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Memorandum

To: City of Mackinac Island Planning Commission
From: Adam Young, AICP, Project Manager
Date: October 2, 2024
Subject: Master Plan - Complete Draft Plan

Background

After a more than year-long planning process that featured surveys, stakeholder discussions, town meeting, public open house, and monthly progress meetings (12 total), the Master Plan Steering Committee has prepared a complete draft of the 2024 Master Plan. This draft, dated September 10, 2024, is being provided for your review. An electronic copy of the draft report is available for download from the City website at the following link:

<https://www.cityofmi.org/community/page/master-plan-update-sept-2024>

The draft 2024 Master Plan is an update of the City's previous plan adopted in 2018. Although the overall structure and many elements of the 2018 plan remain in place, the 2024 Master Plan includes numerous changes and additions. The following is a summary of key changes and additions found in this draft:

- The background studies chapters (Chapter 2 through 5) have seen significant revisions to document the many changes that have occurred within the city over the past 5 years.
- Chapter 6 has been updated to document the planning process that was followed and summarize the feedback that was received from citizens and stakeholders during the many engagement opportunities.
- In light of the findings of the background studies and feedback received from citizens and stakeholders, the Steering Committee:
 - Reviewed and incorporated a variety of changes within the Goals and Policies sections of Chapter 6
 - Reviewed and made limited changes to the Future Land Use narrative and map within Chapter 7
 - Updated the listing of recommended zoning ordinance changes within Chapter 8
 - Established a new Implementation Matrix that serves as a guide for future actions needed to implement the vision of the Master Plan (Chapter 8)

Planning Commission Action Requested

Before a new master plan can be adopted, the Michigan Planning Enabling Act requires the draft plan to be distributed to surrounding communities, county, and other specified entities for review. To initiate this State-required review process, the City Planning Commission needs to forward the draft plan to the City Council, who must then authorize the distribution of the draft plan for review.

The following is a suggested motion for the Planning Commission:

I move to forward the draft 2024 Master Plan to the City Council for review and request that the Council authorize the distribution of the draft plan for review in accordance with the Michigan Planning Enabling Act.

Master Plan Adoption Process

Once the draft plan is authorized for distribution by City Council, letters will be sent out to the surrounding communities, county, and other specified entities containing a link to the draft plan. These entities will have 63-days to provide comments back to the City in writing. After the 63-day review period has ended, the Planning Commission may hold a legally noticed public hearing. After the public hearing, the Planning Commission may adopt the plan.

If you have any questions, please feel free to reach out to me at 313.961.3651 or ayoung@wadetrim.com.

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[20241002 Master Plan Complete Draft-Memo.docx](#)

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Draft Report – September 10, 2024

City of Mackinac Island 2024 Master Plan

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Mackinac Island is a community comfortable with its history. Reminders survive of the Island's heritage as a Native American gathering place, a French missionary settlement, military and fur trading post, fishing station, and a favorite and healthful destination for wealthy Victorian travelers. This unique heritage led to the designation of the entire Island as a National Historic Landmark.

One of the most unique aspects of Mackinac Island is the horse tradition. The horseless carriage was first banned in the village in 1898 and then in the State Park in 1901. The automobile ban carries on to this day. Horses transport goods and people year round. Horse-drawn drays pick up household items, mail, commercial goods, hay and construction material from the ferry docks in the season and the airport in the wintertime. Horse manure, rubbish, and construction debris is hauled by horsepower to the solid waste facility. Some residents keep horses for their own personal use and enjoyment. Horses are also available for rental by visitors. Horses are not only for work, but also for fun. Miles of wooded trails are available for riding. Horse culture is what makes Mackinac Island so special and different from other tourist towns.

The Island is a small town with close family relationships and a sense of shared history. It is one of the country's premier tourist destinations, and a highly desired location for vacation and retirement homes.

An alternative to horsepower is the bicycle. Residents use bikes daily for work, school, errands, and recreation. It is an essential mode of transportation unique to the Mackinac Island community. Bicycle rental businesses flourish during the Summer season. Visitors often bring their own personal bikes. Competition for the right of way and parking spaces is considerable. The interaction of horses, bikes and pedestrians requires unique planning tools for traffic control.

The City of Mackinac Island is an exceptional Michigan community with special land use circumstances and concerns. The Island is a small town with close family relationships and a sense of shared history. It is one of the country's premier tourist destinations, and a highly desired location for vacation and seasonal living. Business thrives on the island, but is hampered by the lack of housing for employees which directly competes with the need for affordable housing for new island families.

Life on Mackinac Island is not completely unlike that of the mainland. Residents do things in a different way and within the confines of a small island without automobiles.

Mackinac Island Public School holds classes for preschool through high school. Students travel to and from school by foot, bicycle, horse-drawn taxi or snowmobile. School children regularly travel off Island to attend special programs, participate in sports and competitive events. On average, there are 70 students in school per year, with an average graduating class of six.

Employment on the Island consists mainly of hospitality related jobs, as well as important services such as construction, education, administration and medical services. Some residents own and operate their own businesses. The busy tourist season runs from April until November. Wintertime on Mackinac Island is generally quiet and serene and attracts some tourists and visitors; however, significant construction work also

occurs on the Island during the off-season, which can impact the Island's otherwise serene character through construction-related noise and traffic. A few local accommodations and restaurants are open for the entire year to serve residents and welcome visitors. Groomed trails welcome skiers and the many community events are open to all visitors. Island residents relax and enjoy the less hectic season spending time with family and friends and participating in community events.

Life on the Island does present special challenges. About 82 percent of the Island is a State Park under the direction of the Mackinac Island State Park Commission, enacted by legislation in 1895. The remaining 18 percent (less than one square mile) of the Island is privately owned and is in high demand for commercial and residential development. Because of this, affordable housing for the local year-round community is extremely scarce, and housing for seasonal employees is difficult to secure.

Purpose and Planning Process

The purpose of the City of Mackinac Island Master Plan is to preserve Island culture and history, protect natural resources, and support a thriving economy, while confronting challenges from development and limited infrastructure expansion capability. The Master Plan provides guidelines for future development and is the basis of the Mackinac Island Zoning Ordinance.

This Plan presents extensive background information for the City of Mackinac Island, including socioeconomic data, description and mapping of natural and historic resources, and an inventory of existing community facilities. Information is analyzed to identify important characteristics, changes and trends for Mackinac Island. Community concerns are identified based on citizen participation in meetings, workshops and stakeholder interviews. The results of recent surveys, previous planning studies, and input from City commissions and committees produced goals and policies to guide future land use based on the background studies, key land use trends, and community issues. These goals, along with a detailed map of existing land use, provided the basis for the Future Land Use Map. The map specifies the extent and location for the various types of future development. This Plan also provides suggestions for implementation of the identified goals and policies. The guidance provided by this Master Plan will be utilized in updating the Zoning Ordinance and developing a Capital Improvement Program.

Location and Regional Context

The City of Mackinac Island is located in the Straits of Mackinac between Lake Huron and Lake Michigan, three miles east of the City of St. Ignace. According to the City charter, the City includes the land areas of Mackinac Island and Round Island and the navigable waters adjacent to the islands for a distance of one mile off shore. The total land area of Mackinac Island (not including Round Island) is approximately 2,221 acres (3.5 square miles) including about 8.5 miles of Lake Huron shoreline. Only 400 acres on Mackinac Island are under private ownership, and the remaining 1,821 acres (approximately 82 percent) are owned by the State of Michigan.

For reference, **Figure 1-1** shows the regional location and transportation facilities while **Figure 1-2** provides a parcel line and base map of Mackinac Island.

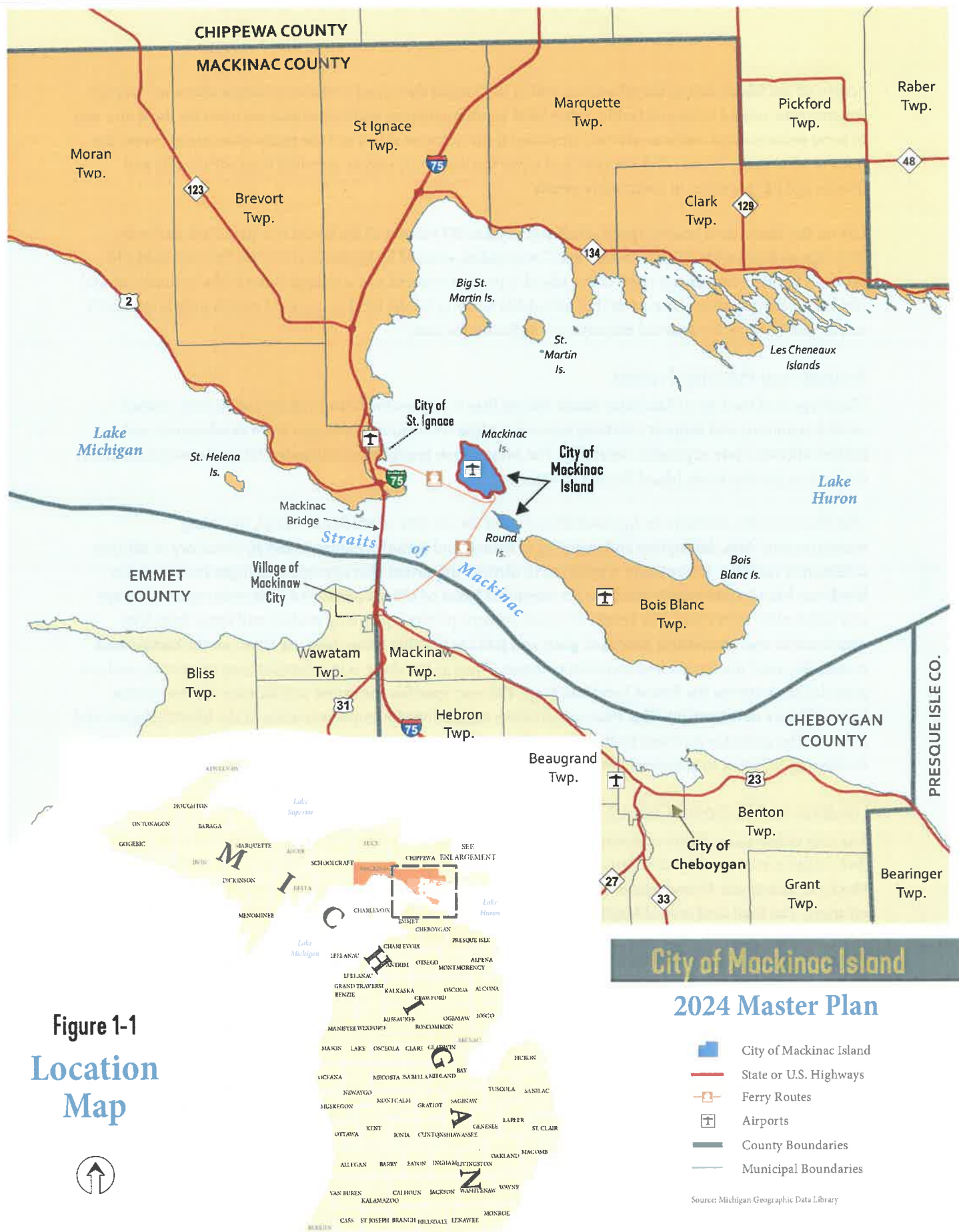
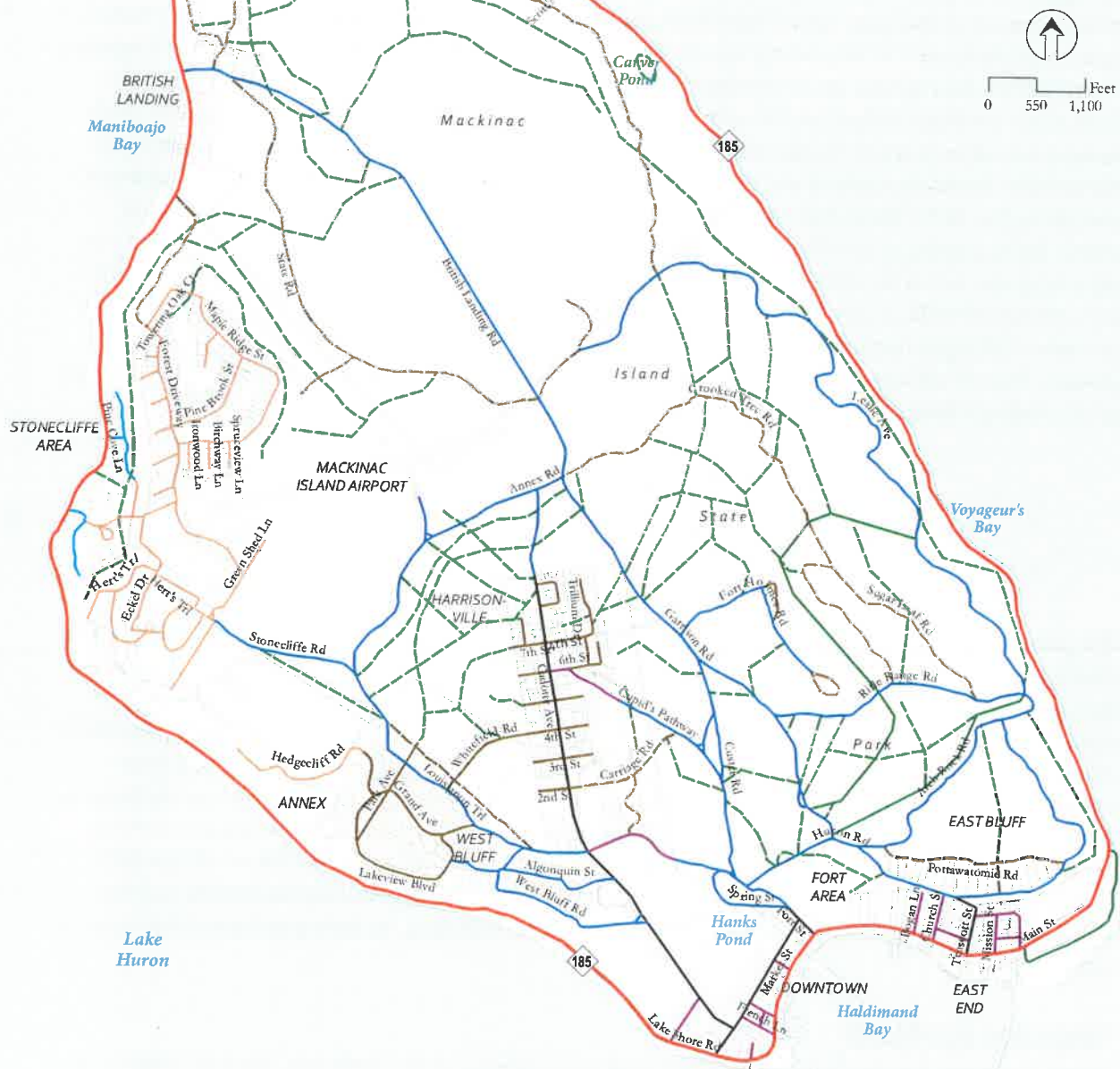


Figure 1-2
Base
Map



City of Mackinac Island | 2021 Master Plan

| | | |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------|
| — State Highway | — City Local - Unimproved (Gravel) | — Property Lines |
| — City Major (Asphalt) | — State Park Unimproved (Gravel) | — Water Bodies |
| — City Local - Improved (Asphalt) | — Private - Unimproved (Gravel) | |
| — State Park Improved (Asphalt) | — Paved Bike Trail | |
| — Private - Improved (Asphalt) | - - - Footpath/Trail | |

Road Source: City of Mackinac Island Master Plan (2018)
Property Line Source: Mackinac County Equalization, 2018

July 2024

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Mackinac Island is not only a regional tourist destination, but draws visitors from all over the world. The Island has a tremendous appeal, as a community that has changed little since well before the automobile. Mackinac Island is a premier tourist destination and has a significant impact on tourism and economics throughout the region. The economies of the communities in the Straits area are interdependent with the tourist economy of Mackinac Island. Retail businesses, motels, and restaurants have been attracted to both St. Ignace and Mackinaw City to serve the tourists visiting the Island and surrounding areas. Two ferry companies that serve the Island operate out of Mackinaw City and St. Ignace from April until the end of October. One ferry service continues to the Island from St. Ignace, weather and ice permitting. When the boats quit, public access is limited to air travel. North Country Aviation, based in Gaylord, provides year round service to the Island from Charlevoix, Gaylord, and Harbor Springs. Additionally, Fresh Air Aviation, based in Charlevoix provides service to the Island from St. Ignace. Air service is frequently coordinated with commercial and charter flights arriving at the Pellston Regional Airport, as well as other points. Charter flights, instruction and sightseeing also part of the service. Mackinac Island State Park maintains the airport on the Island with private and commercial traffic. A number of people reach the Island by private boat, enjoying the updated facilities at the State of Michigan marina. Mackinac Island is a popular port of call for the growing Great Lakes cruise industry. Ports of call vary from one route to the next, but Mackinac Island presently is a stop for several cruise lines including Viking Cruises, Pearl Seas Cruises, and Victory Cruise Line.

The economies of the communities in the Straits area are interdependent with the tourist economy of Mackinac Island.

The primary tourist season is the summer months of June, July, and August, with July being the peak. A series of activities and events occur throughout the summer months on the Island. The spring and fall seasons are also popular, but to a lesser extent. Many political, professional, and civic organizations hold working conferences on the Island. State and federal dignitaries are visitors, as well. There are coordinated promotional efforts to boost tourism during the spring and fall, offering packages including reduced hotel rates, ferry tickets, carriage tours, and shopping specials. Packages are also used to promote special events on the Island or in nearby Mackinaw City or St. Ignace. The winter season has its special charm, although accommodations, restaurants and retail services are limited. The beauty and serenity of the Island make for an unforgettable experience. Community events and those sponsored by the State Park are enjoyed by all. Outside activities pursued throughout the winter include cross country skiing, snowshoeing, ice skating and quiet hikes on snow covered trails.

History and Significance

Due to its strategic location in the center of the Great Lakes system and the Straits area, Mackinac Island is one of the oldest inhabited places in the State of Michigan and the Midwest. Before European occupation, the Straits area was home to Ojibwa (Chippewa), Odawa (Ottawa), and Potawatomi tribes. Collectively referred to as the Anishinabeg people, these tribal groups migrated from the Atlantic coast during the Woodland period (1000 B.C. to 1650 A.D.). The Island's name derives from the native word, Michilimackinac, meaning, "Land of the Great Turtle." The name alludes to the Island's humped profile, like a huge turtle rising out of the water. The Native American style of life in the Straits was semi-nomadic. Archaeological studies show evidence of summer fishing camps on Mackinac Island, where plentiful stocks of trout, pike, sturgeon, herring, and whitefish were harvested. The Straits also functioned as a center of inter-tribal communication and trade. The

Island is regarded by Native Americans as a place of great spiritual importance; the first land to appear after the Great Flood, and the place of origin for Native peoples.

European settlement in the Straits began in the late seventeenth century, with exploration parties, Jesuit missionary outposts, and French fur trading villages. In 1670, Father Claude Dablon established a mission on Mackinac Island to re-settle and protect his followers, a small band of displaced Hurons. The following year the group relocated to St. Ignace, to take advantage of better agricultural land. In the 1690, the first French fort was constructed in the Straits at St. Ignace to guard French commercial fur trading interests in the region. Throughout the late 1600s and early 1700s, the area grew in military and trade significance. The French built Fort Michilimackinac at what is now Mackinaw City in 1714. In 1761, the British took control of the fort, as a result of the Seven Years' War.

The Island is regarded by Native Americans as a place of great spiritual importance; the first land to appear after the Great Flood, and the place of origin for Native peoples.

By 1781, the British re-located the fort to the more defensible Mackinac Island, on land purchased from the Ojibwa. Ste. Anne's Church, along with other buildings, was hauled to the Island across the frozen Straits, to encourage re-settlement of the non-military mainland community to the Island. The new fort, Ft. Mackinac, was located on the bluffs overlooking the harbor. The civilian community settled below and west of the fort, along what today are Main and Market Streets. A wooden palisade wall was constructed around these streets for further protection.

At the end of the Revolutionary War, the Treaty of Paris, negotiated in 1783 between Great Britain and the new United States, technically ceded Mackinac Island to the Americans. Due to the remote location and lack of adequate troops, Americans did not actually take control of the fort until 1796. Meanwhile, by the 1790s, settlement began to occur beyond the palisade wall perimeter. Several farms were developed on the Island, including the 110 acre farm of Dr. David Mitchell (at what is now Harrisonville and the upper part of the Grand Hotel Jewel Golf Course), the George Schindler farm on the southwest bluff, the Ambrose Davenport farm in the present-day Hubbard's Annex area, and the Simon Champaign farm near the present-day Stonecliffe and Woods Golf Course.

The British captured the fort at the beginning of the War of 1812. The assault was launched by night from the unprotected north side of the Island (British Landing). British cannon were placed on high ground behind the fort. The overwhelming force and strategic location forced a quick American surrender. Several attempts were made by American forces to displace the British. In 1814, the British constructed "Fort George" on the hill north of Ft. Mackinac, to guard against another rear attack. A significant attempt on August 4, 1814, known as the Battle of Mackinac Island, ended in defeat for American forces.

In December 1814, the Treaty of Ghent gave control of the Fort back into American hands. In July 1815, the last British troops left the Island, and "Ft. George" was re-christened "Ft. Holmes."

With military matters resolved, the fur trade at Mackinac Island flourished, under the leadership of John Jacob Astor and the American Fur Company. Astor's warehouse on Market Street (now the Community Hall) functioned as industry headquarters. It is interesting to note that the permanent Island population in the 1820s

was about 500 persons, including French Canadians, Native Americans, Metis (of French and Indian heritage), and Americans; very close to the permanent Island population at the time of the 2010 Census. During the summer trading season, the number increased to approximately 2,000. During the 1820s, a religious revival movement brought about the founding of the Mission School (1823) and Mission House (1825), in an effort to convert French Catholics, Native Americans, and Metis to Protestant Christianity.

In 1836, a U.S. treaty with Ojibwa and Odawa bands specified that payment for purchased Native American lands in Michigan be made over a twenty-year period in provisions as well as cash. Mackinac Island was designated as the payment distribution point, drawing 4,000 Native Americans to the Island each September. This increased the Island's importance as a provisioning center and commercial hub, as well as a focal point for Native American culture and crafts. In turn, this sparked the interest of American and foreign tourists and travelers to the region. The "Indian Dormitory" was built under one clause of the 1836 treaty, intended to serve as temporary Native American housing during provisioning visits. In fact, the structure was largely used as the office for agent Henry Schoolcraft and as a payment distribution center.

By 1840, over trapping and changes in fashion brought the Island's fur era to an end. Gradually, furs were replaced by fish as items of trade. Commercial fishing operations took over harbor dock space, and by 1845 more than 20,000 barrels of processed fish were shipped annually from the Island. The disposal of fish entrails became a major sanitary issue, and ordinances were passed against such disposal in the (then) Village limits. The "Borough Lot," in front of the current Grand Hotel, was designated as the disposal area. Later, this area became a squatter's haven, a so-called "Shanty Town."

The advent of railroads on the mainland increasingly replaced water-born transportation, decreasing the Island's importance as a fishing and general shipping headquarters. Tourism had by then begun to supplement the Island economy. The American Fur Company buildings were converted into the Astor House Hotel as early as 1836; Mission House began accepting tourists by the 1840s; the Island House opened in 1852; and the Lake View House in 1858. But tourism and summer cottage construction really got underway after the Civil War. In 1875, America's second National Park was established on Mackinac Island. That same year, two areas within the park were set aside to lease for cottages and summer homes. These lots on the East and West Bluff were not actually surveyed and available for construction until 1885. Meanwhile, Gurdon S. Hubbard had built "The Lilacs" cottage in 1870. He subdivided and sold adjacent lands as "Hubbard's Annex to the National Park" beginning in 1882. By the late 1800s, Mackinac Island had become a nationally known summer retreat, outstanding for its clean air, beautiful scenery, and high society. As well-to-do families flocked to the island, modest carpenter-gothic cottages were frequently replaced by or remodeled into elaborate Queen Anne style mansions. The signature project of this era was construction of the Grand Hotel in 1887. The Grand joined the Murray (1882), Chippewa (1902), and Iroquois (1902) hotels in hosting an ever-increasing array of summer residents and guests.

Tourism development stimulated a wide variety of support services, both on the Island and mainland. Rail lines and passenger ships increased in number and service frequency. Retail trade adapted quickly to tourism. The Murdick family began making fudge in the 1880s. The decision to ban automobiles from the Village in 1898, and from the Park in 1901, protected the horse-drawn carriage and bicycle businesses that continue to give the Island its special charm and niche in the region's tourism industry. The importance of horses for Island transportation is also discussed in Chapter 5, Community Services, Facilities and Transportation.

In 1894, the Federal government decided to close Fort Mackinac. Efforts by Michigan's congressional delegation averted an economic disaster by arranging to transfer the Fort and Park to the State of Michigan. In 1895, Mackinac Island State Park became Michigan's first state park, administered by the newly created Mackinac Island State Park Commission. Early on, the Commission became active in preserving and interpreting the Park's historic resources; its first project was renovating and adapting the Officers' Stone Quarters as a military museum. Marquette Park, an Island focal point, was designated by the Commission in 1898 and landscaped in 1905. The statue of Father Marquette was unveiled in 1909.

In 1895, Mackinac Island State Park became Michigan's first state park, administered by the newly created Mackinac Island State Park Commission.

Although many Island businesses had a difficult time surviving the Depression, post-war economic recovery and construction of the Mackinac Bridge brought new waves of visitors to the Island. The Mackinac Bridge opened to traffic on November 1, 1957, uniting the two peninsulas of Michigan. Increased regional growth in recreation and tourism pose new challenges for the Island. Mackinac Island's long and unique history has left a significant physical legacy.

Historic Sites and Districts

Historic resources are an extremely important factor to consider during the process of preparing the Master Plan. A detailed survey of buildings on Mackinac Island conducted by the State Park in 1970-71 estimated that there were at the time over 120 buildings dating from the latter half of the nineteenth century which had significant architectural and historic value. The walls of Ft. Mackinac are some of the oldest remaining man-made structures in the State of Michigan, and the Island is a location of important Native American archaeological sites. In 2010, Michigan Bureau of History records indicated that there were 32 Island buildings or sites on the State Historic Register. Ten of these sites are also on the National Register of Historic Places and the Island has enjoyed National Landmark status since 1951. A listing of the 32 national and state registered historic sites on the Island is included as **Appendix A** of this Plan.

Created under the authority of the Michigan Local Historic Districts Act, Public Act 169 of 1970, a local historic district is a historically significant area that is protected by a historic district ordinance. The local unit of government appoints a historic district commission to review proposed work to the exterior of resources in the district to determine if the work meets the Secretary of the Interior's Standards and Guidelines for Rehabilitation. Designating an area as a local historic district is one of the few ways a community can provide legal protection for its historic resources.

The City of Mackinac Island currently has five historic districts. In 2010, the City of Mackinac Island formed a Historic District Commission (HDC). Under the Commission's leadership, three historic districts were established covering portions of the Island. The geographic location and extent of these historic districts is shown on **Figure 1-3**. The three initial historic districts were:

- Hubbard's Annex Historic District
- Market & Main Historic District
- West End Historic District

The City's Historic District Commission is charged with applying the Secretary of the Interior's Standards and Guidelines for Rehabilitation when evaluating an application for work within one of the City's historic districts. In 2016, the HDC prepared and adopted architectural guidelines to serve as a guide for the Commission when evaluating proposed projects. Design guidelines are necessarily general basic principles, as every historic building is different and each project is unique. The guidelines are general so as to apply to a wide variety of building types and situations.

In 2024, the entire Island was studied to consider whether additional local historic districts should be established, and a Historic District Study Committee was created to lead the effort. The Historic District Study Committee recommended the establishment of two new historic districts on the east end of the island: the Mission Historic District and Small Point Cottage Historic District. These two new historic districts were adopted by City Council on May 1, 2024 and April 17, 2024, respectively. The limits of these new historic districts are shown on **Figure 1-3**.

Government/Community Organization

Mackinac Island's first form of governmental organization was that of a military garrison. Although later established as a Borough in 1817 and a Village in 1875, Mackinac Island was established by charter as a City in 1899. The City Council, headed by the mayor, serves as the legislative or governing body for the City. The day-to-day administration of the City is primarily handled by the Mayor, Mayor's Assistant, City Clerk, City Treasurer, and support staff.

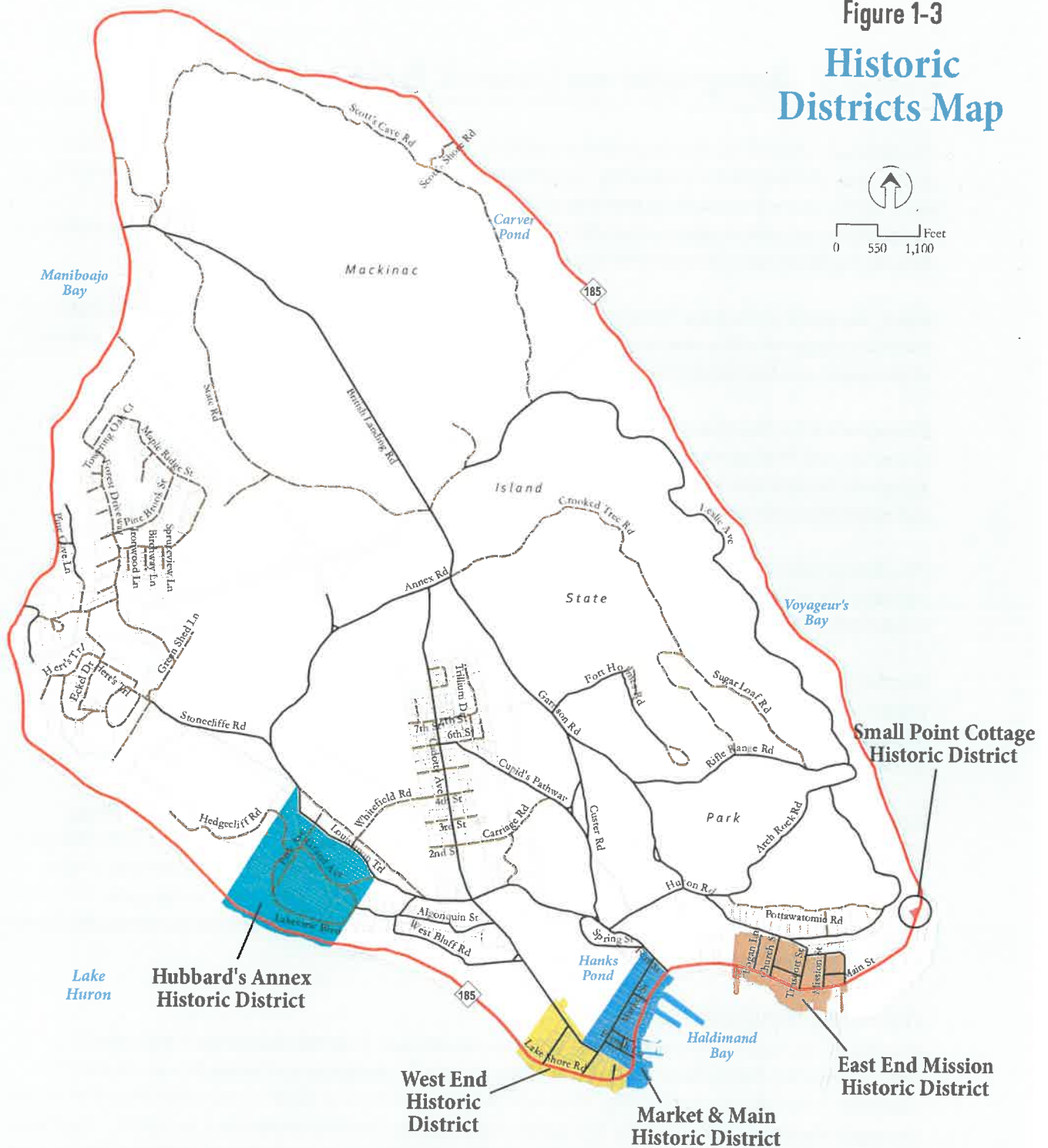
Because the majority of Island land area is State owned and designated as State Park, the influence of State policy is great. The Mackinac Island State Park is administered by the seven-member Mackinac Island State Park Commission, with members appointed by the governor. The Park Commission is a key stakeholder on Mackinac Island and was consulted during the development of this Plan. Existing development on State land consists of the State Park Commission offices, residences and support facilities, the Mackinac Island airport, property leased to the City of Mackinac Island for public utilities and recreation (resource recovery center, waste water treatment plant, water reservoirs, Great Turtle Park), Wawashkamo Golf Course, The Greens of Mackinac, Grand Hotel's Jewel Golf Course, Mackinac Community Equestrian Center and approximately forty-three acres of land leased for private residential purposes.

Status of Planning and Zoning for the City of Mackinac Island

The City Council established a Planning Commission in the early 1980s. The Planning Commission serves as the zoning commission and, as such, monitors the implementation of the Zoning Ordinance to ensure that proposed development is consistent with the City's Master Plan.

Mackinac Island is governed by local zoning. The Planning Commission is responsible for the preparation and adoption of the Master Plan to guide development of the City of Mackinac Island. A master plan developed in the mid-1980s was never adopted. The Island's first master plan, City of Mackinac Island Comprehensive Municipal Master Plan, was adopted August 4, 1999. A review and update was completed March 22, 2011. A zoning ordinance review and update was completed November 12, 2013. The most recent Master Plan was adopted October 9, 2018. Michigan law requires that a zoning ordinance correspond with an adopted master plan. After the completion of this Master Plan, the Zoning Ordinance will need to be reviewed to correspond to land use policies established by the Plan.

Figure 1-3
Historic Districts Map








City of Mackinac Island | 2024 Master Plan

Existing Historic Districts:

- | | |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  Hubbard's Annex |  East End Mission |
|  Market & Main |  Small Point Cottage |
|  West End | |

Base Layers:

-  State Highway
-  Improved (Asphalt) Roads
-  Unimproved (Gravel) Roads
-  Property Lines
-  Water Bodies

July 2024



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Historic Districts Source: City of Mackinac Island, 2024
Parcel Source: Mackinac County Equalization, 2018

Chapter 2: Demographic and Economic Profile

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

Due to the nature of Mackinac Island as a tourist destination, the community receives a significant number of seasonal residents as well as daily visitors. The year-round population and the summer population, consisting of tourist and non-tourist categories, must be considered in the planning process.

This section of the Plan examines several elements that are central to understanding a community's overall population and housing characteristics. These items include population growth patterns and population shifts, age/gender breakdowns, racial composition, household size, housing characteristics, income characteristics, and employment patterns.

This demographic analysis relies on several key data sources. Figures from the decennial U.S. Census reports, including the most recent 2020 Census, are utilized, where available. The decennial census reports from the Census Bureau are 100% counts of every citizen in the country.

Another key data source is Esri (a leader in GIS software, location intelligence and mapping), who produces independent demographic and socioeconomic estimates for the United States using a variety of data sources, beginning with the latest decennial census data as a base and adding a mixture of administrative records and private sources to capture change. Esri data is available for 2023, with 5-year estimates for the year 2028.

Finally, data on certain detailed demographic topics is only available through the American Community Survey (ACS) 5-year estimates, made available by the U.S. Census Bureau. ACS data is derived from a sample survey of citizens by the Census Bureau. It should be noted that, although the ACS data offers valid insights into certain population characteristics, the data contains a margin of error. For smaller sample sizes, such as for a small community like Mackinac Island, the ACS produces larger sampling errors. For this reason, the Census Bureau's decennial census reports and Esri data is used when available.

Year-Round Population Trends

The City of Mackinac Island's year-round population has changed little over the past several decades. U.S. Census figures for 2020 indicate a population of 583 persons. In discussing the Census data for the City, it is important to note that the Census tally, taken on April 1, does not count residents who reside elsewhere on that day (many Mackinac Island residents who spend winter months elsewhere are not back by April 1). The figures presented in the 2020 Census do not reflect the actual number of persons residing on the Island in the Summer months. Although this situation is common throughout northern Michigan recreational/resort areas, the influx of seasonal residents on Mackinac Island during the Summer months is tremendous. This is evident by the fact that more than 70 percent of the City's total housing units were classified as vacant, of which 96 percent were occupied for seasonal, recreational, occasional, or migrant worker use according to the 2020 Census.

