue Water Trail Towns Master Plan

The Blue Water Trails Towns Master Plan, prepared by the County Metropolitan Planning Commission and the nonprofit Land Information Access Association (LIAA), highlights ways in which coastal communities can establish Trail Town strategies around the Tip of the Thumb Heritage Water Trail and the system of water trails that make up the Blueways of St. Clair. The plan states that it is important for local and regional trail advocates, economic development professionals, and public officials in the region to understand that coastal communities are linked together by trails and biking routes that create a regional destination for recreational activities. The plan specifically includes downtown Algonac, but highlights Algonac State Park as a Trail Town Business Amenity for trail users and bike tourists. Additionally, the plan states that water trails tend to be used by people seeking a two-hour or half-day paddling excursion. Algonac State Park is also an important amenity for water trail users.

As part of the plan, a Trail-to-Town Assessment, physical assessment of each central business district identified and its relationship to nearby trails, was completed to provide a better understanding of the physical challenges that trail visitors may encounter in their visit to downtown. The following are recommendations and images from the Trail-to-Town Assessment that relate specifically to Clay Township.

PRINT MATERIALS. Due to its close proximity to Lake St. Clair and Macomb County, information about Clay Township and Algonac can be found in many different regional publications. However, there is not one specific brochure for Clay Township or Algonac. If it is not feasible to develop a brochure specifically for Clay Township and Algonac, then local officials should work closely with regional organizations to include information about the local trail networks in regional print materials.

VIDEO AND WEB MATERIALS. There are currently no videos related to paddling in the Clay Township/Algonac area available online. However, there are videos on YouTube that feature a sailboat ride along the St. Clair River and the ferry to Canada. The City of Algonac does not have any information about paddling or the paddle routes on its website. However, the Clay Township website has formal links to “waterways” and “paddling routes” which link directly with the Blueways of St. Clair website.

PORTAL. The empty sign at the DNR boat launch could be redesigned and feature more information about the water trail and nearby retail and restaurant options. It will also be very important to provide wayfinding and information about the shops and restaurants in Algonac at the Algonac State Campground, and near the trail, just north of town.

GATEWAY. The Gateway from the DNR boat launch would be located right where visitors exit (or enter) into the property along Highway 29. Landscaping, lighting and pedestrian amenities will be essential components to the Gateway design.

FERRY AREA. Given that both Algonac, Clay Township and Lambton County (across the river in Canada) feature such robust regional trail networks, local officials in Algonac hope to make the ferry area a little more accommodating and inviting for trail users.

Regional Planning: St Clair County

Resilient Communities

Communities across the United States are facing significant risks because of rising sea levels and extreme weather events such as storms, heavy rains, and heat waves. In many places, these risks are projected to only worsen. Extreme weather events are increasing both in frequency and severity. From 2010 to 2015, the Federal Emergency Management Agency (FEMA) declared 360 major disasters.

As a county with numerous waterfront communities, it is important to consider the natural dynamics of a waterfront. These dynamics include the ecosystem, water level fluctuation, erosion and accretion, shoreline, floodplain, wetlands, and other natural elements. It is critical that community stakeholders understand these elements because they impact any activity that occurs along the shore.

Strong land use planning and management along the shorelines that are subject to erosion, flooding, and other extreme weather impacts promotes the health, safety, and welfare of residents and builds community resiliency - both environmental and economic.

As noted by Beth Mattson-Teig in the Urban Land Institute's UrbanLand publication in July 2015,

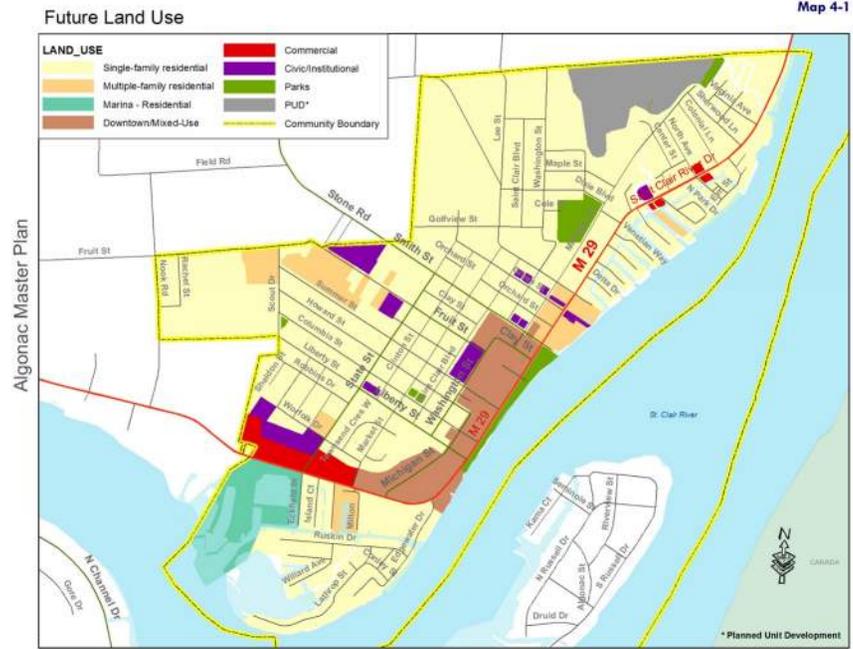
“Communities recovering in the wake of a disaster often want to rebuild things exactly as they were, and exactly where they were. Resilience tends to refer to an area's ability to endure a shock or stress. Yet resilience also affords the opportunity not just to bounce back, but to bounce forward and emerge as a better, stronger community because of it.”



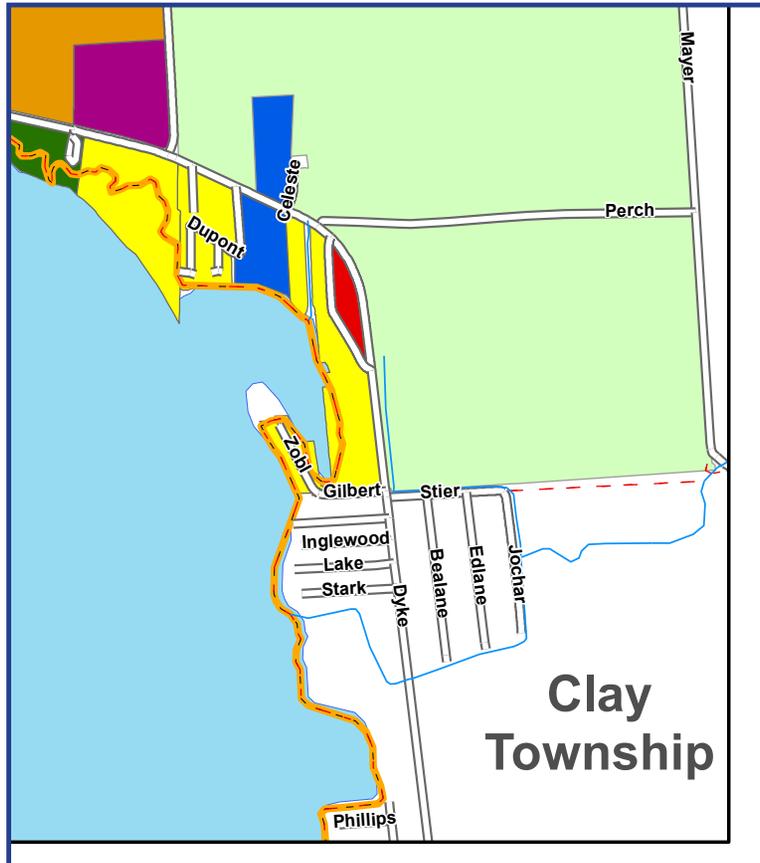
Above: Flooded portion of Colony Drive in Clay Township; June 2019 (Giffels Webster, 2019)

Planning in Neighboring Communities

THE CITY OF ALGONAC is located adjacent to the southeastern portion of mainland Clay Township. The primary area of land use influence from Algonac occurs at the gateways to and from the township along the M-29 corridor, where the city and township share two borders. The Algonac future land use plan identifies an the Algonac Harbour Club, adjacent to Clay Township, south of M-29, as future Marina Residential. The plan notably identifies vacant land south of the Harbour Club that could accommodate future residential growth. There are no existing industrial areas in the City of Algonac; however, there are a number of industrial uses located just cross the border in Clay Township that the city will need to consider the intensity of these when planning in adjacent areas.



Above: City of Algonac Future Land Use Map from City of Algonac Master Plan



Above: Ira Township Future Land Use Map from Master Plan

IRA TOWNSHIP borders Clay Township to the north. Future land use designations along the adjacent border include a mix of housing, commercial and conservation. The plan (left) notes several development options along the M-29 corridor which mostly align with the Clay Township current land use. Aside from the M-29 corridor, most land in Ira Township that borders Clay Township is comprised of St. Johns Marsh.

COTTREVILLE TOWNSHIP borders Clay Township to the north. The vast majority of the boundary between Clay Township and Cottreville Township is planned for Agriculture and Rural Residential which envisions lots of at least five (5) acres in size. Two other land uses can be found along the mutual boundary; the State Park as well as Waterfront Residential.

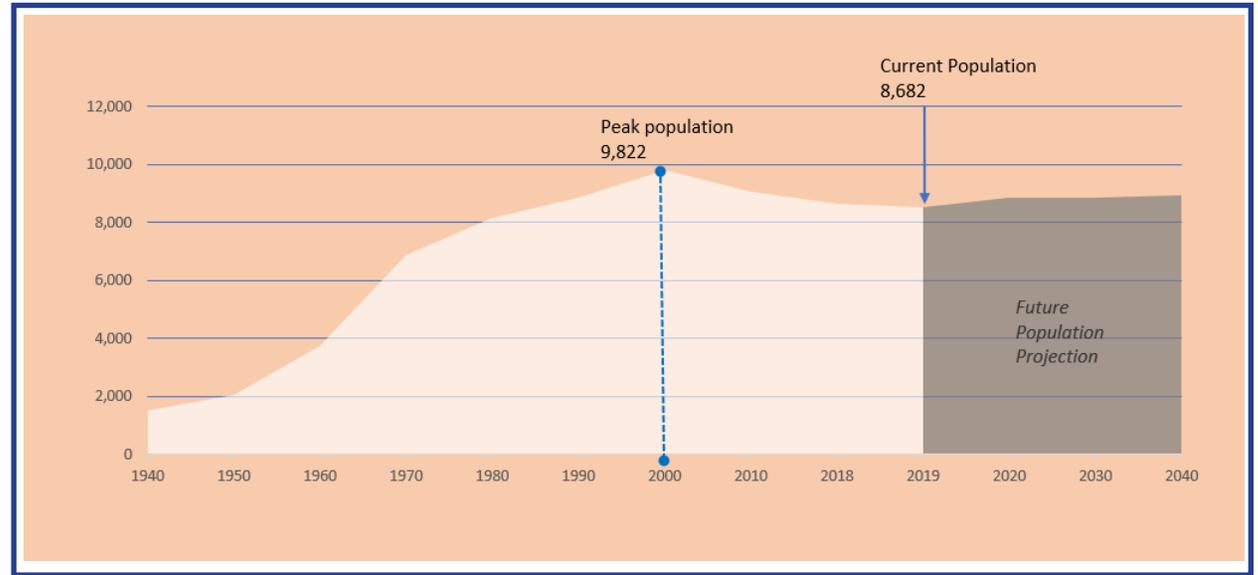
4. Demographics

Population

CHART 1: POPULATION TRENDS & PROJECTIONS 1940 - 2040

Population Trend

Clay Township saw a steady increase in population from the 1940's through 2000, when the township reached its peak population of 9,822. Since that time, the population has decreased by 12% to its current count of 8,552 people in July of 2019, according to SEMCOG data. This represents a population decrease of -7.7% from 2010 (see Chart 1). SEMCOG predicts that the township's population will increase slightly over the next few decades, with an estimated peak population of 8,979 in 2045.



Above: SEMCOG population forecast – Decennial census data and SEMCOG 2045 forecast

TABLE 1: COMMUNITY POPULATION COMPARISON 2000-2017

Community	2000	2010	% Change from 2000-2010	2017	% Change from 2010-2017
Clay Township	9,822	9,356	-4.7%	8,867	-9.7%
Ira Township	6,966	5,586	-19.8%	5,089	-26.9%
Cottreville Township	3,814	3,672	-3.7%	3,508	8%
China Township	3,340	3,568	6.8%	3,465	3.7%
Chesterfield Township	37,405	42,613	13.9%	44,726	19.6%
Algonac	4,613	4,253	-7.8%	4,048	-12.2%
St. Clair County	162,558	165,719	1.9%	159,761	-1.7%
SEMCOG	4,833,368*	4,695,856	-2.8%	4,742,104	-1.9%
Michigan	9,688,555	9,952,687	2.7%	9,925,568	2.4%

Community Population Comparison

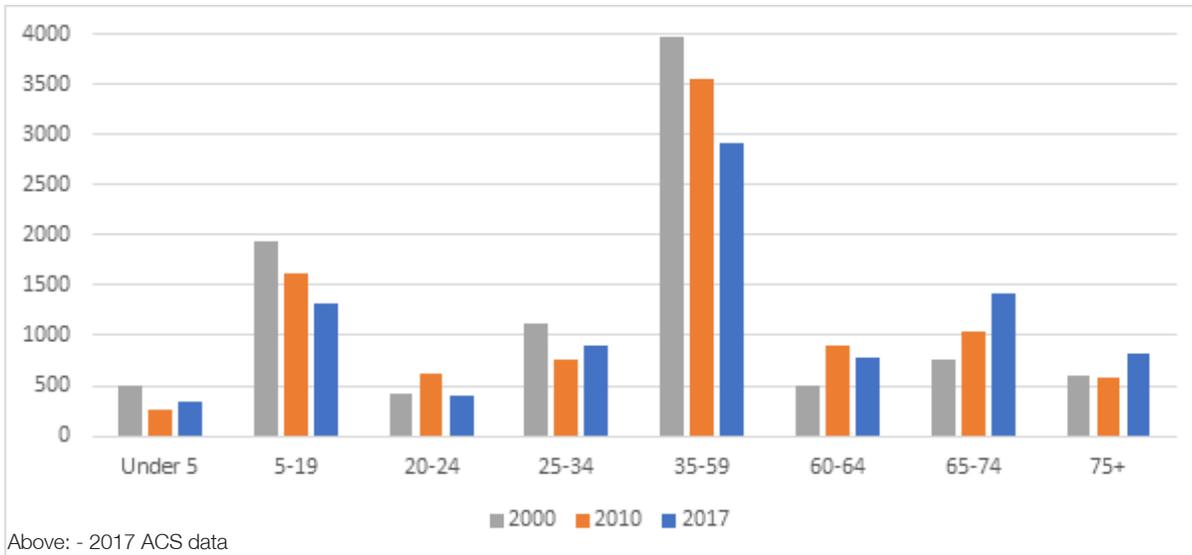
Many of the surrounding communities, including St. Clair County as a whole, have been experiencing a population decline since 2000. Clay Township saw a loss of 466 residents from 2000-2010, and another 489 between 2010-2017

Population

Population comparison

The township's largest population cohort are adults aged 35-59—people who are typically in the workforce and in their family-forming years (see Chart 2). Young children and teenage populations have declined slightly from 2000 to 2017, and the largest cohort (35-59) has also been declining steadily for over 15 years. However, young adults 25-34 as well as older adults, aged 60 and older have been growing in number within in the township, on par with state and regional trends. As noted in Table 2, the median age in Clay Township in 2017 was 51. This aligns with the county, regional, and state trend of an aging population, as the median age in all these geographies has increased, but the township's median age is 8 years greater than the county's and over 11 years greater than the state's.

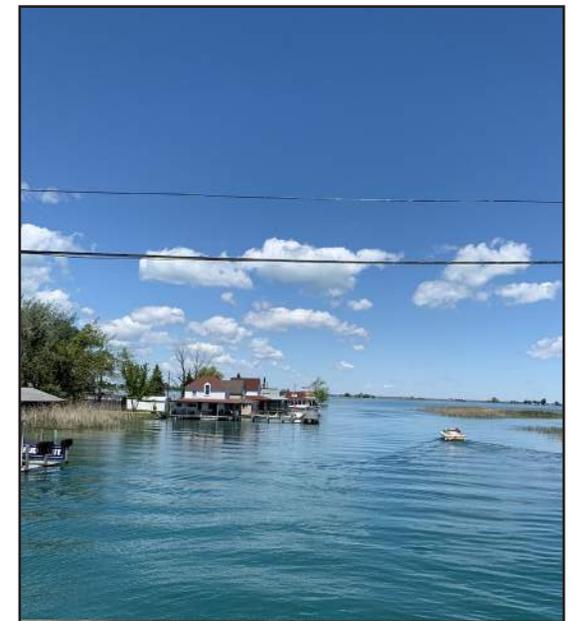
CHART 2: CLAY TOWNSHIP POPULATION BY AGE COHORT 2000, 2010, 2017



MEDIAN AGE

The chart shown below shows that the median age of Clay Township has steadily remained above both county and state counts since 2000.

TABLE 2: MEDIAN AGE			
Community	2000	2010	2017
Clay Township	40.9	48.8	51.3
St Clair County	36.4	41.3	43.2
Michigan	35.5	38.9	39.6



Above: View of Muscamoot Bay from S. Channel Drive on Harsens Island (Giffels Webster, 2019)

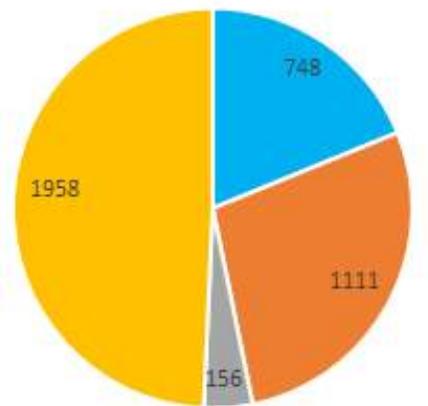
Households

Household Composition

In 2017, there were 4,009 households in Clay Township. People living alone made up 29.2% of households in the township, with slightly more than 10% of those as individuals over age 65. Households with children made up 18.7% of total households. The average household size was 2.21 persons in 2017; this figure being lower than the county, the region, and the state.

TABLE 3: HOUSEHOLD COMPOSITION COMPARISON, 2017				
	Clay Township	St Clair County	SEMCOG Region	Michigan
Total Number of Households	4,009	64,387	2,074,227	3,888,646
Average Household Size	2.21	2.45	2.52	2.49
With Children	748	16,569	543,303	1,028,999
Two or More Persons Without Children	1,958	30,047	981,666	1,724,162
Live Alone	1,267	17,771	549,258	1,135,485
Live Alone Under 65	1,111	15,674	487,483	1,007,175
Live Alone 65 and Over	156	2,097	61,775	128,310

CHART 3: CLAY TOWNSHIP HOUSEHOLD COMPOSITION



- With Children
- Live Alone under 65
- Live Alone 65+
- Two of more persons without children

Educational Attainment

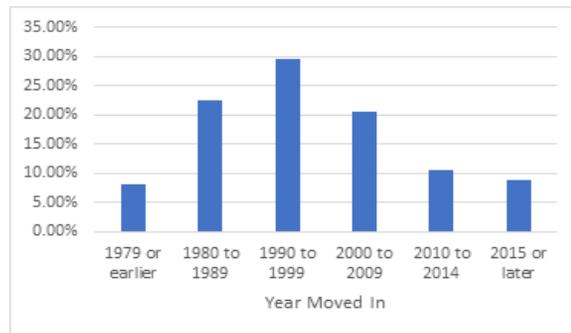
Approximately 17% of Clay Township residents hold a bachelor’s or post-graduate degree. This is lower than the state and national segment of this population (See Table 4).

TABLE 4: EDUCATIONAL ATTAINMENT (% of population total)			
Highest Level of Education (25+ years old)	Clay Township	St Clair County	Nation
Graduate / Professional Degree	7.5	6.2	11.5
Bachelor’s Degree	9.6	11.3	18.8
Associate Degree	10.3	10.8	8.2
Some College, No Degree	25.8	26.1	21
High School Graduate	35	35	27.5
Did Not Graduate High School	11.8	10.5	13

Housing

Housing Occupation

Of the township’s 5,569 housing units, 71.9% were occupied in 2017. Of the occupied units, 86% were owner-occupied; 14% were occupied by renters. Most householders moved into their home between 2000 and 2009 (29.5%), followed by 2010 to 2014 (22.5%) (See Chart 4).



Housing Value

The median housing value in 2017 in Clay Township was \$173,400 (see Table 5). In 2010, the census identified the median household value as \$179,400. This is a 3.3% decrease within seven years. However, this drop in housing values is similar to that of the county, region, and state, post-recession.

TABLE 5: MEDIAN HOUSEHOLD VALUE (in dollars)			
	2000	2010	2017
Clay Township	155,500	179,400	173,400
St Clair County	122,700	150,300	135,000
SEMCOG	144,314	175,314	169,086
Michigan	110,300	144,200	136,400

Above: 2017 ACS data

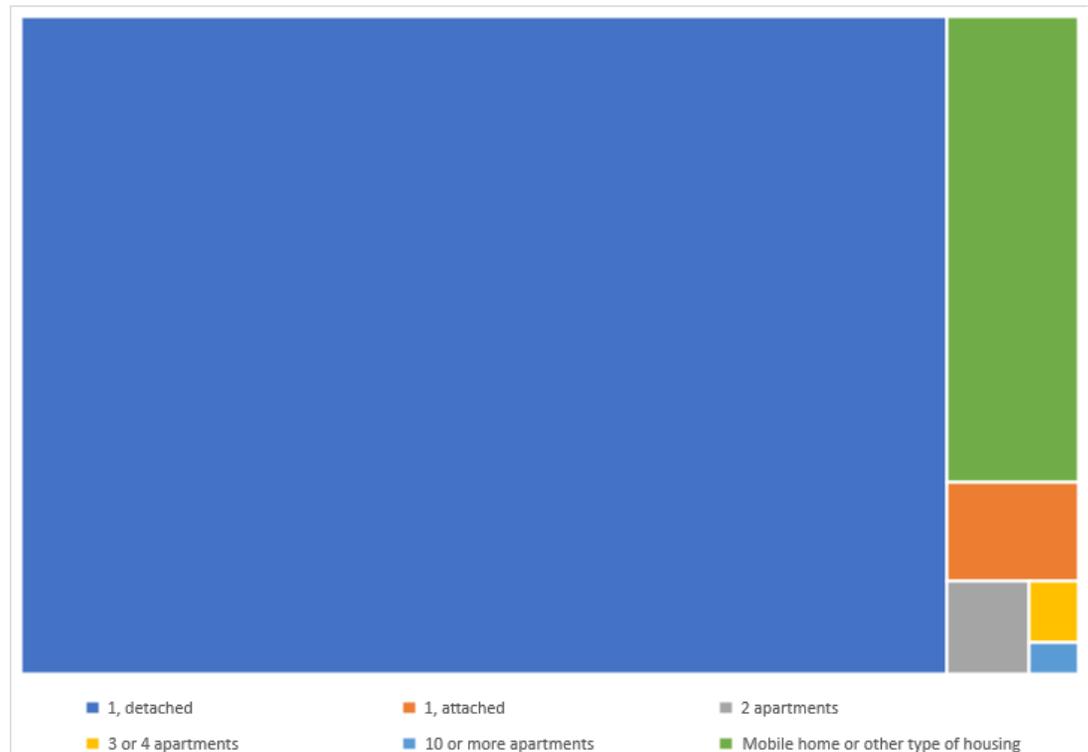


Above: Home on Harsens Island (Giffels Webster, 2019)

Housing Types

As shown in Chart 4 below, single-family detached housing is the predominant housing type in the township, making up 87.5% of all units. Multi-unit apartments made up 20.6% of housing types and single-family attached units (such as townhomes and condos) made up 8.6% of all housing units. Duplexes comprise the smallest housing type in the township at 0.5%.

CHART 4: HOUSING TYPES IN CLAY TOWNSHIP



5. Natural Features

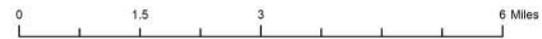
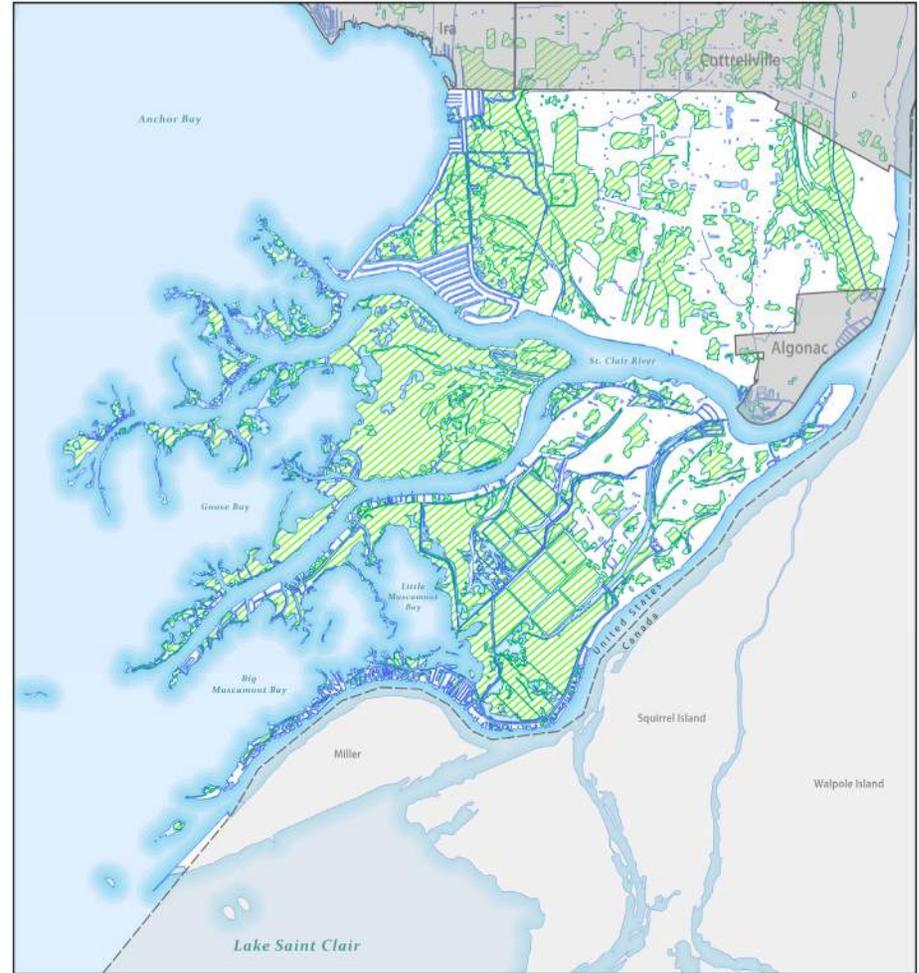
Natural Features

Wetlands

The largest contiguous wetland in the township is located within the St. John's Marsh area. Large wetland areas are also located along the eastern portion of the township just to the north of the City of Algonac. Small wetland areas can be found throughout the interior acreage of the township. The areas along the shoreline of Harsens Island are largely noted a potential wetland areas and most of Dickinson Island is classified as potential wetland. The size and extent of the contiguous wetlands will likely have a substantial impact on the ability to develop much of the remaining acreage in the township, especially those areas on the mainland.



Above: Walking Path at St. John's Marsh (Giffels Webster, 2019)

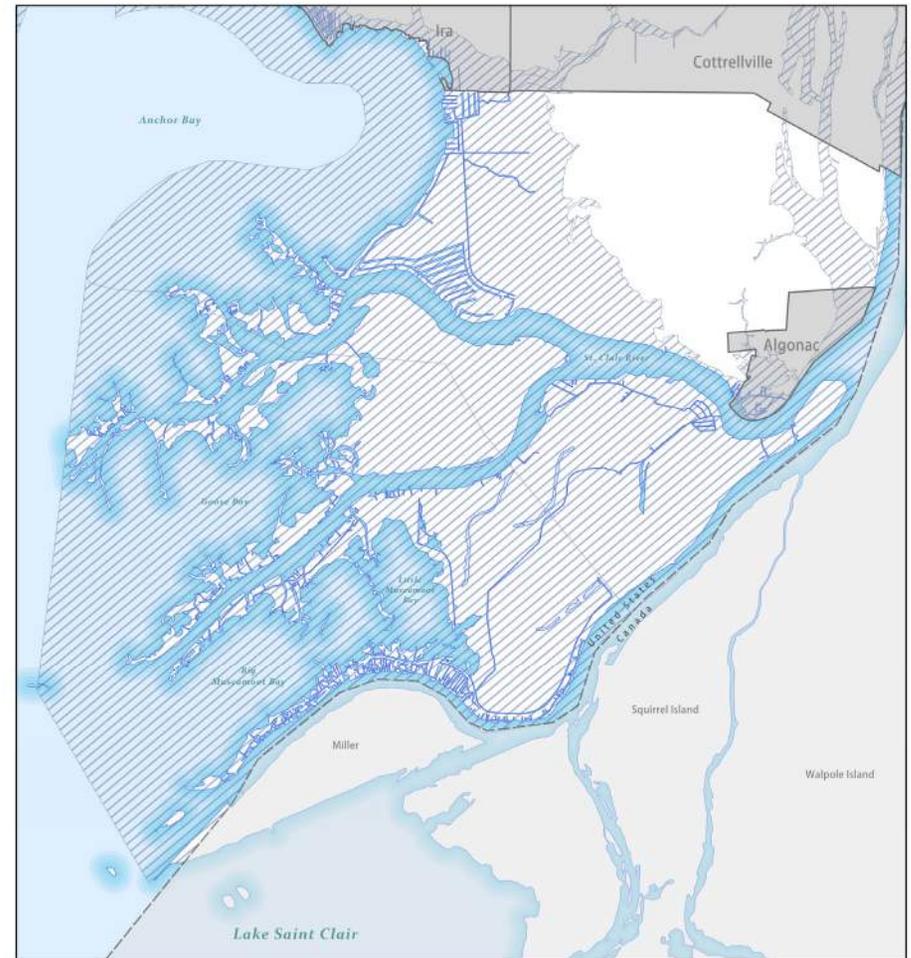


Wetlands and Surface Water: NWI, Version 2. Map exported: September 11, 2019. ©2019 Giffels Webster.

Natural Features

Floodplains

Floodplains in Clay Township outline the perimeter of the township. This includes the St. John's Marsh Area as well as the shoreline north of the City of Algonac. Further, both Harsens and Dickenson Islands are largely designated as floodplain areas as well as shown on the adjacent map. For development to occur within these areas, map revisions would need to be performed and studies conducted to indicate how the floodplain would either not be impaired or how the floodplain area/function would be mitigated. Further, for individual buildings, additional construction precautions would likely be necessary to ensure building standards are being met. The official floodplain maps are currently being reviewed and revised. Some additional inland areas are anticipated to be added to the defined floodplain area.



Special Flood Hazard Area - FEMA. Map exported: September 11, 2019. ©2019 Giffels Webster.



Above: View of Beaubien Creek, east of Dyke Road. (Giffels Webster, 2019)

Natural Features

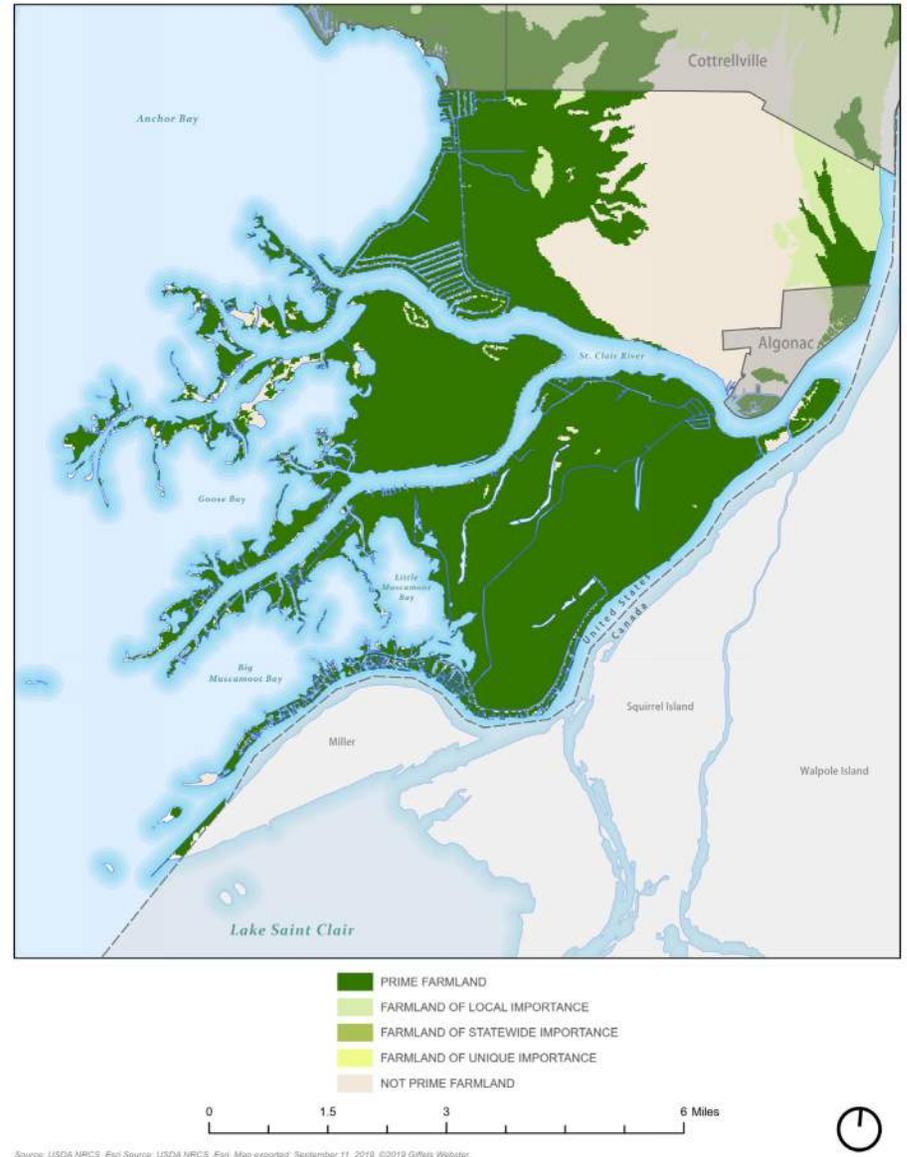
Prime Farmland

In Clay Township most the prime farmland is located where potential wetlands also exist. This includes most of the area within St. Johns Marsh as well as both Harsens and Dickenson Islands. A small amount of prime farmland is noted just to the north and west of the City of Algonac. Based on County information there is one property in the township that is enrolled in the PA 116 Farmland preservation program.

Soil data is the principal source of information used by the U.S. Department of Agriculture Soil Conservation Service (ASCS) to determine those areas of the township and the county that have the greatest potential for long-term agricultural production.



