

# BEAVER ISLAND MASTER PLAN 2023



Draft, April 20, 2023





## ACKNOWLEDGMENTS

This Plan was originally prepared by the Land Information Access Association (LIAA) as part of the Resilient Beaver Island project and updated in 2023. A special thank you is owed to the many organizations and individuals that contributed to the planning process.

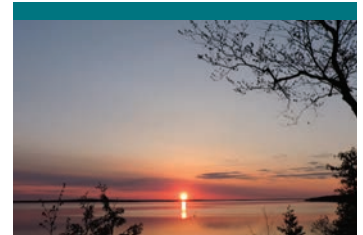
The Resilient Beaver Island project was funded by the Michigan Coastal Zone Management Program, Department of Environmental Quality, Office of the Great Lakes; and the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

Cover photo courtesy of Jim Anderson



# BEAVER ISLAND MASTER PLAN

**THE PURPOSE OF THE RESILIENT BEAVER ISLAND MASTER PLAN IS TO PROVIDE DIRECTION FOR THE GROWTH OF THE ISLAND OVER THE NEXT 20 YEARS AND BEYOND. THE MASTER PLANNING PROCESS ENGAGED HUNDREDS OF RESIDENTS IN PEAINE TOWNSHIP AND ST. JAMES TOWNSHIP TO CREATE ACTIONS THE COMMUNITY CAN TAKE TO INCREASE RESILIENCY, STRENGTHEN THE LOCAL ECONOMY, PROTECT NATURAL FEATURES, AND MANAGE ITS MANY RESOURCES.**



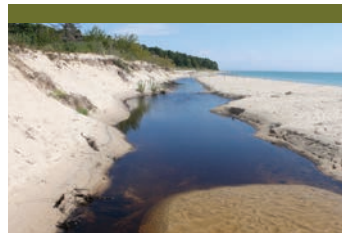
**VISION**

The community's vision for the future of the Island should form the basis of government decisions moving forward.

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**Appendix A: Survey Results**



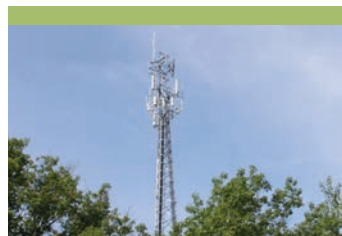
**CONNECTING WITH NATURE**

The natural resources of the Island are discussed throughout the plan, but most especially in Chapter 2.



**COMMUNITY ORGANIZATIONS**

Community groups and organizations are mentioned throughout the plan, but are described most fully in Chapter 3.



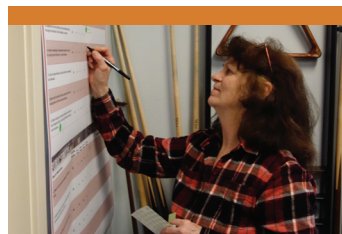
**BUILT ENVIRONMENT**

Chapter 4 includes topics like land use, roads, ferries, energy, waste, and communications infrastructure.



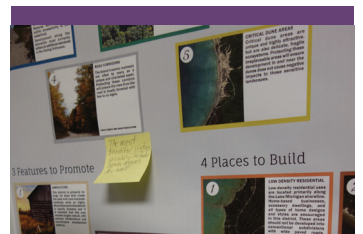
**TOURISM**

Tourism is the backbone of the Island's economy. Useful information related to improving tourism on the Island is included in Chapter 5.



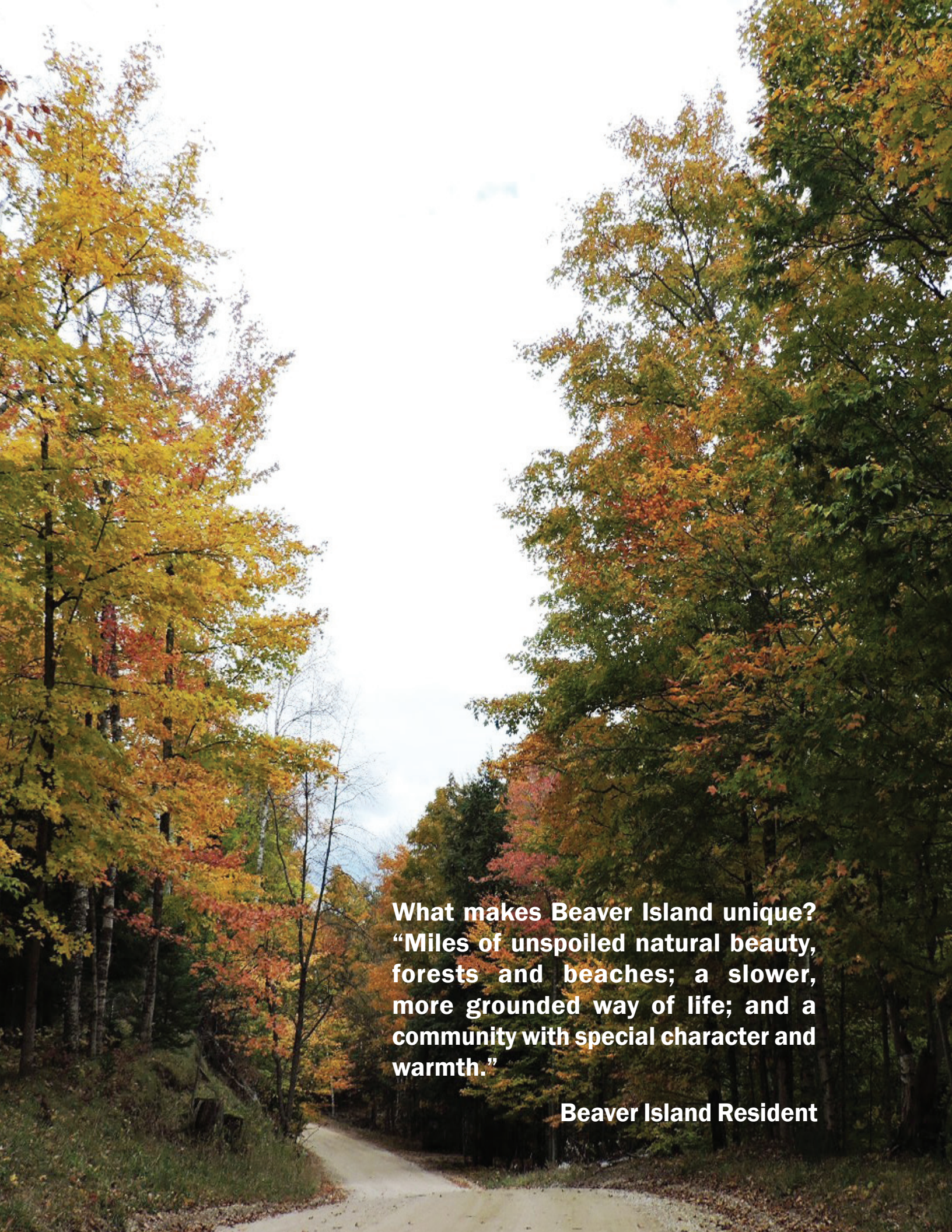
**ACTION PLAN**

Chapter 6 of the plan identifies actions the Island governments, non-profits, and other organizations can take to achieve the community's vision for the future.



**FUTURE LAND USE**

Chapter 7 is centered around the Future Land Use Plan, a legally required component of a Master Plan in Michigan. The Future Land Use Plan was created with public input.



**What makes Beaver Island unique?  
“Miles of unspoiled natural beauty,  
forests and beaches; a slower,  
more grounded way of life; and a  
community with special character and  
warmth.”**

**Beaver Island Resident**

# CHAPTER 1

## ABOUT THIS PLAN

**The Beaver Island Master Plan is a blueprint for the future of the Island. The Master Plan helps shape the future of Beaver Island and the Archipelago by summarizing existing conditions and trends, identifying a vision for the future, and prioritizing the actions that should be taken to achieve the community’s vision. This Master Plan involved dozens of meetings and the input of hundreds of Islanders.**

### **WHAT IS A MASTER PLAN?**

The Beaver Island Master Plan serves as the official policy guide for the Island’s future development and growth, including the management of its many natural resources. In Michigan, master plans serve as a legal basis for zoning, and provide policy guidance for changes to infrastructure, land use, transportation, natural resource management, and other community systems. In general, the Beaver Island Master Plan serves the following purposes:

- Evaluates existing conditions and trends on Beaver Island and the Archipelago.
- States the community’s long-range vision, extending 20 years or more into the future.
- Provides the flexibility to respond to changing conditions with new resources or innovations that align with the goals of the Master Plan.
- Identifies opportunities for partnerships between residents, community groups, non-profit organizations, and regional entities that help support and participate in plan implementation.
- Identifies where new development should be directed and the general character to which new homes and buildings should adhere.
- Gives guidance to property owners, developers, neighboring jurisdictions, and county and state entities about expectations and standards for public investment and future development.
- Provides guidance for the allocation and spending of funds.
- Guides the day-to-day decisions of the government and the land-use policy decisions of the Planning Commissions and Township Boards.
- Establishes a legal basis for both Peaine and St. James Townships’ Zoning Ordinances, capital improvements, land-use policies, and other implementation tools and programs.

## A RESILIENCY FOCUS

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### WHAT IS RESILIENCY?

This updated Master Plan is grounded in the 2017 effort known as *Resilient Beaver Island*, which was conducted with a focus on building community resilience. Resilience is an umbrella term for the planning and design strategies needed to help communities develop the necessary capacities to meet the economic, social, environmental and climate challenges of the future. **Community resilience** is a measure of the sustained ability of a community to utilize available resources to respond to, withstand, and recover from adverse situations.

Beaver Island has experienced a number of significant changes over the last several years. The COVID-19 pandemic opened more possibilities for remote workers to reside on the Island, though the population is still trending toward retirees. With these changes in demographics to the Island and changes in the experiences tourists prefer, the Island is

already learning to practice resilience by maintaining a high quality of life for all residents.

Environmentally, a changing climate means generally warmer temperatures, increased rains, ice storms and other more severe storms in the Great Lakes region. For Beaver Island, responding to climate change is a challenge in both the short term and the long term. It requires officials and community stakeholders to consider how they plan for new development, transportation, infrastructure, natural resource preservation, energy production and transmission, and community health.

Social, economic, and environmental changes are explained throughout this plan. The action steps in Chapter 6 are designed to help the community prepare for and respond to these changing conditions.



**INTERCONNECTED TO THRIVE**

One important aspect of resilience is the ability of a community to come together around common challenges. One goal of this update process was to help everyone on the Island come together and participate in discussions about what should be done to ensure the Archipelago's ongoing success. The result of this work can be seen in the Action Plan found in Chapter 6, a truly community-based roadmap to a sustainable, resilient future for Beaver Island.

Beaver Island provides a unique quality and pace of life not found on the “mainland.” Islanders submitted comments to the Master Plan website throughout the planning process, many of which highlight the positive benefits of Island life. Quotes from Islanders are included throughout this plan to help illustrate the diversity of opinions about the Island's future.

Beaver Island is surrounded by beautiful views, like this sunset captured by Cynthia Hector.







## THE BEAVER ISLAND ARCHIPELAGO

Beaver Island and the Archipelago includes 14 islands that vary in size, biodiversity, and ownership. While this Master Plan is focused primarily on Beaver Island, it is important to describe the cultural resources, substance, recreational opportunities and land ownership of several of the larger islands in the Archipelago. Most of the islands are within Charlevoix County excluding North and South Fox Islands, which are part of Leelanau County, Michigan.

### BEAVER ISLAND

Located about 30 miles offshore from the City of Charlevoix, Beaver Island is the largest island in Lake Michigan, with approximately 56 square miles of land. Beaver Island is unique for many reasons, including a beautiful natural environment with plentiful sand dunes, beaches and wetlands, a distinctly diverse ecology, and a close-knit community with a proud Island heritage. Beaver Island is the only island in the Archipelago home to a permanent population (with the exception of staff of Mirada Ranch on South Fox Island) and scheduled ferry and airline services. About one-third of Beaver Island is state-owned land managed by the Michigan Department of Natural Resources (MDNR) Wildlife Division.

### GARDEN ISLAND

Garden Island is 98% owned by the state and managed by the MDNR Wildlife Division. Once fished, farmed and logged by Anishinaabeg and other groups, Garden Island has an abandoned sawmill and several standing structures.

### HIGH ISLAND

High Island is 100% state land managed by the MDNR Wildlife Division. The island was originally named after a mountainous sand dune on its western edge. In the past, Native Americans and settlers lived on the island in small numbers. The island is used by researchers, and the DNR owns several cabins currently in disrepair.

### HOG ISLAND

Hog Island is the fourth largest island in the Archipelago and is 100% state land under the MDNR Wildlife Division. The island is characterized by a number of wetland areas that are home to a variety of rare plants and animals. Hog Island also provides vital spawning ground for perch and small-mouth bass and draws many rare and unique birds during migration.

### WHISKEY ISLAND

Whiskey Island is state owned and managed by the MDNR Wildlife Division as well. Whiskey Island is home to one of most visible shipwrecks in the Archipelago, the wreck of the Chandler J. Wells.

### NORTH FOX ISLAND

North Fox Island is state owned under the MDNR Wildlife Division but has been inhabited by private owners in the past. The island has an operational paved runway.

### SOUTH FOX ISLAND

South Fox Island is partially state owned (about one-third) through the MDNR Wildlife Division and partially privately owned. The island has a paved runway, a private residence and two lighthouses.

### OTHER ISLANDS

Other islands in the Archipelago include Gull, Ojibwa (formerly known as Squaw), Trout, Grape, Hat, Shoe and Pismire. Trout and Ojibwa islands are privately owned.

## ARCHIPELAGO

The Beaver Island Archipelago contains 14 islands, varying in size and biodiversity. The State of Michigan has ownership over many islands in the Archipelago due to the variety of threatened, endangered, and rare plants and animals present, which are managed by the Michigan DNR Wildlife Division. The US Fish & Wildlife Service manages Gull Island and Hat Island as part of the Michigan Islands National Wildlife Refuge, while the Grand Traverse Band of Ottawa and Chippewa Indians (GTB) and Little Traverse Bay Bands of Odawa Indians (LTBB) possess reservation lands and fishing rights throughout Beaver Island and the Archipelago and its waters. For more on the natural resources and environment of Beaver Island and the Archipelago, see Chapter 2.



One of the privately-owned islands in the Archipelago, Ojibwa Island is renowned for its historic lighthouse built in 1892. A work crew from Beaver Island performed significant preservation work on the lighthouse in 2016. Photo Credit: US Coast Guard Archives



## BEAVER ISLAND'S HISTORY

In order to plan for the future of Beaver Island and the Archipelago, it is important to understand the past. Beaver Island and the Archipelago were first formed by glacial changes in the Great Lakes region thousands of years ago. Oral accounts show that Native American tribes passed through the Archipelago on journeys through the Great Lakes, leaving many archaeological artifacts behind. In the mid-1700s, the Odawa migrated westward and permanently settled on Beaver Island and the outer islands. European settlers arrived on the Island in the early 1800s and trapped and fished throughout the Archipelago. By 1850, settlers were flourishing on Beaver Island.

In 1848, Mormon leader James Strang formed a colony on Beaver Island. The colony contributed to the Island's infrastructure by building roads and homes and cultivating ground. James Strang became the self-proclaimed King of Beaver Island and caused disputes between the Native Americans and other European settlers on the Island. In 1856, this unrest erupted; James Strang was assassinated and the Mormon colony collapsed.

Irish fishermen and their families began to settle Beaver Island in the mid-1800s. The population of the Island began to grow steadily. Calling the Island "America's Emerald Isle," these families created an Irish culture that still exists today on Beaver Island. Fishing and logging remained the mainstays of the Island's economy while the Island accepted new groups of immigrants and entered the industrial age.

Through this Master Plan, the Beaver Island community is building on its history of innovation by preparing to face new challenges with resolve, while remaining loyal to the environment and the people that make it so unique and special.

Tourism began in earnest on Beaver Island in the late 1800s, when local merchants began promoting the Island as a pristine yet rustic destination. Vacation cottages were built in the early 1900s and sold to families from Chicago and other Midwestern cities.

Beaver Island and the Archipelago faced serious economic challenges in the early and mid-1900s, when fish population loss caused the commercial fishing industry to decline. Logging on Beaver Island and throughout the Archipelago by lumber industries such as the Beaver Island Lumber Co. and the House of David Israelite Community on High Island in the early 1900s gave a boost to the economy and the Archipelago's population, but only for a short time span.

The last residents of High Island were several Anishinaabeg families who were forced to abandon the island after the 1940 Armistice Day Blizzard. The last resident of Garden Island, Pete Manatou, a Native American, died in the 1940s, leaving Beaver Island as the last inhabited island of the Archipelago for a number of years. Beaver Island struggled to maintain population until the 1970s, when tourism emerged as the economic anchor of the community, and a new generation of cottages and vacation homes were built.

Today, Beaver Island remains among Michigan's most beloved and unique communities. The Island community is a mix of newcomers and long-standing

families, each bringing a unique perspective. Through this Master Plan, the Beaver Island community is building on its history of innovation by preparing to face new challenges with resolve, while remaining loyal to the environment and the people that make it so unique.<sup>1</sup>

<sup>1</sup> This brief history of the Island was adapted from the webpage <http://www.beaverisland.net/beaver-island-history/>. Many detailed sources of the Island's rich history are available, such as the Beaver Island Historical Society.

## PREVIOUS PLANNING EFFORTS

Beaver Island regularly conducts a number of planning efforts. This Master Plan seeks to build on those efforts, as each project or program offered something uniquely valuable to the Island. This section summarizes several of the community-wide planning efforts used in the creation of this Master Plan, but may not be a comprehensive overview of all planning efforts conducted on the Island. Information about specific groups working on topics discussed in this plan are described in later chapters.

## TOWNSHIP PLANNING EFFORTS

St. James and Peaine townships have actively worked to plan together for land use in recent years. The *2017 Beaver Island Master Plan* provided a solid basis for the development of this 2023 update. Both the *St. James Township Recreation Plan* and the *Peaine Township Recreation Plan* provide a summary of the recreational assets on the Island and identify desired improvements.

## CHARLEVOIX COUNTY PLANNING EFFORTS

Beaver Island is included in all long-range plans produced by Charlevoix County. The county's *Recreation Plan* provides a concise summary of the recreational assets on the Island and outlines goals for the future, while the *Natural Hazards Mitigation Plan* and *Hazard Mitigation Plan* map the Island's critical infrastructure and describes the Island's risk to hazards like wildfires, power failures, and severe weather. The *Future Land Use Map Plan* provides locations of sensitive landscapes on the Island and identifies areas best suited for development, preservation, or recreation.

“Natural resources, peace and solitude are what make this place special. Balancing what Beaver Island is with the changes that increased tourism and seasonal visitors bring will continue to drive innovation from leadership.”

## Beaver Island Resident



Many acres of Beaver Island are state-owned and managed by the Michigan Department of Natural Resources (DNR). The state-owned land, as well as DNR's management goals for the Island, are discussed in greater detail in Chapter 4.

Photo by Tom Hawkins

## STATE AND REGIONAL COLLABORATIONS

Beaver Island has participated in a number of collaborative projects led by state or regional entities. The *2016 Management Plan for State-owned Lands on Northern Lake Michigan Islands* was developed by the Michigan Department of Natural Resources (DNR) through a diverse partnership to identify ways to manage state-owned land in the Archipelago more effectively. The *Northern Lake Michigan Islands Collaborative* is a network of many stakeholders and organizations and is an outcome of this DNR process. This network provides an important venue to continue land management discussions with a wide range of interested parties.

The *Great Lakes Unbridged Island Communities* project began in 2015 in collaboration with the Beaver Island Association, the Northland College Center for Rural Communities, and the Michigan Office of the Great Lakes. This project connected Beaver Island to the Island Institute, an organization that works to sustain Maine's many remote coastal islands. This ongoing project has allowed for continued learning between Beaver Island and the Maine islands and sparked the creation of the *2015-2016 Beaver Island Asset Summary*, a document that inventories the many public and private services and amenities on the Island.

The *Great Lakes Islands Alliance* (GLIA) was established in 2017 following the 2015 Great Lakes Unbridged Island Communities project. It currently consists of 150 members and 20 year-round Great Lakes islands between Canada and the U.S., including Beaver Island.

# VISION STATEMENT

## VISION STATEMENT CREATION

The vision statement on the right was written by the Peaine Township and St. James Township Joint Planning Commission based on the public input received during this process and the vision found in the 2017 Beaver Island Master Plan.

The vision statement is an aspirational description of what Beaver Island would like to be over the next 25-30 years. It is intended to guide current and future goals and policies. The actions in Chapter 6 of this Master Plan were submitted by Islanders and crafted by the Joint Planning Commission in order to help the Island achieve this vision.

In 2045, Beaver Island will be a thriving community: economically diverse, socially vibrant, and environmentally rich. High-quality ecosystems will be preserved and managed in a sustainable way, but also leveraged to support ecotourism and economic development. Historic and cultural resources will help define the Island, telling stories of its rich past and attracting visitors and new residents. There will be a diversity of affordable housing options that meet the needs of all residents and pave the way for changing demographics. A connected network of bike paths, sidewalks, and paddling routes will link recreational assets, community services, and residences.



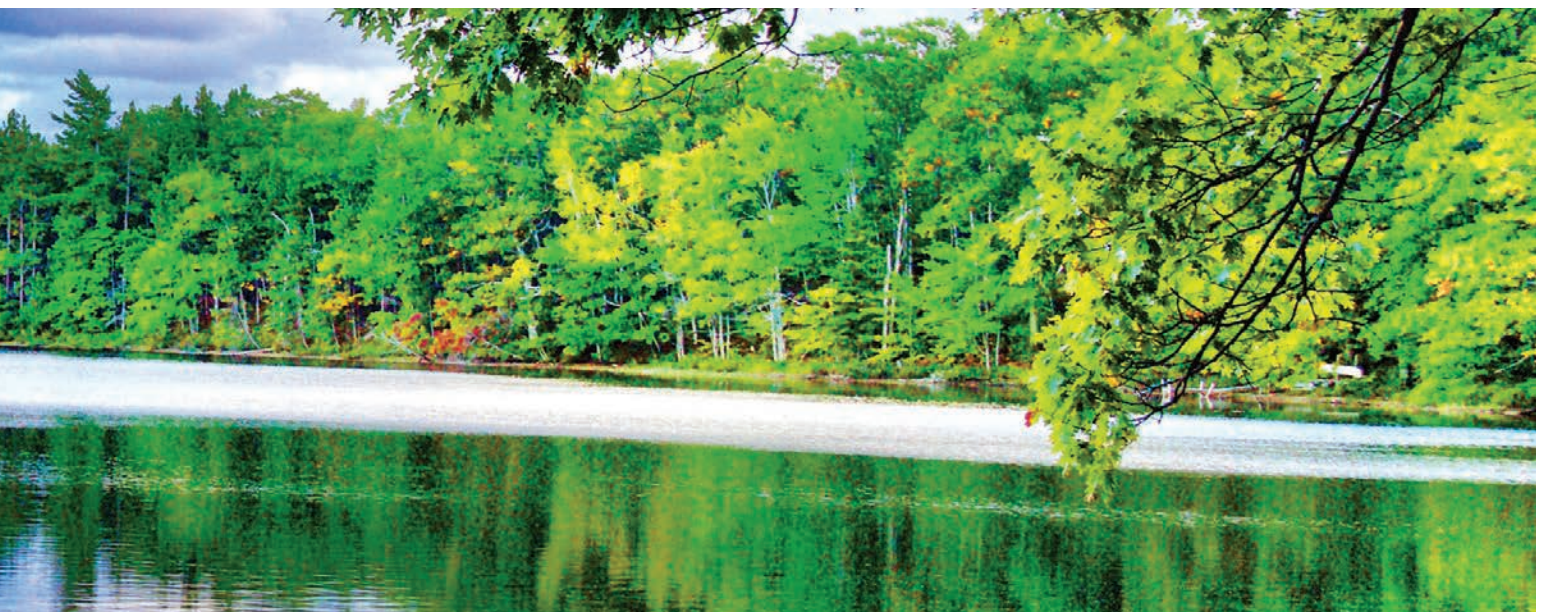
# GUIDING PRINCIPLES

## GUIDING PRINCIPLES CREATION

The guiding principles for the future of Beaver Island were developed by the Joint Planning Commission based on the public input received during this process and the vision found in the 2017 Beaver Island Master Plan. These guiding principles serve to inform the actions that should be taken in the next 25-30 years. These principles also provided the key areas of attention in the master planning process.

1. Preserve the Island's character, scenic vistas, water quality, high-quality natural ecosystems, and clean environment.
2. Support a comprehensive and collaborative marketing strategy both on and off the Island.
3. Invest in technology and public infrastructure that positions Beaver Island to attract young families, retirees, and new business ventures.
4. Ensure that high-quality healthcare is available to all Island residents and visitors at an affordable price.
5. Expand educational opportunities offered within the public school system and to the broader community.
6. Grow the local economy by capitalizing on tourism opportunities, expanding recreation into the shoulder season, and leveraging existing capital to grow businesses.
7. Enhance collaboration and foster open dialogue between the two townships, and between local government and community members. In addition, learn from other communities grappling with similar issues and continue conversations with fellow Great Lakes islands.

The vision statement and guiding principles have a heavy emphasis on protecting the natural features that make the Island unique. This photo was taken by GK Doig at the Fox Lake Public Access Point in October 2016.





From a public open house to meetings with the Joint Planning Commission, stakeholders were able to share many perspectives and opinions throughout the planning process. Thank you to all who participated!

## A PASSIONATE AND ENGAGED PUBLIC

This planning process sought to bring in the opinions of as many Islanders as possible. Both year-round and seasonal Islanders attended meetings, visited the project website, and submitted ideas and comments to the Joint Planning Commission. Whether submitted online or in person, public input was used to build the goals and recommendations of the plan, shape the planning process, and direct the efforts of the Joint Planning Commission and the consultant team through each step of the planning process.

### IN-PERSON PUBLIC ENGAGEMENT ACTIVITIES

The timeline on the following pages describes the public engagement activities that were part of this Master Plan update. In total, the project team conducted [insert total] Joint Planning Commission meetings. In addition, at least five stakeholder meetings were held with various interest groups, as well as a public open house. The results of these

public engagement activities can be found throughout the plan, most especially in Chapter 6 where the ideas for the future of the Island are summarized.

### JOINT PLANNING COMMISSION MEETINGS

The full planning commissions of Peaine and St. James townships regularly met jointly throughout the process. This body served as the guiding force behind the update, the structure of the public meetings, and the final review process of the document. All Joint Planning Commission meetings were open to the public, and the notes from the meetings were hosted online.

### STAKEHOLDER MEETINGS

Stakeholders attended public meetings to address their concerns. The purpose of their participation was to ensure that a diverse range of opinions were part of the planning



Residents care about Beaver Island and the Archipelago.

process and to better understand the work that various boards and organizations are doing on the Island. Stakeholder meetings were held with the following interest areas and/or groups:

- Beaver Island Association
- Beaver Island Transportation Authority

#### **OFF-ISLAND STAKEHOLDERS**

The project team also met with a number of regional and county-based groups that have a vested interest in the Island. These meetings helped the project team better understand the regional context of Beaver Island and the array of services that outside organizations (like Charlevoix County) provide to the Island. Meetings were held with the following groups and individuals:

- Networks Northwest Hazard Mitigation Planning
- United Nations Educational, Scientific and Cultural Organization (UNESCO) Obtawaing Biosphere Reserve
- Northern Lake Michigan Islands Collaborative (NLMIC)
- Great Lakes Island Alliance
- Little Traverse Conservancy
- Grand Traverse Band of Ottawa and Chippewa Indians
- Little Traverse Bay Bands of Odawa Indians

# PLANNING PROCESS TIMELINE

This Master Plan was created with input from many groups and individuals on the Island. A number of public meetings were held for the process, as well as monthly Joint Planning Commission meetings open to the public. This graphic outlines the events and activities involved in creating this Master Plan.

In general, three types of input methods were utilized: Joint Planning Commission meetings, stakeholder meetings, an general public input including an in-person open house and an online survey. Each are described on this timeline in more detail.

- STAKEHOLDER MEETING**
- PUBLIC INPUT**
- JOINT PLANNING COMMISSION**

## MAY-AUGUST 2022

Meetings were held with the Beaver Island Association, Beaver Island Transportation Authority, Networks Northwest Hazard Mitigation Planning, Obtawaing Biosphere Reserve (UNESCO), and the Northern Lake Michigan Islands Collaborative (NLMIC).



## AUGUST 2022

Online public survey tool launched and input collected. A public Open House held on August 17 at the Community Center drew about 65 Islanders, with further online and paper surveys submitted for those who couldn't attend in person. The open house asked for input on the economy, natural environment, coastal resilience, housing, transportation, education, technology, and several other quality of life issues.

## OCTOBER 17, 2022

The Joint Planning Commission met in October to discuss and finalize Goals, Objectives, and the Action Plan.

## MAY 9, 2022

The Joint Planning Commission began working on the update by reflecting on the strengths and weaknesses of the 2017 Master Plan.

## SEPTEMBER 19, 2022

The Joint Planning Commission met in September to discuss how the community's input online and at the public open house meeting could shape the vision and guiding principles of the Master Plan.

## APRIL 18, 2022

The Joint Planning Commission met to learn about the Master Plan update process and decided to participate.



# [MONTH] 2023

The 2023 Master Plan Update for Beaver Island was adopted.

## FEBRUARY 13, 2023

The Joint Planning Commission met to review draft chapters of the Master Plan and to discuss conservation and preservation, housing, dark skies, the economy and tourism.



## DATE, 2023

A public hearing was held on the Draft Master Plan.

## DATE, 2023

The Draft Master Plan was distributed for public comment.



## FEBRUARY - MARCH 2023

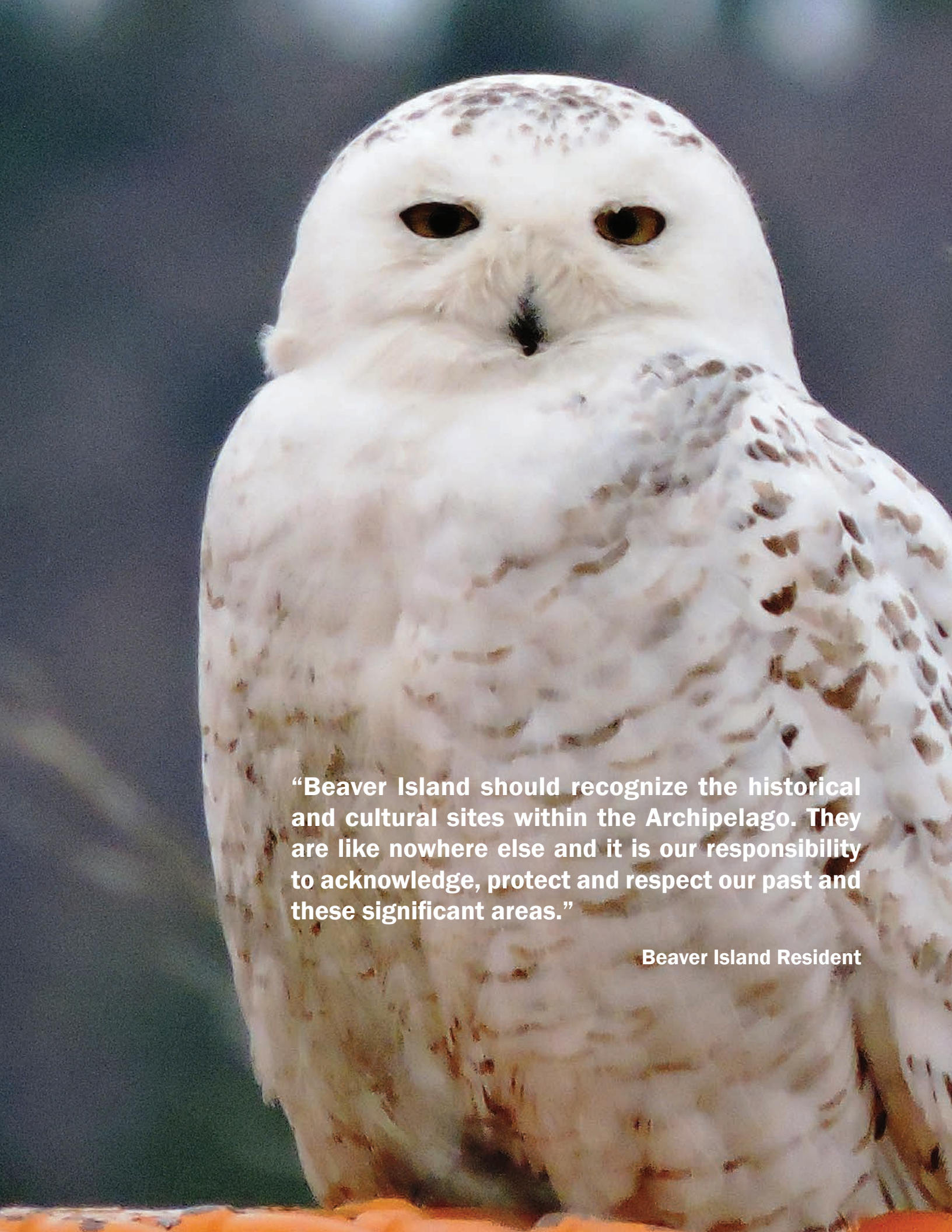
The Joint Planning Commission continued work on the draft.



## NOVEMBER 2022 - JANUARY 2023

The project team continued work on sections of the Master Plan based on public feedback.





**“Beaver Island should recognize the historical and cultural sites within the Archipelago. They are like nowhere else and it is our responsibility to acknowledge, protect and respect our past and these significant areas.”**

**Beaver Island Resident**

## CHAPTER 2

# NATURAL RESOURCES

**This chapter summarizes the existing conditions of Beaver Island and the Archipelago’s natural environment and identifies how resources are currently managed. This chapter also provides information on species composition, vulnerabilities, and key resources to protect moving forward. This information was shared with the Joint Planning Commission as part of the process to develop appropriate goals for the future.**

Part of the allure of an island is its physical separation from the rest of society. From an ecosystem perspective, an island’s physical separation allows plant and animal communities to grow and change in unique ways, with limited connections to the mainland. When asked what Beaver Island’s greatest asset is, most Islanders highlight some element of the Island’s rich natural environment. In fact, Beaver Island and the Archipelago are incredibly ecologically diverse and home to a wide variety of plants, animals, and ecosystems. The current challenge identified by Island organizations is a need to educate visitors and new property owners on the wise use of natural resource assets; likely locations of rare, threatened and endangered species; the threats of invasive species; and current laws and ordinances in place to help protect these assets and natural communities.

### **KEY ENVIRONMENTS**

The next several pages provide an overview of the rich natural ecosystems on Beaver Island and the Archipelago and the plants and animals that inhabit these systems. Understanding existing conditions, even broadly, is useful when prioritizing goals and identifying actions for the Master Plan.

## COASTAL HAZARDS

Just as living along Lake Michigan is beautiful, it can also be dangerous. In the short term, severe storms can cause high winds and powerful waves to envelop the shoreland. These waves are capable of damaging docks, boats, and piers and can put human safety in danger. Evidence collected over the last several decades shows that severe storms in the Great Lakes region are increasing in both frequency and in intensity due to changing weather patterns (see the next section on climate change).

In the long term, decadal lake level changes can create a false sense of security and encourage unwise building practices. When water levels are down for an extended period, lakefront property owners might be tempted to believe their properties have permanently extended. However, fluctuations in water levels are a natural Great Lake process, and higher water levels can erode high bluffs, consume beaches, and stretch the boundaries of coastal wetland systems. It is important for property owners and local governments to understand the dynamic nature of the coastline to prevent development in unsafe areas. Setbacks are one easy way to regulate this development, and this Master Plan recommends that the Planning Commissions in each township evaluate the current regulations regarding lakefront development to determine areas where setbacks should be increased in the future or where additional studies on erosion might be needed. An additional challenge related to coastal areas, especially coastlines with dunes and steep slopes, is the matter of access for fire equipment and emergency services. Dangerous situations can result when narrow, privately-maintained roads restrict the ability for emergency services to access remote locations.

Lastly, extreme storms on Beaver Island have significant impacts on transportation, including boat and plane access. This issue is discussed in more detail in Chapter 4.

## COASTAL DYNAMICS AND THE IMPORTANCE OF PLANNING IN COASTAL COMMUNITIES

The Great Lakes are one of the most unique and important environmental systems in the world. In fact, “the Great Lakes basin contains more than 20% of the world’s surface freshwater supplies and supports a population of more than 30 million people.” The Great Lakes ecosystem plays a key role in the environmental, social and economic makeup of the region. Michigan is home to nearly 3,300 miles of Great Lakes shoreline, along with 36,000 miles of rivers and streams, and 11,000 inland lakes. Communities across the Great Lakes shoreline haven an important role to play in ensuring the long-term sustainability of their shorelines.

Yet in general, riparian land (land adjacent to a water body) throughout Michigan is not adequately protected from development pressures. This has been especially clear during high water periods, which communities across the state, including Beaver Island, have experienced in recent years. In 2001, the Michigan Department of Environmental Quality (DEQ; now EGLE) acknowledged “fragmentation of coastal habitats, loss of agricultural and forest lands, increased impervious surfaces and resulting stormwater runoff, and the increased development in coastal hazard areas, wetlands, and Great Lakes Islands, could be improved through better coastal land-use planning.”

Planning for coastal areas at the local level requires knowledge of both local conditions and state and federal regulations. This chapter aims to address these needs for the community and provide clear, well-founded recommendations for future land-use planning.





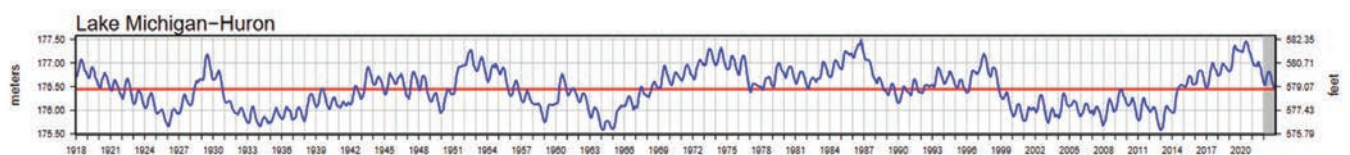
### HOW ARE GREAT LAKES WATER LEVELS MEASURED?

Great Lakes water levels are measured via the International Great Lakes Datum (IGLD), a reference system of benchmarks at various locations on the lakes that approximate sea level. Great Lakes water levels are expressed as measurements above this reference elevation.

### OVERVIEW OF COASTAL DYNAMICS AND THE GREAT LAKES

The Great Lakes function differently than other inland water bodies and tidal oceans. Understanding these dynamics can help the Island plan for naturally occurring changes along the shoreline.

**FIGURE 2.1 GREAT LAKES WATER LEVELS 2018-2023 (LAKE MICHIGAN-HURON)**



Source: <https://lre-wm.usace.army.mil/ForecastData/GLBasinConditions/LTA-GLWL-Graph.pdf>

### CHANGING WATER LEVELS OF THE GREAT LAKES

Great Lakes water level changes result not from the moon’s gravitational pull, but from cyclical changes in rainfall, evaporation, and river and groundwater inflows. These factors work together to raise and lower the water levels of the Great Lakes in small increments daily, and larger increments seasonally and over the course of years and decades. Long-term water levels fluctuate by multiple feet. Figure 2.1 illustrates the water level of Lake Michigan from 1918 to 2023 (Lake Michigan and Lake Huron are technically considered one lake). However, under certain climate conditions, water levels can dramatically fluctuate over short periods of time. For example, following the extreme winters of 2014 and 2015, water levels in Lake Michigan rose between three to four feet from an all-time low (576 feet) set just a year earlier.

The Great Lakes have been experiencing a period of rising lake levels. Since the early 2000s, water levels had remained low, but historical patterns over the last century indicated that higher water levels were sure to return. After a period of lows in 2013, Lake Michigan’s water level in July of 2020 averaged 582.2 feet, which was 34 inches above its long-term average level for the month. According to a recent U.S. Army Corps of Engineers summary, based on current conditions, Lake Michigan is expected to see lake levels decline after seeing record highs throughout 2020 (see Figure 2.1).



It is important to note that changes in water levels are not solely responsible for the movement of the shoreline landward and lakeward over time. The velocity and height of waves, erosion of shorelines, and the pace of fluctuating water levels also contribute to coastal dynamics on the Great Lakes.

### **WAVE ENERGY AND HEIGHT**

The Great Lakes experience high-energy waves and wave setup along the coastline. High-energy waves are high in speed and strong in intensity and are primarily created as fast winds move across the surface of the water for extended distances. “Wave setup” is the height of the water as waves reach the shore. High wave setup results as regional storms create high winds on the Great Lakes. Powerful and tall waves can quicken the rate of erosion and damage structures near the shoreline.

### **EROSION**

The shorelines of Lake Michigan are mostly made of gravel and sands that easily erode during times of high-energy waves. Coastal erosion can cause flooding and damage infrastructure along bluffs and beaches. Erosion is caused mainly by storms and winds, and is exacerbated when lake levels are high.

### **COASTAL HAZARD ANALYSIS**

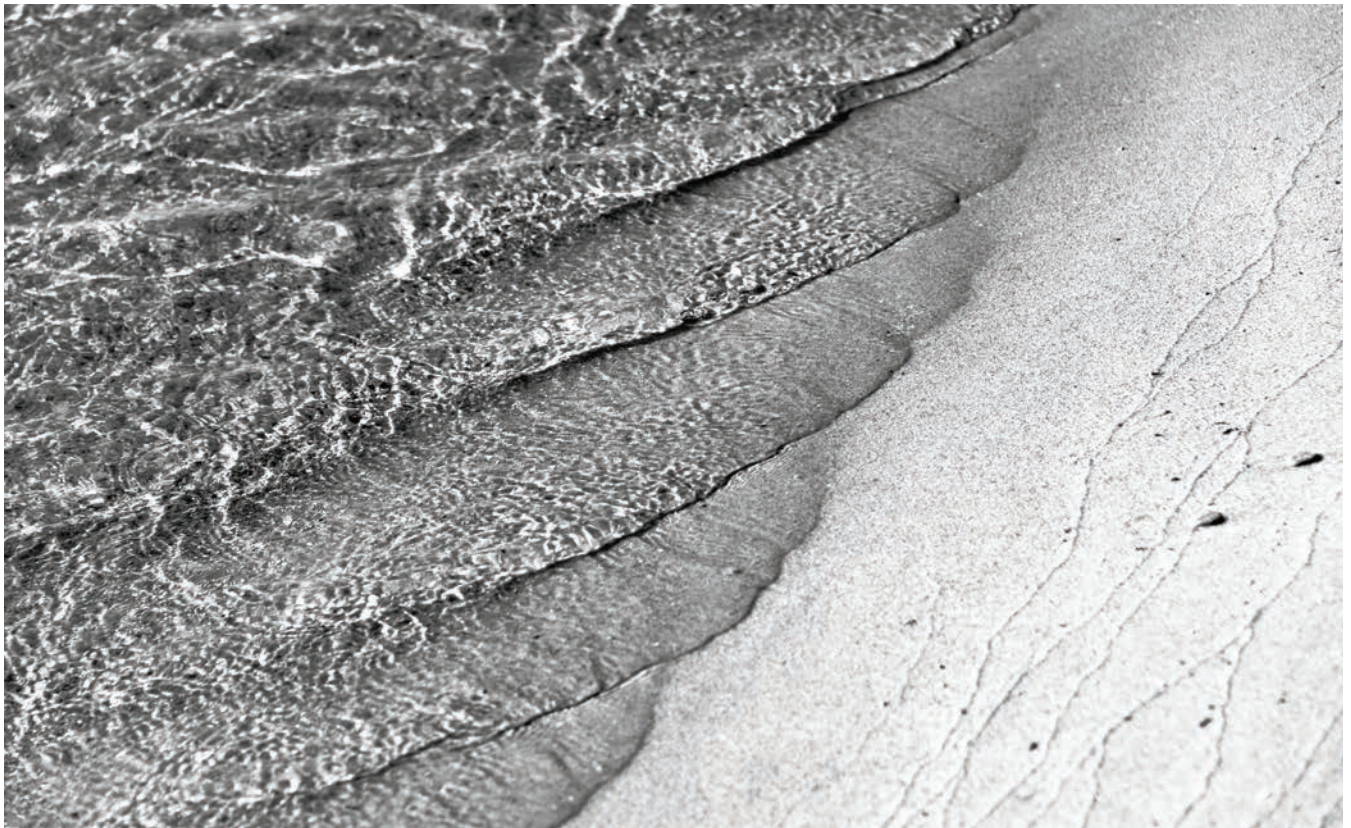
As part of this master planning process, LIAA analyzed shoreline and riverine ecosystems and physical dynamics to help the Beaver Island community manage its shoreline and riverine areas. This chapter presents a brief summary of the team’s framework, results and recommendations.