According to the 2020 Census, more than 70 percent of the City's total housing units are classified as vacant, of which 96 percent are occupied for seasonal, recreational, occasional, or migrant worker use

Table 2-1, below, highlights population trends for Mackinac Island from 1950 through 2023. The highest population level occurred at the 1960 Census count, but the population dropped significantly by 1970. The high 1960 population can be explained by the temporary presence of Moral Re-Armament (MRA) on the Island at the time the 1960 Census was taken. Between 1970 and 2010, the year-round population of the island fluctuated, with modest declines or increases each decade. Between 2010 and 2020, the year-round population increased by 8.44 percent from 492 to 583.

The 2023 year-round population estimate from Esri suggests that the year-round population has continued to increase and now stands at 640. Esri estimates that the year-round population of Mackinac Island will remain steady through 2028, with a slight decrease of 7 residents over the 5-year span.

| Year | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 | 2023* |
|-----------------------------|------|--------|---------|--------|--------|--------|--------|-------|-------|
| Population | 572 | 947 | 517 | 510 | 469 | 523 | 492 | 583 | 640 |
| Change from Previous Census | -- | 65.40% | -45.40% | -1.40% | -8.00% | 11.50% | -5.98% | 8.44% | -- |

*2023 Estimate per Esri.

Sources: 1950-2020 U.S. Census; 2023 Esri Demographic and Income Profile

It should be noted that the accuracy of the Census is only as complete as information provided by the residents. Some people are leery of answering all the Census questions, such as the number of people living in the house.

Seasonal and Tourist Population

For most communities, a discussion of the year-round population would be sufficient when planning for community needs. The City of Mackinac Island is different from most communities in that respect. Because tourism is the City's central industry, the community experiences a tremendous influx of visitors during the summer months. Without an actual census count, it is difficult to calculate the City's seasonal population. Some factors to consider when determining the seasonal population are tourist related employment, vacation homes, available hotel rooms, State Park attendance, and ferry service to Mackinac Island. Estimates suggest the Island experiences an average daily seasonal population of nearly 22,500 persons, of which roughly 5,000 are seasonal employees. For planning purposes, an attempt has been made to estimate the Island's prime tourist season population without duplication. **Table 2-2** illustrates the calculations used for the estimate.

Seasonal Employees

Most Island businesses, including hotels, restaurants, and retail establishments operate only during the tourist season of May through October. According to the Mackinac Island Tourism Bureau, these seasonal operations employ about 5,000 individuals during the prime tourist time (mid-June through August). Some of the major

Island employers are the Mackinac Island State Park, Grand Hotel, Mission Point Resort, and Mackinac Island Carriage Tours.

| Table 2-2 Estimated Seasonal Population Mackinac Island | |
|---------------------------------------------------------------------------------------------------------------------------|---------------|
| Category | Number |
| Year-round residents (per 2023 Esri Demographic Profile) | 640 |
| Seasonal residents (654 seasonally-occupied housing units * 2.14 persons per household, derived from Esri 2023 estimates) | 1,400 |
| Hotel and lodging @ full occupancy (1,503 rooms @ 2 persons per room, per 2016 survey) | 3,006 |
| Seasonal employees (per Tourism Bureau - February 2023) | 5,000 |
| Daily transient visitors via ferries (1.2 million annual visitors 2024 estimate, divided by 100 days) | 12,000* |
| Daily transient visitors via cruise ships (19,148 passengers in 2023 per Tourism Bureau, divided by 100 days) | 191* |
| Boat slips at full occupancy (80 slips @ 2 persons per boat) | 160 |
| Airport traffic | 80 |
| Total estimated daily population during summer season | 22,477 |

Data Sources: U.S. Census Bureau; Esri Demographic and Housing Profiles; Mackinac Island Tourism Bureau; ferry service operators. Estimates compiled by Wade Trim.

Note: The estimates above represent a seasonal average, and the population is expected to be even higher on peak days, such as festival or holiday weekends.

*The figures represent an average of the total visitors spread evenly across the 100 days. In reality, certain days, such as holidays and weekends, will feature many more visitors than other days.

Although the two ferry lines employ a significant number of people, the Michigan Department of Labor and Economic Growth lists the number of employees where the main office is located. Consequently, many ferry employees are counted in Mackinaw City or St. Ignace. The employment numbers reported by the State are based on self-reported numbers employers provide on quarterly tax returns. The completeness of the information is reliable.

Seasonal Residents

For some visitors, the Island provides the perfect setting for seasonal or vacation homes. According to the 2020 Census, over 70 percent of housing on the Island is considered vacant, 96 percent of which is occupied for seasonal, recreational, occasional, or migrant worker use. By applying the 96 percent seasonal occupancy rate to the estimated 681 total vacant units (per Esri in 2023), we can assume that roughly 654 units are seasonally occupied. Visitors in this category may stay for as long as the entire summer, while others may only stay for a few weeks. When applying the persons per household average of 2.14 (per Esri in 2023) to the 654 estimated

seasonally occupied units, we can assume that approximately 1,400 additional persons may reside in these units during the summer months. Additionally, the Tourism Bureau estimates roughly 5,000 resident seasonal employees living on the Island during these summer months.

Seasonal Tourism – Lodging

The Tourism Bureau reports that approximately 1,500 hotel rooms are available on the Island. The Island guest room figure includes bed and breakfast facilities as well as hotels. According to the Tourism Bureau, occupancy rates of nearly 100 percent are recorded during the peak months of July and August. The slower months of May, June, September, and October generally experience occupancy rates of 80 to 95 percent.

Seasonal Tourism – Daily Transient Visitor Counts

Another determinant in estimating the summer population is to review attendance figures from the Mackinac Island State Park Commission. Fort Mackinac, one of the Island's major attractions, receives approximately 225,000 visitors during the season. While there has not been any tremendous increase in recent years, the figures show a steady and significant level of tourist attraction to the Island. The number of visitors to the Fort peaks from early July to mid-August.

It is important to look at the number of tourists who use ferry, cruise ship and airport services to visit Mackinac Island. According to the City, approximately 30 planes arrive or depart from the Island each day.

According to the Mackinac Island Tourism Bureau, in 2023, a total of 19,148 visitors came to Mackinac Island via cruise ships. Dividing this number by the approximately 100-day long peak season results in an average of 191 visitors per day.

Although specific figures from the individual passenger ferry service operators are not available, a ferry service operator was contacted in 2024 who estimated that, in total, approximately 1.2 million passengers annually use ferry services. Dividing this number by the approximately 100-day long peak season results in an average of 12,000 visitors per day.

The City collects a "flat rate" franchise fee from each ferry company. This flat rate was established as part of a new agreement in 2012; previous to this agreement, franchise fees were based on ticket sales. The ferry operators indicate that the number of passengers varies year to year. Approximately 55 to 60 percent of the passengers travel from Mackinaw City; the remaining passengers travel from St. Ignace.

While all of these factors still cannot accurately calculate the Island's exact seasonal population, it is important to remember that the figure increases many times over the year-round population. Because tourist and short-time visitors draw on municipal services, the City of Mackinac Island, therefore, needs to continue to provide these services and plan for an estimated daily seasonal population of roughly 22,500 persons.

Age Distribution

Information on age distribution within a population can assist the community in matching public services to community characteristics and in determining what, if any, special needs specific resident groups might have.

The age distribution of the City of Mackinac Island's year-round residents in 2023 is presented in **Table 2-3**, with comparisons to Mackinac County and the State of Michigan.

| Table 2-3 Population by Age City of Mackinac Island, Mackinac County and State of Michigan – 2023 | | | | | | |
|---------------------------------------------------------------------------------------------------------|-----------------|--------------|-----------------|--------------|-------------------|--------------|
| Age Group | Mackinac Island | | Mackinac County | | State of Michigan | |
| | # | % | # | % | # | % |
| Under 5 | 29 | 4.5 | 377 | 3.5 | 528,483 | 5.2 |
| 5-9 years | 29 | 4.5 | 470 | 4.3 | 577,543 | 5.7 |
| 10-14 years | 32 | 5.0 | 544 | 5.0 | 610,784 | 6.0 |
| 15-19 years | 28 | 4.4 | 519 | 4.8 | 639,875 | 6.3 |
| 20-24 years | 22 | 3.4 | 355 | 3.3 | 646,908 | 6.4 |
| 25-34 years | 80 | 12.5 | 972 | 9.0 | 1,286,710 | 12.7 |
| 35-44 years | 87 | 13.6 | 1,075 | 9.9 | 1,236,846 | 12.2 |
| 45-54 years | 86 | 13.4 | 1,324 | 12.2 | 1,237,077 | 12.3 |
| 55-64 years | 102 | 15.9 | 1,961 | 18.1 | 1,398,648 | 13.9 |
| 65-74 years | 91 | 14.2 | 1,970 | 18.2 | 1,164,357 | 11.5 |
| 75-84 years | 43 | 6.7 | 974 | 9.0 | 562,418 | 5.6 |
| 85 years and over | 11 | 1.7 | 290 | 2.7 | 208,391 | 2.1 |
| Totals | 640 | 100.0 | 10,831 | 100.0 | 10,098,040 | 100.0 |
| Median Age | 46.5 | | 53.4 | | 41.1 | |

Source: 2023 Esri Demographic and Income Profile

As **Table 2-3** demonstrates, year-round residents of Mackinac Island in the young adult (25-34), family-forming (35-44), and empty nester (45-54) age categories make up a larger percentage of the total population (39.5 percent) in comparison to both the County (31.1 percent) and the State (37.2 percent). At 21.8 percent, the percentage of younger age groups (age groups 24 years or under) on Mackinac Island is comparable to the County (20.9 percent), but much lower than the State (29.6 percent). The percentage of older age groups (age groups 65 years and over) on Mackinac Island (22.6 percent) is lower than the County (29.9 percent) but higher than the State (19.2 percent).

According to 2023 Esri data, the median age of year-round residents of the City of Mackinac Island is 46.5 years (up from 43.1 years in 2010). Mackinac County's median age is older at 53.4 (up from 49.0 years in 2010). The median age of the State, at 41.1 years (up from 38.8 years in 2010), is younger than both the Island and the County.

According to Esri, the City's median age is anticipated to increase to 47.3 years by 2028. Similarly, both the County and State's median age is also anticipated to increase over the next 5 years.

It is difficult to get an accurate gauge of the age distribution of the tourists and seasonal residents. In the past, the seasonal employee population was primarily comprised of college age persons. However, in recent years, seasonal employees tend to be older, and more often foreign born.

Racial Composition

Mackinac Island's year-round population is somewhat racially diversified. According to Esri estimates, of the 640 permanent residents in 2023, 486 (75.9 percent) are White. Native Americans are an important resident minority group numbering 86 persons or 13.4 percent of the Island's year-round population. A total of 43 residents (6.7 percent) were listed as Two or More Races. The remainder of the population comprised of Black or African American (16 persons), Asian (1 persons), and Some Other Race (8 persons). The racial composition of Mackinac County is similar to that of the Island, with 73.9 percent White, 16.0 percent Native American, and the remainder of the population classified as other races.

Native Americans are an important resident minority group numbering 86 persons or 13.4 percent of the Island's year-round population

Households and Families

Census data for 2020 indicates a total of 293 (year-round) households within the City of Mackinac Island, which is an increase from 240 households in 2010. Esri estimates indicate that the total number of households will remain steady through the year 2028, staying at 293 total households.

Per the 2020 Census, of the City's 293 households, 106 or 36.2 percent were married couple households, while 31 or 10.6 were cohabitating couple households. A total of 124 households (42.3 percent) were comprised of individuals living alone. 52 households (17.7 percent) contained children under the age of 18.

Census data for 2020 indicates a total of 147 (year-round) families within the City of Mackinac Island, which is an increase from 128 families in 2010. Esri estimates indicate that the total number of families will remain steady through the year 2028, staying at 147 total families.

Average Household Size

According to the 2020 Census, the average household size for Mackinac Island is 1.96. However, Esri estimates for 2023 suggest that the average household size is higher at 2.14. This is an increase from the average household size of 2.05 back in 2010. Data from Esri suggests that the average household size on the Island will remain steady over the next 5 years (2.13 by 2028).

In contrast to the average household size on Mackinac Island, which has increased since 2010 and will remain steady over the next 5 years, the average household sizes within Mackinac County and the State of Michigan have decreased since 2010 and are expected to continue to decrease through 2028. For the County, the average household size was 2.19 in 2010, decreased to 2.11 in 2023, and will continue to decrease to 2.07 by 2028. For the State, the average household size was 2.49 in 2010, decreased to 2.42 in 2023, and will continue to decrease to 2.39 by 2028.

Disability Status

According to the 2021 ACS 5-year estimates, zero persons on the Island under the age of 17 are reported to have a major physical disability. In the 18 to 64 years category, 23.4 percent of Islanders are listed with a disability, as compared to 22.4 percent for the State. In the 65 years and over category, 96.5 percent of the Islanders have mobility and self-care limitations, while State statistics are listed as 71.3 percent. The City wishes

to accommodate this special population, as well as the number of visitors from across the State and elsewhere that may have mobility limitations.

Income

Income statistics for year-round residents of Mackinac Island, Mackinac County and the State of Michigan are presented in **Table 2-4** as taken from the 2023 Esri Demographic and Income profiles. 2010 values are from the U.S. Census. Generally, the median household income and per capita income levels for the year-round residents of the City are comparable to the County but below the levels for the State of Michigan as a whole. However, the income levels for the City, County and State have all increased since 2010 and are expected to increase over the next 5 years, from 2023 through 2028.

According to Esri in 2023, 76 or 25.9 percent of the 294 (year-round) households in the City of Mackinac Island are classified as low income, while 188 or 63.9 percent are middle income. The City's low income household percentage is slightly higher than the County (24.8 percent) and is also higher than the State (20.7 percent). However, between 2023 and 2028, the percentage of low income households on the Island is expected to decrease to 23.2 percent, while middle income household percentage is expected to increase to 65.2 percent.

| Table 2-4 Income Statistics City, County, and State – 2010, 2023, 2028 | | | | | | |
|------------------------------------------------------------------------------|-------------------------|----------|----------|-------------------|----------|----------|
| Place | Median Household Income | | | Per Capita Income | | |
| | 2010 | 2023 | 2028 | 2010 | 2023 | 2028 |
| Mackinac Island | \$48,594 | \$57,911 | \$64,787 | \$27,451 | \$35,295 | \$39,531 |
| Mackinac County | \$39,339 | \$57,006 | \$63,968 | \$22,170 | \$37,147 | \$43,584 |
| Michigan | \$48,432 | \$65,287 | \$75,808 | \$25,135 | \$38,288 | \$44,180 |

Source: 2023 Esri Demographic and Income Profile

Education

Education is an important factor in analyzing the capabilities of the local work force and in the economic vitality of a community. The U.S. Census Bureau tracks educational attainment by recording the percentage of citizens who have graduated from high school and who have gone further and obtained a bachelor's degree. Statistics from the 2000 and 2010 Census indicate that a higher proportion of Island residents (25 years of age or older) are high school graduates or higher, as compared to Mackinac County and the State as a whole. Additionally, a higher proportion of Island residents (25 years of age or older) have obtained a bachelor's degree or higher educational level, as compared to Mackinac County and the State as a whole. Although, the 2021 ACS data suggests the amount of high school or higher and bachelor's or higher persons has decreased on the Island. These values may be subject to dispute, seeing as though the margin of error for this data is very high compared to the Island's total population (refer to **Table 2-5**). It should be noted that these numbers apply only to the Island's year-round population.

| Table 2-5 Educational Attainment – Persons 25 Years and Older City, County, and State – 2000, 2010, 2021 | | | | | | |
|----------------------------------------------------------------------------------------------------------------|----------------------------------|-------|-------|-------------------------------|-------|-------|
| Place | High School Graduate or Higher % | | | Bachelor's Degree or Higher % | | |
| | 2000 | 2010 | 2021 | 2000 | 2010 | 2021 |
| Mackinac Island | 84.1% | 94.5% | 80.5% | 31.1% | 29.6% | 28.9% |
| Mackinac County | 82.5% | 89.1% | 91.5% | 14.9% | 20.1% | 24.7% |
| Michigan | 83.4% | 89.3% | 91.6% | 21.8% | 28.6% | 30.6% |

Source: 2000/2010 U.S. Census; 2017-2021 American Community Survey 5-Year Estimates

Employment

The Michigan Department of Technology, Management & Budget (DTMB), regularly publishes employment data. Employment data on the civilian labor force is presented in **Table 2-6**, comparing Mackinac County and the State at regular intervals from 1990 through 2022 (the DTMB does not have this data available for the City). The unemployment rate for Mackinac County has traditionally been higher than that of the State as noted in the table. Additionally, it is notable that, while the unemployment rate for the State has declined since 2014, the unemployment rate for the County has risen since 2014.

| Table 2-6 Labor Market Statistics Mackinac County and Michigan – 1990-2022 | | | | | | | | |
|----------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| State of MI | 1990 | 1995 | 2000 | 2005 | 2010 | 2014 | 2018 | 2022 |
| Labor force | 4,620,000 | 4,835,000 | 5,144,000 | 5,097,000 | 4,799,000 | 4,754,000 | 4,966,000 | 4,833,000 |
| Employed | 4,262,000 | 4,577,000 | 4,953,000 | 4,754,000 | 4,194,000 | 4,408,000 | 4,756,000 | 4,624,000 |
| Unemployed | 358,000 | 285,000 | 190,000 | 344,000 | 605,000 | 346,000 | 210,000 | 209,000 |
| Unemployment rate | 7.7% | 5.3% | 3.7% | 6.7% | 12.6% | 7.3% | 4.2% | 4.3% |
| Mackinac Co | 1990 | 1995 | 2000 | 2005 | 2010 | 2014 | 2018 | 2022 |
| Labor force | 6,236 | 7,274 | 6,881 | 6,590 | 5,560 | 5,316 | 4,312 | 4,223 |
| Employed | 5,343 | 6,411 | 6,368 | 5,938 | 4,746 | 4,723 | 3,550 | 3,525 |
| Unemployed | 893 | 863 | 513 | 652 | 814 | 593 | 762 | 698 |
| Unemployment rate | 14.3% | 11.9% | 7.5% | 9.9% | 14.6% | 11.2% | 17.7% | 16.5% |

Source: Michigan Department of Technology, Management & Budget

Employment data at the City level for 2023 is available through Esri. Esri estimates that, of the 545 year-round residents of Mackinac Island who are age 16 or older, 524 are participants in the labor force. Of these, 514 are employed and only 10 are unemployed. This results in an unemployment rate of 1.9 percent, which is exceptionally low when compared to both the County and State. This data is evidence of the robust tourist economy on Mackinac Island.

It is also important to remember that the unemployment rate for the Island and similar seasonal communities is higher during the winter months and lower during the summer months, reflecting the nature of tourism's seasonal work. Because of the area's tourism character, the majority of employment is in lower paying service producing industries rather than in goods producing industries. In 2023, based on Esri data, 33.5 percent of Island residents were employed in the service industry (termed "Accommodation/Food Services"), which far exceeded any other industry category. The purpose of reviewing these employment statistics is to stress the important role of the Island as a major employment center for Mackinac County and the region during the summer season.

Housing Units and Housing Structure Types

According to the decennial census reports, the total number of housing units on Mackinac Island increased from 565 in 2000 to 1,002 in 2010. However, the 2020 Census recorded a decrease to 980 total housing units. Overall, however, this is an increase of 73.5 percent between 2000 and 2020. Esri estimates that there are 975 total housing units on the Island in 2023, which will decrease slightly to 963 total housing units by 2028.

Discussion on housing structure types in this section is derived from 2021 ACS information. As **Table 2-7** shows, the distribution of housing structure types for the City of Mackinac Island is considerably different than the County as a whole. Much of this difference can be accounted for in provision of multiple-unit structures for summer employees. For Mackinac Island, there is a much more even distribution of housing unit types compared to the County. The largest percentage of housing structures in the City (as of the 2021 ACS) are 1 unit structures (detached or attached), at 40.0 percent; however, for the County as a whole, more than 80 percent of structures are 1 unit structures (detached or attached). Following closely behind 1 unit structures, the second highest percentage of housing units in the City were 2-4 unit structures at 27.1 percent of total City housing stock. Ten or more unit structures comprise 24.6 percent of total City housing stock, while units in 5-9 unit structures comprise 6.2 percent of City housing stock.

| Structure Type | Mackinac Island | | | | | | Mackinac County | | | | | |
|----------------------------------------|-----------------|-------------|------------|-------------|--------------|-------------|-----------------|-------------|---------------|-------------|---------------|-------------|
| | 2000 | | 2010 | | 2021 | | 2000 | | 2010 | | 2021 | |
| | # | % | # | % | # | % | # | % | # | % | # | % |
| 1 unit attached or detached structures | 370 | 65.3% | 428 | 58.2% | 427 | 40.0% | 7,878 | 83.7% | 8,903 | 82.3% | 8,640 | 81.9% |
| 2-4 unit structures | 134 | 23.6% | 138 | 18.8% | 289 | 27.1% | 364 | 3.9% | 437 | 4.0% | 489 | 4.6% |
| 5-9 unit structures | 28 | 4.9% | 62 | 8.4% | 66 | 6.2% | 109 | 1.2% | 164 | 1.5% | 151 | 1.4% |
| 10 or more unit structures | 26 | 4.6% | 95 | 12.9% | 262 | 24.6% | 170 | 1.8% | 235 | 2.2% | 512 | 4.9% |
| Mobile home or trailer | 9 | 1.6% | 12 | 1.6% | 23 | 2.2% | 892 | 9.5% | 1,080 | 10.0% | 763 | 7.2% |
| Totals | 567 | 100% | 735 | 100% | 1,067 | 100% | 9,413 | 100% | 10,819 | 100% | 10,555 | 100% |

Source: 2000/2010 U.S. Census; 2017-2021 American Community Survey 5-Year Estimates

Housing Occupancy Characteristics

Housing occupancy characteristics for the City and County are presented in **Table 2-8**. Of the 975 total housing units on the Island per 2023 Esri data, 294 or 30.2 percent were occupied year-round and 681 or 69.8 percent were vacant. In comparison to 2010, the City's occupied housing percentage has increased (from 24.0 percent to 30.2 percent) and conversely, the City's vacant housing percentage has decreased (from 76.0 percent to 69.8 percent).

Of the 294 occupied housing units in 2023, 181 (or 61.6 percent) were renter-occupied, while 113 (or 38.4 percent) were owner-occupied. Since 2010, the number and percentage of renter-occupied housing units has increased significantly, from 104 units (43.3 percent of all occupied units) to 181 units (61.6 percent), while the number and percentage of owner-occupied housing units has decreased significantly, from 136 units (56.7 percent of all occupied units) to 113 units (38.4 percent).

The profile of housing on Mackinac Island is substantially different from the County as a whole. While a significant percentage of Mackinac County's housing units are seasonally occupied, the percentage is not nearly as high as on the Island. In terms of owner and renter occupancy, a much higher percentage of Mackinac County's housing units are owner-occupied and much lower percentage or renter-occupied in comparison to the Island.

Housing occupancy characteristics for the City of Mackinac Island reflect a heavy seasonal population. The lure of island living, along with the abundant recreational opportunities, have attracted people to Mackinac Island, many of whom reside here during the summer months. As mentioned earlier in this section, according to the 2020 Census, of the City's total housing units classified as vacant, 96 percent were occupied for seasonal, recreational, occasional, or migrant worker use.

| Table 2-8 Housing Occupancy Characteristics City of Mackinac Island and Mackinac County – 2010 and 2023 | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|------------|---------------|-----------------|--------------|---------------|---------------|
| Category | Mackinac Island | | | | Mackinac County | | | |
| | 2010 | | 2023 | | 2010 | | 2023 | |
| | # | % | # | % | # | % | # | % |
| Occupied Housing | 240 | 24.0% | 294 | 30.2% | 5,024 | 46.6% | 5,090 | 48.5% |
| Owner - Occupied | 136 | 13.6% | 113 | 11.6% | 3,937 | 35.8% | 3,818 | 36.4% |
| Renter - Occupied | 104 | 10.4% | 181 | 18.6% | 1,087 | 9.9% | 1,272 | 12.1% |
| Vacant Units | 762 | 76.0% | 681 | 69.8% | 5,986 | 54.4% | 5,409 | 51.5% |
| Total Housing | 1,002 | 100% | 975 | 100.0% | 11,010 | 100% | 10,499 | 100.0% |

Source: 2023 Esri Housing Profiles

Housing Values and Rent

One comparative measure of the local housing stock is housing value. In 2000, the median value of owner-occupied housing units on the Island was \$170,000. According to figures compiled by the 2023 Esri housing profile, this median value has sharply increased to \$438,000. The median value of owner-occupied housing units for the County and State, per the 2023 Esri data, is much lower at \$186,229 and \$222,633, respectively.

This sharp increase in housing values on Mackinac Island is reflective of numerous factors, both inside and outside the Island. Local factors include the high desirability of living on the Island, historic significance of housing stock, high construction costs on the Island, waterfront land values, and limited availability of owner-occupied homes. The primary outside factor is the current state of the nation-wide housing market, featuring high demand for housing which has pushed up housing prices. According to Esri, the median value of owner-occupied housing units is expected to increase to \$448,077 by 2028.

Table 2-9 shows the distribution of owner-occupied housing units by value in 2021, based on ACS 5-year estimates. Of the 152 owner-occupied units recorded by the ACS, only 11 were valued at less than \$100,000, and only 10 were valued between \$100,000 and \$200,000. A total of 29 units were valued between \$200,000 and \$300,000. The remainder were valued at more than \$300,000, including 24 units which were valued at more than \$1,000,000.

Also shown in **Table 2-9**, median rental values on the Island (\$908) are notably higher than that of the County (\$649), but are more comparable to State values (\$969). It should be noted that the 2021 ACS data is a sample count and contains margin of error. Further, confidence in the reported value of contract rent is greater than confidence in the reported values of owner-occupied homes. Renters are asked to state a fact -- how much is monthly rent. Homeowners are asked to state an opinion -- how much do they estimate the home would sell for.

| Table 2-9 Comparative Distribution of Housing Values and Rent City, County and State – 2021 | | | | | | |
|---------------------------------------------------------------------------------------------------|-----------------|--------------|--------------|--------------|------------------|--------------|
| Financial Characteristics | Mackinac Island | | Mackinac Co. | | Michigan | |
| | # | % | # | % | # | % |
| VALUE: Owner-Occupied Housing Units | 152 | 100.0 | 3,741 | 100.0 | 2,966,347 | 100.0 |
| Less than \$50,000 | 0 | 0.0 | 324 | 8.7 | 255,911 | 8.6 |
| \$50,000 - \$99,999 | 11 | 7.2 | 883 | 23.6 | 342,898 | 11.6 |
| \$100,000 - \$149,000 | 0 | 0.0 | 800 | 21.4 | 407,304 | 13.7 |
| \$150,000 - \$199,999 | 10 | 6.6 | 516 | 13.8 | 484,498 | 16.3 |
| \$200,000 - \$299,999 | 29 | 19.1 | 550 | 14.7 | 683,100 | 23.0 |
| \$300,000 - \$499,000 | 43 | 28.3 | 470 | 12.6 | 566,674 | 19.1 |
| \$500,000 - \$999,999 | 35 | 23.0 | 155 | 4.1 | 192,293 | 6.5 |
| \$1,000,000 or more | 24 | 15.8 | 43 | 1.1 | 33,669 | 1.1 |
| Median Housing Value | \$422,700 | | \$139,200 | | \$199,100 | |

| RENT: Occupied Units Paying Rent | 232 | 100.0 | 995 | 100.0 | 1,027,094 | 100.0 |
|---------------------------------------------|------------|--------------|------------|--------------|------------------|--------------|
| Less than \$500 | 37 | 15.9 | 227 | 27.8 | 105,122 | 10.2 |
| \$500 - \$999 | 101 | 43.5 | 546 | 54.9 | 444,517 | 43.3 |
| \$1,000 - \$1,499 | 78 | 33.6 | 127 | 12.8 | 348,689 | 33.9 |
| \$1,500 or More | 16 | 6.9 | 45 | 4.5 | 128,766 | 12.5 |
| Median Rent | \$908 | | \$649 | | \$969 | |

Source: 2017-2021 American Community Survey 5-Year Estimates

Housing Affordability

The housing stock in a community should be affordable to its residents. If housing costs are prohibitive, housing needs remain unmet in spite of housing unit availability. On the Island, housing affordability is an increasingly important issue for many year-round residents and seasonal employees. Some long-time year-round residents and descendants are finding it difficult to meet rising costs and, combined with other difficulties of Island living, are having to relocate to the mainland. As discussed earlier in this Chapter, the vast majority of the jobs are low paying seasonal service industry jobs, and yet housing costs are significantly above average and continuing to rise.

Total household income determines the price range of affordable housing for virtually all families. One method of determining housing affordability is to correlate housing values to household incomes. It can generally be determined that a household can afford to own a home that is no more than three times the household's yearly gross income. Thus, it is assumed that a household earning \$50,000 per year can afford a home that is \$150,000 or less in value. As noted in earlier in **Table 2-4**, the median household income on Mackinac Island, as recorded by the 2023 Esri profiles, was \$57,911. The median value of owner-occupied housing units was \$438,000. This median housing value is more than 7 times the median household income, suggesting a housing affordability concern on the Island.

According to the Esri Demographic and Income Profiles, the median value of owner-occupied housing units on the Island is more than 7 times the median household income on the Island, suggesting a housing affordability concern

Another method for evaluating housing affordability is the percentage of income a household spends on housing costs. Typically, housing costs should not exceed 30 percent of a household's gross income. According to the 2021 ACS, of the owner-occupied housing units on the Island with a mortgage, 32.2 percent were occupied by households who were paying more than 30 percent of their household income on monthly ownership costs. According to the 2021 ACS, of the occupied housing units on the Island occupied by renters, 27.6 percent were occupied by households who were paying more than 30 percent of their gross income in rental costs. Both of these figures further suggest a housing affordability concern on the Island.

Age of Housing Units

Typically, the economically useful age of residential housing units is approximately 50 years. Due to the historic nature of Mackinac Island and the value of the housing units, it is not surprising that over fifty percent of the total housing units are approaching or are over 50 years old (built earlier than 1970). **Table 2-10**, below, compares residential housing unit age for Mackinac Island, Mackinac County, and the State of Michigan based on data provided by the 2021 ACS. As is shown, the largest percentage (43.2 percent) of housing units on the Island were built in 1939 or earlier. This is reflective of the historic character of the Island, and is a much higher percentage than found in both the County and State. However, due to the care and concern of Island residents, older homes in the community have largely been preserved in good repair.

| Table 2-10 Comparative Age of Structures, Total Housing Units City, County, and State – 2021 | | | |
|----------------------------------------------------------------------------------------------------|-----------------|--------------------|----------|
| Year Structure Built | Mackinac Island | Mackinac County | Michigan |
| | % | % | % |
| 2020 or later | 0.0% | 0.1% | 0.1% |
| 2010-2019 | 1.1% | 3.4% | 3.7% |
| 2000-2009 | 11.3% | 10.4% | 9.9% |
| 1990-1999 | 9.0% | 14.3% | 13.0% |
| 1980-1989 | 17.8% | 14.4% | 9.8% |
| 1970-1979 | 7.2% | 15.7% | 15.3% |
| 1960-1969 | 8.2% | 10.3% | 11.8% |
| 1950-1959 | 1.5% | 9.9% | 14.6% |
| 1940-1949 | 0.6% | 5.5% | 7.2% |
| 1939 or earlier | 43.2% | 16.0% | 14.5% |
| Totals | 100% | 100% | 100% |

Source: 2017-2021 American Community Survey 5-Year Estimates

Some of the significant attractions for the residents and visitors of Mackinac Island are the area’s natural environment, fresh air, and island setting. The natural environment that attracts people to the area also imposes constraints on the use of the land. Often, the alteration of sensitive environments creates problems that cannot be easily corrected. An analysis of the City of Mackinac Island’s physical environment can assist government officials in planning for future use. This Chapter includes resource discussions of climate, geology, topography, soils, water, wetlands, and wildlife.

Climate

The climate of the Island is similar to that of other parts of the Eastern Upper Peninsula, particularly those areas near the Straits of Mackinac. Generally, the summers are very mild and enjoyable, with the average May-September temperature in the 50s (F). The season of above freezing temperatures on the Island typically lasts about four and one-half months, from mid-May to early October. During the winter, the temperature typically hovers around freezing for December, January, and February with temperatures occasionally dropping to 15 to 20 degrees below zero. Snowfall averages about 93 inches annually, with seasonal variation ranging from 40 to 120 inches. Annual precipitation averages about 30 inches. The effects of Lakes Michigan and Huron are somewhat diminished due to the proximity of the Upper and Lower Peninsulas. Lake-effect snow is virtually non-existent and fall and spring temperatures are also influenced with temperatures staying warmer in the fall and cooler in the spring. Because of this, Mackinac has about 180 frost-free days per year, which is higher than many of the surrounding inland areas.

Table 3-1
Climate Summary Statistics
Mackinac Island Area, 1991-2020 Averages

| Category | St. Ignace/Mackinac Bridge |
|------------------------------|----------------------------|
| Avg. Temp. - January | 13.6 deg. F |
| Avg. Temp. - February | 13.5 deg. F |
| Avg. Temp. - March | 19.9 deg. F |
| Avg. Temp. - April | 31.2 deg. F |
| Avg. Temp. - May | 41.9 deg. F |
| Avg. Temp. - June | 52.4 deg. F |
| Avg. Temp. - July | 59.1 deg. F |
| Avg. Temp. - August | 59.0 deg. F |
| Avg. Temp. - September | 53.1 deg. F |
| Avg. Temp. - October | 42.1 deg. F |
| Avg. Temp. - November | 31.7 deg. F |
| Avg. Temp. - December | 22.8 deg. F |
| Average Annual Precipitation | 27.9" |
| Average Annual Snowfall | 93.0" |

Source: National Oceanic and Atmospheric Administration U.S. Climate Normals, 2020

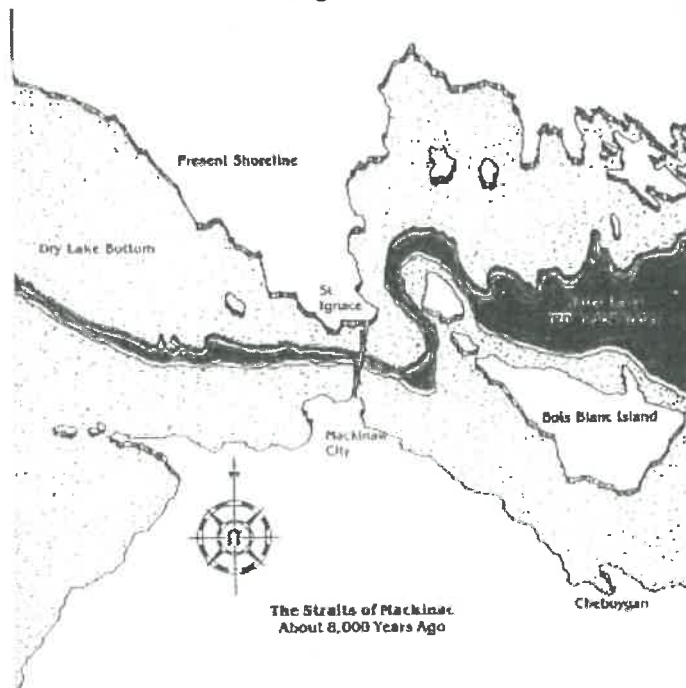
Climatic conditions significantly influence the environment of the area, affecting the operation of municipal services as well as the economic development. The climate is particularly important on Mackinac Island because of its direct bearing on tourism. **Table 3-1** documents some important weather statistics recorded at two weather stations near Mackinac Island: St. Ignace and the Mackinac Bridge.

Geology

According to geologists, the bedrock underlying Mackinac Island was laid down during the Devonian age of the Paleozoic Era. Mackinac Island is part of a bowlshaped bedrock complex called the Michigan Basin. The bedrock on the Island is Garden Island Formation. The limestone features of the Island were formed

approximately 350 million years ago. Mackinac Island first appeared as the last glacier retreated north of the straits about 15,000 years ago. About 9,000 years ago, (over a period of approximately 2,000 years), Lake Algonquin receded to reveal Mackinac Island. The “Island” during this epoch was the tip of the peninsula which extended through Round Island and Bois Blanc Island and connected to the mainland near Cheboygan (see **Figure 3-1**). During the Lake Nipissing period, approximately 4,000 years of relatively high precipitation caused the lake to gradually rise to a level about 50 feet higher than Lake Huron is today. The erosion sensitive nature of limestone, combined with the erosive power of the historic Great Lakes washed away softer materials, resulting in the magnificent limestone formations found on the Island, such as Skull Cave, Sugar Loaf, and Arch Rock.