Above: St. Clair Flats Wildlife area (Giffels Webster, 2019)

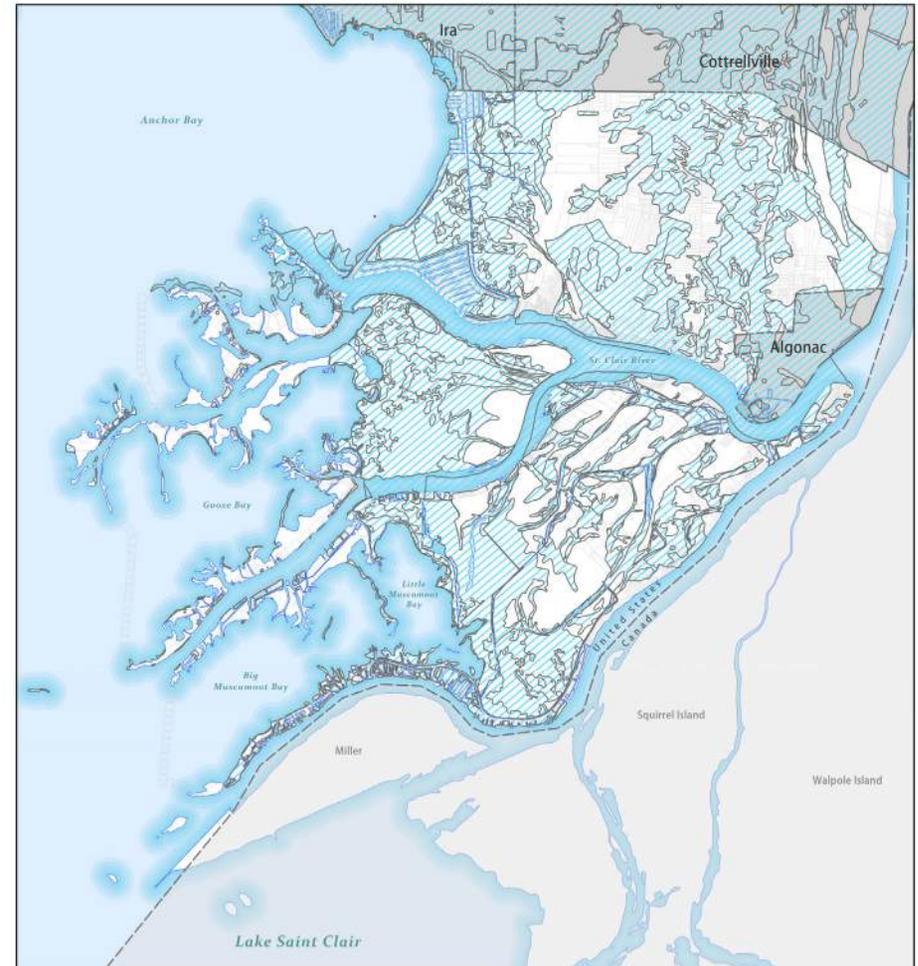


Source: USDA NRCS, Esri Source: USDA NRCS, Esri Map exported: September 11, 2019. ©2019 Giffels Webster.

Natural Features

Soils

Soils play a major role in the long-term development of a community. With Clay Township still in its development phase, the soil patterns have a direct impact on the type and location of development, as well as an impact on watershed issues. Soil types can be a significant help in addressing construction issues relating to infrastructure and the siting of buildings, and in addressing drainage problems in specific areas. A generalized soils map is provided (right).



Hydric Soils: Michigan EGLE Map exported: September 11, 2019 ©2019 Giffels Webster

Above: St. Clair River (Giffels Webster, 2019)

6. Resiliency and Sustainability

Resiliency & Sustainability

As we plan for the future, many of the challenges we will face are related either directly or indirectly to our place in larger systems, both natural and manmade. We often have little direct local control over these systems, but adapting to change and discovering our role in contributing to the health of these systems is nonetheless essential to planning for a community that can survive and thrive even in the face of the most severe challenges.

Michigan is affected by our changing climate in many ways, some of which may seem counterintuitive. For instance, as average annual temperatures rise, the chance of prolonged deep freezes such as those experienced in the 2013-2014 and 2014-2015 winters may increase, as warming elsewhere on the planet destabilizes the jet stream, allowing Arctic air that would normally be trapped further north to descend into the Upper Midwest.

A changing climate has far-reaching implications for Michigan's agricultural and tourism economies, waterfront development, and communities with older stormwater management infrastructure. As a low-lying waterfront community, Clay Township has already experienced heavy flooding and must anticipate that more flooding will occur in the future, damaging property, impairing access to parts of the township, creating financial distress for local residents and businesses, and dampening the tourism economy.



Above (top): Flooding on the mainland in spring, 2019; Above (bottom): Spring, 2019, flooding at the airport on Harsens Island (Giffels Webster, 2019)

Resiliency & Sustainability

Though they are related, resiliency and sustainability are not the same. Sustainability is the more familiar, well-established concept, and focuses on decreasing or eliminating the detrimental future impacts of our current activity. Resiliency recognizes that our built environment will be subject to stresses and is the practice of designing that environment in a way that can endure those stresses. Planning for resiliency must consider that some threats are ongoing, persistent stresses, while others are sudden shocks, single events that disrupt the day-to-day functioning of the community.

Resiliency

“Ability of a system to prepare for threats, absorb impacts, recover, and adapt”

Persistent Stress

Persistent stressors are recurring events or conditions that impact quality of life, economic activity, and social stability.

- Change in climate/weather patterns
- More frequent extreme heat
- More frequent destructive weather
- Groundwater contamination
- Loss of protective topography, woodland, wetland
- Changes in economic opportunity: potential loss of production across industries (tourism, agriculture)

Disruptive Events

Sudden shocks are individual events that must be managed in real-time and recovered from after the fact (items in bold were highlighted in the Michigan Resiliency Handbook, 2017):

- Heat wave
- Heavy rain and flooding
- Sever winter storms
- Coastal dynamics
- Agriculture/food systems
- Damage to natural systems
- Toxic algae blooms
- Crop-destroying late freezes
- Drought & Wildfires

Sustainability

“The reduction or elimination of future impacts from current activity”

Environmental

- Reduce waste
- Reduce pollution
- Reduce resource extraction
- Limit human impact on natural systems
- Limit impacts of economic activity on human and natural health

Social

- Pursue social stability
- Mitigate impacts of poverty, lack of savings, low income
- Provide facilities, services to least connected and least able citizens

Economic

- Balance short-term monetary gain with long-term stability
- Consider future costs of infrastructure
- Consider costs of mitigating future impacts of sudden shocks versus cost of recovery

How Are Resilience and Sustainability Related?

Failure to act in a sustainable way now harms our ability to be resilient in the future.

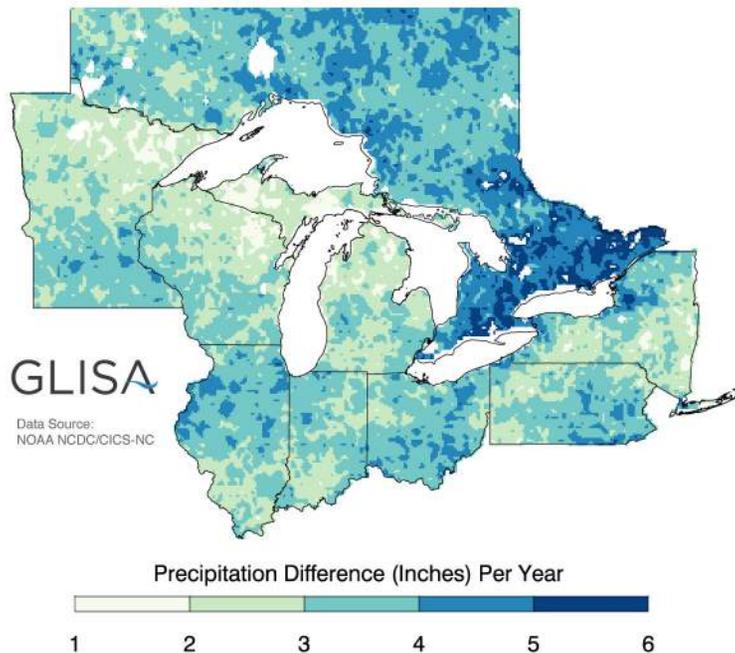
Resiliency & Sustainability

Effects of Climate Change

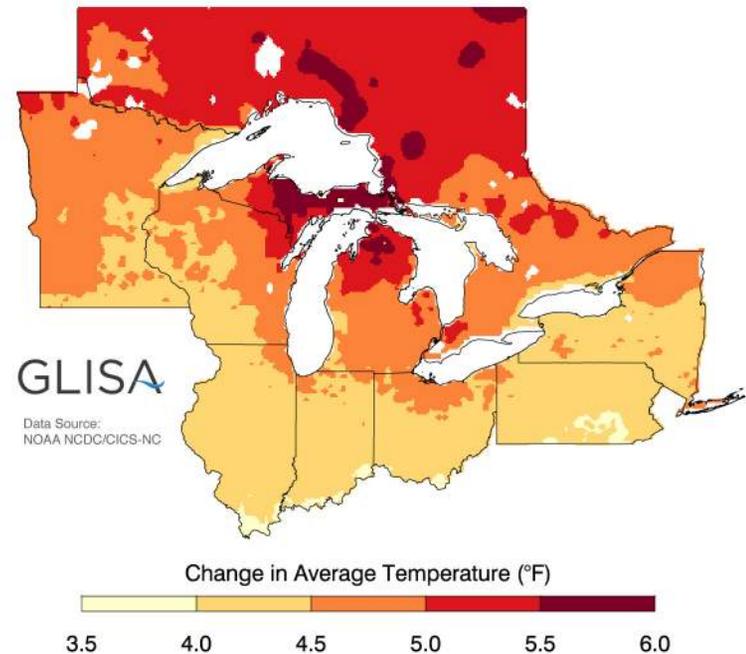
Climate Change is not merely a future threat; changes in the local climate have already been recorded in places around the world, and Michigan is no exception. For instance, according to data from the National Oceanic and Atmospheric Administration, average temperatures in the Great Lakes region rose 2.3 degrees Fahrenheit from 1951 to 2017, extending the frost free season by 16 days, while total annual precipitation increased 14 percent and the number of heavy precipitation events rose 35 percent. By 2070, average temperatures in southern Michigan are expected to rise an additional 4 degrees, and the annual number of days above 95 degrees will correspondingly rise by between 5 and 10. Communities will experience between 25 and 35 fewer nights below freezing, and average annual ice cover on the lakes will continue to decline.

As the frequency and intensity of severe weather events continues to increase, communities will experience economic disruption. For instance, while the frost-free season has nominally increased, farmers in many of Michigan’s agricultural communities have not benefited in recent years due to abnormally late frosts (such as those in mid-May, 2020) or heavy rain events, which have damaged early crops or delayed planting of late crops. Rising temperatures and more very hot days may effect the timing of summer festivals and tourism. Communities must be prepared to anticipate the local effects of regional climate trends.

Projected Change in Average Precipitation
 Period: 2041-2070 | Higher Emissions: A2



Projected Change in Average Temperature
 Period: 2041-2070 | Higher Emissions: A2



Above: Maps courtesy National Oceanic & Atmospheric Administration’s Great Lakes Integrated Sciences and Assessments Program (GLISA)

Resiliency & Sustainability

Addressing Resiliency

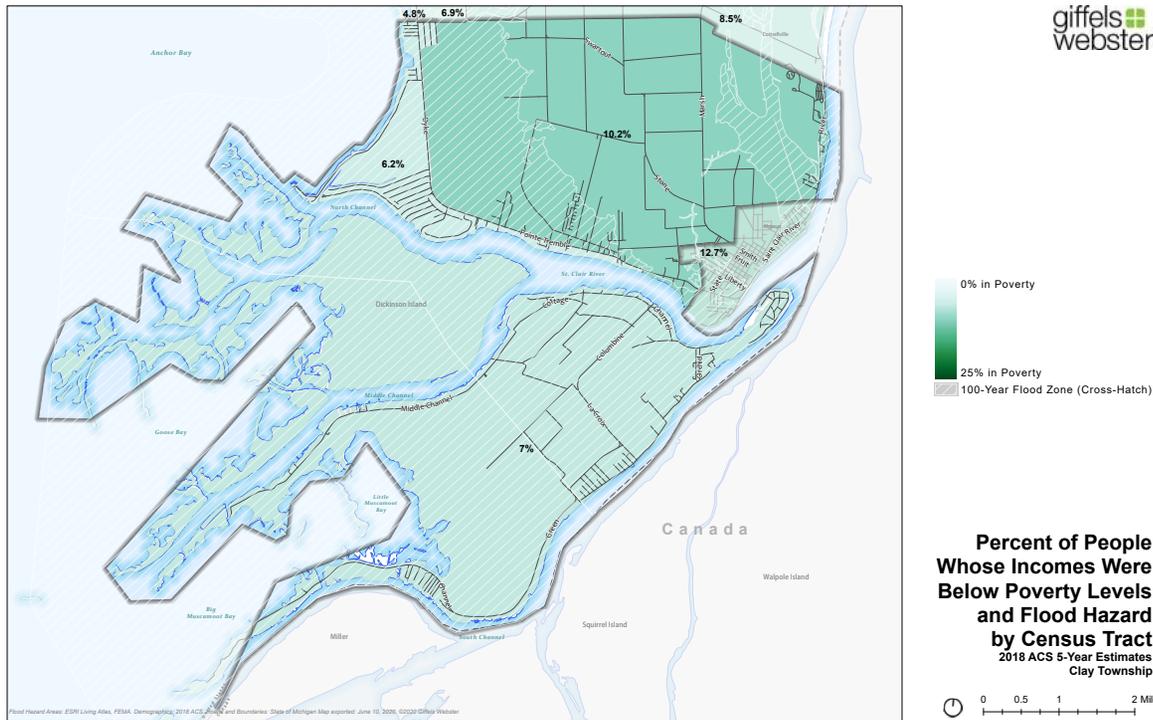
Resilient communities anticipate likely shocks, understand trends in stressors, and prepare for potential worst case scenarios. Understanding where a community is physically most vulnerable to specific events, and understanding which members of the community are likely to be most vulnerable in each case is key to effective planning. This chapter discusses in general terms what the community may expect in the future and what might be done to prepare for it; this plan recommends the development of a community resiliency plan.

Identifying Vulnerable Populations

Though an entire community will be affected by a major event such as a severe storm, flood, or long power outage, certain segments of the population are more vulnerable to the effects of such events, and in some cases are also more likely to live in locations that are more likely to be severely affected. Though the most vulnerable populations will vary based on the specific event, certain population segments warrant special attention even in a general analysis:

- Low-income households
- The elderly
- The disabled
- Children

Low-income households are often located in areas with limited open space and tree canopy and are often less likely to have access to disaster mitigating items such as air conditioning and reliable transportation. Low-income households may also lack the financial resources to support quick recovery after a disaster or to prepare effectively for likely future events. The elderly and disabled may similarly lack financial resources and mobility, and may be more socially isolated than other groups. Especially in extreme heat events, the elderly and very young children are much more likely to be badly affected, including to the point of hospitalization, than the general population.

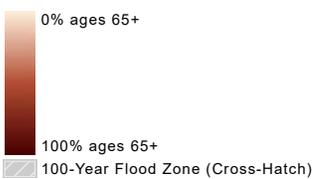
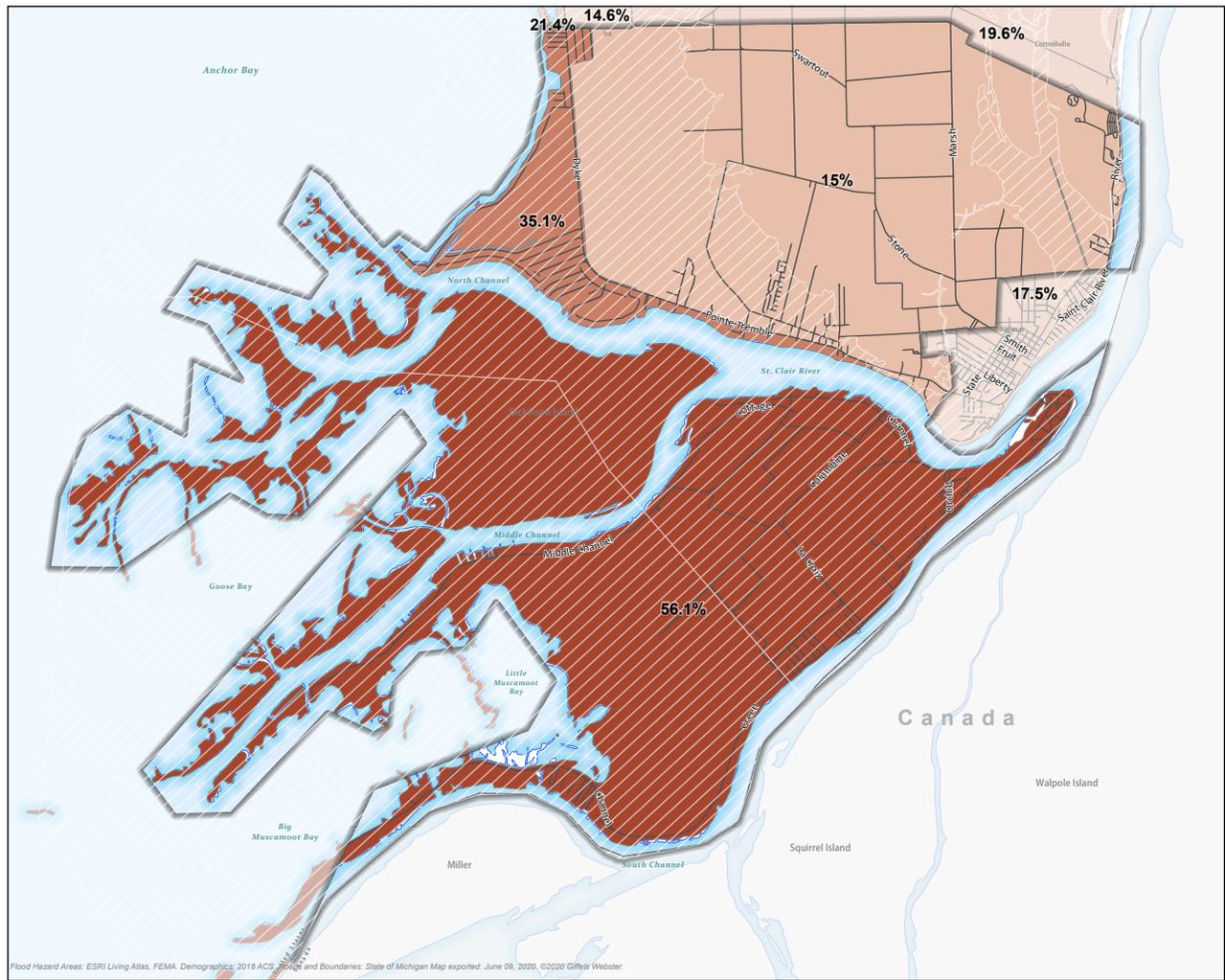


Percent of People Whose Incomes Were Below Poverty Level and Flood hazard Area by Census Tract

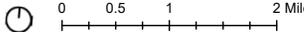
Resiliency & Sustainability

Identifying Vulnerable Areas

Different disasters are most likely to affect different areas, and communities can use geographic information systems to map relative risk levels for different neighborhoods. Identifying vulnerable populations living in especially vulnerable areas allows a community to focus resources where the need is greatest.



Senior Population and Flood Hazard by Census Tract
 2018 ACS 5-Year Estimates
 Clay Township



Flood Hazard Areas: ESRI Living Atlas, FEMA. Demographics: 2018 ACS. Source and Boundaries: State of Michigan Map exported June 09, 2020. ©2020 Giffels Webster.

Mitigation, Adaptation & Risk Reduction

Public Outreach

Resiliency planning should include a public outreach process in two basic parts: education and input. Education includes making community members aware of potential threats and the process of planning for them, with an emphasis on outreach to the most vulnerable members of the community. The input process should offer the opportunity for residents and other stakeholders such as municipal staff and business owners to engage in detailed, focused conversations regarding resiliency planning issues. It is important for the community to engage in vigorous outreach through multiple channels to get people involved.



Extreme Heat. Average temperatures in the Great Lakes region rose 2.3 degrees Fahrenheit from 1951 through 2017. Extreme heat is dangerous for vulnerable populations and can also tax electrical infrastructure, leading to power outages, which in turn can increase the risk for the people most prone to succumbing to heat. Designating specific locations with backup power sources (such as municipal halls, libraries, and schools) as cooling stations can provide vulnerable residents with an essential escape from the heat. There may be a need to provide transportation to cooling stations for those with limited mobility options.

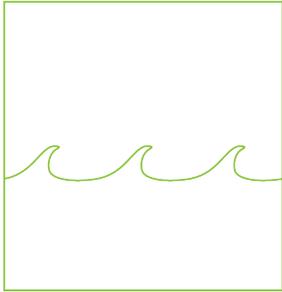


Heavy rain and flooding. Heavy rain events are already more common in Michigan than they were in the mid-to-late 20th Century, having increased by 35% from 1951 to 2017, as total annual precipitation increased by 14%. They are anticipated to become even more common in the future. Clay Township experienced widespread flooding in 2019, coupled with extensive property damage, and a large portion of the residential property in the township is vulnerable to future flooding due to its proximity to the shore and canals. The township should consider developing a flooding and severe weather response plan, coupled with budgetary planning for flood prevention and mitigation efforts (hundreds of thousands of sandbags were used in 2019).

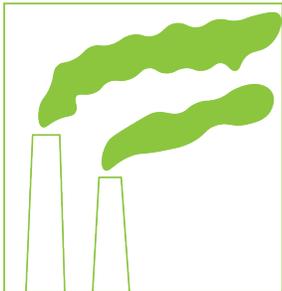


Severe winter storms. As temperatures rise, winter precipitation levels are anticipated to rise as well, and mixed precipitation events with more heavy ice may become more common. Severe winter storms can result in power outages, impeded mobility, damage to structures and trees, and lost economic productivity. Municipal costs for snow removal should be included in budget planning. While storms are the primary focus of future concern, communities also benefit from planning for extreme cold—locations designated as cooling stations in the summer can become warming stations in the winter.

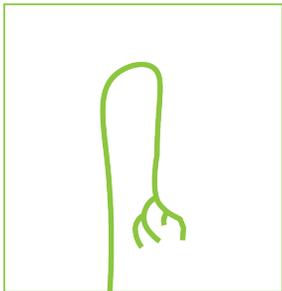
Mitigation, Adaptation & Risk Reduction



Coastal dynamics. The Great Lakes, including Lake St. Clair, undergo cycles of elevated and decreased water levels. During low cycles, it can often appear that a great deal of land is available for shoreline development, but this land is at extremely high risk of being submerged when elevated water levels return. Erosion is also exacerbated by the rise in overall precipitation and the rise in frequency of extreme storm events. Understanding these cycles and regulating coastal development with them in mind is important over the long term in order to avoid development on land that is essentially temporary. Furthermore, adopting a strategy to manage shoreline erosion is important to ensuring that a shoreline lifestyle can be maintained into the future. Erosion management strategies are often most effective when coordinated with neighboring jurisdictions, as managing water in one place can change its effect elsewhere.



Damage to natural systems. Human activity is rarely in balance with the natural systems it occurs within. While resource extraction and pollution offer two very obvious examples of human activity, nearly all modern human development activity has some impact on natural systems, including loss of habitat, interruption of habitat, and increased emissions due to greater travel distances as development moves outward into wild places. A combination of rising temperatures and agricultural runoff that changes the nutrient balance in major water bodies has led to much higher frequency of toxic cyanobacteria and algae blooms, particularly in Lake Erie. These blooms can impair drinking water quality and limit recreational opportunities, including fishing and watersports. It is important for a community to understand its water source and the health of its own groundwater, particularly if the majority of residents use well water.

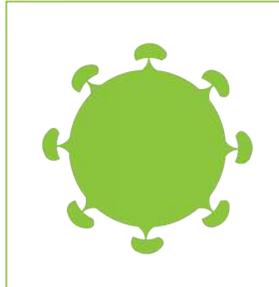


Agriculture/food systems. As the climate changes and weather patterns shift accordingly, planting and harvesting conditions become less predictable, and the potential for crop losses increases. In 2019, unusually heavy rains across much of Michigan made planting during the typical time difficult for many farmers. While the number of frost-free days has increased by an average of 16 days across the Great Lakes region from 1951 to 2017, the timing of those extra days has not uniformly added to the growing season. In recent years, unexpected late freezes after earlier-than-usual warm weather lead to the loss of large portions of fruit crops such as apples and cherries.

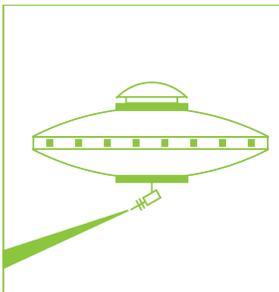
Mitigation, Adaptation & Risk Reduction



Drought. We most frequently think of drought as a prolonged period without precipitation. While this kind of drought is certainly possible in the future in Michigan, the more likely effects of the changes the state is experiencing will be changes in seasonal distribution of storms with precipitation. Winter rainfall will become more common, snowpack overall may decrease, and stream levels will peak earlier in the year, affecting water availability and the timing of groundwater recharge. Drought is exacerbated by higher temperatures, which lead to increased evaporation rates; even with higher average rainfall, land may become drier, and as rain becomes less frequent in the hottest summer months, mid-summer drought could become a regular challenge. Dry conditions bring with them the possibility of wildfires, which are not uncommon in rural Michigan but could grow in scale and intensity in coming years. It is important to understand the community's water sources and how extended periods of drought might affect water availability.



Public health emergencies. The 2020 SARS-COV-2 pandemic brought with it unprecedented economic disruption, forced short-term changes in social habits, destroyed numerous small businesses, and led to a very large increase in unemployment in a very short time period. Planning for public health emergencies needs to consider the many dimensions of the social fabric that are heavily impacted, including the availability of medical services, government's ability to continue functioning under quarantines or stay-at-home orders, and the locations and numbers of vulnerable populations. Local police, fire, and ambulance services may be particularly taxed in a future public health emergency.



Unanticipated events. No community can plan for every possible future event or scenario. This is why developing resiliency, improving sustainability, understanding vulnerabilities, and identifying emergency resources is so important.

Resiliency & Sustainability

Coastal Resiliency

In Michigan’s lake shore communities, water levels can vary significantly over time. In 2019, each of the Great Lakes, including Lake St. Clair, set a new record high for lake level, leading to serious flooding in numerous shoreline communities.

In a waterfront community such as Clay Township, where managing the shoreline is key both to protecting housing and preserving the local economy, it is important to guide shoreline development in a manner that reduces vulnerability.

In many communities, years of low lake levels during the 1990s created a false sense that the ordinary shoreline was much more distant from shorefront buildings and infrastructure than it actually is. Because lake levels are cyclical, long periods of high water tend to be followed by long periods of low water, and vice versa. Setback regulations should consider not only the ordinary high water mark at the time of development, but also the historical high water mark, which helps to ensure that development does not encroach too far toward the water during low water level cycles, only to be vulnerable to flooding or escarpment erosion when the lake returns to high levels.

ACTION ITEMS	
ZONING ACTION ITEMS	
•	Consider amending zoning ordinance to utilize historical high water mark when determining waterfront setbacks
•	Add standards to development regulations for building within flood plains



Above: Cinder block washed ashore on Lake Huron beach, Sanilac County (Giffels Webster, 2018)

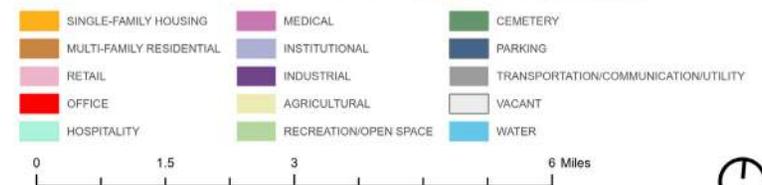
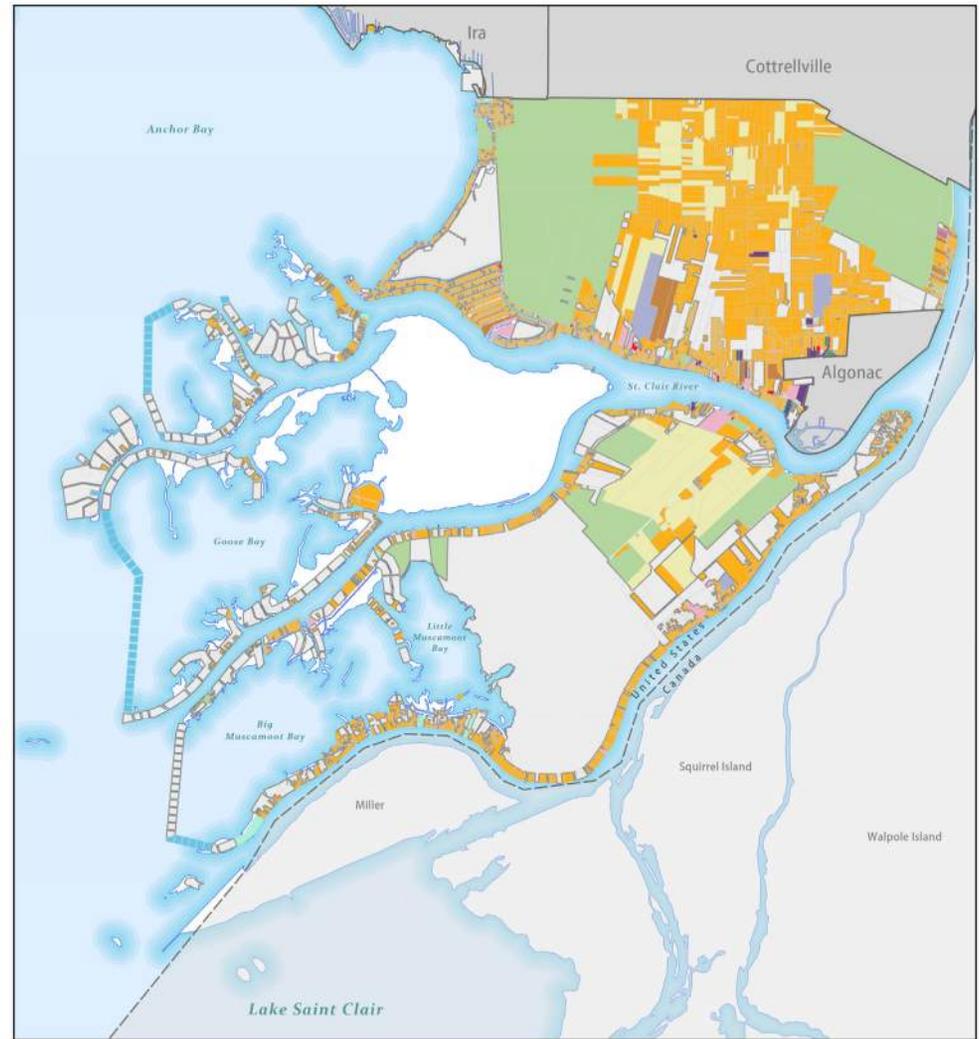
7. Land Use Analysis

Land Use Analysis

Existing Land Use

The following is a table showing existing land use categories and area based on 2015 data from the Southeast Michigan Council of Governments.

SEMCOG LAND USE	2015 ACRES	PERCENT
Single-Family Residential	4,945.4	21.6%
Multi-Family Residential	27.4	0.1%
Retail	177	0.8%
Office	32.2	0.1%
Hospitality	65.9	0.3%
Medical	8.6	0%
Institutional	185.7	0.8%
Industrial	54.5	0.2%
Agricultural	2,269.6	9.9%
Recreation / Open Space	4,184.3	18.2%
Cemetery	7.9	0%
Parking	11.9	0.1%
Extractive	0	0%
TCU	1,723.3	7.5%
Vacant	7,298	31.8%
Water	1,937	8.4%
Total	22,928.7	100%



Existing Land Use 2015. SEMCOG's Open Data Portal. Map exported: September 11, 2019. ©2019 Giffels Webster.

Land Use Analysis

Existing Residential Land Use

Single Family Residential

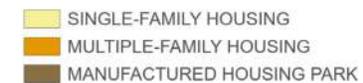
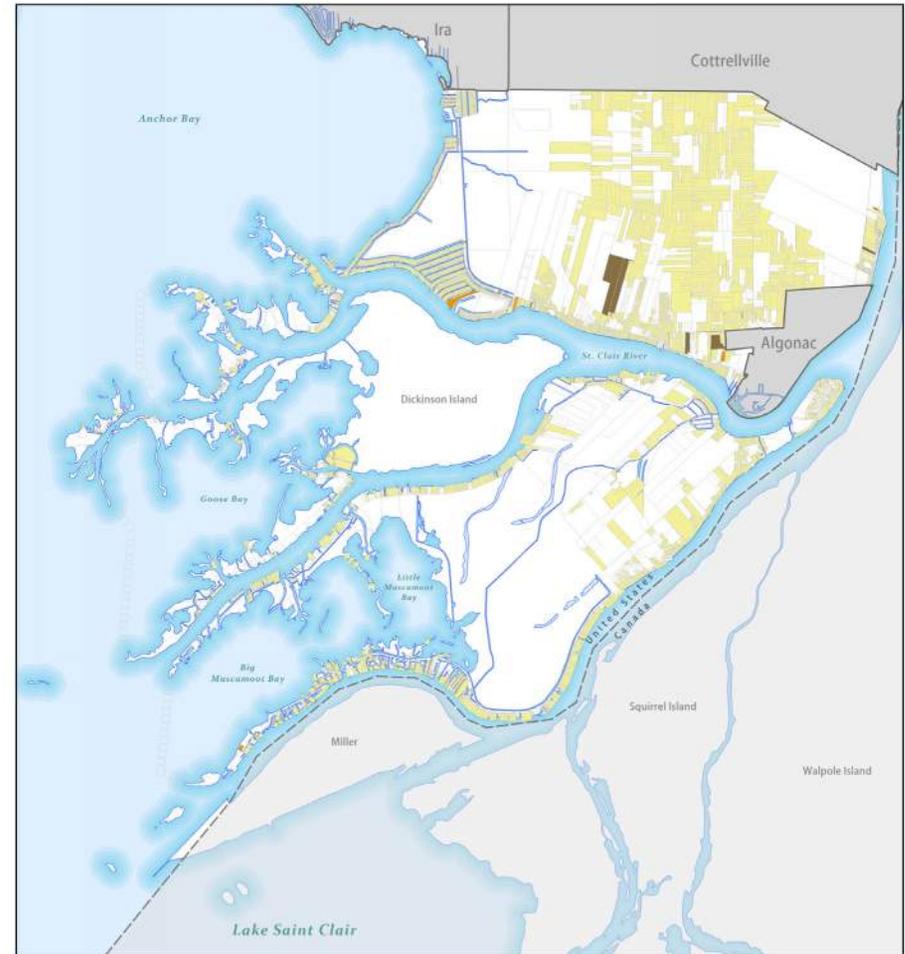
Single family homes occupy 4,945 acres of land in Clay Township. This represents over 21% of the township's total land area. Most existing single family development are concentrated in platted subdivisions. According to SEMCOG, there are a total of 5,079 single family homes in the community in 2018.

Multiple Family

Multiple family units occupy 27.4 acres of land, or 0.1% of the township's total developed land area. There were 187 Multiple family units in 2018, comprising 3.6% of the township's total housing supply

Manufactured Housing

There are 455 total manufactured housing units within the township.



Residential Data: Existing Land Use, 2018, SEMCOG's Open Data Portal. Map exported: September 11, 2019. ©2019 Giffels Webster.