### **OVERVIEW OF RESEARCH FRAMEWORK**

Scenario planning, in general, identifies driving forces to inform a range of scenarios that are then analyzed and evaluated. In this context, the project team identified natural forces, especially increasing storminess and lake-level fluctuations causing increased problems with flooding. These forces informed the creation of multiple climate futures. Each climate future was tested and evaluated for impacts on the environment and land use in the community.

### **CLIMATE FUTURE DEFINITIONS**

Rather than presenting a prediction of what the future will bring, each of the following “climate futures” lays out a possible future that might occur. These varying climate futures — all of which are reasonably anticipated possibilities — are arranged from a least impactful to a



most impactful condition in terms of the potential for wave damage and flooding hazards they would bring. The following descriptions outline the key assumptions made in defining each of the climate futures as compared to the others. Map 2.18 shows the estimated land areas that would be affected by waves and flooding under these three climate futures, and Map 2.19 shows the same information but with building footprints displayed.

“Lucky” Future: Under the Lucky Climate Future scenario, Great Lakes water levels will stay relatively low. Although there will be wave and wind action, major storm events and wave impacts will not encroach on properties landward of current beaches. A Lucky Future projection, indicating the land areas that would be affected by high-energy waves along the shoreline and/or adjacent riverine flooding under these conditions, is shown in yellow on Maps 2.18 and 2.19.

“Expected” Future: Under the Expected Climate Future, Great Lakes water levels will continue to fluctuate according to long-term decadal patterns, including recent extreme storm events incorporated into the ongoing Great Lakes Coast Flood Study by the Federal Emergency Management

Agency (FEMA). Given those ongoing fluctuations, this Climate Future accounts for periods when Great Lakes still-water elevations are closer to the long-term average. In addition, this Climate Future anticipates the so-called “100-year storm event” (or 1% storm) becoming more like a 20- or 50-year storm event (i.e., an expected storm within the normal community planning time horizon) because of increased storminess. The Expected Future projection is shown in orange on Maps 2.18 and 2.19.

“Perfect Storm” Future: Under the Perfect Storm Climate Future, Great Lakes water levels will continue to fluctuate according to decadal patterns, consistent with assumptions made for the Expected Future. However, for this Perfect Storm Climate Future, the estimated still-water elevation is set higher than the long-term average and closer to the long-term high (583 feet). In addition, this Climate Future anticipates the occurrence of a so-called “500-year storm event” (or 0.2% storm) occurring within the planning time horizon while lake levels are high. The Perfect Storm Future projection is shown in red on Maps 2.18 and 2.19.



The Island's many beaches provide habitat for some of Michigan's rarest plants, like the Lake Huron tansy. Photo Credit: J. Russell, Michigan Sea Grant.



Coastal wetlands provide unique habitat to plants and animals. This photo is of a coastal wetland area in Paradise Bay.



Iron Ore Bay is a unique shoreland area on the southern coast where Iron Ore Creek, a coldwater creek, runs into Lake Michigan.

## ISLAND ENVIRONMENTS

Beaver Island and the Archipelago feature a number of unique ecosystems, including shoreland areas (dunes, coastal wetlands, fens, bogs, marshes and beaches), inland lakes, and forested areas.

### FLOODING

While flooding is a natural process, aging infrastructure and infrastructure that is not properly sited can be severely damaged in the event of a heavy precipitation event, coastal storm, or heavy ice melt. Certain areas of Beaver Island experience recurrent flooding, particularly dirt roads. Culverts that restrict the flow of water, and pavement in areas that promote the speed of runoff, can exacerbate the negative impacts of flooding. Beaver Island can use a number of resources, including the elevation map, or Digital Elevation Model (DEM), shown in Map 2.7.

### SHORELANDS

Lake Michigan is an astounding natural resource that is within sight and sound of most Islanders each day. Approximately 40 miles of Lake Michigan coastline help define the unique identity of Beaver Island. Ranging from rock to wetlands and sandy beaches, each coastal area offers a host of ecosystem benefits, unique habitats, and opportunities for humans to explore. A short overview of the types of shorelands and nearshore areas of Beaver Island are covered in this section, including dunes, wetlands and beaches.

### DUNES

Healthy, ecologically diverse sand dunes surround the perimeter of Beaver Island, most especially on its western

side. These dunes are spectacular natural features, but also very fragile ecosystems susceptible to human and natural disturbances. Beaver Islanders have a strong commitment to managing dynamic coastal dunes to allow their natural processes to shape the landscape and adapt as conditions change. Map 2.1 shows the dunes on the Island.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) administers a permitting program for any earthmoving, vegetation removal, and/or construction activities within a Critical Dune Area. Both St. James and Peaine Townships have locally administered Critical Dune Ordinances.

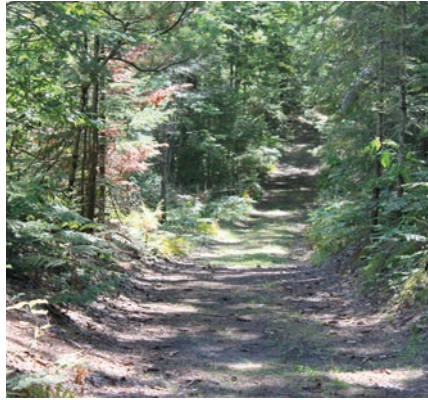
### COASTAL WETLANDS

Wetlands on Beaver comprise a vast portion of the interior of Beaver Island, near the many inland lakes and especially on the Island's eastern side. Coastal wetlands, in particular, are unique as they have hydrological connection to Lake Michigan and fluctuate with water level changes. Coastal wetlands provide a wide range of important ecosystem services, including filtering and cleaning water naturally; providing critical habitat to fish, reptiles, and amphibians; and reducing the impact of extreme rain events by absorbing flood waters. Coastal wetlands are also great places for bird watchers to congregate during migration seasons and can be wonderful places for kayaking and other passive recreational activities. Much of the Island's wetlands are in public ownership, though some, like the one pictured above in Paradise Bay, are privately owned or for sale. Map 2.2 shows the approximate location and type of Beaver Island's coastal wetlands.





Lake Geneserath is the Island’s largest inland lake and is home to a number of beautiful natural areas, opportunities for fishing, and recreational boating.



The Island’s many trails help residents and visitors explore the forested types on the Island. Trails are described in greater detail in Chapters 4 and 5 of this plan.



The beauty of the Island’s natural environment was repeated time and again by Islanders as the thing they love most about their community.

Photo Credit: Cynthia Hector

**BEACHES**

Many of the Island’s beaches are sandy, while others are a mix of rock and gravel deposited by Lake Michigan’s strong waves. The Island’s beaches draw residents and visitors year-round to watch sunsets, explore the terrain, and look for glimpses of the Northern Lights. The beach areas of the Island also provide important “breathing room” for nearby development, as beaches can drastically inflate and deflate according to water level changes and severe storms on the Great Lakes. The Island’s beaches also provide habitat for some of Michigan’s rarest plants, such as the pitcher’s thistle (*Cirsium pitcheri*) and the Lake Huron tansy (*Tanacetum huronensis*).

**INLAND LAKES AND STREAMS**

Inland lakes and streams form a critical network of connected waterways in the interior of the Island, providing important habitat and a variety of recreational opportunities. The main inland lakes include, from north to south: Font Lake, Round Lake, Barney’s Lake, Egg Lake, Fox Lake, Greene’s Lake, Miller’s Marsh, and Lake Geneserath. Both Round Lake and Egg Lake are privately owned as well as Miller’s Marsh, but CMU allows public access here. Prominent fish passage waterways include the Jordan River, Iron Ore Creek and Cable’s Creek. Descriptions of each inland lake follow. Inland lakes and streams can also be seen on Map 2.3.

Many types of wetlands surround the inland lakes, including fens and bogs. Each of the Island’s wetland communities support unique species of plants and animals. In the past, wetlands were once seen as “swamps” with a negative connotation. Many wetlands were drained and filled for use as agricultural lands or residential development. Beaver

Island has proactively preserved and maintained many of its natural wetland areas, allowing the Island to reap the many benefits of access to these unique landscapes. Map 2.4 shows existing wetlands and areas where wetlands might be restored.

“Beaver Island is unique and special because of its biodiversity. The multitude of habitats found on the Island means a multitude of creatures. Every year for decades I have seen a bug or a bird I have never seen before in my life. To me, it is the mixture of all things interacting that makes Beaver Island a special and unique place.”  
**Beaver Island Resident**



### FISHERIES HABITAT CONSIDERATIONS

A variety of high-quality lakes and streams are located on Beaver Island. Iron Ore Creek, Jordan River, and Cables Creek are all designated Trout streams, and Iron Ore Creek and Cables Creek host resident populations of native Brook Trout, and naturally reproducing juvenile Steelhead. Jordan River is a warm transitional stream, home to a robust community of various minnow and shiner species. All three streams see migratory runs of Rainbow Trout (steelhead), Brown Trout, White Sucker, Longnose sucker, and occasionally Chinook and Coho salmon.

Lake Geneserath is a high-quality mesotrophic lake which provides a well-utilized fishery for Walleye (stocked by DNR Fisheries Division, with populations monitored by the Little Traverse Bay Bands of Odawa), Smallmouth Bass, Largemouth Bass, Northern Pike, and various panfish species. Font Lake, though shallow, creates a good fishery for Yellow Perch, Rock Bass, Largemouth Bass, and Smallmouth Bass, as well as many species of Herpetofauna.

Barney's Lake is highly eutrophic with a limited Yellow Perch and Rock Bass fishery. Greene's Lake is part of a bog complex and often freezes solid, making it inhospitable for most fish but popular with Herpetofauna. Fox Lake provides an excellent small-boat fishery for Bluegill and Pumpkinseed Sunfish.

### FORESTED AREAS

The Island has a number of forest types including boreal, dry-mesic northern, conifer swamps and mesic northern forests. Each of these host a unique mix of tree species. Major forest cover on the Island includes northern hardwoods, lowland deciduous forest, and lowland coniferous forests.

According to Dr. Dave Ewert, Senior Scientist at The Nature Conservancy, "the interior forests of Beaver Island include mixed hardwood forests dominated by sugar maple, dotted with wetlands and small lakes that are often ringed by tamarack, black spruce, white cedar and other conifers. Small pockets of red and white pine contribute to the diversity of the interior forests. Forests near the immediate shoreline are frequently dominated by spruces, balsam fir, white cedar, pines, and eastern hemlock. Openings, including old fields, pastures and clear-cuts, are scattered around the island." Today, many acres of hunting lands are managed by the DNR and the Island's Wildlife Club. Other areas are used for recreational trails, foraging, and peaceful residential neighborhoods.

Some of the greatest threats to these forested areas include invasive species and disease such as Emerald Ash Borer (EAB), Beech Bark Disease, Oak Wilt, Hemlock Woolly Adelgid and more.

## INLAND LAKES

Beaver Island's many inland lakes provide residents and visitors with opportunities to explore many different types of environments. From fens and bogs to old-growth forests, the areas near the Island's lakes are precious to many. This section provides a short description of each inland lake and inventories the amenities available at each.

### WATER QUALITY DATA

Currently, water quality data about the Island's inland lakes is not collected and distributed at a large scale. However, residential development, septic systems, and human activities can trigger water quality problems in inland lakes. The



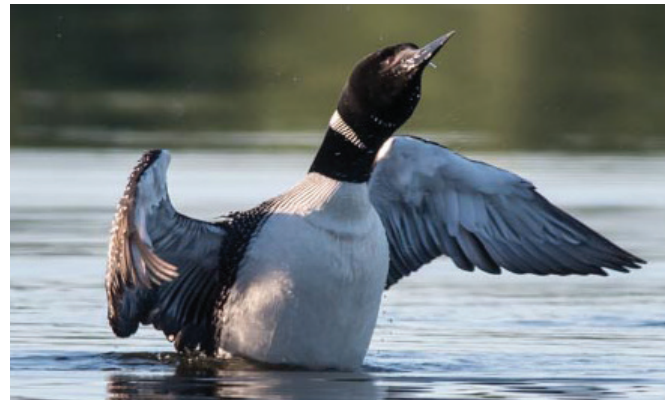
Font Lake is approximately 382 acres and is the Island's second largest lake. Part of the northern half of the lake is dotted with homes, along with much of the northern and western shorelines belonging to the Port of St. James Association, including a public boat launch on the north end. Peaine Township's Font Lake Park allows viewing access of the lake on the southern end. Photo of a family of common mergansers on Font Lake by Tom Hawkins



Barney's Lake is about 45 acres in size and is a premier fishing location on the Island primarily owned by LTC except for a small southern part of the lake. The lake has been stocked in the past with largemouth and smallmouth bass and continues to provide habitat for bass, northern pike and sunfish. An access site is available on the southeastern shore at a low-impact, LTC-owned launch site. Photo Credit: BeaverIsland.net

Beaver Island Archipelago's Terrestrial Invasive Species (TIS) Program is currently working with the Michigan Clean Water Corps to establish consistent monitoring of aquatic invasive species, shoreline assessment, water clarity, water quality and more through the Cooperative Lake Monitoring Volunteer Program.

At least one scientific study linked an increase in the trophic status in Lake Geneserath to a warming climate and increased residential development.<sup>1</sup> Trophic status refers to the level of nutrients in the lake that can cause excess algae growth and limit the oxygen available for plants and animals. Even



Round Lake is a small private lake about 24 acres in size in the northern interior of the Island. Round Lake is unique in that it has water only seasonally and does not support fish populations. Round Lake is connected to a wetland complex known as "Cornelius' Swamp" and serves as a stopping point for ducks, sandhill cranes and geese in the spring. Photo Credit: Tom Hawkins



Egg Lake functions more like a bog than a lake. The lake is privately owned and supports many of the rarest plant species in Michigan. Because of its plentiful biodiversity, many conservation groups have prioritized Egg Lake as an important natural area in need of greater protection from human disturbance. Photo Credit: WorldLakes.org

<sup>1</sup> Sawyers, J.E., McNaught, A.S. & King, D.K. J Paleolimnol (2016) 55: 97. doi:10.1007/s10933-015-9867-x

with limited available data, there are steps the Island can take to protect water quality (see Chapter 6).

## RECREATION

The recreational amenities and opportunities on the Island are linked, of course, to its many natural resources including its inland lakes, trails, and wetlands. Recreation and tourism are discussed in greater detail in the next Chapters 5 and 6 of this Master Plan. St. James Township recently approved an updated Parks and Recreation Plan in 2023 and Peaine Township will be following in 2024.



Fox Lake is 75 acres in size and is located near the center interior of the Island. Fox Lake supports a variety of fish as well as a bog towards its eastern shores. Fox Lake's public access site is well known for successful fishing and its proximity to the "Big Birch," one of the oldest birch trees in Michigan. Photo Credit: GKDoig



Miller's Marsh is a small lake in a larger wetland complex that is owned by Central Michigan University. The public is welcome to use the Miller's Marsh CMU Trail, a walking path that meanders around Miller's Marsh and through the wetland complex. Many butterflies, plants and snakes live in this unique natural landscape.

**"...The twin goals of preservation and protection of the environment and of the people needed to support ecotourism are values that must be actively pursued by the Island, Charlevoix County and the State of Michigan."**

**Beaver Island Resident**



Greene's Lake is 62 acres in size and is located in the southwestern interior of the Island with several two-hearted oaks lining its shores. Greene's Lake is shallow and freezes totally most winters. Many animals live in the rich wetlands surrounding the lake, taking advantage of the fact that the Michigan DNR owns the majority of the lake shoreline.



Lake Geneserath is the largest of the Island's lakes. With depths reaching 55 feet, the lake provides many opportunities for fishing species such as bass, northern pike, perch, and bluegill. A public access site and boat launch is available on the north arm of the lake. Some old cottages and new residential homes dot the shoreline, primarily along the eastern side of the lake.

## SOILS ON BEAVER ISLAND

Beaver Island and its Archipelago were formed by a glacier, and the topography reflects the history of the Great Lakes. The soil composition of the islands can help inform land use and identify where particular management practices are most appropriate. Some soils are better for development, some are better for farming, and others are best suited to remain undeveloped and unfarmed. Beaver Island has four main soil classifications, or associations (see Map 2.5):

The **Deer Park-Dune Land Eastport Association** which is well-drained, nearly level to very steep sandy soils on beach ridges and dunes. This soil type is found along the coastline and is difficult to farm or build on.

The **Kalkaska-Mancelona Association** which is well-drained to moderately well-drained, nearly level to gently sloping sandy soils on lake plains and valley trains. Much of this soil is forested. This soil type is difficult to farm.

The **Roscommon-Charlevoix-Mackinac Association** which is poorly to moderately poorly drained, nearly level to gently sloping sandy and loamy soils on lake plains. This soil type is conducive to wetland areas and poorly suited to farming.

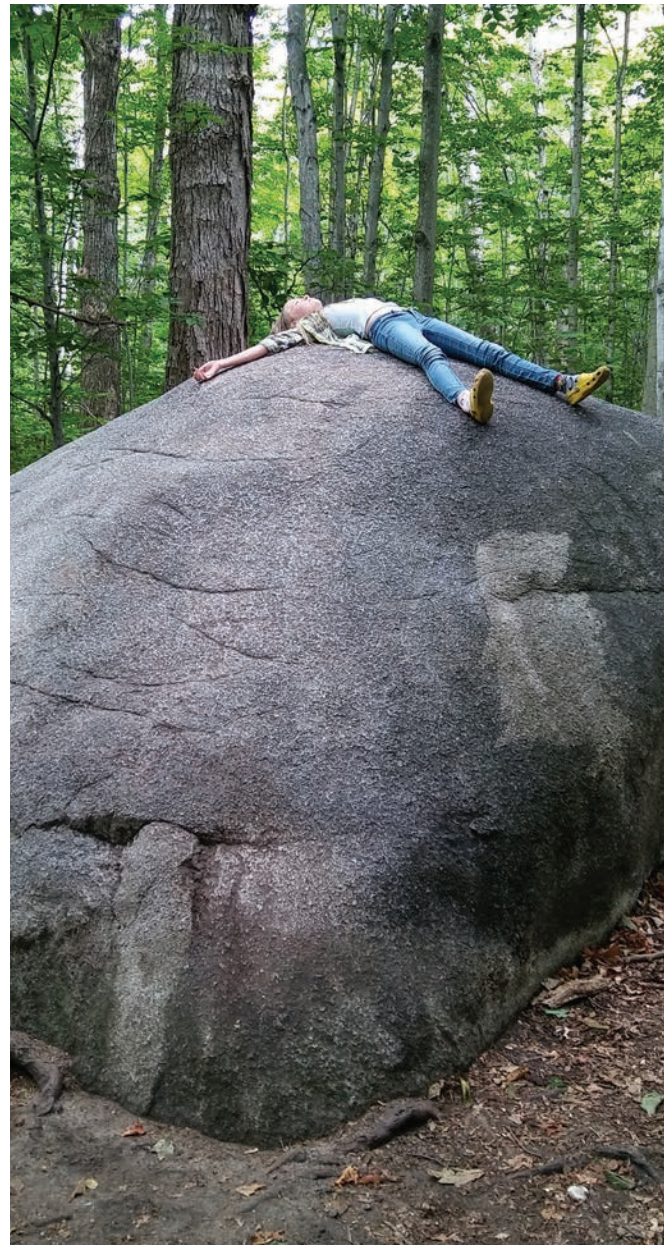
The **Emmet-Leelanau Association** which is well-drained, nearly level to very steep loamy and sandy soils on moraines. This soil type may be suitable for construction and farming.

### AGRICULTURAL SOILS

Despite the fact that most of the Island's soil is not suited for farming, agriculture played an important role in Beaver Island's past. Beginning with Native Americans and followed by the Mormon settlement, particular areas of some islands were cultivated and farmed. The farming on Beaver Island in particular enabled the Island to support a year-round population in spite of the high cost to transport food from the mainland.

### SOIL STEEPNESS

In addition to soil type, soil slope can also be a useful indication of areas where runoff and erosion might be problematic. Map 2.6 shows the Island's soil in terms of the percent of slope. The areas with the steepest slopes are along the northern, western, and southern slopes of the Island as well as the areas surrounding Fox Lake, Greene's Lake, and Miller's Marsh. While an expert is required to determine where soil will allow for development on a particular site, this map can help inform general discussions about land use. This map can also be useful in discussions to identify where erosion could be an issue.



Beyond being a local point of interest, “Big Rock” is actually the largest known glacial erratic on Beaver Island. A glacial erratic is simply a rock that isn't naturally found in the area. “Big Rock” was carried by a glacier to Beaver Island from north of Lake Superior. It is a type of rock called igneous which is part of the Canadian Shield. Rumor has it that most of the rock's mass is buried underground! Photo Credit: Binney Girdler



Beaver Island's natural landscapes are truly astounding to visitors and locals alike, from a remnant of an agricultural economy on Beaver Island (top; credit to GKDoig) and beautiful rocky gravel in Iron Ore Bay, to "Big Birch," one of the oldest birch trees in Michigan.

## KEY ENVIRONMENTAL CHALLENGES

Many of the Island’s well-loved landscapes are also extremely fragile. Throughout the master planning process, Islanders expressed not only their love for the many natural areas and unique landscapes on Beaver Island, but also concerns about invasive species, rare and endangered species, flooding, coastal hazards, and climate change. This section provides a short overview of each major concern, while the section at the end of this chapter describes management strategies currently employed by various groups and agencies.

### INVASIVE SPECIES

Invasive species are non-native plants and animals that are likely to cause harm to the environment or human health. Invasive species are damaging to natural areas when they out-compete native species and spread rapidly. Over time, invasive species can rapidly change the ecosystems that many plants and animals rely upon. Invasive species

can also negatively impact property values. Unfortunately, invasive species are a common problem in many Great Lakes communities. One benefit of living on an island is that it can be more approachable to manage invasive species and protect threatened and endangered species thanks to some separation from the mainland and less contact with one of the greatest invasive species spreaders: humans. However, once invasives are established, it becomes more expensive and sometimes impossible to remove them. Therefore, even a few invasive plants can cause significant disruptions to the ecological integrity of any island.

Beaver Island has a strong community of volunteers and activists that donate time and energy to address invasive species, including those who after multiple years of concentrated efforts to treat non-native phragmites have virtually eradicated over 30 acres of this invasive plant

#### GARLIC MUSTARD

Garlic mustard (*Alliaria petiolata*) is self-fertile and is very difficult to eradicate once it is established in an area. It spreads rapidly and unfortunately displaces native or other desired plants in a relatively short period of time. Each plant can produce thousands of seeds which can be spread by wildlife, humans, water, or other means. Garlic mustard has been found in several locations on Beaver Island.



#### AUTUMN OLIVE

Autumn olive (*Elaeagnus umbellata*) is a deciduous shrub that can grow up to 20 feet tall. It is distinguished from other similar shrubs by the silvery scales found on the lower leaf surface. Its aggressive proliferation outcompetes and displaces native plants by creating dense shade. Autumn olive has been found throughout the coastal and northern areas of Beaver Island where more disturbances occur.

## 4 PLANT INVASIVES

#### EUROPEAN SWAMP THISTLE

European Swamp Thistle or Marsh Thistle (*Cirsium palustre*) grows 3-6 feet tall in its second year, with a thick stem covered in hairy spines and a tight cluster of multiple pink/purple flowers with spiny leaves that bloom during summer months. This invasive species spreads rapidly via seeds and has been spreading throughout Beaver Island in wetlands, marshes and in ditches along roadways.



#### BABY'S BREATH

Baby's breath (*Gypsophila scorzonifolia*) is originally from Siberia and Eastern Europe and can be found invading dune ecosystems along the western shorelines of the mainland in destructive ways, posing a very near threat to Beaver Island and the Archipelago. Because it has a very deep taproot (up to 12 feet), it can outcompete native plants, many of which have disappeared from Michigan's dunes.

from Beaver Island alone. Treatment and monitoring must continue for the foreseeable future to effectively contain the few existing stands. This effort helped to establish a new local program implemented in 2021, the Beaver Island Archipelago Terrestrial Invasive Species (TIS) Program.

The TIS Program is part of a community effort to curb and/or eradicate invasive species spread in the Beaver Island Archipelago while promoting the knowledge, awareness and protection of threatened and endangered species. This program is intended to create a local base of information and action plans for invasive species management efforts with the assistance of the community and all groups currently working throughout Beaver Island and the Archipelago to protect and value our native ecosystems, including CAKE CISMA (Charlevoix Antrim Kalkaska Emmett Cooperative Invasive Species Management Area), Michigan DNR, Little Traverse Bay Bands of Odawa Indians, Little Traverse Conservancy, the BIA (Beaver Island Association) and many more.

Several surveys have been conducted throughout Beaver Island and the Archipelago, including a 2012 survey of Beaver, High, Garden and Hog Islands by The Nature Conservancy that identified 23 invasive plant and animal species; a 2015-17 survey by the Michigan Natural Features Inventory (MNFI) on the same islands that identified 43 occurrences of high-quality natural communities, some being critically imperiled or imperiled at the global scale; and several surveys for invasive and threatened and endangered terrestrial species by CAKE CISMA and the TIS Program that are recorded and reported to MISIN (Midwest Invasive Species Information Network) and MNFI.

Aquatic invasive species are another major concern for Beaver Island and the Archipelago, with many invasives

### WHAT IS HAPPENING TO THE ISLAND'S BEECH TREES?

Beech bark disease is quickly killing beech trees across northern Michigan. It is caused by an insect named the beech scale that attacks the bark of a tree and creates a wound. Fungi then invade the tree through the wounds and cause cankers to form, eventually leading to death of the tree. Dead beech trees present a number of hazards. The dead trees are a liability for falling and causing property damage and personal injury. The dead trees will also increase the amount of fuel in the forested areas, increasing the risk of wildfire.



The tree above is infected with the beech scale, as shown by the white woolish appearance on the bark of the tree.

Photo Credit: Wisconsin DNR

able to be spread from boats and other crafts, especially in consideration of any watercraft traveling from Lake Michigan to any of the inland lakes of Beaver Island. Many aquatic invasive species have already been confirmed in St. James Harbor on Lake Michigan, including Eurasian Watermilfoil, Zebra and Quagga Mussels, Round Gobies and more. Boat washing stations, updated signage, educational outreach and other ideas to stop the spread of invasives are found in Chapter 6.

### RARE SPECIES

Native plants and animals are negatively impacted by human activities, development and invasive species within Beaver Island and the Archipelago, with a handful of those native species being endemic to the Great Lakes Region. There is great need to protect the many threatened, endangered and rare species found on Beaver Island and the Archipelago, particularly on the outer islands which is a main goal of the TIS Program and many other entities. To date, no full study has been conducted for Beaver Island and the Archipelago to inventory and evaluate the status of its many species. Anecdotal reports suggest that the Islands likely have dozens of species not commonly found elsewhere in Michigan. Tourists and residents can cause accidental damage to sensitive areas these species rely upon.

The endangered Piping Plover is an example of the Archipelago's ability to attract rare birds as a critical stopover site. It relies on very limited shoreline conditions for nesting habitat. The plover routinely finds nesting areas throughout Beaver Island and the Archipelago. A pair successfully nested in a spot that Island volunteers had recovered from non-native phragmites. Many volunteers on the Island have worked to protect native habitats from invasive species, but more monitoring is required to maintain these efforts.



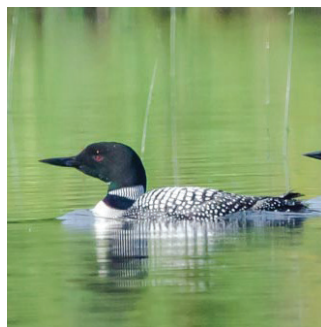
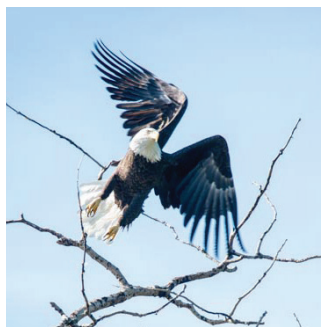
STATE STATUS CODES	FEDERAL STATUS CODES
E= Endangered	LE= Listed Endangered
T= Threatened	LT= Listed Threatened
SC= Special Concern	

**TABLE 2.1 ENDANGERED, THREATENED, OR SPECIES OF CONCERN IN CHARLEVOIX COUNTY**

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Accipiter gentilis	Northern goshawk		SC
Adlumia fungosa	Climbing fumitory		SC
Ammodramus savannarum	Grasshopper sparrow		SC
Appalachina sayanus	Spike-lip crater		SC
Bombus borealis	Northern amber bumble bee		SC
Bombus terricola	Yellow banded bumble bee		SC
Botaurus lentiginosus	American bittern		SC
Bromus pumpellianus	Pumpelly's bromegrass		T
Brychius hungerfordi	Hungerford's crawling water beetle	LE	E
Buteo lineatus	Red-shouldered hawk		T
Calypso bulbosa	Calypso or fairy-slipper		T
Charadrius melodus	Piping plover	LE	E
Cincinnatia cincinnatiensis	Campeloma spire snail		SC
Cirsium pitcheri	Pitcher's thistle	LT	T
Coregonus artedi	Lake herring or Cisco		T
Cottus ricei	Spoonhead sculpin		SC
Cypripedium arietinum	Ram's head lady's-slipper		SC
Dalibarda repens	False violet		T
Drosera anglica	English sundew		SC
Emydoidea blandingii	Blanding's turtle		SC
Euxoa aurulenta	Dune cutworm		SC
Falco columbarius	Merlin		T
Gallinula galeata	Common gallinule		T
Gavia immer	Common loon		T
Gymnocarpium robertianum	Limestone oak fern		T
Haliaeetus leucocephalus	Bald eagle		SC
Hydroprogne caspia	Caspian tern		T
Iris lacustris	Dwarf lake iris	LT	T
Lithobates palustris	Pickrel frog		SC

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
Littorella uniflora	American shore-grass		SC
Microtus pinetorum	Woodland vole		SC
Mimulus michiganensis	Michigan monkey flower	LE	E
Myotis lucifugus	Little brown bat		SC
Myotis septentrionalis	Northern long-eared bat	LT	SC
Necturus maculosus	Mudpuppy		SC
Nycticorax nycticorax	Black-crowned night-heron		SC
Opheodrys vernalis	Smooth green snake		SC
Orobanche fasciculata	Broomrape		T
Pandion haliaetus	Osprey		SC
Papaipema aweme	Aweme borer		SC
Physella magnalacustris	Great Lakes physa		SC
Pinguicula vulgaris	Butterwort		SC
Pisidium idahoense	Giant northern pea clam		SC
Planogyra asteriscus	Eastern flat-whorl		SC
Potamogeton hillii	Hill's pondweed		T
Pupilla muscorum	Widespread column		SC
Pyganodon lacustris	Lake floater		SC
Ranunculus cymbalaria	Seaside crowfoot		T
Schoenoplectus torreyi	Torrey's bulrush		SC
Solidago houghtonii	Houghton's goldenrod	LT	T
Somatochlora hineana	Hine's emerald dragonfly	LE	E
Stagnicola contracta	Deepwater pondsnail		E
Stagnicola woodruffi	Coldwater pondsnail		SC
Stellaria longipes	Stitchwort		SC
Sterna hirundo	Common tern		T
Tanacetum huronense	Lake Huron tansy		T
Trimerotropis huroniana	Lake Huron locust		T
Vertigo elatior	Tapered vertigo		SC

Source: Michigan Natural Features Inventory, January 2023



In order from left: Bald eagles (species of concern), common loons (threatened), and osprey (species of concern) can be regularly seen on the Island.

Photo Credit: Tom Hawkins

## LEVERAGING NATURAL RESOURCES

The Island's many natural resources described in this chapter are used to support the Island economically. Hiking, fishing, kayaking, botany and birding are all increasingly popular activities on the Island and in the State of Michigan overall. For more on ways that the Island is working to benefit from its natural resources in a sustainable way, see Chapter 5. Chapter 6 contains a list of recommendations and actions the community is taking to better preserve and maximize the benefits that natural resources yield to the Island economy.

Ash trees, like the one pictured below, are becoming increasingly rare on the mainland due to infestations of the Emerald Ash Borer pest. Yet, due to its remoteness, the Island has an opportunity to protect and preserve this beautiful tree.



## PROTECTING NATIVE SPECIES

Beaver Island and the Archipelago have a rare opportunity to protect native species. Islands act as a refuge for native plants and animals, as invasive pests and diseases have more difficulty accessing these locations. The Emerald Ash Borer (EAB) is one example. This pest has eradicated many if not all of the ash trees in the Lower Peninsula of Michigan. EAB was first detected in 2017 after a decade of monitoring. Islanders have worked with the USDA's Animal and Plant Health Inspection Service (APHIS) to release EAB parasitoids on Beaver and Garden Islands as a bio-control effort to preserve the ash on the islands.

The Archipelago's ability to protect rare and native species may represent a unique opportunity for the Beaver Island community to save and preserve Michigan's natural gems, like the ash tree. This unique opportunity was mentioned time and again during the public process for this Master Plan. For ideas and recommendations on invasive species monitoring and native species protection, see Chapter 6.

## DARK SKY

Beaver Island is the most remote inhabited island on the Great Lakes. The Island's location in Lake Michigan, approximately 32 miles (51 km) off the Charlevoix, Michigan coastline, allows for a unique dark sky viewing experience. Many constellations, planets, the Milky Way, meteorite showers, Aurora Borealis and comets can be seen with the naked eye or with the aid of telescope or camera. Sky Quality Meter readings (SQM) evidence a Night Sky Quality (the measurement of how dark a place is) average between 21 and 21.6 out of 22.0 on any given night according to conditions. To preserve and protect the dark skies, the Dark Sky Project was formed under the Beaver Island Association. The Dark Sky Project has been working with the International Dark Sky Association (IDA) to have a portion of the Island designated an International Dark Sky Sanctuary by the IDA. Chapter 5 contains information regarding astrotourism, while Chapter 6 contains recommendations from the Dark Sky Project regarding dark sky preservation and protection. Both Townships have approved an IDA Management Plan.

## ENVIRONMENTAL CHALLENGES: LOOKING TO THE FUTURE

One aspect of resiliency is preparing for future changes and new conditions. To be ready for future changes in the environment, Beaver Island will need to employ adaptive management strategies to ensure the long-term viability of ecological resources on Beaver Island and the Archipelago. During the planning process, one stakeholder noted that on an island, ecosystems must evolve, as opposed to migrate. While in other parts of Michigan climate experts expect to see the southern reaches of certain species shift north over time, island ecosystems do not have that option. The following section identifies the changes occurring in the natural environment due to climate variability and describes several potential impacts to natural resources that Beaver Island should monitor and respond to.

### WHAT IS CHANGING IN THE NATURAL ENVIRONMENT?

The Great Lakes Integrated Sciences + Assessments Center (GLISA) is a consortium of scientists and educators from the University of Michigan and Michigan State University that is funded by the National Oceanic and Atmospheric Administration (NOAA). GLISA provides climate information and resources for communities across the Great Lakes region. According to GLISA, the Great Lakes region has already experienced a 2.3° F increase in average temperatures since the 1900s. An additional increase of 1.8 to 5.4° F in average temperatures is projected by 2050. Although these numbers are relatively small, they are driving very dramatic changes in Michigan.

Based on the most recent regional climate change maps that are found on GLISA's website, the climate of Northwest Lower Michigan will continue to warm, with greater increases in average temperatures during the winter months and at night. There are a variety of weather impacts expected with this change in average temperatures. Some of the potential impacts relevant to Beaver Island include:

1. Storms are expected to become more frequent and more severe.
2. Increases in winter and spring precipitation.
3. Less precipitation as snow and more as rain.
4. Less winter ice on Lake Michigan and inland lakes.
5. More flooding events with risks of erosion.
6. Increases in frequency and length of severe heat events.
7. Increased risk of drought and wildfire.

One of the goals of this Master Plan is to protect the beautiful night skies from light pollution. Photo Credit: Cynthia Hector



**“The night sky is phenomenal (where no night lights are on); also our clean air and clean water, our breathtaking natural areas with wildlife, trees, birds, fish; our clean sandy and rocky beaches with wildflowers--some rare--all beautiful--our sand dunes, our boulders left by the glaciers...all of these natural features are Beaver Island’s greatest treasures to be enjoyed, cherished, protected. We who live here are fortunate indeed!**

**Beaver Island Resident**

## EXTREME COLD EVENTS

While average temperatures are rising in the State of Michigan, it is also likely that extreme cold events will continue in parts of the Upper Peninsula and northwest Lower Peninsula. In the winters of 2019 and 2021, communities in the northwest part of the Lower Peninsula experienced extreme cold waves in late January/early February that brought temperatures down as low as minus-13 degrees! Many climate researchers believe this was due to a sustained change in the jetstream that allowed cold, polar air to travel farther south. Some researchers believe this trend may reoccur in the state due to changes to the ice mass in the Arctic, despite an overall rise in temperature.



## WHAT DO THESE CHANGES MEAN FOR BEAVER ISLAND'S NATURAL ENVIRONMENT?

The following section identifies several ways that climate change on to Beaver Island and the surrounding Archipelago is resulting or will result in economic, recreational, or other challenges. This topic is woven into a number of chapters in the Master Plan, and the following section is intended to be a short overview.

### **MORE EXTREMES**

While extreme storms are nothing new in northwest Lower Michigan, both the rate and severity of extreme storms have already increased and are likely to continue to increase in the region. This change in storm patterns may result in quickly changing temperatures, precipitation and water levels of Beaver Island and the Archipelago. Extreme rainstorms followed by freezing temperatures, for example, have the potential to cause serious damage to pavement and infrastructure. Loss of electricity may occur more frequently, which places vulnerable and isolated populations at increased risk during a storm. For natural resources, extremes in temperatures, precipitation and water levels can damage coastal wetlands, harm already vulnerable animals and plants, and create an environment for invasive species to thrive. According to one Central Michigan University (CMU) researcher, the extreme water level changes have already resulted in an overall loss of coastal wetlands within Beaver Island and the Archipelago.

### **INVASIVE SPECIES**

Invasive aquatic species, like the zebra mussel and the quagga mussel, are able to proliferate in Lake Michigan as water temperatures rise. This could damage the spawning grounds for fish and cause irreparable changes up the food chain to the animals that compete for food (plankton) with these mussels. Invasive plant species (mentioned earlier in this chapter) are also likely to find more suitable conditions as temperatures warm on Beaver Island and the Archipelago.

### **WHITEFISH**

Small changes in the chemistry and temperatures of the Great Lakes have big impacts on fisheries. As noted by CMU Biological Station Director Don Uzarski, the observed 2-3° F warming in Lake Michigan has already resulted in a notable decline of the whitefish population. Staff at the Little Traverse Bay Bands of Odawa Indians confirm that fishing yields of whitefish for the tribes are significantly down.

### **WILDFIRE**

As periods of drought and high temperatures increase due to climate variability, chances of severe wildfires increase. Islands by their very nature are more limited when it comes to emergency response, with greater response times and more difficult mobilizations the norm. Even the DNR's routine management of brush removal is more difficult on the islands.

## CULTURAL RESOURCES

### A CULTURALLY RICH ARCHIPELAGO

Beaver Island and the Archipelago are home to a rich array of significant cultural and historic resources. Some of these resources are natural, as opposed to manmade. Others are remnants of past Native American settlements and sacred sites. The Michigan State Historic Preservation Office (SHPO) has cataloged some significant and cultural resources on the Island, but many private property owners are unaware of what may be on their property. Currently, a total of 141 sites are recorded with the Office of the State Archaeologist (as of July 2016) that are associated with the Beaver Island Archipelago. Of the 141 sites, 123 are classified as originating during the historic period, while 18 are considered prehistoric. The data on the resources is public, although exact locations are not documented in an effort to prevent the misuse of information. Map 2.8 shows that most of the Island has potential for archaeological features, according to the State of Michigan.

The Little Traverse Bay Bands of Odawa Indians (LTBB) Tribal Historic Preservation Office (THPO) is particularly interested in identifying the cultural resources relevant to the Archipelago's tribal history. Currently, LTBB is working to identify the historic and cultural resources that are adjacent to public lands as a way to leverage these assets for public benefit. One strategy LTBB is exploring is a partnership with the Little Traverse Conservancy and others to enact voluntary easements for important cultural resources currently located on private property. This would allow tribal members access to sacred sites for occasional ceremonies, ensure the sites are protected in perpetuity, and provide tax incentives for private property owners. LTBB is also looking to create an endowment that can be used to purchase the development rights of sacred sites on Beaver Island and other islands within the Archipelago.

### EXAMPLES OF CULTURAL RESOURCES

Many of the Archipelago's cultural resources are linked to its tribal history. Cultural resources can also be natural resources (such as sweet grass, which is considered a sacred plant used in ceremonies and medicine, or black ash trees, which were used in traditional basket making). Historic structures and the locations of past settlements, like fishing villages or farms, are also important to preserve and protect as part of the Archipelago's heritage. In managing these important cultural resources, collaborations between tribal and non-tribal groups are essential to both identifying and preserving the cultural assets of the Archipelago.

### THE SOUTH END LIGHTHOUSE

Many Islanders voiced concerns for the preservation and care of the Beaver Island Lighthouse at the south end of the Island during the Master Planning process. The lighthouse was built in 1851 and operated well into the 1950s, helping countless ships navigate the treacherous waters of Lake Michigan. The lighthouse also served as a hunting lodge, and most recently as part of the Beaver Island Lighthouse School, a program run by Charlevoix Public Schools for troubled teens. The campus includes a number of facilities near the lighthouse including tent structures, a wood shop, and several cabins. Unfortunately, the school announced its closure in 2016 due to inadequate funding caused by changes in federal legislation. The lighthouse was sold in 2018 to the county, which has a 51% ownership interest, and Networks Northwest, with a 49% ownership interest. The Beaver Island Historical Society is the community liaison and has helped organize work on the property, including a Historic Preservation Field School that will continue through 2025.