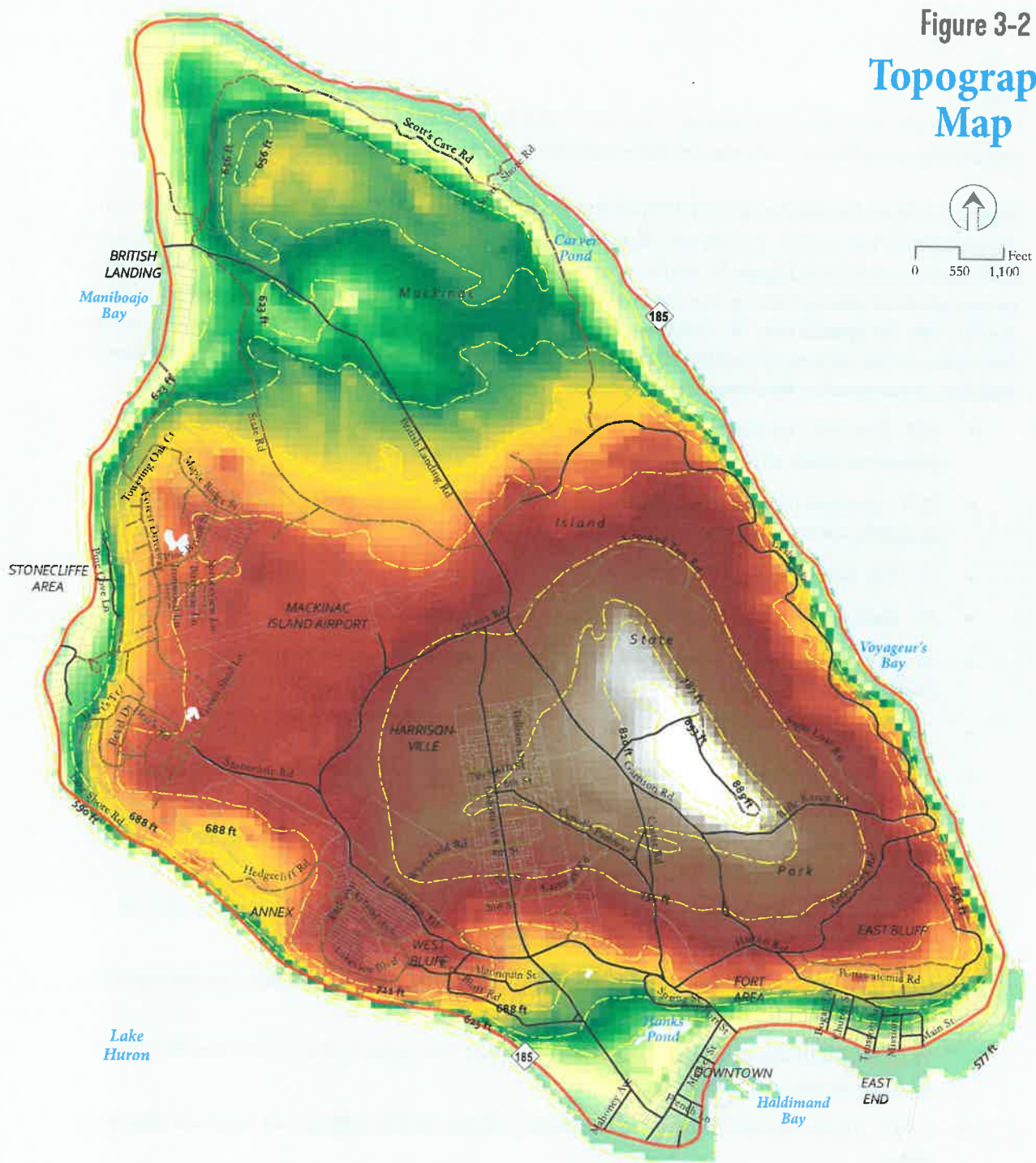
Figure 3-1



Topography




The topography of Mackinac Island is wedge shaped, with a high point of greater than 885 feet above sea level (see **Figure 3-2**). The low elevation, located along the shoreline, is about 590 feet, as compared to 577 feet for Lake Huron. The significant bluffs are primarily located on the southwest edge of the Island and along the eastern and southeastern edges of the Island. These bluff areas are comprised of the St. Ignace-Rock Outcrop Complex soil type, with slopes between 35 and 75 percent (see **Figure 3-3**). Round Island’s topography is similar to Mackinac Island, with steep slopes on the northeast side of the Island and a single high point with an elevation of approximately 680 feet.

Figure 3-2
Topography
Map








City of Mackinac Island | 2024 Master Plan

Digital Elevation Model:

-  Higher Elevations
-  Lower Elevations
-  10 Meter (33 Ft) Contour Lines

Base Layers:

-  State Highway
-  Improved (Asphalt) Roads
-  Unimproved (Gravel) Roads
-  Property Lines
-  Water Bodies

Topography Source: Mackinac County Digital Elevation Model, Michigan Geographic Data Library
Parcel Source: Mackinac County Equalization, 2018

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Soils

One important determinant of land use is the soil's suitability for a variety of uses. The physical and engineering properties of a soil type should be considered before development occurs.

Figure 3-3 shows the distribution of soil types throughout Mackinac Island. St. Ignace silt loam (70B) and Alpena gravelly loam (124D) are the two most predominant soil types on the Island. While the soil association information presented in **Figure 3-3** and steep slope and hydric soils presented in **Figure 3-4** can be used as a general guide for management of large undeveloped tracts of land, it should not be used for development of specific sites. For specific sites, the Mackinac County Soil Survey should be consulted. The following is a brief description of the soil associations found on Mackinac Island. The soil survey for Mackinac County shows 14 different associations for Mackinac Island.

- 27B - Greylock Fine Sandy Loam: (1 to 6 percent slopes) - Nearly level and undulating areas on ground moraines, end moraines, and drumlins.
- 27D - Greylock Fine Sandy Loam: (6 to 15 percent slopes) - Gently rolling and rolling areas on ground moraines, end moraines, and drumlins.
- 33 - Pits, Sand and Gravel
- 35 - Histosols and Aquents, ponded: Depressions, beaver dam areas, and marshes.
- 36 - Markey and Carbondale Mucks: Depressions on ground moraines, lake plains, and outwash plains.
- 52A - Ingalls Fine Sand: (0 to 3 percent slopes) - Nearly level areas on lake plains and outwash plains.
- 61B - Paquin Sand: (0 to 6 percent slopes) - Nearly level and undulating areas on outwash plains and lake plains.
- 70B - St. Ignace Silt Loam: (0 to 6 percent slopes) - Nearly level and undulating areas on bedrock-controlled ground moraines and lake benches.
- 70D - St. Ignace Silt Loam: (6 to 15 percent slopes, rocky) - Gently rolling and rolling areas on bedrock-controlled ground moraines and lake benches.
- 70F - St. Ignace-Rock Outcrop Complex: (35 to 75 percent slopes) - Very steep areas on bedrock-controlled ground moraines and lake beaches.
- 116 - Udipsamments and Udorthents - (Nearly Level) - Flat areas that were excavated for borrow material, or cut and fill areas.
- 124D - Alpena Gravelly Loam: (0 to 15 percent) - Nearly level to rolling areas on glacial lake beach ridges.
- 163B - Esau-Zela Complex: (0 to 3 percent slopes) - Ridge-swale complex on beach ridges; Esau - on low ridges with slopes of 0 to 3 percent; Zela - in swales with slopes of 0 to 2 percent.
- 164A - Moltke Loam: (0 to 3 percent slopes) - Nearly level areas on lake plains and outwash plains.

Figure 3-3
Mackinac Island Soils Map

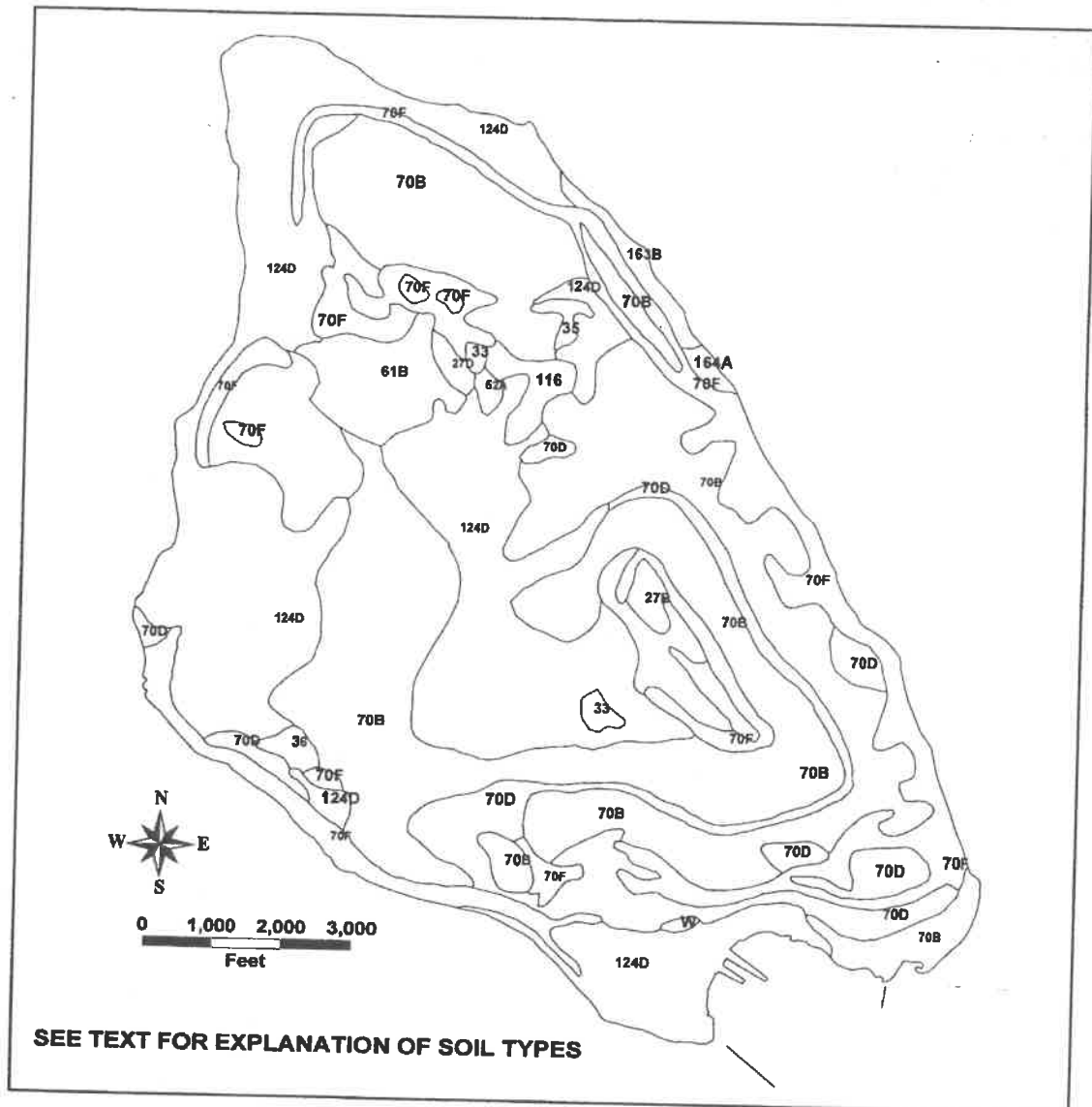
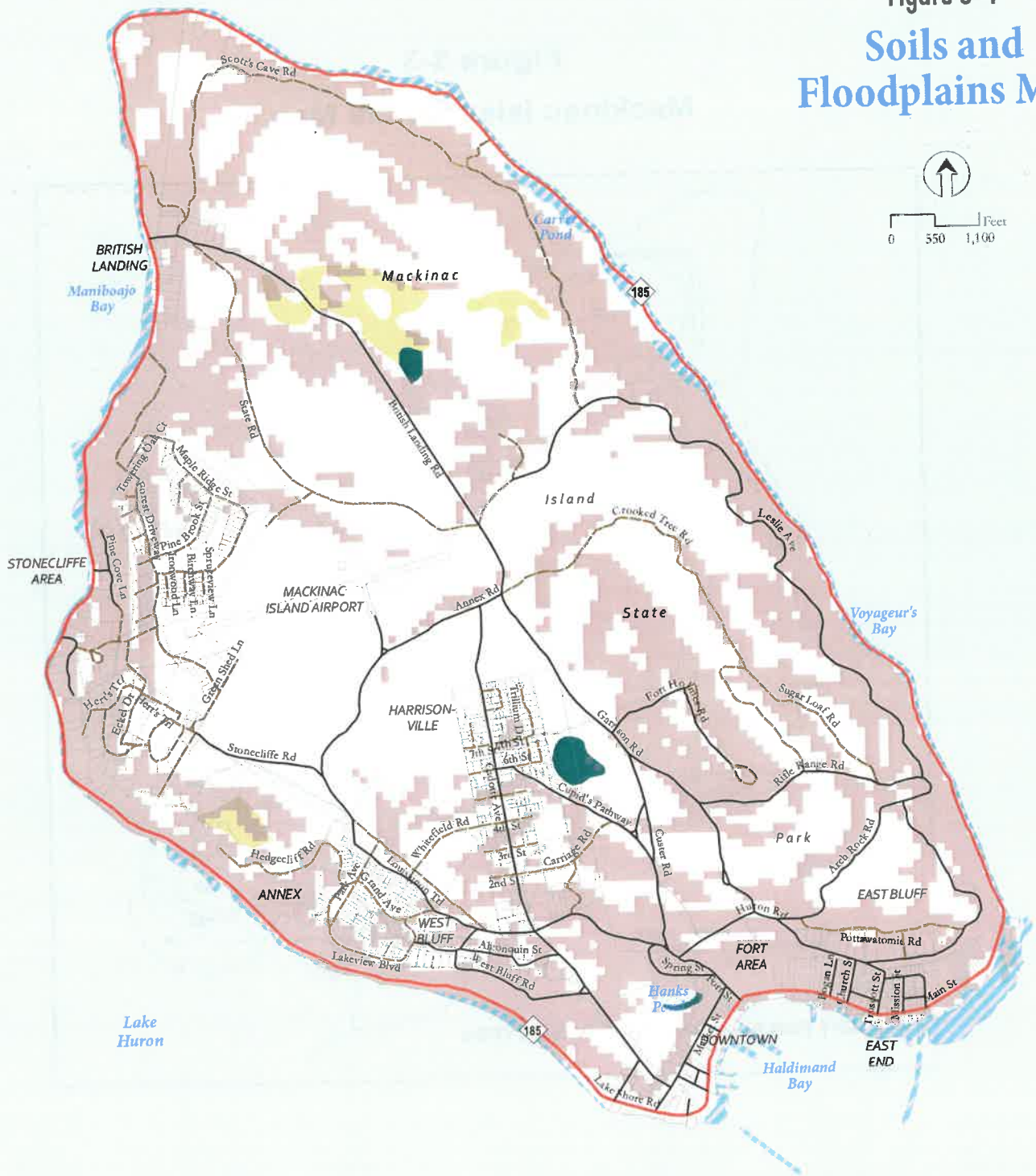


Figure 3-4
**Soils and
Floodplains Map**



City of Mackinac Island | 2024 Master Plan

Soils, Slopes and Floodplains:

- Non-Hydric Soils
- Hydric Soils
- Soils Not Classified
- Slopes Greater Than 10%
- State Flood Hazard Areas

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

Soils Source: SSURGO Soil Data, USDA Natural Resource Conservation Service;
Slope Source: Derived from Digital Elevation Model

Special Flood Hazard Area Source: FEMA, December 15, 2022
Parcel Source: Mackinac County Equalization, 2018

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\\sdc\proj\3153\2024\GIS\Map\Soils.mxd

Water Resources

Although the Island is located in the Lake Huron end of the Straits of Mackinac, there is very little surface water located on the Island. The only surface water visible on the United States Geological Survey topographical maps is a pond associated with Grand Hotel Golf Course. Additionally, a small creek on the west side of the Island, Brown's Brook, is fed by underground springs and flows year-round. There are a number of seeps with water trickling out of the limestone slopes cut on the east and west sides of the island. A small spring also feeds into Croghan Water on the Northwest side of the Island.

The water quality surrounding the Island is considered excellent. The lake water is the source for all drinking water which is filtered for use on the Island (see Chapter 5 – Community Facilities, Services and Transportation).

Floodplains

Floodplain information is made available by the Federal Emergency Management Agency (FEMA) through its National Flood Insurance Program (NFIP) (December 15, 2022 effective date for Mackinac Island). From a planning standpoint, this information is intended to promote floodplain management through implementation of sound land use within floodplain areas. Presently, there are several areas of the island, all of which are located along the shoreline, that fall within a "special flood hazard area." Special flood hazard areas are those having special flood, mudflow or flood-related erosion hazards where the NFIP's floodplain management regulations must be enforced and where the mandatory purchase of flood insurance applies. The special flood hazard areas on Mackinac Island have been determined in consideration of the base flood elevation of 585 feet above sea level. Most of the special flood hazard areas are immediately adjacent to the shoreline. The exceptions are the downtown and east end areas of the island, where floodplains extend slightly further beyond the immediate shoreline. Special flood hazard areas are shown on **Figure 3-4**. Efforts should be made to maintain these floodplain areas in their natural state to assure preservation of natural features and to limit damage to personal property. Some, but not all, of these special flood hazard areas are occupied as public parks or private open spaces.

Wetlands

Wetlands are unique and diverse ecosystems where water is found, either on the surface or near the surface, at various times during the year. These areas often contain poorly drained soils which support water-loving vegetation. Wetlands are also referred to as marshes, swamps or fens. Residents of Michigan are becoming increasingly aware of the value of wetlands. Beyond aesthetic value, wetlands protect the water quality of lakes and streams by filtering polluting nutrients, organic chemicals, and toxic heavy metals. Wetlands are closely related to high groundwater tables and serve to discharge or recharge aquifers.

Residents of Michigan are becoming increasingly aware of the value of wetlands. Beyond aesthetic value, wetlands protect the water quality of lakes and streams by filtering polluting nutrients, organic chemicals, and toxic heavy metals.

Croghan Water is an important marsh, located at the north central portion of the Island, along British Landing Road. This area is a natural drainage area for rain and snow melt water. It is also fed by underground springs, which protect it from severe wet and dry cycles.

Additionally, two wetlands are shown on the Soils Map (**Figure 3-3**). An emergent wetland is located along the shore on the east side of the Island, approximately one third of a mile south of the Wildflower Trail. This wetland (Carver Pond), a calcareous fen, referred to locally as Lone Lake, is dominated by herbaceous hydrophytic plants. A shrub/scrub wetland is located on the west side of the Island, northwest of Devil's Kitchen, and is dominated by woody vegetation less than six meters tall. Another wetland area borders Brown's Brook, especially near the mouth. There are also some less conspicuous wetland areas on both the east and west sides of the island.

Part 303 (Wetlands Protection) of Michigan's Natural Resources and Environmental Protection Act (P.A. 451 of 1994) defines wetlands as "land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh." The act further specifies State jurisdiction depends on proximity to lake, stream, pond, or Great Lake, and/or having a direct hydrological relationship with it. Wetlands that meet the statute criteria are considered regulated and require a permit before draining, filling, dredging, or construction in a wetland.

Woodlands and Flora

The Island provides a variety of habitats and supports a broad diversity of plant species. Island habitats include the northern mixed hardwood forests, upland conifers, lowland conifers, meadows, beaches and marshes. Northern hardwoods are the predominant forest type on the Island, which includes sugar maple, beech, basswood, and red oak. The other forest types include upland conifers, such as white-cedar, white spruce, balsam fir, white pine, red pine, and hemlock. The lowland conifers include northern white-cedar, balsam fir, white spruce, eastern larch, and paper birch. A belt of predominantly northern white-cedar surrounds the Island, as is typical of islands in the Western Great Lakes.

Mackinac Island is located in a floral transition zone, between the boreal forests of the north, and the mixed hardwoods further south. The Island supports over 600 species of plants. A 1995 study of the Island flora found some previously resident native species missing, and many new introduced species.¹ The State of Michigan recognizes rare plants and classifies them according to the level of protection granted: endangered, threatened, or special concern. Some of the protected plants found on the Island include all the orchids, some ground pines (*Lycopodium* species), and Pitcher's Thistle. Additionally, the Dwarf Lake Iris (*Iris lacustris*), a State threatened species, is no longer found in the wild on the Island (though the original siting of this species type was found here in 1810). One plant listed as rare is the Twisted Whitlow Grass (*Draba arabisans* Michaux), which grows on large boulders and outcrops of limestone. Mackinac is one of only four counties in Michigan to have this plant.

Approximately 28 percent of the plant species on the Island are introduced species. Case in point is Norway Maples, which have been brought to the Island over the years and planted as shade trees in yards and along streets. Now, this nonnative species has established itself throughout the Island and is out-competing many of the native trees. Left unchecked, the aggressive Norway Maple may someday replace the native Sugar Maple as the dominant hardwood tree on the Island. In the last few years, great strides have been made in removing them and controlling their spread on State Park land, and individuals on private land are similarly being

¹ Martin, Patricia L., A Floristic Study of the Vascular Plants of Mackinac Island, Michigan, Masters Thesis, Central Michigan University, 1995.

encouraged to remove and control their spread. Care should be taken to protect native flora and to eradicate exotic plants on the Island such as the following:

- Japanese Knotweed (*Polygonum cuspidata*)
- Phragmites (*Phragmites australis*)
- Common St. John's Wort (*Hypericum perforatum*)
- Wall Lettuce (*Lactuca muralis*)
- Golden Lungwort/Wall Hawkweed (*Hieracium murorum*)
- Purple Loosestrife (*Lythrum salicaria*)
- Black Spotted Star Thistle/Spotted Napweed (*Centaurea maculosa*)
- Periwinkle/Myrtle (*Vinca minor*)
- Garlic Mustard (*Alliaria petiolata*)
- Japanese Knotweed (*Fallopia japonica*)
- Wild Parsnip (*Pastinaca sativa*)
- Common Buckthorn (*Rhamnus cathartica*)
- Glossy Buckthorn (*Rhamnus frangula*)
- Crown Vetch (*Securigera varia*)

In addition to invasive species issues, our woodlands face threats from diseases. Beech Bark blight is killing the American Beeches on the Island and will probably claim 85 to 95 percent of these trees. Spruce bud worm is also damaging the White Spruce and Balsam Fir populations. Mackinac State Historic Parks has a checklist of wildflowers found on Mackinac Island, organized by family and specifies which species are introduced. A copy of this list is included in **Appendix B**.

Wildlife and Fish

The wildlife species found on the Island are typically smaller mammals, including squirrels, chipmunks, hares, raccoons, minks, river otters, beaver, coyote, fox and bats, our once most populous mammal. Unfortunately, the bat population has diminished lately due to the presence of White-nose syndrome first found in Mackinac County in the winter of 2013-2014. The disease is caused by the fungus *Pseudogymnoascus destructans*, which colonizes the bat's skin and usually results in death. It is estimated that 90 to 95 percent of the Little Brown Bat population has already been lost. During the winter, when the Straits of Mackinac is frozen, other larger mammals occasionally cross the ice from the mainland or neighboring islands. Due to the significant influx of summer tourists and the limited amount of wilderness area, very few larger mammals remain on the Island year round. However, since the last Master Plan, the island has seen the establishment of a permanent deer and coyote population. Like the non-native plants introduced to the Island, two non-native mammals were recently introduced to the Island and are now prolific. Gray squirrels were introduced in the 1970s at Fort Holmes, and eastern cottontails were introduced as recently as the 1990s.

A variety of bird species can be viewed on Mackinac Island, including species that reside on the Island year-round, summer breeding and nesting species, and those that stop briefly during migratory flights. The year-

round permanent species include: Chickadees, Nuthatch, and Purple Finch. The summer breeding species include: American Robin, the Yellow Warbler, Black Throated Green Warbler, Indigo Bunting, Ovenbird, American Redstart, Chimney Swift, and many others. Mackinac Island provides the appropriate habitats to support five species of eastern swallows during the summer. Birds that are occasionally spotted on the Island include the Broadwing Hawk, Osprey, and Great Gray Owl. Mackinac is on the flyway for migrating birds, especially hawks and eagles. Thousands pass over every spring and fall and, for the last three years, the Straits Area Raptor Watch has stationed a bird watcher to count the vultures, eagles, falcons, hawks and owls passing over Fort Holmes from March until early June. Mackinac Island State Historic Parks has a checklist of the bird species found on Mackinac Island. This checklist is included in **Appendix B**.

Fishing in the Straits area has been a significant part of the Island's history. Mackinac Island was one of the earliest fisheries in the upper Great Lakes. At the peak, in the middle part of the nineteenth century, the Island exported an estimated 25,000 barrels of fish annually.

Fishing in the Straits area has been a significant part of the Island's history. Mackinac Island was one of the earliest fisheries in the upper Great Lakes. At the peak, in the middle part of the nineteenth century, the Island exported an estimated 25,000 barrels of fish annually. The back bone of the fishing industry was the Lake White Fish, which spawn in abundance in the Straits of Mackinac, and also the Lake Trout. Today, in addition to those two species, there are a number of other fish in the Straits including Perch, Small Mouth Bass, Pike, Walleye, Brown Trout and Chinook salmon. The Chinook were introduced to the Great Lakes in an effort to control the invasive Alewife.

Although the Michigan Department of Natural Resources (MDNR) does not stock the Straits of Mackinac, there are some other stocking programs around the area that may influence the fishing around the Island. The local tribe of Native Americans is stocking one half million Chinook salmon at St. Martin's Bay annually. The MDNR also stocks Chinook salmon and brown trout at Detour. Today fishing from the Island is primarily recreational, with a few companies providing charter fishing excursions in the Straits area. The predominant fish caught is the King Salmon and the season is best during June, July, and early August.

Sites of Environmental Contamination and Concerns

Part 201 (Environmental Remediation) of the Natural Resources and Environmental Protection Act (PA 451 of 1994), as amended, provides for the identification, evaluation, and risk assessment of sites of environmental contamination in Michigan. The Remediation and Redevelopment Division (RRD) of the Michigan Department of Environmental Quality (DEQ) is charged with administering the law. A site of environmental contamination is identified by RRD as "a location at which contamination of soil, groundwater, surface water, air, other environmental resource is confirmed, or where there is potential for contamination of resources due to site conditions, site use, or management practices."

The RRD maintains a database on the agency's website of environmentally contaminated sites by county, showing the sites by name, pollutant(s), and site status. The current list (February 2023) identifies one site on Mackinac Island which qualify as a contaminated site per Part 201. The facility's name is Island Hardware (Facility ID# 00003237).

The current RRD list (February 2023) also includes two sites of environmental contamination which qualify as a result of a Baseline Environmental Assessment (BEA) prepared by a new or prospective property owner and disclosed to the DEQ pursuant to Part 201. One site is located at 6309-66 Main Street and 6550 Wendell Street (Site ID# 49000091). The other is located at 1 Lakeshore Drive (Site ID# 4900007).

A second list for Leaking Underground Storage Tanks (LUST) is also maintained by the RRD and is governed by Part 213 of the Natural Resources and Environmental Protection Act (PA 451 of 1994), as amended. The purpose of the program is to provide remedies for sites posing a threat to the public health, safety, or welfare, or to the environment, regardless of whether the release or threat of release is of a regulated substance. LUSTs are those contaminated sites with leaking petroleum products from underground tanks.

- An Open LUST site means a location where a release has occurred from an underground storage tank system, and where corrective actions have not been completed to meet the appropriate land use criteria. An Open LUST site may have more than one confirmed release.
- A Closed LUST site means a location where a release has occurred from an underground storage tank system, and where corrective actions have been completed to meet the appropriate land use criteria. In accordance with Section 21315(1) of Part 213, the DEQ may audit a closure report, wherein the results of corrective actions are documented, up to six months after receipt of the closure report. This audit window may result in a confirmed release(s) being reopened during the six-month time frame following receipt of a closure report if deficiencies are noted.

Enbridge Line 5 Pipeline

Of particular environmental concern is the nearly 70 year old Enbridge Line 5, a major oil pipeline in the Enbridge Lakehead System, which conveys petroleum from western Canada to eastern Canada via the Great Lakes states. Line 5 is particularly notable for passing under the Straits of Mackinac. Public concerns have focused on the risk of a spill under the Straits of Mackinac, the difficulty of controlling any spill that might occur, and the impact such a spill would have on Mackinac Island. According to Enbridge, the pipes under the straits have never leaked, are monitored 24 hours a day, and are regularly inspected by underwater autonomous vehicles. However, there have been numerous spills elsewhere in Michigan from Enbridge pipelines, including a major Line 5 spill at Crystal Falls in 1999, as well as the 2010 Kalamazoo River oil spill on Line 6.

Anchor strikes to the pipeline have occurred in recent years, including a June 2020 anchor strike that temporarily shut down the pipeline to repair significant damage. In November 2020, the Governor of Michigan announced the termination of Enbridge's easement to operate Line 5 in the Straits of Mackinac and requiring them to decommission Line 5 by May 2021. The Governor's action was based on a finding that Enbridge has repeatedly violated the 1953 Easement and that the continued operation of the pipeline violates the state's solemn duty to protect the Great Lakes under the public trust doctrine. Legal battles between Enbridge and the State are ongoing.

Surface Water Discharge Permits

All point source discharges into surface waters are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit, which is issued by the Michigan Water Resources Commission upon recommendation by DEQ, Surface Water Quality Division. Permit requirements generally address discharge limitations, effluent characteristics, monitoring and reporting requirements, along with facility management

requirements. The wastewater treatment plant and water filtration plant are the only operations on the Island that currently hold point source discharge permits.

Air Quality

Air Quality is monitored by the Air Quality Division of the DEQ. Standards have been established as acceptable levels of discharge for any of the following air pollutants: particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and trace metals. These pollutants are monitored on a continuing basis at selected locations around the state. Monitoring in recent years has shown the level of pollutants in the region to be within the established acceptable standards. Air discharge permits are required for businesses discharging more than the acceptable level of any of the regulated air pollutants. While there are discharge permits issued within Mackinac County, there are no permits issued to businesses located on Mackinac Island.

Patterns of Land Ownership

The patterns of land ownership on Mackinac Island are complicated. At the most basic level, the Island is comprised of privately owned land, State owned land, and State owned land that is leased for private use. Round Island, which according to the City Charter is part of the City of Mackinac Island, is federally owned. On Mackinac Island, most State land is under the jurisdiction of the Mackinac Island State Park Commission, which has been making a concerted effort in recent years to clarify ownership issues resulting from decades of encroachment and lack of accurate survey information. The State Park has acquired some conservation and scenic easements on private property to limit development on those parcels and protect views and has purchased additional properties. The State Park has also granted a number of specific easements for utility lines to traverse State property. The patterns of land ownership are depicted in **Figure 4-1**.

Existing Land Use Analysis

Categories and Methodology

The review of existing land use on the Island (as of Fall 2023) was conducted by a small team of Mackinac Island citizens who were also part of the Master Plan Steering Committee. For each specific area of the Island, an initial identification of existing land use was checked by one or more residents of that particular area. A total of 10 existing land use categories were established for the analysis, as follows:




- Residential, Year-Round
- Residential, Seasonal
- Condominium Attached Structure
- Employee Housing
- Accommodations (For Rental to Guests)
- Commercial
- Institutional
- Museum
- Recreation
- Vacant Land/Rights-of-Way

Additionally, a study of the use of private barns was conducted; however, private barn is not considered an existing land use category. An Island-wide existing land use map (**Figure 4-2**) illustrates the distribution of existing land use for each individual property. Several existing land use maps have been prepared at a larger scale for specified areas of the Island (**Figures 4-3 through 4-6**), including Downtown, the East End, Harrisonville, and Stonecliffe.