Land Use Analysis

Existing Commercial and Industrial Land Use

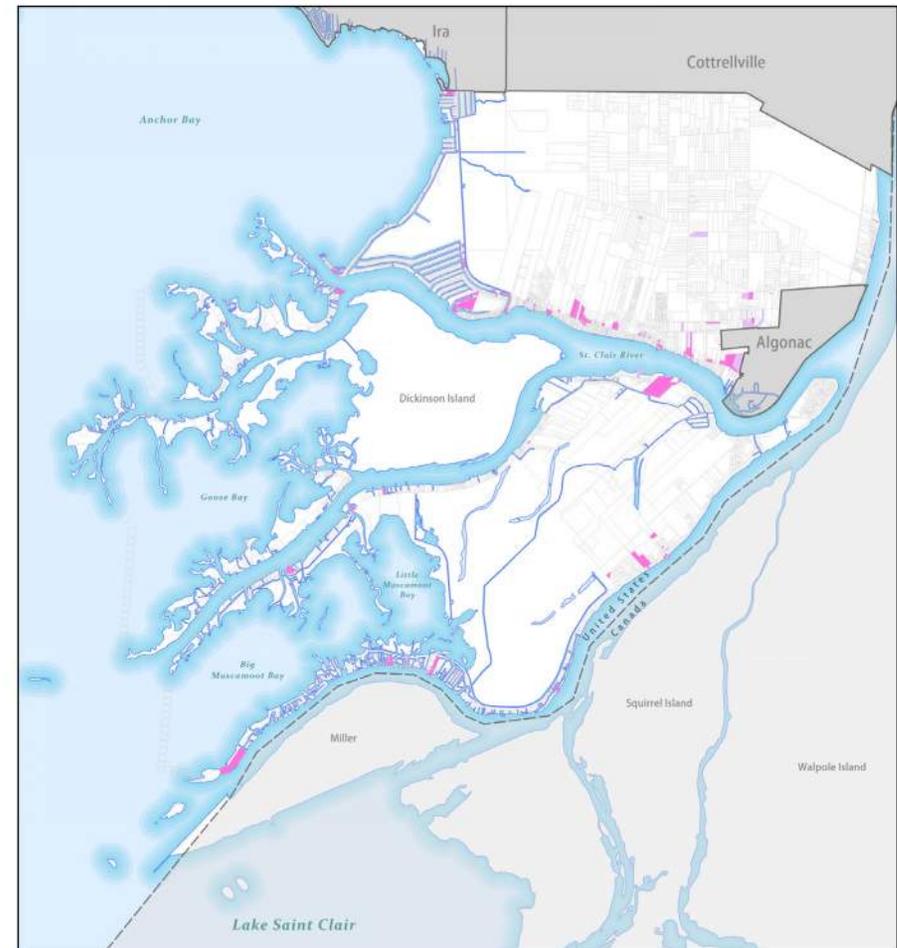
COMMERCIAL & OFFICE

Clay Township's commercially zoned areas feature businesses that serve local and visitor needs. Although the township does not cater to the regional retail market, visitor and recreational tourism offers consumer expenditures beyond the local demand. Commercial uses represent approximately 275 acres of land within the township. Commercial properties occupy a small percentage of the total land area and are mostly located along the Dyke Road/Pointe Tremble Road (M-29) corridor. Sans Souci, located on Harsens Island, features several commercial properties that serve residents and visitors of the island. Several commercial properties are featured at the northwest corner of the township at the border with Ira Township. Marinas and other water-oriented businesses are common in Clay Township and serve marine traffic from Lake St. Clair and the St. Clair River. Marina commercial areas are accessible by waterways and the major thoroughfares in the township.

The new Waterfront Mixed Use District also provides opportunities for commercial and offices uses.

INDUSTRIAL

Clay Township has approximately 55 acres of land designated for industrial uses which is less than 1% of the total land area. Most of the industrial properties are located in the southeast corner of the township, near the border with the City of Algonac.



INDUSTRIAL
COMMERCIAL

0 1.5 3 6 Miles

Industrial and Commercial Data: Existing Land Use, 2018; SEMCOG's Open Data Portal. Map exported: September 11, 2019. ©2019 Giffels Webster.



Land Use Analysis

Existing Open Space

VACANT AND OPEN SPACE

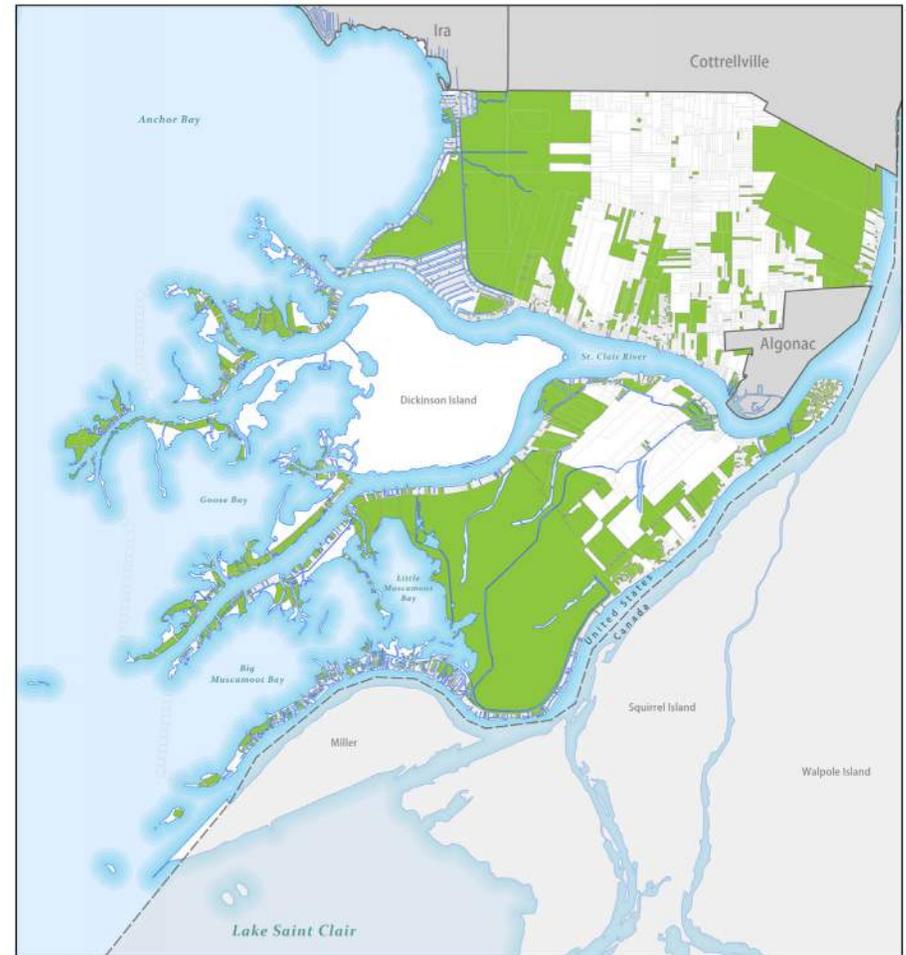
The largest portion of Clay Township's land is designated as vacant or open space. The different classifications of vacant and open space impact the long term capacity for development in these areas.

State Managed Lands

Clay Township features several significant state managed properties including the St. Clair Flats State Wildlife Area, St. John's Marsh State Wildlife Area, and the Algonac State Park. The properties preserve huge tracts of land and wildlife. In addition, the state manages research areas and habitat restoration initiatives on the properties. . The North Channel, Decker's Landing, Snooks, and Ames provide boating access to the St. Clair River and the connecting waterways. The state managed land is used as open space, hunting grounds, and for recreational uses. Certain portions of the properties were once platted but have since been inundated by water. The Michigan Department of Natural Resources manages St. John's Wet Prairie Natural Area and the adjacent St. John's Marsh. In Clay Township there are 4,184 acres of recreational land and open space. In addition, 8.4% of the township is covered by water, equal to 1,937 acres. State Managed Lands offer public benefits to Clay Township. The expansive and scenic lands encourage active and passive recreation and provide stimulus to the local economy in the form of tourism and visitor dollars. Importantly, state managed lands also actively preserve the existing natural habitats and wildlife in the township.

Vacant/Open Space

There are 7,298 acres of vacant land in Clay Township which comprises of 31.8% of the total land area. The land in this category is vacant, un-buildable, open space, or is currently in the process of being developed. These vacant areas are more likely to be developed as access to public infrastructure improves in Clay Township. Expanded water and sewer capacity will allow development to take place in currently vacant areas.



VACANT & OPEN SPACE

0 1.5 3 6 Miles

Vacant and Open Space Data: Existing Land Use, 2015, SEMCOG's Open Data Portal. Map exported: September 11, 2019. ©2019 Giffels Webster.



Land Use Analysis

Community Facilities

Clay Township and other governmental and quasi-public entities provide a wide variety of community facilities and services for township residents and businesses. Key facilities include:

Township Hall

Clay Township Hall is located on Pointe Tremble Road (M-29), between Lakepointe Boulevard and Estergreen Street. The Clay Township Police Station is also housed at the township hall building. Meetings for the Township Board, Planning Commission, and other boards and committees are held here. The site also features a historic structures, a community park, and splash pad, and it provides a central location for residents to gather and meet. The township hall also provides recreation opportunities in the form of community basketball courts and a network of walking paths.

Police

Clay Township Police Department is a full service police agency that serves the mainland and Harsens Island areas. The department has a 23 member force with 6 reserve officers available. The department operates out of one station that is located within the Clay Township Hall building on Pointe Tremble Road (M-29).

Fire

The Township has two fire stations in operation. The Clay Township Fire Department operates on the mainland out of a fire station located at 9620 Muskrat Run. The Harsens Island Fire Department serves Harsens Island and has one fire station located in San Souci near the Harsens Island Lions Hall, across from the Post Office. The department consists of a 27+ member force.

Increased access to public utilities is directly related to the Clay Township's ability to meet its growth potential in certain areas. Clay Township is currently involved in providing water and sanitary sewer services to some areas of the township. As the township grows, increased demands are placed on the capacities of these systems to provide necessary infrastructure.



Above: Clay Township Fire Department located at 9620 Muskrat Run

Land Use Analysis

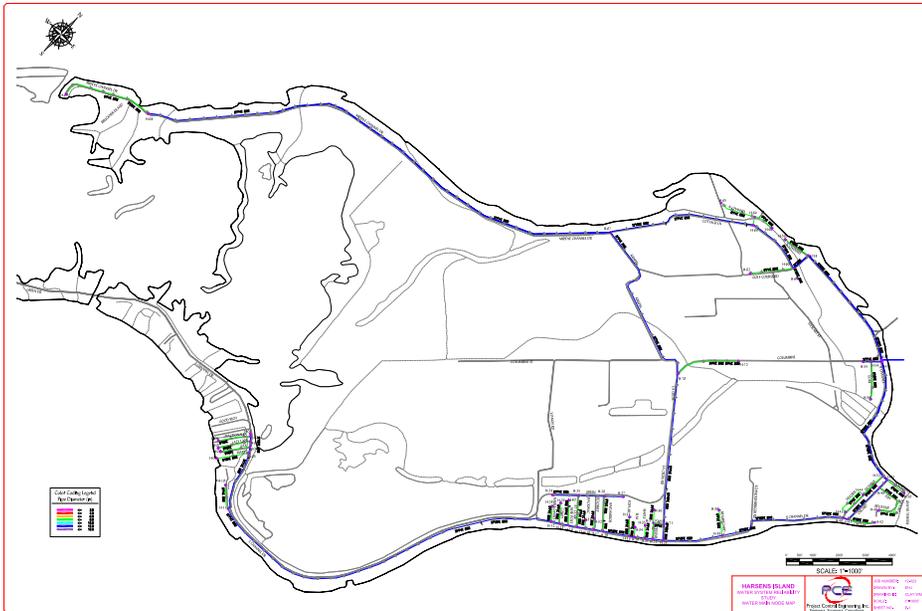
Water

The water maps shown above indicate the extent of the water system, which services both the mainland and Harsens Island. The township plans to replace the main water line along M-29 from Butterfield to Billow Ct (approx 3 miles), as this is the main water line that experiences a high percentage of breaks due to its old age. Replacing this line, while adding an additional extension under the St. Clair River to Harsens Island would “loop” the system, providing more consistent and higher water pressure. The township has also discussed the possibility of locating a water tower on township property behind the water department if needed.

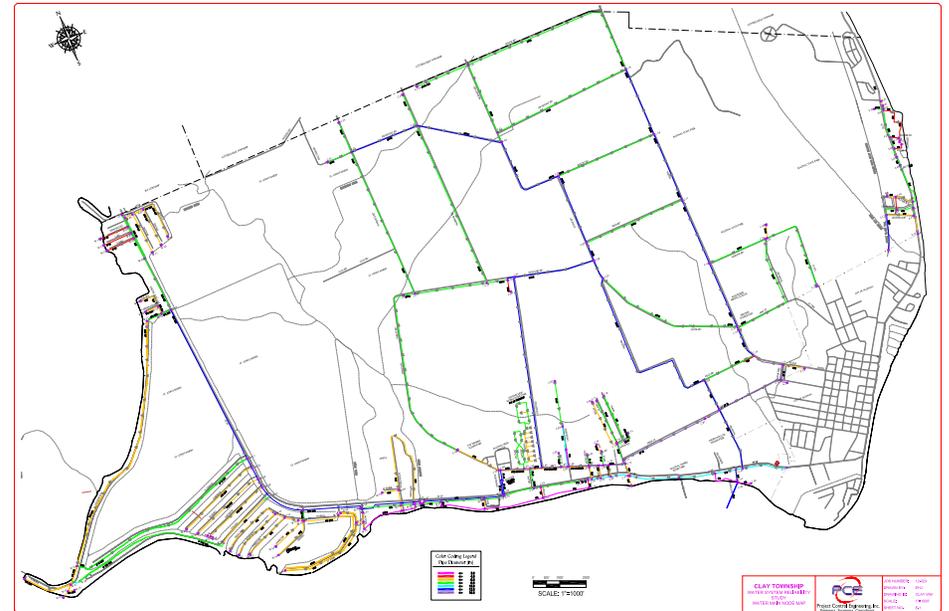
Sewer

Clay Township sewer service is provided on the mainland primarily along M-29 and Anchor Bay Drive. The township is aware that the main sewer interceptor needs repair due to old age and is seeking additional funding before undertaking major repairs.

Harsens Island relies on septic treatment to process wastewater. Prior to 2012, a special assessment district was established in the San Souci area, although no improvements were made. The township may wish to explore this option to fund a package treatment plant for local sewer service on the island.



Above: Harsens Island Water System Reliability Study: Water Main Node Map



Above: Clay Township Water System Reliability Study: Water Main Node Map

Land Use Analysis

Community Facilities

Ferry Service

Privately operated, but serving the public, ferry services provide year-round vehicle, pedestrian, and bicycle access to Harsens Island. The ferry route travels between a loading dock in Clay Township and the northern shore of Harsens Island and provides expanded hours of operation during the summer season. Ferry service for vehicles is charged based on vehicle type, however pedestrians and bicyclists may use the ferry at no cost. Weather and water conditions ultimately affect the ferry service schedule and the safety of travel from to the island.

Two new working docks have been constructed on the mainland and a third dock is in the process of being built. One option for an emergency ferry service contingency plan is a Army Corps of Engineers floating bridge that could be deployed within 48 hours for evacuation from Harsens Island. A ferry service operating out of the city of Algonac provides transport to Russell Island and Walpole Island.

Harsens Island Airport

Located just north of Sans Souci is the Harsens Island Airport, a small private runway on a grass field.



Above: Harsens Island Airport in June 2019
(Giffels Webster, 2019)

Road Network and Classifications

An important element of the Master Plan process is the development of a plan for the overall system of streets and roads in a community. This system provides for the movement of people and goods from places both inside and outside the community. Road rights-of-way also provide places for various public utilities such as water lines, gas lines, sanitary and storm sewers, cable television lines, electrical power and telephone lines. Because of these combined roads and utility functions, the system of roads in a community can impact economic conditions, environmental quality, and energy consumption, land development and overall quality of life in a community. See the Complete Streets section for more information.

Sidewalks

Few of the residential developments in Clay Township have an existing sidewalk network. The M-29 corridor has sidewalks or paths on one side of the street for certain segments, but the system lacks continuity. The sidewalk network has significant gaps and lacks necessary marked crosswalks. From Estergreen Street to Island Drive, M-29 has no sidewalks or pathways; this disrupts the pedestrian network. Streets without sidewalks and others with sidewalk gaps require pedestrians to walk on the grass or in the street. Eliminating gaps in the sidewalk system network is a relatively simple way to help provide a safer non-motorized system that connects neighborhoods and links residential areas to places of commerce and recreation.

Shared Use Paths

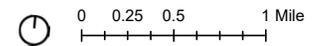
Bikeways are defined as rural wide paved shoulders, shared-lane markings, and local, county, or national bike routes. In Clay Township, bikeways are located along M-29, Nook Road, eastern Fruit Street, and on Harsens Island along Columbine Street and Channel Drive. The Bridge to Bay Trail is the most significant regional non-motorized route and it runs through Clay Township along M-29. Importantly, SEMCOG rated all of the existing bikeways in Clay Township as tier four which means few people would be comfortable

* Refer to Complete Streets Section for more details

Community Facilities: Mainland



Community Facilities
Mainland, Clay Township



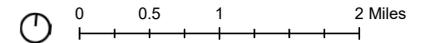
Trails: DNR. Campgrounds: SEMCOG. Boundaries and Roads: State of Michigan MGF v17a. Community Features: Giffels Webster. Map exported: July 20, 2020. ©2020 Giffels Webster.

Community Facilities: Harsens Island



- BIKE LANE
- BIKE ROUTE
- FERRY ROUTE
- KRISPIN BLUEWAY
- - - SEASONAL WATER TRAIL (JAN - AUG)
- OTHER WATER TRAILS
- BOAT ACCESS (PUBLIC)
- AIRPORT
- CEMETERY
- FIRE DEPARTMENT
- HISTORIC SOCIETY
- KAYAK ACCESS
- LIBRARY
- MUSEUM
- POLICE DEPARTMENT
- POSTAL SERVICE
- SCHOOL
- WATER DEPARTMENT
- LOCAL-OWNED PARK
- STATE-OWNED PARK
- ALGONAC

Community Facilities Dickinson Island and Harsens Island Clay Township



Parks, Campgrounds: SEMCOG. Boat Access, Deer Check, Campgrounds: MDNR. Bridge to Bay Trail: St. Clair County. Community Features: Giffels Webster. Map exported: July 20, 2020. ©2020 Giffels Webster.

8. Vision, Goals and Objectives

Visioning & Public Input

The Master Plan process started in June 2019 with a joint meeting with members of the Township Board, Planning Commission, Downtown Development Authority, Zoning Board of Appeals, Parks and Recreation, and City Staff. The purpose of the leadership meeting was to understand what elected officials and township staff would like the Master Plan to focus on over the next several months and the challenges that should be addressed.

The groups completed two exercises. The first asked Individuals to write down what they felt were **assets** and to provide **future ideas** to address challenges that face the community related to specific focus areas: Clay Township (Overall) Pearl Beach, San Souci, and Bike Improvements. The top three responses under each focus are were then consolidated and voted on; the results are below:



Clay Township (Overall)	
ASSETS	FUTURE IDEAS
Parks ● ● ● ● ● ●	Downtown ● ● ● ● ● ● ● ●
Access to Water ● ● ● ● ● ●	Improved Beach Areas ● ● ● ● ● ● ● ●
Natural Resources ● ● ● ●	Sidewalks / Paths ●

San Souci	
ASSETS	FUTURE IDEAS
Quaint & Quiet ● ● ● ●	More Business ●
Waterfront Views ● ● ● ● ● ●	Water Access ● ● ● ● ● ● ● ●
Historic Assets	Parking Improvements ● ● ● ● ● ● ● ● ● ●

Pearl Beach	
ASSETS	FUTURE IDEAS
Pier ● ● ● ● ● ● ● ●	Economic Development ●
Businesses	Water-based Amenities ● ● ● ●
Marsh ● ● ● ●	Better Transportation ● ● ● ●

Bike Improvements	
HARSENS	REST OF TWP.
Bike Path through DNR	Bike Path connecting parks ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Bike loop around island ● ● ● ● ● ● ● ●	Water Access ● ● ● ● ● ● ● ●
Bike path separate from road ● ● ● ● ● ●	Parking Improvements ● ● ● ● ● ● ● ● ● ● ● ●

Open House

The public open house opportunities for the Clay Township Master Plan update were held in November 2019 and offered residents of Clay township two opportunities to learn about the master plan update and share their thoughts on the vision of the township.

Harsens Island Open House

An opportunity for residents of Harsens Island to voice their input was offered at the Lions Club facility. Here residents were asked what improvements they would like to see, including specific questions regarding Sans Souci and the non-motorized network on the island. Discussions regarding improved ferry service and access to the island were mentioned, along with how to mitigate the effects of sustained record-high water levels.



Township Hall Open House

Residents were offered an opportunity to join the discussion and add their input at a second open house hosted at township hall. This was held the same day as the Harsens Island open house at township hall. Here residents and stakeholders had similar conversations of regarding high water and improvements to infrastructure.

Public Input Survey

Response Rate

Over 250 people responded to the Master Plan's on-line survey. Generally, majority of people (are satisfied with the overall quality of life. Most residents currently do not view Clay Township as a vacation destination but expressed interest in pursuing opportunities to promote itself a tourism destination. A quick summary of public input is presented here for Planning Commission's consideration. Full survey results will be provided in the appendix.



87% response

Average or above overall quality of life

When asked what are important factors that contribute to quality of life, respondents picked the following:

- Township services
- Quality of homes
- Neighborhoods and schools
- Access to waterfront
- Open spaces
- Proximity to workplace or access to walkable downtown were not important

Things residents like most include the waterfront, boating and the small community feel of Clay Township

Things residents would improve are adding more water access and fixing roads and blight.

Major challenges



52%

Lack of sidewalks and bike paths



50%

Flood Preparedness



47%

Land use Conflicts

Most respondents (72%) would like the township to encourage detached single family home for move-up or second time home buyers. Rental apartments were discouraged by over half



Service Ratings:

- ★★★★★ Police and Fire
- ★★★★★ Park Maintenance
- ★★★ Sidewalk Maintenance
- ★★ Road Maintenance
- ★ Zoning Code Enforcement

Public Input Survey

Most popular destinations by Car

- Daily: St. Johns Marsh and Ferry
- Weekly: Harsens island ferry and St. Clair Flats
- Monthly: Algonac Downtown and Waterfront park
- 5-11 times year: Algonac, Township Hall and Park
- 1-4 Times year: Algonac state park



Most popular destinations by Bike

- Daily: St. John's Marsh, Pearl beach, Ferry, Pearl beach and Ferry
- Weekly: Algonac and Town Hall park
- Monthly: San Souci and St. Johns Marsh
- 5-11 times year: Ferry Algonac and State Park
- 1-4 Times year: Marsh, Township hall, Algonac and Ferry + San Souci (same)
- Never: Brownes field, Lions field and Pearl Beach



Top five qualities of the township as submitted by survey respondents:



Public Input Survey

What are Goals and Objectives?

This 2020 Master Plan strives to refine goals and objectives so they are more succinct and easier to understand.

- Goals are general guidelines that explain what the community wants to achieve. Goals are usually long-term and represent global visions such as “protect the township’s natural resources.” Goals define the “what,” “why,” and “where,” but not the “how.” Identifying obstacles to overcome is also useful in defining goals.
- Objectives identify the milestones that mark progress in achieving goals and provide more of the “how” goals will be implemented. For example, with a goal of “protect the township’s natural resources,” an objective to “maintain the township’s tree cover” is something that may be measured and tracked over time.
- Action items are more specific and define the steps to accomplish objectives and attain the identified goals. The most effective action strategies will include who will tackle that task and when it should be accomplished. For the above example objective of maintaining tree cover, one action strategy might be: “Using the township’s GIS data, map the current tree cover in the township.” This may be assigned as a staff item to be completed within one to three years.

ACTION ITEMS
Implementation and action items are identified throughout the following sections and are incorporated into the action plan on page 1XX. Sidebar call-outs highlight these items for clear identification within the text of the plan.
ZONING ACTION ITEMS
These are items requiring zoning amendments and will generally be led by staff and the Planning Commission.
ADVOCACY ACTION ITEMS
These will be items involving education of the community, including residents, business owners, property owners, developers and design professionals. They will be led by a combination of staff, boards and commissions.
OTHER ACTION ITEMS
Other items may involve research, study and further evaluation by staff and/or other boards and commissions.

Within each category, the goals are presented in clear, concise bullet points that address the following:

- What do we want?
- Why?
- Where? (Note: generally, the goals that follow apply throughout the township, but the question is included here as a guide for the future; some goals may apply in specific areas of the township)
- What are the potential obstacles or related considerations that may impact achieving the goal?

The answers to these questions are informed by township officials and the community through its feedback.

Goals and Objectives

The overall vision for Clay Township is organized based on the following principles that inform the following corresponding goals.

1. Residential Character.

Clay Township will maintain, support and enhance residential areas based on the character and desire of each area. Residential areas will be protected from the negative external impacts of other uses. The Township will plan for and encourage a variety of housing types to serve all people at different stages in life.



2. Resilient Outdoor Lifestyle

Clay Township will continue to develop and protect natural resources and recreation opportunities and ensure regional amenities enhance the livability and viability of the township. Growth and future development will withstand and emerge from environmental threats and challenges, and developments will be encouraged to add value and meaning to the public realm.



3. Open and Efficient Transportation Access and Circulation

Clay Township will strive to provide direct, safe and comfortable routes for pedestrians and bicyclists though the township, including reliable access to Harsens island. The township will partner with neighboring communities and public agencies to maintain and improve multiple modes of access for residents and visitors of all ages and ability throughout the township.



4. Prosperous Local Economy

Clay Township will promote steady, orderly development that will result in a balanced land use pattern and diverse tax base in the community while supporting the local economy and workforce. Entrepreneurship and business growth will be encouraged to ensure the long-term vitality of the community. A mix of commercial uses that serve both neighborhoods and regional visitors will occur in appropriate locations that are supported by existing infrastructure and designed to minimize impacts on residential areas and natural resources.



Goals and Objectives: Residential Character

What do we want?

To maintain, support, enhance and protect the character of residential areas

Why?

- The established residential character provides a sense of community and belonging for residents.
- Ensure sufficient equitable housing for lower income residents.
- Attractive neighborhoods with access to walkable destinations appeals to younger residents and families.

Where? Throughout residential neighborhoods

Potential obstacles/related considerations?

- Difficulty enforcing code compliance and effectiveness
- Outdated zoning ordinance standards may not have the desired regulatory effect
- Zoning regulations should support housing types desired by current and future residents

Housing Objectives:

1. Improve residential code compliance and enforcement awareness through educational materials
2. Provide support for residents to maintain and update homes and properties.
3. Establish a program to engage with residents in the individual residential areas in the township in order to better understand the needs and desires of each area and pursue capital improvements or assistance based on identified need.
4. Review and, if necessary, update the zoning ordinance to address buffering and separation in areas of conflict between residential and non-residential areas.
5. Protect established residential areas from potentially negative impacts of other uses and development, including studying the potential addition of sewer and water utilities to Harsens Island.
6. Support and plan for housing that is attainable for the majority of township residents.
7. Encourage missing middle housing types and accessory dwelling units in appropriate locations.
8. Expand senior living housing options in areas near amenities, services and transit.



ACTION ITEMS

ZONING ACTION ITEMS

- 4. Assess site design standards and update as needed to ensure adequate provisions exist that protect residential development from the negative impacts of non-residential development, including noise, traffic, waste management, light trespass, privacy, and poor property maintenance
- 7. Consider ordinance changes to permit smaller single-family homes and expanded opportunities for attached single-family homes.

ADVOCACY ACTION ITEMS

- 2. Develop resource packet for homeowners that identifies available home improvement financing tools, guides for home maintenance, and a directory of local tradespeople.
- 6. Develop policies and programs to facilitate the development of new public and private senior housing facilities to meet the needs of the township's expanding aging population.
- 8. Pursue strategies to make Clay Township an "Age-Friendly Community."

OTHER ACTION ITEMS

- 1. Create a development review guide or similar tool that will help residents, staff and code enforcement understand the intent of ordinances.
- 3. Establish a Capital Improvement Program and encourage residents to participate in the development of the plan.
- 5. Budget for a feasibility study to determine the cost-benefit analysis of adding sewer and upgrading utilities on Harsens Island.

Goals and Objectives: Resilient Outdoor Lifestyle

What do we want?

To protect and enhance natural resources within the township, and to withstand and emerge from environmental threats and challenges.

Why?

- Protecting natural resources enhances the quality of life and livability and viability of the township
- Providing outdoor recreation opportunities benefits public health and the local economy
- Having an established mitigation plan for natural occurrences saves lives and resources

Where? Throughout the township

Potential obstacles/related considerations?

- Coordination of state and private lands

Resilient Outdoor Lifestyle Objectives:

1. Coordinate and support the management of state-owned or regulated natural resources.
2. Pursue aquatic-based amenities and access that support the township as a regional recreation destination.
3. Promote and increase observational and educational benefits of the township’s natural resources.
4. Discourage the use of transient housing types that negatively affect established residential areas.
5. Support and promote the benefits of the township’s proximity to natural resources on the local tourism and other industries.
6. Monitor changes and expert forecasts related climate and Great Lakes water levels, and take action to improve the township’s overall resiliency.
7. Monitor and promote the mitigation of hazardous materials that may pose a threat to residents and resources in the township.
8. Support and promote community events, especially those that focus on local community.
9. Pursue neighborhood-scale revitalization projects that increase recreational opportunities for residents.
10. Expand upon the place-making and walkability opportunities in the Pearl Beach, East End and San Souci areas

 
ACTION ITEMS
ZONING ACTION ITEMS
<ul style="list-style-type: none"> • 4. Review zoning standards and consider updating the design standards to ensure future development meets expected area standards • 10. Adopt zoning standards that will allow for flexible uses while preserving the historical and existing character of these areas
ADVOCACY ACTION ITEMS
<ul style="list-style-type: none"> • 2. Develop resource packet for visitors to navigate and understand the destinations within the township • 3 + 8. Consider centralizing and disseminating useful (non-essential) township community events and information into a monthly or quarterly publication to keep township residents informed of opportunities, • 5. Market the township as a vacation destination and seek developers to build overnight lodging to support weekend tourism
OTHER ACTION ITEMS
<ul style="list-style-type: none"> • 1. Identify contacts that manage state owned lands and 3. Establish a Capital Improvement Program and encourage residents to participate in the development of the plan. • 6. Publish water levels as on a consistent basis and consider establishing a resiliency plan based on observed water levels • 7. Ensure hazardous waste material disposal guidelines are easily accessible, including a contact list of local facilities that are equipped to deal with such materials • 9. Identify areas that have high potential and consider acquiring land when a public benefit should be preserved or enhanced

Goals and Objectives: Open and Efficient Transportation

What do we want?

Multiple modes of direct, safe access for residents and visitors of all ages and abilities throughout the township; reliable island access

Why?

- To appeal to residents and businesses looking for a community with a variety of transportation options
- To provide transportation choices that improve independence for residents of all ages and abilities
- To improve community health by encouraging non-motorized travel
- To make the township a more desirable recreation destination

Where? Throughout the township

Potential obstacles/related considerations?

- Current land use pattern dictates motorized travel
- Current road design supports motorized travel

Non-motorized Transportation Objectives:

1. Identify funding opportunities to maintain and expand the non-motorized transportation network.
2. Work with MDOT to improve pedestrian and bicyclist conditions along M-29 and M-154.
3. Identify opportunities to improve transit stop facilities and access to residential areas and amenities.
4. Increase township promotion of the County Blue ways system.
5. Improve non-motorized access and paths of desire between amenities that utilize both on-street and off-street facilities.
6. Explore expansion of tourism in the township through improvement of non-motorized routes connecting Pearl Beach, East End, San Souci, and other destinations to state, county, and local parks and recreation areas.
7. Explore the desire and opportunities for improved bicycle parking improvements and sharing programs.
8. Reinforce the community's character by incorporating wayfinding signage, art, and other civic installations throughout and along the non-motorized transportation network where possible.



ACTION ITEMS
ZONING ACTION ITEMS <ul style="list-style-type: none"> • 6. Implement mixed use and higher density districts to direct developments that will support core commercial areas • 7. Adopt zoning standards that will require bike parking when along designated routes or that incentivize bike parking by reducing vehicle parking if provided.
ADVOCACY ACTION ITEMS <ul style="list-style-type: none"> • 3. Attend St. Clair County Road Commission or Planning Commission meetings that offer dialogue or input into the regional transit opportunities • 4. Market the township as a regional biking and kayaking destination • Work with St. Clair County and MDOT to seek out funding for the St. Clair Bikeway and other non-motorized projects in the township.
OTHER ACTION ITEMS <ul style="list-style-type: none"> • 1. Regularly check funding sources listed in complete streets chapter and track township eligibility • 2. Establish a person of contact with MDOT to ensure there is always open communication • 5. Identify priority sidewalk gaps that can should be filled and work with landowners to provide safer pedestrian infrastructure when the right of way limits options • 8. Develop a wayfinding signage program that will provide design standards for unified wayfinding signs, including where signs should be placed and the regulatory standards that need to be met for MDOT approval.

Goals and Objectives: Open and Efficient Island Transportation

What do we want?

Multiple modes of direct, safe access for residents and visitors of all ages and abilities throughout the township; reliable island access

Why?

- To appeal to residents and businesses looking for a community with a variety of transportation options
- To provide transportation choices that improve independence for residents of all ages and abilities
- To improve community health by encouraging non-motorized travel

Where? Throughout the township

Potential obstacles/related considerations?

- Current land use pattern dictates motorized travel
- Current road design supports motorized travel
- There is limited land available for the construction of bridge and supporting infrastructure.

Island Access Objectives:

1. Support reliable ferry access to Harsens Island and Russell Island, including the shared use of ferry boats and docks.
2. Pursue dynamic traffic messaging and other technology-based improvements that improve ferry access efficiency.
3. Develop island access emergency plans for when ferry access issues occur.
4. Develop and formalize community-based transit, shuttles, park-and-ride locations and other amenities that increase mobility options on Harsens Island in cases of emergency.
5. Explore available land opportunities and study the feasibility of constructing a bridge to provide direct vehicular access to Harsens Island.

 
ACTION ITEMS
ZONING ACTION ITEMS
<ul style="list-style-type: none"> • 5. Review zoning ordinance to ensure the standards and requirements can be met for the placement of a bridge
ADVOCACY ACTION ITEMS
<ul style="list-style-type: none"> • 4. Work with the St. Clair County Road Commission to ensure the county’s transit plan aligns with the townships goals • 5. Work with county and state officials to seek federal funds for a feasibility study of a bridge to Harsens Island.
OTHER ACTION ITEMS
<ul style="list-style-type: none"> • 1. Open communication with ferry owners and hold regular meetings to receive updates on the status of upgrades or repairs. • 2. Identify case studies and social media messaging that showcase the use of message boards and how they can ease traffic concerns related to backups and delays • 3. Formalize a contingency emergency access plan in the event ferry service is disrupted. • 4. Identify parcels near the ferry area that could be acquired to serve as overflow, park & ride or emergency parking.

Goals and Objectives: Local Economy

What do we want?

Policies that strengthen existing business and promote new development.

Why?

- To help provide meaningful, well-paying jobs for residents.
- To help provide entry-level jobs for younger residents.
- To offer access to local goods and services for residents.

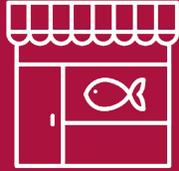
Where? Throughout non-residential and mixed-use districts

Potential obstacles/related considerations?

- Difficulty enforcing code compliance and effectiveness
- Outdated zoning ordinance standards may not have the desired regulatory effect
- Zoning regulations should support housing types desired by current and future residents

Local Economy Objectives:

1. Strengthen Pearl Beach, East End and Sans Souci as distinct mixed-used nodes.
2. Identify pilot projects for placemaking in targeted areas near businesses.
3. Support and plan for the appropriate continued use of historic industrial uses and essential services, including coordination with the City of Algonac.
4. Increase opportunities for employment of township residents within the township.
5. Promote opportunities for pop-up shops and temporary retailers that can serve as incubators for local entrepreneurs.
6. Support the Downtown Development Authority.
7. Promote high-quality, aesthetically appealing development including attractive context-based signage that provides messaging in an uncluttered fashion and is sized to respect and not overwhelm the building or site upon which it is placed. Provide support for business façade and signage improvement programs.
8. Encourage businesses to tap into the market potential associated with non-motorized travel, which could include healthy food, recreational clothing and equipment, and also delivery services for those shopping by bicycle and on foot.

 
ACTION ITEMS
ZONING ACTION ITEMS
<ul style="list-style-type: none"> • 2. Review the Zoning Map to ensure that intense non-residential development is concentrated in areas served by utilities and infrastructure • 5. Review the zoning ordinance to ensure temporary uses regulation is flexible while still providing necessary oversight during approval
ADVOCACY ACTION ITEMS
<ul style="list-style-type: none"> • 1. Market Pearl Beach, East End District and San Souci as unique waterfront development opportunities • 3. Direct new and growing industrial businesses to desired township locations. • 8. Work with local businesses to encourage non-motorized travel. This may include offering delivery services for shoppers who make purchases and are traveling on foot and by bicycle.
OTHER ACTION ITEMS
<ul style="list-style-type: none"> • 6. Schedule annual check-ins with the DDA to facilitate discussion and align goals with available funding • 7. Explore a range of tools to assist with the rehabilitation, reuse and/or redevelopment of blighted and polluted commercial and industrial properties through possible creation of a brownfield redevelopment authority or through coordination with the existing DDA. • Develop an illustrated guidebook that property owners can use as an idea resource for placemaking improvements on private property

9. Future Land Use

Future Land Use

The Master Plan and Future Land Use Map are tools to be used by the Planning Commission and Township Board during land use decision-making, capital improvement planning, development review, and ongoing reevaluation and refinement of the township's ordinances. Implementation of the general recommendations and specific action strategies will occur over time and will depend upon many factors, including the overall economic climate, changing development and demographic trends, availability of infrastructure, local budget constraints and political priorities. The Future Land Use Map (Map 9) is a representation of the township's preferred long-range future land use arrangement. The map identifies general locations for various land uses envisioned by the Planning Commission. Following are descriptions of the future land use categories illustrated on the map.