### ARCHAEOLOGICAL, HISTORICAL AND CULTURAL FEATURES ON STATE LAND

The Archipelago and the surrounding bottomlands contain cultural sites representing thousands of years of area history. Native Americans occupied the islands for millennia before European missionaries, traders, trappers and settlers arrived. All left their mark on the landscape as observed in descendant histories, archaeological sites, architecture, shipwrecks and more. Island cultural resources, including natural features important to traditional Anishinaabek culture, remain an important part of island life and collaborative stewardship today.

Most state-owned lands within Beaver Island and the Archipelago have not yet been surveyed for cultural resources. Surveys to identify cultural resources should be considered prior to the initiation of proposed ground-disturbing projects. Cultural resources on state-owned lands and bottomlands are protected by law and are stewarded by the DNR on behalf of all citizens.



The Beaver Island Lighthouse in 1930 and today. Photos Courtesy of the US Coast Guard (left) and Networks Northwest. The 1906 net shed (below) with its original siding made from Island cedar, now houses many historical artifacts in the Island's Marine Museum operated by the Beaver Island Historical Society.



A diverse network of organizations is required to manage the Archipelago's vast number of environmental and cultural resources. When organizations are able to coordinate management of natural areas with the public's interest in mind, a community is able to better respond to challenges and changes in the natural environment.

## MANAGING NATURAL RESOURCES

Many groups and agencies are collaborating to protect the diverse natural resources within Beaver Island and the Archipelago, each with a strong presence on Beaver Island and a unique role in fostering healthy ecosystems.

### MICHIGAN DEPARTMENT OF NATURAL RESOURCES

The Michigan Department of Natural Resources (DNR) owns approximately 12,400 acres of land on Beaver Island, or about one-third of the total area, along with several other islands within the Archipelago (see Chapter 4 for more discussion of land ownership). The DNR recognizes the important role the State can play in helping communities manage their natural resources to promote economic and community development while still fostering high-quality natural resources. Consequently, the DNR takes a collaborative approach to manage its land on Beaver Island and the Archipelago.

### NORTHERN LAKE MICHIGAN ISLANDS COLLABORATIVE

The Northern Lake Michigan Islands Collaborative meets regularly to address a wide range of management efforts, from protection of ecological function and strict limitation of activities to the development of opportunities for recreational activities. The DNR, which administers state-owned land throughout Beaver Island and the Archipelago under its Wildlife Division, recognized the need to formulate a unique approach for providing effective management of natural and cultural resources on the islands. The DNR chose a collaborative approach to implement the 2013 Managed Public Land Strategy. The Strategy provided a broad framework for the continued conservation, use and enjoyment of these lands that was congruent with the DNR's goals of protecting cultural and natural resources, providing recreational opportunities, and fostering economic prosperity. Also in 2013, the Recommendations for Natural Resource Management in the Beaver Island Archipelago was adopted by both Island townships to recognize the link between the unique natural and cultural resources and the wellbeing of island residents and visitors. This recognition was manifested in goals that call for effective management of the Archipelago's natural resources, economic vitality and growth that results from effective management, and how education and outreach focused on unique natural, historical, and cultural resources can lead to greater appreciation and protection of those resources. The DNR formed a network of local and tribal governments, regional non-profits, island organizations, and interested stakeholders to meet and implement the DNR's management plan. The management plan adopted by the DNR in 2017 is known as

the Management Plan for State-owned Lands on Northern Lake Michigan Islands.

### TRIBAL GOVERNANCE

The Little Traverse Bay Bands of Odawa Indians (LTBB) and the Grand Traverse Band of Ottawa and Chippewa Indians (GTB) both have a long history on and constitutional rights to Beaver Island and the Archipelago. Important tribal resources are managed by multiple departments of each Tribal government. Many of these resources have strong connections to the natural environment.

### CENTRAL MICHIGAN UNIVERSITY

Beaver Island is home to the Central Michigan University (CMU) Biological Station. The CMU Biological station manages two facilities on the Island, owns a number of acres, and conducts a variety of research focused on the water resources and ecological systems on the Island. CMU brings in students and staff to explore and study the islands through summer programming. Data collected on the islands are published in a number of studies and reports by CMU scientists, including studies of the inland lakes, coastal wetlands, and nearshore waters.

### LITTLE TRAVERSE CONSERVANCY

The Little Traverse Conservancy (LTC) manages seven public nature preserves on the Island. The preserves are open to birders and hikers, and LTC has worked with the DNR and other groups to secure conservation easements on many acres of privately-owned land on the Island. A conservation easement is a voluntary legal agreement between a landowner and a qualified organization in which a landowner agrees to permanently protect the natural environment. Sometimes an easement prohibits new construction, the removal of vegetation, or other changes from occurring on the land.

### VOLUNTEER ORGANIZATIONS AND OTHER GROUPS

In addition to the governmental agencies and NGOs cited above, residents of Beaver Island are deeply committed to fostering high-quality natural resources in a sustainable manner. A variety of formal and informal Island groups volunteer regularly to protect and enhance natural resources on the Island. A few examples include the Wildlife Club, the Beaver Island Association, the Beaver Island Archipelago Trails Association, and the Preservation Association of Beaver Island.

## MAPS IN THIS CHAPTER

The maps for this chapter are included on the following pages. This page provides a brief description of each map, while data sources and other information can be found on each map.

### MAPS 2.1 BARRIER DUNES

These maps show the areas on Beaver Island and the Archipelago designated as barrier dunes by the State of Michigan.



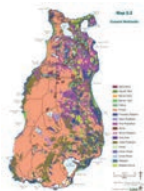
### MAPS 2.6 SOIL PERCENT SLOPE

These maps show the areas on Beaver Island and the Archipelago where soils have a relatively high percent slope.



### MAPS 2.2 COASTAL WETLANDS

These maps show coastal wetlands by scientific type on Beaver Island and the Archipelago. The types were determined by vegetation by Michigan Technological Research Institute.



### MAPS 2.7 DIGITAL ELEVATION MODEL

These maps show the elevation of the land on Beaver Island and the Archipelago.



### MAPS 2.3 INLAND LAKES AND STREAMS

These maps show the location and names of the lakes and major streams on Beaver Island and the Archipelago.



### MAP 2.8 POTENTIAL FOR ARCHAEOLOGICAL FEATURES

This map shows areas on Beaver Island that have a high likelihood of containing archaeological features.



### MAPS 2.4 WETLANDS AND POTENTIAL WETLAND RESTORATION AREAS

These maps show the types of wetlands on Beaver Island and the Archipelago and indicate areas where wetlands might be restored.



### MAP 2.9 POPULATION 65 YEARS AND OLDER

This map shows the relative concentration of older adults in the community by Census Block.



### MAPS 2.5 SOIL ASSOCIATIONS

These maps show the main soil associations on Beaver Island and the Archipelago.



### MAP 2.10 PEOPLE LIVING ALONE

This map shows the concentrations of people living alone.





**MAP 2.11 NON-WHITE POPULATION**

This map shows the relative percentages of non-white populations in the community.



**MAP 2.12 HOUSEHOLDS LIVING BELOW POVERTY THRESHOLD**

This map shows the percentage of households living below the poverty threshold in the community.



**MAP 2.13 POPULATION WITH LESS THAN HIGH SCHOOL EDUCATION**

This map shows the relative percent of persons 25 years and older with less than a high school education in the community.



**MAP 2.14 SENSITIVITY TO EXTREME HEAT EVENTS**

This map shows the locations where the highest percentages of at-risk residents live with regard to heat sensitivity and exposure.



**MAP 2.15 IMPERVIOUS SURFACE**

This map shows the amount of impervious surfaces in the community.



**MAP 2.16 TREE CANOPY**

This map shows the relative density of the tree canopy.



**MAP 2.17 POTENTIAL FLOODING EXPOSURES**

This map shows the areas that are at a higher risk of flooding.



**MAP 2.18 CLIMATE FUTURES**

This map shows the estimated land areas in the Archipelago that would be affected by waves and flooding under various climate futures.



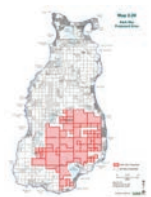
**MAP 2.19 CLIMATE FUTURES AND EXISTING BUILDING FOOTPRINTS**

This map shows the estimated land areas that would be affected by waves and flooding under various climate futures with building footprints.

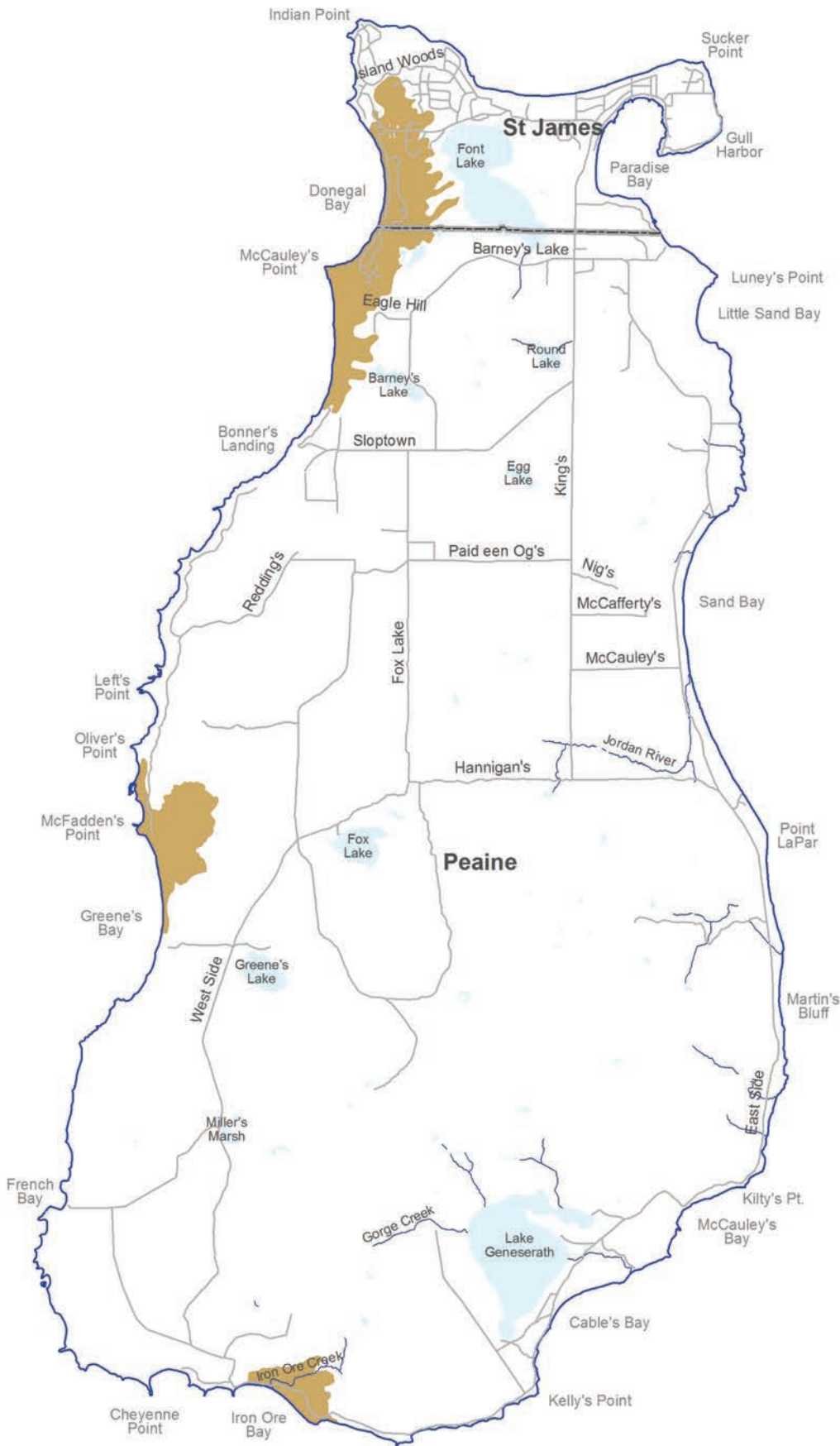


**MAP 2.20 DARK SKIES**

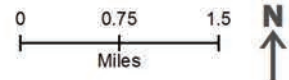
This map shows the proposed Dark Sky Sanctuary Wildlife Research Area at Beaver Island (DSSWRABI).



# Map 2.1 Barrier Dunes



Barrier dunes

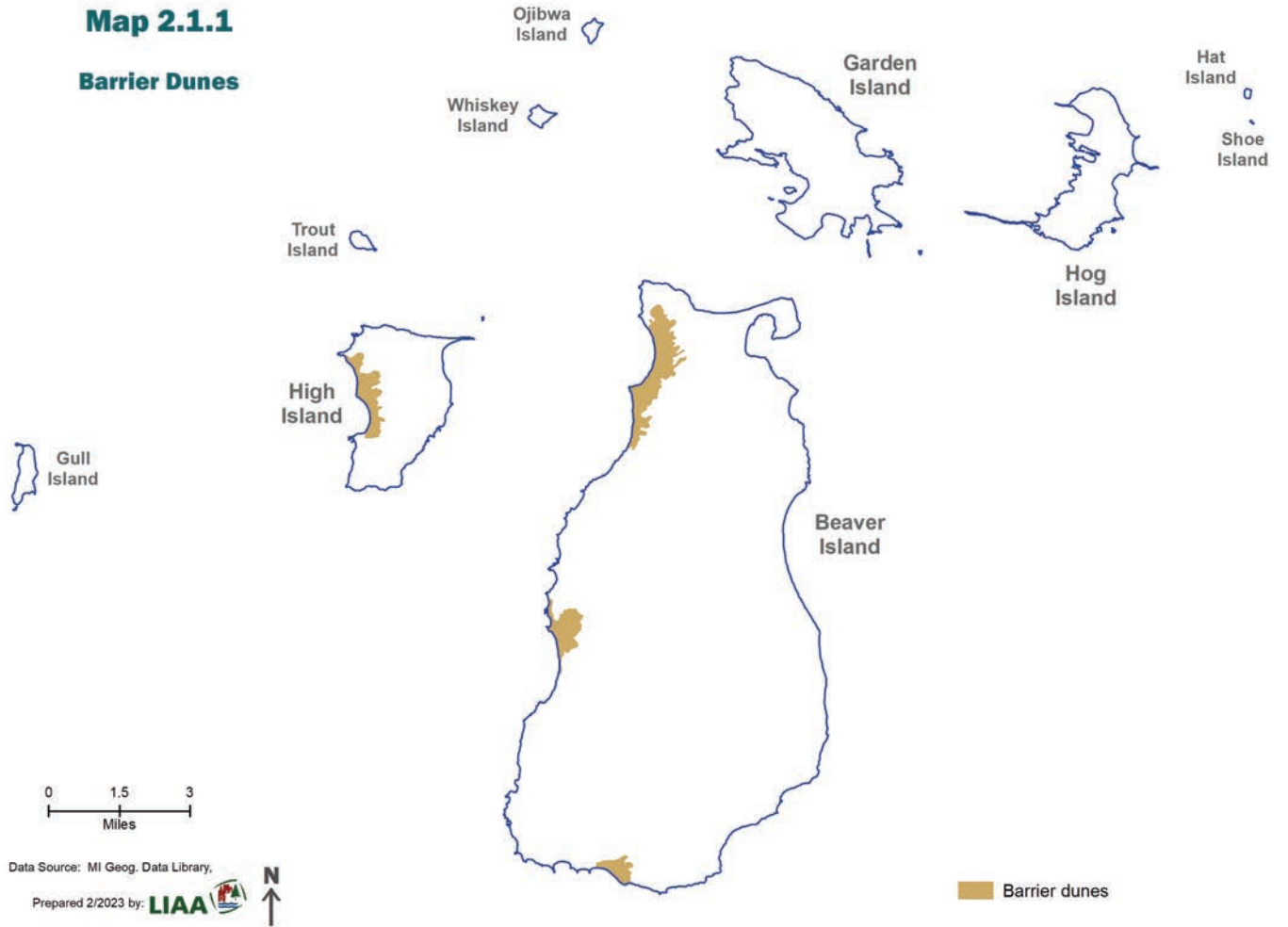


Data Source: MI Geog. Data Library

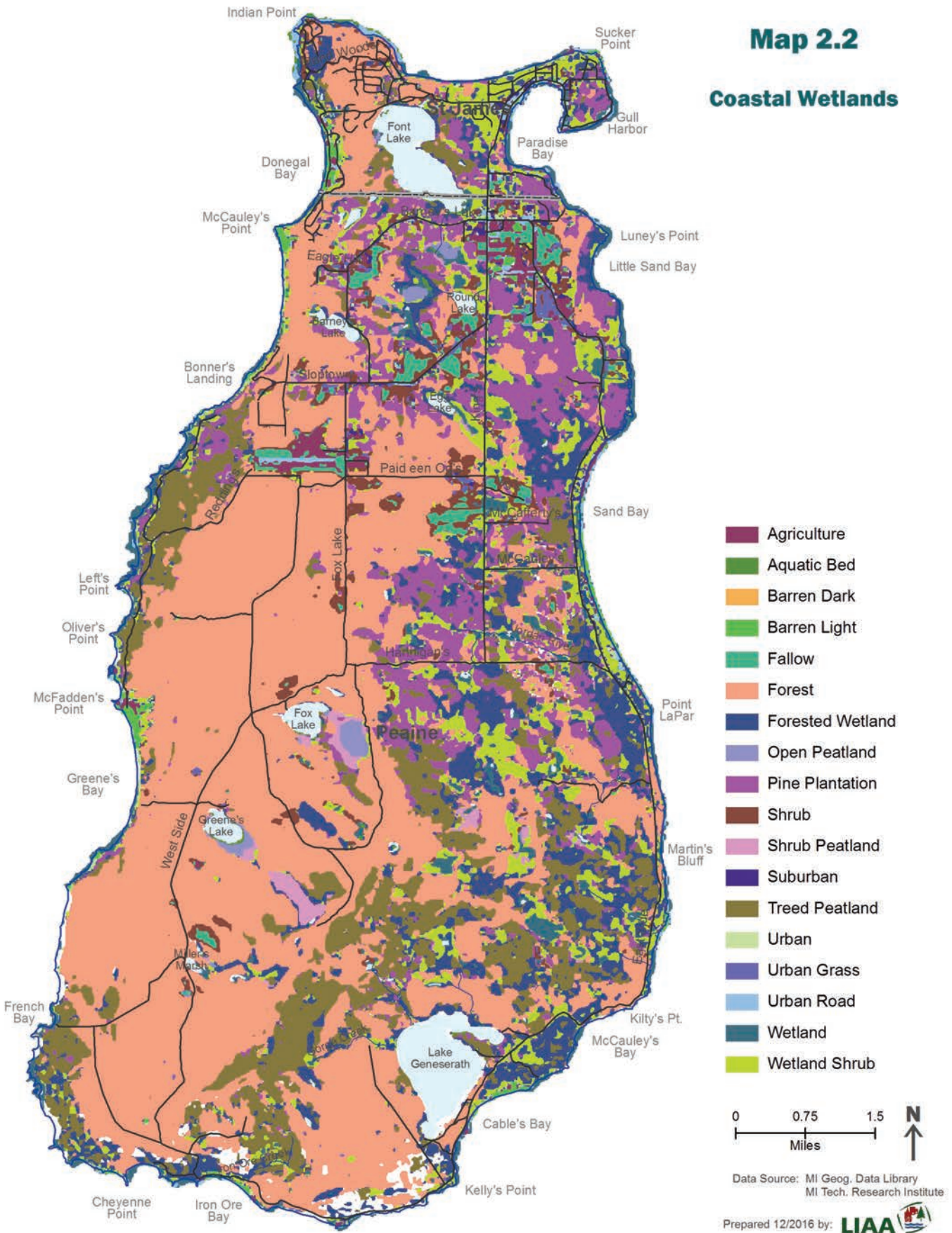
Prepared 12/2016 by: **LIAA**

### Map 2.1.1

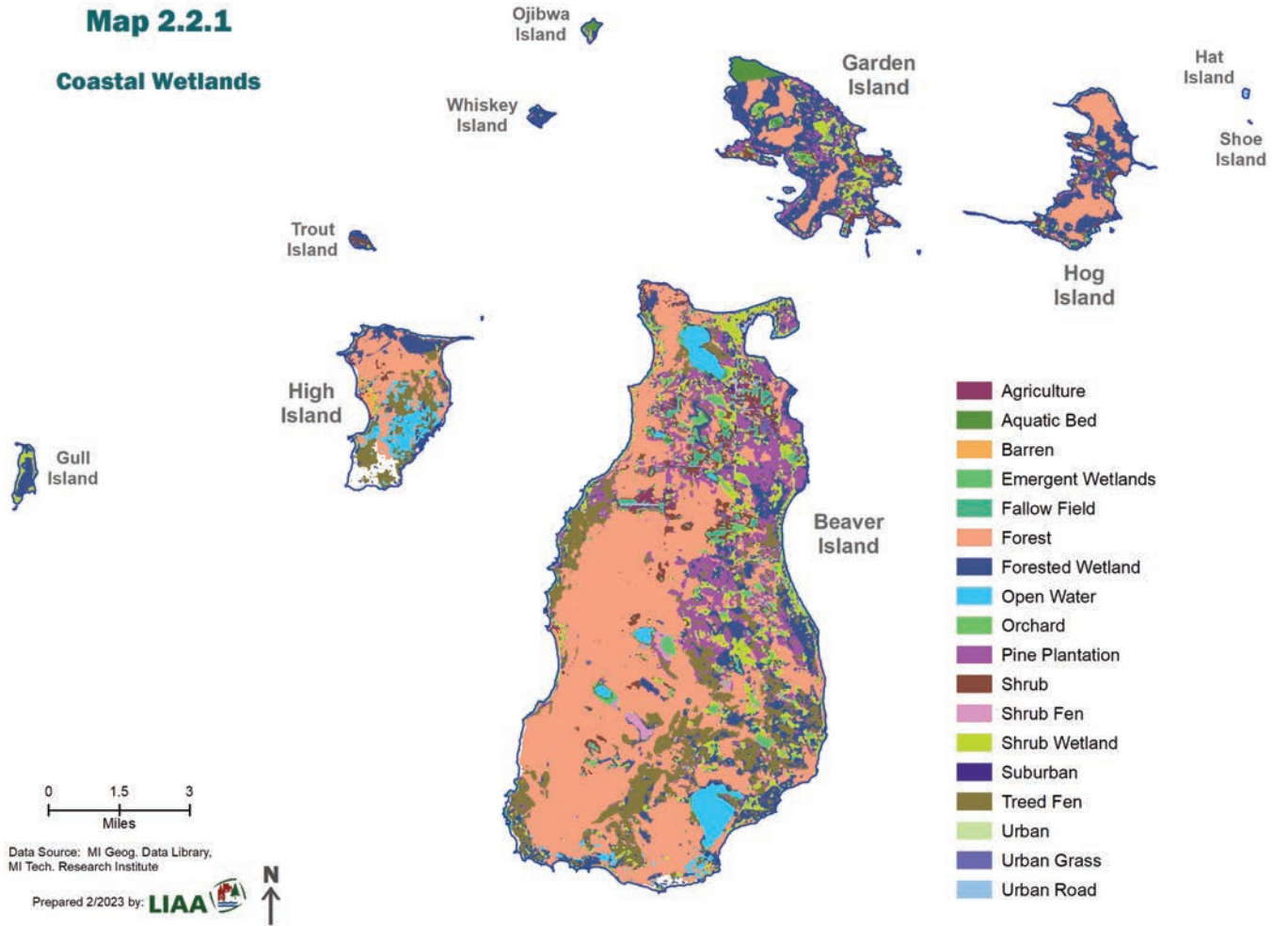
#### Barrier Dunes



**Map 2.2**  
**Coastal Wetlands**

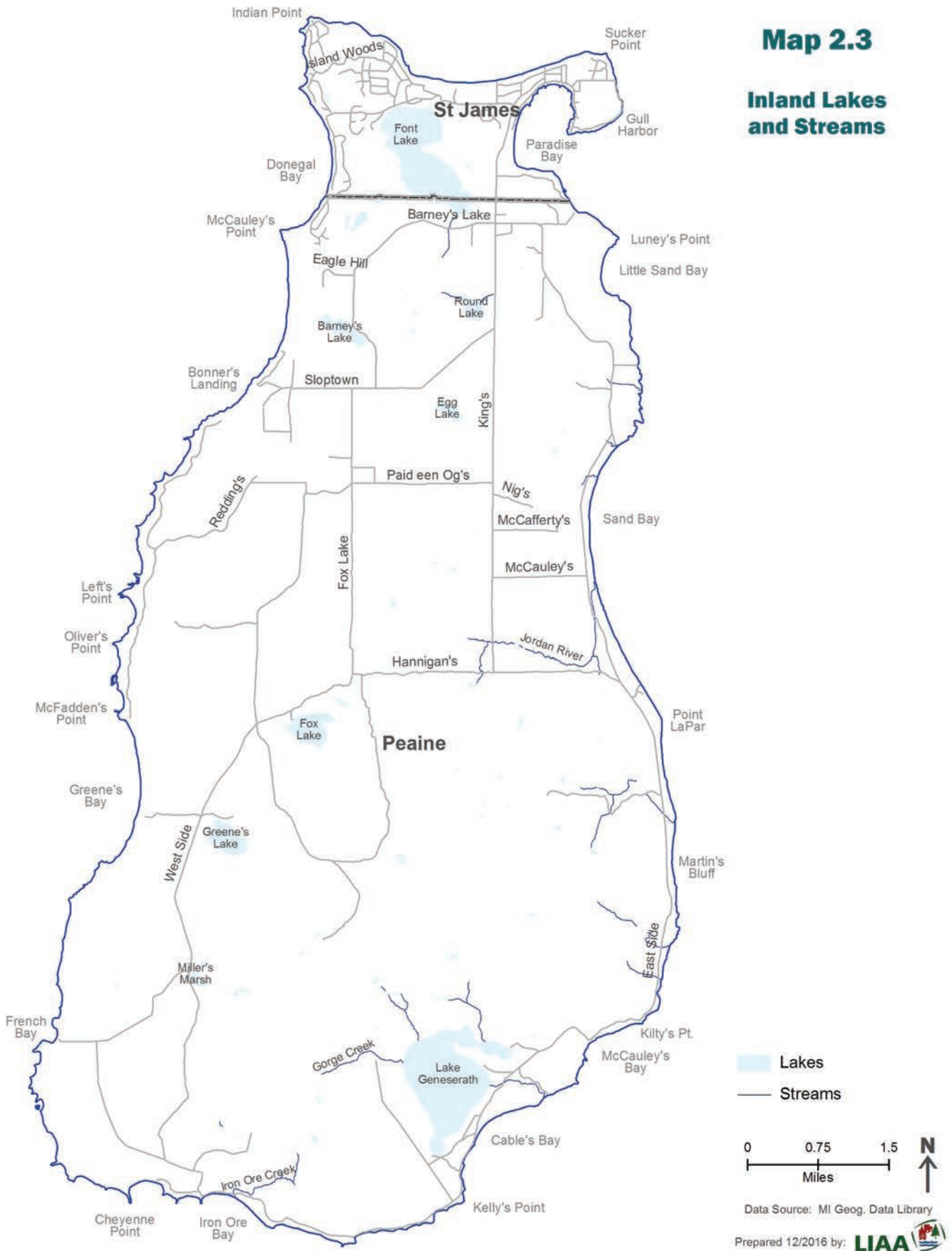


**Map 2.2.1**  
**Coastal Wetlands**



## Map 2.3

### Inland Lakes and Streams



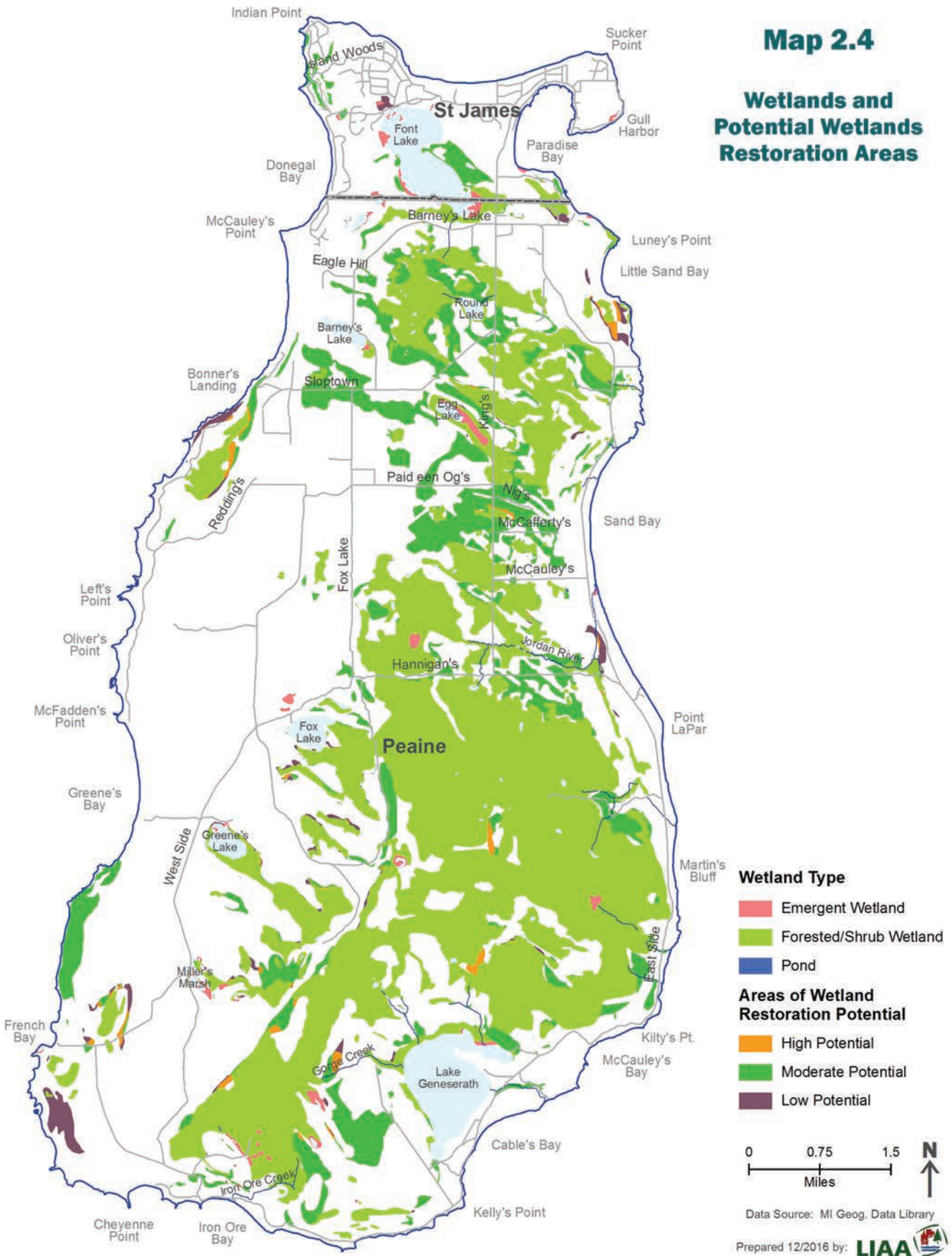
### Map 2.3.1

#### Inland Lakes and Streams

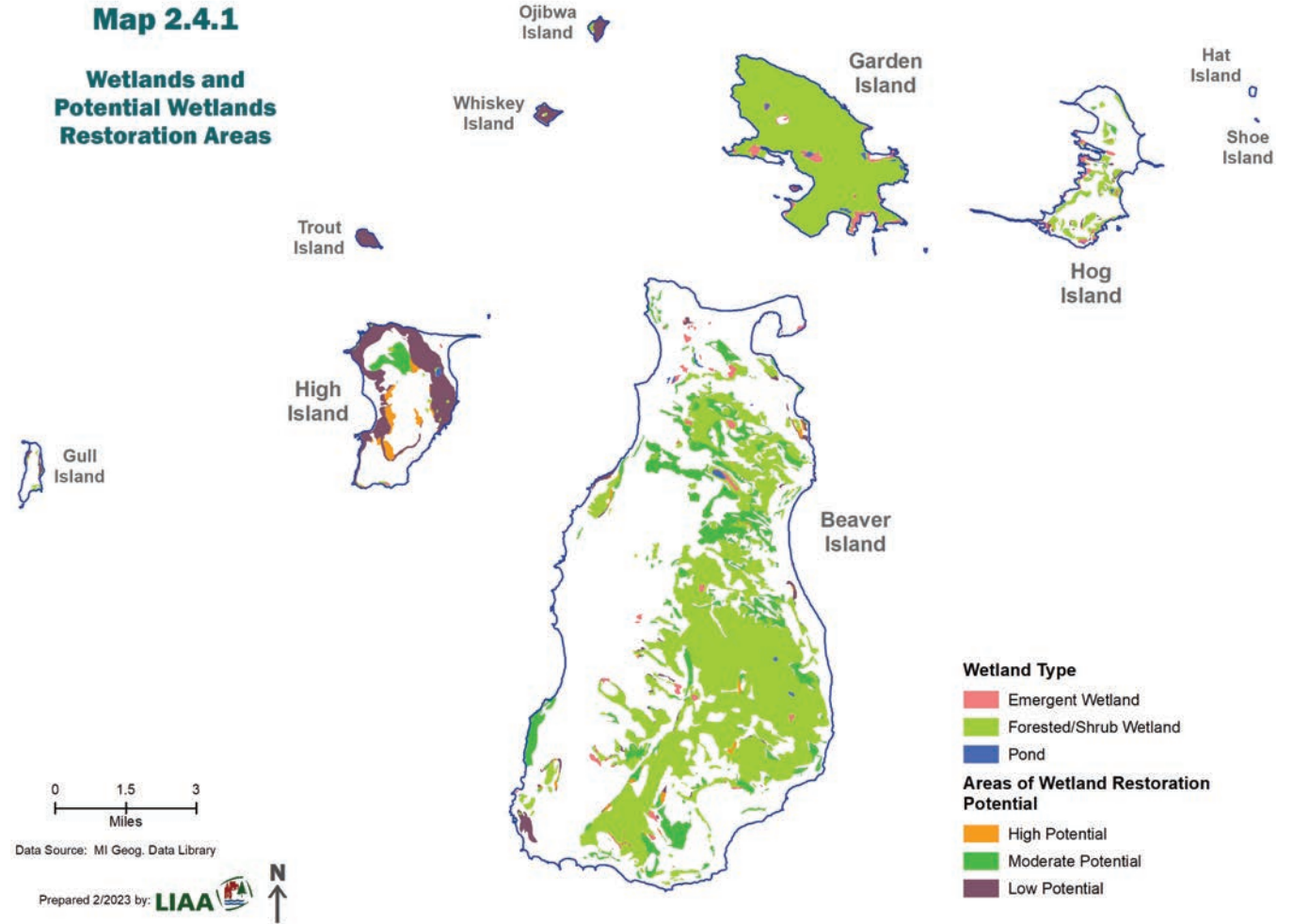


## Map 2.4

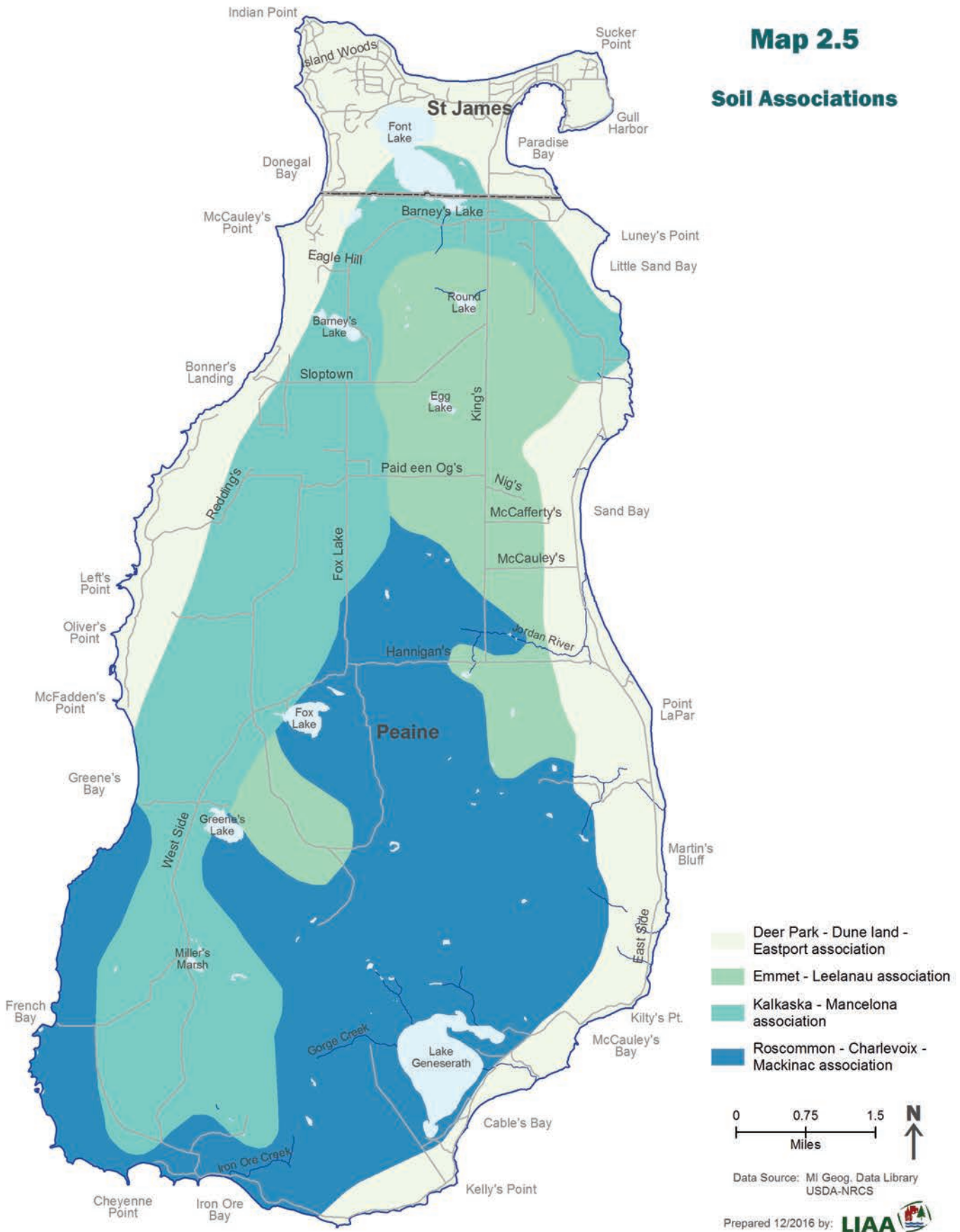
### Wetlands and Potential Wetlands Restoration Areas