City of Mackinac Island | 2024 Master Plan

Ownership:

-  Private Land
-  State Land
-  State Land Leased for Private Use

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
-  Water Bodies

July 2024

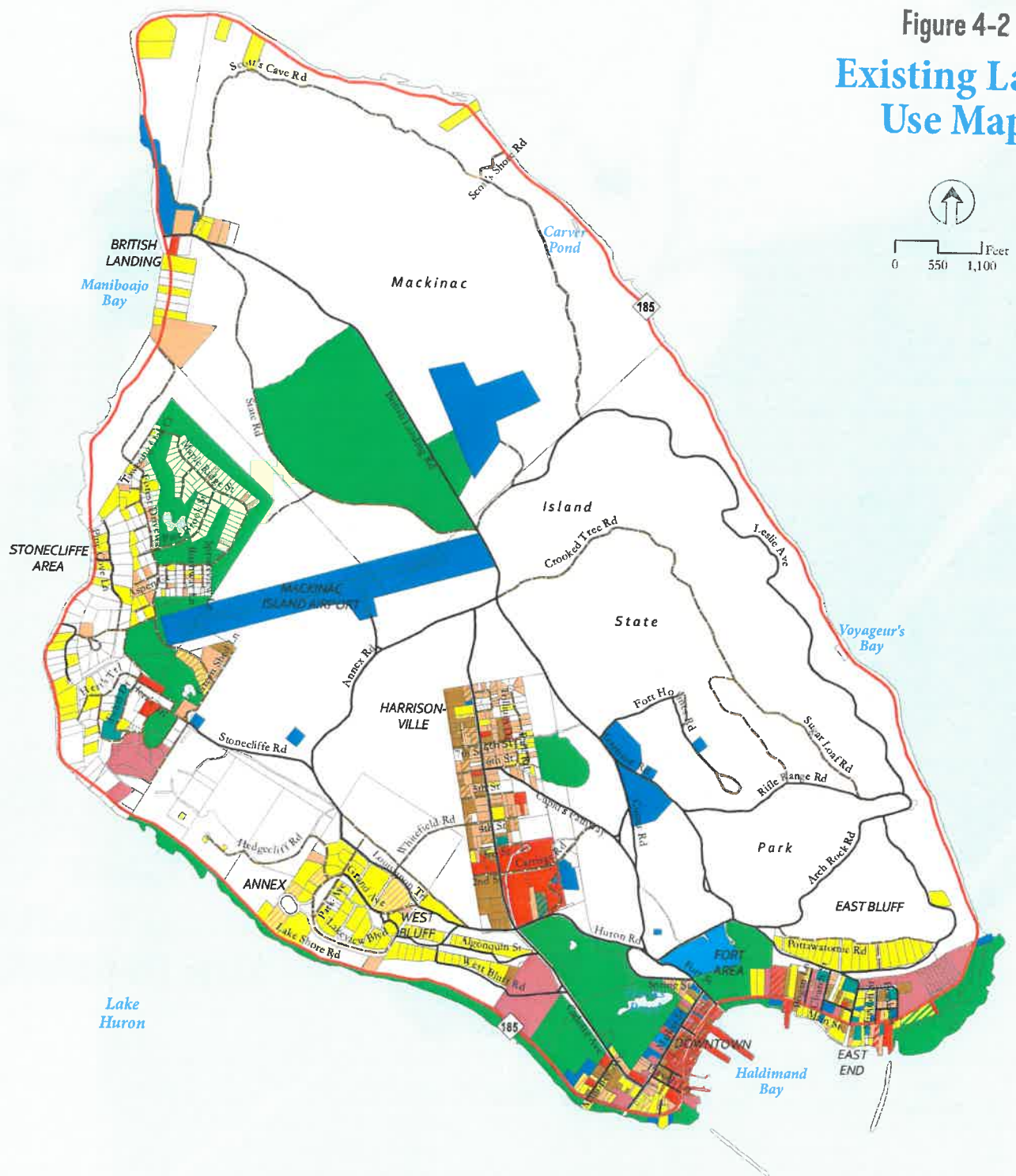


4241 Old US 27, Suite 1
Gaylord, MI 49734
www.WadeTrim.com

Ownership Source: Wade Trim and the City of Mackinac Island, February 2024
Parcel Source: Mackinac County Equalization, 2018

Table 1. Summary of the 2013-2014 data. Percentages are based on 1000

Figure 4-2
Existing Land
Use Map



City of Mackinac Island | 2024 Master Plan

Existing Land Use Categories:

- | | |
|---------------------------------------|----------------------|
| Residential, Year-Round | Commercial |
| Residential, Seasonal | Institutional |
| Condominium Attached Structure | Museum |
| Employee Housing | Recreation |
| Accommodations (For Rental to Guests) | Vacant/Rights-of-Way |

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

Existing Land Use Source: Wade Trim and the City of Mackinac Island February 2024
Parcel Source: Mackinac County Equalization, 2018

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WadeTrim.com | 4241 Old US 27, Suite 1, Gaylord, MI 49734

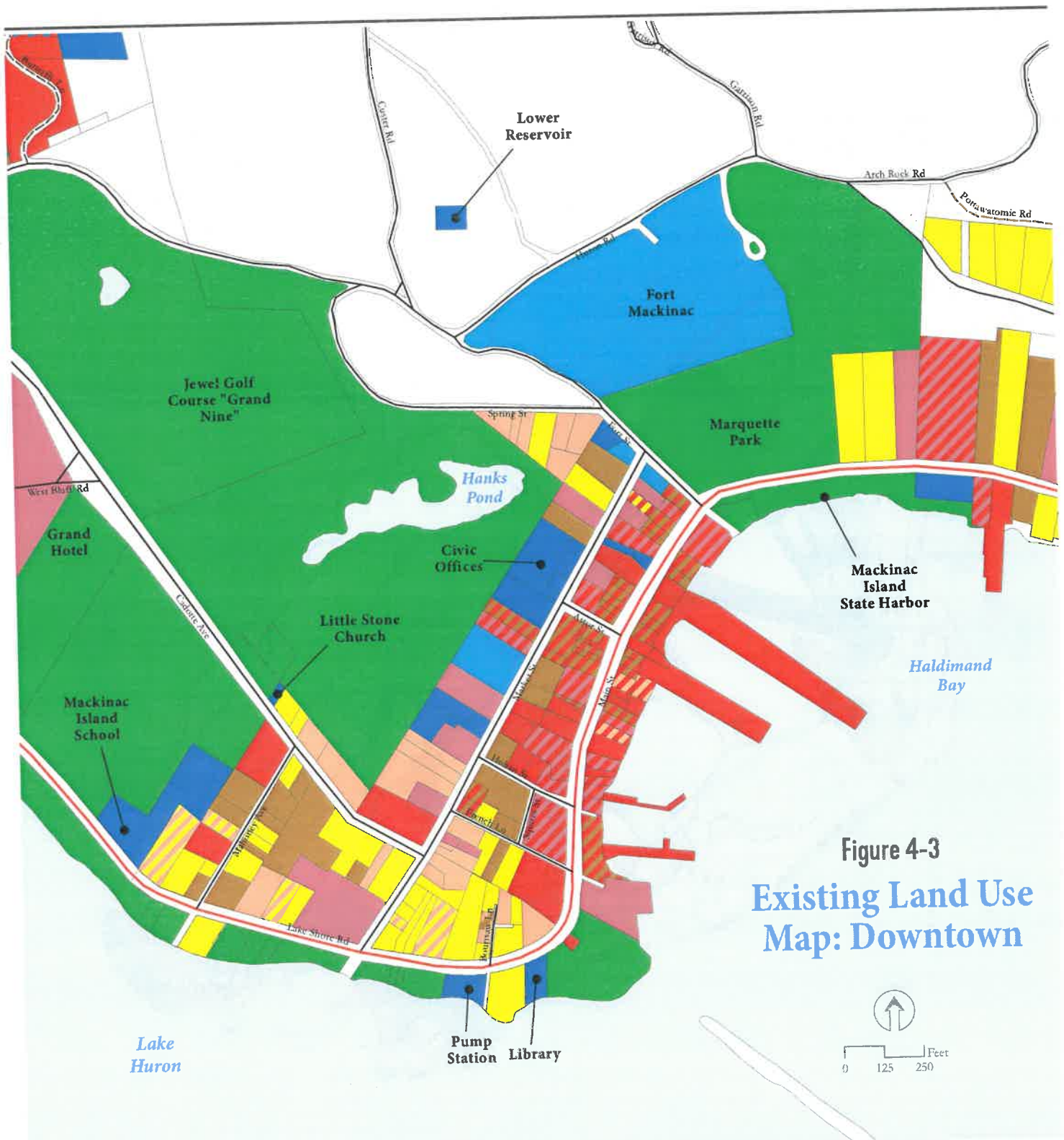


Figure 4-3
Existing Land Use
Map: Downtown

City of Mackinac Island | 2024 Master Plan

Existing Land Use Categories:

- Residential, Year-Round
- Residential, Seasonal
- Condominium Attached Structure
- Employee Housing
- Accomodations (For Rental to Guests)

- Commercial
- Institutional
- Museum
- Recreation
- Vacant/Rights-of-Way

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

Existing Land Use Source: Wade Trim and the City of Mackinac Island, February 2024
Parcel Source: Mackinac County Equalization, 2018

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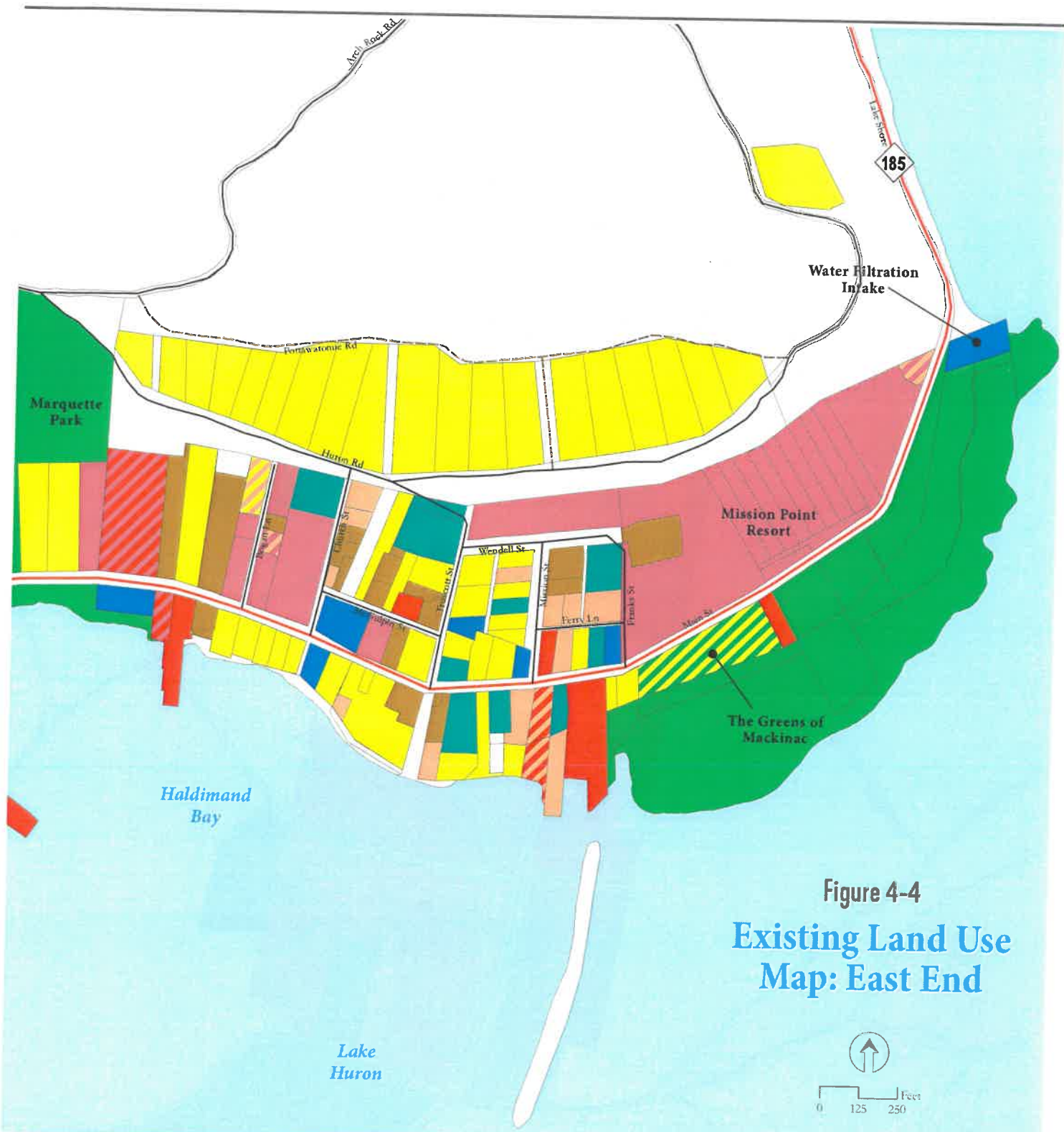


Figure 4-4
Existing Land Use
Map: East End

City of Mackinac Island | 2024 Master Plan

Existing Land Use Categories:

- | | |
|---------------------------------------|----------------------|
| Residential, Year-Round | Commercial |
| Residential, Seasonal | Institutional |
| Condominium Attached Structure | Museum |
| Employee Housing | Recreation |
| Accommodations (For Rental to Guests) | Vacant/Rights-of-Way |

Base Layers:

- | |
|---------------------------|
| State Highway |
| Improved (Asphalt) Roads |
| Unimproved (Gravel) Roads |
| Property Lines |
| Water Bodies |

Existing Land Use Source: Wade Trim and the City of Mackinac Island, February 2024
Parcel Source: Mackinac County Equalization, 2018

July 2024



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Figure 4-5
Existing Land Use
Map: Harrisonville



City of Mackinac Island | 2024 Master Plan

Existing Land Use Categories:

- Residential, Year-Round
- Residential, Seasonal
- Condominium Attached Structure
- Employee Housing
- Accommodations (For Rental to Guests)

- Commercial
- Institutional
- Museum
- Recreation
- Vacant/Rights-of-Way

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

Existing Land Use Source: Wade Trim and the City of Mackinac Island, February 2024
Parcel Source: Mackinac County Equalization, 2018

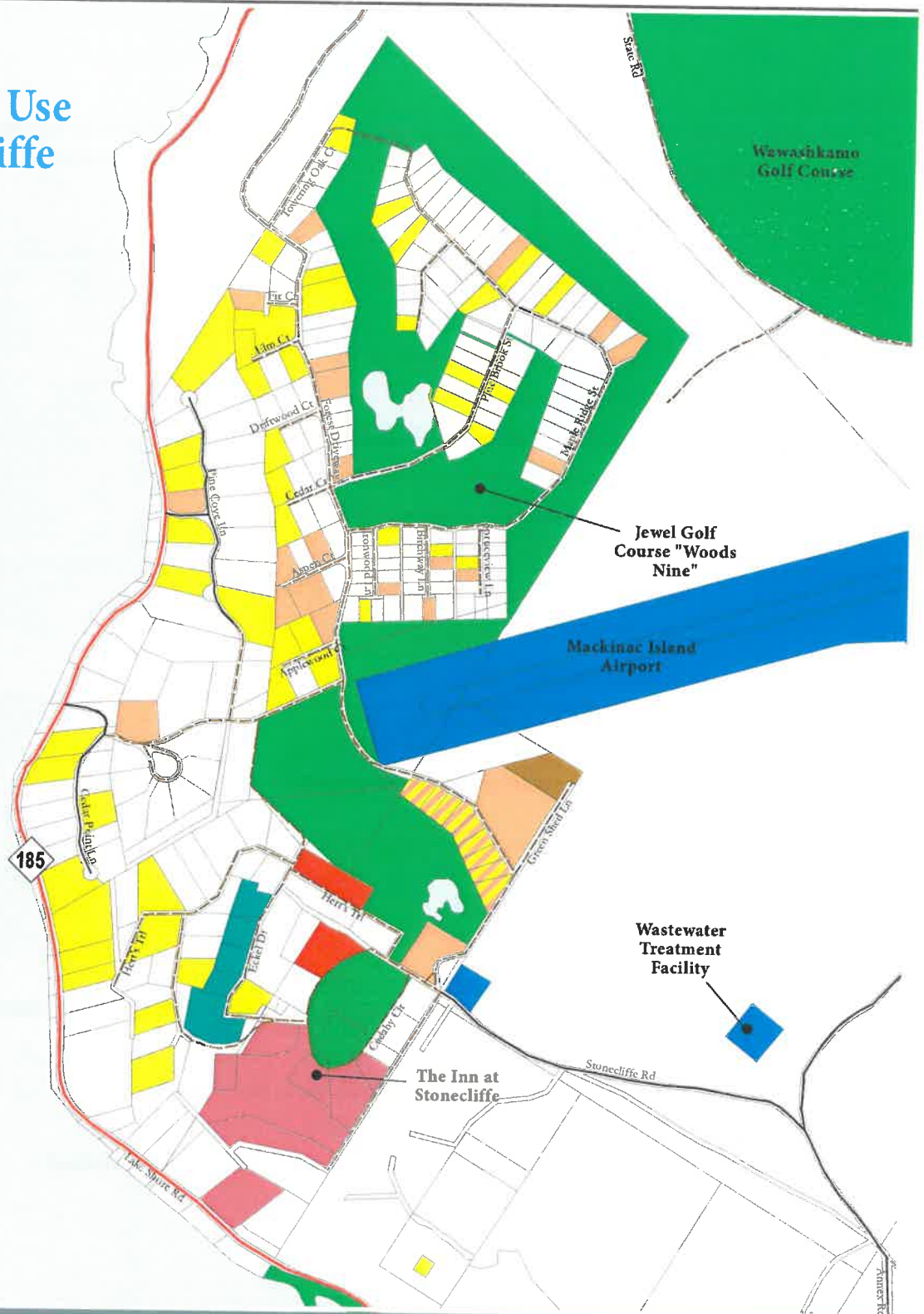
July 2024



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Map prepared by Wade Trim for the City of Mackinac Island, 2024

Figure 4-6
Existing Land Use
Map: Stonecliffe



City of Mackinac Island | 2024 Master Plan

Existing Land Use Categories:

- Residential, Year-Round
- Residential, Seasonal
- Condominium Attached Structure
- Employee Housing
- Accommodations (For Rental to Guests)

- Commercial
- Institutional
- Museum
- Recreation
- Vacant/Rights-of-Way

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

Existing Land Use Source: Wade Trim and the City of Mackinac Island, February 2024
Parcel Source: Mackinac County Equalization, 2018

July 2024



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A summary table (Table 4-1) lists the distribution and number of uses by land use type for each specified area and subsection of the Island. The following areas and subsections are included in the summary table:

- Downtown, with 4 subsections:
 - Mackinac Island School to Market Street
 - Market Street to Hoban Street
 - Hoban Street to Astor Street
 - Astor Street to Marquette Park
- East End, with 3 subsections:
 - Marquette Park to Church Street
 - Church Street to Truscott Street
 - Truscott Street to Mission Point Resort
- Harrisonville, with 5 subsections:
 - Four Corners (Annex/Huron Roads) to 3rd Street
 - 3rd Street to 5th Street
 - 5th Street to 7th Street
 - North of 7th Street
 - Trillium Heights (Trillium Drive)
- Bluffs, British Landing, and the Lakeshore, with 6 subsections:
 - East Bluff
 - Fort Area
 - West Bluff
 - Annex
 - British Landing
 - Beyond British Landing, along Lake Shore Road to Mission Point Resort
- Stonedcliffe, with 5 subsections:
 - Towering Oak Court to Maple Ridge Street
 - Spruceview Lane to Forest Driveway
 - Forest Driveway to Lake Shore Road, North of Stone Brook Road
 - Stone Brook Road to Eckel Drive
 - Eckel Drive to Green Shed Lane

The following methodology was utilized in the identification of existing land use:

- If a property/structure had two uses (for example, a property containing a structure with commercial on the ground floor and employee housing above), it was shown on the existing land use map with a hatch pattern to represent both existing land use categories. Within the summary table, the use was listed in both existing land use categories (note: this means that the total number of uses listed in the table for a particular area may exceed the actual number of properties in that area).
- A residential property/structure which could be used year-round but was not so used in the Fall of 2023 was counted as seasonal.
- It is understood that some of the “condominium attached structures” have units which can be used, and in some cases are used, year-round. However, no effort was made to determine how many units in each such condominium structure were used year-round or seasonal.
- In the summary table, employee housing structures were subdivided into “small” (3 or fewer units) and “large” (more than 3 units). (Please note that the small or large distinction is based on the number of units, not the number of occupants.)
- In the summary table, buildings not in one of the identified areas of the island were included in the counts of the nearest counted area. As examples, the Wawashkamo area buildings are included in the British Landing area, and the airport and waste water plant’s buildings are in the Stonecliffe area.

Existing Land Use Analysis

The summary table of structures by existing land use, for each section and subsection of the Island, is presented as **Table 4-1**. A narrative describing existing land use on the Island is included below.

Residential, Year Round

In general, higher concentrations of residential year-round homes are located in downtown, Harrisonville, and in the Stonecliffe areas, with a small number in the Annex and British Landing area.

Residential, Seasonal

Residential seasonal homes include houses that on Mackinac Island are called “cottages”, many of them over 100 years old. They are on both the East Bluff and West Bluff and in the Annex, with a few downtown. Some of them have converted a part of the cottage or barn into a winterized unit which can be used for occasional winter visits.

In the seasonal residential category, there are also homes that have been built so they can be used year-round (some were so used in recent years) and the owners have chosen to leave the Island typically in the fall/winter seasons. This is true for some of the houses identified as “seasonal” in Harrisonville, especially Trillium Heights, or in the Stonecliffe area.

Table 4-1
Existing Land Use
Mackinac Island, Fall/Winter 2023-2024

| Area of Town | Number of Uses by Existing Land Use Category | | | | | | | | | | Vacant Land |
|-----------------------------------------------------------------------|----------------------------------------------|-----------------------|--------------------------------|------------------|-------|---------------------------------------|------------|---------------|--------|-------------|-------------|
| | Residential, Year-Round | Residential, Seasonal | Condominium Attached Structure | Employee Housing | | Accommodations (For Rental to Guests) | Commercial | Institutional | Museum | Totals Uses | |
| | | | | (S - I) | Total | | | | | | |
| DOWNTOWN | | | | | | | | | | | |
| Mackinac Island School to Market Street | 7 | 17 | 0 | (6 - 5) | 11 | 1 | 2 | 2 | 0 | | 0 |
| Market Street to Hoban Street | 9 | 16 | 0 | (6 - 4) | 10 | 6 | 3 | 1 | 0 | | 0 |
| Hoban Street to Astor Street | 3 | 0 | 0 | (18 - 2) | 20 | 12 | 39 | 3 | 1 | | 0 |
| Astor Street to Marquette Park | 0 | 3 | 0 | (14 - 2) | 16 | 8 | 20 | 6 | 2 | | 0 |
| Totals | 19 | 36 | 0 | n/a | 57 | 27 | 64 | 12 | 3 | 218 | 0 |
| EAST END | | | | | | | | | | | |
| Marquette Park to Church Street | 2 | 7 | 1 | (2 - 2) | 4 | 9 | 3 | 1 | 0 | | 0 |
| Church Street to Truscott Street | 4 | 7 | 2 | (8 - 3) | 11 | 1 | 1 | 2 | 0 | | 1 |
| Truscott Street to Mission Point Resort | 9 | 16 | 7 | (1 - 4) | 5 | 2 | 4 | 3 | 0 | | 2 |
| Totals | 15 | 30 | 10 | n/a | 20 | 12 | 8 | 6 | 0 | 101 | 3 |
| HARRISONVILLE | | | | | | | | | | | |
| Four Corners to 3rd Street | 2 | 2 | 2 | (6 - 4) | 10 | 0 | 12 | 2 | 1 | | 2 |
| 3rd Street to 5th Street | 24 | 1 | 1 | (8 - 3) | 11 | 0 | 2 | 0 | 0 | | 7 |
| 5th Street to 7th Street | 33 | 10 | 0 | (6 - 3) | 9 | 0 | 1 | 0 | 0 | | 13 |
| North of 7th Street | 27 | 3 | 0 | (9 - 6) | 15 | 0 | 1 | 1 | 0 | | 11 |
| Subtotals | 86 | 16 | 3 | n/a | 45 | 0 | 16 | 3 | 1 | 170 | 33 |
| Trillium Heights | 9 | 1 | 0 | (0 - 1) | 1 | 0 | 1 | 0 | 0 | | 11 |
| Totals | 95 | 17 | 3 | n/a | 46 | 0 | 21 | 2 | 1 | 185 | 44 |
| BLUFFS, BRITISH LANDING, AND THE LAKESHORE | | | | | | | | | | | |
| East Bluff | 0 | 20 | 0 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 1 |
| Fort Area | 0 | 2 | 0 | (0 - 0) | 0 | 1 | 0 | 0 | 1 | | 1 |
| West Bluff | 3 | 27 | 0 | (1 - 0) | 1 | 0 | 0 | 0 | 0 | | 8 |
| Annex | 4 | 15 | 0 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 8 |
| British Landing | 4 | 7 | 0 | (0 - 0) | 0 | 0 | 1 | 3 | 0 | | 7 |
| Beyond British Landing, along Lake Shore Road to Mission Point Resort | 0 | 1 | 0 | (0 - 0) | 0 | 0 | 0 | 1 | 0 | | 1 |
| Totals | 11 | 71 | 0 | n/a | 1 | 1 | 1 | 3 | 1 | 89 | 25 |
| STONECLIFFE | | | | | | | | | | | |
| Towering Oak Court to Maple Ridge Street | 8 | 13 | 0 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 65 |
| Spruceview Lane to Forest Driveway | 4 | 4 | 0 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 32 |
| Forest Driveway to Lake Shore Road, North of Stone Brook Road | 8 | 18 | 0 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 39 |
| Stone Brook Road to Eckel Drive | 0 | 12 | 5 | (0 - 0) | 0 | 0 | 0 | 0 | 0 | | 40 |
| Eckel Drive to Green Shed Lane | 11 | 10 | 0 | (1 - 0) | 1 | 9 | 2 | 1 | 0 | | 17 |
| Totals | 31 | 57 | 5 | n/a | 1 | 9 | 2 | 1 | 0 | 106 | 193 |
| ISLAND TOTALS | 171 | 211 | 18 | n/a | 125 | 49 | 96 | 24 | 5 | 699 | 265 |

Condominium Attached Structure

Condominium attached structures have virtually all been built to be usable year-round, but the majority of the units are not so used, being in actual use during the extended season from May to the end of October, both by the owner and rented to others. These condominium attached structures are found in downtown, on the south side of Harrisonville, and in the Stonecliffe area.

Employee Housing

Employee housing is found downtown, in Harrisonville, and in the Stonecliffe area. The structures are converted from former family houses, from former hotels, or are structures purposely built to house employees in single rooms or in units for two or more individuals, owned by one of the Island's employers. Some have kitchen and laundry facilities, and some do not. Their primary occupancy is during "the tourist season" from early May to the end of October.

Accommodations (For Rental to Guests)

Accommodations for rental to guests range from the two large hotels, the Grand and Mission Point, through mid-sized hotels, to smaller hotels, and include bed & breakfasts. They are located in the downtown area with one mid-sized hotel at Stonecliffe. They are all open by the end of May and closed during and by the end of October, while some of the bed & breakfasts are open for guests during the winter months. The Island has an estimated 1,600 rooms available for the many tourists who come for one or more nights (Mackinac Island Tourism Bureau, 2024). On a number of nights in mid-summer, there is not an extra room to be had on the Island.

Commercial

Commercial uses of land include restaurants, gift shops, snack shops, fudge stores, and offices for arranging carriage tours and rental of bikes and horses. There are two year-round banks, a post office, and a grocery store. These uses are found on downtown's Main Street, primarily between French Lane and Fort Street, with occasional isolated commercial uses on the east end of Main Street, in Harrisonville, at Stonecliffe, and at British Landing. While most horses leave at the end of the tourist season, several teams remain on the Island all winter, so that horse-drawn taxis and wagons for deliveries and trash removal can continue year-round.

Institutional

Institutional uses of structures on the Island include the City office, Mackinac Island Medical Center, Police and Fire Department offices and buildings, the Library, the School, a City museum, and several churches. These institutional uses are all in the downtown area. The State Park also operates offices and work buildings in the downtown area, with seven buildings downtown (five museums, one employee housing structure and a visitor's center). The airport with its associated buildings, the water intake/treatment plant, the solid waste and waste water processing areas and buildings, two reservoirs (the lower reservoir and upper reservoir), and three cemeteries, are all located on State Park owned land in the interior of the Island. Near the Fort is a second fire station, and a facility belonging to the electric cooperative that serves the Island (these facilities are also situated on State Park owned land). Other institutional uses on State Park owned land include the State of Michigan's dock at British Landing.

Recreation

A recreation land use category is included on the existing land use maps. This land use category encompasses public or private recreation-related lands on the Island, including three golf courses (Wawashkamo, Jewel "Woods Nine", and Jewel "Grand Nine"), Marquette Park, Great Turtle Park, and the Mackinac Island State Harbor. Some of these recreational lands are privately owned while some are owned by the State Park. As these lands generally do not contain principal structures, the recreation category is not included in **Table 4-1**.

Vacant Land/Rights-of-Way

Lands which are currently vacant or unoccupied, as well as road rights-of-way, are classified into this category. The majority of the State Park owned land on the Island is shown as this category on the existing land use map, reflective of the undeveloped nature of the land. Numerous vacant, privately-owned lots are interspersed within subdivisions amongst otherwise built-up areas, such as in Trillium Heights, British Landing, and the Stonecliffe area (including Woodbluff and Stonebrook).

Private Barns

An inventory of private barns was conducted as part of the 2018 master planning process. Because private barns are accessory to principal uses, such as dwellings, they are not listed in **Table 4-1**. However, it was important to conduct an inventory of them because of the Island's unique horse culture and traditions. A private barn is defined as a structure in which one or more horses were recently stabled. In addition, there were 23 barns that, with some restoration, including clearing out the inevitable "stuff" which accumulates in otherwise empty barns, could return to stabling a horse. In 2018, there was a total of 44 actual or potential private barns on the Island, located in the following areas. (The first number is the current and recent use for one or more horses, the second number is the potential and plausible additional usable barns.)

- Harrisonville: 4 – 1
- East Bluff: 5 – 7
- Fort Area: 0 – 3
- West Bluff: 6 – 4
- Annex: 3 – 7
- British Landing: 1 – 0
- Beyond British Landing, on Lake Shore Road to Mission Point Resort: 2 – 1

Chapter 5: Community Services, Facilities, and Transportation

Water Distribution and Sewage Collection

Municipal water and sewer systems, maintained by the Department of Public Works (DPW), serve the majority of the water and sewer needs in the downtown area and other developed portions of the Island. While most of the State Park land is not served by water and sewer, many of the support facilities and service lines run through State Park property. City water and sewer does serve all State Park fire suppression and consumer service needs. The DPW has a 40-year franchise agreement (expires 2033) with the Mackinac Island State Park Commission to erect and maintain facilities and distribution systems for water supply and sewage treatment and disposal on Mackinac Island. DPW facilities on State Park property include the water reservoirs, Solid Waste Handling Facility, and Waste Water Treatment Plant, as well as horizontal water and sewer assets.

Sewer service in Harrisonville is limited. The public sewer system does not currently serve the older single family dwellings and residential developments in Harrisonville, although the newer housing developments in the area such as Edgewood and Woodville Court and Iroquois employee housing have installed private sewer mains which connect to the municipal system. Likewise, many of the newer residential developments have been required to install sewer mains which meet the City's specifications and connect to the municipal system. A few scattered single family residences, located on the northern and eastern portions of the Island, either on leased State Park land or private parcels surrounded by State Park land, are not served by municipal sewer. Two single family residences on the far northern portion of the Island are not served by City water and take their supply directly from Lake Huron.

Water System

The following narrative was prepared for the City by Fishbeck, Thompson, Carr & Huber (FTC&H) in April 2022 as part of a Water System Reliability Study. The Water Treatment Plant, including the raw water intake, was originally constructed in 1984 with a conventional filtration system. The raw water intake was installed 783 feet into Lake Huron at a depth of approximately 40 feet. In 1997, the conventional filtration system was replaced with a membrane filtration system.

Raw water is conveyed from the lake through an 18-inch ductile iron pipe to the shorewell at the WTP. Two vertical turbine shorewell pumps with a capacity of 2,000 gallons per minute (gpm) (2.88 MGD) each draw water directly from the shorewell, which causes water to flow from the intake. The shorewell pumps provide a total capacity of 5.76 MGD and a firm capacity of 2.88 MGD.

Water is pumped by the shorewell pumps through two strainers to four continuous microfiltration membrane filtration skids. The original membranes and the skids were installed in 1997; the membranes were then replaced in 2006 and again in 2016 due to their age and reductions in performance. The new membranes are chlorineresistant, which allows the City the ability to, if needed, pre-chlorinate the raw water just prior to filtration. The skids have a total capacity of 2.30 MGD and a firm capacity of 1.73 MGD. The firm capacity of the skids is the limiting factor relative to the WTP capacity, meaning the plant has a firm capacity of 1.73 MGD with one skid out of service. Process air is fed to the membrane skids via two compressors housed within the plant.

Filtered water from the membrane skids flows to the concrete clearwell beneath the plant, where chlorine is added for disinfection. The clearwell has a total capacity of 100,000 gallons. Water is pumped from the clearwell to the distribution system by four vertical turbine pumps: two pumps for the low-pressure district and two for the high-pressure district. The pumps currently in use were installed in 1998. During normal plant operations only the high-pressure district pumps are used. Water is pumped to the high-pressure district and then bleeds down into the low-pressure districts through a series of pressure reducing valves.

The WTP uses chlorine gas for disinfection, which is shipped to the City in 150-pound cylinders. The chlorination equipment is located in the chlorine room at the WTP. Since the water demand varies seasonally, so do the chlorine requirements.

The WTP requires improvements to continue reliable operation. Most of the equipment is 20 to 30 years old, and several items need to be replaced or rehabilitated due to age and condition. The Project Plan from the Water System Reliability Study focuses on the installation of new membrane filtration skids, improvements to the disinfection system, as well as other needs.

A total of about 140 fire hydrants throughout the system are maintained by the DPW. These are used in street washing, horse drawn street sweeping, as well as fire protection.

Leak surveys of the water system are conducted every other year by an outside firm in conjunction with the DPW.

Wastewater

The wastewater treatment facility, which is located near the center of the Island, has a rated capacity of 0.99 MGD. It was built in 1971, with expansions in 1984, 1992 and 2013. In 2024 a total rebuild of the Biddle Point pump station controls, pumps, motors, ventilation, and standby power was completed. Biddle Point handles sewage from the East and West Bluffs, Grand Hotel, Fort Mackinac, and all of the downtown and Mission areas. Pump configuration was changed from two 100 Hp and two 75 Hp pumps to three 75 Hp pumps. While these changes dropped the firm capacity from 1,650 GPM to 1,350 GPM, reliability was improved by having three identical pumps. Power costs were also reduced with the new configuration. If needed, capacity can be increased significantly by changing to higher horsepower pumps and/or the addition of a fourth pump. There are four smaller pumping stations located at Mission Point, Park Avenue in the Annex, near the Airport, and near Stonebrook. Mission Point lift station was refurbished in 2021. The Airport lift station was rebuilt in 2022. Improvements are planned for Stonebrook and Park Avenue. Additionally, newer developments have installed private sewer lines to DEQ specifications and the City has accepted responsibility for some of these lines.

Due to the dwindling capacity of the wastewater treatment facility, the City Council established a policy in June 2004 limiting the number of residential equivalency units (REU's) sold each year, with the goal of extending the life of the wastewater treatment facility. Specifically, the policy limits the number of new REU's issued per year on the Island to 10, on a "first come, first served" basis. These 10 REU's are allocated per year, as follows:

- 3 REU's reserved for residential
- 2 REU's reserved for change of use or small commercial
- 5 REU's open to residential or commercial

In 2023, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) announced the award of a \$15 million Clean Water State Revolving Fund grant to the City of Mackinac Island to support the construction of a new wastewater treatment plant. This grant will be added to other State and local funding sources including low-interest loans. In 2023, Fleis & Vandenbrink Engineering was contracted to construct the new wastewater treatment plant, increasing capacity, addressing ongoing odor issues, and removing Chlorine gas hazards. Once bid, the project cost became \$77.4 million. Additional funds from the State of Michigan totaling \$39.7 million were assigned to this project. Ground was broken in the fall of 2023 for a new Moving Bed Biological Reactor (MBBR) facility with an enclosed headworks, septage receiving station, and UV disinfection. Work is expected to be completed in the fall of 2025.

In 2024, in consideration of the wastewater treatment plant update, secured funding, and construction underway, the City Board of Public works expanded the REU distribution to 20 REU's per year, allocated as follows:

- 3 REUs reserved for strictly residential
- 2 REUs reserved for change of use or small commercial
- 5 REUs reserved for residential OR boardinghouse use
- 10 REUs reserved for commercial

Although the City's REU limitation policy remains in place as of the adoption of this 2024 Master Plan, the need for the policy is likely to end in the fall of 2025 when the new wastewater treatment plant is constructed and begins operations. Over the past 20 years, the City's REU limitation policy has been an influential factor working to limit growth and development on the Island. Other factors, including the City's Master Plan, zoning ordinance, and Historic District standards, play a similarly influential role in managing the character and scale of development on the Island. The potential for the City Council to rescind the REU limitation policy in the near future reinforces the need for the City to proactively plan for its future and ensure that its Master Plan is accompanied by strong regulatory tools such as the zoning ordinance and Historic District standards.

Stormwater

The stormwater collection system is in place in the downtown area and the Mission Area of the City of Mackinac Island. The downtown portion extends west to Mahoney Street. The nutrient load entering the system as debris and manure is minimized by the diligent street sweeping efforts conducted by both the City and the State Park. All portions of the stormwater collection system ultimately drain to Lake Huron. The stormwater system is fully owned by MDOT.

Solid Waste

Solid waste is an especially important function for an island community, and as such, Mackinac Island has developed a state-of-the-art processing and handling operation. The composting program is considered a model program by other communities from around the State.

Residential and commercial pick-up is offered on the Island by Mackinac Island Service Company using horse drawn drays. The dump on the Island was closed and capped in 1993. The Island currently operates an aggressive recycling and composting program, which serves to minimize the amount of solid waste shipped off-island for landfill disposal. Three types of municipal solid waste (compostable, recyclable, and landfill) are

collected and taken to the Solid Waste Handling Facility, where the different types of waste are processed and sorted. Approximately 85 percent of municipal solid waste collected annually is collected between June 1 and September 30 each year. Approximately 26 percent of this waste is recycled, roughly 24-25 percent is composted on the Island, and the remaining 49-50 percent ends up in an off-island landfill. Single use plastic cups, water bottles, and similar items are among the materials which must be transported off-island. The City should consider whether additional efforts to reduce single use plastic waste are needed, such as providing more water fountains and water bottle filling stations.

Construction debris, such as wood and drywall, is utilized in the composting process. The wood is separated for grinding once a year, and then the woodchips are mixed into the early stages of the compost process or used to cap dumpsters to prevent animal scavenging. Scrap metal, including discarded appliances, is now separated and periodically shipped off-island to a recycler. Much more metal than originally anticipated has been collected. The landfill solid waste collected on Mackinac Island is taken off-island and transported to a landfill in Dafer, Michigan. The recycling program is operated as source separated. Garbage and recyclable wastes are picked up daily from businesses during the summer season (May 1 – November 1) and curbside from residences weekly for garbage and every two weeks for recyclables. For the wintertime season (November 1 – May 1), pickup is twice weekly for commercial and weekly for residential. The City recycles three types of plastics, glass, magazines, tin, aluminum, styrofoam, and cardboard. The City collects newspaper, but due to the small volume and low market value, the City shreds the newspaper and uses it in the composting process.

The City's composting program is considered a model program by other communities from around the State

The composting program takes yard waste, food and paper waste from restaurants, horse manure from street and stable cleaning. The process involves a number of mixing steps and moving the compost piles. The compost piles are aerated with the leachate collected for treatment. Finally, the material is screened, cured (aged), and ultimately tested by DEQ prior to being sold. This process allows for a considerable amount of the waste to be converted into usable material which is sold on the Island for lawn and garden areas as well as used on the dump for additional cover. This material, once composted, is spread on top of the capped dump. The current composting and recycling facility is meeting the existing needs and is adequate to meet the anticipated needs for the near future. Landfill operations often suffer from transportation delays of empty and full dumpsters. Occasionally, especially in the spring, delays in shipping leave construction projects and City landfill operations unable to meet demand.

Other Utilities

Electric power is provided to Island residents, businesses, and the State Park by Cloverland Electric Cooperative of Dafer. The electricity is provided through lines from St Ignace located under Lake Huron. The electric service is provided throughout the developed portions of the Island via a combination of buried and overhead transmission lines. The reliability of the electric services has been improving, although the Island still experiences occasional short-term power outages. These occasional power outages support the need to have a sufficient number of full-time Island residents as employees of the power company. In the winter of 2015-16, Cloverland Electric upgraded and buried lines in the downtown area.

The Island is provided with phone and internet service by AT&T through copper and fiber optic cable. However, only certain portions of the Island, including downtown, have good access to fiber optic service, while other portions of the island have limited access, including many of the residential areas. Cable television service is provided to Island businesses and residents by Astrea. Internet is provided mainly by Astrea and AT&T. Additionally, many on the Island utilize satellite systems for their television reception, which must meet certain Island and State Park regulations.