Future Land Use Designations

RURAL RESIDENTIAL

Rural Residential uses provide a transition between traditionally developed single family uses and Recreation & Conservation uses. Rural Residential uses do not contain a substantial amount of environmental features. These areas are not expected to receive access to new public infrastructure within this planning horizon. The zoning plan indicates the combination of the rural suburban zoning districts into a Rural Residential (RR) zoning district with a maximum density of one (1.0) dwelling unit per acre.

SINGLE FAMILY RESIDENTIAL

Single Family Residential (SFR) uses (as identified by the future land use map) are primarily found within the public water and sewer area and do not contain extensive natural features. Areas planned for SFR should maintain a density range up to 3.0 dwelling units per acre when sanitary sewer is available. Higher residential densities should occur close to the City of Algonac and in areas transitioning away from commercial or industrial uses. The SFR pattern should be preserved unless there is a logical and orderly pattern of development supporting a decision to change this future land use designation and/or zoning designation. Home occupations and reasonable institutional or semi-public uses may be appropriate for special use permitting within the SFR zoning districts.

WHAT IS THE FUTURE LAND USE MAP?

The Future Land Use Map, along with the entire Master Plan document, is a guide for local decisions regarding land use. The boundaries reflected on the map are not intended to indicate precise size, shape, dimensions or individual parcels. In addition, where the Future Land Use Map and the Zoning Map are not in alignment, the Future Land Use Map does not necessarily imply that rezoning is imminent; rather, the Future Land Use Map sets forward recommendations to achieve long-range planning goals.

WATERFRONT RESIDENTIAL

The Waterfront Residential designation takes into account the unique issues associated with the residential properties in close proximity to Anchor Bay. These areas will most likely maintain densities consistent with the R-1L zoning designation (approximately 2.2 dwelling units per acre). The zoning plan calls for the creation of a zoning district that addresses the unique needs of waterfront residential (WFR) properties, such as setbacks, accessory buildings, viewsheds, and fences. Depending on public water and/or sewer availability and established density patterns in the area, two (2) distinct residential zoning districts may be necessary to protect the character and development rights associated with various lot sizes. These two (2) districts may have differing lot size requirements, frontage requirements or other design requirements that are characteristic of a particular area of homes located near the waterfront.

Density bonuses should be considered for exemplary developments that provide for pedestrian connectivity, support of non-motorized transportation, green building and site development techniques and elements that support the goals and objectives of the master plan.

MULTIPLE FAMILY HOUSING

The Multiple-Family designation is expected to produce densities in the range of 5.0 to 12.0 units per acre. Typical developments in this category will include attached condominiums, townhouses and apartments. It also includes missing middle housing types including bungalow court units, courtyard attached, quadplexes and duplexes. In determining the appropriate multiple-family zoning district for an area, consideration must be given to existing land uses surrounding the property and the impact such development will have on those uses. In addition, consideration must be given to the existing infrastructure and its ability to accommodate multiple-family development at the density requested. Areas within close proximity to industrial or commercial uses would be more likely to accommodate a higher density multiple-family zoning district, while areas with a predominant character of single-family residential would be more appropriate for a lower density multiple-family zoning district.

MANUFACTURED HOUSING COMMUNITY

This plan does not anticipate the expansion of the Manufactured Housing Communities designation because the township's population is expected to change little during the planning cycle considered within this master plan.

Future Land Use

COMMERCIAL AND OFFICE

Existing commercial and office uses serve a trade area that includes Cottreville, Ira, Clay Township and the City of Algonac because the peninsular location of the township does not stimulate regional traffic into the community. Commercial and office uses exist primarily along the M-29 corridor and within the Sans Souci hamlet on Harsen's Island. There are other instances of locally serving commercial and office uses, however, they are independent of logical patterns and should not be expanded beyond their existing extent. The zoning plan implements "Rustic & Nautical" themed design standards in a form-focused zoning district specifically for Sans Souci and East End, and to a lesser extent Pearl Beach.

WATERFRONT COMMERCIAL

This use is appropriate for waterfront properties where an established pattern of existing waterfront commercial development is evident. Waterfront commercial uses attract both local and regional consumers. They require design standards that are different from traditional commercial development because of the unique features associated with the land and watercraft. The zoning plan calls for the creation of a zoning district that addresses the unique needs of waterfront commercial (WFC) properties, such as setbacks, accessory buildings, view sheds, and fences.

INDUSTRIAL

Industrial uses within the township are primarily categorized two ways, outdoor storage and light industrial shops. The zoning plan recommends the reformulation of a light industrial district that considers primarily the light machining and manufacturing uses traditionally associated with industry, principally along the M-29 corridor and the eastern end of Fruit Road, adjacent to the boundary with Algonac. The zoning plan also recommends the creation of an outdoor storage industrial district. This district focuses on uses that occupy larger parcels, use landscaped berms as screening, lies on the north side of Fruit Road towards its western end, and the primary use is outdoor or self storage. These outdoor storage uses will typically locate in areas that are isolated from less intense uses, such as residential.

Future Land Use

RECREATION & CONSERVATION

Recreation and conservation uses are appropriate for properties that are contiguous to existing recreation and open space uses. Land for these uses should not lie within planned service areas for public water and sewer. Land for these uses should also contain significant natural features such as regulated wetlands or stands of woodlands. The zoning plan indicates the creation of a zoning district that addresses the unique needs of Recreation/Conservation (RC) properties, such as setbacks, accessory buildings, viewsheds, and fences. Appropriate uses in the RC district include active and passive recreation, managed conservation areas, seasonal structures & cottages, and agriculture. In some instances, commercial/tourism uses may be allowable within the Recreation & Conservation designation. Allowing these additional uses would naturally require additional review authority and control to ensure that proper land use and intensity relationships are maintained. If land that is publicly owned and/or managed changes ownership to a private entity, then future use should be consistent with immediately adjacent land uses and the overall character of the area.

The one unique property listed under this designation is the Middle Channel Golf and Country Club. While recreation in nature, Master Land Use Plan does envision the potential for some commercial land use on this property to allow for additional recreation and tourism opportunities. These uses may include lodging facilities, restaurants, entertainment uses, etc. With the potential of additional development on this property, the property may be serviced by public water and sewer infrastructure. As noted above, the Master Plan suggests the development of a new zoning district, these tourism-related commercial uses could be drafted in the District specifically for the golf course property due to its size and unique attributes.

PUBLIC & SEMI PUBLIC

Public and semi-public uses are typically institutional in nature. They should be located in proximity to the population they service. This plan does not anticipate the expansion of public and semi-public uses because the population is expected to change little during this planning cycle. Public or semi-public uses that cease functioning should reclassify or rezone to a use that is a logical extension of contiguous uses.

New Future Land Use Designations

RESIDENTIAL TRANSITION provides for a transition of uses and building form between the more-intense Waterfront Commercial and less-intense Waterfront Residential areas. It may also be found for certain transition areas along the M-29 corridor. Residential Transitional areas will most likely remain primarily single-family residential, but will provide for potential infill areas for Missing Middle Housing (e.g., cottage court bungalows, duplexes, quadplexes), mixed-use buildings, and other low-impact, non-single-family uses that support areas that have more activity due to their proximity to the waterfront and M-29. Uses here are intended to be less intense than those allowed in commercial areas and should be compatible with nearby single-family homes. Uses may include multiple-family buildings with eight or fewer units, live-work spaces or small professional offices, limited-capacity restaurants such as cafes, coffee shops, and deli's, and other low-impact transitional or neighborhood-scale uses. Typical building height is one to two stories. The zoning plan calls for the creation of a zoning district that addresses the unique needs of residential transition areas, such as building form and use flexibility, through the use of a form-based district.

MIXED-USE is a new designation to be used in part within the three focus areas: San Souci, Pearl Beach, and East End. These areas are envisioned as walkable areas with a variety of placemaking elements to capture the interest of pedestrians. Uses include smaller retail, restaurant and service uses sited close the primary road: Dyke Road in Pearl Beach, Pointe Tremble Road in East End, and South Channel Drive in San Souci. Other permitted uses include office, water-based tourism uses, small hotels / bed and breakfast inns, missing middle housing including detached bungalow courts, duplexes, quadplexes and townhouses. Single family lots may be permitted to have accessory dwelling units or guest suites to serve better serve tourism demand and more attainable housing costs. Buildings are expected to be one and two stories. Three story buildings may be permitted along the primary road frontage if residential is included on one or more floors. Form-based zoning ordinance amendments will be needed to calibrate the code requirement to the unique characteristics of the three focus areas.

WATERFRONT RESIDENTIAL 2 is a new designation that reflects areas where more compact residential building types are permitted adjacent to certain waterfront areas. These are typically areas adjacent to mixed-use and commercial areas. Maximum density is up to 6.0 dwelling units per acre. The predominant character will be single family residential. Some attached units, with not more than four units to a building could be found, as well as duplex units, quadplexes that look like single family homes, and detached cottage court bungalows. These units would be interspersed with single family units. It is expected that buildings will range from one to two stories.



INGELNOOK COTTAGE HOMES
CARMEL, INDIANA

COTTAGE COURT BUNGALOWS

Above: Example of Cottage-court style housing (Source: Ingelhook Cottage Homes)

FOCUS AREAS

As part of this Master Plan Update, the following sites, currently vacant or under-utilized, were identified by the township for specific redevelopment concepts and the vision that has been developed. Public input in these concepts was sought at both public open houses and through online surveys.

- Pearl Beach
- East End
- Sans Souci

Changes Future Land Use

Map Changes

As part of this Master Plan Update, a parcel-by-parcel analysis of use, zoning, and ownership was done for the entire township to determine the appropriateness and accuracy of the 2012 Map designations. As a result of inaccurate designations, recent developments that occurred after the 2012 plan, planned developments the township is now aware of, and the direction of township staff and the Planning Commission, the following list of parcel/area designation changes are included with this Update.

PEARL BEACH	
1	Waterfront Commercial, Waterfront Residential and Commercial & Office TO Mixed Use: reflects desired development at the core intersection of the Pearl Beach focus area
2	Waterfront Residential TO Residential Transition: Area primarily west of Ford Avenue; reflects transition from multiple family use to west and commercial area immediately east
3	Waterfront Residential TO Residential Transition: Area to the southwest of the intersection of M-29 and Pearl Beach Boulevard; reflects transition from commercial to west and pier area

SAND PIT AREA / FRUIT STREET INDUSTRIAL AREA	
1	Industrial TO Single Family Residential: Nook Road frontage east of sand pit; reflects residential use
2	Additional Industrial sites TBD

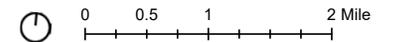
MAINLAND & H.I. FERRY LANDING (Starting in NW corner of township moving south/southeast- see appendix for pages indicating each change)	
1	Waterfront Residential TO Waterfront Residential 2: Canal lot areas in Perch Point (R-4) on both sides of M-29
2	Recreation & Conservation TO Waterfront Residential 2: Parcel 74-14-025-8002-500; reflects zoning and separate ownership from main DNR-owned parcel to north
3	Commercial & Office, and Multiple Family TO Residential Transition: Nonresidential frontage along M-29 from DNR parcel described in #2 above south to Bluebill Road; reflects low-intensity mixed use area
4	Recreation & Conservation TO Multiple Family: Reflects existing multiple family development on Harbor Drive
5	Recreation & Conservation TO Waterfront Commercial: Parcel 74-14-273-0001-000; reflects adjacent marina use immediately to the west and the lack of an established recreation or conservation use
6	Recreation & Conservation TO Single Family Residential: Parcel 74-14-061-0001-000; reflects adjacent residential property to the east and south with access to same roadways
7	Single Family Residential TO Commercial & Office: Mid-blocks of existing commercial frontage along the north side of M-29, south of Phelps Road, to the west and just east of Muskrat Run
8	Block: Helene Street – M-29 – Lakepointe Boulevard – Taft Road
a	a. Single Family Residential TO Commercial & Office: Rear of Colony Bowl and adjacent vacant commercial site to match zoning and use
b	b. Single Family Residential and Commercial & Office TO Public & Semi-Public: Parcel 74-14-054-0004-000 (Simons); reflects planned public services site
c	c. Single Family Residential and Commercial & Office TO Residential Transition: Both sides of Helene Street frontage between M-29 and Taft Road; to encourage residential development
9	Block: Estergreen Street – M-29 – Island Drive – Taft Road
a	a. Single Family Residential and Commercial & Office TO Residential Transition: reflects residential use of area and transition area along M-29
b	b. Commercial & Office TO Public & Semi-Public: Parcel 74-14-388-0023; reflects substation use
10	Block: Island Drive – M-29 – Nook Road – Fruit Street
a	a. Commercial & Office TO Residential Transition: reflects residential use of area and transition area along M-29
b	b. Commercial & Office and Single Family Residential TO Commercial & Office; reflects use and contiguous ownership
11	Waterfront Residential TO Waterfront Commercial: Ferry Landing Parcel 74-14-618-0073-000; reflects contiguous Waterfront Commercial designation of ferry property immediately to the west
12	Mainland North End TBD

Future Land Use Map



- RECREATION AND CONSERVATION
- RURAL RESIDENTIAL
- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MANUFACTURED HOUSING PARK
- RESIDENTIAL TRANSITION
- MIXED USE
- COMMERCIAL AND OFFICE
- INDUSTRIAL
- PUBLIC AND SEMI-PUBLIC
- WATERFRONT COMMERCIAL
- WATERFRONT RESIDENTIAL
- WATERFRONT RESIDENTIAL 2

Future Land Use Clay Township



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community FLU: Clay Township. Roads and Boundaries: State of Michigan Map exported: July 21, 2020. ©2020 Giffels Webster.

10. Housing

Attainable Housing

BENCHMARK

Thriving communities provide a wide spectrum of housing options to support all residents. The availability of “attainable” housing helps accommodate everyone from young adults who are just beginning to live on their own, to older residents looking to downsize while staying in the community. While there is no universal definition of “attainable housing,” the term was recently defined by the Urban Land Institute as “non-subsidized, for-sale housing that is affordable households with incomes between 80 and 120 percent of the area median income (AMI).”

Overview

In many communities, young adults and the elderly have limited housing options due to a combination of their lower income levels along with the pricing and availability of housing. This kind of financial challenge can impact people of all ages.

The general rule of thumb based on guidance from the U.S. Department of Housing and Urban Development is to spend a maximum of 30% of a household’s income on housing costs, yet many people find themselves spending more on housing, leaving less of their income available for other household expenses. Finding attainable housing can be challenge and it can stress family finances.

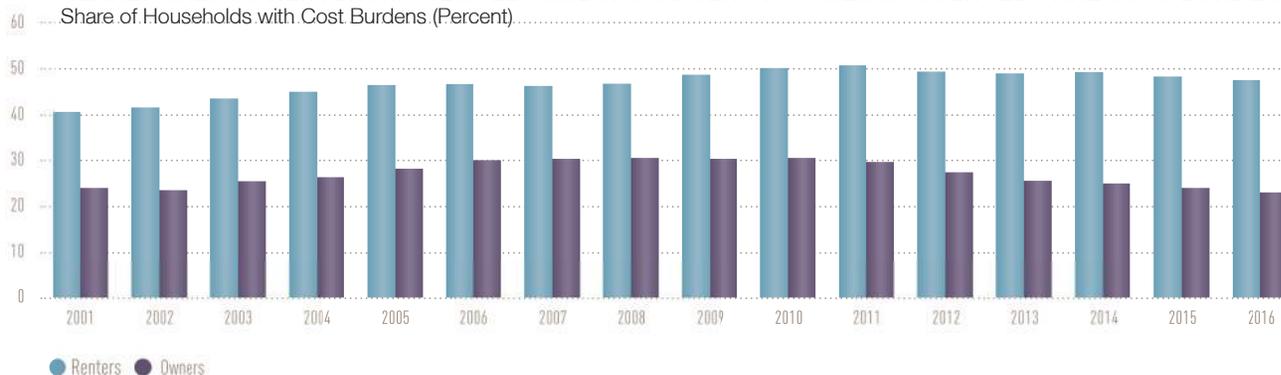
The chart below demonstrates that nearly half of all renter households and about a quarter of owner households are cost burdened. Cost burdened is defined as households spending more that 30 percent of income on housing. In 2001, only slightly more that 40 percent of renters were cost burdened.

The supply of multifamily for-sale housing is decreasing. Multifamily for-sale housing has historically represented about 20 to 25 percent of total multifamily permits. This type of housing is often more attainable because of its lower cost. In the past 8 years, multifamily for-sale housing has represented 6 to 7 percent of total permits, reflecting a significant post-Great Recession decline.

New construction has delivered larger homes with more bedrooms even though household size was dropping. “Although one- or two-person households make up more than 60 percent of total households, nearly 50 percent of the homes delivered are four bedrooms or more. Less than 10 percent of the homes offer fewer bedroom options like one and two bedrooms,” as noted by ULI.

The same ULI report notes that small housing, under 1,400 square feet, has historically represented about 16 percent of new construction, but in the last cycle, it has averaged closer to 7 percent. When combined with the next size category, 1,400 to 1,800 square feet, the overall distribution of “small homes” has declined from just under 40 percent to 22 percent. Homes over 2,400 square feet have increased from 32 percent to 50 percent of new construction since 1999, according to the ULI .

NEARLY HALF OF RENTER HOUSEHOLDS AND A QUARTER OF OWNER HOUSEHOLDS ARE COST BURDENED



Attainable Housing

What does the mean for Clay Township?

As noted on the previous page, attainable housing has been defined as non-subsidized, for-sale housing that is affordable to households with incomes between 80 and 120 percent of the area median income (AMI).” The Detroit metropolitan area median family income for 2020, which is used by the U.S. Department of Housing and Urban Development for housing reports, was \$78,500.00.

Median family income is typically higher than median household income. A family consists of two or more people compared to a household, which may only consist of one person. For the Detroit metro area, median family income is about 19 percent higher than median household income. For Clay Township, the median household income in 2018 was \$59,464, which is almost the same as the median income for the Detroit region (\$59,494), so the regional calculations noted above for family income should also be generally reflective of township income conditions.

The median sale price for a home in the metro Detroit real estate market in March 2020 was \$220,600.00 . With 10 percent down, a family household income of about \$62,000 is necessary for a home of this median price.

The average price for a single-family home of new construction in southeast Michigan was \$376,600, which is substantially higher than the median home value. It is also higher than the national average of about \$325,100 (2018). To buy a new construction home valued at \$376,600, a family household income of about \$96,000 is required.

In addition to housing costs, transportation costs can also be a substantial economic burden. Harsens Island residents spend about 31 percent of their household income on housing and another 29 percent on transportation costs (60 percent total) . On the mainland, housing and transportation costs comprise about 27 percent each (54 percent total) of household income. For the southeast Michigan region (SEMCOG), 29 percent of income is spent on housing and 23 percent is spent on transportation (52 percent total). The longer commuting time for Clay Township, particularly Harsens Island, is impacting transportation costs.



Estimated Attainable Home Value based on 30% of Metro Detroit Median Income of \$78,500

Housing Density Plan

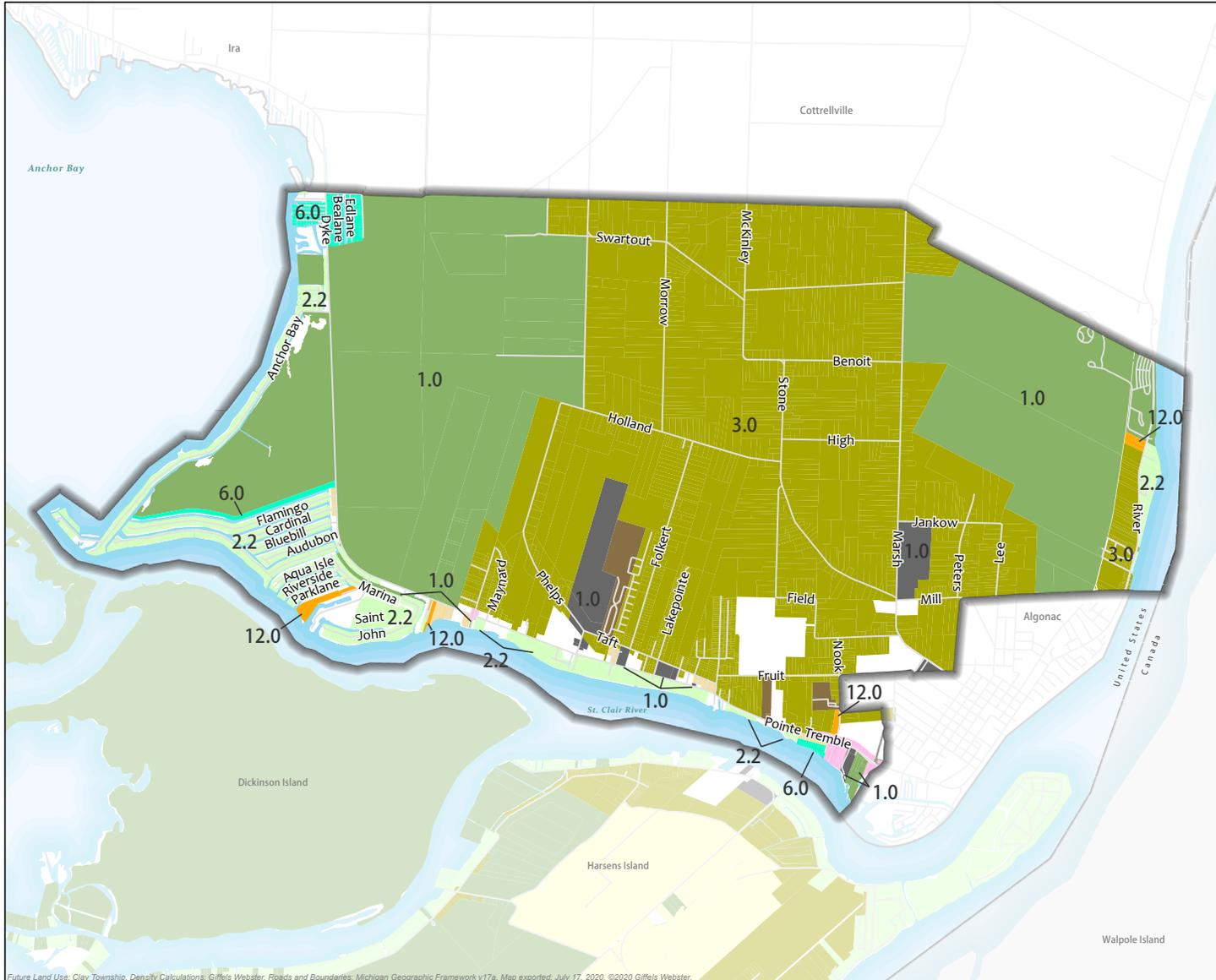
Density Plan

The Residential Density map on the following page indicates the planned maximum number of dwelling units per acre throughout both the mainland and island portions of the township. The density numbers indicated on the map correspond to the density maximums and ranges provided for in the Future Land Use designation descriptions.

Density numbers provided on this plan are not intended to depict actual densities of established residential areas. Density numbers provided can be organized into three groups:

1. Established residential areas. Density indicated for established residential areas, such as 2.2 du/ac for Waterfront Residential, primarily reflects previously established density based on existing development patterns and density. Significant changes to density in established residential areas indicated with lower density amounts are not planned or anticipated. Accessory dwelling units permitted in established residential and other areas may add density at a small, individualized scale as desired by property owners. The units do not count towards maximum density given their low impact.
2. Established recreation and conservation areas. These areas, consisting primarily of DNR property, are not planned for residential development as indicated by the Recreation and Conservation designation. Density is provided for in these maps in the instance where zoning would permit residential development. While residential development is not planned for DNR or other recreation and conservation property, there could be instances in the future where property ownership, developability, or other factors change necessitating density considerations for these areas.
3. New designations. The Residential Transition, Mixed use, and Waterfront Residential 2 designations are new designations from the 2012 Master Plan and area areas where increased residential density should be accommodated consistent with the ongoing control by the Zoning Ordinance. Density in these areas will by no means be unlimited but will effectively be limited by Zoning Ordinance requirements for building height, lot coverage, setbacks, parking and other factors that limit the amount of developable building area for any site. New Zoning Ordinance requirements will be implemented as a result of this Master Plan Update, at which time appropriate effective density may be further considered as part of zoning.

Housing Density Plan: Mainland



Density numbers indicated below include the maximum density number where certain designations provide a density range. Accessory dwelling units are not to be counted towards maximum density.

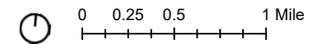
- 1.0 DU/AC¹ RECREATION AND CONSERVATION
- 1.0 DU/AC RURAL RESIDENTIAL
- 3.0 DU/AC SINGLE FAMILY RESIDENTIAL
- 12.0 DU/AC MULTIPLE FAMILY RESIDENTIAL
- N/A² MANUFACTURED HOUSING PARK
- N/A³ RESIDENTIAL TRANSITION
- N/A³ MIXED USE
- 1.0 DU/AC¹ PUBLIC AND SEMI-PUBLIC
- 2.2 DU/AC WATERFRONT RESIDENTIAL
- 6.0 DU/AC WATERFRONT RESIDENTIAL 2

1.0 DU/AC¹ Recreation and Conservation, and Public and Semi-Public areas are not planned for residential development. Density is provided here only for reference in cases where zoning would permit residential development.

N/A² No range or maximum density is provided for Manufactured Housing Parks as this is regulated by the State of Michigan.

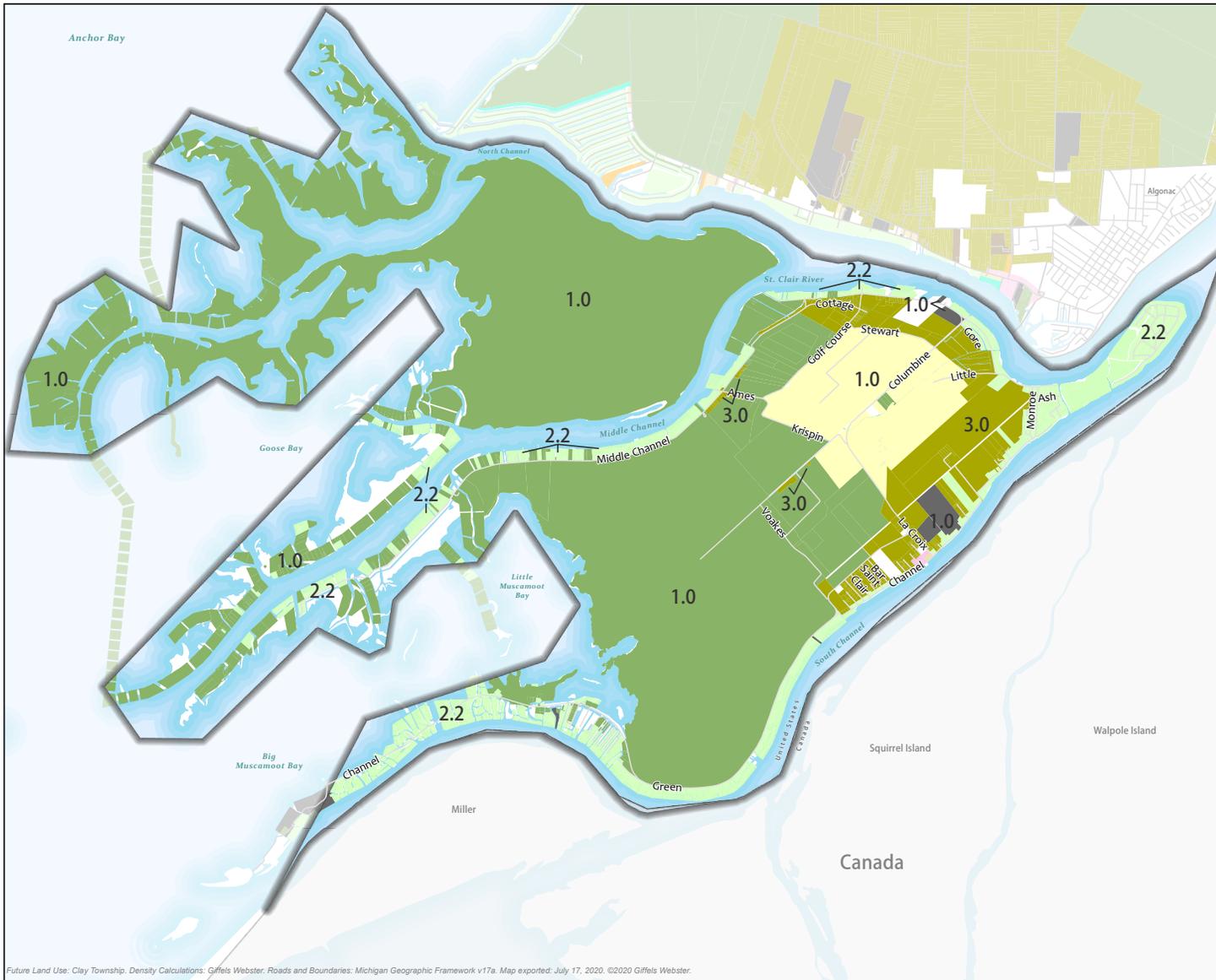
N/A³ No range or maximum density is provided. Density in these areas will be controlled by zoning development regulations and form standards, such as building height and lot coverage.

Residential Density Mainland, Clay Township



Future Land Use: Clay Township, Density Calculations: Giffels Webster, Roads and Boundaries: Michigan Geographic Framework v17a, Map exported: July 17, 2020, ©2020 Giffels Webster

Housing Density Plan: The Islands



Density numbers indicated below include the maximum density number where certain designations provide a density range. Accessory dwelling units are not to be counted towards maximum density.

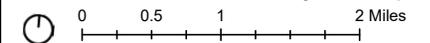
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Residential Density Dickinson Island and Harsens Island Clay Township



Future Land Use: Clay Township. Density Calculations: Giffels Webster. Roads and Boundaries: Michigan Geographic Framework v17a. Map exported: July 17, 2020. ©2020 Giffels Webster.

11. Focus Areas

East End Development District

The Algonac Plaza shopping center located along Pointe Tremble Road (M-29) in Clay Township is the first development residents and visitors see when they enter the township from the east. The site borders the City of Algonac and offers a prime opportunity to implement design elements that define the unique character of the township. Currently, there are no features in place to identify the township's border or signify a transition from the City of Algonac to Clay Township.

The Blue Water Trail Towns Master Plan outlines a strategy for the pedestrian and water trails throughout St. Clair County. The plan offers development recommendations for the trail towns along the eastern coast of St. Clair County and portions of Macomb County. Enhancing the design, functionality, safety, and wayfinding in trail towns like Clay Township will support local tourism and new business opportunities. Pointe Tremble Road is envisioned with a 8-foot wide shared use side path for on the north side of the road and a 6-foot wide sidewalk for pedestrians on the south side.

CREATING PLACE IN A WATERFRONT TOWNSHIP

There are many types of walkable places. The traditional urban downtown often comes to mind. It is dense, buildings generally have no front or side yard setbacks and amenities such as urban plazas, modern benches and other street furniture are common. The downtown Detroit, Mount Clemens and Port Huron reflect this character to varying degrees.

In a community like Clay Township, walkable places are still desirable, and they will have some of the qualities of a downtown, but they standards are more relaxed; more "village" or "hamlet" and less "city". Buildings may be placed close together, but they may not have a continuous street wall from parcel to parcel. Buildings will typically be one to two stories, and street furniture will be a little less formal.

The most evident factor in creating and maintain place identity is appearance. The physical attributes of places may be the only impression people have of the community. The quality and character of buildings—and the spaces between buildings—provide the context for the story of settlement area.

Connecting Elements Map



The image (left) from the Blue Water Trail Towns Master Plan Algonac-Clay Township plan identifies a rough trailhead and gateway framework to demonstrate how the East End ferry landing area is envisioned to align with the adjacent land uses. (Blueways of St. Clair)

East End Development District

CREATING PLACE IN A WATERFRONT TOWNSHIP

This office building in Walloon Lake, Michigan shows several exemplary qualities that are reflective of a relaxed, waterfront hamlet. The ground floor windows and the façade elements are pedestrian scale and have large areas of glass. This could easily be converted to retail or a restaurant in the future. The shuffleboard courts in the front are a placemaking element. The building materials reflect quality but are much less formal than brick and stone.



Recreational sites and the trail network within the township are a unique and powerful asset for branding the area as a regional destination. The Blue Water Trail Towns Master Plan takes specific aim at improving the North Channel DNR Boat Launch located directly south of the Algonac Plaza shopping center and within Clay Township. The plan suggest several improvements to better serve local and visiting boaters, pedestrians, paddlers, and trail users. With support from the DNR, a new trailhead is proposed at the current boat launch site along with upgrades to make the launch more accessible. The existing signage portal at the boat launch will be redesigned to feature more information about the trail network, local retail, and restaurants in the township. Importantly, the plan encourages the creation of a gateway design at the entrance of the DNR boat launch. New landscaping, lighting and pedestrian amenities like high visibility crosswalks, trail signage, and designated bike lanes are proposed to better connect the trailhead at the launch to the Algonac Plaza shopping center.



East End Development District

The Algonac Plaza is part of the East End Redevelopment concept as proposed in the 2012 Master Plan for Clay Township. Sites to the immediate east and west of Algonac Plaza were selected as potential redevelopment opportunities to support recreational tourism in the township. For example, the plan suggests large scale retail, office uses, water-based tourist facilities, or hotels as possible developments that would contribute to the local economy and expansion of Clay Township as a recreational destination. The area between the east township boundary (near Catch 22 Bistro) and Wright Drive (just west of Huntington Bank) is about 2,000 feet. This length can typically be walked in 10-15 minutes, and it is a desirable distance to establish a pedestrian-oriented node in the community. The properties on the south side of the Pointe Tremble Road in this area are also deeper than properties to the west of this district, which makes them more desirable for assembly and redevelopment.

As part of this plan, the desired land use vision for this area is further refined from the 2012 Master Plan to include the following:

- Large scale retail limited to the existing development at Algonac Plaza,
- Smaller retail, restaurant and service uses sited close to the Pointe Tremble Road right-of-way to frame a pedestrian-oriented street. This would include new linear uses in front of Algonac Plaza.
- Office uses
- Water-based tourism uses
- Small hotels / bed and breakfast inns
- Missing middle housing including bungalow court units, townhouse and courtyard attached units that would fit well in this type of mixed-use district.

CREATING PLACE IN A WATERFRONT TOWNSHIP

Vibrant Public Realm.

The public realm is defined as the spaces framed by buildings: sidewalks, streets, plazas, alleys, passages, parking lots, and other open spaces. In most cases, when buildings are set at the property lines, the areas framed by buildings is public space. Sometimes buildings are set back from the property line and that space may be perceived to be public space and also presents opportunity to engage the public.

The photo below shows how this retail business created a park-like setting in the front yard. It is casual, well-maintained and it creates interest for those walking on the adjacent public sidewalk. The public realm presents the opportunity to shape the character and feel of the downtown through street furniture, art, landscaping, and lighting. The concepts noted above that create an engaging street wall apply to the public realm as well since these spaces knit the various parts of downtown together.



East End Development District

CREATING PLACE IN A WATERFRONT TOWNSHIP

Engaging Streets.

Often people come to a walkable district for one purpose: to visit a specific shop, restaurant, or other use. Yet, frequently people find that parking in front of that one destination is not available. Once the customer parks down the street, the challenge is to create something interesting to see and do along the way. In a traditional downtown, this done by creating a continuous “street wall,” that engages the public and creates visual interest from parking areas to various destinations, much like New Baltimore and to a limited extent in San Souci.