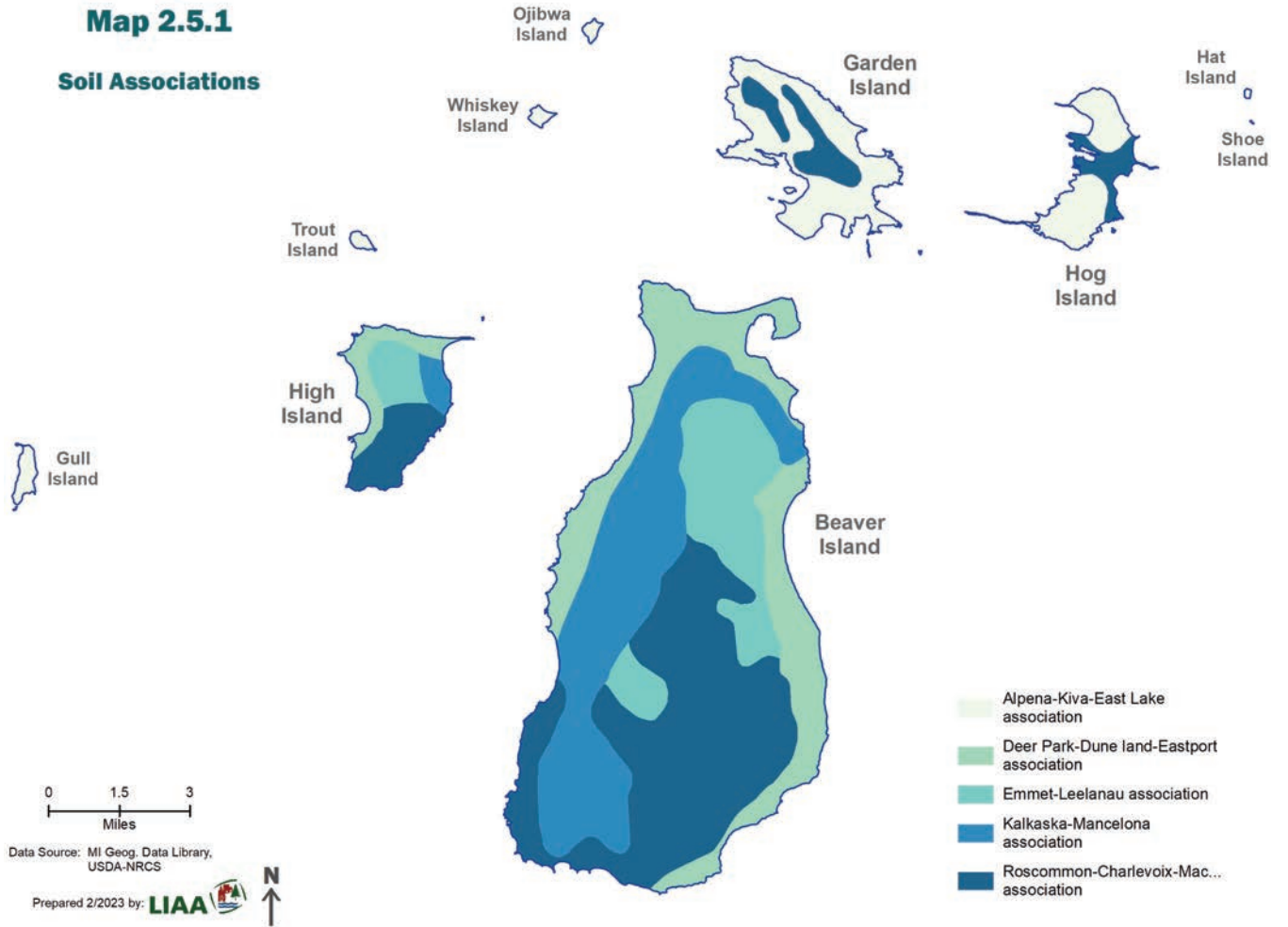




## Map 2.5 Soil Associations

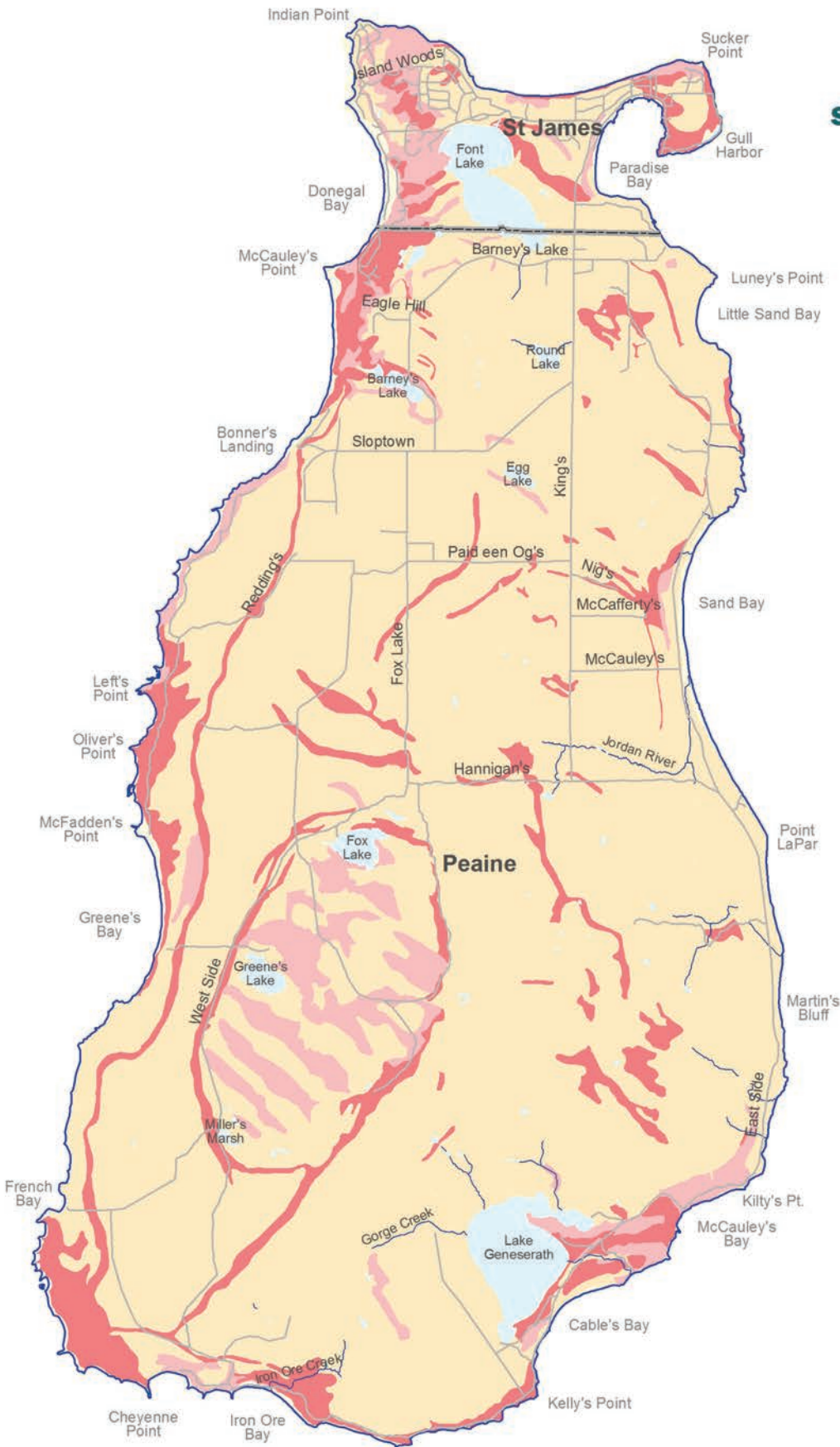


**Map 2.5.1**  
**Soil Associations**



### Map 2.6

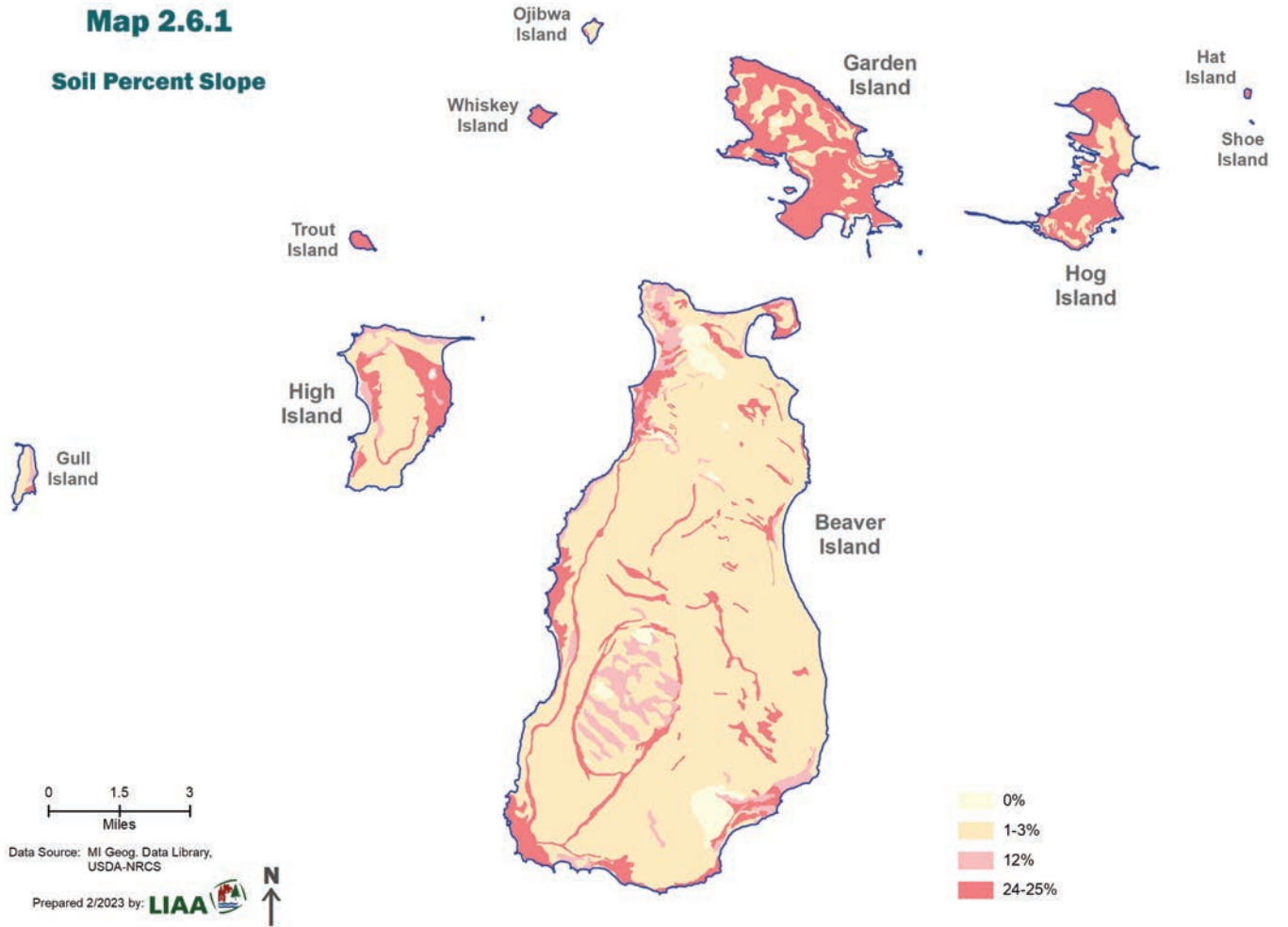
### Soil Percent Slope



Data Source: MI Geog. Data Library  
USDA-NRCS

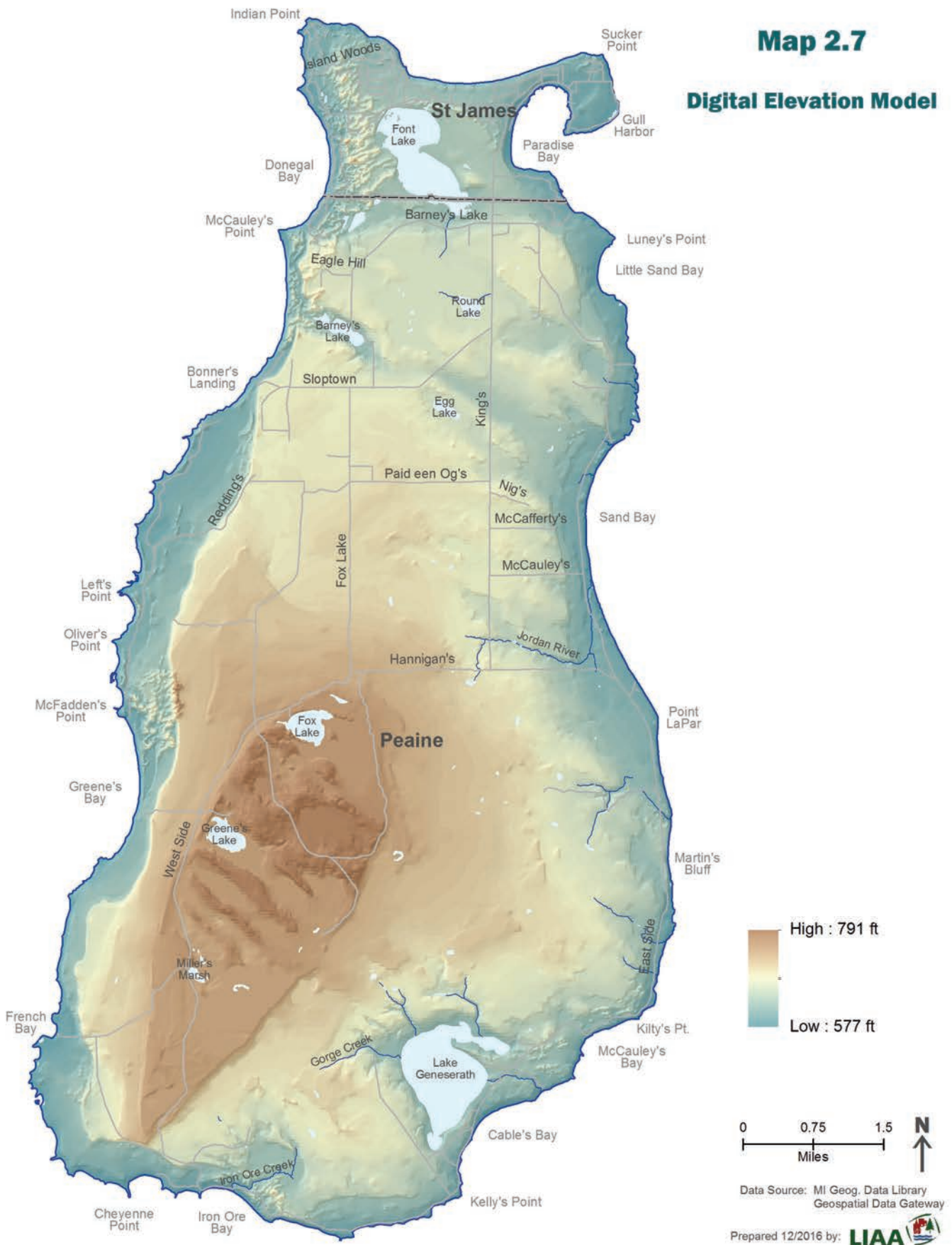
Prepared 12/2016 by: **LIAA**

**Map 2.6.1**  
**Soil Percent Slope**

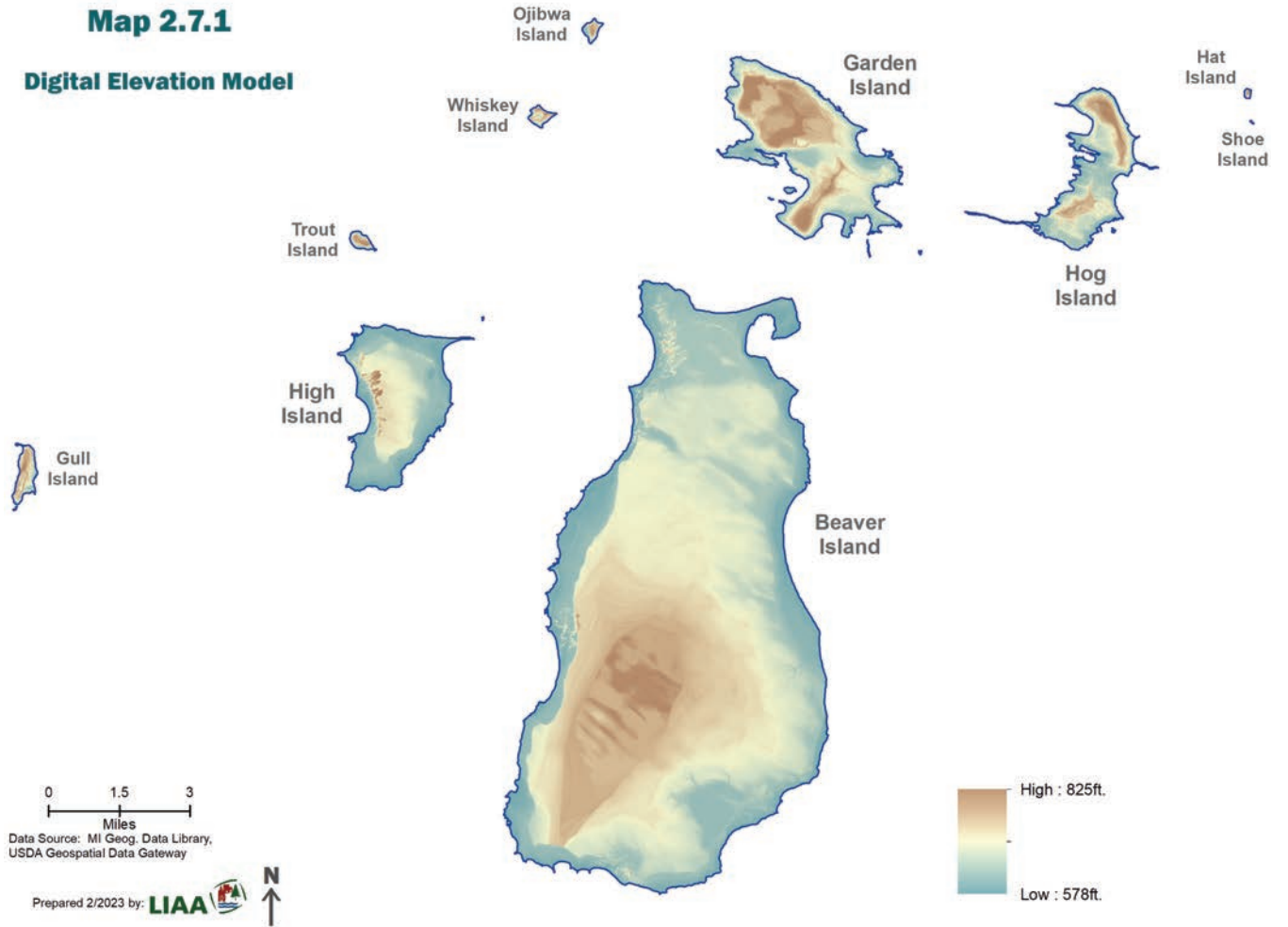


### Map 2.7

### Digital Elevation Model

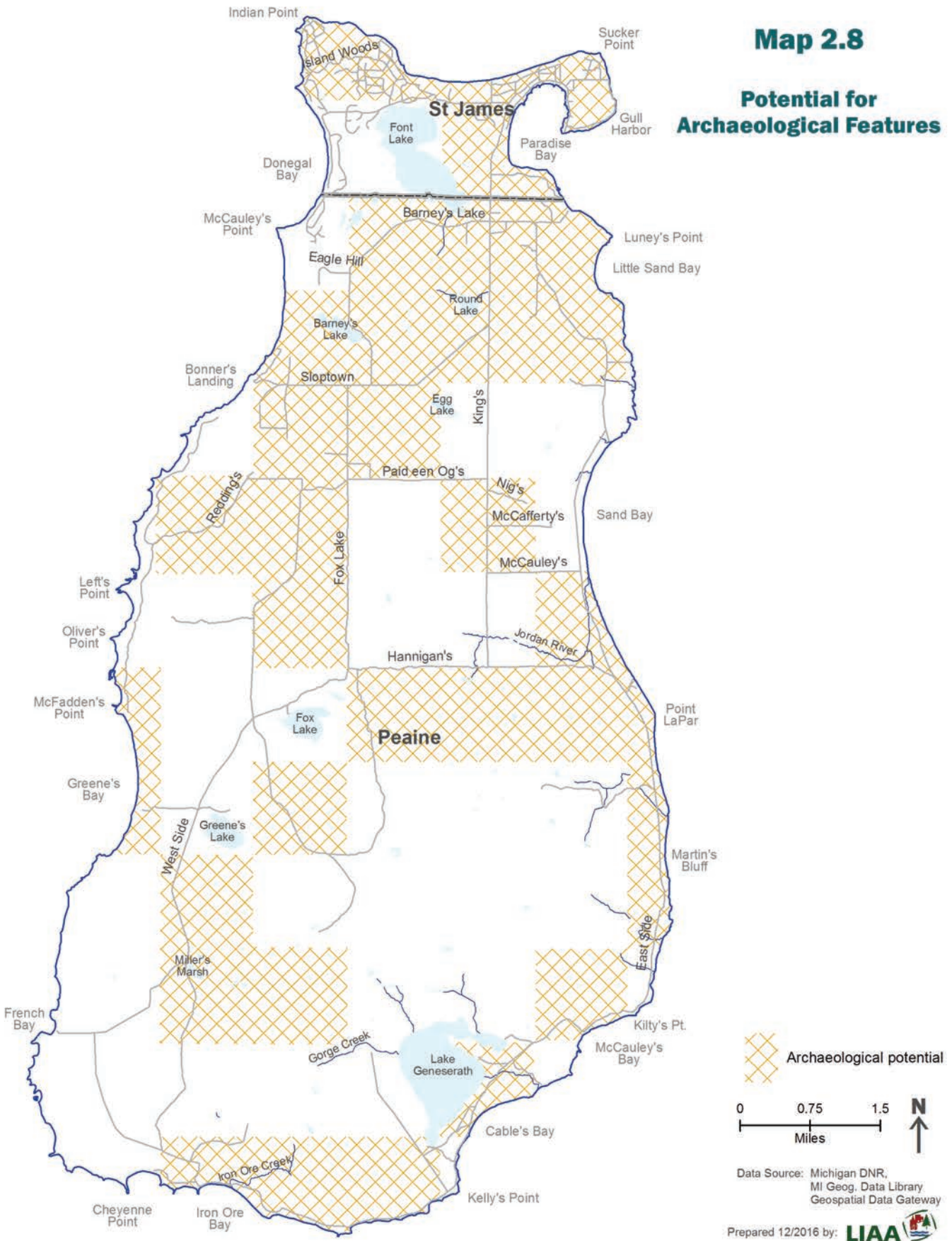


**Map 2.7.1**  
**Digital Elevation Model**



## Map 2.8

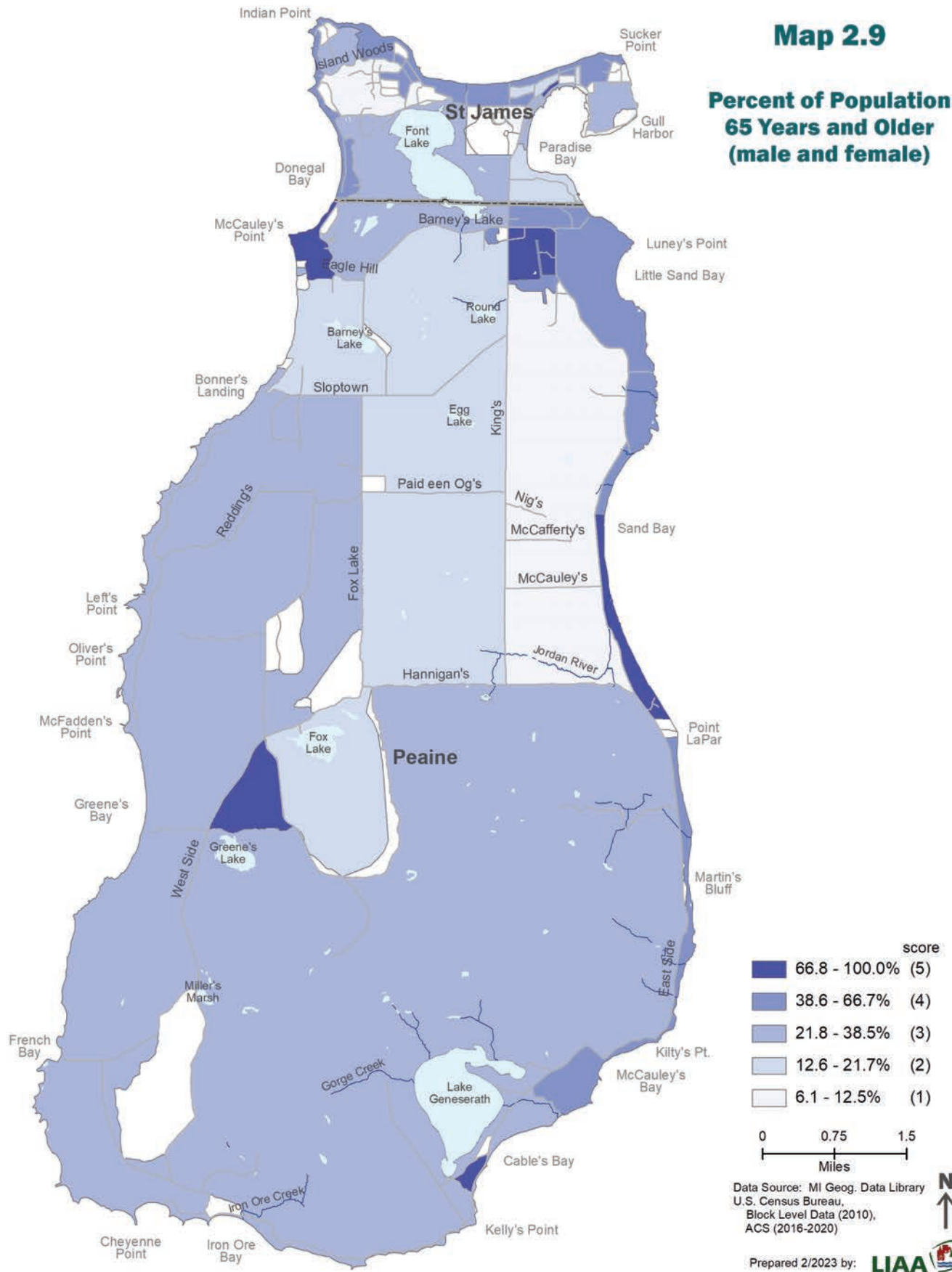
### Potential for Archaeological Features





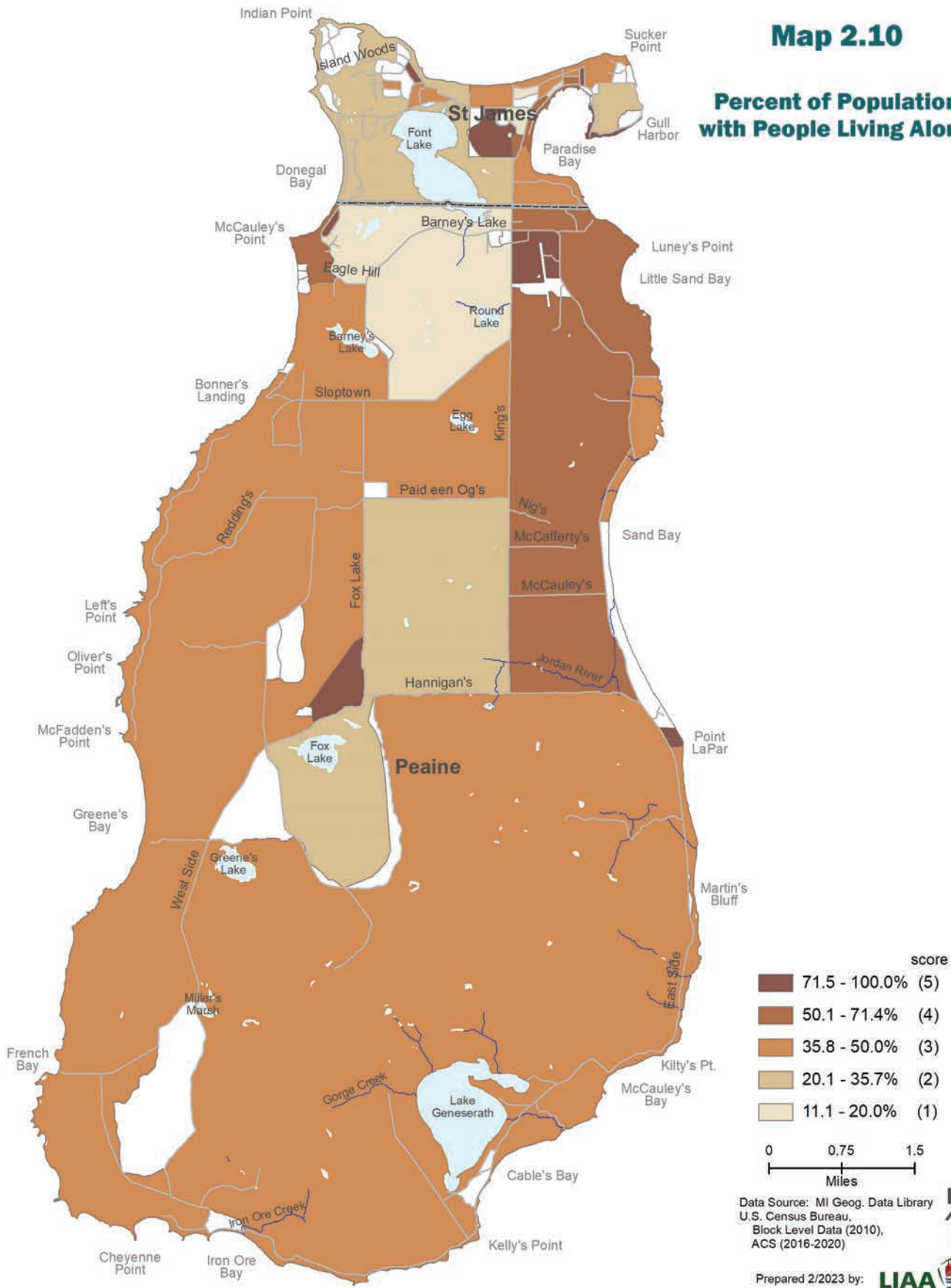
### Map 2.9

### Percent of Population 65 Years and Older (male and female)



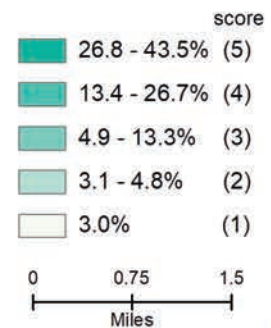
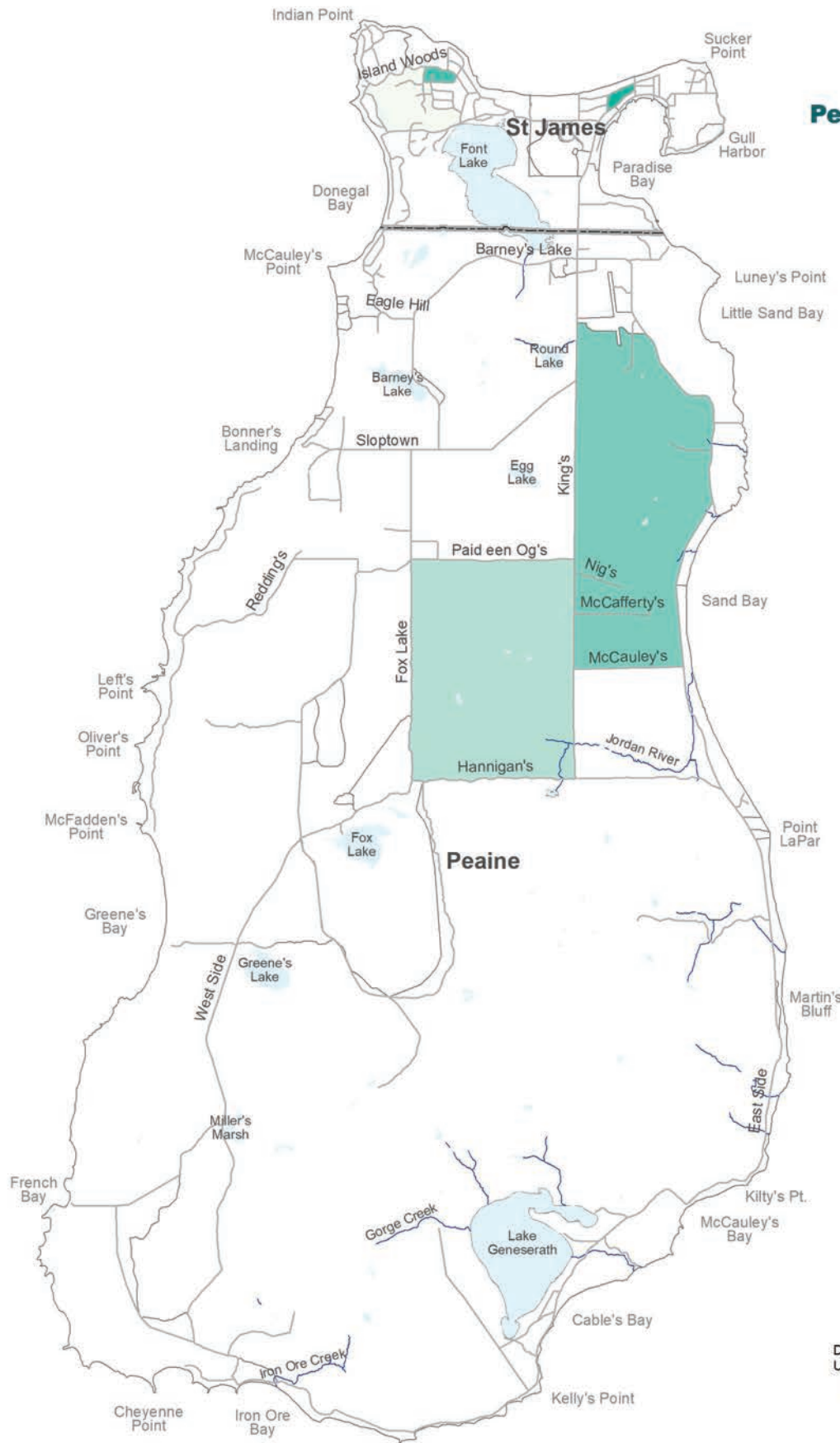
**Map 2.10**

**Percent of Population with People Living Alone**



# Map 2.11

## Percent of Non-white Population

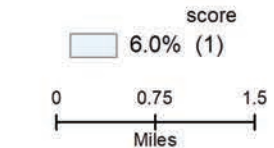
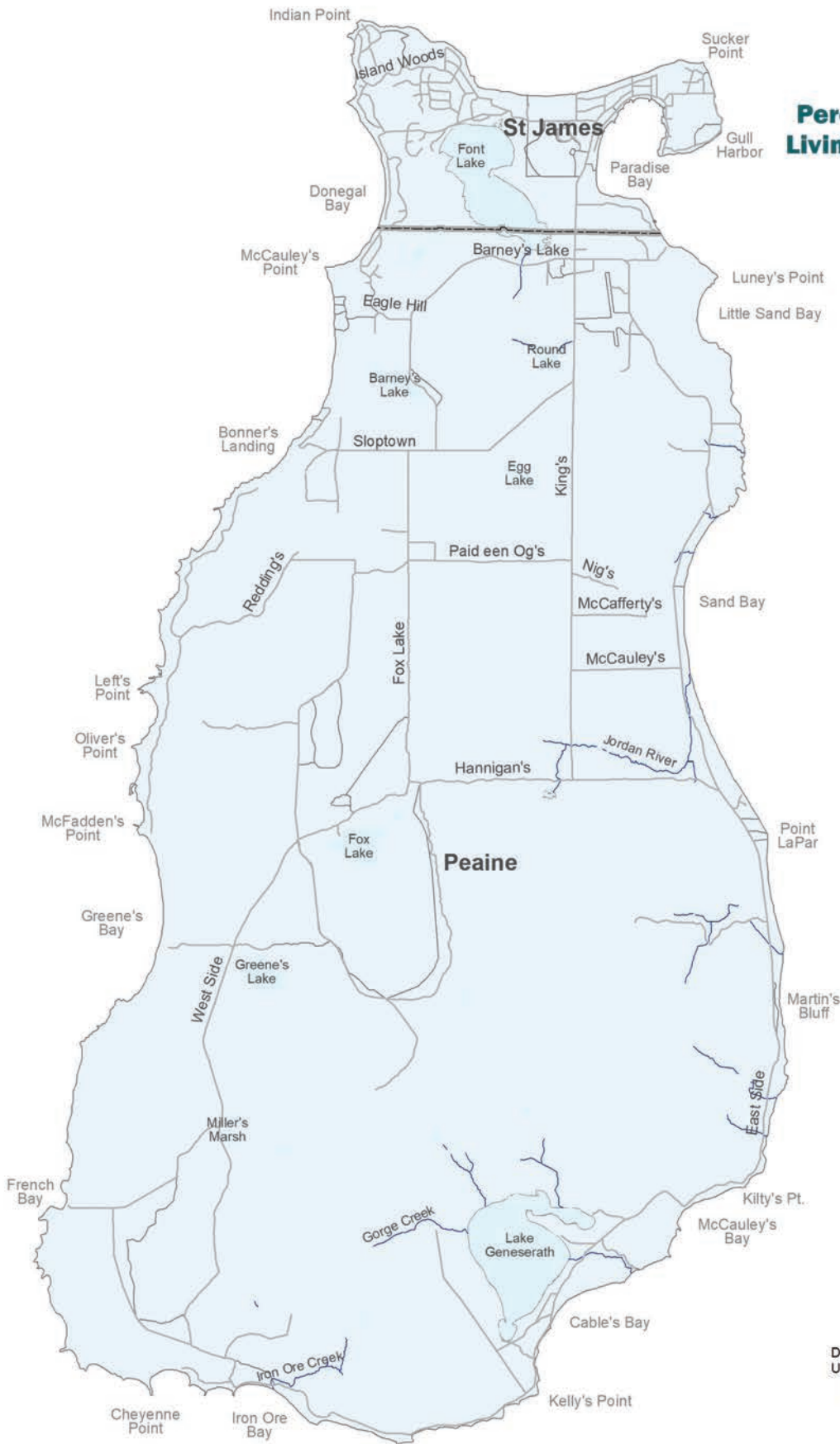


Data Source: MI Geog. Data Library  
U.S. Census Bureau,  
Block Level Data (2010),  
ACS (2016-2020)

Prepared 2/2023 by: **LIAA**

### Map 2.12

### Percent of Households Living Below the Poverty Threshold

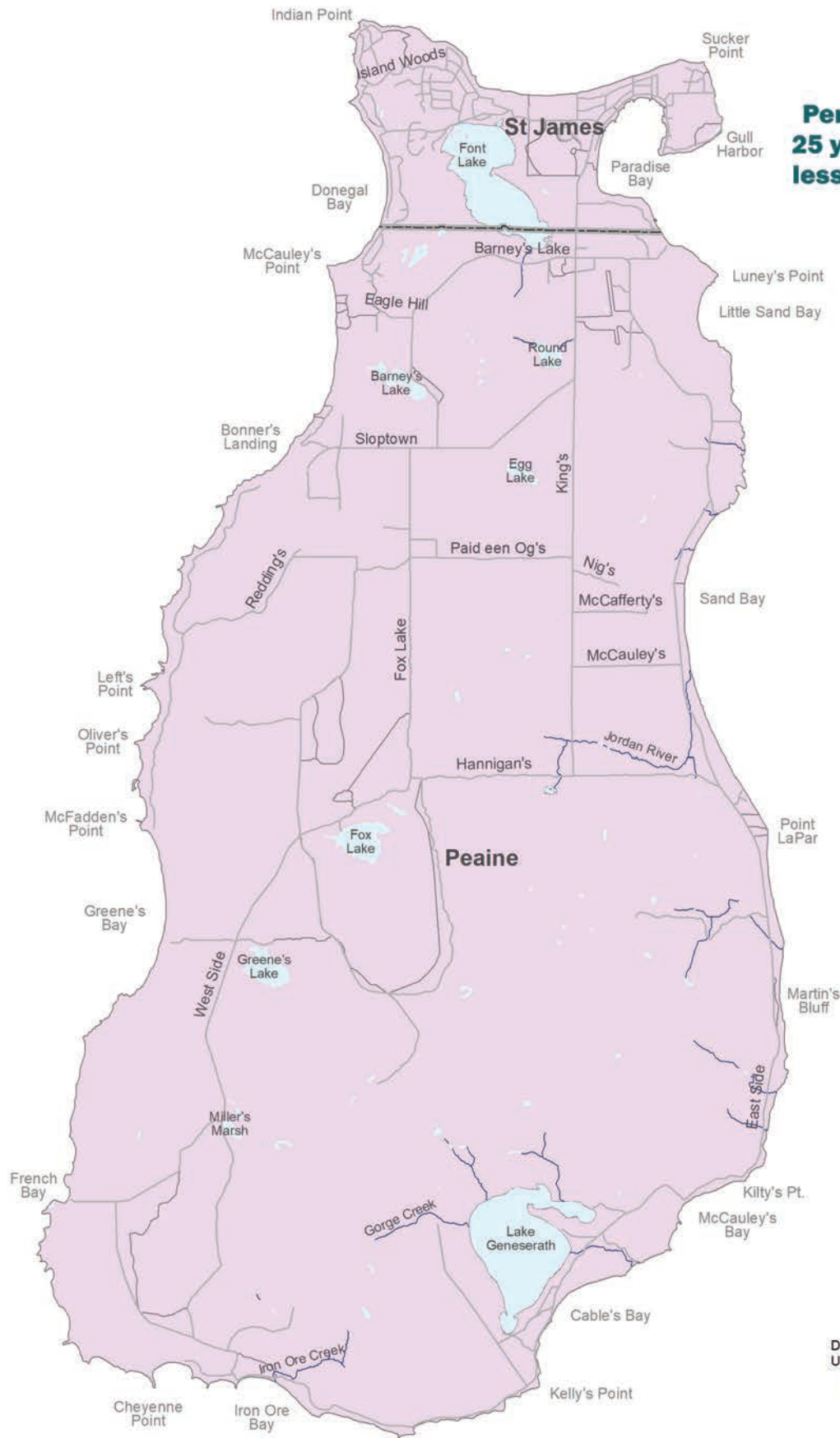


Data Source: MI Geog. Data Library  
U.S. Census Bureau,  
Block Level Data (2010),  
ACS (2016-2020)