The Island does not have natural gas service. Rather, propane gas is delivered to the Island via barge in 100, 250 or 400 pound cylinders. Mackinac Island Service Company stores the cylinders at the Coal Dock awaiting end-user delivery. Roughly 50 commercial and residential customers use propane. For commercial customers, propane is typically used for cooking, while residential customers typically use propane for small gas heating units or for cooking alternative. The Service Company delivers propane cylinders by dray or hand-pushed cart using certified installers for hazard prevention. Mission Point uses propane that is stored in two, 30,000 gallon propane tanks on their property, serviced by a propane delivery truck.

Most winter heating on the Island is served by electricity, while a few may heat or supplement with propane, fuel oil, wood pellets or wood.

Police, Fire, and Emergency Medical Services

The full time, year-round Island police force consists of a chief, two corporals, and three officers. During the summer, the staff is supplemented with four seasonal officers, and three traffic interns. The Michigan State Police assign two state troopers to the Island for 16 weeks in the summer. The Police Department operates two, four-wheel drive police vehicles.

The Police Department offices are located downtown on the first floor of the old City Hall building on Market Street. A substation in Harrisonville is also utilized. This facility allows for an increased police presence and greater accessibility for the public in Harrisonville and is used for conducting interviews, writing reports, and has an outside phone that is a direct dial to emergency dispatch.

Since 2006, the Island has had a community-wide addressing system and is participating in the county-wide 911 emergency services.

The year-round Mackinac Island Fire Department currently has a roster of 22 certified volunteer paid firefighters. Fire equipment includes four fire trucks: Squad 1, Engine 1, and Ladder 1 and 2; as well as other rescue vehicles: Rescue 1 (4x4), Battalion Pickup Truck with Wildland Fire Pump, and Ice Rescue Catamaran. This equipment is stored at Fire Station #1 on Market and Fire Station #2 on Edison Road. The department is also equipped for ice and water rescue.

In 2015, the City of Mackinac Island was awarded a Federal Emergency Management Agency (FEMA) port security grant. This grant funded a \$500,000 custom 31 foot vessel constructed by SAFE Boats International in Bremerton, Washington, which created the Mackinac Marine Rescue Team (MMRT). The vessel arrived at the Straits of Mackinac in June of 2015. The MMRT is managed and operated by members of the Mackinac Island community who are paid on call and trained to the United States Coast Guard small boat operators standards. MMRT later became a full Department of the City of Mackinac Island and now goes by Mackinac Marine Rescue (MMR). MMR assists all the Mackinac Island public safety agencies by providing a marine platform

that works with the Mackinac Island Medical Center and Mackinac Island EMS to provide medical evacuations of critical patients requiring care off the Island. The vessel has firefighting capabilities to assist the Mackinac Island Fire Department and its mutual aid partners. Additionally, the team is trained to carry out hazardous materials screening and search and rescue missions in conjunction with the Mackinac County Sheriff Department, the United States Coast Guard, and other agencies. The vessel is operated from late April until early November each year based on the weather.

Emergency Medical Service (EMS) on the Island operates year-round and is provided under an agreement with Cheboygan Life Support Systems, a non-profit firm from Cheboygan. They are responsible for staffing, equipment, and vehicle maintenance and repair. Emergency medical technicians (EMT) are on call 24 hours per day.

The Mackinac Island Medical Center, affiliated with Mackinac Straits Health System in St. Ignace, provides year round emergency and primary care medicine to Island residents and visitors.

Staffing for both volunteer and paid emergency services personnel continues to be a concern in the community.

School

The Mackinac Island Public School serves grades pre-Kindergarten through twelfth grade, with enrollment for the 2023-2024 school year of approximately 70 students. The school has also instituted a preschool program for 3- and 4-year-old children. The teacher to student ratio for the school is 1 to 6. The school facility is used through the year for volleyball, basketball, and community activities. The school has recently added robotics and e-sports to their curriculum. School students generally score above the state and national averages on standardized tests, with graduates continuing their education or entering the job market or the military. Scholarships are offered to all high school graduates who qualify through Mackinac Island Community Foundation endowments and other scholarship funds. The Mackinac Arts Councils supports the school in numerous ways with field trips, theater productions, and poetic and artistic showcases. The school built a duplex to house their staff in 2017 and is planning on building another duplex in 2024-25.

Recreation

The City of Mackinac Island has a Recreation Master Plan on-file with the Michigan Department of Natural Resources. The current plan was adopted in 2023 and covers calendar years 2024 through 2028. A recreation ordinance was adopted by the City on January 17, 1996. With the acceptance of this ordinance, the City established a recreation department, which is overseen by a five (5) member recreation board, that are appointed by the Mayor. The Board of Recreation hired a full time Recreation Director.

Prior to the formation of a recreation department, any recreational facilities and program developments were carried out by Mackinac Island Recreational Development, Inc, (MIRD). MIRD, an all-volunteer group, was

*Recreation Mission Statement:
To provide the community of Mackinac Island year-round
recreational opportunities that encourage, support and
convey a healthy, active lifestyle for all.*

incorporated as a non-profit organization in 1979. With the cooperation of the Mackinac Island State Park Commission, the City of Mackinac Island, and Mackinac Island Public School, MIRD designed and implemented long range recreation plans and year round recreation programs. MIRD was a driving force behind the planning and building of Great Turtle Park.

The recreation department is currently running over 50 programs throughout the year for all interests including physical activity, sports arts and crafts.

Currently, the school operates a Play Safe Playground, which includes slides, climbers and swings, all ADA compliant. The City also operates:

- East End Cove - open space along the water
- Veterans Memorial City Park - memorial display, and benches with ADA compliant restrooms
- Great Turtle Park - softball and soccer fields, basketball court, sand volleyball court, horseback riding arena, skate park, disc golf course, covered pavilion, concession stand, park benches, barbeque grills and an ADA compliant playground

Mackinac Island Recreation Department works closely with the Mackinac Island State Park, MIRD and the public school to utilize resources, both in personnel and facilities, in developing programs and activities for all residents of the Island. An example of this would be Great Turtle Park, which was built on property that is leased to the City by the State Park.

The current long range goals for the Recreation Department include:

- Continuation of present recreation programs and activities with the goal of expanding offerings to include a wider variety of activities
- Development of City owned land known as East End Cove for future recreational needs
- Golf driving range
- Restrooms by Burrough Lot Playground and Water Filtration Plant
- Design and build a recreational facility
- Build a pool
- Boardwalk maintenance and improvements
- Street end improvements and maintenance
- Playground equipment- upgrades and maintenance
- Workout facilities
- Splash pad
- Greenhouse development, placement and maintenance
- Archery shooting range

- Dog park

The short-term goals of the Recreation Department are as follows:

- Continuation of present recreation programs and activities as well as developing new programs and activities to fill the need of an ever-changing population
- A covered area to accommodate a winter ice skating rink and summer protection from inclement weather or sun
- Great Turtle Park Projects
 - Completion of landscaping and trail ways
 - Finish landscaping sledding hills
 - Soccer field upgrades
 - Improve signage at entrances to the park
 - Add more gardens
 - Playground improvements and updates
 - Softball field upgrades
 - Adding a pickleball court
 - Adding an adult workout area
 - Improved entrances
- Develop a plan for pool access within the community
- Provide a year-round activity center for the Island youth
- Children's day camps
- Development and maintenance of a kayak/canoe launch

Municipal, State, and Federal Facilities

Many municipal, state, and federal facilities are located on Mackinac Island as follows:

- City Offices and Community Hall – 7358 Market Street
- Fire Station 1 – 7366 Market Street
- Fire Station 2 – 2290 Edison Road
- Police Station/Courthouse/Police Lockup – 7374 Market Street
- Police Substation – 3013 Cadotte Avenue
- St. Martin's Place Police Housing- Market Street
- Wastewater Treatment Facility – 3134 Stonecliffe Road
- Water Treatment Plant – 6602 Main Street

- Solid Waste Facility – 3883 Dousman Street
- Mackinac Island Public Library – 7549 Main Street
- Mackinac Island Post Office – 7316 Market Street
- Mackinac Island Medical Center – 7474 Market Street
- State Park Offices - 7029 Huron Road
- State Park Visitors Center – 7165 Main Street
- Mackinac Island Airport – 7700 Annex Road
- State Park British Landing Dock - M185

Civic Organizations and Churches

Although private civic organizations on Mackinac Island are not affiliated with any governmental unit, they are listed in this Chapter because of the important services they provide to the community residents.

Organizations currently active on Mackinac Island include:

- 4-H
- American Legion
- Condominium Associations
- Cottagers' Association
- Lions Club
- Little Traverse Conservancy
- Mackinac Arts Council
- Mackinac Associates
- Mackinac Connect
- Mackinac Horsemen's Association
- Mackinac Island Community Foundation
- Mackinac Island Recreation Development, Inc.
- Mackinac Island Ski Club
- Mackinac Island Tourism Bureau
- Mackinac Island Yacht Club
- Straits Pride
- Wawashkamo Golf Club
- Women in Hospitality Industry Leadership Alliance

Churches currently active on Mackinac Island include:

- Mackinac Island Bible Church
- Ste. Anne's Roman Catholic Church
- Trinity Episcopal Church
- Union Congregational (Little Stone) Church

Transportation

The transportation system is a key element of the community's infrastructure. As an island, transportation issues are different from mainland communities, and can be discussed in terms of the transportation access to the Island and on-island transportation.

The City of Mackinac Island has, by Charter authority, a 15-year Ferry Boat Franchise agreement (which started in 2012 and will end in 2027) with two private ferry lines to transport passengers to the Island from April 21st- October 31st of each year. These two ferry lines are the Mackinac Island Ferry Company and Shepler's Mackinac Island Ferry. For the winter months, November 1st- April 20th, one ferry line (Mackinac Island Ferry Company) has an exclusive contract with the City of Mackinac Island to provide service. Ferry service is provided from both Mackinaw City and St. Ignace in the summer months and from St. Ignace in the winter weather permitting. In June 2024, Hoffmann Family of Companies, the private company who owns Shepler's Mackinac Island Ferry, acquired the Mackinac Island Ferry Company, making it the owner of both ferry lines serving the Island. Freight service is provided by three companies. The Island ferry docks for each of the ferry and freight operators are located in the downtown and are close to each other causing increased congestion in these areas at peak times. Heavy freight and trucks land at the Mackinac Island State Park British Landing Dock.

Air service is available to the Island year-round, using the State Park airport located near the center of the Island.

Motor vehicles have been banned on the Island since before the turn of the 20th century. Due to the lack of cars and trucks, the transportation issues facing the Island are very different from other communities. Horse-drawn carriages, horse-drawn taxis, horseback, foot, and bike are the only means for the movement of people and goods. An exception is made for emergency vehicles, handicap mobility vehicles, and vehicles granted a special permit during limited times of the year. Class 1 electric bicycles are used by some residents with disabilities; use of these bikes requires a personal affidavit of mobility disability. Additionally, during the winter, snowmobiles are allowed by permit in the City streets of the Island and only on some of the roads in the State Park.

Although the Island is without automobile traffic, there are still traffic-related issues and concerns. The combination of various transportation modes and the significant influx of tourists to the Island on a daily basis, who are not familiar with horses, gives rise to transportation related issues and conflicts. One of the most significant traffic issues is the congestion in the downtown during peak times.

Horses continue to be a significant part of the transportation history on Mackinac Island. According to Mackinac Island Carriage Tours, Inc. website, "Carriage men officially began providing tours of the Island in 1869 when the first city carriage license was issued. In 1948, the carriage men officially established the Mackinac Island Carriage Tours, Inc... Today, Mackinac Island Carriage Tours, Inc. is the world's largest, oldest, and continually operated horse and buggy livery, with approximately 100 freight and passenger carriages put in motion by over 400 horses."

During the summer, Mackinac Island is home to approximately 600 horses. Two-thirds of these are associated with the Mackinac Island Carriage Tours, providing sight-seeing tours, taxi service, deliveries, and shuttle services. The majority of the horses are taken off the Island in the fall to winter on the mainland, leaving a much smaller number of horses on the Island for winter use. However, winter horse use for taxis, tours, and freight is growing, along with the winter tourism business. The horses brought to the Island are specially trained for the unique situation of Island duty. Some residents also own horses for necessary transportation and riding enjoyment.

Although the Island is without automobile traffic, there are still traffic-related issues and concerns. The combination of various transportation modes and the significant influx of tourists to the Island on a daily basis, who are not familiar with horses, gives rise to transportation related issues and conflicts. One of the most significant traffic issues is the congestion in the downtown during peak times. Conflicts between foot, bike, and horse traffic are heightened in the commercial area when multiple ferries arrive and bring thousands of people into the downtown amidst carriages, bike rentals, and pedestrians. The lack of knowledge or understanding about Mackinac Island traffic contributes to the congestion and confusion in the downtown at peak times.

Road/Trail Maintenance

The local street system of any community is a vital part of the total transportation system. The transportation routes are comprised of a variety of roads and trails, as shown in **Figure 1-2**. The responsibility for road construction and maintenance is split between the City and the State Park, based on location. Roads which are located partially in the City and partially in the State Park are maintained accordingly. The perimeter road, Lake Shore Road (M-185) is a state trunkline maintained by the Michigan Department of Transportation (MDOT), and as such is eligible for state funding. The remainder of public roads and trails are maintained by the City and the State Park. **Figure 1-2** distinguishes the major and local City streets, as well as the improved and unimproved roads and trails within the State Park land.

Street maintenance issues are addressed by the entity with jurisdiction over that portion of the street. In summer, a crew of people continually making the rounds sweep and shovel manure off the streets in town, and in other areas of the island, a horse pulled mechanized street sweeper is used. Additionally, every night, selected major streets are washed. Sweeping and shoveling are sporadic on the rest of the Island. In winter, snow plowing of the streets is done by the State Park under an agreement with the City. The construction and repair of streets has a different meaning for this island community with very few motorized vehicles; the roads have an extended life expectancy due to the lower load level. However, the effects of horse shoes and narrow carriage wheels cause rutting and pitting not noted with motorized vehicle traffic. In addition, pavement markings do not last with repeated horse traffic.

Mackinac Island Transportation Authority

The Mackinac Island Transportation Authority (MITA) was created in 2019 by the City of Mackinac Island to provide funding and resources to help insure the safe, reliable and affordable year-round ferry transportation of passengers and goods to and from Mackinac Island, and to operate and maintain of the city-owned Coal Dock.

In December 2021, the MITA completed its first ever extensive Transportation Study and Master Plan for the water ferry system servicing Mackinac Island. This Plan reflects intensive community input on ferry service schedules, terminals, vessels, infrastructure and funding required to sustainably support not only peak season service, but also year-round passenger and freight services. The resulting Master Plan delivers a comprehensive vision for the future of the ferry transportation service in the Straits of Mackinac. Key needs and goals identified through community and stakeholder engagement included:

- Increase number and frequency of winter sailings, including Sunday service
- Increase winter service reliability, including ice and inclement weather capability
- Provide earlier and later sailing times throughout the year
- Improve aging vessel fleet, including winter service vessels
- Increase availability and reduce cost of long-term covered/indoor parking
- Reduce system capital and operating costs through realized efficiencies

Key recommendations of the Master Plan include:

- Expansion of ferry service year-round with earlier morning and later evening sailings
- Expansion of winter ferry service with additional Monday-Saturday daily sailings, and new Sunday sailings
- Modernization of the ferry fleet for increased capability, reliability, and environmental sustainability while reducing operating and maintenance costs
- Potential increase to system efficiency through combined passenger and freight service
- Realize ferry system cost efficiencies through ferry operator collaboration of schedules, staffing, fleet resources, purchasing, and other efficiencies
- Harness financial tools available through MITA governance and public/private partnerships for funding of system improvements and operating costs

Airport

The Mackinac Island Airport is owned and operated by the Mackinac Island State Park and features a paved and lighted 3,500' runway and terminal building. The airport is open year-round and serves as the Island's lifeline to the mainland, especially during the winter months when the ferries do not run.

The Michigan Zoning Enabling Act, Public Act 110 of 2006, includes language that requires the incorporation of an airport approach plan within a Master Plan when an airport is located in the community. This language

was enacted, in part, to ensure that land use policies do not endanger the State's mission to preserve a system of essential public facilities that provide access for all regions of the State to the nation's air transportation system.

The following excerpts are taken from Section 203 of the Michigan Zoning Enabling Act:

If a local unit of government adopts or revises a plan... after an airport layout plan or airport approach plan has been filed with the local unit of government, the local unit of government shall incorporate the airport layout plan or airport approach plan into the plan...

A zoning ordinance adopted after March 28, 2001 shall be adopted after reasonable consideration of both of the following:

- *The environs of any airport within a district.*
- *Comments received at or before a public hearing under section 306 or transmitted under section 308 from the airport manager of any airport.*

A zoning ordinance amendment adopted or variance granted after March 28, 2001 shall not increase any inconsistency that may exist between the zoning ordinance or structures or uses and any airport zoning regulations, airport layout plan, or airport approach plan.

The Aeronautic Code of the State of Michigan provides that the Michigan Aeronautics Commission may adopt an approach plan for each licensed airport which describes the airport protection area. Approach protection plans are intended to provide airport sponsors with standards which are reasonable and enforceable under local zoning ordinances. These plans should also provide airport sponsors with sufficient airspace protection according to local needs and conditions. The Airport Layout Plan for the Mackinac Island Airport is included in **Appendix C**.

Local and emergency air service is provided by Fresh Air Aviation, based at the Mackinac County Airport in St. Ignace. This service is available year round, but is especially important to Island residents during the winter months and in case of emergency.

Regional air service is available at Pellston Regional Airport in Emmet County (20 miles from Mackinaw City to Pellston), Alpena County Regional Airport in Alpena (95 miles from Mackinaw City to Alpena), and at Chippewa County Airport, located at Kinross (25 miles from St. Ignace to Kinross). Commercial air service at these facilities is provided by Delta, offering transportation between northern Michigan and Detroit Metro Airport, with regularly scheduled daily flights. United Parcel Service and Federal Express provide air freight service at these airports.

The Cherry Capital Airport in Traverse City (100 miles from Mackinaw City to Traverse City) has commercial passenger service provided by Delta to Detroit Metro Airport, and United and American to Chicago O'Hare Airport. Air freight service at Traverse City includes Federal Express and United Parcel Service.

Before a community can actively plan for its future growth and development, it must first set certain goals and policies that define the boundaries of its needs and desires. This establishes a basis for the future land use and zoning plan formulation. These goals and policies must reflect the type of community that is desired and the kind of lifestyle its citizens wish to follow, given realistic economic and social constraints. In developing goals and policies, the Master Plan Steering Committee analyzed existing community characteristics, such as social and economic conditions, environmental resources, available services and facilities, and existing land use. In addition, public input and opinions were solicited during the process of developing goals and policies.

Public Input

During the planning process for this Master Plan update, several important engagement activities were employed to gain public input. These included:

- Town Meeting
- Business Stakeholders Virtual Focus Group
- Online Citizen Survey
- Online Student Survey

The results of these public outreach activities helped shape community goals and policies and are summarized below.

Town Meeting

On August 31, 2023, a Town Meeting was held at the Mackinac Island Community Hall in Mackinac Island. Approximately 50 citizens attended the meeting. The purpose of the workshop was to engage community members in the identification of needs and concerns and the establishment of goals and policies for future land use and development. The workshop began with a project overview and background information presentation focusing on the project impetus, requirements, and value. Next, attendees were asked to list Mackinac Island's top three strengths, weaknesses, opportunities, and threats. In total, 43 questionnaires were collected.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Questionnaire

The following paragraphs list each of the four subjects, followed by the most common topics participants mentioned regarding that subject. Each topic needed a minimum of 5 mentions on separate questionnaires to make the list. Topics are listed with one being the most common.

What are Mackinac Island's greatest strengths?

1. Beauty/natural features
2. Community involvement
3. History
4. Residents

What are Mackinac Island's greatest weaknesses?

1. Lack of affordable housing
2. Communication between the local government and residents
3. Boat lines/ferry services
4. Infrastructure
5. Increasing corporate presence

What are Mackinac Island's biggest opportunities?

1. Historic preservation
2. Limiting development
3. Increased housing
4. Acquiring new residents

What are Mackinac Island's most significant threats?

1. Excessive tourism/overcrowding
2. Overdevelopment
3. Pipelines (Line 5)
4. Corporate involvement
5. Lack of year round housing/unaffordable housing

Creative Solutions Group Exercise

For the second and final exercise, participants were asked to separate into small groups. From there, they were given a background on planning and development issues cited from a 2016 Mackinac Island community survey. Groups were advised to choose a facilitator, recorder, and spokesperson. Next, groups chose at least one topic outlined from the 2016 survey and had to work together to brainstorm potential solutions. After all topics and solutions were noted, the spokesperson shared the table's findings with all participants.

Some of the most common topics included environmental protection and growth management. Popular solutions regarding environmental protection were waste management and expanding the sewer system. Popular solutions regarding growth management included preemptive zoning changes and better communication between the local government and residents.

Business Stakeholders Virtual Focus Group

The City believes it is of great importance to gain input from the business community related to the Master Plan. Therefore, a focus group discussion was held to hear from key stakeholders in the business community. An invitation to participate was sent out to approximately two dozen stakeholders identified by the Master Plan Steering Committee. Those who were both willing and available to participate did so at a virtual meeting on Monday, October 30th at 3pm. The meeting featured a discussion about Mackinac Island's strengths, weaknesses, opportunities, and threats (SWOT).

Strengths

Numerous strengths were identified, which have been generalized and listed below:

- Horse culture
- Historic character and building
- State Park ownership to manage growth and protect island character

- Unique destination unlike any other and the strength of the tourism industry
- Active non-profit community and community resources
- Excellent community services, including first responders
- Family owned and multi-generational businesses
- New investments and investors within the community
- Island location and the Great Lakes
- Strong representation in State government

Weaknesses

Numerous weaknesses were identified, which have been generalized and listed below:

- Challenge of attracting new talent and employees
- Economy heavily dependent on tourism
- Our economy is based on one industry. As the tourism industry does well, so do we, but if the tourism industry declines, so will we
- Housing affordability for existing housing, combined with the high cost of construction
- Lack of available land, specifically to accommodate new housing
- Lack of families on the island and lack of children in school
- Need for businesses which employ year-round employees
- Lack of broadband/fiber-optic
- Limited support services in certain areas, such as day care and physical fitness
- Reliability of ferry service during the Winter
- Need for and cost of infrastructure improvements

Opportunities

Numerous opportunities were identified, which have been generalized and listed below:

- Availability of State funding to improve the ferry service
- Island recognition and positive attention can be capitalized upon
- Strong market demand for housing and accommodations
- Recent improvement and growth of the arts council
- Potential opportunity for the construction of new docks

Threats

Numerous threats were identified, which have been generalized and listed below:

- Anything that would change the culture and character of the island
- Revising the ban on automobiles is a threat
- Competition from destinations such as Traverse City
- The temporary work visas/lotter system is a threat and challenge to bringing in needed employees
- Ability to grow is hampered by infrastructure limitations
- The threat of the Line 5 pipeline leaking.
- The cost of doing business on the Island is a threat

As a final wrap-up to the discussion, and to specifically inform the development of the new Master Plan, participants were asked what one or two topics the new Master Plan must address. The following answers were offered:

- The Master Plan must be supportive of major anchors such as the Grand Hotel, Fort Mackinac, Mission Point, Carriage Tours and the ferry lines to ensure they have the flexibility to thrive
- The Master Plan must address how to get more dignified housing for people on the other end of the spectrum (families, the service industry, etc.)
- We need to work with the State and the State Park to tackle the key issues noted such as infrastructure improvements, transportation, and affordable housing
- The City needs to support that growth through infrastructure improvements
- The issue of traffic flow and congestion needs to be addressed
- The Master Plan needs to strike an appropriate balance between historic preservation and economic development, resulting in a win-win for both (one should not come at the expense of the other)

Citizen Survey

An online survey was made available to the general public between July 31 and October 15, 2023. The survey was advertised on the City's website and social media outlets. Hard copies of the survey were also made available at City Hall during business hours. A total of 243 surveys were completed as of October 17, 2023. Citizen surveys help guide the planning process for the future.

Filters were applied to the survey results to evaluate differences in opinion between various segments of respondents. For the purposes of this analysis, the following six respondent segments were considered:

1. **Younger and Family Formation Respondents** (49 years or younger – see Question #1 – 86 total)
2. **Older Respondents** (70 years or older – see Question #1 – 39 total)
3. **Year Round Residents** (see Question #2 – 103 total)
4. **Summer Residents** (see Question #2 – 86 total)
5. **Newer Residents** (lived on Mackinac Island between 0 and 9 years – see Question #3 – 68 total)
6. **Business Stakeholders** (work on the island, own/operate a business on the island, own commercial or industrial property on the island – see Question #4 – 72 total)

The survey summary narrative below identifies instances where differences in the responses across the respondent segments were notable.

A public opinion survey was conducted in the Fall of 2016 during the development of the City's previous Master Plan. The 2016 survey was available only in paper format and was answered by 55 persons. The 2016 survey included some of the same questions which were asked as part of this online survey. Where appropriate, this summary compares responses from the 2016 survey with responses from this new survey.

Age

The age of survey respondents skewed toward an older demographic, with most participants between ages 50 to 69 (49%). The second most common age range was those 30 to 49 years (27%) followed by 70 years or over (16%). Participants under the age of 29 represented 9% of survey-takers.

Residence Status

42% of participants said they live on Mackinac Island full-time, 35% said they were summer residents, 10% said they were seasonal workers, and the remaining 13% identified either as island workers, frequent visitors, or other. There were some distinctions in the answers across the respondent segments, as follows:

- Among Younger and Family Formation Respondents, 50% identified as year-round residents
- Among Older Respondents, 69% identified as summer residents
- Among Newer Residents, 59% indicated that they were year-round residents

Residence Tenure

The majority (53%) of respondents have lived on Mackinac Island for more than 20 years. This was the most common answer among all respondent segments (excluding Newer Residents) except Younger Respondents, whose most common answer was 1 to 4 years (30%). The second highest response overall was those who have lived on the Island between 10 to 19 years (16%). 74% of Older Respondents said they've lived on the Island for 20 years or more.

Relation to Community

Respondents were asked to indicate their relationship to the community, with various answer options presented. Respondents were able to select multiple responses. The following answers were received (all respondents):

- 57% work on Mackinac Island
- 53% own residential property on the island
- 28% own or operate a business on the island
- 24% are retirees
- 17% rent residential property on the island
- 11% own commercial or industrial property on the island
- 3% selected none of the above
- 2% go to school on the island

There were some distinctions in the answers across the respondent segments, as follows:

- A larger percentage of Younger and Family Formation Respondents (82%) and Year Round Residents (76%) work on the island in comparison to the rate indicated by all survey respondents (57%)
- Newer Residents are much more likely to rent residential property (31%) in comparison to the rate indicated by all survey respondents (17%)
- Summer Residents (76%) and Older Respondents are much more likely to own residential property (69%) in comparison to the rate indicated by all survey respondents (53%)

Recent Changes

Survey participants were asked what they thought about the changes that have occurred on Mackinac Island over the past 5 years. This question required an open-ended response. Open-ended responses (from the 114 survey-takers who answered the question) commonly related to concerns that the Island is getting too commercialized and/or over-developed.

Uniqueness

Respondents were asked to indicate what they think makes Mackinac Island a unique experience. This question required an open-ended response. The most common answers (among the 134 survey-takers who answered this question) included natural beauty, lack of cars/horse culture, and history. Respondents were then asked what they believe other people would say when asked what makes the Island unique. Most answers (among the 128 who answered) were similar to the previous, although answers related to the slower pace of living and the Island's natural beauty were also common.

Preservation

When asked what elements of Mackinac Island's heritage are most important to preserve, the 5 most popular answers overall were:

1. Ban on motor vehicles (60%)
2. Historic buildings and architecture (45%)
3. Horse and buggy culture (43%)
4. Island history (39%)
5. Cultural and natural attractions (36%)

There was broad agreement across the respondent segments, as all six listed these same elements in their top 5 answers. The ban on motor vehicles was the top answer for all six respondent segments. The only distinctions were the varying order of these elements after ban on motor vehicles, as follows:

- Island history was third among Younger Respondents
- Horse and buggy culture was second among Older Respondents, Summer Residents, Newer Residents, and Business Stakeholders
- Cultural and natural attractions was fourth among Year Round Residents

Reasons to Reside, Work or Visit

Respondents were asked to list their top three reasons they love living in, working in or visiting Mackinac Island. The 3 most popular answers overall were:

1. Island character (74%)
2. Natural features (74%)
3. Friendly people (33%)

There was broad agreement across the respondent segments, as all six listed these same answers in their top 3, although Younger Respondents, Older Respondents, and Summer Residents listed natural features above island character.

On the opposite end, the following were the least commonly indicated answer choices for respondents overall:

1. Shopping (1%)
2. Schools (4%)
3. Neighborhoods (8%)

This same question was asked during the 2016 survey. Survey-takers at that time noted the same top two responses as were noted in 2023.

Congestion

Respondents were asked to indicate whether congestion on Mackinac Island is a concern. The majority (80%) of respondents indicated yes, while 14% indicated no and 6% were undecided. All six respondent segments agreed; however, there were some distinctions (varying by more or less than 5% from the overall yes response), as follows:

- 88% of Summer Residents said yes
- 72% of Business Stakeholders said yes
- 69% of Newer Residents said yes

Respondents were given the opportunity to expand on their answer by providing an open-ended response. The most common write-in answer related to concerns about too many bikers and unsafe bikers.

Cost of Living

Participants were asked if the cost of living and/or the cost of visiting the Island was a concern to them. Most (61%) of the respondents said that they were both were a concern, while 19% said that only cost of living was a concern, and 7% said that only cost of visiting was a concern. These answers were generally consistent across all six respondent segments, with the following distinctions:

- Although 65% of Business Stakeholders indicated that both were a concern, a larger percentage of Business Stakeholders (21%) said that neither are a concern in comparison to the overall respondents where only 11% said that neither are a concern
- A higher percentage of Newer Residents (37%) felt that only cost of living is a concern in comparison to the overall results (19%)

What Would You Change?

Participants were asked what one thing they would change about Mackinac Island. This question required an open-ended response. Some of the most common answers (from the 127 respondents who answered this question) included limiting development, too many tourists, lack of affordable housing, and issues with safety specifically related to the use of e-bikes.

Balancing Preservation and Development

Participants were asked how the City can balance preservation and development within the Island. This question required an open-ended response. Of the 116 respondents who answered this question, common answers centered around stopping or restricting development and preserving as much land as possible.

Focus Areas

Participants were given a listing of 10 common planning and development issues and were asked which issues should the new Master Plan focus on. They were allowed to select up to 3 issues. Overall, the five most common responses were:

1. Growth management (50%)
2. Housing affordability (42%)
3. Traffic and congestion (39%)
4. Environmental protection (35%)
5. Historic preservation (30%)

There was some noteworthy variation across the six respondent segments, as follows:

- Although #2 overall, housing affordability was the top choice for Younger Residents (64%), Year Round Residents (60%) and Newer Residents (67%). Growth management was the top choice for the remaining three respondent segments.
- The answers from the Younger Residents varied most significantly from the overall responses. Growth management was not in the top 5 responses from Younger Residents (growth management was their #7 response at 23%). The following were the top 5 responses of the Younger Residents:
 - Housing affordability (64%)
 - Transportation (40%)
 - Environmental protection (36%)
 - Employee housing (34%)
 - Traffic and congestion (30%)
- Public services and facilities was the #8 issue overall (22%), but was the third highest issue for Newer Residents (36%)
- Transportation was the #6 issue overall (26%), but was a top 5 issue for Younger Residents (40%), Year Round Residents (32%), Newer Residents (36%), and Business Stakeholders (37%)

The 2016 public survey asked this same question. At that time, survey-takers indicated historic preservation, environmental protection, and growth management as their top three issues that needed to be addressed.

Next, participants were asked how Mackinac Island can best address the key issues they identified. This question required an open-ended response. Of the 109 who answered this question, common responses included limiting development, improving boat service, providing more affordable housing mainly for employees, and seeking government funding for improvement projects.

Mackinac's Future

As the survey closed, respondents were asked if they had any other ideas for City leaders concerning the future of Mackinac Island. This question required an open-ended response. Of the 86 who answered, common responses included making more of an effort to involve young people, diversifying committee memberships, and hiring a city manager.

Student Survey

In 2023, a survey was conducted of the students at the Mackinac Island Public School. The survey was administered on September 25th during their social studies class. Six of the seven questions were open ended. A total of 17 surveys were completed. A brief summary is provided below.

Students were asked what they thought the Island's greatest feature or asset was; common answers included arch rock, trails, and fudge. When asked about important elements on the Island which should be preferred, students commonly indicated parks and historical sites. Students' top three reasons why they enjoy living on Mackinac Island were: location (47%), friendly people (35%), and other (29%). Common write-in answers for the "other" category included no cars and the ability to use snowmobiles. Many students indicated that more amenities and activities would make the City more exciting to visitors of all ages. Students were asked what one thing is they would change about Mackinac Island. A common answer was less tourists.

Foundational Planning Principles

Originally developed during the 2018 Master Planning process, a series of foundational planning principles were presented and reviewed. The initial planning principles were generally based on the 10 Principles of Smart Growth, as developed by the Smart Growth Network, and the 6 Livability Principles, as developed by the Partnership for Sustainable Communities. It has been decided that these principles remain relevant and appropriate. Broad and aspirational, these planning principles serve as the foundation for the Goals and Policies presented in this chapter and the Future Land Use planning proposals presented later in this report. A total of 11 principles have been established, which are listed on the next page.

City of Mackinac Island Master Plan Foundational Planning Principles

1. Foster a distinctive, attractive community with a strong sense of place. Embrace and uphold the Island's distinctive historical and cultural characteristics, such as its horse culture, which are cherished by citizens and visitors.
2. Promote equitable, affordable housing with a range of housing opportunities and choices.
3. Invest in healthy, safe, and walkable neighborhoods.
4. Allow for a planned mixture of land uses on the Island which are maintained in compatible relationships with each other.
5. Enhance and foster a strong economic base.
6. Provide a variety of transportation choices as part of a safe and reliable transportation network.
7. Take advantage of compact site design to preserve open spaces and natural features.
8. Protect open space, natural beauty and critical environmental areas.
9. Direct development toward areas where existing infrastructure is available.
10. Make development decisions predictable, fair and cost effective.
11. Encourage community and stakeholder collaboration in development decisions.



Photos courtesy of the Mackinac Island Tourism Bureau

Goals and Policies Introduced

By combining and discussing the outcomes and comparisons of public engagement opportunities, the various planning research efforts, and the foundational planning principles, the Master Plan Steering Committee has established a series of goals and policies to guide the future of Mackinac Island. Organized by category, and listed in no particular order, the specific goals and policies are intended to be more detailed and work to implement the foundational planning principles.

Planning and Community Engagement

GOAL:

Proactively plan for the future of Mackinac Island and utilize all available tools and resources to implement the Master Plan, while coordinating with local and regional partners and encouraging community and stakeholder collaboration in development decisions.

POLICIES:

1. Promote an open Island decision-making process and encourage ongoing active citizen involvement.
2. Encourage and provide diverse opportunities for the solicitation of community feedback related to City administration.
3. Utilize a proactive planning process as a check and balance on decision making. Review and update this Master Plan, when necessary, as required by Michigan Planning Enabling Act.
4. Review the Zoning Ordinance upon adoption of the Master Plan and amend as appropriate.
5. Establish, maintain, expand, and encourage discussions with State Park officials regarding proposed land acquisitions and/or easements and other aspects of the State Park operations.
6. Initiate and maintain proactive conversations with private property owners regarding preferred future land uses.
7. Research and utilize solid demographic data to inform local decision-making. Specifically, the City should establish a strategy to better track the number of seasonal residents and visitors to the Island.
8. Promote a healthy, balanced, year-round and seasonal economy for the benefit of Island residents and visitors, stressing support for local businesses and employees, in a manner that complements the historic character of Mackinac Island.
9. Consider and evaluate the creation of a City Manager staff position to effectively carry out the policies established by City Council and enhance overall City administration.

10. Explore and pursue alternative funding and revenue sources, such as state or federal grant programs, to support planning, historic preservation, environmental preservation, zoning, housing, and other community development related planning initiatives.

Community and Development Character

GOAL:

Protect and enhance Mackinac Island's exceptional character by: strengthening the historic downtown core, protecting the residential and historic character of the City's neighborhoods, and preserving the Island's natural beauty and environmentally sensitive areas.