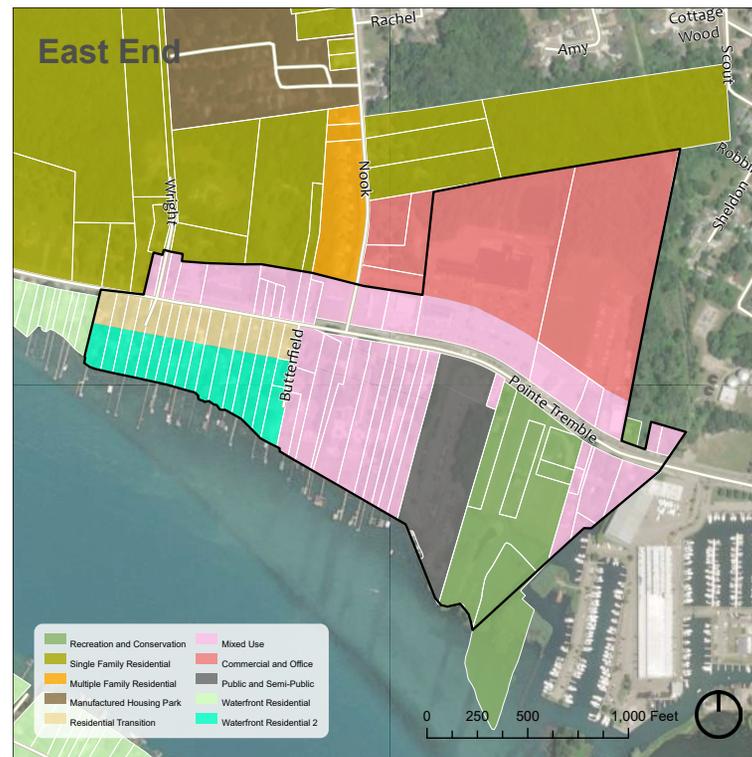
For hamlet settings, the engaging street involves activating the gaps between building where they exist. Where there are open areas between buildings they can be used for display of art, landscaping, passive and active areas for pedestrians, outdoor dining and more. The purpose is two-fold: 1) provide a continuous line of shops, restaurants, and other venues as well as interesting public spaces that capture the attention of the strolling pedestrian, and 2) generate interest in products and services that attract visitors into local businesses.

A key method to accomplish engaging streets this is to provide large areas of clear glass at the pedestrian level, as noted in the office building photo and the New Baltimore photo above. For shops offering products for sale, attractive simple displays should be placed behind the storefront glass and changed frequently. Even offices that do not offer their own products for sale can enhance window displays with art and other items.

Restaurants can offer dining tables, inside and outside, that allow people to watch other people (both restaurant patrons as well as pedestrians walking by on the sidewalk). These can be incorporated in any yard – front, side or rear.

The creation of a branded center for commercial activity, tourism, and recreation is necessary to make Clay Township a recognizable place for visitors and residents. The township should consider additional, consistent signage, spaces for gathering, pedestrian-oriented lighting, and landscaping in the East End District to allow for a walkable urban environment. As noted above redevelopment also allows the opportunity to introduce missing middle housing to Clay Township, which will help support local businesses beyond the support provided by visitors and tourists. Vacant or underdeveloped sites along M-29 and within the East End District can transition to single or small-scale multi-family developments to provide a diversified affordable housing stock.

The East End District will require the establishment of a new mixed-use zoning district that sets forth standards that are consistent with the unique character of the area. The Waterfront Residential district will also need to be augmented by a Waterfront Residential 2 district that allows for additional residential building types.



In June 2020, the township closed on purchasing properties designated on the map as Recreation and Conservation. Long-term plans for the property include plans for development of beach, pavilion and park to be managed by St. Clair County

Pearl Beach Focus Area

Pearl Beach is located on the south side of M-29 on the western side of the township, just east of St. Johns Marsh. The area is primarily accessed by car via M-29. There is an existing sidewalk along the north side of M-29. The previous master plan envisioned this area as a recreation amenity for the township and recommended the addition of a pier, as well as the township purchase of land for a beach park and marina. The pier project was completed; however, interest has dwindled regarding the township acquisition and development of property in this area.

The existing mix of residential, commercial and industrial in this area may necessitate the need for the acquisition of several contiguous parcels in order to make any large scale redevelopment feasible. The presence of the flood plain also limits development potential. Respondents to the survey indicated they would like to see retail, commercial and more parking options.



CREATING PLACE IN A WATERFRONT TOWNSHIP

The photos below show how Walloon Lake has incorporated pop-up shops in a space between permanent structure. These shops provide a seasonal location for shopping, and they can serve an incubator for local entrepreneurs. This space could eventually be converted to a permanent mixed-use building.



Pearl Beach Focus Area

Land use

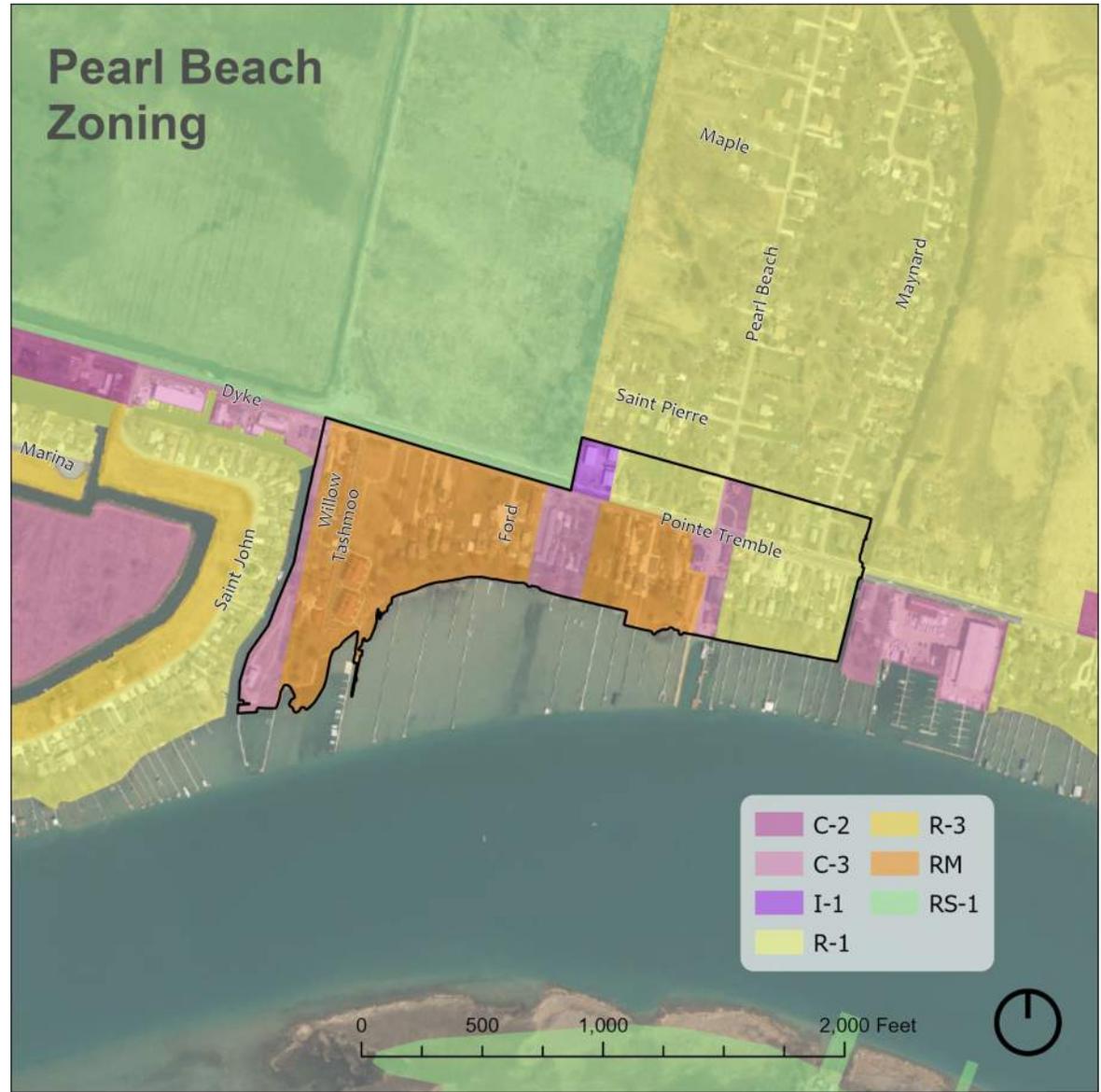
Existing land uses within the Pearl Beach district include mostly single family, with some multiple family and commercial uses located along the south side of M-29. North of M-29 is primarily single family, with commercial uses located at the intersections.

Zoning

The zoning in this area generally corresponds to the existing land uses. Four single family zoning districts, C-2, C-3 and one industrial (I-1) property are found within the district. To enable the unique mix of uses, the township should explore the creation of a waterfront mixed use zoning district to allow for both commercial and residential uses, or multiple residential uses, to be permitted on the same parcel.

Vision

The 2012 plan envisioned the township purchasing land in this area to create a recreation destination. The parcel identified in the previous plan is now under new private ownership, resulting in a modified vision wherein the township sees additional commercial activity concentrated at the intersection of M-29 and Pearl Beach Ave, which may include units and uses being added to the existing narrow waterfront lots. An increase in density could provide economic stability and support residential affordability through rental of an accessory unit.



Pearl Beach Focus Area

CREATING PLACE IN A WATERFRONT TOWNSHIP

QUALITY BUILDING MATERIALS. For the East End District and for the heart of Pearl Beach, there is less of a historic character than San Souci, but these areas have their own waterfront hamlet feel that can be used as a framework for future development.

The type and quality of materials used in buildings contribute to the overall character of the district. Natural materials such as wood, brick, glass and stone have the ability to convey a sense of the organic way an area has evolved. Other materials such as fiber cement planks are durable and can evoke a casual village character when used effectively. These long-lasting building materials suggest permanence and should be preserved and restored whenever possible.

The proportion of materials on a building is important. High-quality accent materials at the ground level add to the feeling of attention to detail and appeal to pedestrians. The addition of unique building lighting and door hardware also adds interest at the street level.



Building Form

North of M-29, many of the structures are single family homes laid out in a more traditional block grid style layout. The homes are moderately sized and have a fairly consistent setback facing M-29. Many of the residential lots on the south side of M-29 are long, narrow lake-front lots that face the water, meaning the rear of these lots and their storage garages front on M-29. There are commercial uses along both side of M-29, however, there is little consistency in design or placement standards, and many are in need of facade improvements. Future development in this area will have to carefully consider the challenges and risks associated with the flood plain from the adjacent North Channel of the St. Clair River. New construction should be required to be situated above the flood plain, and structures should be designed to accommodate minor flooding events.

Looking west on M-29 towards St. John's Marsh (Giffels Webster, 2020)



The photo (right) taken from M-29 looking south toward the waterfront, shows the depth of the existing lots and the challenges associated with using existing building form to create a defined street frontage that draws the eye of vehicular travelers (Giffels Webster, 2020)

Pearl Beach Focus Area

Pedestrian Connectivity

There is a 1 mile stretch of sidewalk along the north side of M-29 that provides a connection from Muskrat Run to the east (.75 mi) to St Johns Marsh to the west (.25 mi). There is only one pedestrian street crossing in this section, which is the un-signalized crosswalk pictured above in the center photo at the Pointe Tremble-Pearl Beach Blvd intersection.

Parking and Traffic Circulation

The primary traffic thoroughfare in the Pearl Beach area is along M-29 (Pointe Tremble Road), which also serves as the primary corridor in the township. M-29 runs east-west through this area and averages about 11,700 trips per day. Pearl Beach Blvd is the local north-south street that intersects with Pointe Tremble and forms the main intersection in the district. Parking within the area is not clearly defined on many properties, which can lead to traffic issues and dangerous circulation patterns.

CREATING PLACE IN A WATERFRONT TOWNSHIP

Defined Edges

Places should have defined edges so that they send a clear signal to approaching motorists that they are entering a place where more pedestrian activity is present. This sends the visual signal to slow down. It also serves as a form of advertising. Wayfinding signs, entry features, landscaping, streetscape amenities, pedestrian scale lighting and other elements can be used to send a clear message that this place is different from the more auto-dominated place that is nearby.



Pedestrian Crossing at M-29 and Pearl Beach Blvd intersection (Giffels Webster, 2020)

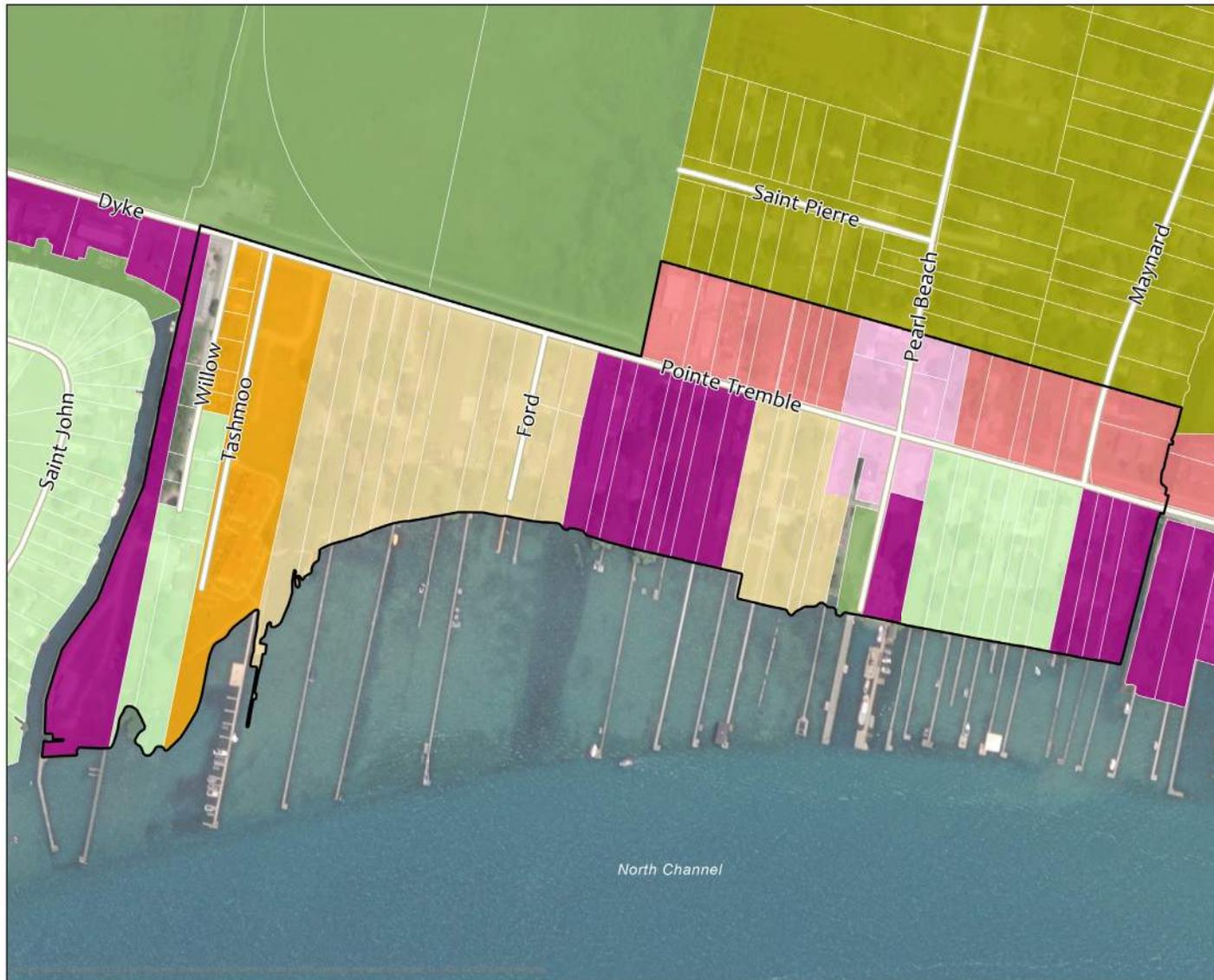


Property on the north side of M-29 with a dangerous circulation pattern (Giffels Webster, 2020)



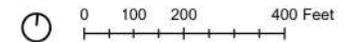
A poorly defined street edge on M-29 that could be improved to enhance the sense of place in the area (Giffels Webster, 2020)

Pearl Beach Focus Area: Future Land Use



- Recreation and Conservation
- Single Family Residential
- Multiple Family Residential
- Residential Transition
- Mixed Use
- Commercial and Office
- Waterfront Commercial
- Waterfront Residential

Future Land Use
Pearl Beach



San Souci Focus Area

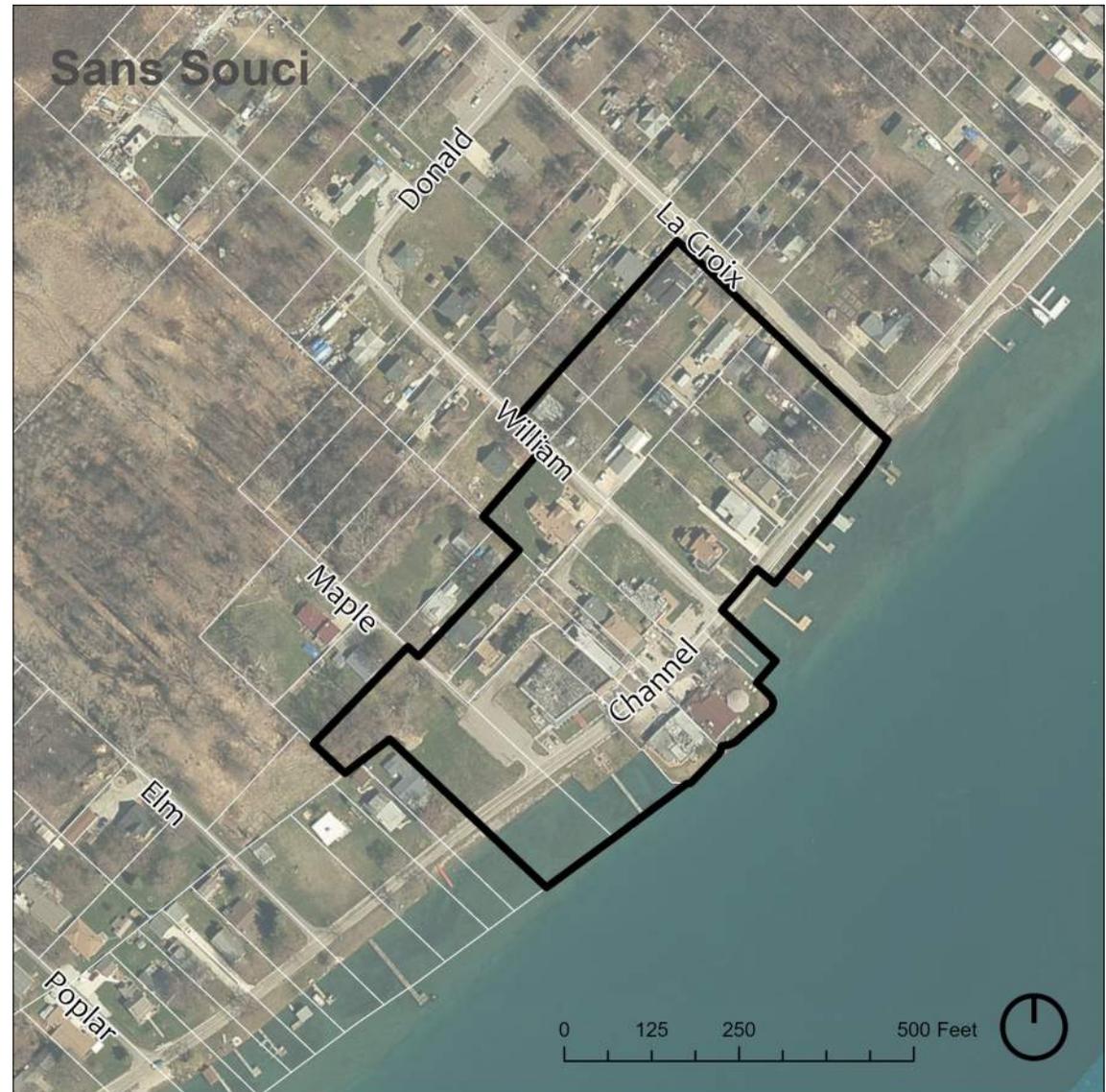
Background

Sans Souci presents a unique redevelopment opportunity given its unique location and history. Located on the east side of Harsens Island, the area is completely isolated from the mainland and is accessible via car or bike only through the use of the ferry from the mainland. It is also accessible by boat via the south channel of St. Clair River.

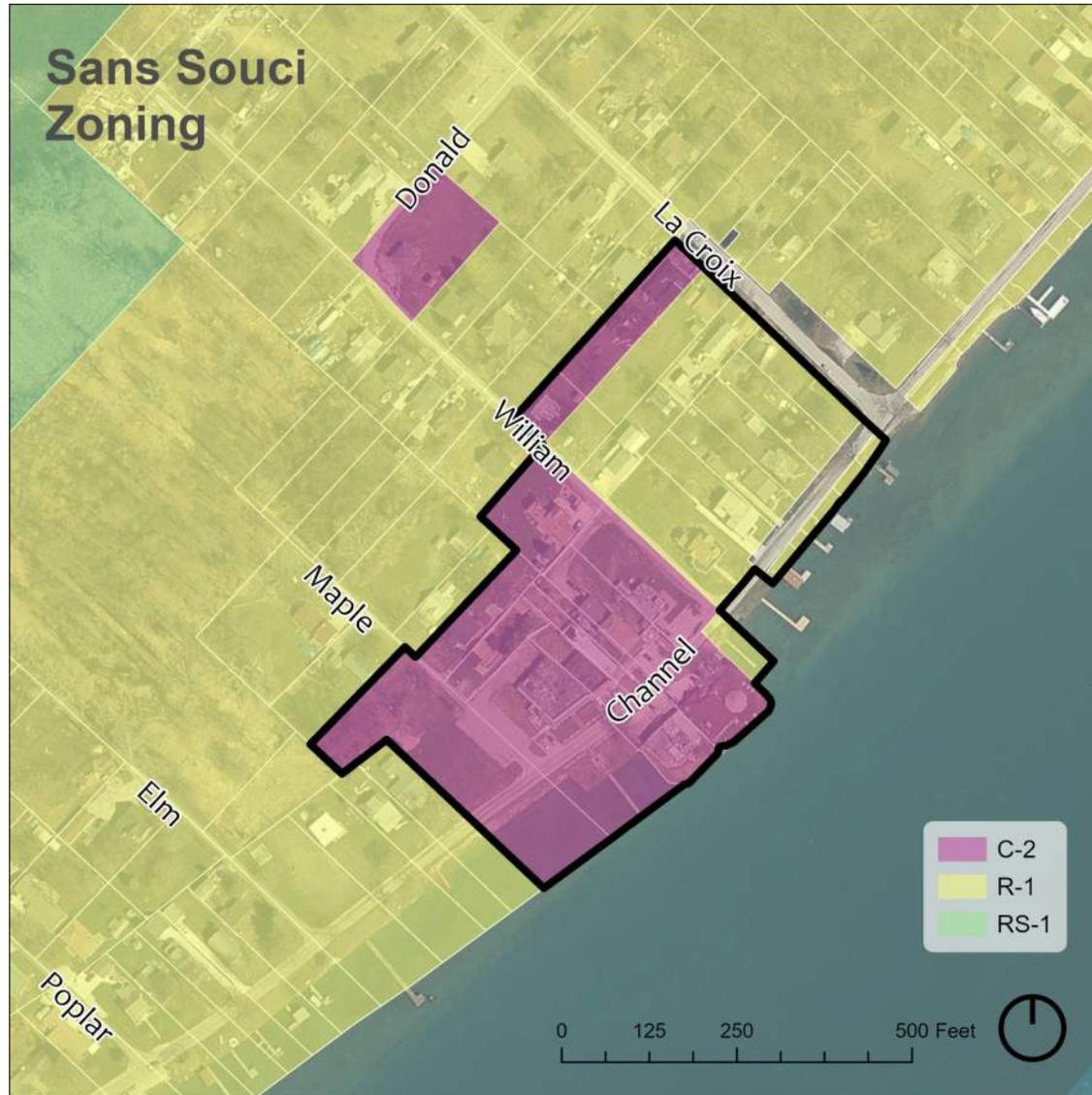
The previous master plan envisioned Sans Souci as a rustic and nautical themed district that would serve as the 'draw' to Harsens Island. A form based code and infrastructure improvements were recommended to expand the district, though none have been implemented to date. Respondents to the survey indicated they would like to see more restaurants, parking and pedestrian amenities.

Existing Development Constraints

- Access to the destination requires use of the ferry or a boat with limited (mostly private) docking
- Aging infrastructure and lack of sewer service limit development potential
- Lack of parking and non-motorized amenities
- Seasonal Dependence
- High water level and flood plains pose ongoing challenges



San Souci Focus Area



Land Use

The existing land uses consist of residential (predominately single family) and the commercial uses, which include a market, distillery, museum, and bar & grill. The 2012 Master plan envisioned the expansion of San Souci into a large scale ‘nautical themed’ village area to be developed under a form based code. This code was not drafted or adopted, and no expansion has taken place.

Zoning

The existing land uses in the San Souci area primarily consist of residential and commercial and generally line up with the zoning map shown above. The 2020 master plan envisions the township focusing on enhancing and supporting the existing assets and infrastructure in place through flexible mix-use zoning and the reorganization of existing streetscape.

San Souci Focus Area

Building Form

The buildings in the San Souci core commercial area have developed individually over time to provide a generally consistent building line along the northwest side of the street over time. The varying character of the buildings provides a sense of character for the area. The market, shown in the upper left image, is the only two story structure in the commercial core. Some single family home adjacent to the district is shown in the upper-middle image, which provides a sense of the residential character in the area.

Streetscape

The area currently lacks consistent pedestrian amenities typical of a small downtown. There is little landscaping and the lighting is inconsistent, while some of the signage adds to the area's charm. It is recommended that the township explore adopting uniform lighting and landscaping standards that will add to the sense of place and safety in the district. New buildings should match the existing style and should not look out of place.



The San Souci district in Clay Township has traditional historic character. It is important that future development and redevelopment in this area reflect the district's established character. New buildings that look like they belong in a large city are not appropriate here. (Giffels Webster, 2019)

CREATING PLACE IN A WATERFRONT TOWNSHIP

Historic Buildings. Historic buildings typically provide the foundation for many places. These structures are often set at the property lines, framing the streets and sidewalks with ample ground-floor display windows designed to engage passersby (who, back in the day, were mostly walking). Historic structures that are preserved, maintained, and used offer an authenticity for downtowns that is nearly impossible to create in new commercial developments. Interesting architectural details like unique doors, windows, window trim, and cornice treatments help to define a sense of place for the downtown area that sets it apart from other commercial areas.

A nearby example of a place that uses historic structures to create a walkable place is New Baltimore. The downtown historic structures form the edge of the public realm and help to create an outdoor room for pedestrians.



San Souci Focus Area

Pedestrian Circulation

There is little consistency in the existing sidewalk network, which operates along the building frontages and ranges from 4'-10'. A lack of defined street edge along the east side of South Channel Drive creates an inconsistent streetscape.

The cross sections shown on the following page demonstrate how the underutilized space could provide for a safe, clearly defined, buffered walkway without losing any parking. The township envisions a minimum 6' wide walkway along building frontages to provide for two way pedestrian traffic.



South Channel Drive looking north on San Souci District (Giffels Webster, 2019)



The San Souci district parking above does intrude into the pedestrian walkway abutting the building frontages. This area could provide for clear two-way pedestrian traffic without losing any parking if organized more efficiently (Giffels Webster, 2019)



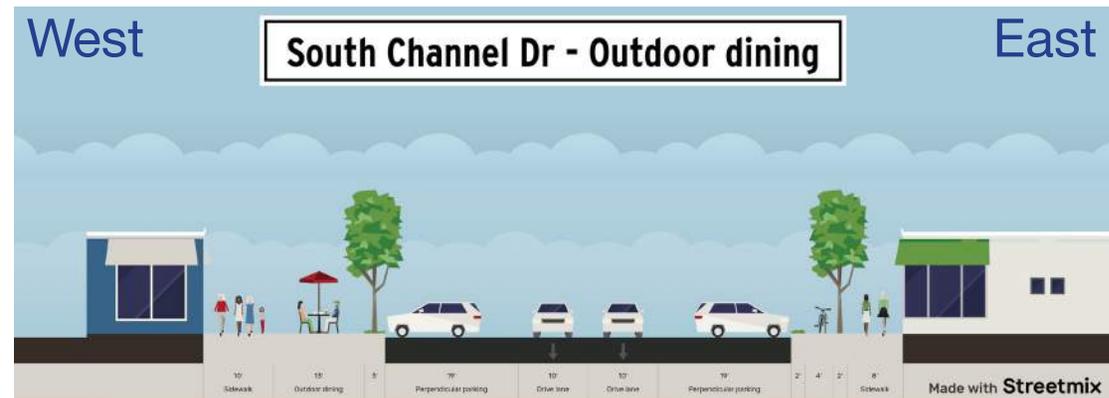
Parking blocks, such as the ones pictured above, offer short term solutions to defining pedestrian areas (Giffels Webster, 2019)

San Souci Focus Area

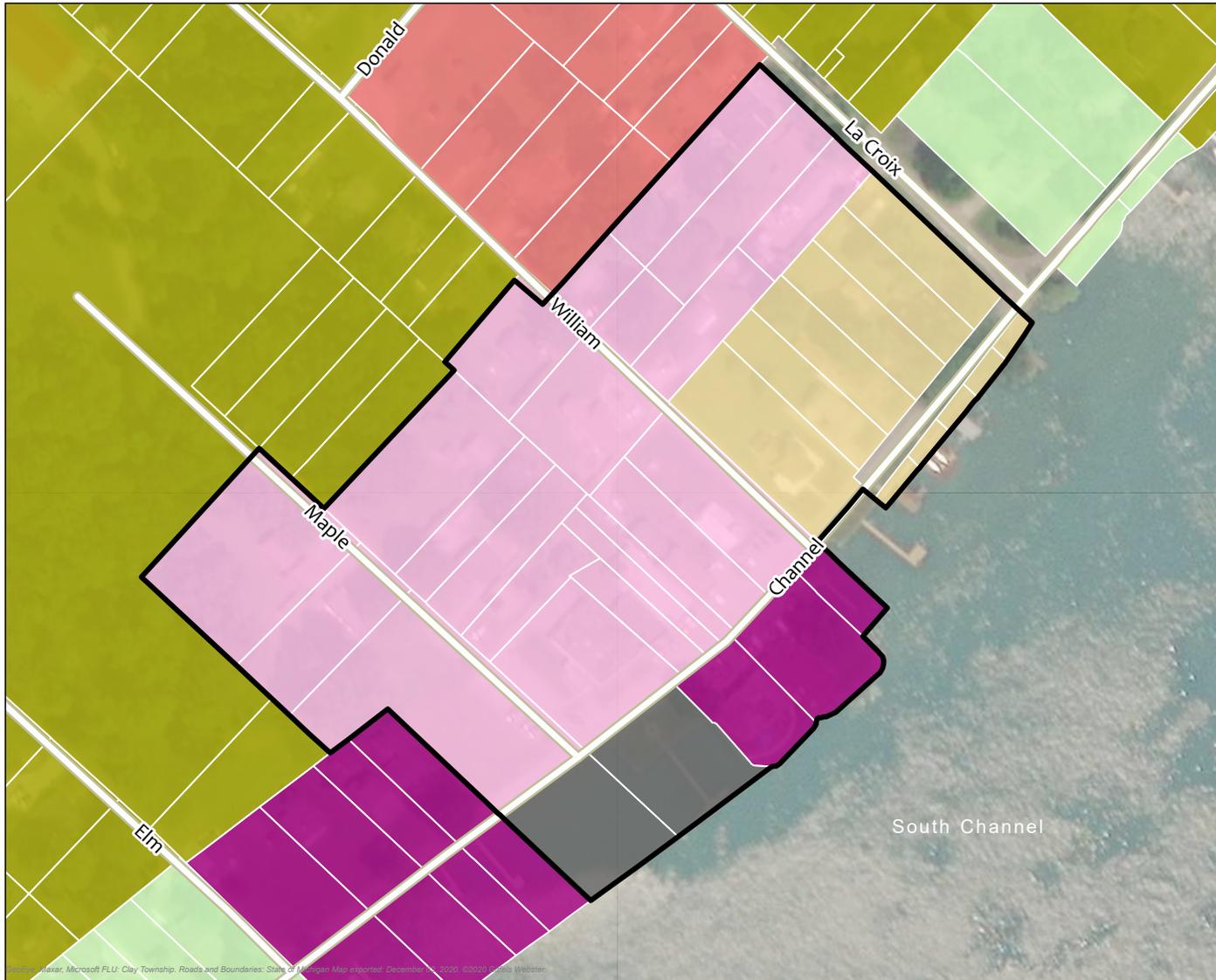
Parking and Traffic Circulation

There is currently a 40' right-of-way to accommodate two-way traffic along south channel drive in the San Souci area. Parking is situated at a 90 degree turn pattern off of South Channel drive. The buildings are generally about 100' feet apart and utilize on-street parking. The low speeds and limited traffic on this portion of south channel drive do not generally cause any circulation concerns. There are several way to reorient the space within and adjacent to the South Channel Drive right-of-way that would preserve parking while maximizing the current layout. The cross sections (right) demonstrate how the parking stalls can be shortened to accommodate wider sidewalks, outdoor dining spaces, maneuvering/bike lanes or streetscape amenities such as trees or bike racks. A number of these changes, such as clearly defined parking and walkways, can be provided within the current district layout.

SOUTH CHANNEL DRIVE	
Existing	
Buildings: 100' apart Sidewalks: 15.5' on east, 7.5' wide on West Road width: 20' (two way, 20'; each direction) Parking: 29' perpendicular east; 28' perpendicular west Pedestrian Amenities: Benches	
Proposed	
OPTION 1: WIDER SIDEWALKS Buildings: Remain as is at 100' Sidewalks: Widen to 12' on both sides Road width: Remain at 20' Parking: Re-stripe to 20' long spaces on both sides Pedestrian Amenities: Incorporate street landscaping as practical	
OPTION 2: OUTDOOR DINING Buildings: Remain as is at 100' Sidewalks: Resize sidewalk to 8' on east and wide to 10' on west Road width: Remain at 20' Parking: Re-stripe to 19' on both sides Pedestrian Amenities: Buffered bicycle parking and street landscaping on the east side, outdoor dining (13') on the west side	

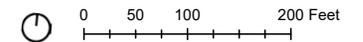


San Souci Focus Area: Future Land Use



- Single Family Residential
- Residential Transition
- Mixed Use
- Commercial and Office
- Public and Semi-Public
- Waterfront Commercial
- Waterfront Residential

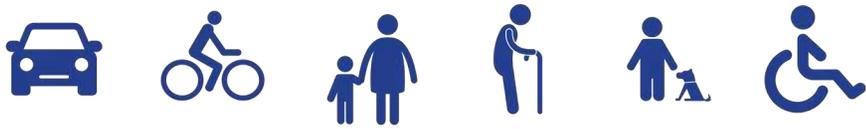
Future Land Use
Sans Souci



Complete Streets

Introduction to Complete Streets

'Complete Streets' is a term used to describe a transportation network that includes facilities for vehicles, pedestrians, cyclists, and other legal users of all ages and



abilities. Complete Streets provide transportation choices, allowing people to move about their communities safely and easily.

The Interstate Highway Act of 1953 dramatically changed modes of transportation as well as the American landscape. After 1953, most federal transportation funding was directed to building roads and highways for efficient movement of vehicles, and to a limited extent, transit. Funding supported a sprawling road system and land use pattern but did not focus on non-motorized connectivity. In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) was created; since then, increased funding has been allocated for non-motorized transportation, although traditional vehicular systems continue to get the bulk of transportation funding. In 2010, Michigan passed the Complete Streets legislation to encourage and justify the development of Complete Streets in communities. At that time, Michigan's Planning Enabling Act was also amended to require master plans to address Complete Streets.