Prepared 2/2023 by: **LIAA**

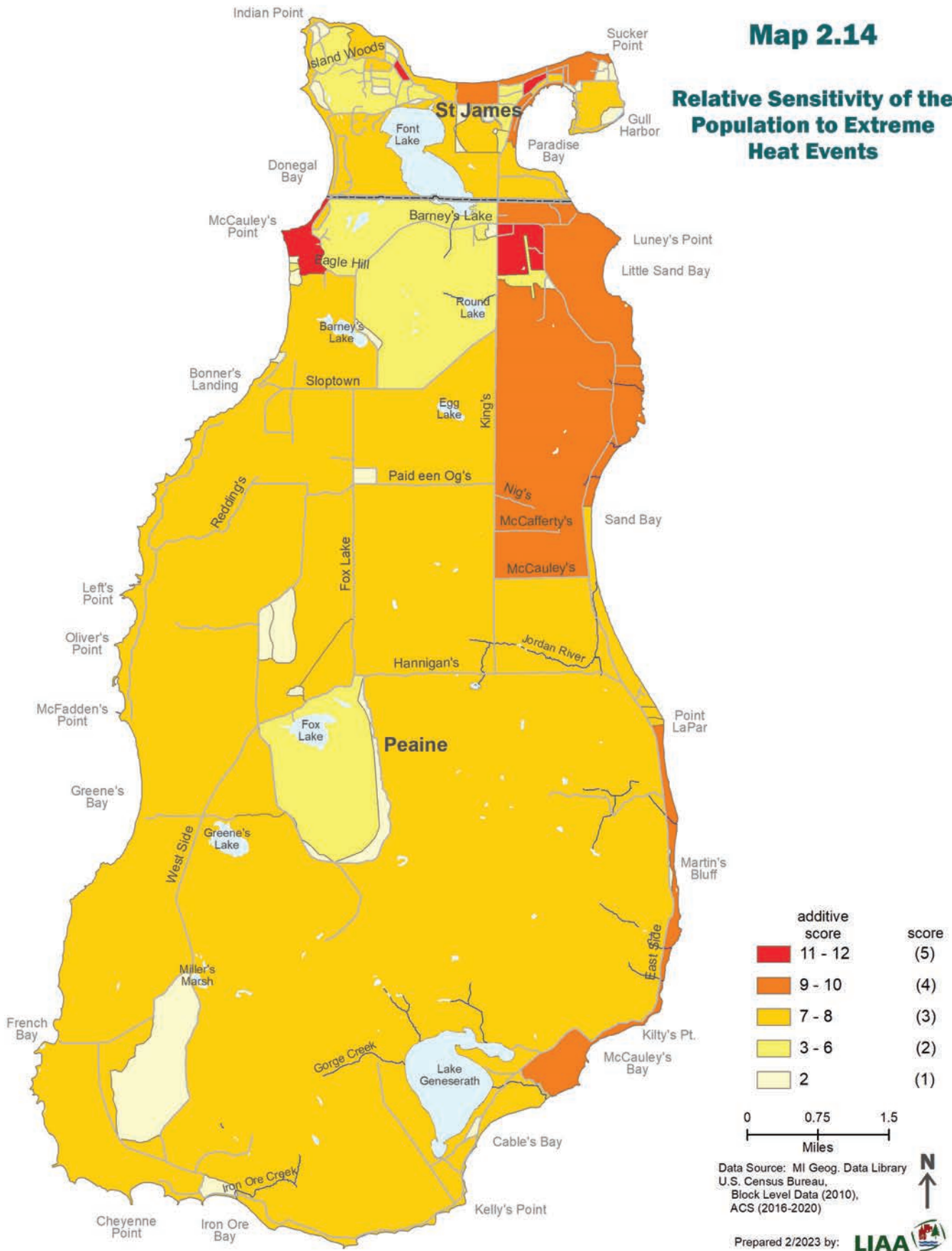
### Map 2.13

### Percent of Population 25 years and Older with less than a High School Education



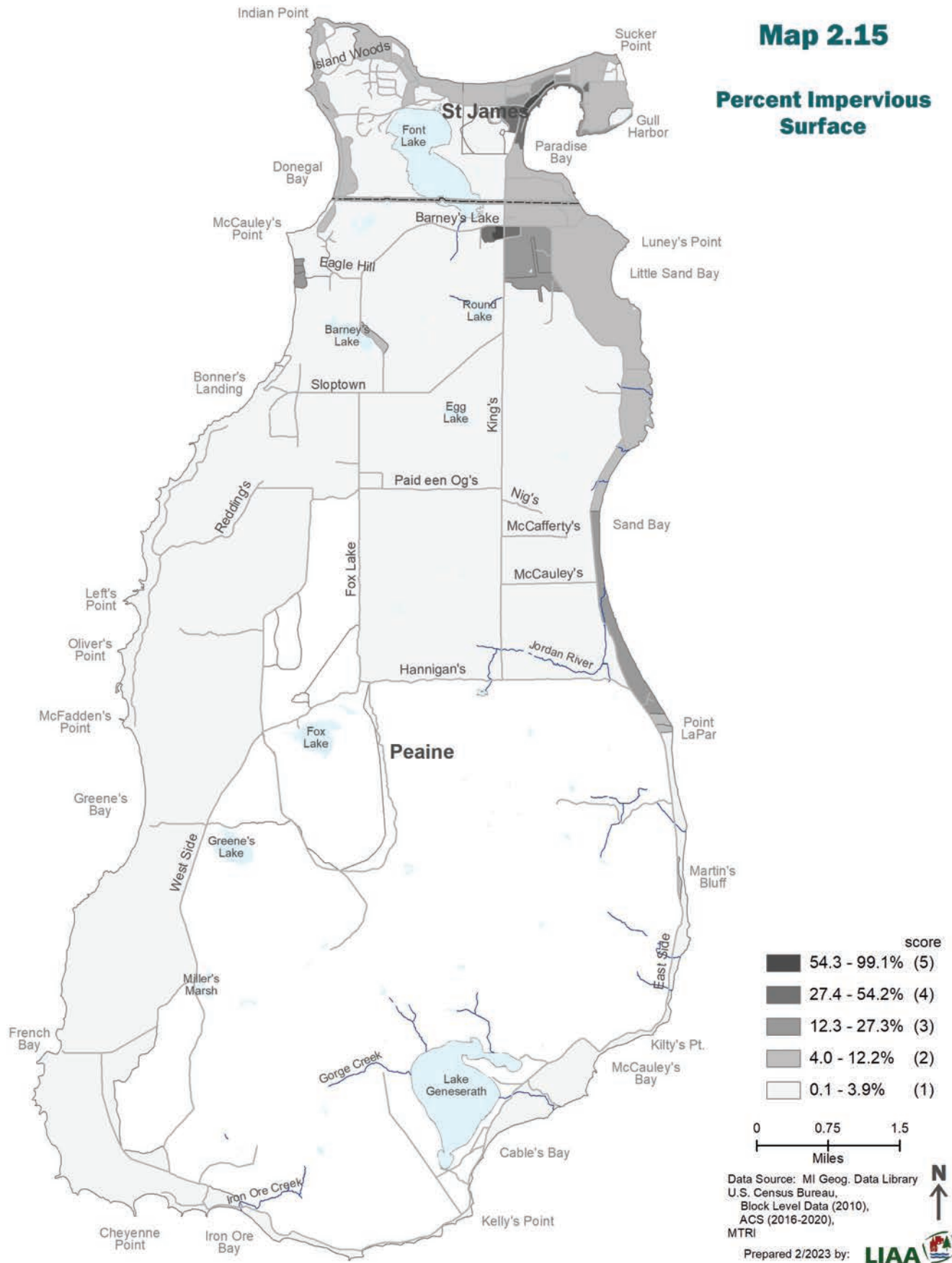
**Map 2.14**

**Relative Sensitivity of the Population to Extreme Heat Events**



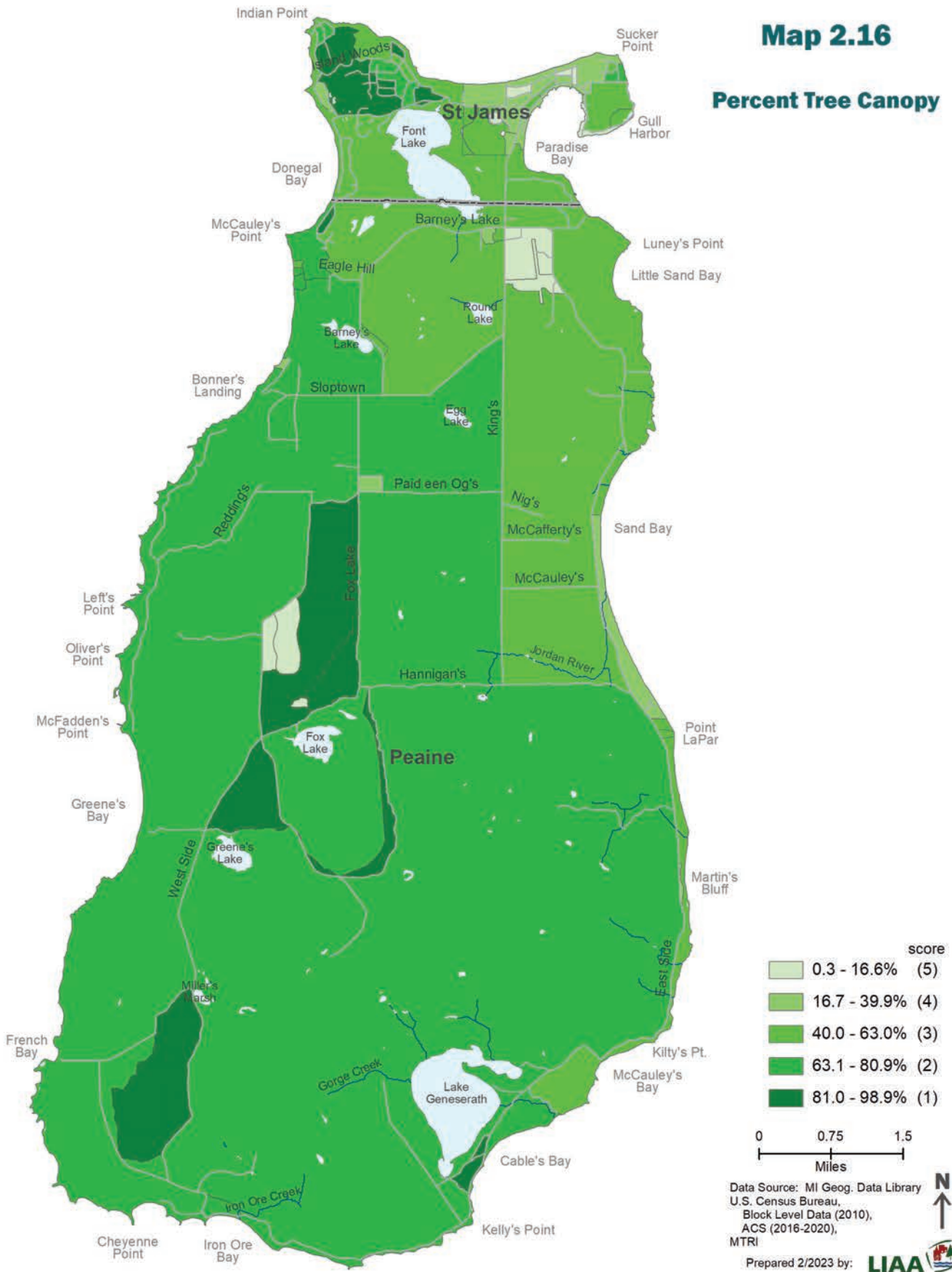
# Map 2.15

## Percent Impervious Surface



**Map 2.16**

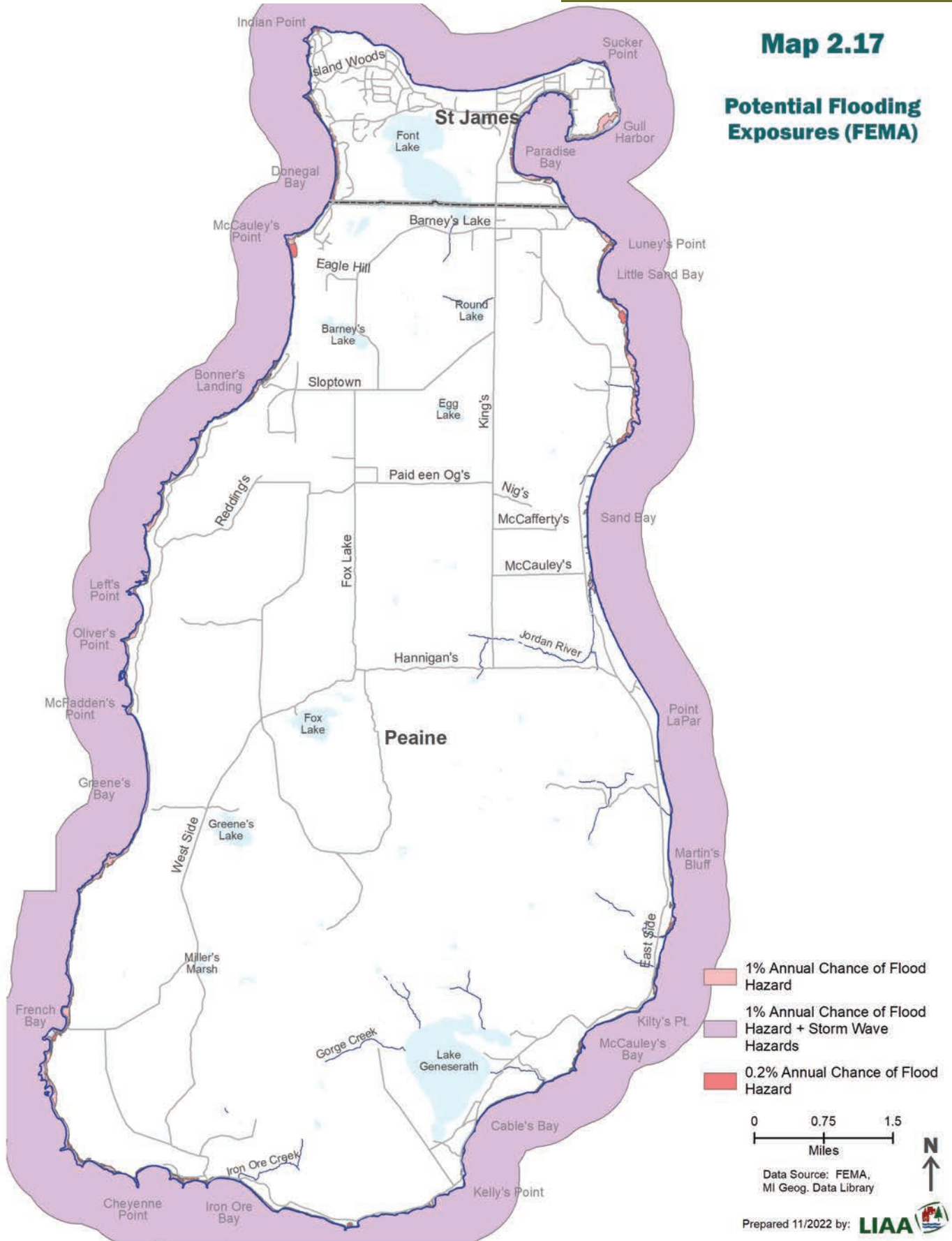
**Percent Tree Canopy**





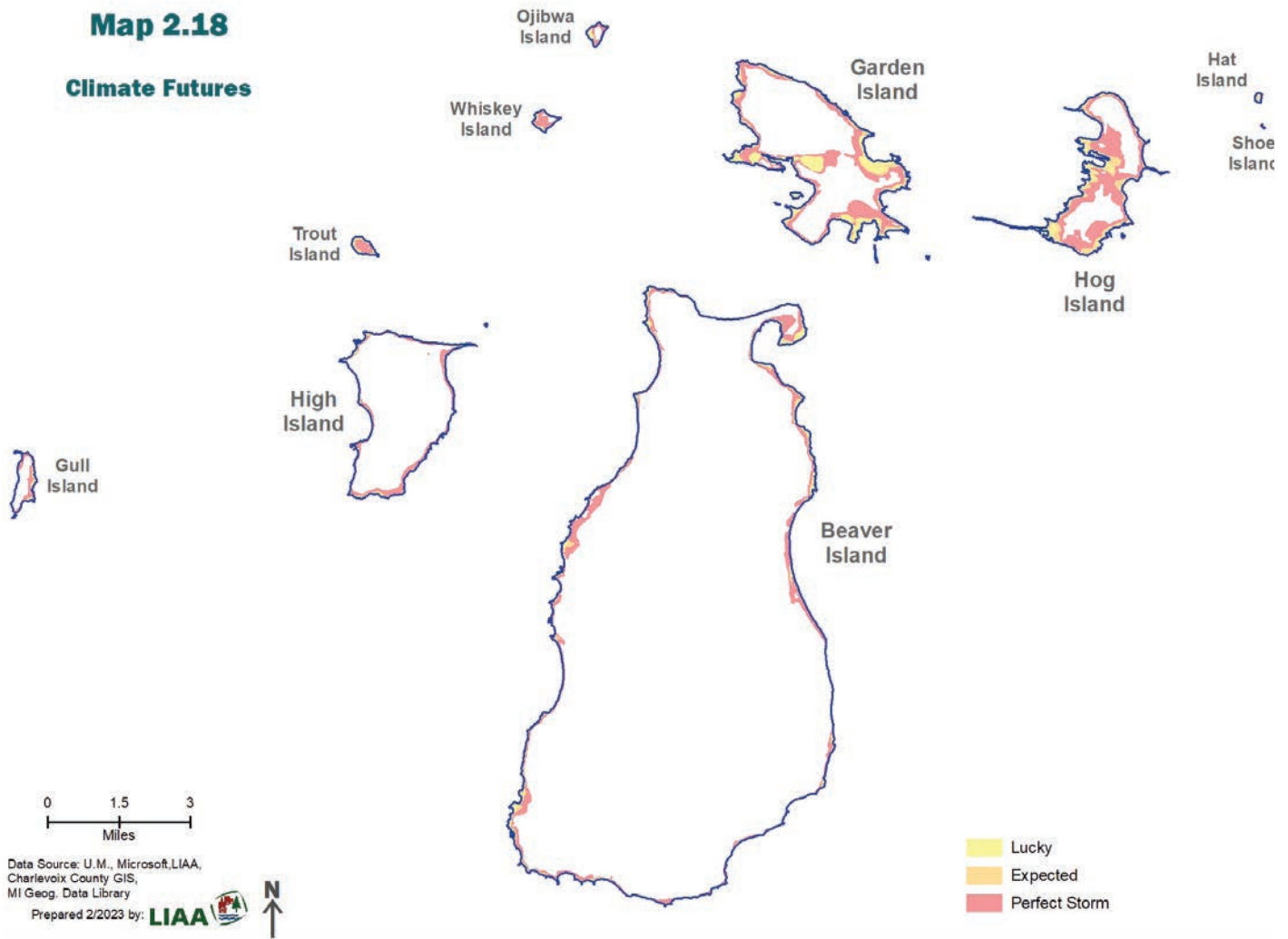
### Map 2.17

### Potential Flooding Exposures (FEMA)

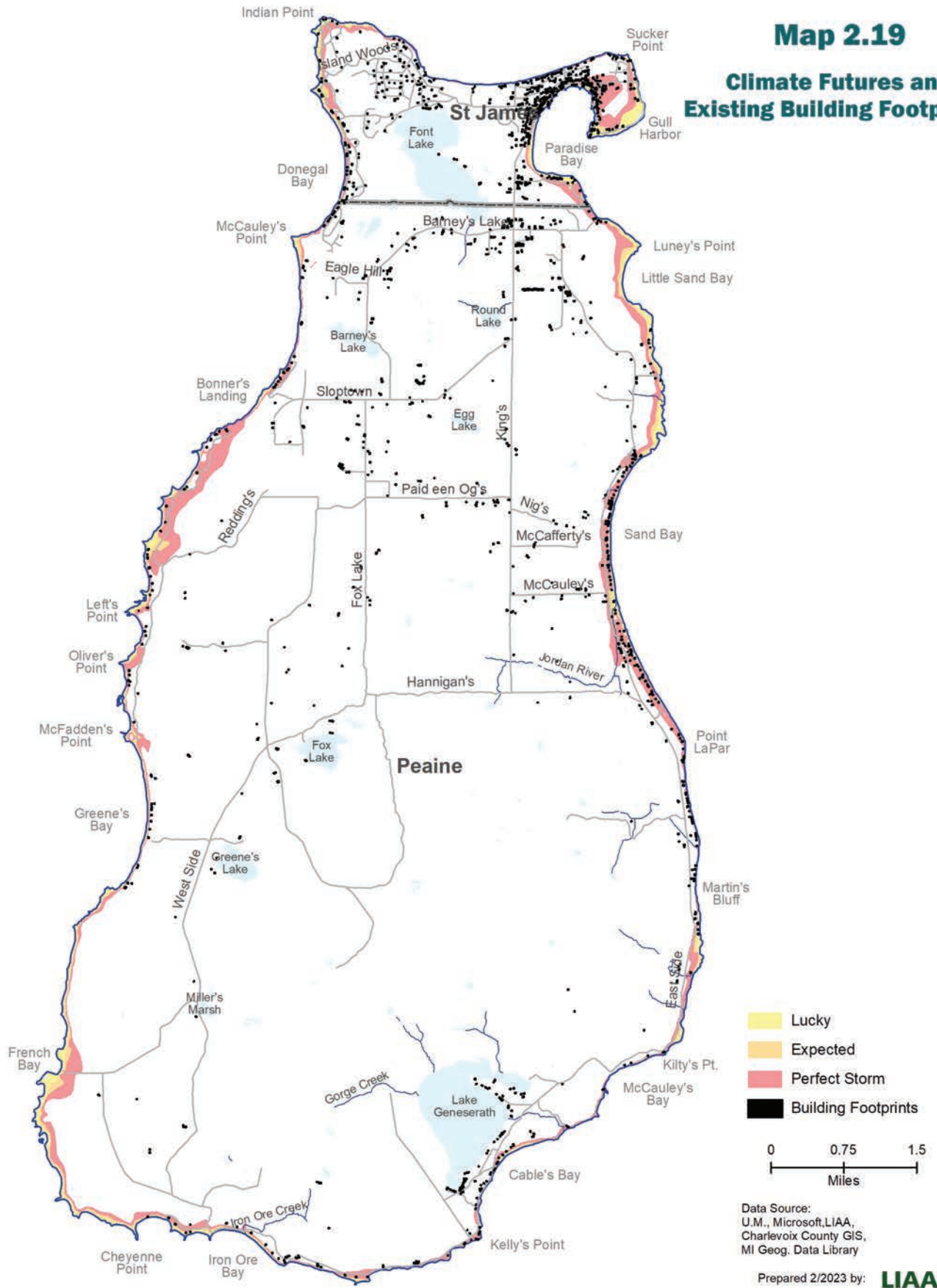


### Map 2.18

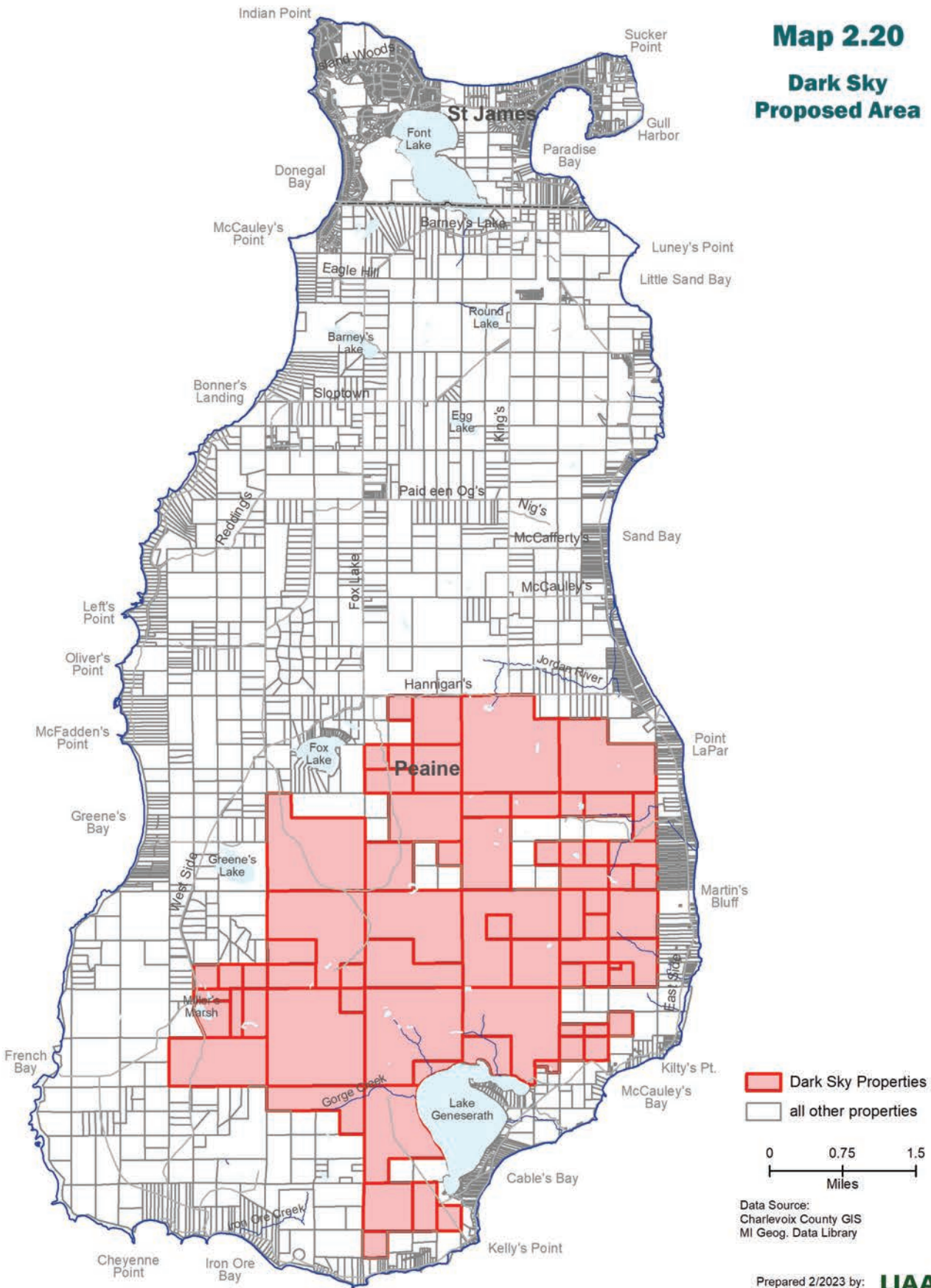
#### Climate Futures



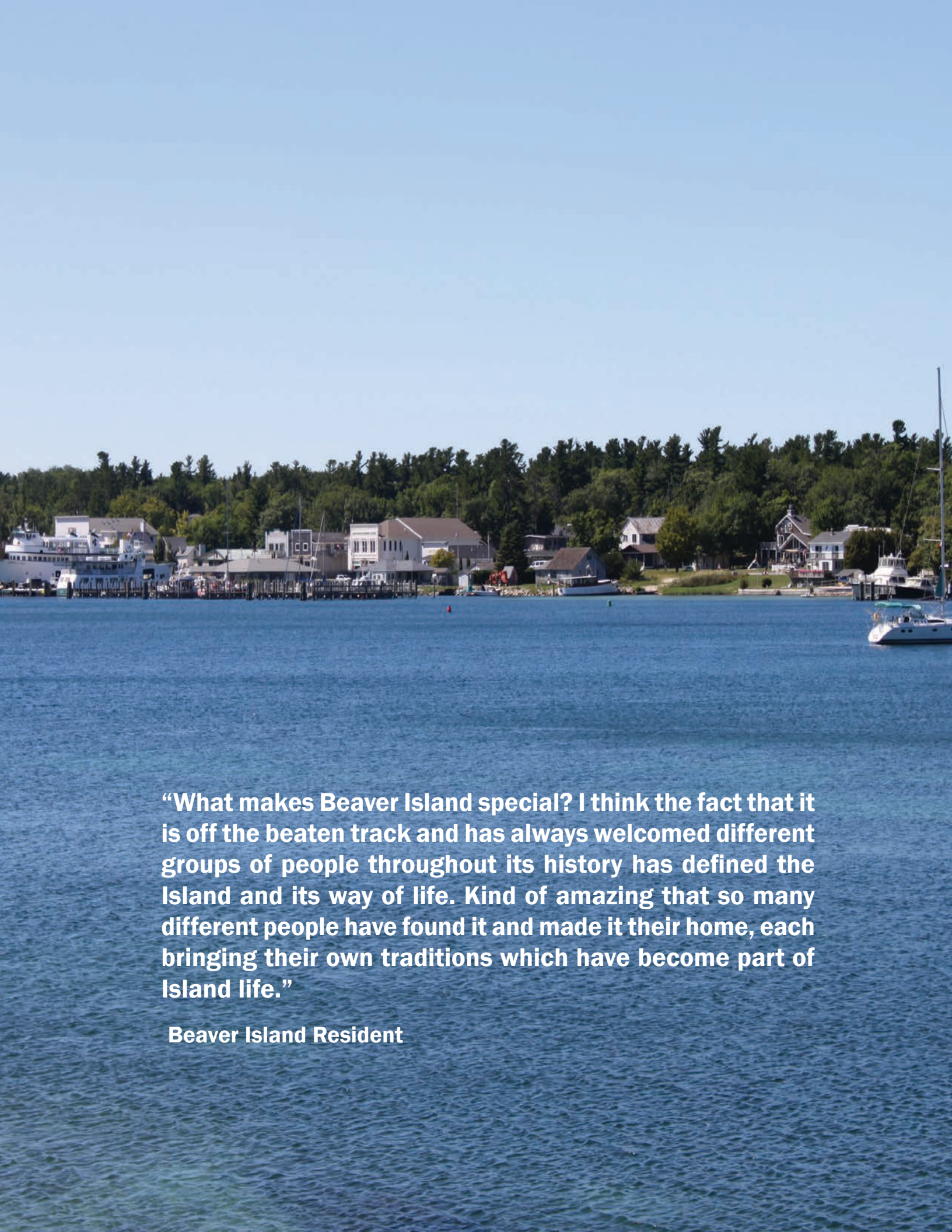
**Map 2.19**  
**Climate Futures and Existing Building Footprints**



**Map 2.20**  
**Dark Sky**  
**Proposed Area**



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**“What makes Beaver Island special? I think the fact that it is off the beaten track and has always welcomed different groups of people throughout its history has defined the Island and its way of life. Kind of amazing that so many different people have found it and made it their home, each bringing their own traditions which have become part of Island life.”**

**Beaver Island Resident**

# CHAPTER 3

## POPULATION AND HOUSING

**This chapter begins by summarizing demographic trends on the Island, including population, age and education. Next, this chapter discusses changes to the Island’s households and housing stock. This chapter then identifies the public and community-wide services available to Islanders. Lastly, the key challenges related to these topic areas are identified.**

### **DEMOGRAPHIC CHARACTERISTICS**

Through a series of tables, the next several pages show overall demographic characteristics of the Island’s population. In general, each table in this chapter uses data collected between 2000 through 2021 by the U.S. Census and American Community Survey to represent current conditions on Beaver Island with the most recent data available. Data from the 2000, 2010, and 2020 (as available) census are used as a point of comparison, and a change in numbers and percentages (using a percent-change formula) is also given where appropriate. The information selected is useful for understanding the current conditions of the population, as well as planning for housing and service needs.

### **UNDERSTANDING CENSUS DATA**

The following pages show a number of datasets related to Beaver Island’s population. All of this data comes from the United States Census Bureau. While the U.S. Census collects information every 10 years, the American Community Survey, also conducted by the U.S. Census Bureau, collects data on a rolling (continuous) basis and estimates data based on an annual basis between each census. Most 2020 general Census population demographics, such as age, sex and race, were estimates and incomplete at the time of the writing of this plan. Therefore, 2019 data was used in the tables on the next few pages for these categories as it was the most recent and complete information available. Data for some categories (such as education and housing) were available and accurate through 2021 and are used in this plan when available.



Islanders posed for portraits to be included in the Master Plan.

## POPULATION GROWTH

Table 3.1 shows the change in the Island’s total population from 2000 to 2019. In general, the Island gained residents during this period, with some fluctuations between the two Townships. Between 2010 and 2019, population has declined by 8.9% in Peaine Township but increased by 20.5% in St. James Township. Approximately 27 new people moved to the Island in recent years, and the Island’s overall population grew by about 4.9%. This surpasses growth rates in both Charlevoix County and the state as a whole.

Based on Census data, Beaver Island’s population is projected to grow by 9.2% until 2030 and then decline by 1.7% following 2030 until 2045. One method to estimate future population is called a population projection, wherein a predicted growth rate is applied to a community’s existing population. Table 3.2 shows a population projection for Beaver Island that calculates the predicted growth rate of net 7.5 per 1,000 residents for Charlevoix County until 2045. In other words, Table 3.2 shows what Beaver Island’s population might be if the Island grows by the same rate as national data suggests Charlevoix County will grow.

According to this table, the Island can expect to gain new residents every year until 2030. Between 2030-2045, the Island’s population is expected to decline by 1.7% and these trends project a total net growth in population of 7.5%

**TABLE 3.1 POPULATION, 2000-2019**

	2000	2010	2019	% CHANGE 2000-2010	% CHANGE 2010-2019
Peaine Township	244	292	266	28.42%	-8.90%
St. James Township	307	258	311	-29.84%	20.54%
Beaver Island	551	550	577	1.09%	4.90%
Charlevoix County	26,090	26,038	26,109	-0.20%	0.27%
State of Michigan	9,938,444	9,889,024	10,050,811	-0.5%	1.6%

Source: U.S. Census Bureau (2019)

**TABLE 3.2 PROJECTED POPULATION, 2019-2045**

	ACTUAL POPULATION		PROJECTED POPULATION			
	2019	2025	2030	2035	2040	2045
Peaine Township	266	287	290	288	287	285
St. James Township	311	336	340	339	338	336
Beaver Island	577	622	630	626	622	619
Charlevoix County	26,109	26,359	26,728	26,853	26,749	26,229

Source: U.S. Census Bureau (2019); Michigan Population Projections By County Through 2045, September 2019. Bureau of Labor Market Information and Strategic Initiatives.



between 2019-2045. Growth on Beaver Island has historically exceeded the rate of growth in Charlevoix County, but it is possible that this trend may diverge in coming years. An aging population with fewer younger people living on the Island, economic challenges to job growth, and access to healthcare are serious concerns that are likely to impact the Island’s future growth if not adequately addressed. Each of these issues are addressed in the Action Plan.

**AGE**

Table 3.3 shows the age distribution of Beaver Island’s residents from 2014 to 2019. In general, the table shows that the Island’s population is aging and, with the exception of ages five and under, the share of residents younger than 60 is declining. The population aged 60 and older is growing. An aging population has implications for housing, schools, health services, recreational amenities, and many other aspects of the community.

**AN AGING POPULATION**

With a few exceptions, Island data shows a general decrease in population under age 60 (see Table 3.3). This has been identified as a key issue on the Island. The goals and actions of this Master Plan are designed to help young families while providing for high quality of life for aging residents.



An Arthritis Foundation Exercise Program event held at the Beaver Island Community Center (above). Many Island organizations offer activities and services to aging residents. Photo Credit: Beaver Island Community Center

**TABLE 3.3 AGE DISTRIBUTION OF BEAVER ISLAND, 2014-2019**

	2014		2019		CHANGE, 2014 TO 2019	
	#	% OF TOTAL	#	% OF TOTAL	#	% CHANGE
5 and under	8	1%	12	11%	4	33.3%
5 to 9	19	3%	14	2%	-5	-35.7%
10 to 14	53	9%	22	2%	-31	-140.9%
15 to 19	33	6%	31	4%	-2	-6.5%
20 to 24	14	2%	24	3%	10	41.7%
25 to 34	8	1%	16	2%	8	50.0%
35 to 44	47	8%	25	4%	-22	-88.0%
45 to 54	101	17%	65	9%	-36	-55.4%
55 to 59	55	9%	48	6%	-7	-14.6%
60 to 64	58	10%	73	11%	15	20.5%
65 to 74	135	23%	153	28%	18	11.8%
75 to 84	54	9%	75	11%	21	28.0%
85 and over	12	2%	19	8%	7	36.8%
Total Population	597	100%	577	100%	-20	-3.5%

Source: U.S. Census Bureau (2019)

### AGING POPULATION

Beaver Island has seen fewer young families move to the Island in recent years. This has been identified as a key issue on the Island. The goals and actions of this Master Plan are designed to help make the Island an attractive place for young families while providing for high quality of life for aging residents.

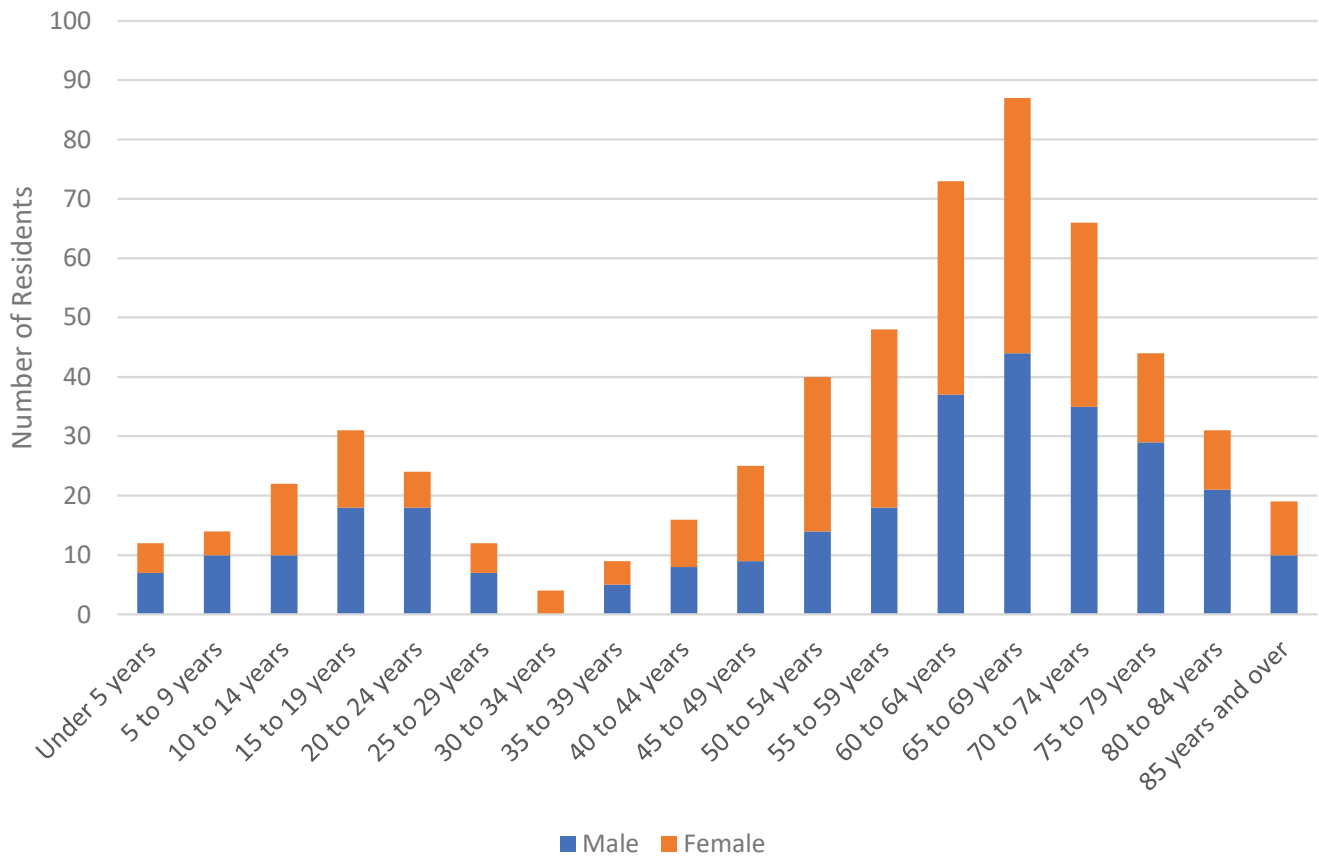
**TABLE 3.4 MEDIAN AGE, 2014-2019**

	2014	2019	% INCREASE 2014 TO 2019
Peaine Township	49.5	65.2	32%
St. James Township	45.6	59.6	31%
Charlevoix County	39.1	49.2	26%
State of Michigan	35.5	40.2	13%

Source: U.S. Census Bureau (2019)

Table 3.4 shows that the Island in general has aged more rapidly than the State of Michigan overall. Table 3.4 shows the median age of each Township on the Island in 2014 and in 2019. In 2014, the median ages in Peaine and St. James townships were 49.5 and 45.6, respectively. In 2019, the median age of each township jumped up to 65.2 and 59.6, respectively, which is trending significantly older than the whole of Charlevoix County (49.2) and the state (40.2). Figure 3.1 shows the number of residents by age and sex on the Island in 2019. This figure clearly shows the age distribution of the Island and the smaller number of residents between ages 6 to 59 years compared to those in very young and older age groups.

**FIGURE 3.1 NUMBER OF RESIDENTS BY AGE AND SEX, 2019**



Source: U.S. American Community Survey (2010-2014)

## RACE

Table 3.5 shows that Beaver Island’s racial makeup has not changed dramatically in recent years. Of the Island’s 577 residents estimated in the 2019 American Community Survey, most were identified as white alone, with small percentages identified as Hispanic, Native American or Alaskan. Official decadal data from the 2020 Census is not yet available at the time of this writing.

## EDUCATION

Educational attainment is a measure of the community to provide its members with greater social and economic success. Having a college education is associated with greater economic stability, positive health outcomes, and several other social and economic benefits. Table 3.6 shows the highest level of education received by adults over 25 on the Island. For example, as of 2019, 26.8% of adults over 25 in St. James Township had at least a bachelor’s degree. This table shows that Beaver Island’s population has a higher percentage of residents with graduate or professional degrees than Charlevoix County or the State of Michigan overall. In fact, the percentage of residents with a graduate or professional degree is Peaine Township is almost triple that of the State of Michigan.



The Beaver Island Community School’s motto is “customized learning in a unique island community.” This educational asset aims to prepare Island students for college and vocational programming.

**TABLE 3.5 POPULATION BY RACE, 2000-2019**

	2000		2014		2019	
	#	% OF TOTAL	#	% OF TOTAL	#	% OF TOTAL
White Alone	541	98.2%	583	97.7%	557	96.6%
Hispanic	1	0.2%	1	0.2%	11	1.9%
Native American or Alaskan	6	1.1%	4	0.7%	9	1.5%
African American	0	0.0%	0	0.0%	0	0.0%
Asian	0	0.0%	5	0.8%	0	0.0%
Other Race Alone	0	0.0%	0	0.0%	0	0.0%
Two or More Races	3	0.5%	4	0.7%	0	0.0%
Total Population	551	100.0%	597	100.0%	577	100.0%

Source: U.S. Census Bureau (2019)

**TABLE 3.6 HIGHEST LEVEL OF EDUCATION RECEIVED AS OF 2019, BY PERCENT OF ADULTS OVER 25 YEARS OLD**

	DID NOT GRADUATE HIGH SCHOOL	HIGH SCHOOL GRADUATE	SOME COLLEGE OR ASSOCIATES DEGREE	BACHELOR’S DEGREE	GRADUATE OR PROFESSIONAL DEGREE
Peaine Township	1.2%	16.9%	32.1%	17.7%	32.1%
St. James Township	3.3%	23.3%	25.9%	26.8%	19.7%
Charlevoix County	4.7%	27.8%	33.7%	19.5%	13.0%
State of Michigan	5.5%	28.7%	31.6%	19.2%	12.5%

Source: U.S. Census Bureau (2019)

### HOUSING GROWTH

Home construction and contracting work remains a staple of the Island’s local economy. Changes in the type and number of homes in demand requires the home construction industry be able to adapt. The economy of the Island, including its labor force, is described in more detail later in this chapter. A number of recommendations for strengthening both housing and the local economy are included in the Action Plan (see Chapter 6).

## HOUSING

Understanding the types and number of households, the choices householders make to own or rent, and the condition of the housing stock are all important elements in developing a Master Plan. The information in this section draws from Census data, regional studies conducted by Networks Northwest, and building permit data from St. James and Peaine townships. As much as possible, the data is selected to show the most recent and accurate information available.

### VACANCY AND SEASONAL HOUSING UNITS

Table 3.7 summarizes several key data trends, including the number of housing units occupied by an owner or renter, used seasonally, or vacant on the Island between 2000 and 2021. This information is collected by the U.S. Census Bureau and reflects the responses of those who completed a census survey form. Therefore, the information in the table likely does not identify the true number of housing units, but may capture changes over time to the Island’s housing stock.

### SEASONAL HOMES

Other traditional data sources, such as occupancy permit records or housing surveys, are not currently available for Beaver Island. Therefore, the information in Table 3.7 is the best information available to understand trends in the seasonal housing market on the Island, excepting anecdotal reports. In general, it appears that most of the housing growth on Beaver Island has been in homes used only seasonally. These homes may be used by either a renter or the owner. About 70% of the Island’s units were seasonally used in 2021. This represents an increase over 2000, when around 63% of the Island’s homes were occupied seasonally

according to the U.S. Census Bureau.

Charlevoix County conducted a Seasonal Population Study in 2022 for the northwest Lower Michigan region. The study found that the population of Charlevoix County is extremely seasonal as it rises by as much as 72% in the summer months versus the winter months. The county maintains a year-round population of 34,603, with a summer-high seasonal population of 59,533. That is a difference of 24,930 residents during the summer. There is not more localized data for Beaver Island; however, it can be assumed that a similar fluctuation in residents and visitors occurs, which can have a significant impact on housing on the Island.

### VACANCY

Table 3.7 also captures some information about housing vacancy on the Island. Here again, traditional datasets typically used by planners (such as U.S. Postal Service data) were not available for the Island. According to U.S.

**TABLE 3.7 HOUSING CHARACTERISTICS OF BEAVER ISLAND, 2000-2021**

	2000		2021		CHANGE (2000 TO 2021)	
	NUMBER OF UNITS	% OF TOTAL HOUSING UNITS	NUMBER OF UNITS	% OF TOTAL HOUSING UNITS	NUMBER OF UNITS	% CHANGE
Owner Occupied	234	31.6%	277	28.0%	43	17.3%
Renter Occupied	24	3.2%	24	2.4%	0	0.0%
Vacant, Not Seasonal	20	2.7%	6	0.6%	-14	-5.6%
Seasonally Used	463	62.5%	683	69.0%	220	88.4%
Total Housing Units	741	100.0%	990	100.0%	249	100.0%

Source: U.S. Census Bureau (2020), American Community Survey (2000-2021)

Census data, vacant units that are not seasonally used decreased dramatically between 2000 and 2021, with only 6 housing units classified as vacant. This could again be seen as an indicator of housing pressure on the Island.

**HOME SALE PRICES**

The average sale price of a home in Charlevoix County has increased nearly 74.49% from \$164,985 in January of 2015 to \$287,877 in January of 2023. This upward trend in home prices continues to put pressure on local communities to develop housing for those in need of workforce or affordable housing options.

**BUILDING PERMITS ISSUED**

Table 3.8 shows the number of building permits issued by the Zoning Administrators on Beaver Island from 2010-2021. Figure 3.2 is a graphical representation of the number of building permits for new homes granted in the same time. The table shows two categories of permits: the total count for new home permits, and the total number of permits issued for new secondary buildings or significant renovations, such as an addition or significant upgrade.