POLICIES:

1. Manage the design and location of residential, mixed-use and commercial development on the Island in a manner which:
 - Reinforces the traditional settlement pattern of the Island;
 - Protects important natural and cultural resources;
 - Preserves the character and integrity of downtown Mackinac Island and the Island's historic districts;
 - Creates opportunities for affordable housing; and,
 - Is able to be supported by available infrastructure systems and community services.
2. Protect community character by ensuring that new development and redevelopment projects fit their context – especially as seen from public places such as roads and public waters.
3. Utilize innovative planning and zoning techniques, to allow for mixed land uses and increased employee housing and/or residential (year-round) apartments in the downtown.
4. Encourage planned land uses in coordination with public utility, facility, and service improvement programs.
5. Review existing zoning district regulations throughout the Island and consider revisions to ensure that the type, scale, height, orientation, density and overall character of development is appropriate given the physical capabilities and characteristics of the land, is compatible with the historical context of area, and is able to be supported by available infrastructure capacities.
6. Encourage the use of environmentally sound “green building” techniques and minimize the negative environmental impacts of building and human habitation.

7. Encourage actions to keep construction activity limited, especially during the peak season, to protect peace and quiet and overall quality of life on the Island. Continue to evaluate construction impacts as part of site plan review.

Historic Preservation

GOAL:

Preserve and protect the Island's historic landmark status and historically diverse culture and historic integrity for present and future generations.

POLICIES:

1. Protect and preserve Island history, including historic sites, neighborhoods, buildings, structures, and scenic features.
2. Encourage creative historic design and planning techniques which produce visual harmony while preserving the significant natural and historic features of Mackinac Island.
3. Maintain the City's historic district designations and require adherence to historic preservation and design standards for development within the City's historic districts.
4. Consider new or expanded historic district designations, following recommendations of the City's Historic District Study Committee.
5. Review existing zoning regulations in historic districts/areas and consider revisions to ensure that new development and redevelopment conforms to historic patterns of development.
6. Continue to educate the public on historic districts, their value in protecting the historic landmark status of Mackinac Island, and the availability of programs that assist property owners in maintaining historic structures, including grants and tax deductions.
7. Encourage and assist property owners to undertake improvements to historic structures thorough incentives such as local grant programs and making greater use of state and federal historic tax credits.
8. Adopt land use policies and regulations that foster the Island's horse tradition.
9. Support and encourage the expansion of the Island's fishing industry. Specifically, the City should consider actions which lead to additional opportunities or facilities for seasonal mooring for Island residents.
10. Work with the State Park, conservation agencies, and private groups to preserve historically significant structures and buildings.

11. Work with entities such as the State Park and the DNR Waterways Commission to coordinate the compatible design of improvements within the public right-of-way and on City-owned property. Such improvements may include sidewalks, boardwalk, street lighting, street trees, trash receptacles, benches and wayfinding signs.

Housing

GOALS:

Support a broad range of housing options for all population segments and age groups, including year-round residents, families, resident workforce, seasonal residents, and employees.

Promote housing affordability to support a year-round community.

POLICIES:

1. Adopt policies and undertake actions in support of the recommendations of the City of Mackinac Island Housing Strategy.
2. Encourage the development of housing to meet the needs of all household types and income groups, with a specific focus and emphasis on providing affordable single-family housing and housing options for the elderly.

Affordable Housing Action Strategies:

- Provide incentives, especially in the downtown and Harrisonville districts, for the development of affordable/workforce housing for individuals and families.
 - Consider allowances for higher density for projects that provide permanently affordable housing, if appropriate given the capacity of available infrastructure.
 - Develop public/private partnerships to create new housing opportunities for individuals and families committed to year-round residency, dispersed throughout the Island.
 - Evaluate the use of public land for new affordable housing.
 - Plan and oversee creation of year-round resident rentals of quality housing for low income and workforce residents.
3. Review and consider zoning ordinance changes to ensure that ample opportunities and incentives are available to encourage affordable housing for existing and future residents; specific consideration should be given to allowing accessory dwelling units (ADUs) under certain conditions and where appropriately integrated within existing neighborhoods.
 4. Increase the supply of housing for independent retirees, seniors, and others needing assisted living housing.

5. Protect the neighborhood feeling of residential areas, seeking to maintain their viability to support year-round residents. Discourage any plans or projects which would result in the loss of housing units for year-round residents.
6. Encourage the maintenance of the existing housing stock and residential neighborhoods in good repair, appearance, usefulness, and safety.
7. Identify appropriate development standards, regulations, and locations for employee housing.

Employee Housing Action Strategies:

- Work with businesses to develop a strategy for businesses to adequately house employees.
 - Consider requiring new hotels to provide on-site housing for employees
 - View the mainland communities of St. Ignace and Mackinaw City as acceptable locations for employee housing
8. Match allowable residential densities to the characteristics and available services of proposed sites, considering infrastructure needs such as roads, public water, utilities, and especially the capacity of the Island's public wastewater system.
 9. Acknowledge and maintain the Island's unique summer cottage community.
 10. Examine the impacts of the fractional home ownership model on existing neighborhood character and the supply of affordable year-round housing and consider enacting policies that will ensure the model supports the vision for Mackinac Island as established in this Master Plan.

Natural Environment, Public Lands, and Recreation

GOALS:

Preserve, protect, and maintain environmentally sensitive areas, open space, and public parks for the enjoyment of residents, tourists, and future generations.

Maintain and improve the recreational facilities and activities.

Restore the Island's native lands, waters and wildlife to functional and sustainable levels.

Establish and manage an Island-wide network of publicly and privately held open spaces, intended to protect critical land and water resources, habitats, and scenic vistas, while affording reasonable public access, consistent with a policy of wise stewardship.

POLICIES:

1. Preserve the unique beauty of Mackinac Island by protecting natural areas and landmarks, waterfront setting, and historic structures.

2. Identify, acquire, and protect desirable open space areas, scenic vistas, and environmentally sensitive lands.
3. Partner with State Park, conservation agencies, and private groups to preserve natural areas.
4. Encourage a land use pattern that is oriented to and respects the natural features and water resources of the area. Promote the protection of sensitive features including shoreline, wildlife habitat, wildlife corridors, wetlands, water quality, steep slopes, native plants, dark skies, and wooded areas.
5. Require an environmental impact review for proposed development during the site plan review or special use permit process.
6. Maintain the Island's adopted Recreation Master Plan and update at five-year intervals; diligently pursue implementation of the plan's recommendations to improve and expand recreational opportunities for all ages.
7. Support cooperative recreational planning and development between the City, school, civic groups, and private entities.
8. Pursue outside funding sources, such as grants, for land acquisition and/or recreational development.
10. Discourage the planting of invasive species and continue efforts to reduce and eliminate invasive species.
11. Work to preserve existing and create new private and public greenspace and other public spaces that are attractive, well-maintained, and encourage social interaction.
12. Work to establish improved water access points to the Lake, such as a canoe/kayak launch, to encourage water recreation opportunities.
13. Review and adopt, as necessary, policies and land development codes that:
 - Minimize the impacts of runoff from new development proposals
 - Require adherence to standards which ensure that erosion and sedimentation, and other forms of contamination, are minimized.
 - Preserve dark skies through appropriate site lighting restrictions
 - Encourage stormwater management controls to improve drainage and reduce contaminants to public utility systems
14. Continue to maintain and work to improve the City's historic boardwalk.
15. Support state, regional and local efforts to decommission the aging Enbridge Line 5 pipeline, which runs through the Straits of Mackinac.

Transportation

GOAL:

Provide a transportation system that will move people and goods to, from, and around the Island in a way that is safe, convenient, economical, and sensitive to the character of the various areas of the Island.

POLICIES:

1. Preserve and strengthen the ban on “horseless carriages” and promote the use of horses for recreation and transportation.
2. Evaluate and implement actions that **enhance safety and reduce conflicts** between different modes of transportation (i.e., horses, bikes, and pedestrians):
 - Encourage the efficient use and maintenance of existing roadways and infrastructure to support safe and convenient access for pedestrians, bicycles and horses/carriages.
 - Establish and implement policies to accommodate persons with disabilities.
 - Improve existing and establish additional crosswalks to facilitate safe pedestrian crossing of busy streets and intersections.
 - Review and consider modifications to improve consistency and effectiveness of existing safety signage.
 - Increase the presence of public safety officers to educate the public and enforce transportation safety policies.
 - Evaluate bicycle and pedestrian safety along Cadotte Avenue (“Grand Hill”) and pursue needed improvements, potentially to include a sidewalk or other designated walking area.
3. Evaluate and implement actions to **reduce congestion** on the Island:
 - Continue to work with ferry services and other tourist agencies to provide improved visitor orientation and education about traffic safety rules and considerations.
 - Continue to coordinate with service companies to schedule deliveries, trash removal and similar activities during off-peak times to reduce congestion.
 - Investigate bicycle usage and trends, and consider equitable solutions to reducing bicycle congestion on the Island.
 - Review and consider modifications to improve consistency and effectiveness of existing wayfinding signage.
 - Increase the presence of public safety officers to educate the public and enforce congestion reduction policies.

4. Adopt policies and undertake actions in support of the Mackinac Island Transportation Master Plan and the Mackinac Island Transportation Authority's mission to help ensure the safe, reliable, accessible, and affordable year-round transportation of passengers and goods to and from Mackinac Island.
5. Continue to cooperate with ferry and air service providers to provide the most affordable and efficient service to and from the Island for residents and tourists alike.

Infrastructure and Public Services

GOALS:

Improve and maintain the transportation systems, community facilities, programs, and public utilities to accommodate the needs of residents and visitors.

Continuously monitor and ensure that the quantity of waste water generated does not exceed the capacity of the treatment plant and that the quality of effluent leaving the treatment plant meets all standards of the regulatory agencies.

POLICIES:

1. Provide high-quality educational facilities adequate to meet present and future growth needs.
2. Recruit, train, and provide continuing support for Island volunteers who provide emergency services.
3. Continue to oversee an assessment, maintenance and improvement program for public water and sewer lines.
4. Encourage the placement of utilities underground and the improvement of utilities to coincide with development.
5. Provide additional public restrooms, bike parking areas, public seating, trash receptacles, and drinking fountains in the downtown area.
6. Maintain dedication to the advanced recycling and composting programs, water filtration, and wastewater treatment and continue public education programs regarding these existing programs and facilities.
7. Ensure that new development and redevelopment is adequately served by available and efficient water and wastewater treatment facilities and roads.
8. Investigate county and state requirements applicable to private wastewater treatment systems and consider whether local measures should be undertaken for the protection of community health and the natural environment.

9. Develop informational brochures and other media for property owners on the benefits of using pervious pavement for parking and driveways and redirecting storm water runoff into natural areas for infiltration into the ground.
10. Review land development regulations to ensure appropriate placement and screening of satellite dishes, antennas, mechanical, HVAC and similar equipment.
11. Review land development regulations to ensure that service entrances, commercial dumpsters, and mechanical/service equipment, are screened from the public right-of-way and, in downtown, are screened from public view.
12. Explore and pursue alternative funding and revenue sources, such as state or federal grant programs, to support infrastructure and public service improvements on the Island.
13. Encourage and incentivize improvements to cellular and internet services, particularly within underserved areas, which are supported by outside funding and are sensitive (in terms of design) to the historic and aesthetic character of the Island.

Introduction

The City of Mackinac Island is a unique Michigan island community, with limited land available for private development. The future land use plan specifies appropriate land use categories for all land located within the Charter boundaries of the City of Mackinac Island. Through careful land use planning and zoning techniques, the City of Mackinac Island wishes to ensure the protection and preservation of the historic and scenic features and unique neighborhoods of the island, while allowing for some additional development in select areas.

Future Land Use Classifications

The Mackinac Island Master Plan Steering Committee developed the following future land use recommendations. The future land use categories and locations are based on an analysis of several factors, including the pattern of existing land use, local social and economic characteristics, environmental conditions, and available community services and facilities, along with the community's expressed foundational planning principles, goals and policies.

The future land use plan proposes locations for nine primary land use classifications, as listed here in no particular order of importance, and described more fully below.

- Conservation/Park
- Recreation/Open Space
- Shoreline Residential
- Cottage Residential
- Mixed Residential
- Single Family Residential
- Hotel/Boardinghouse
- Market Street
- Commercial

Figure 7-1 illustrates the location and extent of the proposed future land use areas on Mackinac Island. The uses anticipated within each of these categories are discussed below.

Conservation/Park

The Conservation/Park category is the most extensive future land use category proposed for the City of Mackinac Island. It includes all of Round Island (not shown on Figure 7-1) and much of the State Park land on Mackinac Island. It also includes publicly or privately owned properties that are dedicated as permanent conservation/park use, including several lots within the Stonecliffe and Annex areas.

Figure 7-1 Future Land Use Map

September 10, 2024
DRAFT



City of Mackinac Island | 2024 Master Plan

Future Land Use Categories:

- | | |
|-----------------------|---------------------------|
| Conservation/Park | Single Family Residential |
| Recreation/Open Space | Hotel/Boardinghouse |
| Shoreline Residential | Market Street |
| Cottage Residential | Commercial |
| Mixed Residential | |

Parcel Source: Mackinac County Equalization, 2018

Base Layers:

- State Highway
- Improved (Asphalt) Roads
- Unimproved (Gravel) Roads
- Property Lines
- Water Bodies

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Activities proposed to be allowed in the Conservation/Park category include the fostering of wildlife habitat and environmental protection, parks and recreation facilities, cemeteries, and open space. These uses are consistent with the current State Park and Federal Wilderness designation of the properties. The Conservation/Park area is intended to be protected for current and future enjoyment by residents and visitors alike. Only very limited and low intensity development should be allowed to occur, consistent with the recreation and conservation goals.

It is recognized that some property within State Park lands on Mackinac Island is leased for other uses, including scattered residential development and public utilities. The airport, cemeteries and DPW facilities are also shown in this category. It is intended that such existing uses will continue to be accommodated within this planning category. Future development of State Park land for purposes other than conservation or recreation should be carefully examined on a case by case basis. Decisions for any development on State Park property are solely under the jurisdiction of the State. However, this Master Plan urges consultation, cooperation, and interaction between the State and City on planning and development issues on State Park land.

Recreation/Open Space

The Recreation/Open Space category includes both publicly and privately owned properties that are primarily used for active recreational or open space purposes. It is intended that these areas continue to serve as recreational and open space for more active and intense recreational uses. As shown on the Future Land Use Map, this category includes the Mackinac Island School property, Grand Hotel open space and golf courses, Wawashkamo Golf Course, Mackinac Community Equestrian Center, The Greens of Mackinac putting course, Marquette Park, Great Turtle Park, Mackinac Island State Harbor, and the lakeshore open space areas at Windermere Point and in front of Mission Point Hotel.

Shoreline Residential

For historic, environmental, and scenic reasons, exceptional care is needed in the review of any development to be located at or near the shoreline of the Island. It is recommended that a separate planning area be designated for all shoreline property located outside of the downtown area, generally lakeward of Lakeshore Road (in some cases, on both sides of Lakeshore Road). This designation also applies to the steep bluff slope below Stonecliffe, West Bluff and Hubbard's Annex.

Lands in this category may be privately or publicly owned. It is not the intent of this category to prohibit development – low density residential use may be allowed in a manner that protects and is compatible with the unique characteristics of the shoreline. In these designated shoreline areas, special setback, height, and landscape buffer standards are critical to retain scenic views, prevent erosion, and buffer any development from the road and shoreline.

Residential

Proposed residential land uses on Mackinac Island are presented in three sub-categories: Cottage Residential, Mixed Residential, and Single Family Residential. These planning areas are discussed in more detail below.

Cottage Residential

The Cottage Residential category is created to recognize and protect the distinct nature of the historic summer cottages located on the West Bluff, Hubbard's Annex extending to Stonecliffe, East Bluff, Marina District Downtown, and on a few privately held residential properties on the north side of the Island. Many of these cottages are eligible for the National Register of Historic Places and thus constitute an important architectural heritage. Any future development of the area is envisioned to be consistent with density levels and design standards of the existing Cottage Residential development. Low density is important to retaining the special character of the Cottage Residential area.

Mixed Residential

The Mixed Residential category is designed to accommodate both single family and multi-family residential uses, at higher densities than anticipated in the Single Family area. Neighborhoods included in the Mixed Residential future land use category include Harrisonville, the neighborhood around Ste. Anne's Catholic Church, and near the foot (south end) of Cadotte Avenue. Additionally, two small areas located inland from Windermere Point are designated for Mixed Residential use (see **Figure 7-1**).

The Mixed Residential area is anticipated to incorporate sites for employee housing and for multiple-family units. Ideally, such housing will be integrated in a non-conflicting manner with single family uses also included in this planning area. Reasonable restrictions or conditions may be needed to assure compatibility of single family, multi-family and employee housing uses, and the preservation of the character of the residential neighborhood. Depending on the situation, employee housing occurs in separate structures, or within units initially designed for single family use. The Mixed Residential area is where affordable, workforce housing can most appropriately be accommodated on the Island. It is also envisioned that churches and small-scale home occupations can be successfully integrated into the Mixed Residential neighborhoods.

Single Family Residential

The Single Family Residential use designation is intended to accommodate existing areas developed for residential use, at a relatively low density of approximately three units per acre. Due to the historic nature of Mackinac Island and the limited amount of private land available for development, some existing residential lots in the Single Family Residential planning areas may be platted at a higher density. These smaller existing lots are incorporated as compatible pre-existing uses. Areas designated for Single Family Residential uses are located in two small pockets near downtown on Mahoney Avenue, an area east of the marina on the lake side of Main Street, British Landing, and property within the more recent developments of Woodbluff, Stonecliffe, Stonecliffe Manors, Stonebrook and Forest Ridge (see **Figure 7-1**).

Hotel/Boardinghouse

The Hotel/Boardinghouse category recognizes the significance of Mackinac Island as a tourist resort destination. The area allows for a wide variety of different land use activities typically associated with and integrated into large resorts, including shops, restaurants, recreation facilities, and semi-public open space. This category is not intended to include all the neighborhood bed and breakfast facilities or hotels located within the downtown, but rather it is intended to demark Hotel/Boardinghouse uses and facilities which occupy large parcels or contiguous areas. Hotel/Boardinghouse areas in this category include Grand Hotel, Stonecliffe, Mission Point Resort, and a number of smaller establishments located along Main Street.

Market Street

Designated as an official historic district in 2013, many of the Island's most historically significant structures are clustered along Market Street (see historic site list and map in **Appendix C**). However, the name "Market Street" itself suggests the street's beginnings as an historic commercial center. While the City wishes to preserve the historic value of structures and sites along Market Street, continuing commercial use there is seen as a vibrant part of the preservation effort. For this reason, small-scale commercial uses are anticipated to remain in the Market Street Historic planning area alongside traditional residential, civic and institutional uses. City Hall is located at the heart of this planning area, and is in itself an admirable example of adaptive re-use of a historic structure. Reasonable restrictions on all uses in the district are desired, to ensure preservation of the area's unique and important cultural and architectural legacy. Such restrictions could include limitations on demolition or structural alterations, standards for repairs or maintenance which are sensitive to historic values, and/or special development review processes focused on historic preservation. Density or height limitations may also be appropriate in certain circumstances, to retain the scenic and historic characteristics of the area.

Commercial

The core of the area designated for Commercial use is located along Main Street, between Windermere Point and Marquette Park. This area not only accommodates the commercial needs of year-round residents, but also serves as the center for most of the Island's tourism activity. The Commercial area includes a variety of retail commercial uses, gift shops, lodging facilities, and restaurants. Transportation-related services, such as carriage and bicycle tour facilities, are appropriate within the Commercial classification, as are civic, office, and institutional uses, such as public restrooms and the island information booth. The ferry docks, another key Island land use, are located in this area and add to the commercial activity level downtown.

A number of residential uses exist downtown in the Commercial area. It is intended that these downtown and above-the-store residential uses will remain. Further, above-the-store residential uses may be added in the future, consistent with the character of the downtown. This type of housing is preferred and encouraged for those employed in the downtown area.

Chapter 8: Zoning Plan, Implementation and Adoption

Introduction

The overall intent of this Master Plan is to identify and develop the most appropriate land use strategies for meeting City needs in a manner which supports the health, safety, and welfare of the current and future residents. These strategies are embodied within this Plan both graphically and in text. However, without the implementation of these strategies, this Master Plan becomes nothing more than a document upon a shelf. A Master Plan is a statement of policy and is ineffective unless acted upon. There are a number of avenues that the City of Mackinac Island can follow to implement this land use plan.

Before implementation can occur, it is critical that the appropriate City governmental bodies recognize and support this Master Plan. Once the Plan is adopted, it is considered official and should be used by the Planning Commission, Historic District Commission, City Council and other City bodies as a guide for future planning and resolving conflicts. Implementation of the Plan may be realized by actively:

- Regulating the use and manner of development of property through up to date reasonable zoning controls, subdivision regulations, and building and housing codes
- Assuring community wide knowledge, understanding, support, and approval of the Plan
- Providing a program of capital improvements and adequate, economical public services by using available governmental financing techniques to encourage desired land development or redevelopment
- Reviewing the plan periodically (at least every five years) to evaluate its consistency with changing trends and citizen desires

This Chapter discusses further the strategies for implementing the goals, objectives and land use recommendations of this Master Plan.

Zoning Plan

Zoning regulations are adopted under the local police power granted by the State for the purpose of promoting community health, safety, and general welfare. Such regulations have been strongly supported by the Michigan courts, as well as by the U.S. Supreme Court. Zoning consists of dividing the community into districts, for the purpose of establishing population density and regulating the use of land and buildings, their height and bulk, and the proportion of a lot that may be occupied by them. The regulations with each zoning district are unique; however, regulations within the same district must be consistently applied throughout the community for that particular district.

The intent of zoning is to assure the orderly development of the community. Zoning is also employed as a means of protecting property values and other public and private investments. Because of the impact that zoning can have on the use of land and related services, it should be based on a comprehensive long-range community plan.

Zoning is an effective tool not only for the implementation of the Plan, but also benefits individual property owners. It protects homes and investments against the potential harmful intrusion of business and industry into residential neighborhoods; requires the spacing of buildings far enough apart to assure adequate light and air; prevents the overcrowding of land; facilitates the economical provision of essential public facilities; and aids in conservation of essential natural resources.

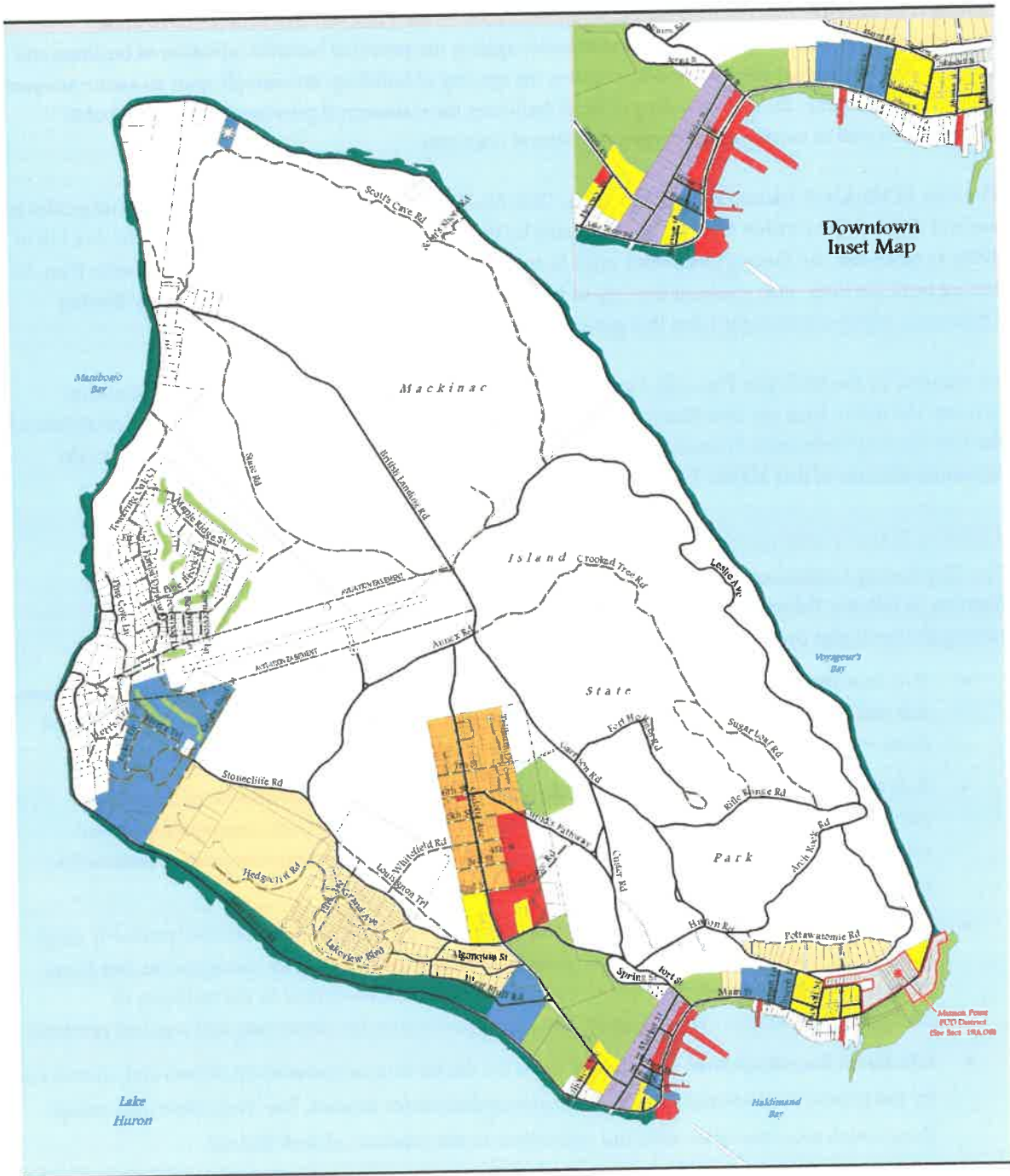
The City of Mackinac Island Zoning Ordinance, Ord. No. 479, as amended, is a regulatory tool that guides land use and development within the City. As stipulated by the Michigan Zoning Enabling Act, Public Act 110 of 2006, as amended, the Zoning Ordinance must be based upon a Master Plan. Therefore, this Master Plan, by setting forth the long-term vision of the City of Mackinac Island, provides the basis for the City Zoning Ordinance, which contains the rules that govern the path to that vision.

As required by the Michigan Planning Enabling Act, the following is an explanation of the relationship between the future land use classifications presented in this Master Plan and the zoning districts established in the City Zoning Ordinance. Potential revisions to the Zoning Ordinance and Zoning Map, based on the recommendations of this Master Plan, are also outlined.

Existing Zoning Districts

The City Zoning Ordinance and its official Zoning Map have established a total of 11 zoning districts, as follows. Taken from the Zoning Ordinance, the intent statement for each zoning district is also provided.

- **R-1, Low Density Residential.** To establish and preserve quiet, low density residential neighborhoods, safe and free from congestion by pedestrians, bicycles and horses, and free from other uses except those which are both compatible with and convenient to the residents of such a district.
- **R-3, High Density Residential.** To establish and preserve quiet neighborhoods of single- and multiple-family homes, free from other uses except those which are both compatible with and convenient to the residents of such a district, and to provide adequate housing opportunities for permanent and seasonal residents.
- **R-4, Harrisonville Residential.** To establish and preserve a quiet neighborhood of primarily single- and two-family homes within the area of the Island commonly known as Harrisonville, free from other uses except those which are both compatible with and convenient to the residents of Harrisonville, and to provide adequate housing opportunities for permanent and seasonal residents.
- **HB, Hotel Boardinghouse.** To establish areas for the housing of seasonal employees and visitors and for the provision of adequate overnight accommodations for tourists, free from other uses except those which are compatible with and convenient to the residents of such district.
- **C, Commercial.** To establish and preserve a cohesive business district suited to the needs of travelers, tourists, vacationers, and seasonal and permanent residents.



Zoning Map City of **Mackinac Island** Mackinac County, Michigan

- R-1 Low Density Residential
- R-3 High Density Residential
- R-4 Harrisonville Residential
- HB Hotel/Boardinghouse
- C Commercial

- MD Market
 - CD Cottage
 - ROS Recreation/Open Space
 - RS Shoreline Residential
- Indicates that the property was rezoned with a statement of conditions

- Improved (Asphalt) Roads
 - Unimproved (Gravel) Roads
 - Property Lines
- Revised City of Mackinac Island Zoning Ordinance
Adopted October 16, 2013
Effective November 12, 2013
Amended Through May, 2017



- **MD, Market.** To establish and preserve a district (formerly called the Historic District) containing several historically significant structures and other buildings primarily fronting Market Street, which together form a neighborhood with unique historic character.
- **CD, Cottage.** To establish and preserve areas of large residential estates characterized by unique Victorian or other style architecture, large landscaped yards, and quiet low density residential use.
- **ROS, Recreation/Open Space.** To establish and preserve public and private areas for outdoor recreation and open space purposes, to provide recreation opportunities for residents and visitors, and to preserve scenic views to Lake Huron which serve to enhance the historic and natural character of the island.
- **RS, Shoreline Residential.** To establish a district which allows for low density residential use in a manner which protects, and is compatible with, the unique characteristics of the Lake Huron shoreline.
- **M, Marine.** To establish a zoning district for the historic harbor area of Mackinac Island encompassing the entire area between the east and west breakwaters lakeward from the ordinary high-water mark. To regulate the necessary uses thereof with recognition of historical uses and further recognizing that this harbor provides the transportation link for most goods and passengers being transported to and from Mackinac Island.
- **L, Lake.** To establish a zoning district to regulate uses and structures in the water area surrounding Mackinac Island which are outside the historic harbor area ("Marine District"), said water area to be considered those areas lakeward from the ordinary high-water mark, recognizing the historical uses, the need for open viewing areas and scenic atmosphere of Mackinac Island.

Relationship between the Future Land Use Classifications and Zoning Districts

This Master Plan has established a total of nine future land use classifications, as listed below (each classification is described in detail in Chapter 7):

- Conservation/Park
- Recreation/Open Space
- Shoreline Residential
- Cottage Residential
- Mixed Residential
- Single Family Residential
- Hotel/Boardinghouse
- Market Street
- Commercial

Table 8-1 summarizes how the future land use classifications in this Master Plan relate to, or can generally be accomplished by, the various zoning districts from the City Zoning Ordinance.

| Table 8-1 Future Land Use and Zoning District Relationship Summary | | |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Future Land Use Classification | Primary Zoning District(s) which accomplishes the recommendations of the Future Land Use Classification | Other Zoning District(s) which may accomplish the recommendations of the Future Land Use Classification |
| Conservation/Park | R-1, Low Density Residential | ROS, Recreation/Open Space |
| Recreation/Open Space | ROS, Recreation/Open Space | R-1, Low Density Residential |
| Shoreline Residential | RS, Shoreline Residential | L, Lake - for areas lakeward from the ordinary high-water mark |
| Cottage Residential | CD, Cottage | |
| Mixed Residential | R-3, High Density Residential | |
| | R-4, Harrisonville Residential | |
| Single Family Residential | R-1, Low Density Residential | |
| Hotel/Boardinghouse | HB, Hotel/Boardinghouse | |
| Market Street | MD, Market | |
| Commercial | C, Commercial | M, Marine - for areas lakeward from the ordinary high-water mark |

Potential Zoning Ordinance and Map Changes

To effectively implement the recommendations contained within this Master Plan, various changes to the City Zoning Ordinance and Zoning Map are likely necessary. Therefore, it is recommended that the City initiate a review of the zoning ordinance after the adoption of this Master Plan. Related to the currently adopted Zoning Map, the City should consider the following changes:

1. A reduction in the amount of land zoned HB, Hotel/Boardinghouse within the Stonecliffe area, consistent with the limits of the Hotel/Boardinghouse future land use classification.
2. An expansion of the RS, Shoreline Residential zoning district to encompass lands in the Windermere Point area and in front of Mission Point Hotel.

Numerous specific policies have been outlined in Chapter 6 of this Master Plan which are related to, or could be accomplished through changes to the City's Zoning Ordinance. A listing of these policies is provided below. The City should review the currently adopted Zoning Ordinance and consider whether changes are necessary and appropriate at this time to implement such policies.

1. Review the Zoning Ordinance upon adoption of the Master Plan and amend as appropriate. (*Planning and Community Engagement Policy #4*)
2. Utilize innovative planning and zoning techniques, to allow for mixed land uses and increased employee housing and/or residential (year-round) apartments in the downtown. (*Community and Development Character Policy #3*)
3. Review existing zoning district regulations throughout the Island and consider revisions to ensure that the type, scale, height, orientation, density and overall character of development is appropriate given the physical capabilities and characteristics of the land, is compatible with the historical context of area, and is able to be supported by available infrastructure capacities. (*Community and Development Character Policy #5*)
4. Maintain the City's historic district designations and require adherence to historic preservation and design standards for development within the City's historic districts. (*Historic Preservation Policy #3*)
5. Review existing zoning regulations in historic districts/areas and consider revisions to ensure that new development and redevelopment conforms to historic patterns of development. (*Historic Preservation Policy #5*)
6. Adopt policies and undertake actions in support of the recommendations of the City of Mackinac Island Housing Strategy. (*Housing Policy #1*)
7. Consider allowances for higher density for projects that provide permanently affordable/workforce housing, if appropriate given the capacity of available infrastructure. (*Housing Policy #2*)
8. Review and consider zoning ordinance changes to ensure that ample opportunities and incentives are available to encourage affordable housing for existing and future residents; specific consideration should be given to allowing accessory dwelling units (ADUs) under certain conditions and where appropriately integrated within existing neighborhoods. (*Housing Policy #3*)
9. Review and revise the zoning ordinance, as necessary, to allow and ultimately increase the supply of housing for independent retirees, seniors, and others needing assisted living housing. (*Housing Policy #4*)
10. Examine the impacts of the fractional home ownership model on existing neighborhood character and the supply of affordable year-round housing and consider enacting policies that will ensure the model supports the vision for Mackinac Island as established in this Master Plan. (*Housing Policy #10*)
11. Require an environmental impact review for proposed development during the site plan review or special use permit process. (*Natural Environment, Public Lands and Recreation Policy #5*)
12. Review and adopt, as necessary, land development codes that:
 - Minimize the impacts of runoff from new development proposals
 - Require adherence to standards which ensure that erosion and sedimentation, and other forms of contamination, are minimized.

- Preserve dark skies through appropriate site lighting restrictions
- Encourage stormwater management controls to improve drainage and reduce contaminants to public utility systems

(Natural Environment, Public Lands and Recreation Policy #13)

13. Review land development regulations to ensure appropriate placement and screening of satellite dishes, antennas, mechanical, HVAC and similar equipment. *(Infrastructure and Public Services Policy #11)*
14. Review land development regulations to ensure that service entrances, commercial dumpsters, and mechanical/service equipment, are screened from the public right-of-way and, in downtown, are screened from public view. *(Infrastructure and Public Services Policy #12)*

Grants and Capital Improvements Investments

A master plan can also be used as a guide for future public investment and service decisions, such as the local budget, grant applications, and administration of utilities and services. Many communities find it beneficial to prioritize and budget for capital improvements projects (such as building expansions, infrastructure improvements, major equipment purchases, park improvements, etc.). A Capital Improvements Program (CIP) is one tool which is often used to establish a prioritized schedule for all anticipated capital improvement projects in the community. A CIP includes cost estimates and sources for financing for each project. Therefore, it can serve as both a budgetary and policy document to aid in the implementation of a community's goals defined in the master plan.

Recreation Planning

A recreation plan is one way to implement important recreation related goals defined in the master plan. By developing a recreation plan consistent with Michigan Department of Natural Resources requirements, a community is eligible for certain MDNR recreation grants. It is recommended the community maintain a recreation plan and keep it updated at five-year intervals, as required by the agency.

5-Year Master Plan Review

The Mackinac Island Master Plan is a flexible document that should be updated periodically to address major changes in the community, such as the addition/loss of a major employer or changing citizen attitudes relating to a controversial issue. At least every five years after the adoption of a Master Plan, the Planning Enabling Act requires that a Planning Commission "review the Master Plan and determine whether to commence the procedure to amend the Master Plan or adopt a new Master Plan." The findings of the review must be recorded in the minutes of the relevant meeting or meetings of the Planning Commission.