In most communities, including Clay Township, the majority of people drive everywhere. Why is this? There are a number of reasons, but one reason is the unavailability of non-motorized facilities that would encourage walking or biking. Also, transit connections to employment centers are limited. In recent years, township noticed increasing demand for developing sidewalks and trails. This is evident from the responses gathered during the master plan's community engagement efforts. An important element of the Master Plan process is the planning for the overall system of streets and roads in a community that provide

for the movement of people and goods from places both inside and outside the community.

Road rights-of-way also provide places for various public utilities and can have an impact on the appearance and design of streetscapes as the dividing line between where rights-of-way end and private property begins is often blurred. Because of this combined function and importance, the system of roads in a community can impact economic conditions, environmental quality, energy consumption, land development, and overall quality of life in a community.

The intent of this Complete Streets section of the master plan update is to provide a brief overview of the benefits of Complete Streets, policy and design elements, township functional street classification, existing non-motorized inventory and finally to identify priority projects. Following the adoption of the master plan, the township ordinance should be amended to provide guidelines for development of Complete Streets policy.

Why Complete Streets?

Communities that adopt Complete Streets policies acknowledge the problems with current transportation facilities and recognize that implementing Complete Streets strategies will make their communities better places to live and work. Some of the benefits are highlighted in this section:

Safety

Safety plays a major role in non-motorized travel. Perceptions of the safety of non-motorized travel strongly influence decisions about alternative modes of travel for many. Data from previous studies has shown that high vehicle speeds contribute to unsafe roadways for pedestrians, and thus the likelihood of accidents that lead to fatalities.



On an average, a pedestrian was killed every **88 minutes** in traffic crashes in 2017.

According to the National Highway Traffic Safety Administration and the Insurance Institute for Highway Safety.

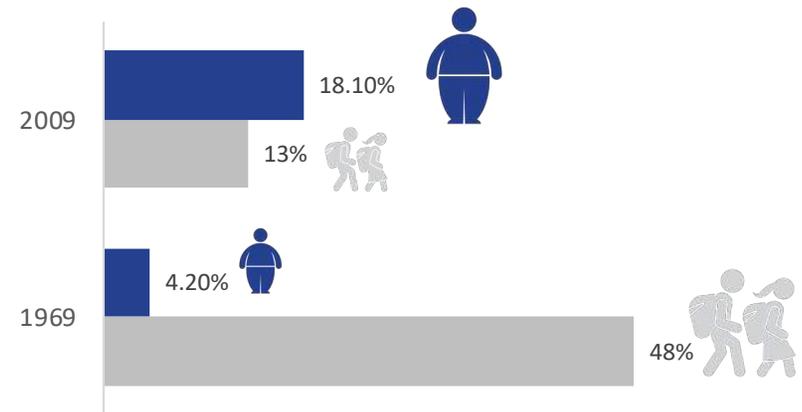
- Since 1990, pedestrian fatalities increased by 208, a 3.4-percent increase. The 2018 number of pedestrian fatalities (6,283) is the highest since 1990 (6,482 fatalities). Over 40 percent of these pedestrian fatalities occur on roads that have no crosswalks (Ernst and Shoup 2009).
- Pedestrian fatalities in urban areas increased by 69 percent since 2009; rural areas increased by 0.1 percent.
- In Michigan (2016), 2,349 pedestrians were involved in 2,232 motor vehicle crashes; 165 (7%) were killed and 1,852 (79%) were injured.

Complete Streets reduce bicycle and pedestrian accidents by increasing the safety factor. Complete Streets also improve vehicle safety. A common practice to improve vehicle safety while providing additional space for bicycle and pedestrian is 'road diet'. This involves reducing either the width or number of travel lanes to make space for shoulder or bike paths. Before-and-after comparisons conducted in several states show that the road diet reduced traffic crashes between 18 and 43 percent while also increasing bicycle and pedestrian travel (Pawlovich et al. 2006).

Promote Healthy Lifestyles

Beyond the obvious choice and safety, there are other reasons communities should consider how complete their streets really are. As many people struggle with their weight, communities battle rising public health costs for chronic conditions associated with obesity. Over the past 25 years, obesity rates have skyrocketed across the country. According to the Centers for Disease Control and Prevention (CDC) reports that between 1989-2018, obesity rates in Michigan rose from less than 14% to nearly 33% of the population. Additionally, childhood obesity rates have risen dramatically, while the percentage of children walking or biking to school has dropped.

OBESITY RATES AND PERCENT OF STUDENTS WALKING TO SCHOOL (2009 AND 1969)



Source: How Children get to school: school travel patterns from 1969-2009

Studies have shown a proportional relation between children walking to school to child obesity rates. Data has shown that these three elements of a complete street, sidewalks on most streets, transit stops nearby, and presence of bicycle facilities significantly impact the levels of physical activities of the residents. The more factors that were present, the higher the activity level by residents.

Complete Streets

Provide access for people with limited mobility

People with limited mobility such as children, older adults, people with disabilities and low-income population are most effected due to lack of access to safe and Complete Streets. Complete Streets that provide access to grocery stores and personal services make a community livable specially for this subset of people.

According to 2010 census,

- Approximately 12% of township population is under 18. Over a quarter (26.5%) of the population is 65 years and older. SEMCOG population forecasts predict a 25% increase in older age population by 2045.
- About 10.3% percent of township’s population is under 65 years with some form of disability, which can include sensory disabilities involving sight or hearing, physical disabilities, mental disabilities causing difficulty in learning and remembering or other conditions that make it difficult to go outside the home to shop or visit a doctor.
- About 8.1% of the population is under the poverty line. These statistics further augment the need for adoption of Complete Streets policy for the township.

As the township’s residents age, issues of health, mobility, and socialization are critical. According to a poll conducted by AARP in 2009, 21% of Americans over 65 do not drive. Studies have shown that forfeiting the driving privilege “results in an emotional trauma much like experiencing a death for the senior. The loss of independence is a source of loss, grieving and even depression” (AARP). It is very likely that this trauma results from the fact that there are limited mobility options for seniors once driving is no longer possible.



54% of older American living in inhospitable neighborhoods say they would walk and ride more often if things improved

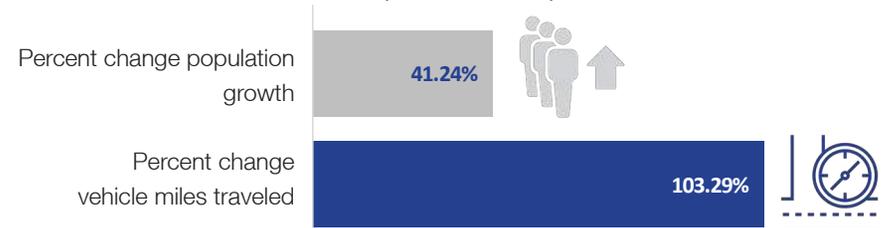
In a national survey conducted by AARP Public Policy Institute in 2009, the data indicated that

- 56% of total older population support the adoption of Complete Streets policies.
- 47% of older Americans say it is unsafe to cross a major street near their home;

Environment

Complete Streets will provide alternate transportation options that could reduce short auto trips within neighborhoods to local retail and services. Our reliance on the automobile as a primary source of transportation leads to a sprawling infrastructure system carrying a low density of population per lane mile. Between 1980 and 2015, the percent change in vehicle miles travelled has increased exponentially (over 2.5 times) compared to the percent change in population growth for America. This demonstrates the significant reliance of people on automobiles for their transportation needs.

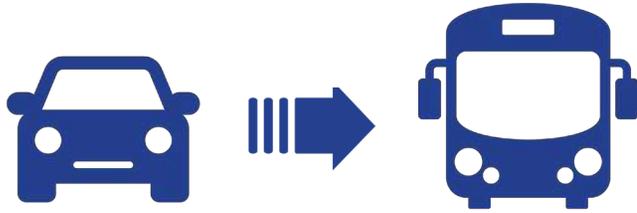
CHANGE IN VEHICLE MILES TRAVELED AND POPULATION IN THE U.S. (1980 TO 2015)



Source: FHWA and US Census Bureau

Complete Streets

Shifting to alternative modes of transportation such as transit, bicycles, and walking, can help lead to corresponding public health improvements and less reliance on personal automobiles. Studies have shown that 5 to 10 percent of urban automobile trips can reasonably be shifted to non-motorized transport.



Carbon-dioxide emissions can be reduced by **20 pounds per day** or more than 4,800 pounds in a year per each commuter by using transit instead of driving

Our dependence on the automobile increases air and water pollution resulting from motor vehicles and the impervious surfaces of roads. With no other transportation options, many people drive alone and create traffic congestion for several hours each day. This wastes time and productivity, and emissions from idling vehicles contribute to increased air pollution and greenhouse gasses. Oil, gas, and chemicals from motorized vehicles collect on roads and are washed into lakes and streams by rainfall.

Economic Development

When streets in and around the residential and local business districts are redesigned with traffic calming measures and provide safe bicycle and pedestrian access, it results in increased consumer activity. Implementing Complete Streets will be a good place making strategy for economic development and community revitalization. **Nearly 40 percent of merchants reported increase in sales, and 60 percent more area residents shopping locally due to reduced travel time and convenience.** Complete Streets support local economic development by encouraging new businesses that serve the local population of residents and workers.

The COVID-19 pandemic of 2020 has led to surge in bicycle sales and usage. In March, nationwide sales of bicycles, equipment and repair services nearly doubled compared with the same period last year. Sales of commuter and fitness bikes in March 2020 increased 66 percent, leisure bikes jumped 121 percent, children's bikes went up 59 percent and electric (e-bikes) bikes rose 85 percent. Citi Bike, New York City's bikeshare program, saw a 67% increase in use during March 2020. It makes sense to consider expanding bike infrastructure to meet increasing demand.

Complete Streets Policy

History

In 2010, Michigan became the 14th state to pass legislation that requires the state and local governments to plan for the safety and convenience of bike and foot traffic when building roads. According to the legislation, Complete Streets means “roadways planned, designed and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot or bicycle” (PA 135 of 2010). An amendment to Michigan’s Planning Enabling Act (PA 134 of 2010) also requires that master plans address Complete Streets.

Key Components of Michigan’s Complete Streets Law include

- Requires community master plans to address all transportation needs, including public transit, bicycle facilities, pedestrian ways and other legal users in addition to motor vehicles
- Requires that streets accommodate a variety of users, such as bicycles and pedestrians, in addition to motor vehicles;
- Requires coordination with neighboring communities and road agencies
- Requires inter jurisdictional cooperation in preparing 5-year transportation improvement program



Elements of Complete Streets policy

The National Complete Streets Coalition (NCSC) compiled a list of ten principles that makes an ideal Complete Streets policy. The ten principles are further categorized into three groups.

VISION	Vision and intent	Includes an equitable vision for how and why the community wants to complete its streets. Specifies need to create complete, connected, network and specifies at least four modes, two of which must be biking or walking.
	Diverse users	Benefits all users equitably, particularly vulnerable users and the most under-invested and underserved communities.
DESIGN	Design	Directs the use of the latest and best design criteria and guidelines and sets a time frame for their implementation.
	Land use and context sensitivity	Considers the surrounding community’s current and expected land use and transportation needs.
IMPLEMENTATION	Performance measures	Establishes performance standards that are specific, equitable, and available to the public.
	Commitment in all projects and phases	Applies to new, retro-fit/reconstruction, maintenance, and ongoing projects.
	Clear, accountable expectations	Makes any exceptions specific and sets a clear procedure that requires high-level approval and public notice prior to exceptions being granted.
	Jurisdiction	Requires inter agency coordination between government departments and partner agencies on Complete Streets.
	Project selection criteria	Provides specific criteria to encourage funding prioritization for Complete Streets implementation.
	Implementation steps	Includes specific next steps for implementation of the policy.

All Ages and Abilities

National Association of City Transportation Officials (NACTO) developed an ‘All Ages & Abilities’ criteria for selecting and implementing bike facilities. This guide helps communities design facilities based on contextual factors such as vehicular speeds and volumes, user type and level of comfort. The document is aimed at urban streets, but the underlying principles can be applied for all communities.

All Ages and Abilities facilities are defined by three primary factors: safety, comfortability and equitability. Safely designed pedestrian/bicycle lanes lead to more users and less accidents. It is well established that ridership is directly related to level of comfort, i.e. mixed traffic lanes vs protected bike lanes. Data has shown that bike lanes that eliminate the stress will attract all types of users, including those that are more likely to seek out buffered, protected and seperated bike lanes, women, children and seniors. Low-income communities will also be benefited with well-designed non-motorized facilities. Riding a bike to work will be a preferred option than transit. The table to the right below refers to all kinds of users that would use a non-motorized facility and the general constraints they come with. The township has to consider the types of users in its long-range planning, with a focus on providing at least one significant bikeway facility on the mainland and one on the Harsens Island that will be attractive to variety of users.

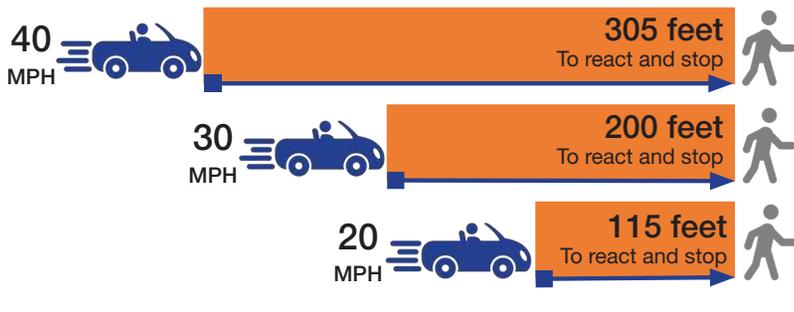
NACTO report also provided recommendations for choosing the right type of bikeway design based on vehicle speed and volume. While it is an ideal goal to achieve all criteria for all ages and abilities, it is obvious that each community has different limitations. Each community should consider their individual goals, identify the needs and challenges and then develop non-motorized facilities even if they may not completely meet these criteria.

	Type of users	Barriers to consider
	Children	Smaller and less visible from driver's seat
	Seniors	Lower visual acuity and slower riding speeds
	Women	Concerns about personal safety and traffic stress. Prefer buffers or barriers from vehicular traffic lanes
	People Riding Bike Share	Bike to transit or make one-way trips. Rely on comfortable and easily understandable bike structure
	People of Color	Fear of exposure to theft, assault or being a target for enforcement
	Low-Income Riders	Rely extensively on bicycles to ride to work. Access to continuous and safe facilities
	People with Disabilities	Use adaptive bicycles that require wider envelope and operate at lower speeds
	People Moving Goods or Cargo	Cannot be accommodated by facilities designed to minimal standards
	Confident Cyclists	Constitute a smaller percentage of total users, most often male. In the U.S., 76% of bike trips are made by men and 87% of competitive cyclists are male.

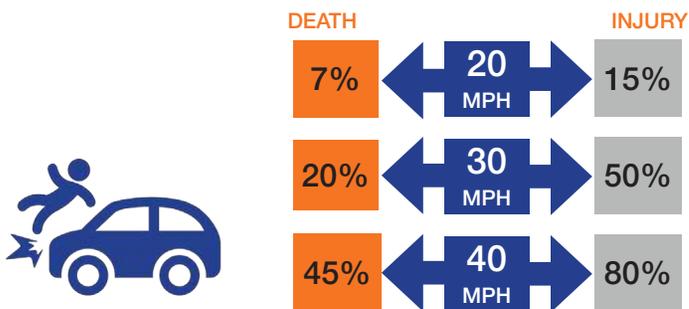
Level of Comfort

The usage rate of any non-motorized facility by diverse group of users depend on the level of comfort the path provides. Level of comfort typically depends on various stress factors such as vehicular traffic speed, volume and the time of the day. Data has shown that most users are not comfortable riding next to vehicle with vehicle speeds over 25 mph. Traffic volumes differ each time of the day and this difference drastically impact the bicycling conditions. Even though queuing stress occurs during peak hours, off-peak hours result in dangerously high speeds. Below images summarize the impact of vehicular speeds on pedestrians accidents.

IMPACT OF VEHICULAR SPEEDS ON PEDESTRIAN CRASHES



RISK OF SEVERE INJURY AND DEATH WHEN STRUCK BY A VEHICLE BY VEHICLE SPEED



Source: SEMCOG and AAA

The Mineta Transportation Institute developed a rating system to rate the “stress levels” users experience. It is now popularly known as Level of Traffic Stress (LTS) ratings. The ratings are based on various factors such as the speed and volume of vehicle traffic, the number of travel lanes, the size and complexity of intersections, and the types of bicycle facilities provided. LTS 1, LTS 2, LTS 3, and LTS 4, where 1 represents the lowest stress and 4 represents highest stress and discomfort. Data has shown that the LTS factor increases with increases in traffic volumes and decreases with higher separation from motor vehicle traffic. LTS 4 roads are considered the most stressful, while LTS 1 are the least. LTS 1 and 2 are ideal target levels for maximum usage of any facility.

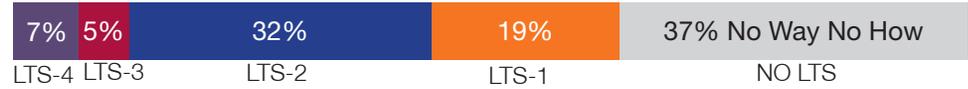
A study completed by Roger Geller for the Portland Office of Transportation identified four type of users which correlates with the LTS ratings. The users are defined by their level of comfort riding on different types of facilities. Next page summarizes the LTS ratings and its correlation with the type of riders.

- **Strong and the Fearless:** These types of riders are undeterred by roadway conditions. They can ride comfortable with busy traffic.
- **Enthusied and the Confident:** These riders can be attracted to regular riding by removing potential barriers such as shorter trip distances, better bicycle facilities and better end-of-trip facilities.
- **Interested but Concerned:** These riders would ride on roadways with low speed and low traffic volumes. These riders make up about 51% of total population. They prefer to use bikeways with a LTS value of 1 and 2.
- **No Way No How:** This group of riders lacks interest in biking or and will not bike regardless of the type of infrastructure provided.

Even though the rating is primarily created for bikers, this can be explained for pedestrians as well. There is no one way to conduct this analysis. By targeting the Interested but Concerned group for primary routes, the township can plan for facilities that will have higher ridership levels. This will support both transportation and tourism (economic) goals. This group has the highest level of comfort on LTS 1 (side path) and LTS 2 (buffered or protected lane) facilities.

Level of Traffic Stress Ratings

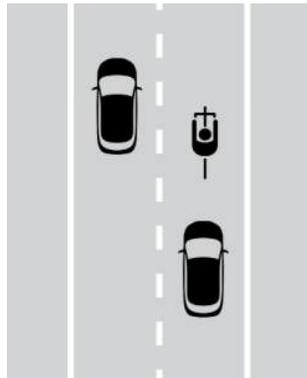
Percent of total population by type of bicyclist in United States



LTS-4

Strong and Fearless Riders

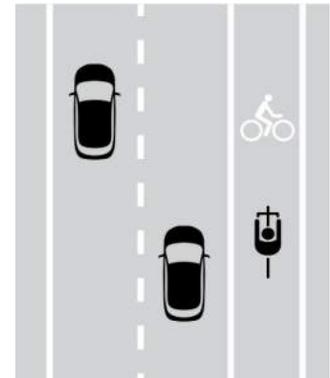
- Riders share the streets with the vehicles in busy traffic
- Uncomfortable for most users
- Typically high streets with high speed limits



LTS-3

Enthusied and Confident Riders

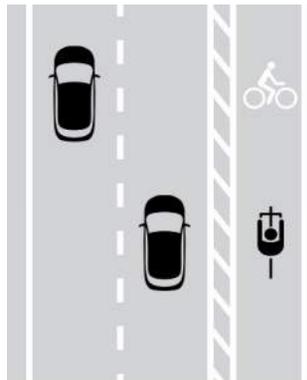
- Narrow bike lanes or shoulder on a busy street
- Comfortable for confident bicyclists, who prefer not to share with the vehicles
- These can be considered LTS-2 level on roadways with 25mph or less speed limits



LTS-2

Interested, but Concerned Riders

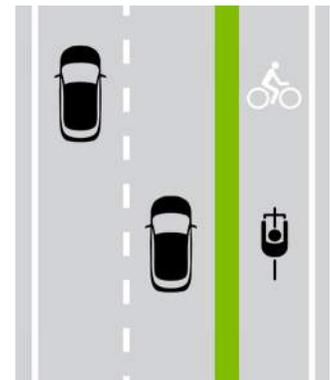
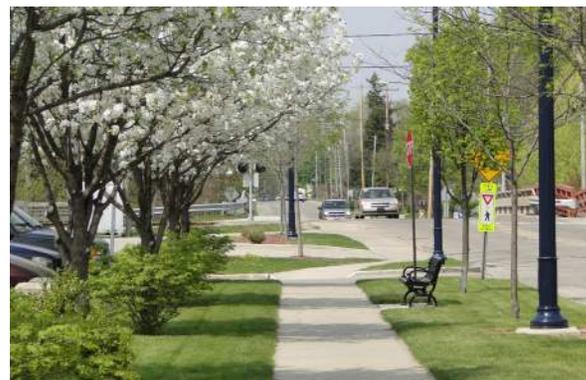
- Protected bike lanes with a buffered lane
- Comfortable for most adults



LTS-1

Interested, but Cautious Riders

- Separated shared use paths with green buffers
- Comfortable for all ages and abilities



Source: (2016) Dill J. and McNeil N., Revisiting the Four Types of Cyclists: Findings from a National Survey, Journal of the Transportation Research Board.

Design Elements

An ideal complete street should include the ten elements listed below. However, depending on the context of the road and surrounding land uses, some of the elements may not be applicable. Typically, there are three types of roads: rural, suburban and urban. Clay Township has three types: major thoroughfare, collector and local. See 'street classification' section for more details.

1. Sidewalks for pedestrians to link neighborhoods, schools, civic uses, and other destinations together.
2. Bicycle lanes which are special dedicated travel lanes that are on-street with traffic (bike lanes), separated by a painted buffer (buffered bike lane) or separated from vehicular lanes by a distance and a vertical element (protected bike lanes). Bike lanes are for experienced bicycle riders, often commuters. Buffered and protected bike lanes are attractive to wide variety of users.
3. Off-street shared use paths for pedestrians, cyclists and others, for those who may be less comfortable with riding in the street with vehicular traffic or where bike lanes are impractical.
4. Protective streetscape to provide shade from sun as well as minor protection from rain. Streetlights contribute to a sense of safety and security.
5. Traffic signals with pedestrian signal heads as well as audible crossing signals for visually impaired pedestrians to safely cross major roadways. Pedestrian-only signals should be designed to halt vehicle traffic only when pedestrians are present.
6. Curb extensions or bump-outs and other traffic calming devices to reduce pedestrian crossing distances, slow vehicular traffic, and alert drivers to the presence of pedestrians.
7. Crosswalks, pedestrian pavement markings, and crosswalk signals to make it safer for children to walk to school, along with other strategies to help slow motorized traffic.
8. Wayfinding signage to make it easier for people on foot or on bicycles to understand where they are and where they are going. Wayfinding signs help identify the route to important destinations and civic spaces. Traffic signals timed to extend walk time for pedestrians, allowing pedestrians with a range of abilities the opportunity to cross major roadways on foot without fear of losing the signal while still in the street. Countdowns help pedestrians time their crossings.
9. Transit shelters to provide places to rest that protect users from rain and snow, making transit more comfortable and appealing.



Protective sidewalks with green buffers from the streets



Dedicated bike lanes along streets



Traffic calming bumpouts to slow traffic at intersections

Existing Street Network

An important element of the Master Plan process is the development of a plan for the overall system of streets and roads in a community. This system provides for the movement of people and goods from places both inside and outside the community. Road rights-of-way also provide places for various public utilities such as water lines, gas lines, sanitary and storm sewers, cable television lines, electrical power and telephone lines. Because of these combine roads and utility function, the system of roads in a community can impact economic conditions, environmental quality, and energy consumption, land development and overall quality of life in a community.

Street Function

Over the years during which the majority of roads and freeways were constructed in the United States, the concept of “functional classification” was developed by the Federal Highway Administration. This involved two main elements: mobility and access. Mobility relates to how vehicular traffic is able to flow through or around an area. Access relates to how travelers of the streets access adjacent land uses (primarily through intersections and driveways).

At higher levels of mobility, travel speeds and volumes are higher; as a result, access to these roads becomes more limited. Conversely, lower classification roads often feature slower speeds and provide more access points to adjacent land uses.

While this system of classification worked in the past, it is clear that the functionality of roads only takes one type of user into consideration: motorized travelers. Motorists learn to drive understanding the trade-offs of roadways: freeways run faster than surface streets, but they can't be used to get directly to their destination. However, with non-motorized uses, the function of roads isn't as black and white. For example, if a pedestrian or cyclist wants to go somewhere, generally speaking, their travel time may not be impacted by the type of road on which they travel. The decision of what road to use depends largely on what the destination is, how safe it is to get there, and the availability of transportation facilities (such as sidewalks). The idea of mobility for non-motorized users goes beyond simply the efficiency of travel to a wider range of barriers to mobility that partly correspond with functional road classifications, but also correspond to land uses, overall community safety, and condition of transportation facilities.



Above: Columbine Street; Harsens Island (Giffels Webster, 2019)

Existing Street Classification

Traditional transportation planning identifies several major categories of road classifications known as National Functional Classification (NFC). These classifications were created by the US Department of Transportation, Federal Highway Administration and are based on mobility and access provided by certain roads. As roads are modified over time, they may not fall neatly into one classification or another, but their functions for motorized travel can generally be understood. It is important to note that substantial variations in road characteristics exist although the NFC may be the same for many roads in a community.

Complete Streets

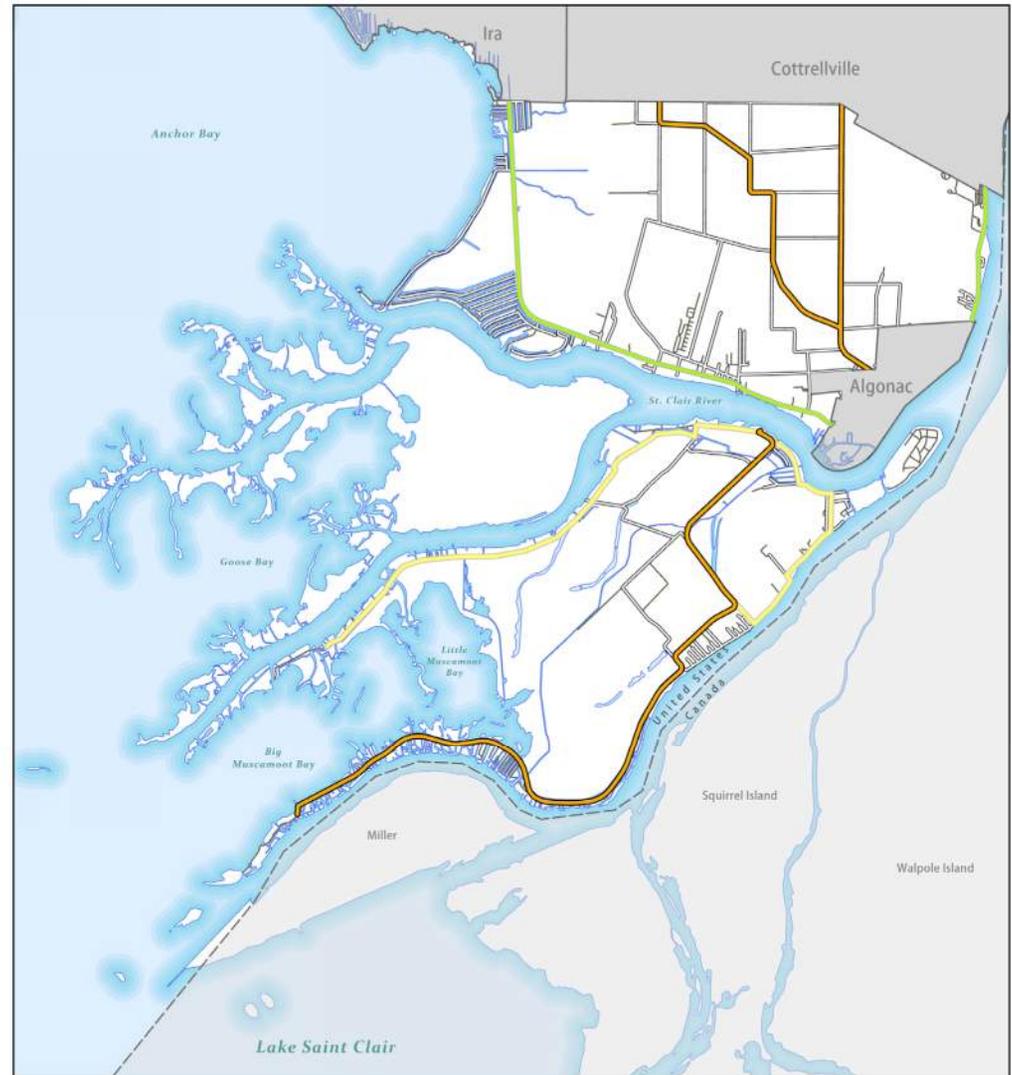
Clay Township currently has, or is served by, roads that fall generally into the following categories:

Rural or Urban Interstates (Principal Arterials): Interstates function to carry a heavy amount of traffic over long distances. They are major connectors from city to city, county to county, across the state, and between states. Interstates are eligible for federal funding. Though not located within the township, I-94 is the primary interstate serving Clay Township.

Rural or Urban Minor Arterial: The main function of arterial roads is to serve as routes for through traffic, while providing access to abutting properties and minor intersecting streets. Minor arterials carry through-travel movements, but carry trips of shorter distance and to lesser traffic generators. Arterials are eligible for federal funding. M-29 currently functions as the minor arterial road within Clay Township.

Rural Major or Urban Collector Street: Collector streets primarily permit direct access to abutting properties and provide connections from local streets and neighborhoods to minor arterials. Through traffic movement from one part of the municipality to another is deliberately discouraged on these streets. Collectors provide the opportunity to connect to arterials, allowing for the reduction in the number of curb cuts onto arterials and ensuring fewer interruptions for arterial traffic. Collectors are eligible for federal funding. Examples of existing collector roads include Middle Channel and South Channel drives, located on Harsens Island.

Rural or Urban Local Streets: Local streets provide access to abutting land. These streets make up a large percentage of total street mileage, but they almost always carry a small portion of vehicle miles traveled. They offer the lowest level of mobility and may carry no through traffic. Local roads are not eligible for federal funding. Examples of this class of roadway include the residential streets located within the township.



National Functional Classification

4 - MINOR ARTERIAL 6 - MINOR COLLECTOR 0 - NON-CERTIFIED
5 - MAJOR COLLECTOR 7 - NFC LOCAL

0 1.5 3 6 Miles

National Functional Classification: Michigan Department of Transportation. Map exported: September 11, 2019. ©2019 Giffels Webster.



Existing Non-Motorized Network

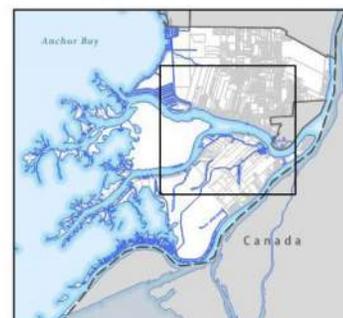
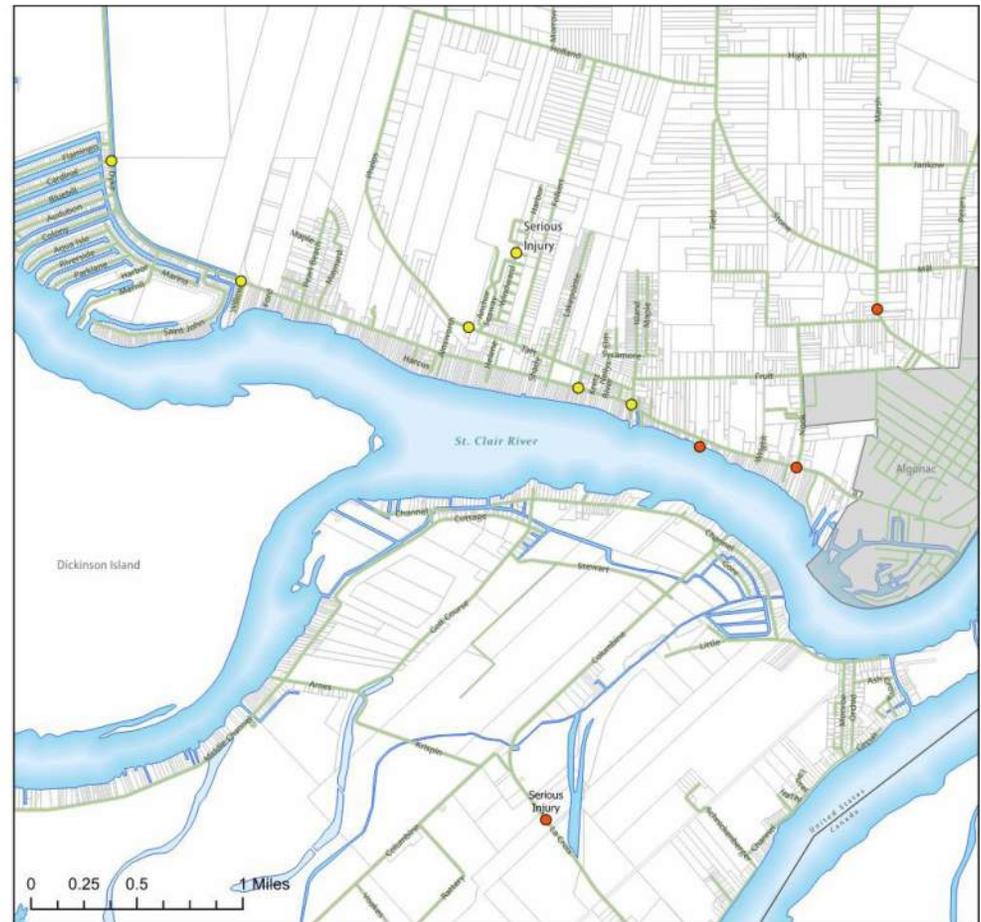
The existing sidewalk network in Clay Township is mostly concentrated along Route 29, Marsh Road and within some new residential developments. This could be due to majority of land uses in the township is comprised of vast areas of open space and rural residential. Until now, there has not been much focus on providing non-motorized connectivity in the township except for recent residential developments. A quick study of crash locations from 2014-2018 has shown that most of the crashes happened along Pointe Tremble. See map to the right.

Sidewalks

Few of the residential developments in Clay Township have an existing sidewalk network. The M-29 corridor has sidewalks or paths on one side of the street for certain segments, but the system lack continuity. The sidewalk network has significant gaps and lacks necessary marked crosswalks. From Estergreen Street to Island Drive, M-29 has no sidewalks or pathways; this distrupts the pedestrian network. Streets without sidewalks and others with sidewalk gaps require pedestrians to walk on the grass or in the street. Eliminating gaps in the sidewalk system network is a relatively simple way to help provide a safer non-motorized system that connects neighborhoods and links residential areas to places of commerce and recreation.

Shared Use Paths

Bikeways are defined as rural wide paved shoulders, shared-lane markings, and local, county, or national bike routes. In Clay Township, bikeways are located along M-29, Nook Road, eastern Fruit Street, and on Harsens Island along Columbine Street and Channel Drive. The Bridge to Bay Trail is the most significant regional non-motorized route and it runs through Clay Township along M-29. Importantly, SEMCOG rated all of the existing bikeways in Clay Township as tier four which means few people would be comfortable.



2014-2018 Crash Locations Involving Bicycles or Pedestrians

- Crash Locations Involving Pedestrians
- Crash Locations Involving Bicycles
- Bike Network



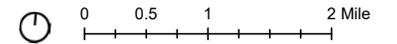
Crash Locations and Bike Network: SEMCOG's Open Data Portal. Map exported: June 05, 2020. ©2019 Giffels Webster.