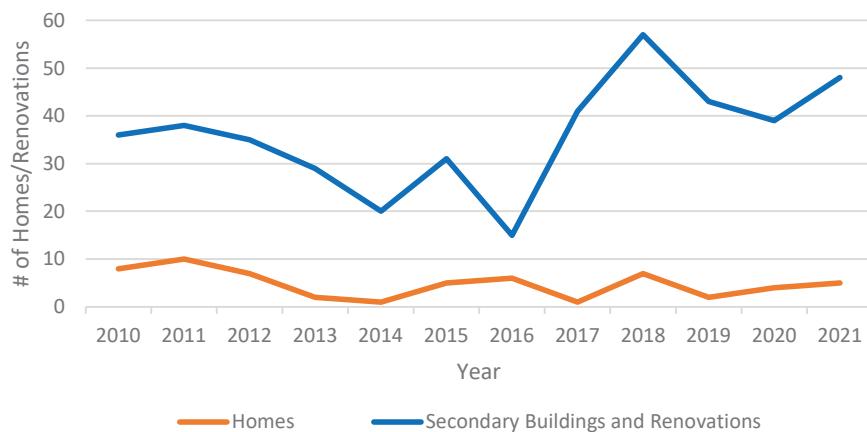
In general, permits for 58 new homes were issued in that 12-year span. The issuance of a building permit, however, does not always mean that a home has been constructed. Permits for secondary buildings and renovations have increased in recent years.

**TABLE 3.8 BUILDING PERMITS ISSUED ON BEAVER ISLAND SINCE 2010**

	BOTH TOWNSHIPS	
	HOMES	SECONDARY BUILDINGS AND RENOVATIONS
2010	8	28
2011	10	28
2012	7	28
2013	2	27
2014	1	19
2015	5	26
2016	6	9
2017	1	40
2018	7	50
2019	2	41
2020	4	35
2021	5	43

Source: Charlevoix County Department of Building Safety, February 2023

**FIGURE 3.2 BUILDING PERMITS ISSUED ON BEAVER ISLAND SINCE 2010**



Source: Charlevoix County Department of Building Safety, February 2023



Many residents expressed opinions on what the Island’s housing stock should look like in the future. These and other recommendations were reviewed by the Joint Planning Commission. See Chapter 6 for recommendations.

**PROPERTY VALUES**

Table 3.9 shows the taxable value of the properties in both Townships. This information is from the Charlevoix County Equalization Office and is organized by property types including agricultural, commercial, industrial, and residential. For Peaine Township, taxable values have overall slightly increased between 2016 and 2021 while St. James overall slightly decreased. Agricultural and industrial decreased for Peaine Township while commercial and residential increased. In St. James Township, commercial slightly increased while residential decreased.

Table 3.10 shows the taxable values of residential properties on the Island for each year from 2016 to 2021. The taxable value for residential properties within each Township decreased from 2016-2018 and then increased from 2018-2021, while Charlevoix County gradually increased throughout the six year-long timeframe.

**PROPERTY TAX REVENUE**

One important implication of property values is the amount of money generated for local public services through tax

**HOUSING TRENDS ON ISLANDS**

Beaver Island might feel as if it’s a world away, but the Island’s local economy and housing market are still impacted by national trends. Beginning in 2009 with the Great Recession, the housing market on Beaver Island began to change. Demand for new housing slowed, and anecdotal reports state that the construction industry suffered on the Island as a result. However, in recent years, housing growth on islands throughout the country has also been impaired by a number of causes beyond the national economy. These include a relatively high cost of living and transportation, limited access to services, and demographic changes such as an aging population. The recommendations of this plan (Chapter 6) are designed to help the Island become more resilient to these changes.

**TABLE 3.9 TAXABLE VALUES ON BEAVER ISLAND, BY PROPERTY TYPE IN 2016 AND 2021**

	2016		2021		CHANGE (2016 TO 2021)	
	PEAINE	ST. JAMES	PEAINE	ST. JAMES	PEAINE	ST. JAMES
Agricultural	\$438,300	\$0	\$293,400	\$0	\$(144,900)	\$0
Commercial	\$2,127,300	\$7,114,300	\$2,417,900	\$7,346,000	\$290,600	\$231,700
Industrial	\$1,056,800	\$0	\$1,039,800	\$0	\$(17,000)	\$0
Residential	\$80,605,900	\$52,865,400	\$81,307,500	\$52,085,100	\$701,600	\$(780,300)
Total Real Property Values	\$84,228,300	\$59,979,700	\$85,058,600	\$59,431,100	\$830,300	\$(548,600)

Source: Charlevoix County Equalization Office

**TABLE 3.10 PROPERTY TAX VALUATIONS FOR RESIDENTIAL PROPERTIES, 2016-2021**

	2016	2017	2018	2019	2020	2021
Peaine Township	\$80,605,900	\$77,523,700	\$77,870,300	\$79,269,100	\$80,689,200	\$81,307,500
St. James Township	\$52,865,400	\$51,672,300	\$50,790,400	\$51,706,000	\$51,613,300	\$52,085,100
Charlevoix County	2.155 Billion	2.271 Billion	2.347 Billion	2.449 Billion	2.606 Billion	2.777 Billion

Source: Charlevoix County Equalization Department

revenue. Table 3.11 shows some of the services on the Island that rely on property tax dollars from either or both Townships. Of course, property taxes fund a number of services not listed on Table 3.11, including state and county services such as transit, recycling, senior services, and the Beaver Island District Library. Table 3.11 shows the local property tax revenues for each Township government and the Beaver Island Community School in recent years.

**HOUSEHOLD SIZE**

The U.S. Census asks a number of questions related to household size, type and age. This information describes the types of households that live on Beaver Island and how households have changed in recent years. Table 3.12 shows the average household size (i.e., the number of people in each household) within each Township, Charlevoix County, and the State of Michigan in 2010 and in 2021. The average household size shrank everywhere during this time period, while Peaine Township’s average household dropped below 2 persons, from 2.16 to 1.86.



The Planning Commissions on the Island have encouraged the construction of unique and eclectic homes through the St. James and Peaine Township Zoning Ordinance.

**TABLE 3.11 PROPERTY TAX REVENUE, YEARS ENDING 2019-2022**

	2018-19	2019-20	2020-21	2021-22
Peaine Township	\$216,000	*	*	*
St. James Township	\$230,150	*	*	\$235,455
Beaver Island School District Local Revenues	*	\$2,361,000 (Final Amended)	\$2,273,000 (Final Amended)	*

Source: Charlevoix County Apportionment Reports and Township Budgets  
 \*Data not available

**TABLE 3.12 AVERAGE HOUSEHOLD SIZE, 2010-2021**

	2010	2021	CHANGE, 2010 TO 2021
Peaine Township	2.16	1.86	-0.30
St. James Township	2.37	2.24	-0.13
Charlevoix County	2.26	2.19	-0.07
State of Michigan	2.53	2.43	-0.10

Source: US Decennial Census (2020) and American Community Survey (2010-2021)



### NUMBER OF HOUSEHOLDS

Table 3.13 shows that in general, the number of households on Beaver Island increased from 2010 to 2021, consistent with county trends. As the total population of the Island grew about 11% from 2010 to 2021 (see Table 3.1), the number of households on the Island grew along with it.

**TABLE 3.13 NUMBER OF HOUSEHOLDS, 2010 TO 2021**

	2010	2021	CHANGE, 2000 TO 2021
Peaine Township	124	153	29
St. James Township	109	148	39
Beaver Island	233	301	68
Charlevoix County	11,355	11,769	414

Source: US Decennial Census (2020) and American Community Survey (2010-2021)

### HOUSEHOLDS LIVING WITH CHILDREN

Table 3.14 shows that Beaver Island had fewer households on the Island with children under 18 than in 2010. The decline in these households is consistent with trends in the county, though the state overall is on the rise. In fact, Michigan had about 134,949 more households with children under 18 in 2021 compared to 2010.

**TABLE 3.14 HOUSEHOLDS LIVING WITH CHILDREN UNDER 18, 2010 TO 2021**

	2010	2021	CHANGE (2010 TO 2021)
Peaine Township	19	11	(8)
St. James Township	29	11	(18)
Beaver Island	48	22	(26)
Charlevoix County	3,136	2,513	(623)
State of Michigan	1,088,694	1,223,643	134,949

Source: U.S. Census Bureau (2020), American Community Survey (2010-2021)

### HOUSEHOLDERS LIVING ALONE

National and state housing experts report that there is an overall trend toward more householders living alone. This is now the case on Beaver Island according to the U.S. Census. Table 3.15 shows that the number of households consisting of persons living alone has increased Island-wide as well as in the county and state. This may be supportive of anecdotal evidence that more retirees have moved to the Island in recent years.

**TABLE 3.15 HOUSEHOLDS OF PERSONS LIVING ALONE, 2010 TO 2021**

	2010	2021	CHANGE (2010 TO 2021)
Peaine Township	27	48	21
St. James Township	22	41	19
Beaver Island	49	89	40
Charlevoix County	271,385	316,586	45,201
State of Michigan	1,085,689	2,549,542	1,463,853

Source: U.S. Census Bureau (2020), American Community Survey (2010-2021)



**HOUSING ORGANIZATIONS**

The Port of St. James Association and the Forest View Community are two examples of housing organizations that provide some services to residents on the Island. Accommodations for tourists and other seasonal visitors are described in more detail in the recreation and tourism section of Chapter 5.

**PORT OF ST. JAMES ASSOCIATION**

The Port of St. James Association is a property owner’s association consisting of around 1,000 residential properties in the northwest portion of the Island. Properties within the Association are subject to a restrictive covenant that controls the use and some elements of a structure’s design. The Association also manages a number of common areas for Association members including a private campground, a beach with a pavilion, hiking trails including Hidden Valley Trail and the McCauley’s Point access to The Kuebler Trail, and part of the Mt. Pisgah dune area.

**FOREST VIEW COMMUNITY**

The Forest View Community is an affordable, six-unit apartment complex located on Carlisle Road West in St. James Township. The Beaver Island Community Development Corporation financed the complex through a grant and a loan. The complex offers housing for qualifying seniors with low to medium incomes. The apartment complex is currently operating at 100% occupancy.



Forest View Community (above) is a six-unit affordable apartment complex on Beaver Island. Photo Credit: Northernhomes.org. The Mt. Pisgah sand dune area (below) is partially owned by the Port of St. James Association. Photo Credit: News on the ‘Net.





Many of the Island's homes are nestled away behind scenic forest roads, especially in Peaine Township (above). Town living provides an opportunity for waterfront views and boat access in St. James Township (left).

### HOUSEHOLDER AGE AND TENURE

Tables 3.16 and 3.17 provide an overview of the number of householders in each Township according to their age and whether they rent or own a home. An aging population and a trend toward fewer families were identified as key challenges on the Island during the planning process for this Master Plan; Tables 3.16 and 3.17 help explain how the housing market is impacted by these demographic changes. It is important to note that this information comes from the U.S. Census Bureau and is determined by residential surveys. Therefore, the statistics are likely not perfectly accurate, but the data can still be used to inform general trends. Tables 3.16 and 3.17 show the following trends.

As was true in 2010, far more householders live in

owner-occupied units than rented units, echoing the community's comments for the need for long-term rental units for affordable and workforce-based housing. Owners are aging, with large increases in owners over 65 and predominant decreases in owners younger than that.

Renter-occupied units actually dropped in Peaine Township from 2010-2021, while they more than tripled (from 5 to 19) in St. James. Very few (only 2) householders in renter-occupied units are below the age of 35; most (12) are 65 and older. Compared to 2010, renting householders are aging in both Townships along with householders in owner-occupied units. In other words, there is a lack of younger owners and renters on the Island.

### HOUSING DATA

Data on housing trends for local governments is typically obtained through a number of sources, including Zoning Administrators, County Assessors, Building Departments and the Post Office. Data for Beaver Island was limited, but the limited information available confirms what many Islanders have reported: fewer young people, and more older people, are occupying homes on the Island.



**TABLE 3.16 AGE OF HOUSEHOLDERS IN OWNER-OCCUPIED UNITS, 2010 TO 2021**

AGE OF HOUSEHOLDER	2010		2021		CHANGE (2010 TO 2021)	
	PEAINE	ST. JAMES	PEAINE	ST. JAMES	PEAINE	ST. JAMES
15 to 34	4	4	1	7	-3	3
35 to 64	75	52	45	49	-30	-3
65 years and over	37	48	102	73	65	25
Total householders in Owner-Occupied Units	116	104	148	129	32	25
Total householders in All Units	124	109	153	148	29	39

Source: U.S. Census Bureau (2020), American Community Survey (2010-2021)

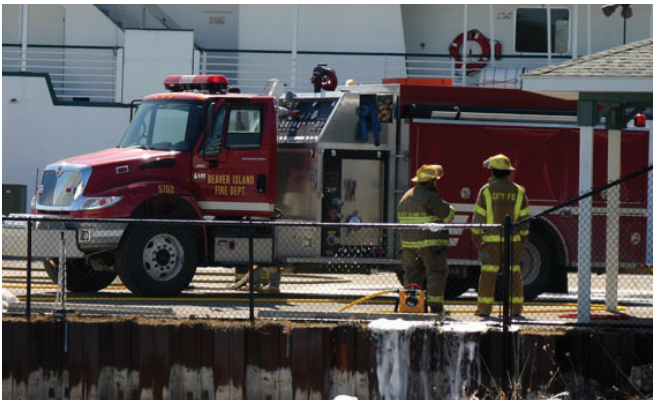
**TABLE 3.17 AGE OF HOUSEHOLDERS IN RENTER-OCCUPIED UNITS, 2010 TO 2021**

AGE OF HOUSEHOLDER	2010		2021		CHANGE (2010 TO 2021)	
	PEAINE	ST. JAMES	PEAINE	ST. JAMES	PEAINE	ST. JAMES
15 to 34	0	2	0	2	0	0
35 to 64	6	3	1	9	-5	6
65 years and over	2	0	4	8	2	8
Total householders in Renter-Occupied Units	8	5	5	19	-3	14
Total householders in All Units	124	109	153	148	29	39

Source: U.S. Census Bureau (2020), American Community Survey (2010-2021)

## SOCIAL AND COMMUNITY SERVICES

A number of social and community services are available to Island residents. The Island's network of social services helps strengthen overall community resilience and provides a safety net and enrichment opportunities for Island residents and guests. This section of the Master Plan is meant to provide several examples of community services, not an exhaustive inventory of every program that may be available. Public utilities and waste services are described in more detail in Chapter 4, while organizations that promote tourism and recreation are identified in Chapter 5.



The Beaver Island Fire Department consists of many volunteers, a Fire Chief, and two Assistant Fire Chiefs. The Department operates two firehouses on the Island, one in downtown St. James and a second along East Side Road south of Hannigan's Road. The Beaver Island Fire Department services between 15 and 25 calls on average each year. Photo Credit: News on the 'Net



Millages in each Township support the Beaver Island District Library. The library is staffed by one full-time director and several part-time staff. The library strives to provide programming and services for everyone on the Island, including children and youth. The library facility also offers wireless Internet services to the public. Photo Credit: BeaverIsland.Michlibrary.org

## TOWNSHIP SERVICES

Several services, including the Beaver Island Fire Department, the Beaver Island Emergency Services Authority, the Beaver Island District Library and the Beaver Island Historical Society, are integral to the health, safety and enrichment of Island residents.

Healthcare on the Island rose to the forefront as a major concern of Islanders during the planning process. This issue is included in the list of key challenges at the end of this chapter.



The Beaver Island Emergency Medical Service (EMS) operates under the joint-township Beaver Island Emergency Services Authority. In 2016, a millage proposal passed in St. James Township to allow for Advanced Life Services to continue on the Island. Beaver Island EMS contracts with Island Airways to provide emergency air medical evacuation to mainland facilities.



The Beaver Island Historical Society preserves the cultural history of Beaver Island by operating four historic sites on Beaver Island for the public: the Mormon Print Shop Museum, the Marina Museum (pictured above), Protar's House, and Heritage Park.

**OTHER SERVICES**

A number of social and community services are provided to Island residents through Charlevoix County. These include Sheriff services, the Commission on Aging, and the Road Commission providing road services (discussed in greater detail in Chapter 4). The U.S. Postal Service and Beaver Island veterans services are also discussed on this page.

**COMMUNITY SERVICE RECOMMENDATIONS**

There are many examples of collaboration on Beaver Island, a key concern voiced during the planning process for this plan. For recommendations on how the Island might encourage greater collaboration between groups, see Chapter 6.



The Charlevoix County Complex on Beaver Island houses a Sheriff's Deputy office, seasonal equipment, and a Charlevoix County Public Transit vehicle. One deputy typically lives on the Island year-round, while a second is typically hired by the Townships for the Island during the summer months.



Beaver Island taxes support Charlevoix County's Commission on Aging services for the Island. One part-time staff member on Beaver Island helps to provide senior meals, special events, and other services to the Island's seniors. However, services on the Island have decreased in recent years as addressed later in this chapter. Photo Credit: News on the 'Net



The United States Postal Service operates daily mail service through the Beaver Island Post Office and Island Airways. The Post Office building is a unique and historic structure located in downtown St. James.



Beaver Island veterans are supported by Post 46 of the American Veterans, Inc. (AMVETS). This veterans service organization provides a scholarship fund for students at the school and various community projects, including the construction of the Beaver Island Veterans Memorial Park in downtown St. James. Photo Credit: Bob Tidmore



The Preservation Association of Beaver Island led the effort to create the Beaver Island Community Center.



The Beaver Island Association is active on various environmental, economic and social issues.



The Rural Health Center serves visitors and Island residents with a number of healthcare services and programs. Photo Credit: BeaverIslandGems.com

## COMMUNITY ORGANIZATIONS

Identifying non-governmental community organizations in the Master Plan is one step toward building community resilience, as achieving the community's vision for the future involves collaboration among Island organizations. This section identifies several large organizations that work community-wide. Organizations related to economic growth and tourism, including recreation groups and special event organizations, are described in more detail in Chapter 5.

### **THE PRESERVATION ASSOCIATION OF BEAVER ISLAND**

The Preservation Association of Beaver Island (PABI) was formed to preserve the history, culture and environment of Beaver Island. PABI has worked on several initiatives in recent years, most notable being the Beaver Island Community Center. The Center offers community programming for all ages including yoga, movies, concerts, and a community room open to everyone. The Community Center is also home to the Beaver Island Chamber of Commerce and supports the tourism industry on the Island, which is discussed more in Chapter 5.

### **THE BEAVER ISLAND ASSOCIATION**

The Beaver Island Association (BIA) was first formed in 1988 as the Beaver Island Property Owners Association. The group formed as a way to respond to a number of challenges the Island was facing, and provided education to residents as well as representation for its members about various environmental, economic, and social issues. The BIA continues as an active group in the community to represent its members, work with the local governments on key issues, support the local economy, and advocate for the natural

environment. Currently the BIA is the parent association and advocate for the Dark Sky Project on Beaver Island.

### **CHURCHES AND RELIGIOUS GROUPS**

The Island is home to a wide range of churches and organizations that offer religious services and support. Many of the Island's churches also provide vital community services to the public. Churches on the Island include the Beaver Island Christian Church, Holy Cross Catholic Church, St. James Episcopal Church, and Lighthouse Fellowship.

### **TRIBAL GOVERNMENTS**

In addition to providing services to tribal members, the Little Traverse Bay Bands of Odawa Indians and the Grand Traverse Band of Ottawa and Chippewa Indians provide vital community development support and natural resource protection to the Beaver Island community. These tribal governments have provided grant funding and support to a number of Beaver Island initiatives, including financial support of EMS radios, the County Sheriff's rescue boat, the fuel dock at the Beaver Island North Municipal Marina, Forest View's HVAC System, outer island studies, and support for educational efforts and veterans.

### **FOOD PANTRY**

The Beaver Island Food Pantry is run by volunteers from a number of local groups and churches. The Food Pantry provides food to those in need on the Island at the Gregg Fellowship Center.

### **COMMUNITY HEALTH**

The Beaver Island Rural Health Center is a non-profit



The Beaver Island Community school had 59 students for the 2021-2022 school year. Photo Credit: <http://beaverisland.k12.mi.us>



The CMU Boathouse is an easily recognizable building located on Paradise Bay.



The CMU Biological Station on the eastern shore of the Island includes research facilities and classrooms. Photo Credit: Central Michigan University

organization that provides several regular medical services to Island residents and guests. The Health Center employs two full-time nurse practitioners, and doctors from the mainland hold office hours on the Island twice per month.

**EDUCATIONAL RESOURCES**

There are several educational facilities on the Island that provide services to Islanders and university students. The Beaver Island Community School and Central Michigan University’s Biological Station are discussed in this section.

**BEAVER ISLAND COMMUNITY SCHOOL**

Education for the youth of Beaver Island is provided through the Beaver Island Community School, part of the Charlevoix-Emmet Intermediate School District (ISD). Staffing, curriculum development, and student achievement are all concerns of school districts in rural or isolated locations, and the Beaver Island Community School Board has been working to ensure that each student is provided a high-quality education on the Island with enrichment opportunities not easily found elsewhere. Robotics, storytelling, radio communications, and other special skills have been offered

to Island students in recent years. Enrollment in recent years has been around 50 students, which is a decrease from years past. In 2022, enrollment increased up to a total of 59 students. Enrollment numbers from recent years are shown in Table 3.18. The Charlevoix-Emmet ISD has steadily decreased in enrollment between 2016 and 2022. With a relatively small number of students, community support for the school is increasingly and always important. Education for youth on the Island is included in the discussion of key challenges at the end of this chapter.

**CENTRAL MICHIGAN UNIVERSITY BIOLOGICAL STATION**

Central Michigan University (CMU) owns and operates the CMU Biological Station and Campground on the eastern shore of the Island; Miller’s Marsh on the southwestern end of the Island; and the CMU Boathouse on Paradise Bay. These facilities provide summer courses for CMU college students and serve as a base for researchers studying the Great Lakes and Beaver Island. CMU benefits the Island through scientific research, economic investment from students and guests, and by providing public lectures and enrichment events.

**TABLE 3.18 SCHOOL ENROLLMENT**

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
BI Community Schools	50	46	49	49	49	59
Charlevoix-Emmet ISD	8,941	8,761	8,673	8,570	8,230	8,035

Source: Michigan School Data as found on MISchoolData.org and Beaver Island Public Schools.

**“We need affordable housing on the Island for senior citizens and for new people just starting out. Not everyone can afford to buy or rent [with the] options we have available.”**

**Beaver Island Resident**



## **KEY CHALLENGES IN THIS CHAPTER**

The information in this chapter identifies the major demographic and housing trends on Beaver Island and inventories a number of social services and community assets. Many of the Island’s key challenges are related to these topic areas. The following list of key challenges was written with significant public input and was discussed at stakeholder meetings, Joint Planning Commission meetings, in a community input survey, and in public input throughout the process.

- The Island has drawn fewer young residents, especially homeowners, to the Island in recent years. At the same time, the population has continued to age, and additional older, often retired, households have moved to the Island.
  - The impacts of an aging population are felt in the housing market, where fewer young families have purchased homes in recent years. Anecdotal reports state that more homes are for sale, as vacation or seasonal homes are not passing from one generation to the next as they did in the past.
  - The impacts of fewer young families are felt in the school district.
  - The impacts of an aging population are felt by social service providers and health care providers who will need to prepare for the additional demand created by an elderly population. This challenge is exacerbated by a decline in service availability from Charlevoix County’s Commission on Aging.
- Providing affordable and inclusive housing options for persons of all income levels continues to be a challenge for both permanent and temporary residents.
- The Island’s appeal as a vacation community creates affordability challenges for year-round renters and seasonal workers.
- The future of the Island is reliant, in part, on its ability to provide for adequate emergency healthcare, especially as the needs of the elderly population increase.
- Accurate data on the Island’s conditions can be difficult to find. This creates a gap in information available to local decision makers and potential investors.
- A wealth of community organizations, non-profits and public agencies provide services to the Island. The quality of communication and collaboration between these groups varies and should be improved overall.
- Many community organizations lack the capacity, leadership skills, or knowledge to apply for grants or access other valuable resources.

Islanders created a list of ideas and priorities to address each challenge. These ideas can be found in Chapter 6.



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# EMERALD ISLE

**“It’s all about infrastructure. Either tourism or permanent residents need well-maintained roads, clean water, affordable housing, medical care and businesses that they can frequent.”**

**Beaver Island Resident**

# CHAPTER 4

## BUILT ENVIRONMENT

**This chapter summarizes current conditions on Beaver Island related to the built environment. This includes overviews of the way land is currently used on the Island, the Island’s transportation network, and the Island’s energy and communication infrastructure. The chapter ends with identifying the key challenges related to these topics including bike-lane expansion, the need for emergency planning, broadband and high-speed Internet availability, and waste and debris removal.**

### LAND OWNERSHIP

This section provides a short overview of the major tax-exempted land owners on Beaver Island and the Beaver Island Archipelago. Map 4.1 at the end of this chapter shows the parcels on Beaver Island that are owned by governmental or natural conservation groups. There are a number of government and conservation landowners on the Island, but it is important to note that just because land is tax exempt does not mean it is open to the public. The following provides a short description of the major public landowners on Beaver Island and the Beaver Island Archipelago.

### BEAVER ISLAND ARCHIPELAGO

Although this Master Plan only guides decisions for Beaver Island, the entire Beaver Island Archipelago is significant to many government agencies and conservation groups that also own land on Beaver Island. The government and conservation groups that have ownership of the Archipelago are discussed briefly in this section.

- About 5,000 of the 5,080 acres of **Garden Island** are owned by Michigan Department of Natural Resources (DNR) and administered by the Wildlife Division.
- **High Island, Hog Island, Whiskey Island** and **North Fox Island** are entirely owned by the DNR and administered by the Wildlife Division.
- About 40%, or about 1,250 acres, of **South Fox Island** is owned by the DNR and administered by the Wildlife Division.
- **Gull Island, Pismire Island, Hat Island** and **Shoe Island** are federally owned and part of the Michigan Islands National Wildlife Refuge, which is administered through the Seney National Wildlife Refuge of the U.S. Fish and Wildlife Service.



The Michigan Department of Natural Resources owns much of the forest land in the southern portion of Beaver Island.



The Beaver Island Lighthouse School property is owned by Charlevoix County and Networks Northwest. The Lighthouse on this property is a cultural resource, as described in Chapter 2.



Each Township on Beaver Island has a Township Hall and several other properties. Township parks are described more in Chapter 5 in the discussion of recreation and tourism.

## BEAVER ISLAND LAND OWNERSHIP

Approximately 40% of Beaver Island, or about 14,400 acres, is owned by governments or conservation groups. This section describes the areas of the Island belonging to these public interest groups. This information is also shown on Map 4.1 at the end of this chapter.

### STATE OF MICHIGAN

Approximately one-third (12,533 acres) of Beaver Island is owned and managed by the Michigan Department of Natural Resources (DNR). Most of the DNR's land is on the southern end of the Island. DNR's holdings include approximately 12,400 acres of diverse forests including northern hardwoods, lowland deciduous, and lowland coniferous forest types. DNR also manages a number of public access sites at Lake Geneserath, Green Lake, and Bonner's Landing. Additional management considerations on DNR land include historic and cultural sites like the Mormon homesteads, hiking trails as mapped later in this chapter, old well sites, infrastructure at Martin's Bluff, and a number of sensitive landscapes home to threatened, rare, and endangered species. In 2017, the DNR updated the Management Plan for State-Owned Lands on Northern Lake Michigan Islands. This plan provided a broad framework for the continued conservation, use and enjoyment of these lands that was congruent with the DNR's goals of protecting cultural and natural resources, providing recreational opportunities, and fostering economic prosperity.

The DNR's land consolidation strategy may allow the DNR to sell non-contiguous land in the future. This is important as several important pieces of DNR land are scattered throughout the Island, especially on the western

coast. Chapter 7 includes a goal that St. James and Peaine Townships work to acquire any DNR land that is sold.

### COUNTY AND LOCAL

A number of properties on the Island (totaling 188 acres) belong to various Charlevoix County departments, including the County Road Commission, the Charlevoix County Beaver Island Center on Donegal Bay Road, and the Lighthouse School property at the south end of the Island. The Lighthouse School closed in 2016 and is described in more detail in Chapter 2.

St. James Township, Peaine Township, and the Beaver Island Community School own property on Beaver Island. Lands in this category total 712 acres, or about 2% of the Island. This category does not include lands owned by Island non-profits or NGOs such as the Preservation Association of Beaver Island. Local organizations are described in more detail in Chapter 3.

### TRIBAL GOVERNMENTS

Both the Grand Traverse Band of Ottawa and Chippewa Indians (GTB) and the Little Traverse Bay Bands of Odawa Indians (LTBB) own several small properties as non-trust lands on Beaver Island totaling approximately 115 acres. That includes areas conserved in perpetuity due to the presence of cultural or sacred sites or access to Lake Michigan. Through the 1836 Treaty of Washington, "the Beaver Islands were reserved for use for the Beaver Island Indians," including hunting, fishing and reservation rights, recognized now as LTBB Reservation Lands including Garden and High Island, and GTB Reservation Lands including Beaver Island.



There are several commercial properties in downtown St. James that offer services to residents and visitors. Chapter 5 describes these amenities in more detail.



Residents of Beaver Island enjoy the quiet solitude of nature on the many waterfront and wooded lots available for residential development.



Public amenities such as the Iron Ore Bay beach are included in tax-exempt lands.

**OTHERS**

As discussed in Chapter 3, Central Michigan University (CMU) owns approximately 478 acres of land on Beaver Island including the Miller’s Marsh Research Area, the CMU Biological Station and Campground, and the CMU Boat House.

The Little Traverse Conservancy (LTC) owns several areas of land, and a number of trails and pathways that are open to the public totaling approximately 483 acres. These areas include the nature preserves of Barney’s Lake, Little Sand Bay, Conn’s Cove, Karl J. Erber, Stanhope Family, Sarah A. Martin, and George and Althea Petritz Preserves.

**PROPERTY CLASSES**

Property classes are one way of understanding the potential use and ownership of property. The St. James and Peaine Township Property Tax Assessors assign a property class code to each property on the Island. Map 4.2 shows the broad categories of property class codes likely pertaining to their use: agricultural, commercial, industrial, residential, and tax exempt. Table 4.1 shows the total acreage and percent of land on the Island in each of these categories. In general, most of the land on the Island is coded residential. Less than 1% of the Island is coded as commercial or industrial, while 9.3% is coded as agricultural. Tax-exempt includes land owned by the government and tribal agencies, and land used primarily for educational, non-profit, or religious purposes. About 23.4% of the Island’s land is exempt. The

outer islands contain about 21.9% of the entire Archipelago’s land mass. Because tax codes are applied to an entire parcel, the tax code does not correspond exactly to the way a parcel is used. For example, a parcel classified as agricultural may also have a home on site.

**TABLE 4.1 ACREAGE OF LAND BY CLASS CODE**

	ACREAGE	% OF TOTAL LAND
Agricultural	4,349	9.3%
Commercial	396	0.8%
Industrial	22	0.0%
Outer Islands	10,244	21.9%
Residential	19,608	41.9%
Tax Exempt	10,948	23.4%
Unknown	1,201	2.6%

Source: Charlevoix County Tax Assessor

## LAND USE ON BEAVER ISLAND



Map 4.3 shows the historical parcels, or plat map, for Beaver Island. While this map is included primarily because of its interesting history and original references to Island landmarks (such as “Big Beaver Island Harbor”), it also highlights the way government defines land ownership. Straight parcel lines form the bounds of a property owner’s private land, but in reality these straight lines often cut across meandering streams, rocky bluffs, high hills, and changing terrain. Lake Michigan’s changing water levels and waves hardly obey private property, and a property on the coast might experience a net gain or loss in land over time.

The previous sections of this plan describes the way land is divided, coded and owned by various property owners and entities, while the next section of the plan describes the way land is used by both humans and the natural environment. Chapter 2 contains more detail on the Beaver Island Archipelago’s environmental systems, including forests, wetlands, dunes and beaches. The next section relies on land-use analyses conducted in 1978 and 2010 to show how land use has changed on the Island over time.



**LAND USE COMPARISON STUDY**

Map 4.4 shows seven categories of land use on Beaver Island in 1978. This information was gathered by the Michigan Geographic Data Library and is based on aerial imagery. The land uses are likely not 100% accurate, but can help paint a general picture of how land was used in 1978. According to this map, roughly 900 acres, or 2.4% of the Island, were built-up with development (including homes, infrastructure, or buildings) in 1978.

Map 4.5 shows the same seven categories of land use on Beaver Island in 2010. This information was created by the Little Traverse Bay Bands of Odawa Indians using a similar methodology to the map created in 1978 (Map 4.4). While some of the definitions of the categories may differ between the two years, Maps 4.4 and 4.5 are largely comparable. In 2010, roughly 4.8% of the Island was built-up with development including homes, infrastructure, or buildings.

Table 4.2 shows the acreages of land classified into the seven categories in 1978 and 2010. It is important to emphasize that while these numbers are specific, they may not be completely accurate and should be taken as a general indication of how land use may have changed over time. Overall, urbanized land has roughly doubled in size, from around 900 to 1,800 acres. This is consistent with the Island’s population growth during this time period (see Chapter 3). It is easy to see by comparing Maps 4.4 and 4.5 that new residential development has occurred along the shoreline, especially in Peaine Township, since 1978. However, land that is now urbanized was once something else. The amount of agricultural and grass and shrub land all decreased in acreage from 1978 to 2010.

**TABLE 4.2 ACREAGE OF LAND BY LAND USE, 2010**

	1978 ACRES	2010 ACRES	CHANGE FROM 1978 TO 2010
Urban and Built-Up	895	1,803	102%
Agricultural	536	432	-19%
Grass and Shrub	3,962	903	-77%
Forest	28,523	29,213	2%
Water	1,059	1,080	2%
Wetlands	2,090	2,867	37%
Barren Land	333	1,079	224%

Source: Little Traverse Bay Bands of Odawa Indians

**DETAILED 2010 LAND USE**

Map 4.6 shows a more detailed version of Map 4.5 by dividing the seven broad categories into additional land-use classifications. This map served as a representation of the way land is used on Beaver Island and helped guide discussions to create the Action Plan and Future Land Use Plan discussed in Chapters 6 and 7.

Table 4.3 shows the number of acres and percent of the Island’s land in each category corresponding to Map 4.5. According to this analysis, most of the Island is forested, with 54.7% of the Island in the upland forest category and 23.3% in the lowland forest category.

**TABLE 4.3 DETAILED LAND USE, 2010**

LAND USE	ACRES	% OF TOTAL LAND
Single Family Residential	1,247	3.3%
Commercial, Services, Institutional	111	0.3%
Other Retail, Services	88	0.2%
Air Transportation	290	0.8%
Roads and Utility Lines	4	0.0%
Extractive	63	0.2%
Agriculture	447	1.2%
Upland Grass and Shrubs	903	2.4%
Upland Forest	20,428	54.7%
Clearcut	57	0.2%
Water	1,080	2.9%
Lowland Forest	8,713	23.3%
Wetland	2,867	7.7%
Shoreland	1,079	2.9%

Source: Little Traverse Bay Bands of Odawa Indians

## TRANSPORTATION

A healthy transportation system provides a number of ways for people and goods to move around a community and travel to surrounding places. For many communities this simply requires roads and sidewalks, but on Beaver Island, vital transportation modes include airplanes, ferries, buses, cars, bicycles, and even snowmobiles. This section provides an overview of the current conditions and planned improvements for the Island's transportation network.

### ROADS

Map 4.7 at the end of this chapter shows the roads on the Island according to Michigan's classification system of county primary roads, county local roads and other road types. Primary roads are those the county considers of greatest general importance. Overall, there are about 10 miles of county primary roads on Beaver Island including King's Highway, Tom McCauley's Road, Paid Een Og's Road, and parts of East Side Road and Donnell Mor's Lane. County local roads consist of roads maintained by a county but are not part of the primary road system. There are about 80 miles of county local roads on the Island as shown on Map 4.7. In addition to county roads, the Island has a number of private roads. Some of the Island's private roads are shown as "unknown" on Map 4.7, while others may not be mapped.



This section of the chapter describes the various ways to reach the Island and get around on the Island. From boats to planes to buses, cars and bikes, Islanders and visitors use many modes of transportation.





### COUNTY ROAD COMMISSION

Only a few of the Island's roads are paved with blacktop: King's Highway (from the north end to McCauley's Road) and the major intersections along King's Highway (East Side Drive, Paid Een Og's, and Sloptown). All of the public roads on the Island are maintained and managed by the Charlevoix County Road Commission through the Charlevoix County Road Commission Beaver Island Garage. Beaver Island property owners pay for this service with tax dollars as well as the Road Commission from state and federal sources.

Currently, the garage is near downtown St. James on Bay Street and is in need of updates, but the Charlevoix County Road Commission recently purchased property on East Side Drive, just south of Welke Airport, with discussions of relocation or other updates to be made here. The Charlevoix County Road Commission currently employs three full-time, year-round employees on the Island to maintain the county roads.



The Charlevoix County Road Commission also maintains the culverts and infrastructure that supports the Island's roads.



The County Road Commission works hard to maintain the Island's roads in the winter. Sometimes, winter lasts until April or even May! This photo is of King's Highway. Photo Credit: News on the 'Net

### **FUTURE ROAD IMPROVEMENTS**

The Charlevoix County Road Commission has several proposed plans up for vote for the Island's roads in the near future. With a planned project to reconstruct the Beaver Island Airport runways, an asphalt paving plant is scheduled to be coming to Beaver Island in the 2024/2025 period. Both Townships are collaborating with the Charlevoix County Road Commission to prepare for needed road projects on Island, including plans for St. James Township to initiate Phase II of the Donegal Bay Bike Path, and Peaine Township currently working to obtain a primary road status for East Side Drive to potentially allow future road improvements during this period an asphalt plant is on Island.

### **ROAD MAINTENANCE**

Road maintenance on Beaver Island varies according to the season and road material. The Island's gravel roads are regularly treated as part of a public safety concern due to increased bike and car traffic activity. The County Road Commission uses a mixture of calcium chloride concentrated to 38% to treat gravel roads. This mixture is more expensive to purchase, but is less cost-prohibitive to transport to the Island than other methods. The high concentration of calcium chloride used on the Island's roads requires less frequent treatment than mineral brines typically used on the mainland. During the winter months, these roads are scraped and occasionally sanded.

The paved roads on the Island are occasionally treated with salt, although transportation of salt is very costly.

Relatively little salt is used on the Island's roads; most roads are scraped and sanded. All salt and maintenance materials must be transported to the Island on the ferry, requiring the Commission to send materials in advance. Past winters have made the repair of large equipment and shipment of supplies to the Island difficult.

There are a number of seasonal roads on the Island that are too narrow for the Commission's equipment to maintain in the winter.

### **PRIVATE ROAD IMPROVEMENTS**

There are a number of private roads in each Township. Several private roads have been upgraded with funding from property owners and occasional Township investment.

### **PUBLIC TRANSPORTATION**

Public transportation is provided by Charlevoix County Transit. On Beaver Island, the transit system operates on an on-call basis within its posted hours. Regular passengers range from youth up to age 60, while seniors are included in those age 60 and above. Seniors and disabled riders pay discounted fares, and the Charlevoix County Commission on Aging has paid the fare for seniors for the past several years. In general, the total number of rides taken on County Transit had steadily declined on the Island the last several years. However, some of the data from 2020 and 2021 may be considered an anomaly, as ridership significantly decreased then increased during the COVID-19 pandemic.





## TRAILS

Trails on Beaver Island are used for hiking, biking and snowmobiling. While some use trails primarily to recreate, the Island's trail systems are an important piece of the Island's transportation network.

Trails were a common discussion topic during the Master Planning process. From confusion over which trails are open to the public to debates over appropriate use of various trails, this topic proved to be of great interest to many on the Island.

Trails not only define the recreational habits for many Islanders, but they also support the economic base on the Island for tourism. Many visitors on the Island use the trails for birding, snowmobiling, and activities in summer and winter. The Master Planning process sought to clearly map the trails on the Island, provide a number of ideas on ways to mediate conflict related to trail use, and create a plan to strengthen this on the Island.

The Island's trail network provides opportunities for recreation, sightseeing, tourism, and even

**“I love the idea of using the Island’s natural areas minimally. Trails for hiking and biking are in line with that idea.”**

**Beaver Island Resident**

**“Add gravel bike paths that maintain the character of the Island.”**

**Beaver Island Resident**

transportation. Several of the trails are along or on main roads, such as East Side Road. These trails are on narrow gravel roads shared with vehicles, and can cause concerns for cyclists or hikers due to safety, dust, or seasonal conditions of the roads.

This Master Plan identifies a number of recommendations supported by Island residents to improve, maintain, and advertise trails (see Chapter 6). Implementing these recommendations will take cooperation with many parties including the DNR, each Township, and property owners. Trails, and opportunities to improve trails, are discussed in more detail in Chapter 5. A map is provided in Chapter 5 of the Island's trail networks.

For the purposes of transportation, it is important that the Island identify areas where trails are used as a major transportation route. Several trails are used by vehicles for emergency access, tours of the Island, or other purposes that might be better served by roads. Popular trailheads on the Island also might require parking areas in the future to avoid roads being blocked by cars.

## AIR TRANSPORTATION

There are two airports on Beaver Island. Each provides regular, year-round passenger flight service from the City of Charlevoix and chartered locations elsewhere in Michigan and the Midwest. The following section provides a short overview of each of the Island's airports. Estimates on the number of passengers flown to and from the Island via air transportation are included in the discussion of the tourism industry in Chapter 5. The location of each airport is shown on the map of the Island's critical infrastructure (Maps 4.9 and 4.10) discussed later in this chapter.

### BEAVER ISLAND AIRPORT

Beaver Island Airport is overseen by the Beaver Island Airport Commission. The airport manager reports to a seven-member board that includes a mix of members from both Townships' boards and public members. The Beaver Island Airport was established in 1945. In 2014, a new terminal building was constructed. Fresh Air Aviation, based in Charlevoix, is the main operator at the airport. Fresh Air Aviation provides year-round passenger flight service between Charlevoix and Beaver Island in addition to charter flights, lighthouse air tours, and shipping services.

### WELKE AIRPORT

Welke Airport is a privately-owned airport on Beaver Island owned and operated by Island Airways. Island Airways provides passenger and freight service between Beaver Island and Charlevoix, in addition to perishables, U.S. Postal Service mail, and shipping services including prescription medication. Island Airways, the Coast Guard, Northflight and Guardian also provide emergency medical transportation to Charlevoix Airport using specialized equipment.



Passengers of one of the Island's two airlines are able to see spectacular views of Lake Michigan and the Beaver Island Archipelago!



## WATER TRANSPORTATION

Ferry service has long been a critical mode of transportation to and from the mainland for both people and goods. Large goods, construction materials, vehicles, and other freight are shipped on one of two currently operating ferries.

### FERRY MANAGEMENT

Two organizations are involved in the management of Beaver Island's ferry system: the Beaver Island Boat Company (BIBCO) and the Beaver Island Transportation Authority (BITA).