Implementation Matrix

In order for the Master Plan to be implemented, the city and community partners must carry out the actions needed to achieve the goals and the community's vision for Mackinac Island's future. To aide the city in implementation of the plan's recommendations, an Implementation Matrix has been prepared (**Tables 8-2 through 8-8**). The Implementation Matrix is organized around the six major themes established in the Goals and Policies section of the Master Plan. These six themes are as follows:

1. Planning and Community Engagement

2. Community and Development Character
3. Historic Preservation
4. Housing
5. Natural Environment, Public Lands, and Recreation
6. Transportation
7. Infrastructure and Public Services

Under each theme, various “actions” are presented. Each action includes a time frame in which the action should be carried out and the task leader(s) most likely to carry out the action. The task leader listed first should be the primary lead on the action item; others listed are recommended collaborators.

| Timeframe Key |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Now – Begin work immediately upon plan adoption |
| Near – Begin work within 1 to 2 years. Inform the task leader(s) and initiate a committee if necessary. The committee should meet at least (1) time per year starting now until the time of implementation to ensure any further work and study on the action is completed and implementation begins on time. |
| Next – Begin work within 3 to 5 years. The Planning Commission should monitor the progress of the near-term action items and be ready to continue progress with these next action items. |
| Ongoing – Actions that require continuous monitoring or effort. |

| Responsibility Key |
|-------------------------------------------|
| BC – Business Community |
| CA – City Administration/Staff |
| CC – City Council |
| HDC – Historic District Commission |
| PC – Planning Commission |
| RD – Recreation Department |

| Funding Key |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PUB – Includes public funds from the city general operating budget. Public funds may also include local government bonds. |
| PVT – Includes funds from private sources, such as foundations, corporations, or personal property owners. |
| OUT – Includes funds from sources generally outside of the city, such as county, state and federal funds through grants and loan programs and other allocations. |

| Table 8-2 Implementation Matrix: Planning and Community Engagement | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------|
| Action | Timeframe | Responsibility | Funding |
| Regularly review and update this Master Plan | Ongoing | PC | PUB |
| Review the Zoning Ordinance upon adoption of the Master Plan and undertake amendments as appropriate. (Refer to the Potential Zoning Ordinance and Map Changes section on pages 88-90 of this Master Plan.) | Now | PC, CC, CA | PUB, OUT |
| Establish a strategy to better track the number of seasonal residents and visitors to the island | Near | PC, CA, BC | PUB |
| Consider and evaluate the creation of a City Manager, grantwriter, and/or other staff positions necessary to support City administration and initiatives | Near | CC, CA | PUB |
| Develop a formal Public Participation Strategy which outlines how the public will be engaged throughout the planning, zoning and development process | Next | CC, CA | PUB |

| Table 8-3 Implementation Matrix: Community and Development Character | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------|---------|
| Action | Timeframe | Responsibility | Funding |
| Use the Goals and Policies of this Master Plan as a guide when reviewing proposals for new development and redevelopment on the island | Ongoing | PC, CC, CA | PUB |
| Engage with the State Park and the DNR Waterways Commission to make sure they are aware of the need for coordination with the City to ensure their capital improvement projects on the Island are appropriately designed | Now | HDC, CC, CA, PC | PUB |
| Review the Zoning Ordinance and consider if any changes to the MD Market District are necessary to ensure that the character of Market Street is protected in line with the intent of the Market Street future land use classification | Near | PC, CC, CA | PUB |
| Investigate the feasibility and potential of a property transfer tax to be used for preservation, housing, infrastructure, and/or other similar community improvement initiatives. | Near | CC, CA, PC, HDC, BC | PUB |

| Table 8-4 Implementation Matrix: Historic Preservation | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|---------------|
| Action | Timeframe | Responsibility | Funding |
| Identify and advertise on the city website available incentives for private property owners to undertake improvements to historic properties | Now | HDC, CA, PC | PUB |
| Consider establishing site and architectural design guidelines for new development and redevelopment outside of the Historic Districts | Now | PC, CA | PUB, OUT |
| Review and revise, as necessary, the city's historic district design guidelines to ensure that new development and redevelopment conforms to historic patterns of development and the Secretary of Interior's Standards for Historic Preservation | Near | HDC, CA, PC | PUB |
| Develop and execute a public education campaign relative to the importance of historic districts, historic district design guidelines, and the availability of programs that assist property owners in maintaining historic structures, including grants and tax deductions | Next | HDC, CA, PC | PUB, PVT, OUT |

| Table 8-5 Implementation Matrix: Housing | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------|
| Action | Timeframe | Responsibility | Funding |
| Led by the City's Housing Committee and supported by the Mackinac Island Community Foundation, evaluate and adopt policies and undertake other actions in support of the recommendations of the City of Mackinac Island Housing Strategy | Ongoing | CC, PC, CA | PUB, PVT |
| Review the Zoning Ordinance and undertake amendments, as necessary, to address housing in line with the recommendations of the City of Mackinac Island Housing Strategy and this Master Plan. | Now | PC, CC, CA | PUB, OUT |

| Table 8-6 Implementation Matrix: Natural Environment, Public Lands, and Recreation | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|---------------|
| Action | Timeframe | Responsibility | Funding |
| Regularly review and update the island's Recreation Master Plan | Ongoing | RD, CC, CA | PUB |
| In line with the city's Recreation Master Plan, seek outside funding and undertake needed parks and recreation facility improvements | Ongoing | RD, CC, CA | PUB, OUT |
| In line with this Master Plan, seek outside funding and undertake needed environmental conservation and protection efforts, including efforts to reduce and eliminate invasive species | Ongoing | RD, CC, PC, CA | PUB, OUT, PVT |
| Identify best practices for building design, sustainable site design, and stormwater management, and consider actions and policies, including possible zoning changes, that encourage or require their use as part of new development and redevelopment projects | Next | CC, PC, CA, BC | PUB, PVT |

| Table 8-7 Implementation Matrix: Transportation | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------|
| Action | Timeframe | Responsibility | Funding |
| Identify and seek outside funding in support of traffic safety, congestion, and non-motorized improvements | Ongoing | CC, PC, CA | PUB, OUT |
| Evaluate and adopt policies and undertake other actions in support of the recommendations of the Mackinac Island Transportation Master Plan | Now | CC, PC, CA | PUB, PVT |
| Negotiate an appropriate and beneficial fee structure policy for ferry providers, which results in affordable rates and fees and functional schedules for residents and visitors. Engage the State of Michigan in these discussions to ensure public access to and use of State lands. | Now | CC, CA, BC | PUB, OUT |
| Establish a traffic safety and congestion task force to carry forward actions as recommended in this Master Plan | Near | CC, PC, BC, CA | PUB, PVT |
| Review and consider modifications to improve consistency and effectiveness of existing safety and wayfinding signage. | Next | CC, CA, BC | PUB |

| Table 8-8 Implementation Matrix: Infrastructure and Public Services | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------|----------|
| Action | Timeframe | Responsibility | Funding |
| Prepare and annually update a Capital Improvements Plan as a guide for major infrastructure and public service improvements | Ongoing | CC, PC, CA | PUB |
| Identify and seek outside funding in support of public infrastructure and services improvements | Ongoing | CC, PC, CA | PUB, OUT |
| Hold an annual joint meeting with City Council, Planning Commission, Historic District Commission and similar bodies to ensure coordination and collaboration on city initiatives | Now | CC, PC, CA | PUB |

Appendices

Draft Report – September 10, 2024

City of Mackinac Island 2024 Master Plan

- Appendix A: Historic, Geologic and Scenic Sites
- Appendix B: Natural Resources (Mackinac Island State Parks Checklists)
- Appendix C: Mackinac Island Airport Layout Plan

Appendix A

Historic, Geologic and Scenic Sites

- National and State Register Historic Sites
- Selected Geologic and Scenic Sites

**NATIONAL AND STATE REGISTER HISTORIC SITES
AS OF MARCH, 2010**

(Note: Number in parenthesis is a reference to site file information kept
at the State Historic Preservation Office, Michigan Historical Center,
Michigan Department of State, Lansing Michigan)

1. **Agency House of the American Fur Company Stuart, Robert, House** (P23995)
Market Street, Mackinac Island
National Register listed 04/16/1971
State Register listed 03/23/1965
2. **American Fur Company Retail Store** (P23996)
Market Street, Mackinac Island
State Register listed 06/10/1980
3. **Battlefield of 1814** (P23997)
Near Wawashkamo Golf Club, on British Landing Road, Mackinac Island
State Register listed 03/19/1958
Marker Erected 06/06/1958
4. **Beaumont's Medical Discovery/ Beaumont Memorial** (P23998)
Market Street at Fort Street, Mackinac Island
State Register listed 02/18/1956
Marker Erected 05/10/1982
5. **Biddle House** (P23999)
Market Street, Mackinac Island
State Register listed 07/19/1956
Marker Erected 05/13/1960
6. **British Cannon Site** (P24000)
Rear of Fort Mackinac Island, high ground north of the fort, Mackinac Island
State Register listed 02/12/1959
Marker Erected 06/01/1959
7. **British Landing** (P24001)
Northwest shore of Mackinac Island, Mackinac Island
State Register listed 03/19/1958
Marker Erected 06/06/1958
8. **Cudahy Residence/ Williams, G. Mennen, Summer Home** (P24002)
West Bluff, Mackinac Island
State Register listed 01/19/1978
9. **Davenport, Ambrose R., House** (P24004)
North Street, Hubbard's Annex, Mackinac Island
State Register listed 06/30/1988

NATIONAL AND STATE REGISTER HISTORIC SITES CONTINUED

10. **Davis-Preston House/ Haan, Joyce and Vernon, House** (P24005)
Huron Street, east of Saint Anne's Catholic Church, Mackinac Island
State Register listed 05/17/1978
11. **Early French Missionary Chapel** (P24006)
Fort Street, north of Main, near sidewalk to fort, Mackinac Island
State Register listed 05/01/1959
Marker Erected 05/27/1959
12. **Fort Holmes** (P24007)
Fort Holmes Road, north of the business district, Mackinac Island
State Register listed 09/25/1956
Marker Erected 05/29/1959
13. **Fort Mackinac** (P24008)
Huron Road, Mackinac Island
National Register listed 07/08/1970
State Register listed 02/19/1958
Marker Erected 06/06/1958
14. **Geary, Mathew, House** (P24009)
Market Street, Mackinac Island
National Register listed 05/06/1971
State Register listed 02/11/1970
15. **Grand Hotel** (P188)
Grand Hotel Avenue, Mackinac Island
National Historic Landmark listed 06/29/1989
State Register listed 07/12/1957
National Register listed 05/05/1972
Marker Erected 1958
16. **Indian Dormitory** (P24012)
Huron Street, next to Marquette Park, Mackinac Island
National Register listed 11/05/1971
State Register listed 02/17/1965
Marker Erected 04/27/1966
17. **Island House** (P24013)
Huron Street, Mackinac Island
State Register listed 03/14/1973
Marker Erected 06/06/1973

NATIONAL AND STATE REGISTER HISTORIC SITES CONTINUED

18. Lake View House/ Lake View Hotel (P24014)

SW end of Huron Street, Mackinac Island

State Register listed 01/13/1982

Marker Erected 08/14/1985

Note: As of August 2010, this site was planned for delisting, but the process was not officially started.

19. Mackinac Conference Informational Site/Grand Hotel (P24015)

Grounds of the Grand Hotel, Mackinac Island

State Register listed 08/15/1975

Marker Erected 08/28/1975

20. Mackinac Island (P200)

Mackinac Island

National Historic Landmark listed 10/09/1960

National Register listed 10/15/1966

State Register listed 07/19/1956

Marker Erected 12/07/1956

21. Market Street (P24017)

Market Street, Mackinac Island

State Register listed 07/19/1956

Marker Erected 11/09/1956

22. Mission Church (P24018)

Huron Street, corner of Truscott Street, Mackinac Island

National Register listed 01/25/1971

State Register listed 07/19/1956

Marker Erected 04/12/1957

23. Mission House (P24019)

East end of Huron Street, Mackinac Island

National Register listed 04/16/1971

State Register listed 11/06/1970

Marker Erected 07/27/1993

24. Round Island Lighthouse Informational Designation (P24020)

Foot of Huron Street, next to the Iroquois Hotel, in the municipal park overlooking the Round Island Lighthouse, Mackinac Island

National Register listed 08/21/1974

State Register listed 04/23/1971

Marker Erected 05/18/1978

25. Sainte Anne de Michilimackinac Roman Catholic Church/ Sainte Anne's Church (P24021)

Huron Street at the corner of Church Street, Mackinac Island

State Register listed 12/20/1990

Marker Erected 03/03/1992

NATIONAL AND STATE REGISTER HISTORIC SITES CONTINUED

26. Silver Birches (P24022)

On M-185, NE part of the island, Mackinac Island
State Register listed 09/08/1982

27. Skull Cave (P24023)

Garrison Road, Mackinac Island
State Register listed 01/12/1959
Marker Erected 05/04/1959

28. Stuart, Robert, Office Building/ Mackinac Island Town Crier Building (P24024)

34 Market Street, Mackinac Island
State Register listed 06/23/1983

29. Trinity Episcopal Church (P24025)

Fort Street, Mackinac Island
State Register listed 07/11/1968
Marker Erected 08/26/1968

30. Union Congregational Church/ Little Stone Church (P24026)

Cadotte Street, Mackinac Island
State Register listed 03/28/1979
Marker Erected 06/26/1979

31. Wawashkamo Golf Club (P24027)

British Landing Road, Mackinac Island
State Register listed 09/08/1982
Marker Erected 04/28/1983

32. Young, Lawrence Andrew, Cottage/ Governor's Summer Residence (P24010)

Huron Road, Mackinac Island
State Register listed 10/21/1975
National Register listed 11/17/1997

SELECTED GEOLOGIC & SCENIC SITES

- A. Arch Rock
- B. Sugar Loaf
- C. Robinson's Folly
- D. Lover's Leap
- E. Sunset Rock
- F. Altar Rock; Tabernacle Rock; Friendship's Altar (alternate names)
- G. Anne's Tablet
- H. Father Marquette Statue
- I. British Landing Trail
- J. Wildflower Walk Trail
- K. Devil's Kitchen
- L. Brown's Brook
- M. Dwightwood Spring
- N. Point Lookout (overlooking Sugar Loaf)
- O. Crack in the Island
- P. Pontiac's Lookout
- Q. Nicolet's Watch Tower
- R. Windermere/Biddle Point
- S. Point aux Pins
- T. Boardwalk
- U. View of the Harbor & Island from Harbor
- V. Round Island
- W. Cave in the Woods
- X. Croghan's Water
- Y. Fenwick's Cache
- Z. Pulpit Rock/Vista Rock

Figure A-1
Historic &
Scenic Sites Map



Appendix B Natural Resources

- Mackinac Island State Park Checklists

CHECKLIST

OF THE WILDFLOWERS OF MACKINAC ISLAND



During the past 200 years amateur and professional botanists have identified more than 600 species of wild plants on Mackinac Island. Less than half of those species are considered wildflowers. This checklist includes 270 species of "wildflowers" that are presently found on Mackinac Island.

THE CHECKLIST OF WILDFLOWERS OF MACKINAC ISLAND

A variety of habitats including; northern hardwood forests, conifer forests, fields, meadows, wetlands and beaches make up Mackinac Island's 2,100 acres. Mackinac Island State Park covers about 82% of the island, and the wildflowers growing in the State Park are protected by law and should not be picked or disturbed.

Whether a particular wild plant is considered a wildflower is a matter of opinion. A wildflower to one person may be a weed to someone else. In this checklist we included all of the island's wild plants that are considered to be wildflowers in today's popular field guides. The common names listed here are those most generally used in Michigan, and the scientific or botanical names are those accepted by botanists worldwide. Introduced species are indicated by an asterisk (*).

COMMON NAME

Family Araceae (Arum Family)

- ☐ Jack-in-the-Pulpit (Indian Turnip)

Family Liliaceae (Lily Family)

- ☐ Solomon's Seal, Hairy

- ☐ Twisted Stalk, White

- ☐ Twisted Stalk, Rose (Rosebells)

- ☐ Trillium, Common

- ☐ Lily, Yellow Trout (Adder's Tongue)

- ☐ Lily, Wood

- ☐ Lily, Orange Day

- ☐ Lily, Bluehead (Clintonia)

- ☐ Leek, Wild

- ☐ Lily-of-the-valley, Wild

- ☐ Solomon's Seal, False

- ☐ Solomon's Seal, Starry False

- ☐ Carnas, White (Death Camas)

- ☐ Lily-of-the-valley

- ☐ Sticky False Asphodel

Family Iridaceae (Iris Family)

- ☐ Blue-eyed-grass

- ☐ Dwarf Lake Iris

- ☐ Wild Blue Flag (Blue Iris)

Family Orchidaceae (Orchid Family)

- ☐ Lady's-slipper, Yellow

- ☐ Orchid, Calypso

- ☐ Orchid, Bracted

- ☐ Orchid, Round-leaved

- ☐ Orchid, Tall Northern Bog

- ☐ Orchid, Tall White Bog

- ☐ Coral-root, Spotted

- ☐ Coral-root, Northern (Early)

- ☐ Coral-root, Striped

- ☐ Helleborine, Broad-leaved

SCIENTIFIC NAME

- Asarum triphyllum* (L.) Scott.

- Polygonatum pubescens* (Willd.) Pursh.

- Streptopus amplexifolius* (L.) DC.

- Streptopus roseus* Michaux.

- Trillium grandiflorum* (Michaux)

- Erythronium americanum* Ker.

- Lilium philadelphicum* L.

- Hemerocallis fulva* (L.) L.

- Clintonia borealis* (Aiton) Raf.

- Allium tricoccum* Aiton.

- Melantherum canadense* Desf.

- Smilacina racemosa* (L.) Desf.

- Smilacina stellata* (L.) Desf.

- Zigadenus glaucus* (Nutt.) Nutt.

- Coriaria majalis* L.

- Tofieldia glutinosa* (Michaux) Pers.

- Sisyrinchium montanum* Greene.

- Iris lacustris* Nutt.

- Iris versicolor* L.

- Cypripedium calceolus* L.

- Calypso bulbosa* (L.) Oakes

- Coeloglossum viride* (L.) Hartman

- var. Virescens* (Willd.) Gray.

- Platanthera orbiculata* (Pursh) Undl.

- Platanthera hyperborea* (L.) Undl.

- Platanthera dilatata* (Pursh) Undl.

- Corallorhiza maculata* Raf.

- Corallorhiza trifida* Calt.

- Corallorhiza striata* Undl.

- Epipactis helleborifolia* (L.) Crantz.

- ☐ Orchid, Fan (Loesel's Twayblade)
- ☐ Rattlesnake-plantain, Green-leaved
- ☐ Ladies'-Tresses, Hooded

Family Santalaceae (Sandalwood Family)

- ☐ Bastard-toadflax

Family Polygonaceae (Smartweed or Buckwheat Family)

- ☐ Field Sorrel (Green or Sheep Sorrel)

- ☐ Water Smartweed

Family Chenopodiaceae (Goosefoot family)

- ☐ Lamb's Quarters (pigweed)

- ☐ Strawberry Blight

Family Portulacaceae (Purslane Family)

- ☐ Spring-beauty

- ☐ Spring-beauty, Broad-leaved

- ☐ Common Purslane

Family Caryophyllaceae (Pink Family)

- ☐ Chickweed, Common

- ☐ Sweet William

- ☐ Bouncing Bet (Soapwort)

- ☐ Sweet-William Catchfly

- ☐ Campion, Bladder

- ☐ Campion, White

Family Ranunculaceae (Crowfoot or Buttercup Family)

- ☐ Virgin's Bower (Old Man's Beard)

- ☐ Wild Columbine

- ☐ Meadow-rue, Early

- ☐ Baneberry, Red

- ☐ Baneberry, White (Doll's-eyes)

- ☐ Goldthread

- ☐ Liverleaf, Sharp-lobed (Hepatica)

- ☐ Liverleaf, Round-lobed (Hepatica)

- ☐ Buttercup, Small-flowered

- ☐ Buttercup, Tall

- ☐ Marsh-marigold (Cowslip)

- ☐ Anemone, Canada

- ☐ Anemone, Wood

- ☐ Thimbleweed

Family Berberidaceae (Barberry Family)

- ☐ Blue Cohosh (Papoose-root)

- ☐ Caulophyllum thalictroides (L.) Michaux.

Family Papaveraceae (Poppy Family)

- ☐ Bloodroot

- ☐ Celandine

Family Fumariaceae (Fumitory or Bleeding Heart Family)

- ☐ Dutchman's-breeches

Family Brassicaceae (Cruciferae) (Mustard Family)

- ☐ Mustard, Dog

- ☐ Yellow-Rocket (Winter Cross)

- ☐ Yellow-Rocket (Native Winter Cross)

- ☐ Mustard, Wild

- ☐ Toothwort, Cut-leaved

- ☐ Liparis loeselii (L.) Nutt.

- ☐ Goodyera oblongifolia Raf.

- ☐ Saranthes romanoffiana Cham.

Family Gentianaceae (Gentian Family)

- ☐ Comandra umbellata (L.) Nutt.

Family Polygonaceae (Smartweed or Buckwheat Family)

- ☐ Field Sorrel (Green or Sheep Sorrel)

- ☐ Polygonum amphibium L.

Family Chenopodiaceae (Goosefoot family)

- ☐ Chenopodium album L.

- ☐ Chenopodium capitatum L.

Family Portulacaceae (Purslane Family)

- ☐ Claytonia virginica L.

- ☐ Claytonia caroliniana Michaux.

- ☐ Portulaca oleracea L.

Family Caryophyllaceae (Pink Family)

- ☐ Stellaria media (L.) Vill.

- ☐ Dianthus barbatus L.

- ☐ Saponaria officinalis L.

- ☐ Silene armeria L.

- ☐ Silene vulgaris (Moench) Garcke.

- ☐ Silene pratensis (Rafn) Godron & Gren.

Family Ranunculaceae (Crowfoot or Buttercup Family)

- ☐ Clematis virginiana L.

- ☐ Aquilegia canadensis L.

- ☐ Thalictrum dioicum L.

- ☐ Actaea rubra (Aiton) Willd.

- ☐ Actaea pachypoda Eli.

- ☐ Coptis trifolia (L.) Salisb.

- ☐ Hepatica acutiloba DC.

- ☐ Hepatica americana (DC.) Ker.

- ☐ Ranunculus abortivus L.

- ☐ Ranunculus acris L.

- ☐ Caltha palustris L.

- ☐ Anemone canadensis L.

- ☐ Anemone quinquefolia L.

- ☐ Anemone virginiana L.

Family Berberidaceae (Barberry Family)

- ☐ Blue Cohosh (Papoose-root)

- ☐ Caulophyllum thalictroides (L.) Michaux.

Family Papaveraceae (Poppy Family)

- ☐ Bloodroot

- ☐ Celandine

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Family Brassicaceae (Cruciferae) (Mustard Family)

- ☐ Mustard, Dog

- ☐ Yellow-Rocket (Winter Cross)

- ☐ Yellow-Rocket (Native Winter Cross)

- ☐ Mustard, Wild

- ☐ Toothwort, Cut-leaved

| | | | | | |
|--------------------------------------------------------|------------------------------------|------------------------------------------------------|---------------------------------------|------------------------------------------------------------|-----------------------------------|
| Family Ericaceae (Heath Family) | Epigaea repens L. | Family Saxifragaceae (Saxifrage Family) | Denaria diphylla Michaux. | Family Polygalaceae (Milkwort Family) | Polysiphonia (Milkwort Family) |
| Trailing Arbutus | Gaultheria procumbens L. | Family Boraginaceae (Borage or Forget-me-not Family) | Nasturtium officinale R.Br. | Fringed Polygala (Gay-wings) | Polygala paucifolia Willd. |
| Wintergreen (Checkerberry) | Arctostaphylos uva-ursi (L.) Speg. | Family Blueweed (Viper's Bugloss) | Cappella bursa-pastoris (L.) Medicus. | Family Euphorbiaceae (Spurge Family) | Euphorbia cyparissias L. |
| Bearberry (Kinnikinnick) | Primula mistassinica Michaux. | Family Gentianaceae (Gentian Family) | Arabis hirsuta (L.) Scop. | Spurge, Petty | Euphorbia peplus L. |
| Family Primulaceae (Primrose Family) | Trientalis borealis Raf. | Family Gentiana (Gentian Family) | Arabis caucasica Schlecht. | Family Balsaminaceae (Touch-me-not Family) | Impatiens capensis Meerb. |
| Bird's-eye Primrose | Primula mistassinica Michaux. | Family Gentiana (Gentian Family) | Hesperis matronalis L. | Jewelweed (Spotted Touch-me-not) | |
| Star-flower | Trientalis borealis Raf. | Family Gentiana (Gentian Family) | Berteroa incana (L.) DC. | Family Malvaceae (Mallow Family) | Malva neglecta Wallic. |
| Gentian, Small Fringed | Gentiana procera Holm. | Family Gentiana (Gentian Family) | Draba arabisans Michx. | Mallow, Common (Cheeses) | Malva moschata L. |
| Gentian, Spurred | Halenia deflexa (Sm.) Griseb. | Family Apocynaceae (Dogbane Family) | Lapidium campestris (L.) R. Br. | Mallow, Musk | Acea rosea L. |
| Family Apocynaceae (Dogbane Family) | Vincetoxicum L. | Family Apocynaceae (Dogbane Family) | Cakile edentula (Bigelow) Hooker. | Hollyhock | |
| Periwinkle (Myrtle) | Vincetoxicum L. | Family Apocynaceae (Dogbane Family) | | Family Clusiaceae (Guttiferaceae) (St. John's-wort Family) | Hypericum kalmianum L. |
| Family Asclepiadaceae (Milkweed Family) | Asclepias syriaca L. | Family Apocynaceae (Dogbane Family) | | St. John's-wort, Common | Hypericum perforatum L. |
| Milkweed, Common | Asclepias syriaca L. | Family Boraginaceae (Borage or Forget-me-not Family) | | Family Violaceae (Violet Family) | Viola tricolor L. |
| Family Boraginaceae (Borage or Forget-me-not Family) | Echium vulgare L. | Family Boraginaceae (Borage or Forget-me-not Family) | | Johnny-jump-up | Viola pubescens Aiton. |
| Blueweed (Viper's Bugloss) | Lithospermum officinale L. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Downy Yellow | Viola canadensis L. |
| Gromwell | Myosotis arvensis (L.) Hill. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Canada | Viola rostrata Pursh. |
| Forget-me-not | Cynoglossum officinale L. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Long-spurred | Viola conspersa Reichb. |
| Hound's-tongue | Cynoglossum officinale L. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Kidney-leaved | Viola renifolia A. Gray. |
| Northern Wild Comfrey | Cynoglossum boreale Farn. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Great-spurred | Viola selkirkii Goldie. |
| Beggar's-slice | Hackelia virginiana (L.) Johnston. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Small Mottled | Viola nephrophylla Greene. |
| European Stickseed | Lappula echinata Glibb. | Family Boraginaceae (Borage or Forget-me-not Family) | | Violet, Common Blue | Viola sororia Willd. |
| Family Verbenaceae (Vervain Family) | Verbena hastata L. | Family Verbenaceae (Vervain Family) | | Family Lythraceae (Loosestrife Family) | Lythrum salicaria L. |
| Blue Vervain | Verbena hastata L. | Family Verbenaceae (Vervain Family) | | Purple Loosestrife | |
| Family Lamiaceae (Labiatae) (Mint Family) | Nepeta cataria L. | Family Verbenaceae (Vervain Family) | | Family Onagraceae (Evening-primrose Family) | Circaea alpina L. |
| Catnip | Nepeta cataria L. | Family Verbenaceae (Vervain Family) | | Small Enchanter's-nightshade | Epilobium angustifolium L. |
| Ground-ivy | Prunella vulgaris L. | Family Verbenaceae (Vervain Family) | | Fireweed (Great Willow-herb) | Epilobium ciliatum Raf. |
| Spill-heal (Heal-all) | Galeopsis tetrahit L. | Family Verbenaceae (Vervain Family) | | Northern Willow-herb | Oenothera biennis L. |
| Hemp-nettle, Common | Leonurus cardiaca L. | Family Verbenaceae (Vervain Family) | | Family Araliaceae (Ginseng Family) | Aralia racemosa L. |
| Motherwort, Common | Monarda didyma L. | Family Verbenaceae (Vervain Family) | | Spikenard | Aralia nudicaulis L. |
| BeeBalm (Oswego-tea) | Blephilia ciliata (L.) Benth. | Family Verbenaceae (Vervain Family) | | Family Apocynaceae (Dogbane Family) | Black Snakeroot |
| Downy Wood Mint | Satureja giabellia (Michaux) | Family Verbenaceae (Vervain Family) | | Wild Carrot (Queen-Anne's-lace) | Daucus carota L. |
| Low Calamint | Briquet. | Family Verbenaceae (Vervain Family) | | Sweet-daisy | Oenothera sp. |
| Dogmint (Wild Basil) | Satureja vulgaris (L.) Fritsch. | Family Verbenaceae (Vervain Family) | | Cow-parsnip | Heracleum maximum Bartram. |
| Bugle Weed | Lycopus virginicus L. | Family Verbenaceae (Vervain Family) | | Wild Parsnip | Pastinaca sativa L. |
| Water-horehound | Lycopus americanus L. | Family Verbenaceae (Vervain Family) | | Postion-hemlock | Conium maculatum L. |
| Mint, Wild | Mentha arvensis L. | Family Verbenaceae (Vervain Family) | | Yellow-pimpernel | Taenidia integrifolia (L.) Drude. |
| Spearmint | Mentha spicata L. | Family Verbenaceae (Vervain Family) | | Water-hemlock | Cicuta bulbifera L. |
| Peppermint | Mentha piperita L. | Family Verbenaceae (Vervain Family) | | Family Cornaceae (Dogwood Family) | Cornus canadensis L. |
| Family Solanaceae (Nightshade or Tomato Family) | Solanum dulcamara L. | Family Verbenaceae (Vervain Family) | | Bunchberry. | |
| Bittersweet Nightshade | Hyoscyamus niger L. | Family Verbenaceae (Vervain Family) | | Family Ericaceae (Heath Family) | Monotropa uniflora L. |
| Black Henbane | Solanum dulcamara L. | Family Verbenaceae (Vervain Family) | | Prince's Pine (Pipsissewa) | Chimaphila umbellata (L.) Bart. |
| Family Scrophulariaceae (Figwort or Snapdragon Family) | Mimulus glaberrimus HBK. | Family Verbenaceae (Vervain Family) | | Shinleaf, One-sided (Sidebells) | Pyrola secunda L. |
| James' Mimulus (Monkey-flower) | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | Shinleaf, Liver-leaf (Pink Pyrola) | Pyrola asarifolia Michaux. |
| Mullen, Common | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | Shinleaf | Pyrola elliptica Nutt. |
| Beard-tongue | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | | |
| Butter-and-Eggs | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | | |
| Yellow Foxglove | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | | |
| Speedwell, Persian | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | | |
| Speedwell, Common | Veronica barbatula L. | Family Verbenaceae (Vervain Family) | | | |

(continued)

- ☐ American Brooklime (Speedwell)
- ☐ Small-flowered Gerardia
- ☐ Wood Betony (Lousewort)
- ☐ Indian Paintbrush (Painted Cup)
- Family Orobanchaceae (Broomrape Family)
- ☐ Cancer-root
- ☐ Squaw-root
- ☐ Beach-drops
- Family Plantaginaceae (Plantain Family)
- ☐ Plantain, Common
- ☐ Plantain, English
- ☐ Plantain, Rugel's
- Family Rubiaceae (Madder or Bedstraw Family)
- ☐ Partridge Berry
- ☐ Cleavers
- ☐ Bedstraw, Small
- ☐ Bedstraw, Sweet-scented
- Family Caprifoliaceae (Honeysuckle Family)
- ☐ Twin Flower
- Family Valerianaceae (Valerian Family)
- ☐ Garden Valerian (Garden Heliotrope)
- Family Campanulaceae (Harebell or Bluebell Family)
- ☐ Harebell (Bluebell)
- ☐ Harebell, Creeping (Bellflower)
- ☐ Harebell, Marsh (Bellflower)
- ☐ Garden Campanula
- Family Lobeliaceae (Lobelia Family)
- ☐ Brook Lobelia
- Family Compositae (Asteraceae) (Composite or Daisy Family)
- ☐ Jerusalem Artichoke
- ☐ Black-eyed Susan
- ☐ Beggar-ticks
- ☐ Lance-leaved Coreopsis (Tickseed)
- ☐ Ragweed, Common
- ☐ Mayweed (Chamomile or Dogfennel)
- ☐ Yarrow, Common (Milfoil)
- ☐ Ox-eye Daisy
- ☐ Tansy, Common
- ☐ Pineappleweed
- ☐ Tall Wormwood
- ☐ Ragwort, Common (Groundsel)
- ☐ Ragwort, Golden
- ☐ Ragwort, Balsam (Groundsel)
- ☐ Palmate-leaved Sweet-colt's Foot
- ☐ Goldenrod, Hairy
- ☐ Goldenrod, Zigzag
- ☐ Goldenrod, Canada
- ☐ Goldenrod, Tall
- ☐ Veronica americana (Rat.)
Schwein.
- ☐ Gerardia purpurea L.
- ☐ Pseudicallis canadensis L.
- ☐ Castilleja coccinea (L.) Spring.
- Family Orobanchaceae (Broomrape Family)
- ☐ Orobancha uniflora L.
- ☐ Conopholis americana (L.)
Walt.
- ☐ Epipagus virginiana (L.) Bart.
- Family Plantaginaceae (Plantain Family)
- ☐ Plantago major L.*
- ☐ Plantago lanceolata L.*
- ☐ Plantago rugelii Deane.*
- Family Rubiaceae (Madder or Bedstraw Family)
- ☐ Mitchellia repens L.
- ☐ Galium aparine L.
- ☐ Galium trifidum L.
- ☐ Galium triflorum Michaux.
- Family Caprifoliaceae (Honeysuckle Family)
- ☐ Linnaea borealis L.
- Family Valerianaceae (Valerian Family)
- ☐ Valeriana officinalis L.*
- Family Campanulaceae (Harebell or Bluebell Family)
- ☐ Campanula rotundifolia L.
- ☐ Campanula rapunculoides L.*
- ☐ Campanula aspernoides
Push.
- ☐ Campanula persicifolia L.*
- Family Lobeliaceae (Lobelia Family)
- ☐ Lobelia kalmii L.
- Family Compositae (Asteraceae) (Composite or Daisy Family)
- ☐ Helianthus tuberosus L.*
- ☐ Rudbeckia hirta L.
- ☐ Bidens frondosa L.
- ☐ Coreopsis lanceolata L.
- ☐ Ambrosia artemisiifolia L.
- ☐ Anthemis cotula L.*
- ☐ Achillea millefolium L.*
- ☐ Chrysanthemum leucanthemum L.
- ☐ Tanacetum vulgare L.*
- ☐ Matricaria matricaroides
(Less) Porter*
- ☐ Artemisia campestris L.
- ☐ Senecio vulgaris L.*
- ☐ Senecio aureus L.
- ☐ Senecio pauciflorus Michaux.
- ☐ Petasites frigidus (L.) Fries.
- ☐ Solidago hispida Muhl.
- ☐ Solidago flexicaulis L.
- ☐ Solidago canadensis L.
- ☐ Solidago altissima L.
- ☐ Goldenrod, Ohio
- ☐ Goldenrod, Grass-leaved
- ☐ Goldenrod, Houghton's
- ☐ Aster, Large-leaved
- ☐ Aster, Lindley's
- ☐ Aster, Arrow-leaved
- ☐ Aster, Bog (Purple-stemmed Aster)
- ☐ Aster, White
- ☐ Philadelphia Fleabane
- ☐ Sweet Scabious (White-top)
- ☐ Daisy Fleabane
- ☐ English Daisy (Garden Daisy)
- ☐ Pussytoes
- ☐ Pearly Everlasting
- ☐ Joe-Pye Weed
- ☐ Common Burdock
- ☐ Thistle, Bull
- ☐ Thistle, Pitcher's
- ☐ Thistle, Field
- ☐ Thistle, Canada
- ☐ Spotted Knapweed
- ☐ Perennial Cornflower (Ragged Robin)
- ☐ Lettuce, White
- ☐ Hawkweed, Rough
- ☐ Hawkweed, Hairy
- ☐ Hawkweed, Narrow-leaved
- ☐ Hawkweed, Orange (Devil's Paintbrush)
- ☐ Hawkweed, Canada
- ☐ Hawkweed (Golden Lungwort)
- ☐ Dandelion, Common
- ☐ Sow-thistle, Spiny-leaved
- ☐ Lettuce, Wild
- ☐ Lettuce, Tall Blue
- ☐ Lettuce, Wall
- ☐ Chicory
- ☐ Nipple-wort
- ☐ Goat's Beard, Yellow
- ☐ Solidago ohioensis Riddell.
- ☐ Solidago graminifolia L.
- ☐ Solidago houghtonii T. & G.
- ☐ Aster macrophyllus L.
- ☐ Aster ciliolatus Lind.
- ☐ Aster sagittifolius Willd.
- ☐ Aster purpureus L.
- ☐ Aster pilosus Willd.
- ☐ Erigeron philadelphicus L.
- ☐ Erigeron annuus (L.) Pers.
- ☐ Erigeron strigosus Muhl.
- ☐ Bellis perennis L.*
- ☐ Antennaria sp.
- ☐ Anaphalis margaritacea (L.)
Benth. & Hook.
- ☐ Eupatorium maculatum L.
- ☐ Arctium minus Schk.*
- ☐ Cirsium vulgare (Savi.) Tenore.
- ☐ Cirsium pithier (Torr.) T. & G. ~
- ☐ Cirsium discolor (Muhl.) Spreng.
- ☐ Cirsium arvense (L.) Scop.*
- ☐ Centaurea maculosa Lam.*
- ☐ Centaurea montana L.*
- ☐ Prenanthes alba L.
- ☐ Hieracium scabrum Michaux.
- ☐ Hieracium gronovii L.
- ☐ Hieracium umbellatum L.
- ☐ Hieracium aurantiacum L.*
- ☐ Hieracium canadense Michaux.
- ☐ Hieracium muronum L.*
- ☐ Taraxacum officinale Weber.*
- ☐ Sonchus asper (L.) Hill.*
- ☐ Lactuca canadensis L.
- ☐ Lactuca biennis (Moench) Fern.
- ☐ Lactuca muralis (L.) Fresen.*
- ☐ Cichorium intybus L.*
- ☐ Lapsana communis L.
- ☐ Tragopogon pratensis L.