Complete Streets



- SIDEWALK
- CROSSWALK
- CROSSWALK PAINTED
- ROADWAY
- LOCAL-OWNED PARK
- STATE-OWNED PARK

Sidewalks Clay Township



Parks: SEMCOG. Sidewalks: SEMCOG. Boundaries: State of Michigan Map exported: May 12, 2020. ©2020 Giffels Webster.

Existing Commuting Patterns

Driving has been the preferred mode of transportation in the United States since the mass production of automobiles changed transportation networks and modes. Due to residential development patterns and school districts, people rarely live in the same place as they work and it resulted in increase in the dependence on automobiles. The image below gives a quick snapshot of commuting patterns in and out of Clay Township for work-related travel. In 2016, the total number of workers traveling outside the township is two and half times more than the number of working traveling from surrounding communities to the township. This ratio decreased by 38% since 2010.

The sum total of number of workers commuting from and to the township is about 8 times more than the total number of township residents who work in the township. A majority of workers (88%) use an automobile as a preferred mode of transportation to work, which is typical to rest of the country. Without a complete street network with safe pedestrian crossings and safe bicycle and pedestrian routes, walking and biking participation rates will continue to be low and automobile dependency will continue.

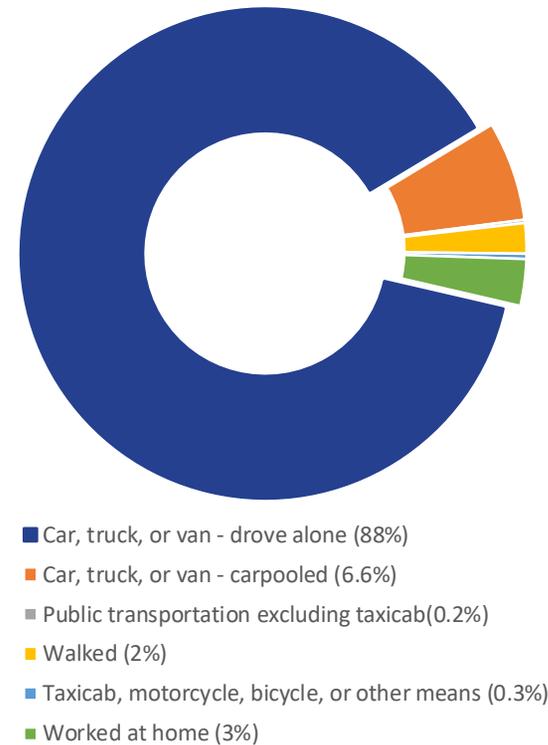
PEOPLE COMMUTING TO AND FROM THE TOWNSHIP FOR WORK



Source: SEMCOG

INFLOW AND OUTFLOW PATTERNS		
	2010	2016
Total Working and Living in Clay Township	470	745
Total Inflow (Workers commute from outside)	958	1,472
Total Outflow (Residents commute to outside)	3,738	3,650
Ratio of Outflow to Inflow	3.9	2.5
Percent Inflow compared to residents who work in the township	49%	51%
Percent Outflow compared to residents who work in the township	13%	20%
Percent Outflow compared to residents who work in the township	13%	20%

PERCENT DISTRIBUTION OF MODE OF TRANSPORTATION TO WORK



Source: SEMCOG and ACS

Public Input Summary

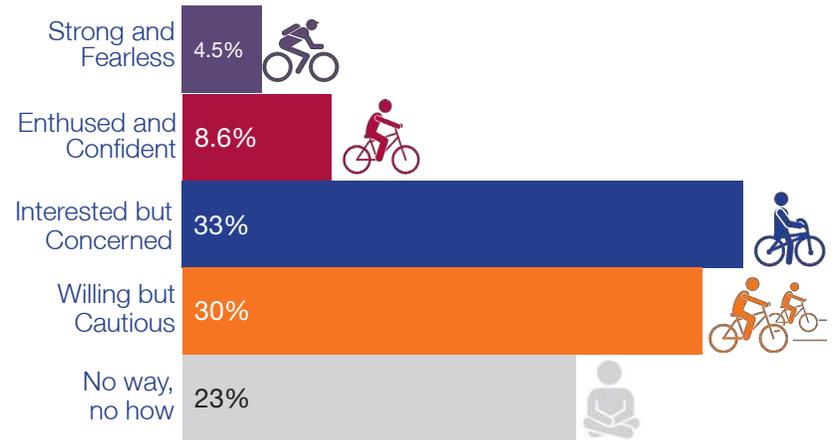
A public input survey was conducted in 2019 to collect public input as part of the current master plan update. The results from the survey indicate a growing demand for non-motorized connections within the township, especially to the major recreational areas. Listed below is a quick summary of the results:

- Over 52% of the respondents noted that lack of sidewalks and bike paths is a major challenge for the township
- San Souci, Pearl Beach, Town Hall, Algonac, St. Johns Marsh and St. Clair Flats are the popular places, the majority of resident's bike daily
- Most of the respondents (57%) rated the township sidewalk maintenance program as average
- There is demand for bike rental facilities at Pearl Beach (13%) and San Souci (23%)

Previously in 2016, the township's parks and recreation department conducted a public survey as part of their 2017-2021 plan update. Walking (68%) and biking (61%) are the most post popular recreational activities after boating, kayaking and paddling were the most popular recreational activity in the township (72%). Bike paths, more activities/facilities on Harsens Island, a waterfront park and public beach area were most frequently suggested improvements for the township. By increasing the non-motorized access to popular recreational destinations, the usage percentages can be further increased.

The type of riders will direct the type of facilities that are required. As part of the survey, the residents were asked what type of a rider they perceive themselves to be. About 60% of the respondents consider themselves to be either 'interested but concerned' or 'willing but cautious'. This validates that the township facilities should aim for LTS levels of 2 or 3 at a minimum. See previous section on Level of Traffic Stress for more detail on the ratings. LTS level 2 or 3 would mean Complete Streets that include separated bike lanes or buffered bike lanes or wider lanes.

Type of Riders in Clay Township from Public Input Summary



LTS-4 Strong and Fearless: Willing to bicycle in a roadway with limited or no bike accommodations. 4.5%

LTS-3 Enthused and Confident: Willing to bicycle within a roadway but only on lower traffic streets or if modest bike accommodations are present (e.g. conventional bike lanes or share the road markings). 8.6%

LTS-2 Interested but Concerned: Willing to bicycle but only on off-road trails or where high-quality bicycle accommodations are provided (e.g. separated bike lanes or side paths outside of the roadway). 33 %

LTS-1 Willing but Cautious: Willing to bicycle within a roadway but only if comfortable bike accommodations are present (e.g. buffered bike lanes or wide bike lanes). 30%

No way, no how: Unwilling or uninterested in bicycling. 23%

Non-Motorized Network Recommendations

Based on results of public input survey and summary of research of best practice, this section recommends bikeways at high level. These recommendations are made along the routes which have potential to make regional connections and to increase accessibility and usability of existing recreational and civic facilities.

SEMCOG Bicycle and Pedestrian Mobility Plan introduces a concept of assessing and rating different sections of a community in three categories- area of high demand, moderate demand and potential demand. Each level of demand is associated with a different range of development considerations and requires a different level of planning. This would allow us to determine where to propose extensive infrastructure improvements and where to propose minimal changes. Along with the demand analysis, the SEMCOG plan also refers to four more analysis (user, infrastructure, equity and safety) to formulate strategic development programs. The township should consider analyzing the existing conditions based on similar analysis recommended by SEMCOG.

The following four different types of bikeway/pedestrian treatments are proposed for Clay township. Detailed Engineering study should be completed before determining the best applicable design for a given location. Changes to recommended cross section are expected as the final design will depend on various factors such as right-of-way availability, surrounding land uses, traffic speeds, anticipated usage, topographical conditions and jurisdictional constraints. Well planned facilities will increase the accessibility and contribute to township's economic development.



Bike Routes (LTS 4)

Identify a specific route as a 'Bike Route' is the simple alternative when immediate infrastructure improvements to roadway network are not feasible. Wayfinding signage such as 'share the road' or directional signage can be installed to guide the users to destinations or other connections. The township should also consider adding bike routes on local roads with 25mph or less speed limits.



Conventional Bike Lanes (LTS 3 or 4)

Conventional bike lanes are dedicated bike lanes that are adjacent to traffic lanes with a minimum width of 5 feet. These are proposed when available right-of-way is limited. These may not serve all types of users.



Buffered Bike Lanes (LTS 2)

Buffered bike lanes are typically constructed by expanding the existing roadway width to allow for a bike lane and additional buffer space. These buffers are typically defined by pavement markings, parallel parking and/or delineators depending on the location. These are proposed along high traffic areas with limited Right-of-way. Candlestick delineators provide an increased level of perceived protection when added to buffered lanes.



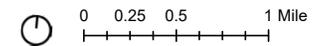
Shared Use Paths/ Side Paths (LTS 1 or 2)

Shared use paths are used by pedestrians as well as bicycle users with a minimum width of 10 feet. Typical design speed for shared use paths is 12-30 miles per hour. Pavement surfaces should be based on anticipated usage volumes. These require wider Right-of-way widths to accommodate wider path and green buffers.

Non-Motorized Map: Mainland



Non-Motorized Facilities Mainland, Clay Township

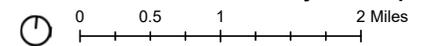


Non-Motorized Map: Islands



- PROPOSED TRAIL HEADS
- PROPOSED SCENIC OVERLOOK
- PROPOSED ST CLAIR FLATS BIKEWAY LOOP
- PROPOSED SOUTH CHANNEL BIKEWAY
- PROPOSED SOUTH CHANNEL ROUTE EXTENSION
- PROPOSED SAN SOUCI LOCAL ROUTE
- PROPOSED GOLF COURSE BIKEWAY
- PROPOSED GOLF COURSE ROUTE
- KRISPIN BLUEWAY
- SEASONAL WATER TRAIL (JAN - AUG)
- FERRY ROUTE
- WATER TRAILS
- BOAT ACCESS (PUBLIC)
- AIRPORT
- CEMETERY
- FIRE DEPARTMENT
- HISTORIC SOCIETY
- KAYAK ACCESS
- LIBRARY
- MUSEUM
- POLICE DEPARTMENT
- POSTAL SERVICE
- SCHOOL
- WATER DEPARTMENT
- LOCAL-OWNED PARK
- STATE-OWNED PARK

Non-Motorized Facilities Dickinson Island and Harsens Island Clay Township

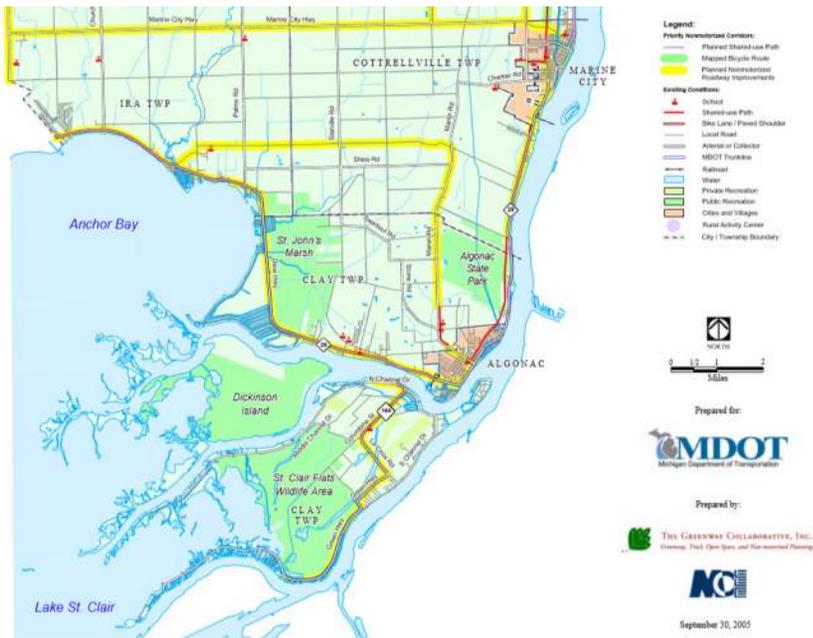


Parks, Campgrounds: SEMCOG. Boat Access, Deer Check, Campgrounds: MDNR, Bridge to Bay Trail: St. Clair County. Community Features: Giffels Webster. Map exported: July 20, 2020. ©2020 Giffels Webster.

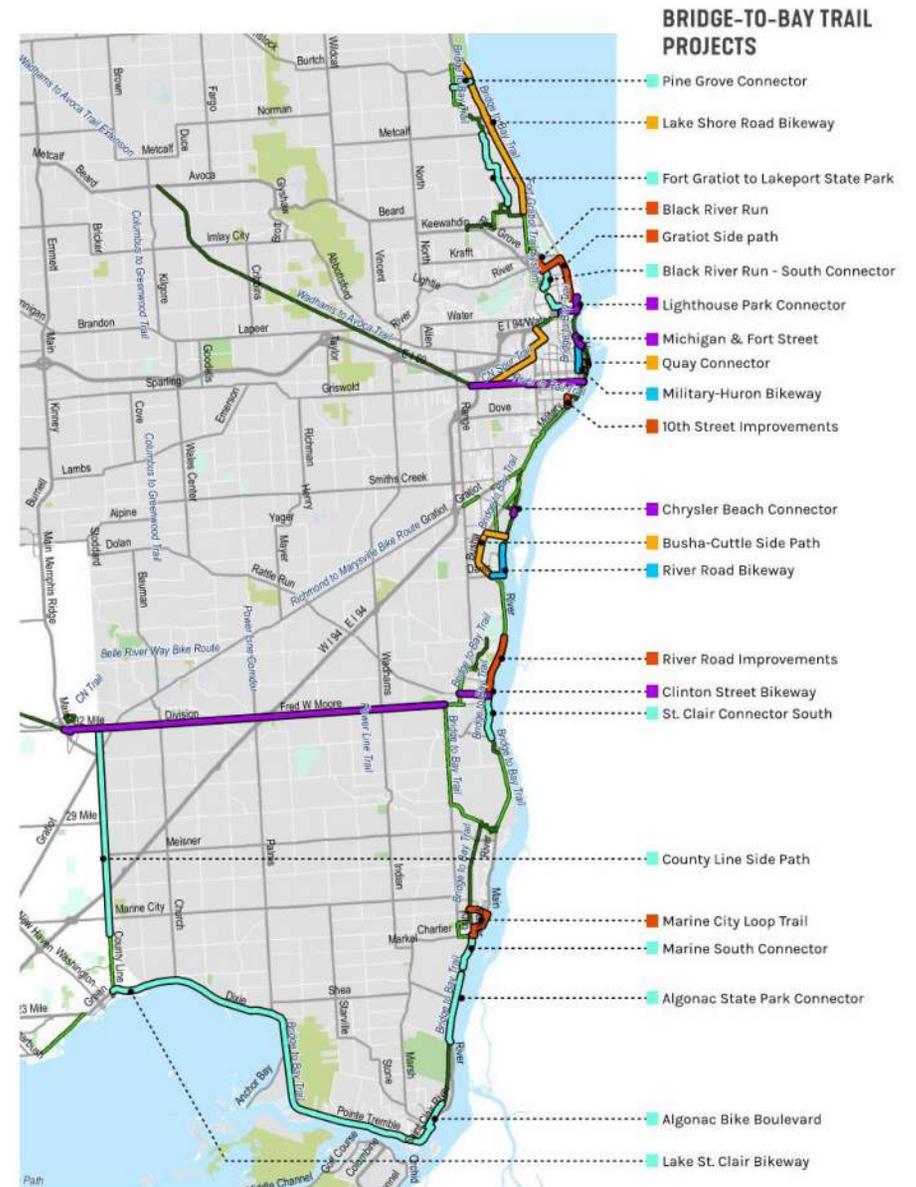
Proposed Bikeways: Islands

Bridge to Bay Trail

The County Bridge to Bay Trail is a 54-mile system of trails routes connecting New Baltimore around Anchor Bay and north along the St. Clair River corridor to Lakeport State Park. About eight miles of this Trail runs through Clay Township along Route 29 (Dyke Road / Pointe Tremble Road). The existing trail in the township is a combination of paved shoulder with some gaps. The MDOT's 2005 St. Clair County Nonmotorized Guidelines Map originally has shown that the Trail along Route 29 in township's mainland and Route 154 in the island.



In 2019, St. Clair County Metropolitan Planning Commission adopted the St. Clair County Trails Plan, which focused on filling the gaps along the Trail. However, that plan only identified gaps along the Trail along Route 19. The section of Bridge o Bay Trail in Clay Township was referred to as Lake St. Clair bikeway in the plan. The plan rated all gaps five ways based on their contribution to the Trail goals ranging from critical to secondary. Lake St. Clair bikeway was rated secondary. Secondary routes are considered last level of priority as these routes extend the trail system into new areas as opposed to filling gaps that connect existing trails together.

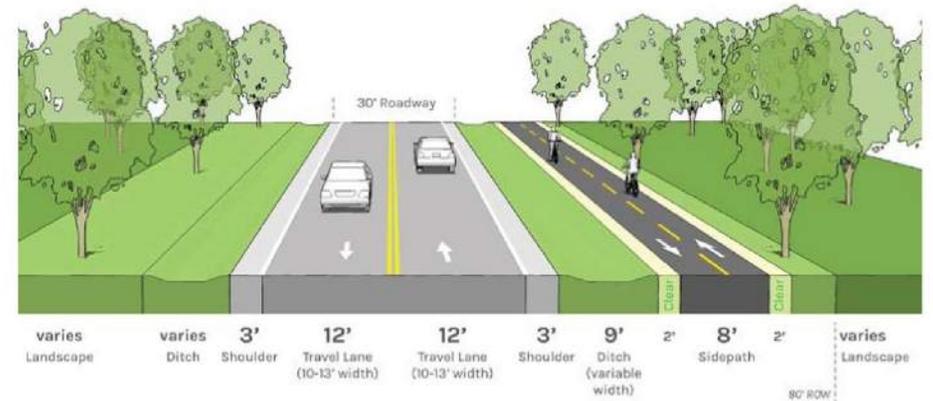
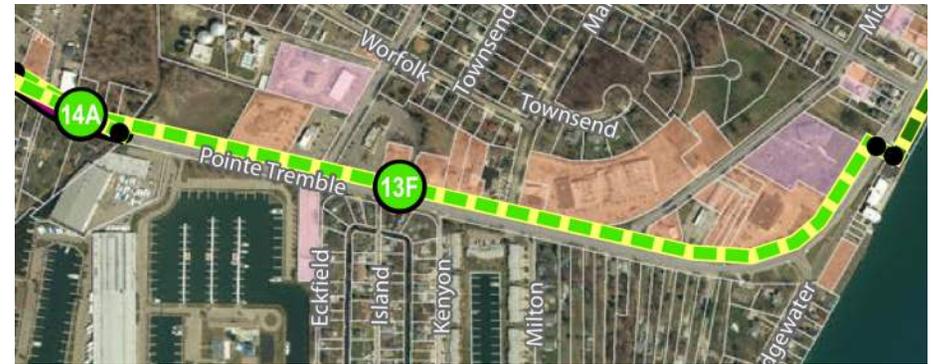


Lake St.Clair Bikeway

Even though it is considered secondary on a regional level, but on a local level, this is a critical path that would connect local and commercial key destinations along the shoreline. At the time of the Trail plan development, a local stakeholder’s group was formed with representatives from Ira, Algonac and Clay Township. MDOT does not have any plans for rehabilitating Route 29 at this time or in the near future, so it falls on the township to take the initiative and collaborate with the County and MDOT to implement this segment.

Recommended cross-section. The 2019 St. Clair County Trails Plan identified three gaps within the township boundary. The cross-sections in the following page are recommended in that Plan based on the traffic volumes, adjacent land uses and existing non-motorized facilities. The recommendations may be modified by individual communities based on further engineering and study. For example, the county plan refers to a eight foot sidepath, but based on current industry standards, a minimum of 10 to 12 feet width is recommended.

GAP 13F: POINTE TREMBLE ROAD (0.8 Miles)		
Extent	Proposed Facility	Design Notes
Liberty Street to Algonac Harbor Club	Sidepath	Widen plus expand sidewalk on the north/west side of the street into path sidepath. Southside has more obstructions.

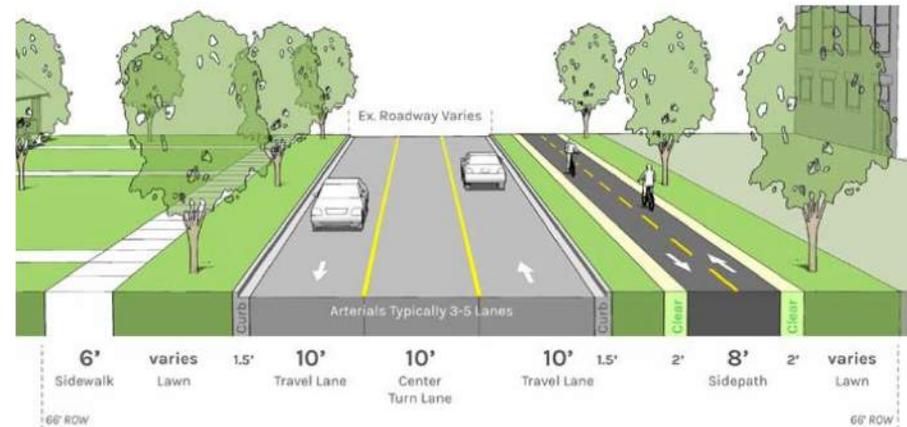


Source: 2019 St. Clair County Trails Plan

LTS-1 Interested, but Concerned Riders



GAP 14A: POINTE TREMBLE ROAD (3.1Miles)		
Extent	Proposed Facility	Design Notes
Algonac Harbor Club to Willow Court	Sidepath	Expand sidewalk on the north side into a shared use path and fill in sidewalk gaps

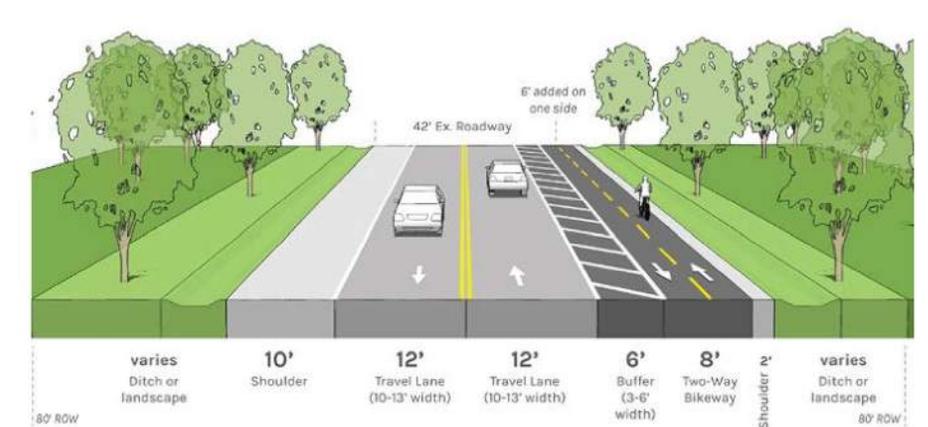
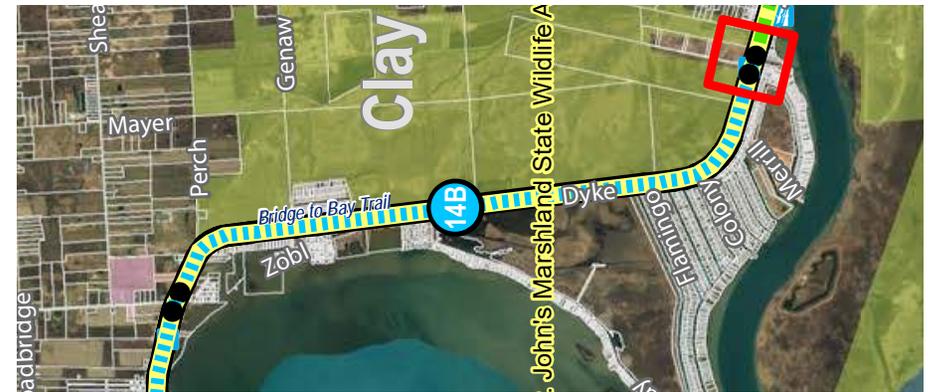


Source: 2019 St. Clair County Trails Plan

LTS-2 Interested, but Concerned Riders



GAP 14B: DYKE ROAD (3.8 Miles)		
Extent	Proposed Facility	Design Notes
Willow Court to Bouvier Boulevard (Ira Township)	Protected Bikeway	Transition sidepath to the south/west side of the road. Established a buffered sidepath/Trail.



Source: 2019 St. Clair County Trails Plan

Taft Road Bikeway

LTS-1 Interested, but Concerned Riders



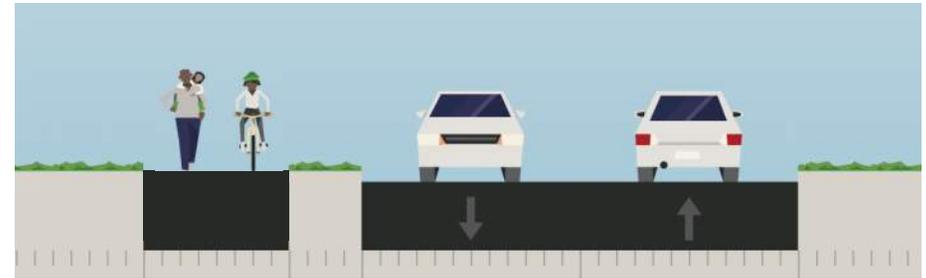
The proposed Taft Road bikeway is intended to provide an alternate route for bikers using Pointe Tremble Road and also a safe route for children biking to high school. The 1.5-mile bikeway is proposed runs across Island Drive, Taft Road and Muskrat Road. This route also provides access to township community facilities and Algonac High School

Recommended Cross-section: There is an existing sidewalk with a small green buffer on one side of all three streets. Based on existing conditions, this plan proposes two alternatives for this route to make it safer for both pedestrians and bicycle users: Widen existing sidewalk on the southside to eight feet or keep sidewalk and add buffered 2-way cycle track on north side (similar to Dyke Road).

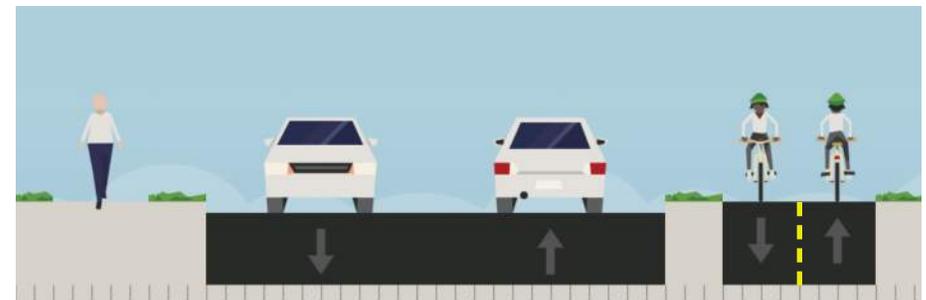
Challenges: Potential conflicts with non-conforming structures close to the Right-of-way, existing matured street tree growth and varying widths of green space adjacent to edge of pavement should be considered. Taft Road is also a no curb road, drainage also plays a major role in determining the best option for this route. Both options could be vetted after the plan with additional public input.

There is potential for extending this route to connect to residential neighborhoods and other schools along Marsh Road. Taft Road is a township road due to which the limitations that are usually associated with collaborating with outside agencies are minimal for this proposed segment.

TAFT ROAD BIKEWAY		
Extent	Proposed Facility	Design Notes
Island Drive, Taft Road and Muskrat Road	Sidewalk	Option 1: Widen existing sidewalk on the south side to eight feet or Option 2: Keep sidewalk and add buffered 2-way track on north side



Option 1. Widen existing sidewalk to minimum 8'
(Exact location and widths to be determined after final engineering study)



Option 2. Add a two-way bike lane, minimum 8' wide
(Exact location and widths to be determined after final engineering study)

Bikeways on the Islands: St. Clair Flats Bikeway Loop

LTS-2 Interested, but Concerned Riders



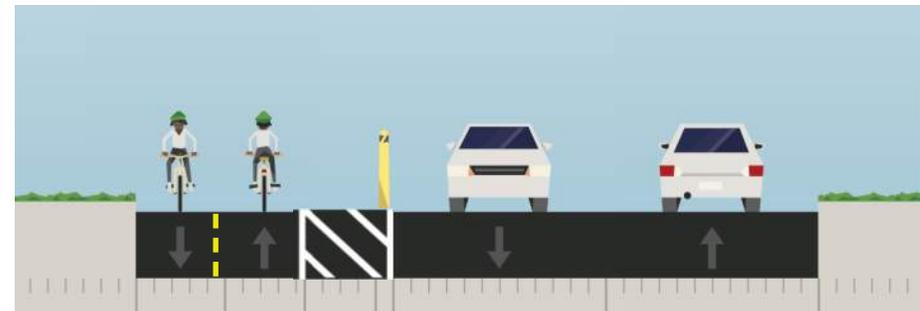
The data from the public input survey as part of this master plan update indicate that a majority (53%) of the residents do not consider the township as a vacation destination. However, the residents agree that the township should pursue opportunities to promote recreational tourism. San Souci and Peal Beach are top two destinations for resident and visitor bikers. The survey results also show a demand for bike rental facilities at these locations. Three bikeway routes are recommended for the Islands which are further explained in this section. A comfortable and well-connected network of bikeways will attract visitors and ensure that Harsens Island has safe non-motorized routes for residents and tourists alike.

This proposed bikeway begins at the Harsens Island Ferry dock, loops around the Harsens Island Airport and goes across the St. Clair Flats Reserve area. The extended bikeway offers a safe non-motorized route through the island's scenic natural features. The segment along Route 154 (M-154) was originally considered for MDOT's 2005 non-motorized Bridge to Bay Trail. However, since it does not offer connectivity to other regional trails, it was eliminated from the Bridge to Bay Trail route in the 2019 County Trails Plan. Despite being removed from the Bridge to Bay Trail, the proposed St.Clair Flats Bikeway loop will cater to the alternative transportation needs of residents and serve the township's recreational tourism industry.

Recommended Improvements: The recommended cross section proposes a protected bike lane with a painted shoulder. In places with conflicts with wetlands, a conventional bike lane with no shoulder can be considered. The township may further consider proposing a separated path with green buffer to reduce the level of traffic street to 1. However, the last option would be expensive.

Challenges: A majority of the bikeway is proposed along Route 154 which would require collaboration with the county and the state. The bikeway proposed for the southern portion of Route 154 provides a more protected path for bicyclists while the remaining section is connected to destinations in Sans Souci. Route 154 is the primary route of access for island residents. Traffic tends to travel at high speeds on Route 154 due to long unobstructed length. In some locations, the edge of pavement comes too close to the surrounding wetland areas. All the potential challenges should be considering during the final design and development of bike lane for this route.

ST.CLAIR FLATS BIKEWAY LOOP		
Extent	Proposed Facility	Design Notes
Along Route 154, La Croix Road, Columbine Road and Voakes Road	Protected Bikeway	Transition sidepath next to right lane. Established a buffered sidepath/Trail.



Protected Bikeway. Minimum 5' wide each lane with 5' wide buffer
(Exact location and widths to be determined after final engineering study)

Golf Course Bike Route

LTS-4 Strong and Fearless Riders



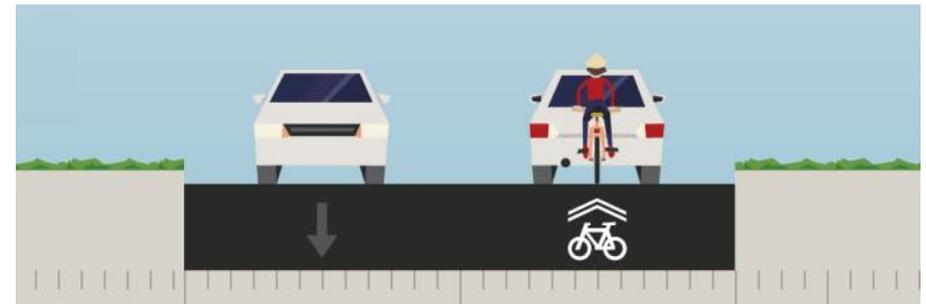
This proposed bikeway also begins at the Harsens Island Ferry dock. Heading north of the dock, the route runs along the waterfront and then follows Golf Course Road. This bike route connects to the proposed St. Clair Flats Reserve area loop along North Channel Road. This additional route provides non-motorized connectivity to the northern part of the island where many residential properties are located along the waterfront.

Recommended Improvements: No infrastructure improvements are recommended at this time for a part of the segment as noted in the table to the right. The plan proposes installing wayfinding and bike route signage along the route. Further engineering analysis is required to determine other appropriate markings and possible road widening. The proposed cross section is planned for confident bikers who are willing to share the road with on-going traffic.

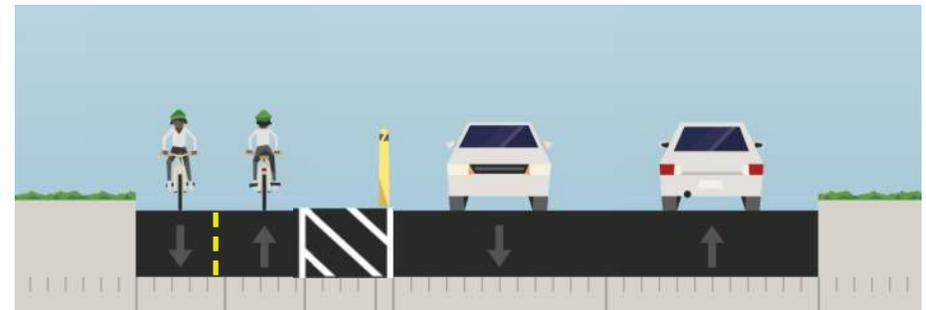
For the remaining segment along Krispin and Gold Course Road, the township may consider expanding the roadway to add a protected bikeway as the travel speeds tend to be 50 miles per hour or more. This would decrease the level of stress for the riders.

Challenges: Budget and construction challenges are not anticipated for this route unless the recommended infrastructure improvements are proposed. The challenge would be to identify the right locations for installing the wayfinding signage and educating the vehicle users to share the road with the bikers by following safety regulations such as maintaining the three feet distance while passing. The township should consider developing bike route maps with the destinations, amenities and best practices for sharing the road.

GOLF COURSE BIKE ROUTE		
Extent	Proposed Facility	Design Notes
North Channel Drive, Cottage Lane and Middle Channel Drive	Bike route	No infrastructure improvements Identify the route as a bike route by installing wayfinding signage .
Krispin Road and Golf Course Road	Protected Bikeway	Expand the roadway to include a shoulder bikelane



Bike Route (Exact location and widths to be determined after final engineering study)



Protected Bikeway. Minimum 8' wide lane with 5' wide buffer
(Exact location and widths to be determined after final engineering study)

San Souci Local Route

LTS-4 Strong and Fearless Riders

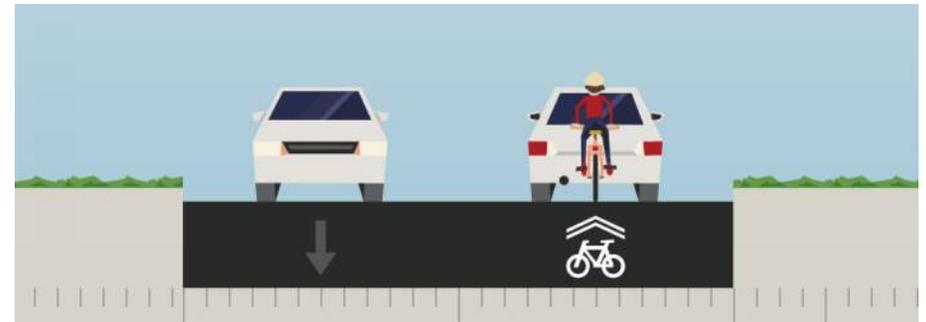


This proposed bikeway is intended to provide the most direct access to the San Souci area from the ferry dock. The route allows for safer passage to the restaurants, shops, and other potential viewpoint destinations in San Souci. The plan proposes a trail head located in San Souci for users who would like to visit the local retail or take a break at the area’s restaurants. The township should either consider constructing a new trailhead with basic amenities such as bike parking and restrooms, or encourage existing businesses to provide those same features for bikers within their facilities. This route is intended for confident bikers who are comfortable cycling closer to ongoing traffic. The level of traffic stress for a majority of riders will be 4, however, it is less intense than golf course bikeway. This can also generate lower stress level (LTS 3) as the riders share residential streets with cars at speeds up to 25 mph. Further engineering studies may be performed to explore other opportunities for roadway expansion and more robust bikeways along this route.