BIBCO was formed in 1984 and provides scheduled fixed-route ferry service between Charlevoix and Beaver Island. BIBCO owns the Beaver Islander and operates both ferries.

BITA was established by St. James Township in 1993 under Michigan's Public Transportation Authority Act (PA 196 of 1986) to form a transit system in the greater Beaver Island

area. BITA owns the Emerald Isle and contracts operations of the ferry to BIBCO. BITA makes decisions regarding the maintenance and funding of the Emerald Isle, and receives federal and state dollars to maintain the ferry. BITA is managed by a board of directors and an executive director.

In January of 2023, a grant from the Federal Transportation Administration (FTA) was awarded for \$6.6 million along with \$14 million from the Michigan Infrastructure Grant program to build a new vessel to ferry passengers, vehicles and supplies to and from the Island. The Michigan Department of Transportation also awarded a \$90,000 grant to BITA to conduct a propulsion study that will determine the cost and upkeep of the potential new vessel.

Currently the Beaver Island Energy Transitions Initiative Partnership Project (ETIPP) Team is considering investigating potential clean energy source options for the new Beaver



Island vessel along with other potential projects to present to the Township boards and BITA. More information about the ETIPP Team is provided under Renewable Energy in this chapter.

### THE EMERALD ISLE

The Emerald Isle is the larger of the two ferries and is also the newest, launched in 1997. The Emerald Isle can hold a maximum of 298 passengers and is capable of carrying large amounts of freight, including up to 20 vehicles at a time.

### THE BEAVER ISLANDER

The Beaver Islander was built in 1962 and is the smaller of the two ferries. This vessel is capable of carrying 200 passengers and 10 vehicles at a time. The Beaver Islander runs primarily during busy summer weekends when additional capacity is needed.

Traveling to the Island by boat allows visitors to experience the Island's remote beauty in a unique way. Reaching the Island from Charlevoix takes about two and a half hours on the ferries. The Beaver Island Harbor on Paradise Bay is also a federally-designated "harbor of refuge," a safe location for boaters to shelter in bad weather.

### MARINAS ON BEAVER ISLAND

Beaver Island Municipal Marina was expanded with the purchase of the privately-owned Anderson Marina by St. James Township in 2019 through the JA Woollam Foundation and a fuel dock installation with funding from the Grand Traverse Band of Ottawa and Chippewa Indians. This now fully public marina is located on Paradise Bay with over 50 slips and is overseen by a Harbormaster.

With this expansion, the Municipal Marina now includes two locations: the South Marina next to the ferry dock, open from early June to Labor Day; and the North Marina near McDonough's Market, which is open from mid-May through Labor Day and features the fuel dock. Both locations offer WiFi, lounges, restrooms with showers, ice, and laundry facilities.

Slip reservations can be made using the Michigan Department of Natural Resources Reservation System with reservations recommended, especially during the busiest months of July and August. For more information, contact the Harbormaster at [harbormaster.stjamestown.bi@gmail.com](mailto:harbormaster.stjamestown.bi@gmail.com) or 231-448-2252.

Beaver Island Municipal Marina monitors marine channel 16.



## UTILITIES AND ENERGY ON BEAVER ISLAND

Because of Beaver Island's remote location, energy and communications infrastructure are of vital importance. This section provides an overview of services on the Island such as water, power, fuel, waste management, and communications including telephone and Internet availability. Each of these services has implications for appropriate emergency planning on the Island, as discussed at the end of this chapter.

### ELECTRICITY ON BEAVER ISLAND

Electricity is provided by Great Lakes Energy (GLE), the third-largest electric provider in Michigan. GLE provides power to most of Emmet, Charlevoix and Antrim counties as well as Beaver Island. The Island is fed through its main underwater line extending from Cross Village in Emmet County.

The Island's electricity usage has increased in both the summer and winter months in the past several years. Demand for electricity in the winter months has grown faster than demand for summer electricity. Winter heating is likely the main cause of this growth in demand.

Overall, the Island still uses the most electricity during the summer months, such as July. The summer weekend with the highest electricity use has been the week of July 4th for the past several years. This information supports the reports of Island hotels and businesses that July 4th is the peak of tourist season on the Island.

The Island currently consumes about half of its electrical usage capacity with its current infrastructure.

### POWER OUTAGES

The Island's electric infrastructure is capable of operating entirely on generated power. In other words, in the case of emergencies, the Island's backup generators will power the Island. GLE conducts assessments of its infrastructure every three years to determine where equipment may need to be upgraded. GLE may be making upgrades to the generator plant on the Island in the next five years to ensure that backup generated power is as reliable as possible. This would be a positive improvement for the Island, especially as the number of extreme storms are expected to increase in northern Michigan, increasing the risk for power outages.

GLE maintains the vegetation near power lines by performing regular trimming of vegetation and yearly inspections for dead trees and other hazards. GLE has a full-time employee on the Island to provide immediate service. While the west side of the Island has buried electric service lines, the east side of the Island has overhead lines that remain sensitive to disruptions due to high wind and ice storms. Property owners should work with GLE to bury lines.

### RENEWABLE ENERGY

A great deal of interest has been expressed in recent years to encourage the development of energy independence on the Island. Beaver Island is not alone in its pursuit of local renewable energy. The Island is part of a larger movement of other island communities piloting renewable energy projects as a means to strengthen energy security and self-reliance, with other islands' projects and accomplishments being discussed within GLIA for example. While some residents already use renewables on the Island, such as small installations of solar or burning wood, there is a desire for the whole of Beaver Island to be self-sufficient and rely solely on local renewable energy.



Beech bark disease is likely to have a long-term impact on fuel wood supplies on the Island, affecting households that heat with wood.



Interest in alternative energy is growing on the Island. Holy Cross Catholic Church recently installed a geothermal system.



Island Energies makes regular trips to the Upper Peninsula for fuel.



The health of the Island's drinking water relies in part on maintaining clean ground water.

In July 2022, Beaver Island was awarded an Energy Transitions Initiative Partnership Project (ETIPP) grant from the Department of Energy (DOE), the first to be awarded within the Midwest Region. This grant does not provide money but rather technical assistance from regional partners such as the National Renewable Energy Lab (NREL), the Island Institute and others to work alongside rural and island communities in assessing and advancing solutions to transform energy systems to sustainable and clean energy sources that best meets the community's needs and wants while increasing energy resilience.

The Beaver Island ETIPP Team is initiating an assessment of Beaver Island's energy grid and investigating several potential projects to present to the Township boards, BITA, GLE and other entities involved in the overall operation of the Island's energy.

This may be accomplished over time through the implementation of local policy changes, collaboration with existing energy suppliers, applications for grant funding, and support in the exploration of developing alternative energy generation and distribution methods.

Traditional power grids operate by connecting residences, businesses and other buildings to central power sources, while a microgrid can disconnect from the traditional grid and operate autonomously. A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Microgrids can improve customer reliability and resilience to grid disturbances. There are a number of benefits and drawbacks that would need further analysis and planning before implementation.

Geothermal and solar energy production are two methods that warrant further investigation for the Island. While there have not been many thorough studies conducted for the Island, there is some evidence from these studies and other islands' projects in other similar locations that indicates there may be merit to both methods.

## FUEL

Island Energies provides car fuel, diesel, rec fuel, aviation fuel and propane to the Island. Island Energies is the only gas station on Beaver Island, excluding the fuel dock at the Municipal North Marina. Fuel is transported to Beaver Island from Ironton on the PetroQueen barge, which is capable of holding 32,000 gallons of fuel in five compartments. The PetroQueen was built in Michigan in 2015 to meet new regulations requiring fuel barges to have a double hull to protect against hazardous spills.



Before Lake Michigan ices over during the winter months, fuel is stockpiled on the Island. If fuel reserves run low, ice-breaking vessels are needed to allow for additional trips to resupply fuel. In years past, fuel has sometimes needed to be rationed on Island. Recently, Island Energies has increased the storage capacity for fuel, in line with the continued growth of the Island. Winter residents are encouraged to keep an extra tank of gas on hand, as many residents live a considerable distance from the grocery store and other necessities located in downtown St. James.

### **WATER SUPPLY**

Property owners and businesses on the Island rely on private wells for drinking water. Water testing kits are made available by the Beaver Island Rural Health Center and water tests are routinely conducted by businesses and homeowners. St. James Township also conducts regular testing on public wells in accordance with EGLE Standards. However, no comprehensive testing of the water supply on Beaver Island has been conducted in recent years, though EGLE did some sampling on the Island in the past. The Health Department of Northwest Michigan requires that new septic systems and water wells meet certain requirements. Maps 4.8 and 4.8.1 show the locations of water wells on Beaver Island and the Archipelago from digitized records; it is likely that there are other well locations that are not yet part of the digital data set, so not every well is shown on these maps.

### **SEPTIC SYSTEMS**

Waste is treated through privately-owned septic systems on individual properties for most of the Island. Particular soils on the Island may or may not tolerate traditional septic tanks. See the soil discussion in Chapter 2 for more information on the Island's soil types. With the potential for negative impacts on human and environmental health on the Island, it is important that government officials and private property owners work together to ensure properly working septic systems protocols are established.

Downtown businesses and several homes near downtown St. James are on a shared community septic system. In 2001, the Township secured a bond to construct the septic system which was paid off by user fees. This system allows downtown businesses to grow with less concern for expanding individual septic tanks. If properly maintained, the community septic system reduces the risk of septic failure of the systems elsewhere in the coverage area. The maintenance and inspection of this septic system is managed by St. James Township. Parcels connected to the community septic system pay user fees to fund the operations and maintenance of the septic system. The septic system has required some significant maintenance, including the repair of a major pipe freeze event in 2014.

### **SEPTIC AND WATER QUALITY**

With an increase of heavy rain events expected in northwest Lower Michigan, many experts, including the Michigan Department of Health and Human Services, are concerned about the impacts of septic leakage on water quality. Many property owners do not know the location or quality of old septic systems or drain fields on their properties. Before health codes required permitting of these systems, many may have been placed close to drinking water, inland lakes or other resources. As precipitation events increase, more toxins are flushed into our waterways, and septic infrastructure can be strained by wetter, heavier soil. These concerns have caused many local governments in Michigan to begin regulating the condition of septic systems.

Michigan is currently the only state in the nation that does not require some type of inspection on a septic system after its initial construction. As individuals move from mainland sewer systems to the Island's private septic systems, there is a need to develop educational materials for property owners to understand septic care, disposal of medications, etc. Several townships and counties have adopted requirements that septic systems be inspected for damages and leakage at the point of a property's sale to a new owner. This strategy allows the buyer and seller to privately negotiate the repairs of a system. There are a variety of strategies local governments can use to better understand the impacts that septic systems may be having on water quality as identified in Chapter 6.



The Beaver Island Transfer Station and Recycle Center provides opportunities for recycling various items including tin, aluminum, books, paper, glass, plastics, returnables and more.

**WASTE MANAGEMENT**

Recycling and the wise disposal of waste is a necessity for life on Beaver Island. The Island has invested in the Beaver Island Transfer Station facility so that residents and visitors can affordably dispose of trash and recycle materials whenever possible, and has initiated single stream recycling as of June 2022. The Transfer Station can also process larger loads like appliances, mattresses and other household items. To do so, the Transfer Station holds large debris until it can fill a crate that is then sent to the mainland.

The disposal of vehicles, building materials, and other large debris is of concern to many on the Island. The expensive removal of these items was identified as a key challenge to achieving the community’s vision of a clean Island.



To recycle large appliances, the Transfer Station holds the appliances until it has enough to fill a crate to send to the mainland for processing (above). Many Island facilities promote recycling, including the Beaver Island Community School (bottom left) and Central Michigan University (bottom right).



“With the acceptance and change in attitude about working from home, income can be generated through many businesses on the mainland. Success depends on reliable fast Internet connections.”

Beaver Island Resident



## COMMUNICATION INFRASTRUCTURE

Inadequate broadband or high-speed Internet availability was one of the top concerns raised by Islanders during the planning process for this Master Plan. The Island currently has two communication towers along with other communication-related infrastructure on the Island. This section briefly outlines this infrastructure and the major organizations providing communication services on the Island. The section at the end of this chapter provides more context and detail on the challenges related to expanding high-speed Internet.

The Beaver Island Joint Telecommunications Committee and Broadband Consortium are both working to address the Island’s communication and connectivity needs.

### TELEPHONE SERVICES

TDS Telecommunications Corporation provides landline services to Beaver Island. Telephone lines were first installed on the Island around 1903. Despite the proliferation of cell phones, many households on Beaver Island still use landlines due to poor cell reception, particularly on the southern half of the Island.

### CELLULAR SERVICES

Many Islanders raised concerns during the planning process for this Master Plan update that cellular strength on the Island is poor or unavailable in many locations. This is discussed more at the end of this chapter.

Due to its remote location, Beaver Island is not fully covered by adequate cellular phone service. Cell phone service is reportedly good in and near downtown St. James, but other areas have limited coverage, particularly the southern half of the Island. This is problematic, especially for tourists that are not aware of their network’s coverage on Beaver Island.

TDS and satellite service providers offer Internet services on Beaver Island. Many Islanders raised concerns throughout the planning process that current offerings are not fast enough or available everywhere on the Island.

The Island’s communication infrastructure is included on the maps of critical infrastructure described in Chapter 4.

## KEY CHALLENGES IN THIS CHAPTER

A number of key challenges related to the topics in this chapter were discussed during the Master Planning process as outlined briefly below.

### INTERNET SERVICES

Many Island businesses and non-profits offer WiFi access, including the Beaver Island Library, the Beaver Island Community Center, the Shamrock Restaurant, the Harbour Bodega and the Municipal Marinas North and South. Many of the Island's hotels also provide this service.

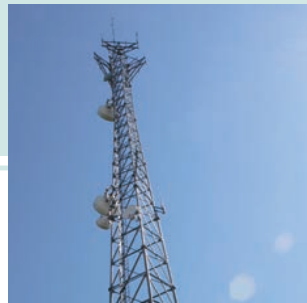
Many Islanders raised concerns throughout the planning process about insufficient Internet services on the Island. This problem not only impacts those who live on the Island, but many feel poor access to high-speed Internet is holding the Island back economically. In an age where an increasing number of jobs can be worked from any location with a good Internet connection, the Island's continued growth may be hampered by inadequate Internet access. The Townships have developed the Beaver Island Joint Telecommunications Committee to research available options. They are committed to this process with applications for grants being done in the past as well as being worked on currently.

Access to affordable high-speed Internet has become a necessity in our professional, personal and social lives. People who lack connectivity miss out on online learning, healthcare and economic opportunities. Expanding broadband connectivity on the Island will drive many improvements. With faster, more reliable Internet access, consumers will be able to access more products which will help grow the economy. Similarly, it can help facilitate communication and collaboration across distances, driving innovation and new business opportunities.

Rural broadband access will also support remote work in more areas. Employees who work from home may be able to contribute to the overall economy of the Island, but they need fast, reliable connectivity. Expanding Internet options

### BROADBAND ON BEAVER ISLAND

Rural communities around the country are recognizing the value of high-speed Internet for economic development. Broadband service was identified as a key challenge on the Island during public forums with the Michigan Office of the Great Lakes and the Island Institute. Central Michigan University constructed a microwave link to the mainland and is providing service to several non-profits and the Beaver Island Community Schools in addition to CMU facilities. Service is unstable, but improvements are being made. Island groups are exploring ideas like these to apply community-wide, although there are a number of regulatory and programmatic barriers.



Inadequate broadband access and poor cellular reception are connected problems that weaken the Island's resiliency to economic trends and continued health for an aging population.

in rural areas such as Beaver Island will create those opportunities for more businesses and the people they employ.

According to a widely-shared survey conducted by the Beaver Island Association in 2016:

- 72.7% of survey respondents think it is important for Beaver Island to have Internet access comparable to that available in larger communities.

- 46.1% of survey respondents have no service on their cell phones at the place they stay on Beaver Island.

### EMERGENCY MANAGEMENT AND SAFETY PLANNING

Emergency management is the planning and preparation for natural or manmade hazards such as severe storms, long periods of power outages, transportation failures, or other events that threaten the health and safety of the population. Planning for emergencies on Beaver Island is handled primarily through the Charlevoix County Office of Emergency Management (through the County Sheriff's Department). In April 2022, the Charlevoix County Emergency Management office issued a new Charlevoix County Operations Plan. This plan guides how the County manages emergencies. A Beaver Island Operations Plan, created in 2019, is an annex to the

County's Plan. This BI Operations Plan describes access needs for Beaver Island. A 2016 Hazard Mitigation Plan operated by Charlevoix County is currently being updated with a completion goal in 2025.

Beaver Island presents unique challenges for emergency management planning. Residents and visitors are only able to reach the Island by air transportation during a large portion of the year. In the case of a large-scale emergency on the Island, such as a wildfire or other threat, first responders and evacuees would face long delays. Remote areas on the Island itself can be hard to reach. The County Hazard Mitigation Plan identifies peak weekends for tourist activity on the Island (Homecoming Weekend, Independence Day), describes the damages that past storms have caused, and



Accommodating bicycles was a key concern raised during the master planning process (left). The need for comprehensive emergency planning and safety audits were another key concern. The Island has some emergency equipment installed like the example above.

lists storm damage, large events that could strain emergency services, and wildfires as the greatest threats facing Beaver Island from an emergency management perspective. Ideas to improve local emergency planning are included in Chapter 6. Local groups can also play a role in planning for better safety on Beaver Island. Public facilities and related equipment should be kept in good working condition, and emergency equipment such as lifesaving gear or rescue equipment should be made available wherever appropriate. These includes the addition of safety measures along the Lake Geneserath dock, such as a small lip, that could prevent wheelchairs from rolling into the water.

One step toward creating a comprehensive local emergency plan is to understand the locations of the Island's critical infrastructure. Transportation to and from critical locations is important during an emergency, and Island groups should work to ensure that critical buildings and services are able to

continue activity during emergencies. Critical infrastructure in high-risk erosion or flooding areas should be evaluated for potential retrofitting that could ensure the continuity of services during an emergency or natural disaster. Maps 4.9 and 4.10 show the locations of some of the Island's critical infrastructure.

Chapter 6 contains additional recommended actions for Island-wide emergency planning efforts.

### **ENERGY COSTS AND ALTERNATIVE ENERGY**

The high cost of transporting energy to the Island is an ongoing concern for many. Despite the enormous ingenuity companies have used to transport fuel and electricity to the Island, power outages and fuel shortages have occurred in the past. Extended shortages in energy can put already vulnerable populations on the Island at increased risk and cause other challenges for people on the Island. Reliance



Beech Bark Disease has impacted many of the Island's Beech trees, as discussed in Chapter 2. Downed and dying trees are a hazard to power lines, roads, and other important infrastructure discussed in this chapter.

on fossil fuels to produce fuel and power also contribute to ongoing environmental challenges. To help address these challenges, the Beaver Island Joint Planning Commission desires to encourage the use of alternative energy for property owners on Beaver Island. Not only does this fit the rustic nature of “living off the grid” that many Islanders cherish, but the production of alternative energy through solar or small-scale wind production are viable alternatives for several Northern Michigan communities. The recommendations in Chapters 6 and 7 are designed to help the Island promote these concepts and pilot them in public projects.

### **REMOVAL OF LARGE DEBRIS**

One guiding principle of this Master Plan is the goal of having a clean, pristine Island. One obstacle to achieving this vision is the presence of large debris that the Beaver Island Transfer Station and Recycling Center cannot currently accept. Unused vehicles are the largest example of debris that is cost-prohibitive to send to the mainland for recycling.

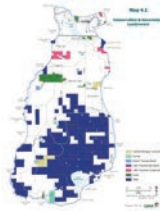
The cost of transportation has remained higher than the potential profit from scrap metal or reselling parts. The Joint Planning Commission identified this as a large challenge on the Island, and devoted time to discussing and researching opportunities to provide property owners with an affordable way to dispose of large debris. Enforcing blight ordinances and exploring grant programs to incentivize the disposal of debris are included in the list of recommendations in Chapter 6.

## MAPS IN THIS CHAPTER

The maps for this chapter are included on the following pages. This page provides a brief description of each map, while data sources and other information can be found on each map.

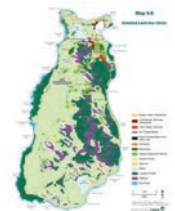
### MAP 4.1 CONSERVATION AND GOVERNMENT LANDOWNERS

This map shows the land on Beaver Island owned by large conservation groups and government entities.



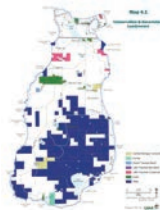
### MAP 4.6 2010 DETAILED LAND USE

This map shows a more detailed version of Map 4.5 for Beaver Island by dividing the general land use categories into more detail.



### MAPS 4.2 PROPERTY CLASSES

These maps show the parcels on Beaver Island and the Archipelago according to their classification by the assessor's office as agricultural, commercial, residential, industrial, or tax exempt.



### MAP 4.7 ROAD CLASSIFICATIONS

This map shows the roads on Beaver Island according to county, local, and general type.



### MAP 4.3 1901 PLAT MAP

This map shows the 1901 parcels along with the names of major landmarks, landowners, and other interesting information.



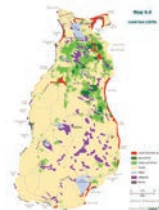
### MAPS 4.8 WATER WELLS

These maps show the locations of water wells on Beaver Island and the Archipelago.



### MAPS 4.4 1978 LAND USE

These maps show Beaver Island and the Archipelago according to general land use categories in 1978.



### MAP 4.9 CRITICAL FACILITIES

This map shows the location of critical infrastructure and facilities on Beaver Island.



### MAPS 4.5 2010 LAND USE

These maps show Beaver Island and the Archipelago according to general land use categories in 2010.



### MAP 4.10 CRITICAL FACILITIES DETAIL

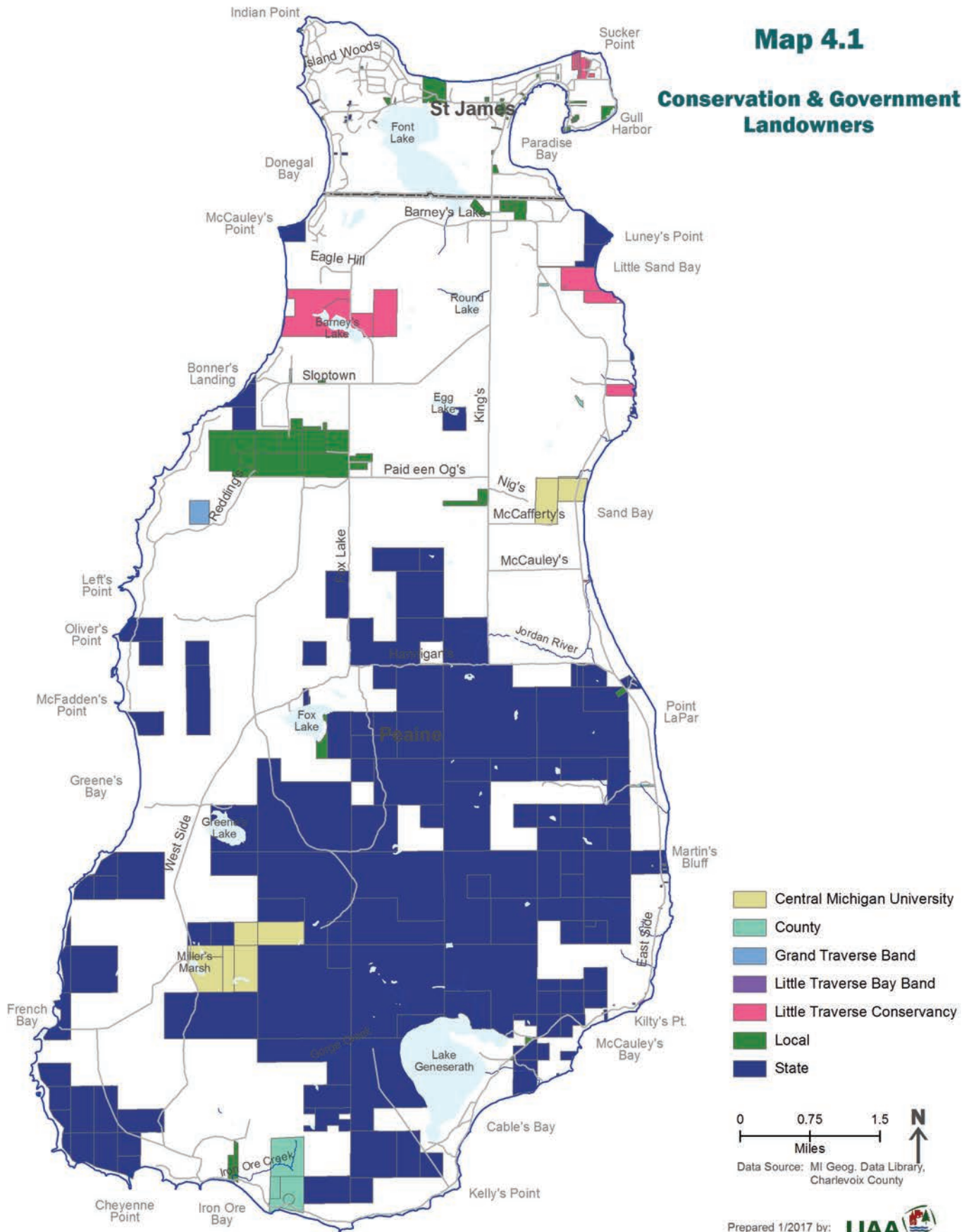
This map shows the location of critical infrastructure and facilities in St. James Township.