This checklist is based on the 1995 Masters of Science thesis
"A Floristic Study of the Vascular Plants of Mackinac Island,
Michigan" by Patricia L. Martin.



Michigan Department of
Natural Resources
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The production of this
checklist was made
Possible by a generous
grant from
Mackinac Associates

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CHECKLIST

OF THE BIRDS

OF MACKINAC ISLAND



This checklist includes all bird species observed on Mackinac Island or in the surrounding waters of the Straits of Mackinac during the past 15 years. Mackinac Island is 2,100 acres in size and has 8.1 miles of shoreline. Mackinac Island State Park contains 1,773 of these acres and includes 5 miles of the shoreline.

Birds can be observed in a variety of habitats in the park:

- The northern hardwood forest, which covers much of the park's interior. (american beech, sugar maple, eastern hemlock, northern red oak, and white pine)
- Lowland conifer forests near the shoreline and in damp areas throughout the park. (northern white cedar, balsam fir, white spruce, red pine and paper birch)
- Open areas, such as the fields and meadows near the airport, and Wawashkamo golf course.
- Wetlands, such as Croghan's Water marsh.

| Family | Species |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loons | <input type="checkbox"/> Red-throated Loon <input type="checkbox"/> Common Loon |
| Grebes | <input type="checkbox"/> Horned Grebe <input type="checkbox"/> Red-necked Grebe |
| Cormorants | <input type="checkbox"/> Double-crested Cormorant |
| Heron, Bitterns | <input type="checkbox"/> American Bittern <input type="checkbox"/> Great Blue Heron <input type="checkbox"/> Green-backed Heron <input type="checkbox"/> Black-crowned Night-Heron |
| Swans, Geese, Ducks | <input type="checkbox"/> Tundra Swan <input type="checkbox"/> Mute Swan <input type="checkbox"/> Snow Goose <input type="checkbox"/> Canada Goose <input type="checkbox"/> Wood Duck <input type="checkbox"/> American Black Duck <input type="checkbox"/> Mallard <input type="checkbox"/> Blue-winged Teal <input type="checkbox"/> Redhead <input type="checkbox"/> Ring-necked Duck <input type="checkbox"/> Greater Scaup <input type="checkbox"/> Lesser Scaup <input type="checkbox"/> Oldsquaw <input type="checkbox"/> White-winged Scoter <input type="checkbox"/> Common Goldeneye <input type="checkbox"/> Bufflehead <input type="checkbox"/> Common Merganser <input type="checkbox"/> Red-breasted Merganser |
| Vultures | <input type="checkbox"/> Turkey Vulture |
| Ospreys, Eagles, Harriers, Hawks | <input type="checkbox"/> Osprey <input type="checkbox"/> Bald Eagle <input type="checkbox"/> Northern Harrier <input type="checkbox"/> Sharp-shinned Hawk <input type="checkbox"/> Cooper's Hawk <input type="checkbox"/> Northern Goshawk <input type="checkbox"/> Red-shouldered Hawk <input type="checkbox"/> Broad-winged Hawk <input type="checkbox"/> Red-tailed Hawk <input type="checkbox"/> Rough-legged Hawk |
| Falcons | <input type="checkbox"/> American Kestrel <input type="checkbox"/> Merlin |
| Grouse | <input type="checkbox"/> Ring-necked Pheasant |
| Rails, Coots | <input type="checkbox"/> Virginia Rail <input type="checkbox"/> Sora <input type="checkbox"/> American Coot |
| Cranes | <input type="checkbox"/> Sandhill Crane |



| Family | Species |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plovers | <input type="checkbox"/> Killdeer |
| Sandpipers | <input type="checkbox"/> Solitary Sandpiper <input type="checkbox"/> Spotted Sandpiper <input type="checkbox"/> Common Snipe <input type="checkbox"/> American Woodcock |
| Gulls, Terns | <input type="checkbox"/> Bonaparte's Gull <input type="checkbox"/> Ring-billed Gull <input type="checkbox"/> Herring Gull <input type="checkbox"/> Great Black-backed Gull <input type="checkbox"/> Caspian Tern <input type="checkbox"/> Common Tern <input type="checkbox"/> Black Tern |
| Pigeons, Doves | <input type="checkbox"/> Rock Dove <input type="checkbox"/> Mourning Dove |
| Cuckoos | <input type="checkbox"/> Black-billed Cuckoo <input type="checkbox"/> Yellow-billed Cuckoo |
| Owls | <input type="checkbox"/> Great Horned Owl <input type="checkbox"/> Snowy Owl <input type="checkbox"/> Barred Owl <input type="checkbox"/> Great Gray Owl <input type="checkbox"/> Long-eared Owl <input type="checkbox"/> Boreal Owl <input type="checkbox"/> Northern Saw-whet Owl |
| Goatsuckers | <input type="checkbox"/> Common Nighthawk <input type="checkbox"/> Whip-poor-will |
| Swifts | <input type="checkbox"/> Chimney Swift |
| Hummingbirds | <input type="checkbox"/> Ruby-throated Hummingbird |
| Kingfishers | <input type="checkbox"/> Belted Kingfisher |
| Woodpeckers | <input type="checkbox"/> Red-headed Woodpecker <input type="checkbox"/> Yellow-bellied Sapsucker <input type="checkbox"/> Downy Woodpecker <input type="checkbox"/> Hairy Woodpecker <input type="checkbox"/> Black-backed Woodpecker <input type="checkbox"/> Northern Flicker <input type="checkbox"/> Pileated Woodpecker |
| Flycatchers | <input type="checkbox"/> Olive-sided Flycatcher <input type="checkbox"/> Eastern Wood-Pewee <input type="checkbox"/> Yellow-bellied Flycatcher <input type="checkbox"/> Alder Flycatcher <input type="checkbox"/> Willow Flycatcher <input type="checkbox"/> Least Flycatcher <input type="checkbox"/> Eastern Phoebe <input type="checkbox"/> Great Crested Flycatcher <input type="checkbox"/> Eastern Kingbird |



Family

Species

Golden-winged Warbler

Tennessee Warbler

Orange-crowned Warbler

Nashville Warbler

Northern Parula

Yellow Warbler

Chestnut-sided Warbler

Magnolia Warbler

Cape May Warbler

Black-throated Blue Warbler

Yellow-rumped Warbler

Black-throated Green Warbler

Blackburnian Warbler

Pine Warbler

Prairie Warbler

Palm Warbler

Bay-breasted Warbler

Blackpoll Warbler

Black-and-white Warbler

American Redstart

Ovenbird

Northern Waterthrush

Connecticut Warbler

Mourning Warbler

Common Yellowthroat

Wilson's Warbler

Canada Warbler

Warblers

Scarlet Tanager

Robins

Northern Cardinal

Rose-breasted Grosbeak

Indigo Bunting

Dickcissel

Rufous-sided Towhee

American Tree Sparrow

Chipping Sparrow

Field Sparrow

Vesper Sparrow

Savannah Sparrow

Fox Sparrow

Song Sparrow

Swamp Sparrow

White-throated Sparrow

White-crowned Sparrow

Dark-eyed Junco

Lapland Longspur

Snow Bunting

Family

Species

Bobolink

Red-winged Blackbird

Eastern Meadowlark

Rusty Blackbird

Brewer's Blackbird

Common Grackle

Brown-headed Cowbird

Northern Oriole

Finches

Pine Grosbeak

Purple Finch

House Finch

Red Crossbill

White-winged Crossbill

Common Redpoll

Pine Siskin

American Goldfinch

Evening Grosbeak

Weaver Finches

House Sparrow

We would appreciate your comments and reports of your observations. You may report your findings to the Park Naturalist at the British Landing Nature Center or to the staff in the Mackinac State Historic Parks Visitor's Center. Sightings of rare or unlisted species should be reported with written details and/or photographic documentation. Island cottager Hayden Hammabass provided valuable assistance in putting this checklist together.

Jeff Dykehouse

Park Naturalist

Mackinac State Historic Parks

P.O. Box 873

Mackinaw City, MI 49701

Date:

Observer:

Notes:

Family

Species

Horned Lark

Swallows

Purple Martin

Tree Swallow

Northern Rough-winged Swallow

Bank Swallow

Cliff Swallow

Barn Swallow

Jays, Crows

Blue Jay

American Crow

Common Raven

Chickadees, Titmice

Black-capped Chickadee

Tufted Titmouse

Nuthatches

Red-breasted Nuthatch

White-breasted Nuthatch

Creepers

Brown Creeper

Wrens

House Wren

Winter Wren

Kinglets, Gnatcatchers

Golden-crowned Kinglet

Ruby-crowned Kinglet

Blue-gray Gnatcatcher

Thrushes

Eastern Bluebird

Veery

Swainson's Thrush

Hermit Thrush

Wood Thrush

American Robin

Mockingbirds, Thrashers

Gray Catbird

Brown Thrasher

Waxwings

Bohemian Waxwing

Cedar Waxwing

Shrikes

Northern Shrike

Starlings

European Starling

Vireos

Solitary Vireo

Yellow-throated Vireo

Warbling Vireo

Philadelphia Vireo

Red-eyed Vireo



printed on recycled paper



Michigan Department of Natural Resources
Mackinac State Historic Parks

Appendix C
Mackinac Island Airport Layout Plan



MACKINAC ISLAND AIRPORT

MICHIGAN AERONAUTICS
COMMISSION

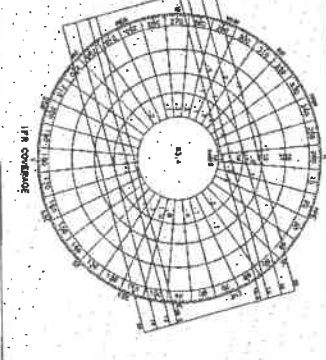
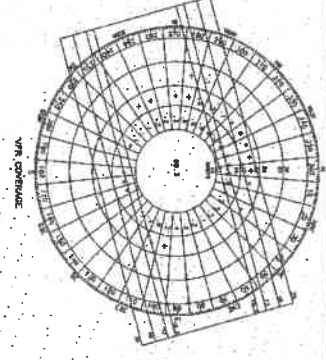
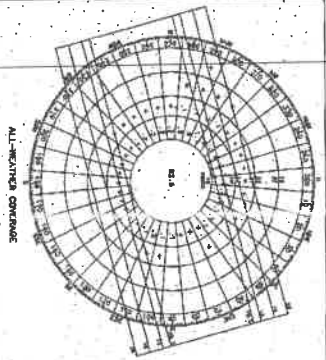
APPROVATO 10-1-09
10-6-09
 PER IL SERVIZIO TECNICO DEL PROGETTO
10-6-09
 DIRETTORE GENERALE
 DIRETTORE GENERALE

NOTE: IN REPLY, OF LBS CORPORATION, THIS REPORT UNDER PLAN (A-1) WAS PREPARED FOR MARSHALL ISLAND AIRPORT ACCORDING TO THE APPLICABLE AGENCY CIRCULARS. THE CURRENT VERSION OF THE GREAT LAKES REGIONAL AIR CHEMISTRY AND QUALITY DEPENDS THE PROPOSED USE OF AIRBASE AT THE TIME OF SUBMITTING THE AIR CONCENTRATIONS WITH TMA DESIGN STANDARDS, EXCEPT AS NOTED.

[illegible]

SITE NO. 49-6

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1 OF 10
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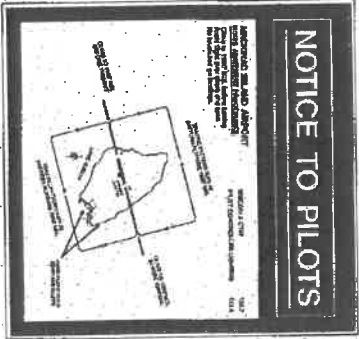
NOTES: 1. THE COVERAGE AREA IS BASED ON THE ASSUMPTION THAT THE AIRCRAFT IS IN A STEADY STATE OF FLIGHT. 2. THE COVERAGE AREA IS BASED ON THE ASSUMPTION THAT THE AIRCRAFT IS IN A STEADY STATE OF FLIGHT.

AIRPORT DATA TABLE

| ITEM | DESCRIPTION | UNIT |
|------|-------------|----------|
| 1 | NAME | NAME |
| 2 | LOCATION | LOCATION |
| 3 | FAA ID | FAA ID |
| 4 | ICAO ID | ICAO ID |
| 5 | UNICOM FREQ | FREQ |
| 6 | COMM FREQ | FREQ |
| 7 | COMM TYPE | TYPE |
| 8 | COMM CLASS | CLASS |
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WIND COVERAGE SUMMARY

| WIND DIRECTION | WIND SPEED | COVERAGE |
|----------------|------------|----------|
| 0-90 | 0-10 | 0.00 |
| 90-180 | 10-20 | 0.00 |
| 180-270 | 20-30 | 0.00 |
| 270-360 | 30-40 | 0.00 |
| 360-90 | 40-50 | 0.00 |
| 90-180 | 50-60 | 0.00 |
| 180-270 | 60-70 | 0.00 |
| 270-360 | 70-80 | 0.00 |
| 360-90 | 80-90 | 0.00 |
| 90-180 | 90-100 | 0.00 |
| 180-270 | 100-110 | 0.00 |
| 270-360 | 110-120 | 0.00 |
| 360-90 | 120-130 | 0.00 |
| 90-180 | 130-140 | 0.00 |
| 180-270 | 140-150 | 0.00 |
| 270-360 | 150-160 | 0.00 |
| 360-90 | 160-170 | 0.00 |
| 90-180 | 170-180 | 0.00 |
| 180-270 | 180-190 | 0.00 |
| 270-360 | 190-200 | 0.00 |
| 360-90 | 200-210 | 0.00 |
| 90-180 | 210-220 | 0.00 |
| 180-270 | 220-230 | 0.00 |
| 270-360 | 230-240 | 0.00 |
| 360-90 | 240-250 | 0.00 |
| 90-180 | 250-260 | 0.00 |
| 180-270 | 260-270 | 0.00 |
| 270-360 | 270-280 | 0.00 |
| 360-90 | 280-290 | 0.00 |
| 90-180 | 290-300 | 0.00 |
| 180-270 | 300-310 | 0.00 |
| 270-360 | 310-320 | 0.00 |
| 360-90 | 320-330 | 0.00 |
| 90-180 | 330-340 | 0.00 |
| 180-270 | 340-350 | 0.00 |
| 270-360 | 350-360 | 0.00 |

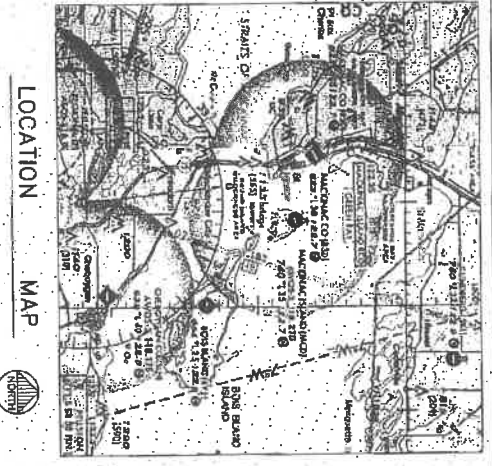
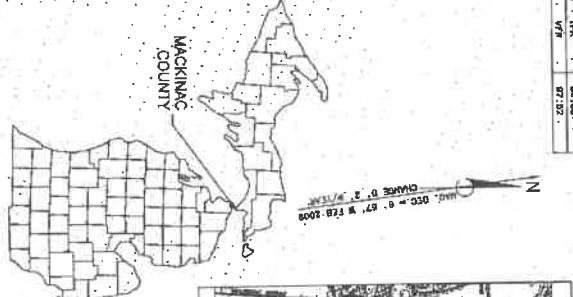


RUNWAY AND APPROACH DATA

| ITEM | DESCRIPTION | UNIT |
|------|-------------|----------|
| 1 | NAME | NAME |
| 2 | LOCATION | LOCATION |
| 3 | FAA ID | FAA ID |
| 4 | ICAO ID | ICAO ID |
| 5 | UNICOM FREQ | FREQ |
| 6 | COMM FREQ | FREQ |
| 7 | COMM TYPE | TYPE |
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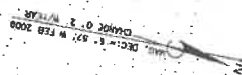
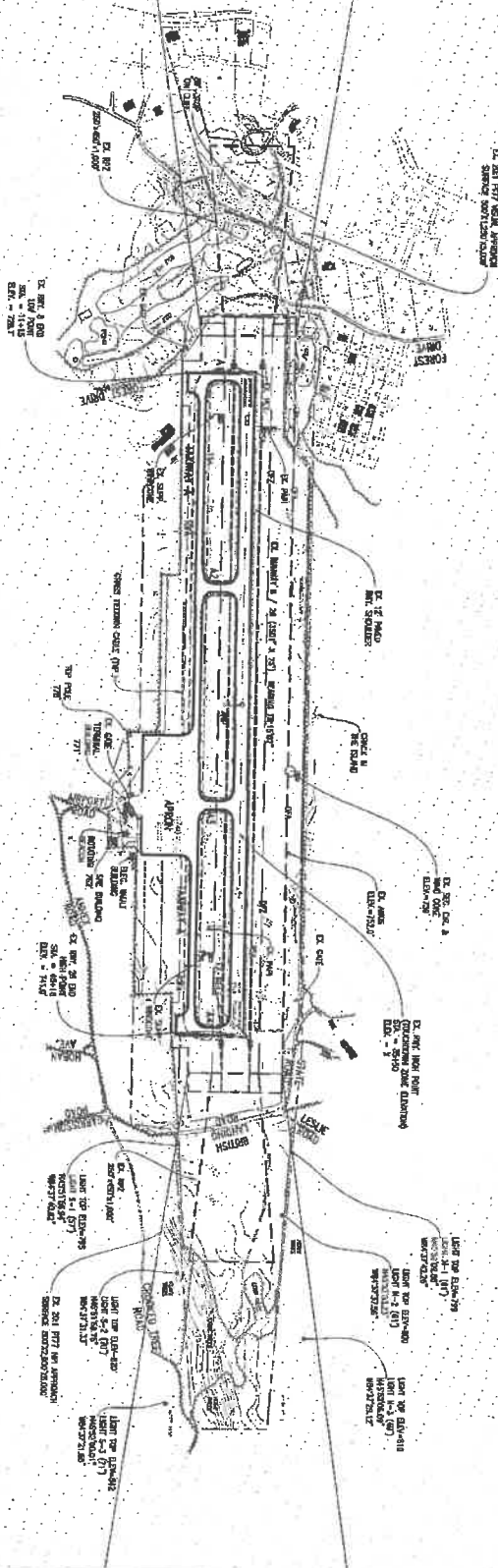
MODIFICATIONS TO FAA DESIGN STANDARDS

| DATE OF MODIFICATION | DESCRIPTION |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| 01-01-2000 | NO CHANGE REQUIRED. OBJECT REMAINS IN PLACE. |
| 02-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 03-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 04-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 05-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 06-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 07-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 08-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 09-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 10-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 11-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |
| 12-01-2000 | REVISION TO RUNWAY 17. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. THE RUNWAY IS NOW 17.000 FEET LONG AND 100 FEET WIDE. |



| RAILWAY INFRA-STRUCTURE | |
|-------------------------|------|
| TALENT | A |
| DESIGN GROUP | II |
| WIDTH | 35' |
| EDGE SAFETY AREA | 7.5' |
| SHOULDER WIDTH | 10' |
| SAFETY AREA WIDTH | 75' |
| OBJECT FREE AREA | 151' |

| RIVANAY INFORMATION | |
|-------------------------------------|---------|
| RIVANAY | 6/28 |
| APPROXIMATE CATEGORY / DESIGN GROUP | R II |
| BUILDING METHOD | 75 |
| STRUCTURAL METHOD | 10 |
| SPECIAL AGES | 150,200 |
| ESTIMATED FEE-ZONE | 200,500 |
| OBJECT FEE-ZONE | 500,500 |
| Q TO 35 BUILDING INSPECTION LINE | 400 |
| Q TO HOLD LINE | 125 |
| Q TO HOLD LINE | 500 |

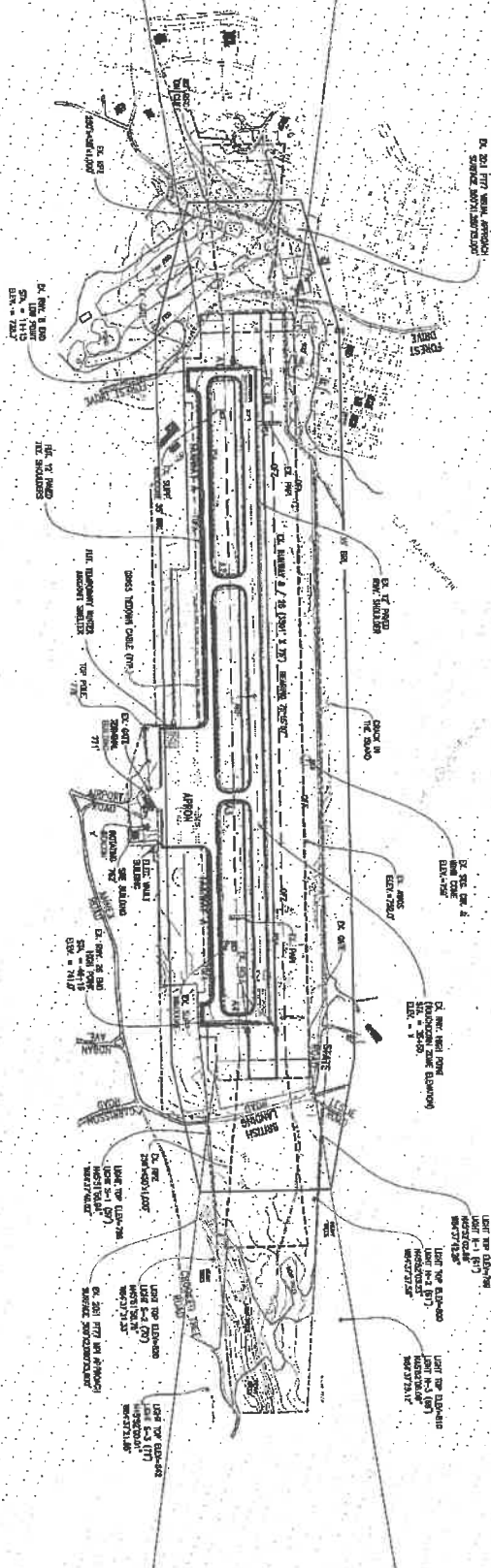
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AIRPORT LAYOUT PLAN.
AIRPORT LAYOUT PLAN (EXISTING)

MADONNA ISLAND, MICHIGAN

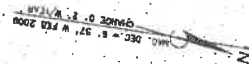
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| | | | |
|--------------|---|------------|--|
| O/E HW | X | | |
| PM - CAC | X | | |
| SOC DR | X | | |
| QC RAC | X | | |
| 10. UNIFORMS | | | |
| IN CHARGE | | | |
| DATE | | ISSUED FOR | |



| TAXWAY INFORMATION | |
|--------------------|------|
| TAXWAY | A |
| DESIGN GROUP | I |
| WIDTH | 35' |
| EDGE SAFETY MARGIN | 7.5' |
| SHOULDER WIDTH | 10' |
| SAFETY AREA WIDTH | 75' |
| OBJECT FREE AREA | 131' |

| HOSPITAL INFORMATION | | 6/75 |
|----------------------------------|--|---------|
| NAME | | |
| APPROACH CATEGORY / DESIGN GROUP | | B 1 |
| ROOMY WITH | | 75 |
| SHALLER WITH | | 10 |
| SWEET AREA | | 180/200 |
| OBSTACLE FREE ZONE | | 250/200 |
| OBSTACLE FREE AREA | | 500/550 |
| 4 TO 35 PAVING INCREASION LINE | | 465 |
| 4 TO 10 ROAD LINE | | 195 |
| 4 TO 10 JAWLINE | | 240 |

[illegible]

| | |
|------------|------------|
| D/E IN/ | 3 |
| RM - RUC | X |
| SOC OF | X |
| ERC RUC | 3 |
| W. MFLPWSG | |
| IN CHARGE | |
| DATE | ISSUED FOR |

MACKINAC ISLAND AIRPORT

AIRPORT LAYOUT PLAN
AIRPORT LAYOUT PLAN (FUTURE)

MACKINAC ISLAND, MICHIGAN

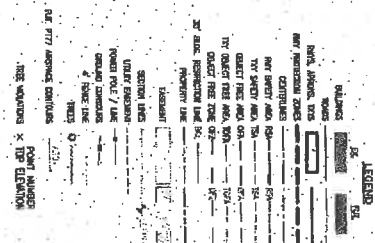
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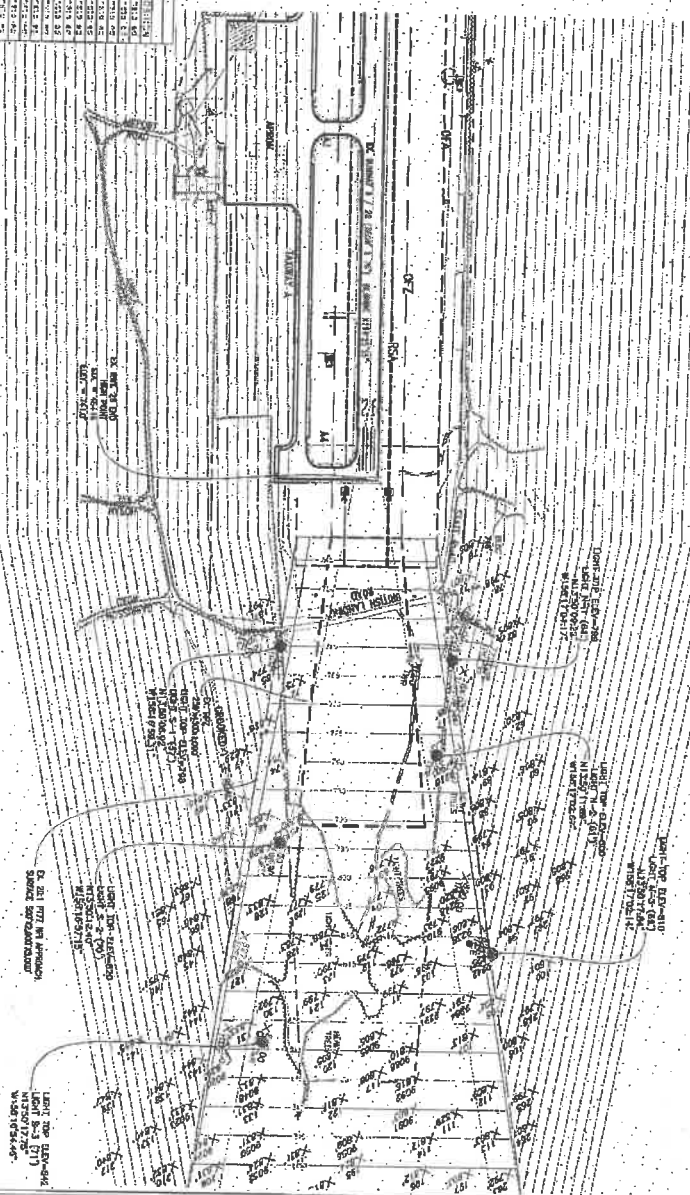
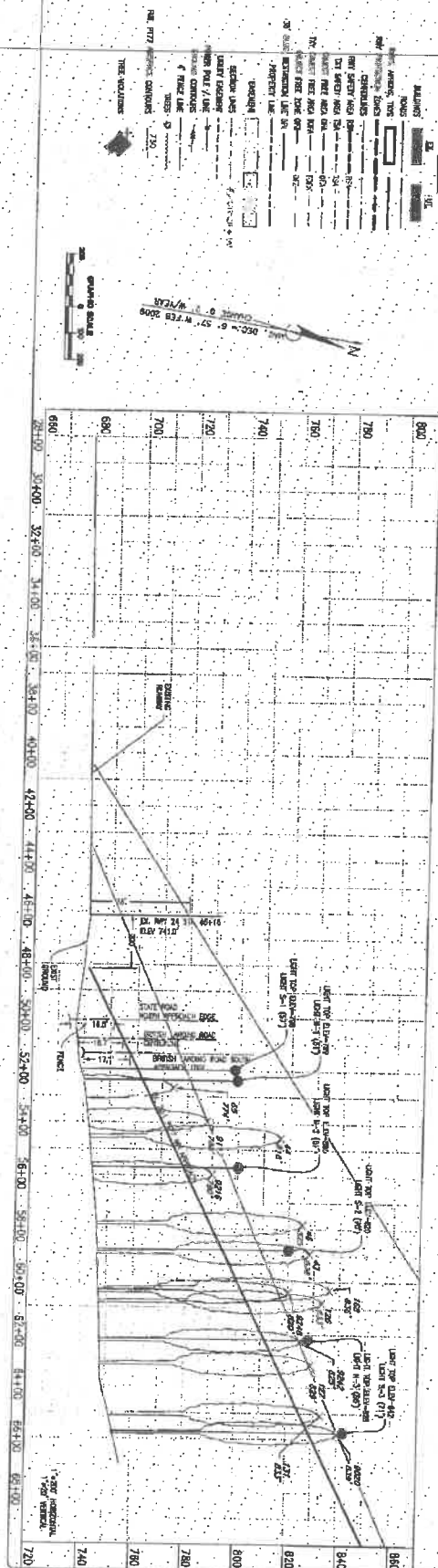
49-5



| NO | NAME | DATE | TIME | LOCATION | REMARKS | STATUS |
|----|------|------|------|----------|---------|--------|
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| D/L JN | 1 | | |
| PM RC | 2 | | |
| EQC ER | 3 | | |
| QC RC | 4 | | |
| R. KUNIGSBERG | | 10-11 | AS BELL CO. IN BUREAU PHOENIX |
| IN CHARGE | | 11-12 | AS COMPTON IN BUREAU PHOENIX |
| | | 12-13 | AS COMPTON CO. IN BUREAU PHOENIX |
| | | 13-14 | AS COMPTON CO. IN BUREAU PHOENIX |
| | | 14-15 | AS COMPTON CO. IN BUREAU PHOENIX |
| | | 15-16 | AS COMPTON CO. IN BUREAU PHOENIX |
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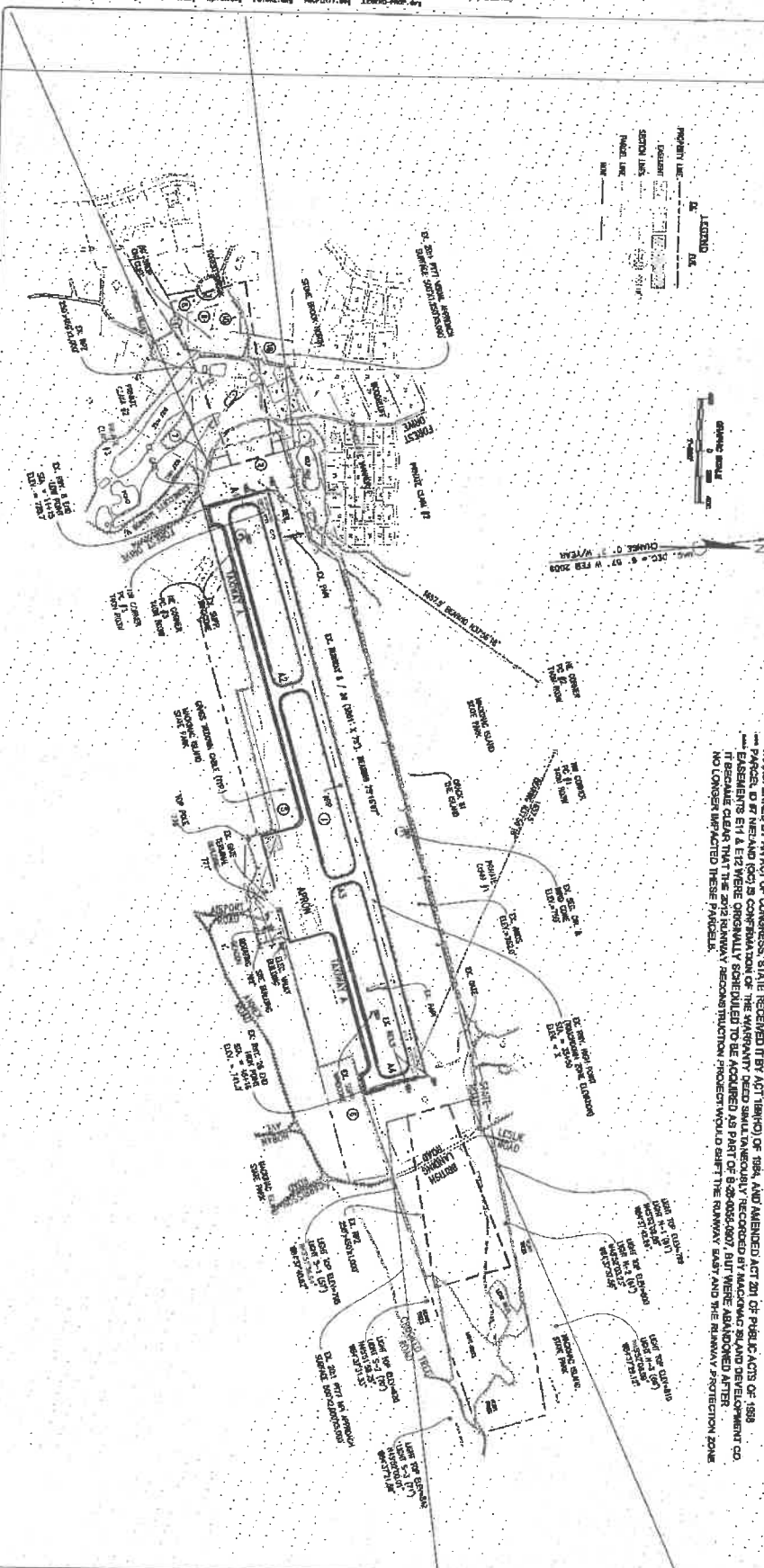
RUNWAY APPROACH PLAN/PROFILE (RWY 28)

MACKINAC ISLAND, MICHIGAN

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| O/E JV | | |
| PM RUC | | |
| SOC DR | | |
| QC RUC | | |
| W. WAKHONSO | NO BULK CGS SEE BARRING EXPENSE AS CONTINUED ON CASE NUMBER 18-07-11 AS CHARGE-CG CTS FOR 1/2 IN REVIEW ATTENDING PLAN | |
| TN CHARGE | CASE | ISSUED FOR |

| OTHER EASEMENT INTERESTS | | | |
|--------------------------|--------------|------|----------------|
| NO. | TYPE | DATE | REMARKS |
| 1 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 2 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 3 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 4 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 5 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 6 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 7 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 8 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 9 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |
| 10 | RIGHT-OF-WAY | 1964 | U.S. AIR FORCE |



| Parcel Number | Controlling Owner | Project Number | County | Section of Title | Lot and Page | Date Acquired | Fee Acres | Remarks |
|---------------|------------------------------|----------------|--------|------------------|--------------|---------------|-----------|----------------|
| 1 | U.S.A. - FEDERAL GOVT OF WAR | 1 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 2 | THE OX ORO GROUP | 2 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 3 | G. HUBBARD | 3 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 4 | THE OX ORO GROUP | 4 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 5 | THE OX ORO GROUP | 5 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 6 | THE OX ORO GROUP | 6 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 7 | THE OX ORO GROUP | 7 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 8 | THE OX ORO GROUP | 8 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 9 | THE OX ORO GROUP | 9 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |
| 10 | THE OX ORO GROUP | 10 | OSHEL | 1/2-4/6 | 1/2-4/6 | 7/14/1964 | 3.50 | U.S. AIR FORCE |