Recommended Improvements: No infrastructure improvements are recommended at this time. The plan proposes installing wayfinding and bike route signage along the route. Further engineering analysis is required to determine other appropriate markings and possible road widening. The proposed cross section is planned for confident bikers who are willing to share the road with on-going traffic. On a clear day, travelers that make it to this point are able to see the City of Detroit skyline. The township should identify potential viewpoint locations for installing benches so the users can pause and enjoy the views.

Challenges: The challenges would be similar to the golf course bike route. In addition, South Channel Drive is considered a major collector road. The road has varying curvature with potential blind spots for drivers. A further engineering analysis is warranted to determine where warning signs are needed to address sight distance and other hazard areas.

SAN SOUCI LOCAL ROUTE		
Extent	Proposed Facility	Design Notes
North Channel Drive, Orchid Boulevard and South Channel Drive	Bike Route	No infrastructure improvements Identify the route as a bike route by installing wayfinding signage



Bike Route

Bike route and wayfinding signage

South Channel Bikeway

LTS-2 Interested, but Concerned Riders

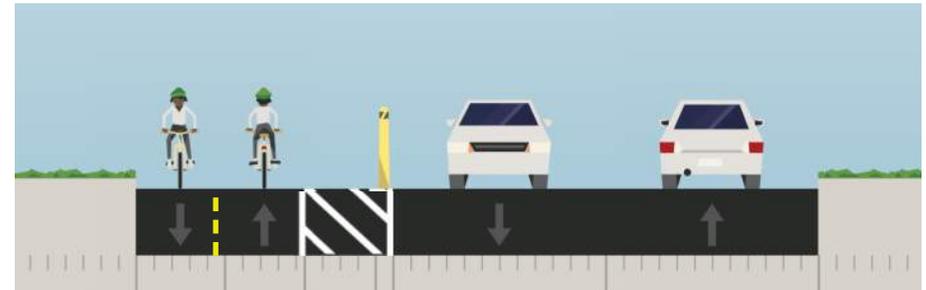


This proposed bikeway follows the picturesque South Channel Blkeway and takes advantage of the southern waterfront of Harsens Island. The first half of this route, starting from Voakes Road, is intended to have a protected bike lane that caters to larger groups of riders. However, the second half of this route will extend from South Channel Road to the turnaround at the southern-most part of the island. Similar to the Golf Course Road bikeway, this segment is for confident riders who are comfortable cycling close to ongoing vehicular traffic and across narrow bridges. There are multiple opportunities for benches, small gathering spaces, and viewpoints along this route to enhance the bike riding experience. Importantly, this route provides the most direct access to the San Souci area from the ferry dock and allows for safer passage to the restaurants and shops. The proposed San Souci local route will culminate at this path and connect to the overall bikeway network on Harsens Island.

Recommended Improvements: Due to existing road cross section and lack of room for expansion, this route is split into two segments. The first half from Voakes Road to Souht Channel Road is proposed to be expanded to include a protected two-way bike lane with a painted shoulder. No infrastructure improvements are recommended for the remaining half. The plan proposes installing bike route and wayfinding signage along the route. The level of traffic stress increases from LTS 2 to LTS 3 or 4 for the second half. On a clear day, travelers that make it to this point (Overlook no.3) are able to see the City of Detroit skyline. The proposed non-motorized plan makes couple of recommendations for potential viewpoint locations for installing benches so the cyclists can pause and enjoy the views.

Challenges: South Channel Drive is considered a major collector road. The road has varying curvature with potential blindspots for drivers. A further engineering analysis is warranted to determine where warning signs are needed to address sight distance and other hazard areas.

SOUTH CHANNEL BIKEWAY		
Extent	Proposed Facility	Design Notes
Along South Channel Drive from Voakes Road intersection to South Channel Road	Protected Bikelane	No infrastructure improvements Identify the route as a bike route by installing wayfinding signage
Along South Channel Drive from South Channel Road to end of the Drive	Bike Route	No infrastructure improvements Identify the route as a bike route by installing wayfinding signage



Protected Bikeway. Minimum 8' wide lane with 5' wide buffer
(Exact location and widths to be determined after final engineering study)



Bike Route
Bike route and wayfinding signage

Other Non-Motorized Recommendations

Connection to Blueways

Water based recreations activities and transport is one of the defining characteristics of Clay Township. Which is why it is crucial to acknowledge the importance to maintain the connectivity between the township’s Blueways” and Greenways corridor. Greenways are corridors of land recognized for their ability to connect people and places together. Blueways are aquatic version of Greenways. Opportunities to increase non-motorized access to the Ferry crossing locations, boat docks and similar facilities should be prioritized. These connections will contribute to economic development and celebrate local heritage.



Safe Routes to School

Earlier in this section, it was noted that childhood obesity levels can be reduced for kids who walk to school. There are four schools on the mainland’s which do not have complete non-motorized network within a mile. The two schools along Marsh Road are also accessed by residents of City of Algonac which would require collaboration with the city. The township should consider providing safe and continuous network around the schools.



Automated and Autonomous Vehicles

The demand for delivered goods and services via e-commerce continuing to grow in an already rapidly developing industry. This growth appears in the form of changing work environments, the patterns and modes of delivery, as well as empty public spaces such as roads, shopping areas.

In an effort to expand services to customers in certain areas and protect the wellbeing of employees, companies have been using small autonomous vehicles such as delivery bots and drones to deliver essentials such as food and medical supplies. These new modes of delivery, combined with personal vehicles, vans and trucks, are accompanied by different traffic and loading patterns as well as added traffic on public sidewalks. This raises concerns about traffic circulation and safety as well as sidewalk space for persons with disabilities. The township should monitor the local demand and amend general ordinance regarding right-of-way requirements and zoning ordinance to reflect changes to delivery systems and use of autonomous vehicles for human transportation.



Supporting Amenities

The trail system planned for the township is intended for primarily recreational use. As part of design development, the township should consider installing supporting amenities listed below in strategic location to e. Amendments to the ordinance should be considered to allow supporting land uses in San Souci area to allow supporting businesses such as bike rentals. This trail is intended to target two type of riders ‘Interested but Concerned’ and ‘Willing but Cautious’ who make up 60% of township residents. Additional amenities will attract family ridership.

The township should consider creating bike route/trail maps to educate residents and visitors of available routes and availability of supporting amenities along the route. These maps should be made available at strategic locations, such as trailheads, schools, township hall, local stores/gas stations, and ferry dock stations, etc. Amendments to the ordinance should be considered to allow for expansion of existing buildings to include supporting amenities such as restrooms or bike parking instead of building new structures. Opportunities for bike route users to use existing private business facilities should also be explored. Refer to the ‘Non-Motorized Plan’ for potential locations for such amenities.

SUPPORTING AMENITIES	
Amenity Type	Proposed Facility
Lighting	Helps with nighttime visibility Increase comfort and safety
Wayfinding	Directs users to destinations or other trail connections
Bicycle Parking	Short term parking to access walking trails and services such as retail and restaurants. All bike parking should meet the APBP guidelines (Association of Pedestrian and Bicycle Professionals). Wave racks are generally not recommended.
Bicycle Repair Kiosks	Addresses emergency bike repair needs Avoids disruptions in a trip
Green Infrastructure	Provide a sense of separation and safety. For example, street trees. Improvements such as porous pavement, bio-swales etc. Encourage environment friendly improvements
Access to Ferry	Providing bikers an access to Ferry will reduce long trips by cars
Trailhead & Restrooms	Usually located at the start or end of trails. Allows long distance riders to rest and refresh
Public Art	Provides opportunities to integrate cultural, historic and natural resources of a community



Transit Stops



Public Art



Bicycle Parking



Benches

Post Policy Adoption Recommendations

Wayfinding

Wayfinding signage makes it easier for people on foot or on bicycles to understand where they are and where they are going. Wayfinding signs help identify the route to important destinations and civic spaces. Effective wayfinding signage in strategic locations reduce stress and provide a level of comfort for infrequent users of a route. These are particularly critical when there are multiple ways to get to a destination, or if there are different bikeway improvements, which is the case for the recommended routes on Harsens Island.

Comprehensive wayfinding system typically include a combination of maps, distance, symbols, nearby amenities and local destination information. The township should consider studying different routes, identify nearby local destinations such as San Souci and the Ferry Dock, identify amenities such as bike repair station, bike rentals and viewpoints in order to propose a comprehensive wayfinding system. Wayfinding can also contribute local placemaking strategies and provide information of cultural and historic significance.

St. Clair County is in the process of developing an overall wayfinding signage plan for 54-mile Bridge to Bay Trail. The intent is to propose a unified design across different communities guiding users to local destinations and trails. The township should take the county level recommendations into consideration prior to designing a system for the township.



Collaboration

Collaboration with multiple stakeholders is another important tool for successful implementation. Most of the time, the roadway jurisdiction determines the combination of outside agencies that are required to be part of the stakeholder team. Local residents, surrounding municipalities, St. Clair County Planning, Recreation and Transportation Departments, Southeast Michigan Council of Governments (SEMCOG), Michigan Department of Natural Resources (MDNR), Michigan Department of Transportation (MDOT) and other local non-profit agencies such as Michigan Trails and Greenways, Rails to Trails conservancy are the potential members of a team.

Existing Non-motorized network maintenance

Like most communities in Michigan, most of existing non-motorized infrastructure in the township pre-dates Americans with Disabilities Act of 1990. It is mandatory for communities to have an ADA transition plan to update existing infrastructure to meet the standard ADA guidelines to serve people of all abilities. There are grants and funding opportunities offered by ADA Michigan for implementation of such programs. Coincidentally, most of the residents also consider the maintenance program for existing sidewalks in the township as average, as noted in the data collected through public input survey. The township should reassess and update the existing infrastructure and the maintenance/upgrade plan in place based on current best practices.

Complete Street Funding

SOURCE OF FUNDING OPTIONS			
Small Budget Short-Term	Small Budget Long-Term	Large Budget Short-Term	Large Budget Long-Term
Placemaking and temporary treatments such as painted bike lanes and shared-lane markings, wayfinding signage etc	Sidewalk maintenance, and ADA enhancement projects; shared-use paths and trailhead amenities	Sidewalk gap filling and replacement; mid-block and intersection pedestrian safety enhancements; protected and separated bike lanes	Regional trail and shared-use path gap-filling projects; streetscapes including pedestrian lighting; multi-use bridges and boardwalks crossing etc.
Type of funding sources			
- Neighborhood Associations - Nonprofit grants - Local Health Departments - Office of Highway Safety - Main Street and Downtown Development Authority programs - Crowdsourcing (e.g., Patronicity grants) -Local General Funds -Foundation grants -Individual donor	-Federal Transportation Funds (e.g., TAP, SRTS, CMAQ, etc.) Capital Improvement budget funds - Special Assessment Districts - State and Local Programs - Community Development Block Grants; Natural Resources Trust Fund; Recreation Passport; Land & Water Conservation Funds	- Foundation grants - Individual donors - Public-private partnerships - Infrastructure bonds - Special Assessment Districts	- Federal Transportation Funds (e.g., TAP, SRTS, CMAQ, etc.) - Foundation grants

Funding Sources

Adequate funding is the primary implementation tool. The township should consider integrating non-motorized projects with larger street infrastructure projects to allow for lower constructions costs. Depending on the scale of the project and available local funding, the township should assess multiple funding sources. Chapter six of SEMCOG’s Bicycle and Pedestrian Mobility Plan provides different types of federal, state, local and other funding sources in great detail. SEMCOG plan provides different funding sources depending on the projects of varying side and budgets.

Source: SEMCOG’s Bicycle and Pedestrian Mobility Plan, Chapter 6

Implementation Recommendations

Once the policy is adopted along with the Master Plan, the township should consider the following. Refer to Goals and Objectives for more details.

1. Identify the relevant sections township's zoning ordinance and amend to achieve the intent and goals of Complete Streets policy.
2. Analyze existing conditions in detail, work with township's public works department to setup a prioritization program for identifying critical projects, funding sources, stakeholders, and timeline for completion.
3. Consider establishing a sub-committee with representatives from appointed officials, elected officials, city employees from relevant departments and residents to discuss project scope and implementation of non-motorized infrastructure construction and maintenance on a regular basis.
4. Successful construction of Trails and bikeways should be followed by an efficient maintenance plan. The maintenance plan should address ongoing maintenance of all physical and aesthetic improvements to ensure that the non-motorized facilities are safe and usable.
5. Encourage educational programs within the township to educate all users on the laws and best practices to ensure safe usage of all non-motorized facilities.
6. The township should also review the current conditions of existing non-motorized network and come up with a recurring maintenance program for sidewalks, bikeways and ADA upgrades.



Scenic overlook no. 7: Golf Course Road looking north



Scenic overlook no. 3



Scenic overlook no. 3

Harsens Island Bridge

Background

Constructing a vehicular bridge from M-29 on the mainland of Clay Township to M-154 on Harsens Island has been a topic of discussion for many years, with several proposals submitted by the Detroit International Bridge Company since 2001. Those proposals were denied for various reasons, most recently in 2016 when MDOT and the MDEQ both denied the respective permit applications. Though the permits were denied, reviewing the application provides some guidance for what specific information the reviewing agencies are considering and what criteria must be met in order to receive regulatory approval. Additionally, the Township Planning Commission finds that a bridge connection to Harsens Island is consistent with promoting the health, safety and welfare of the community.

Harsens Islands Transportation Authority

The Harsens Island Transportation Authority (HITA), which is established to “plan, promote, purchase, acquire, establish, own, operate, or cause to be operated, maintain, improve, enlarge and modernize an intra-waterway transit waterway system serving the Harsens’s Island area” was also re-activated in 2019 and members from the respective boards have been appointed. The board was re-instated in response to residents who wanted to explore different potential options for transportation to the island.

SUGGESTED ACTION ITEMS:

- The Harsens Island Transportation Authority should set an annual meeting date annual calendar so that residents and stakeholders are aware of the meetings and can plan to attend for public comment and discussion.
- Any future bridge proposals should be discussed and reviewed in close coordination with the Harsens Island Transportation Authority.

Regulatory Approval

Due to the complex nature of the project, permits will be required from additional regulatory agencies, and additional public input is also necessary. It is suggested that coordination with federal and state agencies be initiated early in the feasibility process so that all parties are working in coordination with each other to maximize time and resources as any potential bridge proposal is developed.

ADVOCACY ACTION ITEM
 Invite representatives from the Michigan Department of Transportation (MDOT), Michigan Environment, Great Lakes & Energy (EGLE), US Army Corps of Engineers, United States Coast Guard and other regulatory agencies to HITA meetings, as needed, to further explore the construction of a new bridge.

Site Plan Review

For any proposal to be considered by a private operator, site plan review is required to ensure compliance with the applicable provisions of the Clay Township zoning ordinance. Construction as a public road improvement would likely not require site plan approval but would require important coordination at various levels of government. Site plan review and local coordination both provide the township the opportunity to review

the relationship of the plan to surrounding uses, accessibility, on and off-site pedestrian and vehicular circulation, off-street parking, public utilities, drainage, natural features, screening, and other relevant factors which may have an impact on public health, safety and general welfare.

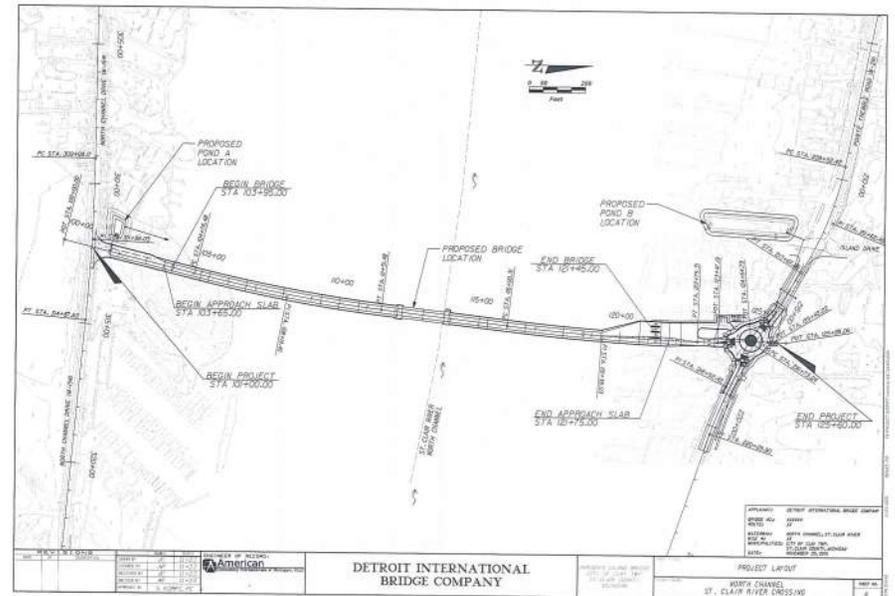


Illustration showing previously proposed bridge location, which was not approved.

Harsens Island Bridge

Planning and Zoning background issues that need to be addressed during site plan or other regulatory review:

- What type of structures (offices, toll booths, utility buildings, storage, etc.) would be constructed?
- What would be the general traffic access and vehicular circulation patterns on both the mainland and island parcels?
- What impact would heavier vehicles have on existing roads on Harsens Island?
- Would there be appropriate standing areas for vehicles waiting to cross when the bridge is in its “up” position, both on the mainland and island sides?
- Would the bridge allow pedestrian and bicycle traffic, and if so, how would both parcels be designed to minimize potential conflicts with vehicles?
- How would vehicular access from M-29 be handled? Is there adequate rights-of-way width to support a round-about, and have the appropriate road agencies been consulted?
- What additional traffic control measures are being contemplated?
- What signage is being proposed?
- What type of lighting is being proposed, and what will the impact be on adjacent properties, especially those planned, zoned and developed with residential homes?
- What is the proposed height clearance for boats when the bridge is in its “down” position? What percentage of anticipated boat traffic will be able to pass without requesting the bridge be raised?
- What contingency plans would be in place if the bridge was not operational?

Environmental concerns that need to be addressed:

- How will the proposed bridge impact, or be impacted by, river flooding?
- What effect will the new bridge have on ice dams and floating ice?
- Is there potential that additional ice damming would adversely impact upstream flooding?
- What impacts would the new bridge have on stormwater runoff and related impacts on nearby properties?
- What would be the potential noise impacts be on adjacent properties?
- Would endangered species be protected?
- Would there be a potential for the contamination of water and soils during construction, and if so, what would be done to mitigate/eliminate that potential contamination?
- Would construction of a bridge disrupt wetlands and floodplains?
- Would a completed bridge impair wetlands and floodplains?

Economic concerns that need to be addressed:

- What is the long-term economic viability of the bridge?
- If the bridge is ever abandoned, are adequate measures in place to ensure its removal?
- What impact will the proposed bridge have on property values in the immediate area?

ZONING ACTION ITEM

Review the zoning code and consider adopting specific criteria that must be met, addressed or discussed in order for a bridge project to be eligible for Planning Commission approval. For a public project, this list could also be helpful during the intergovernmental review process.

Implementation

Implementation

The thoughtful preparation and adoption of any plan would be of diminished value without a program of implementation strategies. The implementation strategies of this chapter will assist the township in putting the key recommendations of the Master Plan to work.

The implementation program is based on the goals and objectives discussed earlier. Some of these goals are carried over from the previous Master Plan. A specific Zoning Plan outlines steps that can be taken toward implementation through amendments to the Zoning Ordinance.

The tables that follow assign actions to the goals and objectives, leaving room to establish priority levels for short-term, mid-term, and long-term items as the next step following adoption of this plan. This chapter should be reviewed periodically and at least annually to assess progress and adequately budget for specific strategies. Each action should have a “lead,” a board, commission, group, or individual who is responsible for project initiation and coordination.

Zoning Plan

The Zoning Ordinance is one of the primary tools for implementing the Master Plan. Many of the land use recommendations, goals and objectives found in this plan can be aided by amendments to the township’s Zoning Ordinance. Amendments can range from minor changes to text all the way to the creation of new districts, which will be needed based upon the updated Future Land Use Plan.

Implementation

The best plans are those that are implemented in a consistent, incremental, and logical manner. The implementation matrix that follows is designed to show how the goals of the Master Plan are fulfilled by the action strategies. All boards, commissions, and authorities are encouraged to read through all of the strategies to understand how they all work together to create a better community for residents, business owners and visitors.

Aside from the modification of existing districts and the creation of new districts, some objectives of the Master Plan will be addressed with text amendments. The implementation tables that follow in this chapter identify the amendments that are necessary to move the towards toward its goals.

ACTION STRATEGIES FOR WALKABLE PLACES

Clay Township has designated three distinct “places” in the township: San Souci, Pearl Beach, and East End. These are destinations. People are encouraged to drive, bike or walk there. Once there, they are encouraged to walk, shop, engage with others, play, and take in the unique waterfront and natural characteristics of the area.

San Souci already has many key elements of placemaking: shops form a continuous streetwall, sidewalks abut storefronts, pedestrian benches and other amenities are present, and much more. Pearl Beach and East End will require more actions to become walkable places – destinations in the township. Other destination, such as local and state parks, also serve as places, but the activities there typically are focused on recreational activities.

Implementation

Aside from the modification and consolidation of existing districts and the creation of a new residential district (to support Residential 5), some objectives of the Master Plan will be addressed with text amendments. The implementation tables that follow in this chapter identify the amendments that are necessary to move the city toward its goals.

IMPLEMENTATION STEPS FOR RECOMMENDED CHANGES TO THE ZONING DISTRICTS		
Future Land Use Designation	Current Zoning District (Zoning Map Areas)	Intended Zoning District / Other Action
Rural Residential	RS-1 Rural Suburban RS-2 Rural Suburban	<ul style="list-style-type: none"> • Create RR Rural Residential district after consolidating RS-1 Rural Suburban & RS-2 Rural Suburban
Single Family Residential	R-1 One Family Residential RS-1 Rural Suburban	<ul style="list-style-type: none"> • R-1 One Family Residential • Up zone RS-1 Rural Suburban Area
Residential Transition (NEW)	Multiple	<ul style="list-style-type: none"> • Create RT Residential Transition district
Waterfront Residential	R-1L One Family Residential R-1 One Family Residential R-2 One Family Residential	<ul style="list-style-type: none"> • Eliminate R-1L One Family Residential • Create WFR Waterfront Residential district after consolidating R-1 One Family & R-2 One Family
Waterfront Residential 2 (NEW)	R-3 One Family Residential R-4 Perch Point Isles Residential	<ul style="list-style-type: none"> • Create WFR2 Waterfront Residential 2 district after consolidating R-3 One Family & R-4 Perch Point Isles)
Multiple Family Housing	RM Multiple Family Residential	<ul style="list-style-type: none"> • RM Multiple Family Residential
Manufactured Housing Community	Manufactured Housing Park	<ul style="list-style-type: none"> • MHP Mobile Home Park (Rename Manufactured Housing Park)
Waterfront Commercial	C-2 Small Business C-3 General Business	<ul style="list-style-type: none"> • Create WFC Waterfront Commercial district
Waterfront Mixed Use (NEW)	Multiple (Pearl Beach core, Sans Souci, East End)	<ul style="list-style-type: none"> • Create WFMU Waterfront Mixed Use district
Commercial & Office	C-2 Small Business C-3 General Business	<ul style="list-style-type: none"> • C-2 Small Business • C-3 General Business
Industrial	I-1 Industrial I-2 Industrial (None)	<ul style="list-style-type: none"> • I-1 Industrial • I-2 Industrial (None)
Recreation & Conservation	Multiple (Primarily RS-1 & R-1)	<ul style="list-style-type: none"> • Multiple • Create RC Recreation & Conservation district by rezoning the DNR property
Public & Semi-Public	Multiple (RS-1, R-1 & C-3)	<ul style="list-style-type: none"> • Multiple (RS-1, R-1 & C-3)

Implementation

ACTION STRATEGIES FOR WALKABLE PLACES

In evaluating thousands of public spaces around the world, the Project for Public Places has found that successful ones have four key attributes:

ACCESSIBILITY — walkable, convenient

ACTIVE — fun, engaging

COMFORTABLE — attractive, clean

SOCIABLE — neighborly, welcoming

These and similar gathering places are often referred to as “third places”, a term coined by sociologist Ray Oldenburg, and it refers to places where people spend time between home “first place” and work or school “second place”. For these to reach their full potential, it requires a partnership between private business owners, residents and local government.

Note that the timeframes are not included at this time. This should be on of the first actions by the Planning Commission and staff as a part of the Master Plan Update Adoption Process

FUNDING SOURCES	
MATRIX CATEGORIES	DEFINITIONS
1	General fund and/or other typical financial mechanisms available to the city for general government operation and for public infrastructure and services improvement
2	Tax increment financing revenues as provided by the Brownfield Redevelopment Authority (BRA) and Local Development Finance Authority (LDFA).
3	Historic Preservation programs, including historic tax credits.
4	Redevelopment and urban renewal programs (Community Development Block Grant (CDBG), etc).
5	Special Improvement District programs that may be created for maintenance and improvement of public facilities. Certain funds may also be used for planning, design, construction, managing, marketing activities and business recruiting services.
6	Grants related to transportation improvement, streetscape enhancement and alternate modes of travel programs; funds to improve air quality in areas that do not meet clean air standards; funds for recreation-related acquisitions and improvement.
7	Non-traditional grants and funding programs for beautification, enhancement and public art.
8	Public-Private Partnerships (P3)

IMPLEMENTATION MATRIX CATEGORIES	
MATRIX CATEGORIES	DEFINITIONS
Action Strategy	The actions necessary to carry out goals and objectives
Lead Body	Identifies the primary party responsible for accomplishing the action strategy
Timeframe	Identifies and prioritizes the timeframe for the action strategy to be implemented.
Potential Funding Source	Lists potential funding sources that could be utilized to accomplish the action strategy. See the Funding Sources Matrix (right) for reference details.
Supporting partners	Identifies other parties involved in the accomplishment of the action strategy

Implementation Matrices

In order to illustrate the connection between goals, objectives and action strategies, each of the implementation matrices that follow align with the Master Plan goals outlined in pages 55-62. Within each matrix, the action items are broken into subcategories intended to assist with identification and prioritization. Not all goals contain action items within each subcategory. These subcategories include:

Zoning Action Items. These are items requiring zoning amendments and will generally be led by staff and the Planning Commission.

Advocacy Action Items. These will be items involving education of the community, including residents, business owners, property owners, developers and design professionals. They will be led by a combination of staff, boards and commissions.

Other Action Items. Other items may involve research, study and further evaluation by staff and/or other boards and commissions.

ACTION STRATEGIES FOR WALKABLE PLACES

Placemaking action strategies to consider include the following:

- 1) Amend the zoning ordinance to include a form-based district(s) for the three focus areas that will foster a walkable, mixed use environment.

The Outbox below is a portable platform that creates a gather space in a small location. It can serve many functions: parklet, outdoor dining, outdoor office space, and more.



Implementation: Housing

GOAL: To maintain, support, enhance and protect the character of residential areas.				
ACTION STRATEGY	LEAD BODY	TIME FRAME	POTENTIAL FUNDING SOURCES	SUPPORTING PARTNERS
ZONING ACTION ITEMS				
Assess site design standards and update as needed to ensure adequate provisions exist that protect residential development from the negative impacts of non-residential development, including noise, traffic, waste management, light trespass, privacy, and poor property maintenance	Planning Commission		1	Staff
Consider ordinance changes to permit smaller single-family homes and expanded opportunities for attached single-family homes	Planning Commission		1	Staff
ADVOCACY ACTION ITEMS				
Develop resource packet for homeowners that identifies available home improvement financing tools, guides for home maintenance, and a directory of local tradespeople.	Staff		1	Planning Commission
Develop policies and programs to facilitate the development of new public and private senior housing facilities to meet the needs of the township's expanding aging population.	Staff		1	Planning Commission
Pursue strategies to make Clay Township an "Age-Friendly Community."	Staff		1	Planning Commission
OTHER ACTION ITEMS				
Create a development review guide or similar tool that will help residents, staff and code enforcement understand the intent of ordinances.	Staff		1	Planning Commission
Establish a Capital Improvement Program and encourage residents to participate in the development of the plan.	PC & Staff		1	Planning Commission
Budget for a feasibility study to determine the cost-benefit analysis of adding sewer and upgrading utilities on Harsens Island.	Twp. Board		1, 5 & 6	Planning Commission

ACTION STRATEGIES FOR WALKABLE PLACES

Placemaking action strategies to consider include the following:

2) Create a "Clay Township Guide for Creating Places People Love" that illustrate actions that property owners can take to enhance placemaking on private property. This is intended to be an idea guide that provides descriptions and photographs of techniques and features that improve placemaking. They can be as simple as placing a few chairs and amenities between buildings to building parklets and small plazas.



This photo shows how the addition of furnishings and landscaping can activate a small space between buildings.

Implementation: Resilient Outdoor Lifestyle

ACTION STRATEGIES FOR WALKABLE PLACES

Placemaking action strategies to consider include the following:

3) Include “review of placemaking elements” in the site plan review standards of the zoning ordinance for submittals within Pearl Beach, San Souci and East End.



Placemaking elements can be simple and inexpensive or elaborate. The examples above are from for Pinewood Forest, GA and include a ping pong table as a work of art and a community garden.

GOAL: To protect and enhance natural resources within the township, and to withstand and emerge from environmental threats and challenges.

ACTION STRATEGY	LEAD BODY	TIME FRAME	POTENTIAL FUNDING SOURCES	SUPPORTING PARTNERS
ZONING ACTION ITEMS				
Review zoning standards and consider updating the design standards to ensure future development meets expected area standards	Planning Commission		1	Staff and Twp Board
Adopt zoning standards that will allow for flexible uses while preserving the historical and existing character of these areas	Planning Commission		1	Staff, Twp Board & DDA
ADVOCACY ACTION ITEMS				
Develop resource packet for visitors to navigate and understand the destinations within the township	Staff		1	Planning Commission
Consider centralizing and disseminating useful (non-essential) township community events and information into a monthly or quarterly publication to keep township residents informed of opportunities,	Staff		1	Planning Commission
Market the township as a vacation destination and seek developers to build overnight lodging to support weekend tourism	Staff		1	Planning Commission
OTHER ACTION ITEMS				
Identify contacts that manage state owned lands and encourage frequent dialogue	Staff		1	Planning Commission
Establish a Capital Improvement Program and encourage residents to participate in the development of the plan.	Staff		1	Planning Commission
Publish water levels as on a consistent basis and consider establishing a resiliency plan based on observed water levels	Staff		1	Planning Commission
Ensure hazardous waste material disposal guidelines are easily accessible, including a contact list of local facilities that are equipped to deal with such materials	Staff		1	Planning Commission
Identify areas that have high potential and consider acquiring land when a public benefit should be preserved or enhanced	Planning Commission		1	Planning Commission

Implementation: Open and Efficient Transportation

GOAL: Multiple modes of direct, safe access for residents and visitors of all ages and abilities throughout the township; reliable island access

ACTION STRATEGY	LEAD BODY	TIME FRAME	POTENTIAL FUNDING SOURCES	SUPPORTING PARTNERS
ZONING ACTION ITEMS				
Implement mixed use and higher density districts to direct developments that will support core commercial areas	Planning Commission		1	Staff
Adopt zoning standards that will require bike parking when along designated routes or that incentivize bike parking by reducing vehicle parking if provided.	Planning Commission		1	Staff
Review the zoning code and consider adopting specific criteria that must be met, addressed or discussed in order for a bridge project to be eligible for Planning Commission approval. For a public project, the list on page 134 may be referenced during the intergovernmental review process.	Planning Commission		1	Staff
ADVOCACY ACTION ITEMS				
Attend St. Clair County Road Commission or Planning Commission meetings that offer dialogue or input into the regional transit opportunities	Staff		1	Planning Commission (PC)
Market the township as a regional biking and kayaking destination	Staff		1	PC
Work with St. Clair County and MDOT to seek our funding for the St. Clair Bikeway and other non-motorized projects in the township	Staff		1	Planning Commission
Work with the St. Clair County Road Commission to ensure the county's transit plan aligns with the townships goals	Staff		1	PC
Work with county and state to seek federal funds for a feasibility study of a bridge to Harsens Island.	Staff		TBD	Township Board
Complete an in depth examination of the requirement for safe, reliable and adequate intra waterway transportation. Work with Harsens Island Transportation Authority(HITA) and seek funding to support Intra Waterway Transportation needs to support the vision for Clay Township including Harsens Island.	Staff		TBD	HITA Township Board

Implementation: Open and Efficient Transportation

GOAL: Multiple modes of direct, safe access for residents and visitors of all ages and abilities throughout the township; reliable island access

ACTION STRATEGY	LEAD BODY	TIME FRAME	POTENTIAL FUNDING SOURCES	SUPPORTING PARTNERS
OTHER ACTION ITEMS				
Regularly check funding sources listed in complete streets chapter and track township eligibility	Staff		1 & 6	PC & Twp Board
Establish a person of contact with MDOT to ensure there is always open communication	Staff		1	PC
Identify priority sidewalk gaps that can should be filled and work with landowners to provide safer pedestrian infrastructure when the right of way limits options	Staff		1	Planning Commission
Develop a wayfinding signage program that will provide design standards for unified wayfinding signs, including where signs should be placed and the regulatory standards that need to be met for MDOT approval.	Staff		1	Planning Commission
Open communication with ferry owners and hold regular meetings to receive updates on the status of upgrades or repairs. The Harsens Island Transportation Authority should set an annual meeting date annual calendar so that residents and stakeholders are aware of the meetings and can plan to attend for public comment and discussion.	Township Board		1	Staff & Twp Board
Identify case studies and social media messaging that showcase the use of message boards and how they can ease traffic concerns related to backups and delays	Staff		1	Planning Commission
Formalize a contingency emergency access plan in the event ferry service is disrupted.	Staff		1	PC & Twp Board
Identify parcels near the ferry area that could be acquired to serve as overflow, park & ride or emergency parking.	Staff		1	PC & Twp Board
Any future bridge proposals should be discussed and reviewed in close coordination with the Harsens Island Transportation Authority and should include additional public input.	Township Board			PC and Staff

Implementation: Prosperous Local Economy

ACTION STRATEGIES FOR WALKABLE PLACES

Placemaking elements can be simple and inexpensive or elaborate. This example from Pinewood Forest, GA include a decorative fence



GOAL: Policies that strengthen existing business and promote new development.				
ACTION STRATEGY	LEAD BODY	TIME FRAME	POTENTIAL FUNDING SOURCES	SUPPORTING PARTNERS
ZONING ACTION ITEMS				
Review the Zoning Map to ensure that intense non-residential development is concentrated in areas served by utilities and infrastructure	Planning Commission		1	Staff
Review the zoning ordinance to ensure temporary uses regulation is flexible while still providing necessary oversight during approval	Planning Commission		1	Staff
ADVOCACY ACTION ITEMS				
Market Pearl Beach and San Souci as unique waterfront development opportunities	Staff		1	Planning Commission
Direct new and growing industrial businesses to desired township locations.	Staff		1	Planning Commission
Work with local businesses to encourage non-motorized travel. This may include offering delivery services for shoppers who make purchases and are traveling on foot and by bicycle.	Staff		1	Twp Board
OTHER ACTION ITEMS				
Schedule annual check-ins with the DDA to facilitate discussion and align goals with available funding	Planning Commission		1	DDA & Staff
Explore a range of tools to assist with the rehabilitation, reuse and/or redevelopment of blighted and polluted commercial and industrial properties through possible creation of a brownfield redevelopment authority or through coordination with the existing DDA.	Staff		1	Planning Commission
Develop an illustrated guidebook that property owners can use as an idea resource for placemaking improvements on private property	Staff		1	Planning Commission