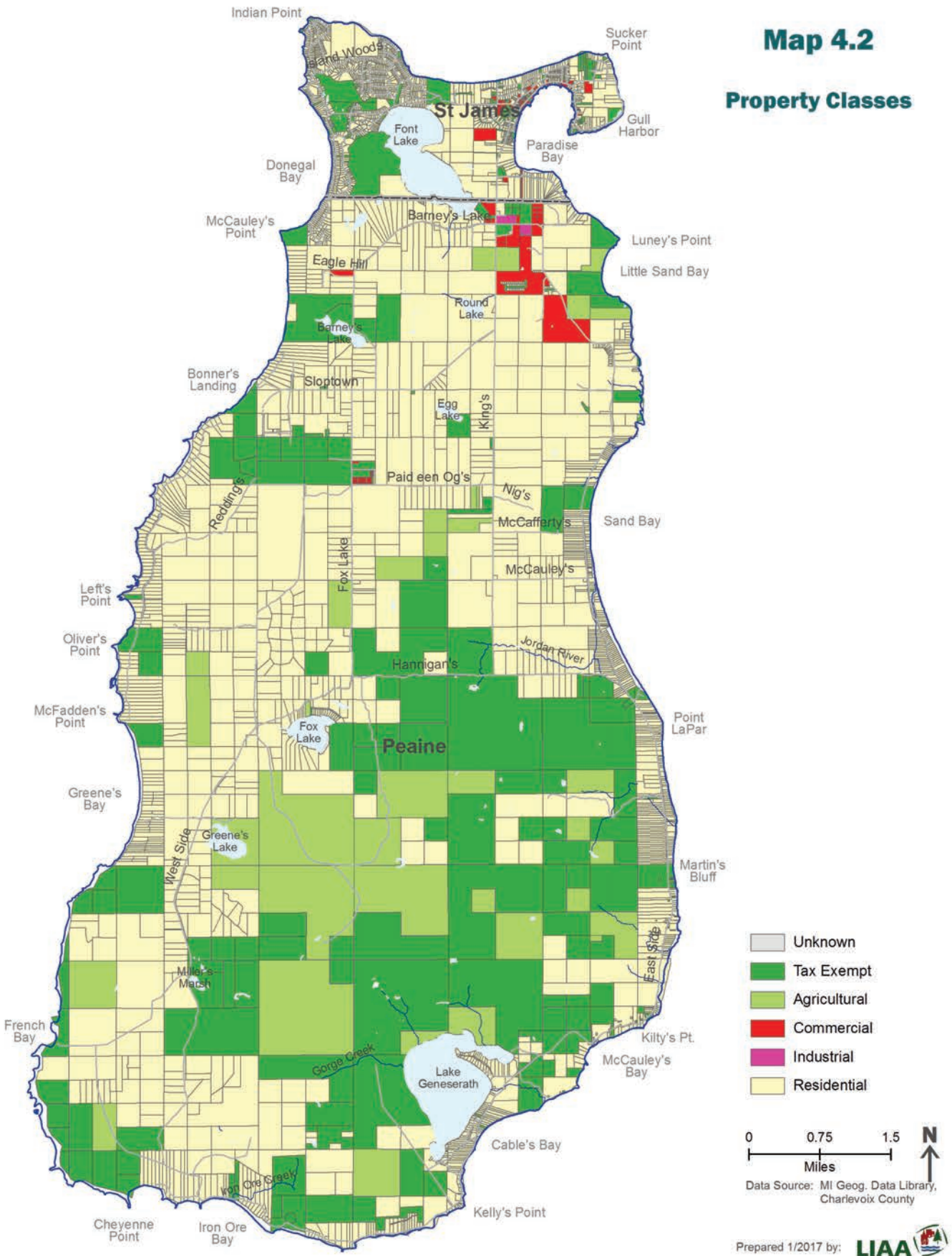


# Map 4.1

## Conservation & Government Landowners

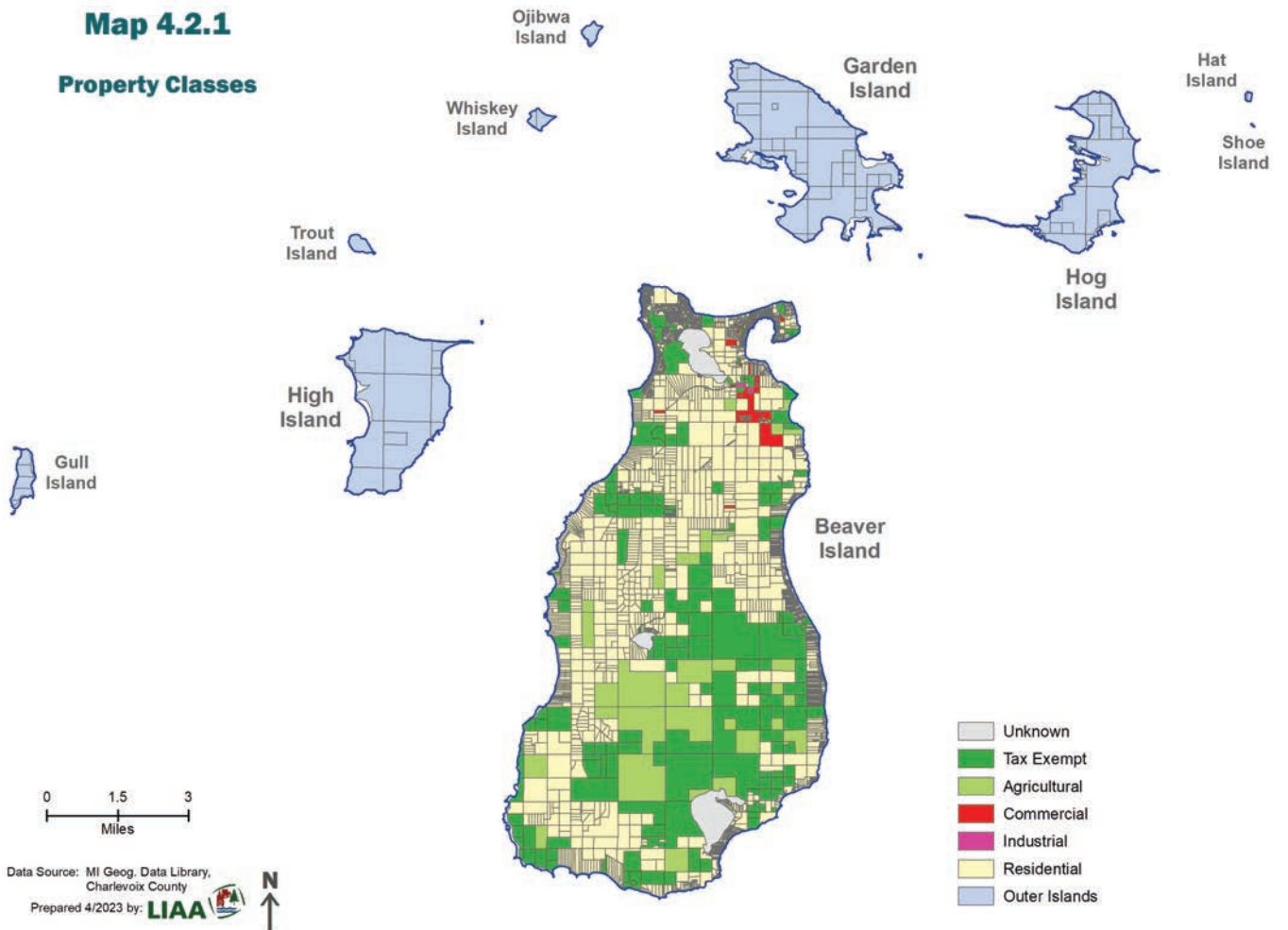


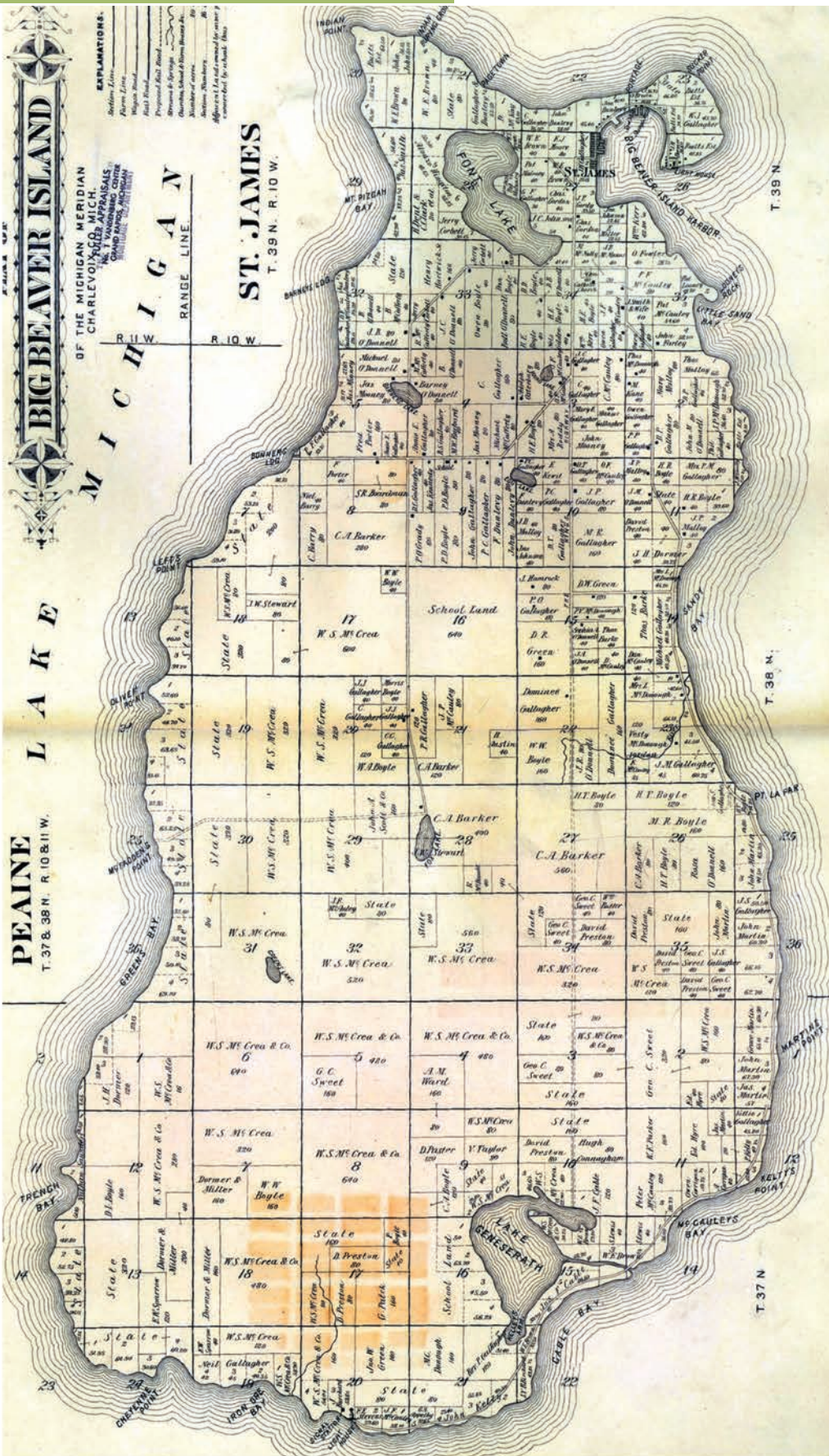
**Map 4.2**  
**Property Classes**



### Map 4.2.1

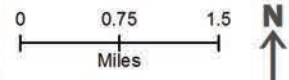
#### Property Classes





# Map 4.3

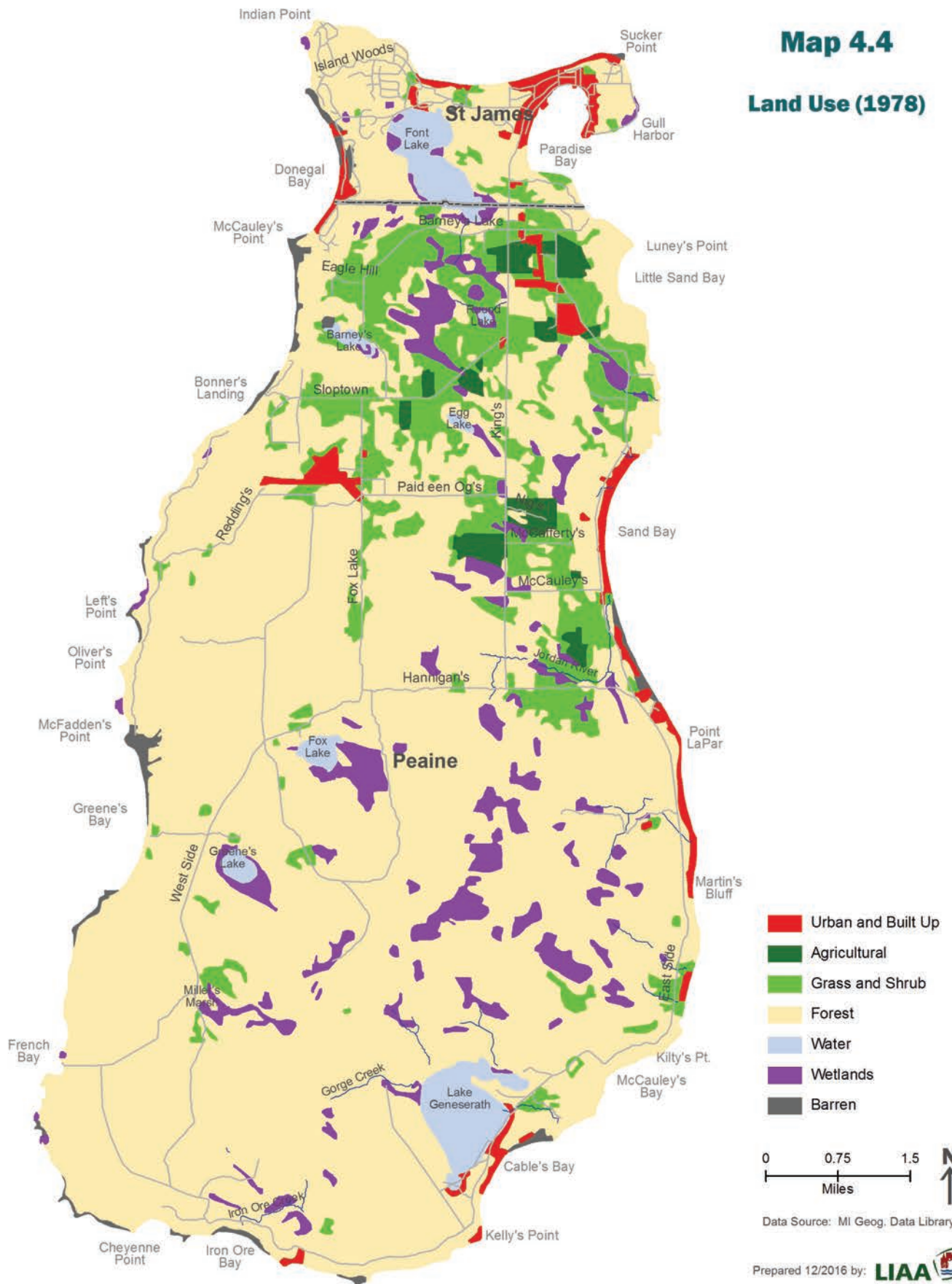
## 1901 Plat Map



Data Source: MI Geog. Data Library

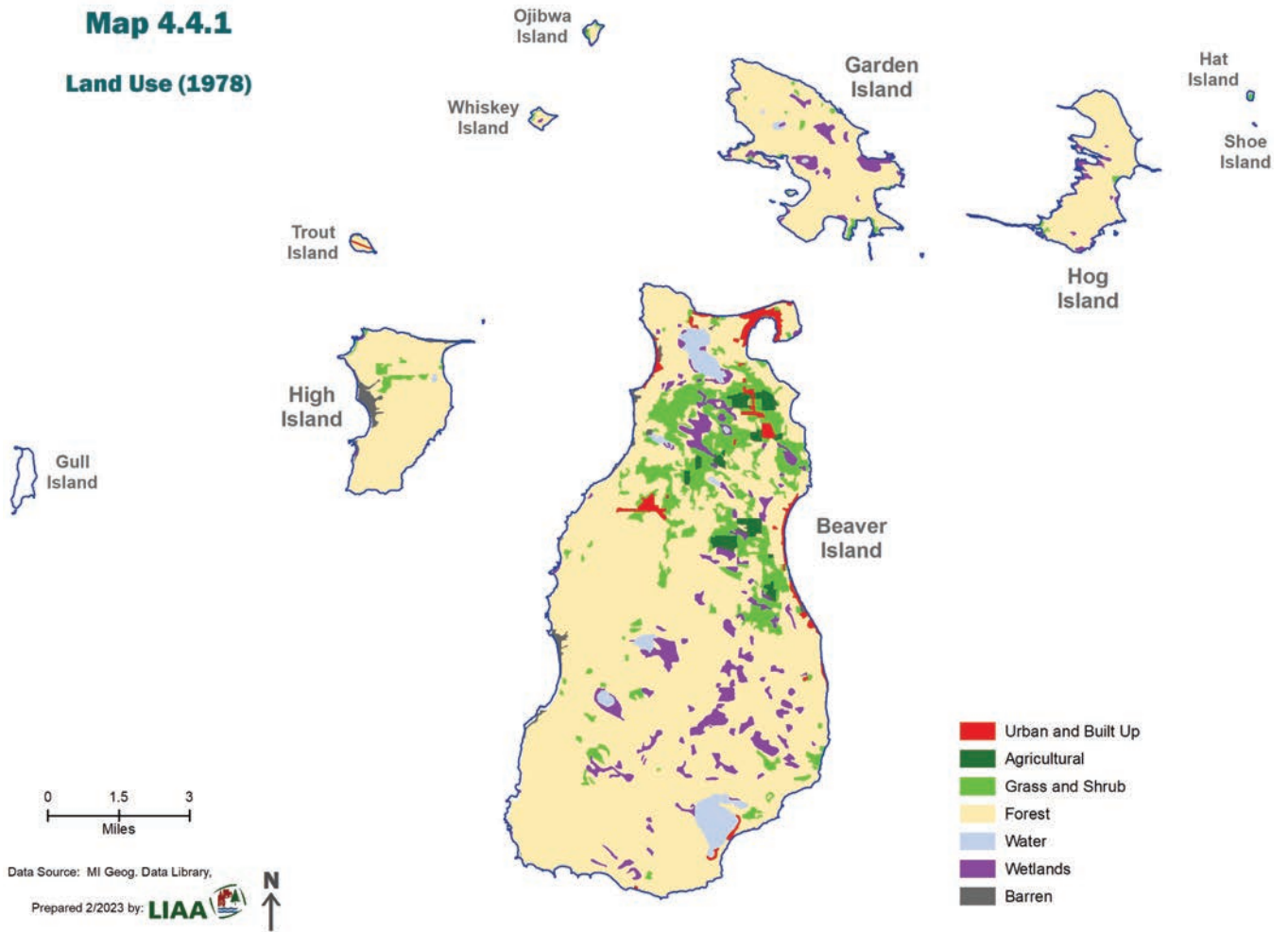
Prepared 12/2016 by: **LIAA**

**Map 4.4**  
**Land Use (1978)**

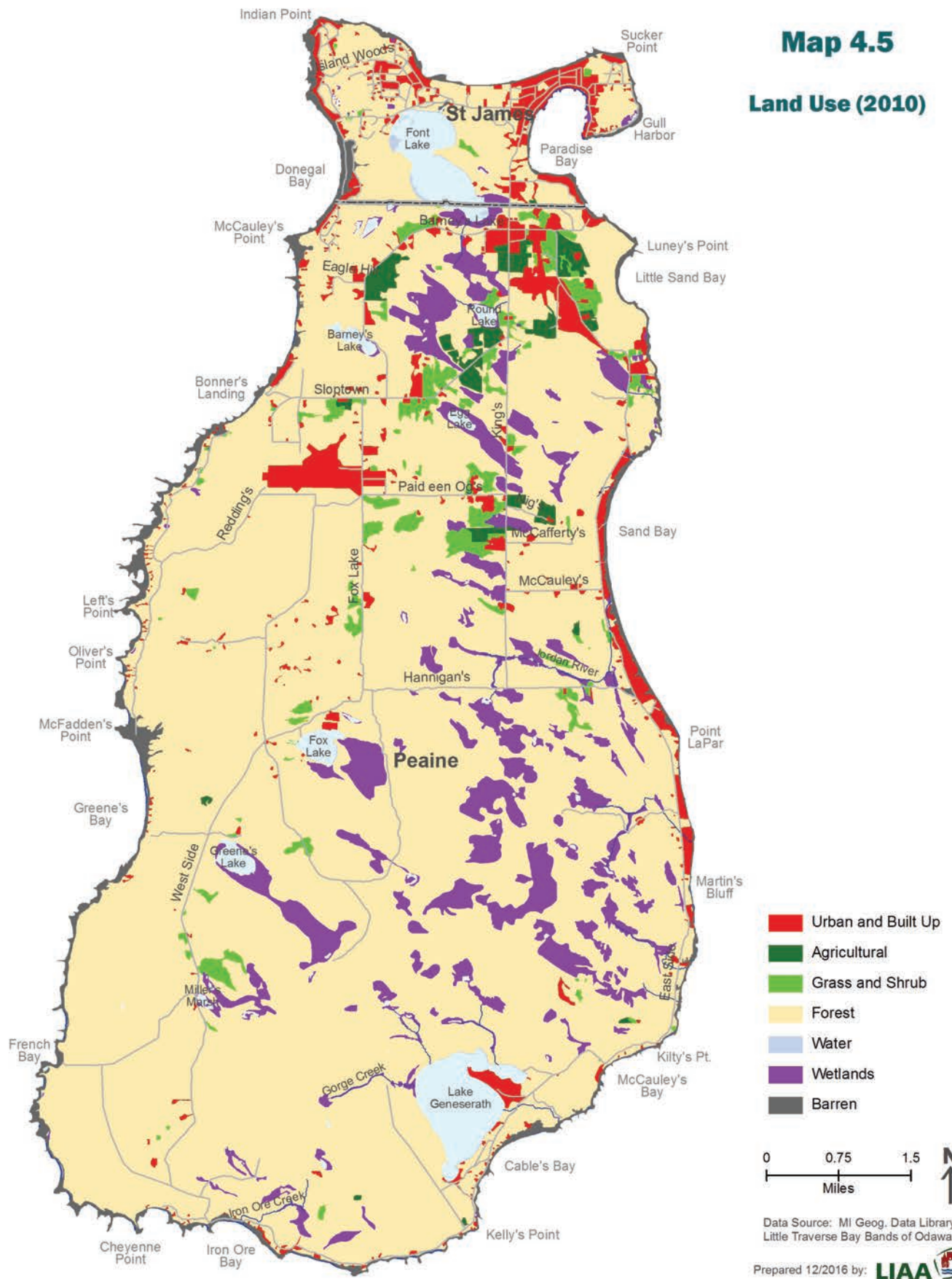


### Map 4.4.1

#### Land Use (1978)



**Map 4.5**  
**Land Use (2010)**

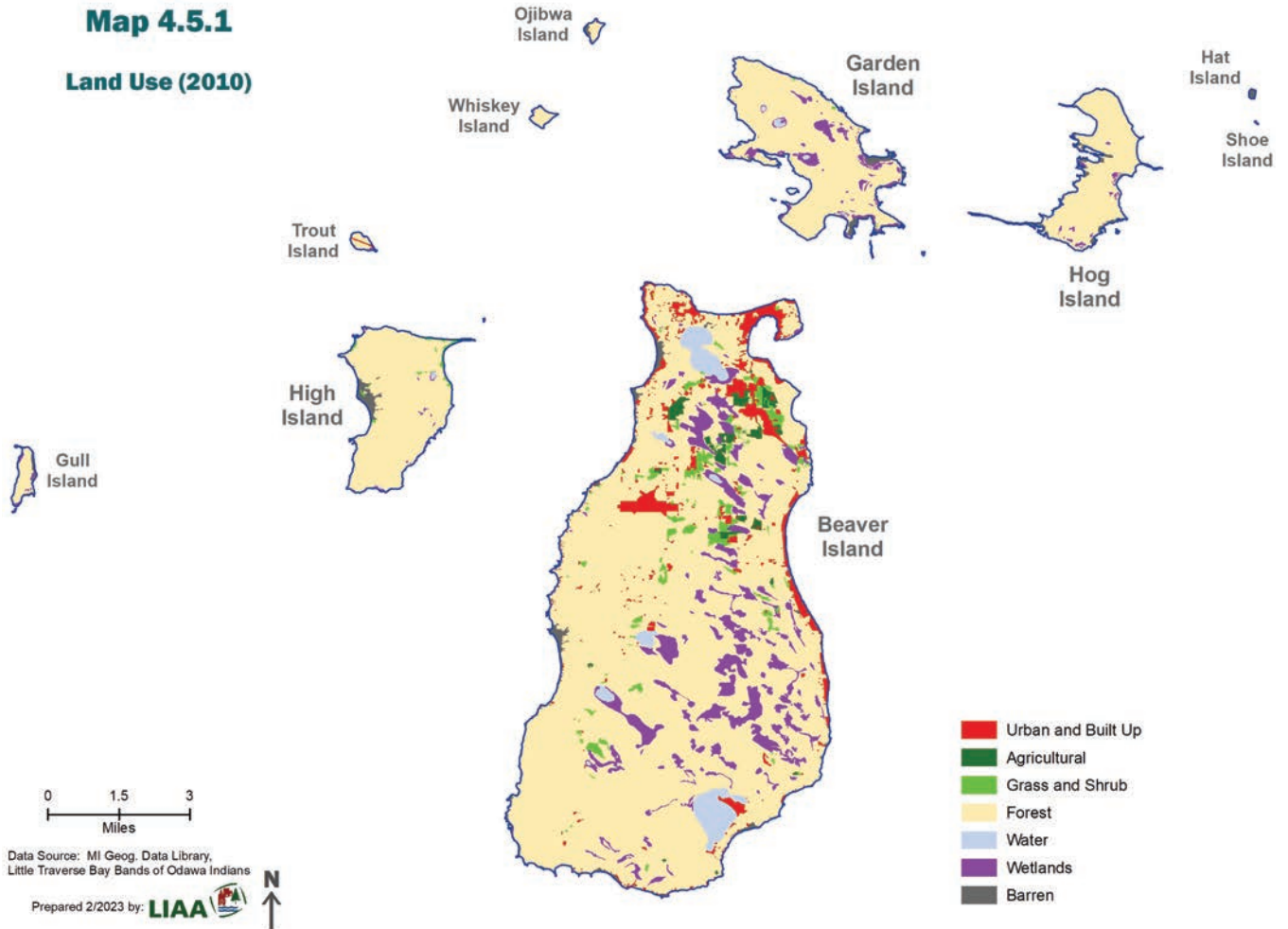


Data Source: MI Geog. Data Library, Little Traverse Bay Bands of Odawa Indians

Prepared 12/2016 by: **LIAA**

### Map 4.5.1

#### Land Use (2010)



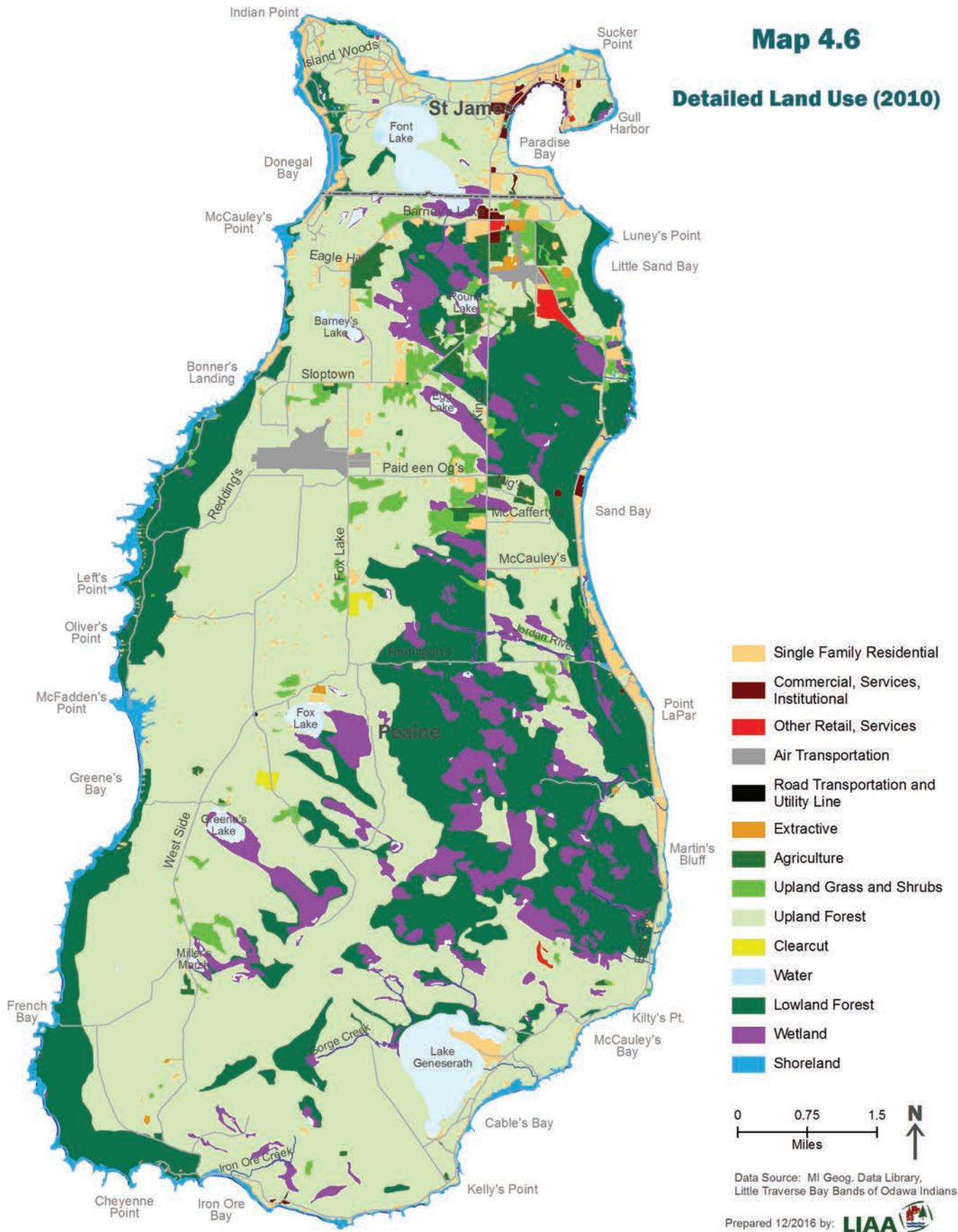
Data Source: MI Geog. Data Library,  
Little Traverse Bay Bands of Odawa Indians

Prepared 2/2023 by: **LIAA**  

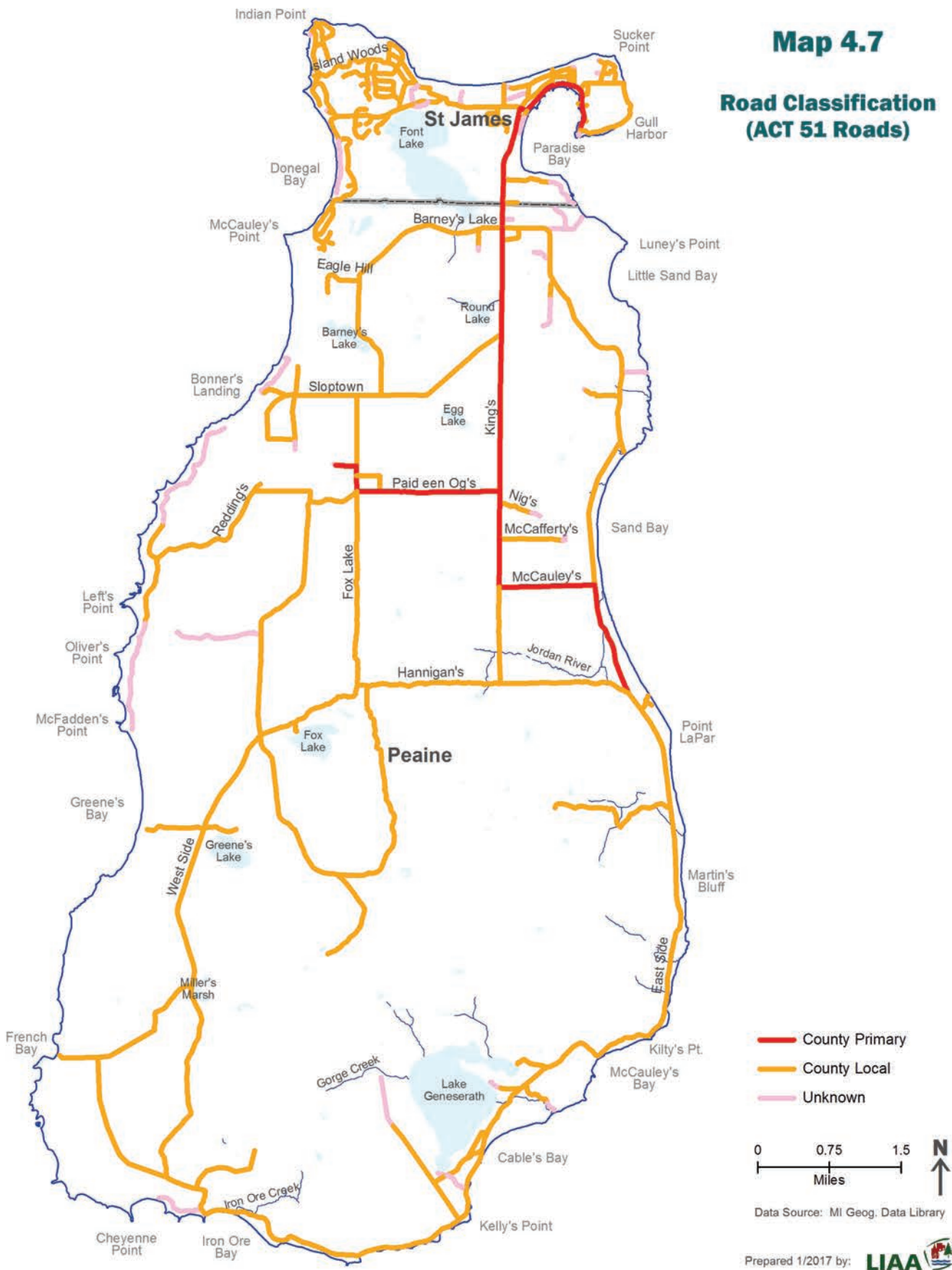


### Map 4.6

### Detailed Land Use (2010)

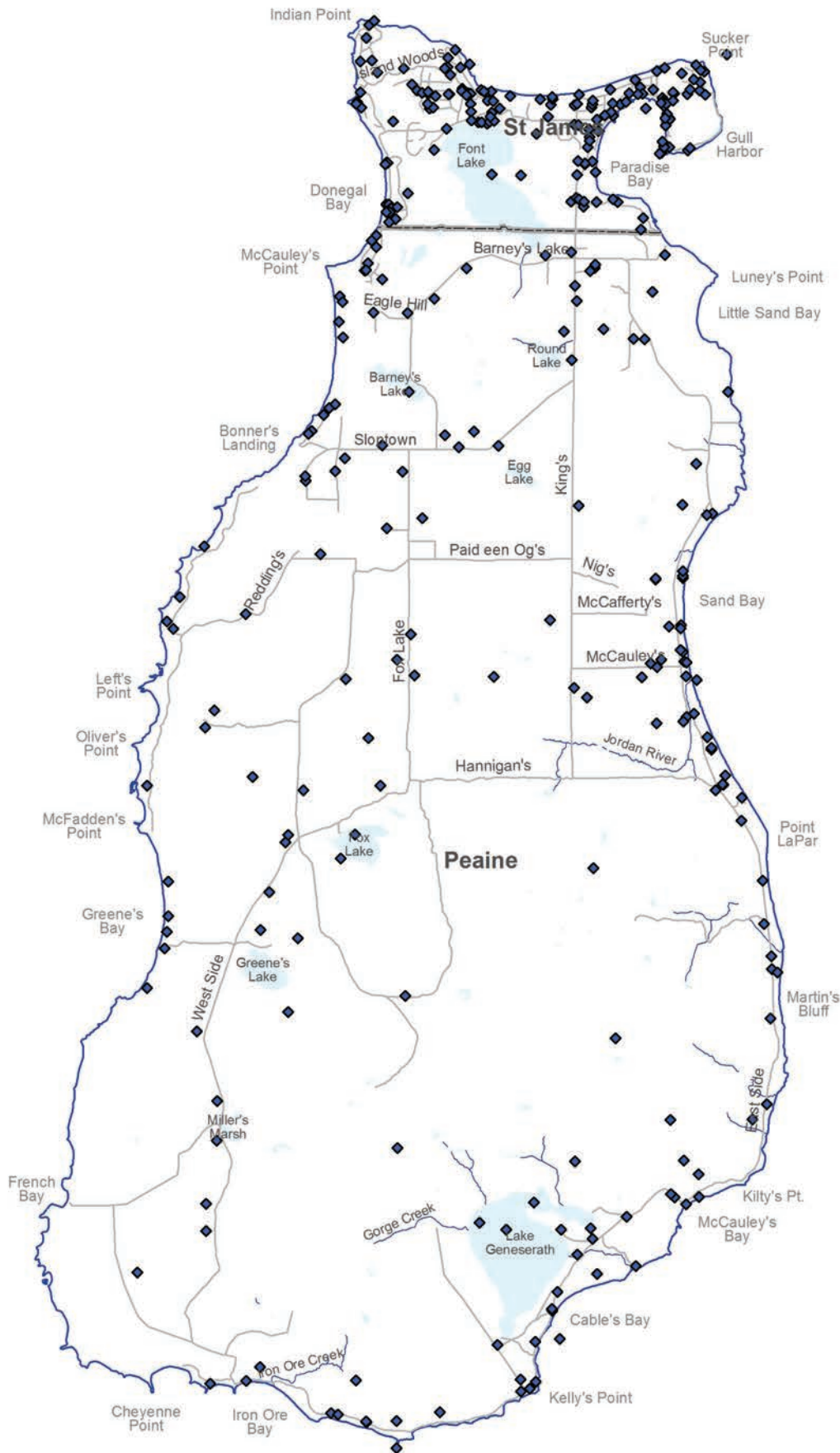


**Map 4.7**  
**Road Classification**  
**(ACT 51 Roads)**



# Map 4.8

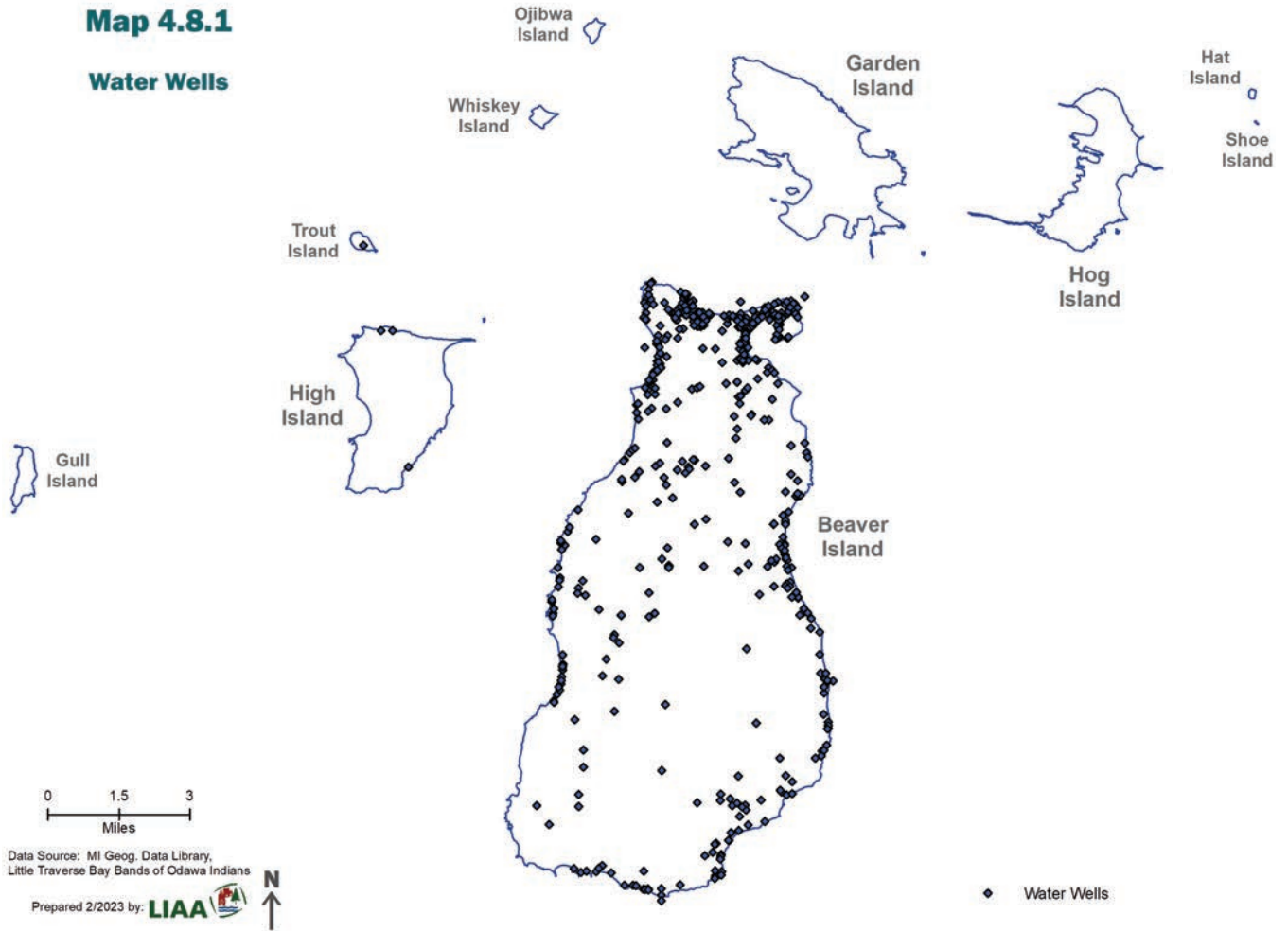
## Water Wells



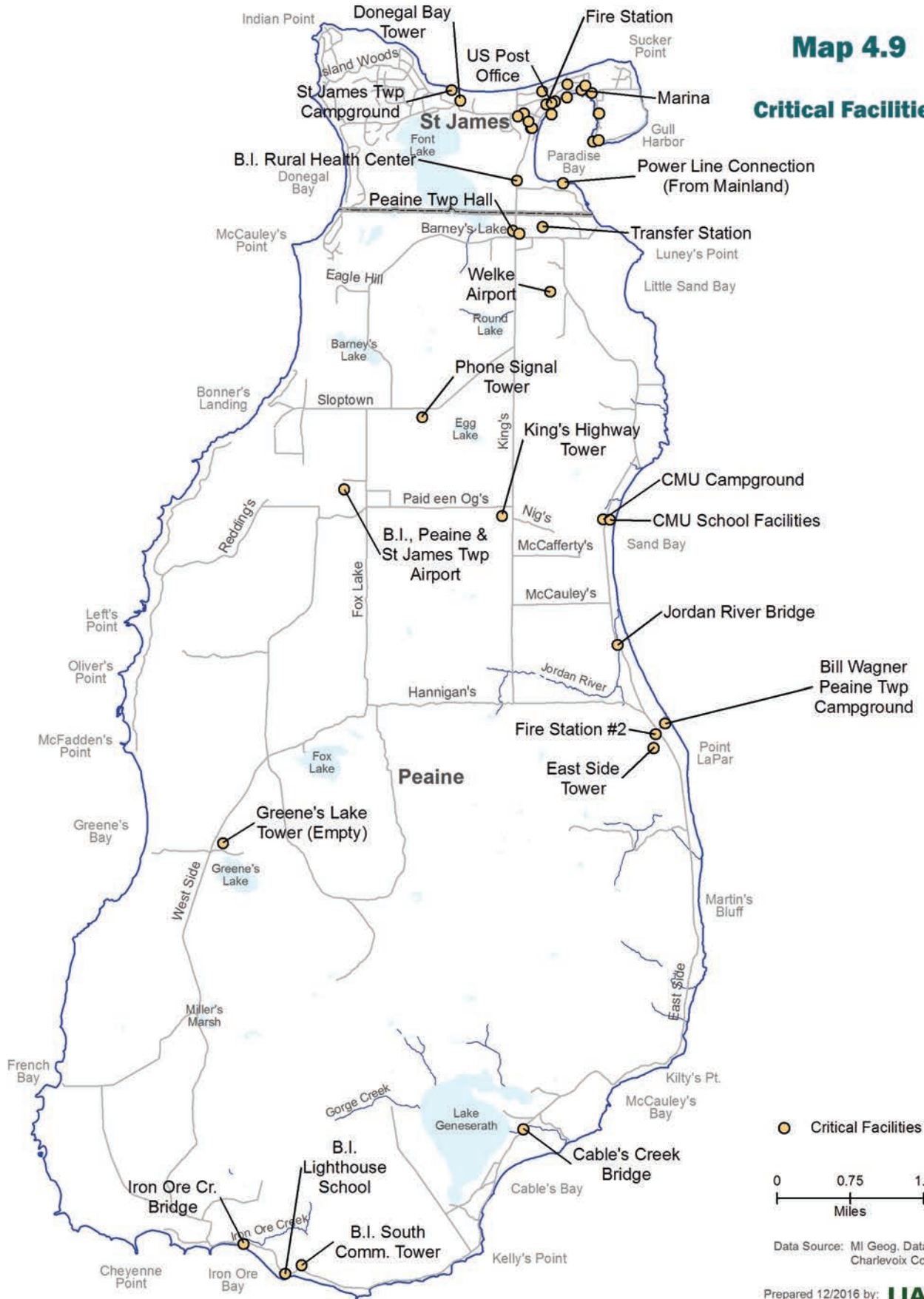
Data Source: MI Geog. Data Library  
Prepared 12/2016 by: **LIAA**

### Map 4.8.1

#### Water Wells

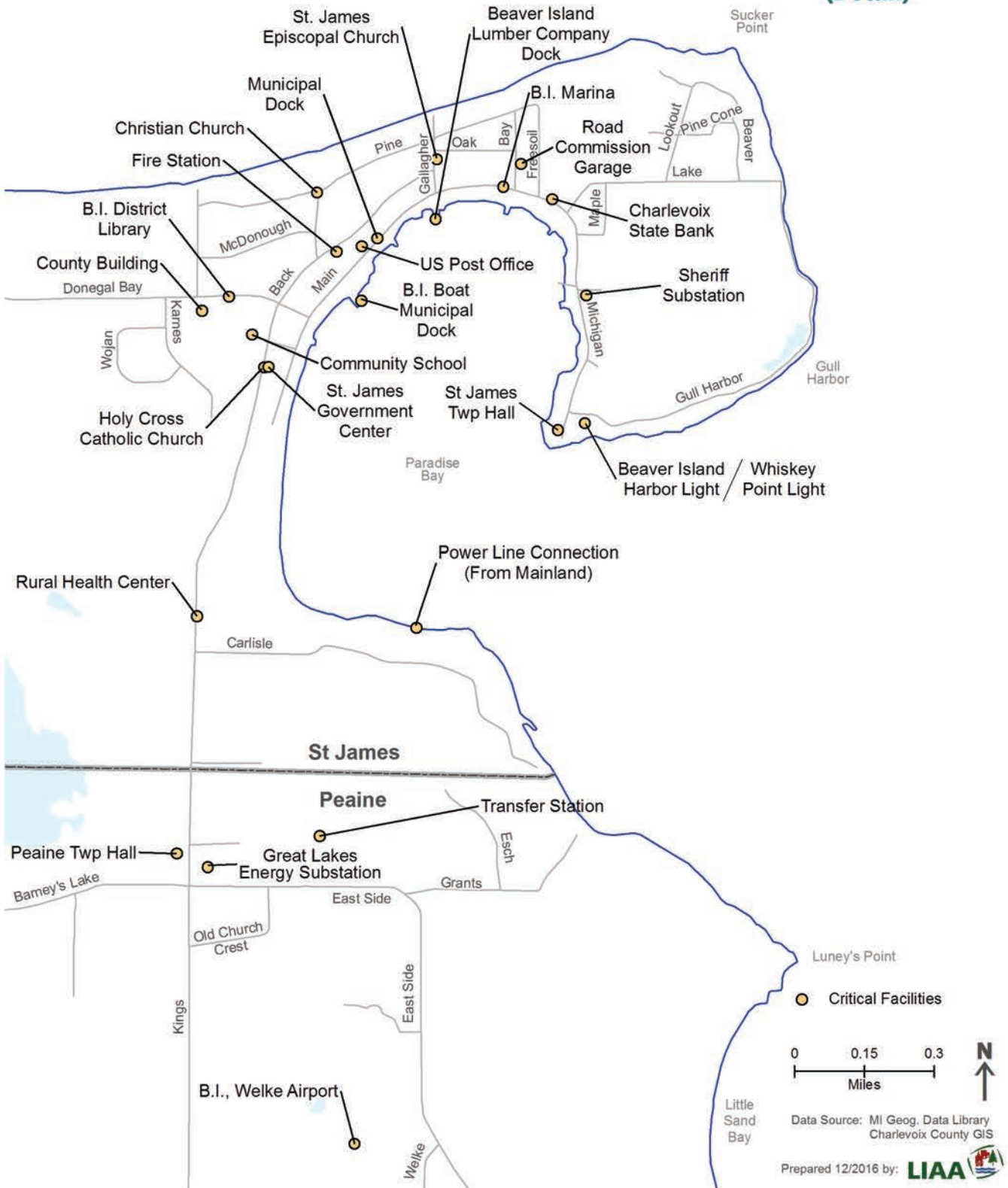


### Map 4.9 Critical Facilities




### Map 4.10

### Critical Facilities (Detail)



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**“Our natural and cultural resources are what make Beaver Island unique, and we should do all in our power to protect and keep in balance our tourism with these features – preservation, tours, educational outreach events. We can increase year-round business by offering more daily needs like childcare, physical therapy, health center, indoor pool, and so on.”**

**Beaver Island Resident**



# CHAPTER 5

## ECONOMY AND TOURISM

**This chapter summarizes current economic conditions on Beaver Island including unemployment, median income, and information related to the Island’s tourism economy. This chapter inventories the Island’s economic assets and challenges, along with the various groups and organizations active in promoting tourism on the Island.**

### **ECONOMIC INDICATORS**

An indicator is a gauge that says something important about a community’s condition, much as a thermometer helps identify whether a person is healthy or sick. The indicators used to show the economic condition of a community can vary depending on the community’s key industries, recent challenges, and other factors. For this chapter, economic indicators were selected based on reports produced by the Island Institute. Economic indicators include median income, unemployment, and the percentage of the workforce that relies on various industries.

### **UNDERSTANDING ECONOMIC DATA**

Through a series of tables, the next several pages show overall characteristics of the Island’s economy. In general, each table in this chapter uses data collected from 2010 through 2021 by the American Community Survey (a United States Census Bureau product) to represent current conditions on Beaver Island. Census data from the 2020 Census is used as a point of comparison, and a change in both number and percentage (using a percent change formula) is also given where appropriate. In some cases, we also use economic statistics published by the Environmental Systems Research Institute (ESRI) that are estimates, based on Census data, for the year 2021. The information selected is useful for understanding the general conditions of the Beaver Island economy.

## UNEMPLOYMENT ON BEAVER ISLAND

Table 5.1 shows the percentage of the Island's workforce that was unemployed in 2000 and in 2020. It is important to note that while this data is published and reputable, it is based on estimates and studies rather than on a survey of every person in the community. Therefore, these numbers should support an overall picture of the Island's economy rather than an exact number. In general, employment on the Island improved after the 2009-2015 recession and dipped again during the 2020/21 COVID-19 pandemic.

In discussions with Island business leaders during the development of this Master Plan, several reasons for increasing unemployment were identified. First, the Island's housing construction industry slowed in 2009-2015 due to the Great Recession. Second, the tourism and service industries are unable to offer many full-time, year-round positions. A third reason may be that increased use of online services such as Amazon has reduced demand for goods to be sold on the Island. Another reason may be an increase in the number of retired residents, whether they are indigenous or moved to the Island after retirement.

## THE ISLAND'S WORKFORCE

The demographic trends in Chapter 3 show that many people who moved to the Island in recent decades are retirees and empty nesters. However, there are also many working people and creative entrepreneurs on the Island. From jewelers and hairdressers to homebuilders, musicians, and remote workers who left offices during the COVID-19 pandemic, Beaver Island is home to many talented individuals looking to make a living for their families. The recommendations in Chapter 6 include a number of ways to support entrepreneurs and new businesses on Beaver Island.

## MAJOR INDUSTRIES

Table 5.2 shows the percentage of the adult workforce that is currently employed by industry. This information was published as an estimate for the year 2022 based on recent U.S. Census data. Table 5.2 is a snapshot in time that shows the current mix of industries on the Island. In general, this information shows that the Services industry is the backbone of the Island's economy, with 36%-37% of the Island's adult workforce in this tourism-related industry. The Transportation/Utilities industry (which includes all land, water and air transportation services) is the second largest employer on the Island at about 27%, followed by the construction industry at about 20%. With over three-quarters of the Island workforce dependent on these three industries, it is important that the Island works to strengthen and enhance these industries on the Island wherever possible. It is also important that the Island works to identify new industries that might present opportunities for Islanders. While Public Administration provides a smaller share of the employment on Beaver Island, it is important to note that this includes critical services such as township governance, road commission services, schools, and medical services.

**TABLE 5.1 PERCENT OF WORKFORCE UNEMPLOYED, 2000 TO 2020**

	2000	2020	CHANGE, 2000 TO 2020
Peaine Township	0.0%	6.7%	+6.7%
St. James Township	2.2%	5.6%	+3.4%

Source: US Census Bureau (2020) and ESRI Business Analyst (2023)

**TABLE 5.2 PERCENT OF ADULT WORKFORCE BY INDUSTRY, 2022**

INDUSTRY	2022	
	PEAINE	ST. JAMES
Agriculture	1.4%	1.5%
Construction	19.2%	20.7%
Manufacturing	1.4%	0.7%
Wholesale Trade	0.0%	0.0%
Retail Trade	8.2%	8.1%
Transportation/Utilities	26.7%	27.4%
Information and Technology	0.7%	0.0%
Finance and Real Estate	1.4%	0.0%
Services	36.3%	37.0%
Public Administration	4.8%	4.4%

Source: ESRI Business Analyst (2023)

### HOUSEHOLD INCOMES

Median household income is a commonly-used economic indicator that gauges the approximate spending power of households. Table 5.3 shows the median household income in each Township and in Charlevoix County in 1999 and 2021. This information comes from the U.S. Census Bureau, and the 1999 values were adjusted for inflation in order to be easily comparable to 2021 values. In general, the spending power of households increased significantly in the Townships and more significantly than Charlevoix County overall. This might suggest that Beaver Island’s households have weathered recent economic challenges with more resilience than other communities, or that households unable to cope with economic decline (e.g., loss of jobs, unemployment) have left the Island.

Table 5.4 shows the percent of households on Beaver Island within each income range. This information is an estimate for the year 2022 based on U.S. Census Data. In general, the two Townships have a similar income distribution, with most households making between \$35,000 and \$99,999 annually.

**TABLE 5.3 MEDIAN HOUSEHOLD INCOME, 1999-2021**

	1999*	2021	% CHANGE 1999 TO 2014
Peaine Township	\$41,446	\$61,875	+49%
St. James Township	\$47,151	\$70,625	+50%
Charlevoix County	\$56,538	\$63,508	+12%

\*1999 dollars were adjusted for inflation according to the Bureau of Labor Statistic Inflation Rate Calculator; Source: U.S. Census Bureau (2020), American Community Survey (2010-2021)

**TABLE 5.4 PERCENTAGE OF HOUSEHOLDS BY INCOME RANGE, 2022**

INCOME RANGE (DOLLARS)	2022	
	PEAINE	ST. JAMES
Less than 15,000	6.5%	6.0%
15,000 to 24,999	5.1%	4.5%
25,000 to 34,999	10.1%	10.5%
35,000 to 49,999	12.3%	12.8%
50,000 to 74,999	23.2%	23.3%
75,000 to 99,999	20.3%	20.3%
100,000 to 149,999	9.4%	9.0%
150,000 to 200,000	6.5%	6.8%
Over 200,000	6.5%	6.8%

Source: ESRI Business Analyst (2023)

“The Island needs community education on economic development through sustainable agriculture and renewable energy projects. Worker-owned cooperatives in these areas would provide jobs, attract younger people to the Island, and create community and economic development.”  
Beaver Island Resident

# A VISION FOR TOURISM

In general, this Master Plan’s vision for the future of the tourism industry on Beaver Island is based on a rustic, rural experience that prizes solitude and appreciation of the Island’s natural resources and culture. Unique, homegrown events such as Museum Week, the Birding Festival, the Bike Marathon, Irish Festival, Baroque on Beaver Island, the Beaver Island Music Festival, and the St. Patrick’s Day celebration encourage visitors to come enjoy the Island’s culture and celebrate its environment, music, history and food. Island businesses should be welcoming, friendly places that help visitors get the true sense of the Island. Additionally, the use of the Island by visitors should not damage the natural resources that make the Island unique to begin with.

## **TOURISM ON BEAVER ISLAND**

Like many Northern Michigan communities, tourism is the backbone of Beaver Island’s economy. This Master Plan includes a number of recommendations and ideas for strengthening the Island’s tourism economy in Chapter 6. Chapter 2 offers an inventory of natural features and attractions that draw tourism. This section inventories the many organizations and commissions that contribute to the Island’s tourism economy and help support local businesses that serve visitors to the Island.



## TOURISM STATISTICS

It is difficult to know the exact number of tourists that visit the Island each year. No comprehensive study has been done to identify the number of visitors each season, but many Island groups keep a count of visitors to various places and events. The Beaver Island Transportation Authority also records the number of tickets sold for the ferries, and each airline knows the number of passengers. Taken together, this information can supplement the anecdotal reports of businesses in helping to identify whether the number of tourists has increased or decreased in recent years.

- The Beaver Island Community Center counts the number of people that visit the center. In general, from 2013 to 2016, the number of visits to the Community Center slightly decreased in those years.
- The number of visits is highest in the summer. In 2014, summer visits accounted for 18,133 visits to the Community Center. In 2015 and 2016, the number of visits dropped to 14,624 and 13,724 respectively.
- The Preservation Association of Beaver Island noted that large events hosted by the Community Center, such as Baroque on Beaver, have seen increases in attendance in recent years.
- The Beaver Island Music Festival is the Island's largest event. The Festival has grown steadily each year. In 2016, 2,055 people attended the three-day event. This was an increase over 2014 and 2015, which drew 1,687 and 1,981 people respectively. About 10% to 15% of attendees are Island residents.
- Ridership on the two ferries has increased in recent years during the peak summer season. According to the 2021 Beaver Island Transportation Authority Transportation Plan, there were 30,925 trips taken (each way counts as one trip) on the two ferries in 2016. In 2021, this number grew to 35,087, an increase of about 13.5%. The number of vehicles transported during the same time period increased from 5,525 to 7,544, an increase of about 36.5%. Some of this increase may have been due to the COVID-19 pandemic.
- In 2022, Island Airways flew about 30,000 passengers and Fresh Air flew about 11,000 back and forth from Beaver Island to various destinations including Charlevoix, Manistique and Traverse City.
- The Beaver Island Chamber of Commerce estimates that about 50,000 people visit Beaver Island each year.

In general, it seems that tourism overall has increased in the past decade compared to years past. Some business owners and leaders in the community report that tourism struggled during the Great Recession, but appears to be rebounding in the past several years. Economic challenges related to tourism, such as constraints to the growth of the tourism industry, are described at the end of this chapter.

Photo Credit: Cynthia Hector



## TOURISM AND RECREATION ASSETS

Most of the natural features and resources listed in Chapter 2 could be repeated in this chapter as assets essential to the Island's economy. Inland lakes, wetlands, forests, and the shoreline all provide opportunities for visitors to enjoy the natural beauty of the Island. The next several pages inventory the various facilities that support the Island's tourism economy. These include a number of cultural and historic sites, special events, organizations, and accommodations and services primarily for visitors.



The Beaver Island Marine Museum was originally built as a net shed in the early 1900s and first used as a museum in 1976. The museum has two floors of exhibits that tell stories about shipwrecks, Coast Guard rescues, ship building, Island vessels, and even diving. The museum is staffed and maintained by volunteers from the Beaver Island Historical Society.

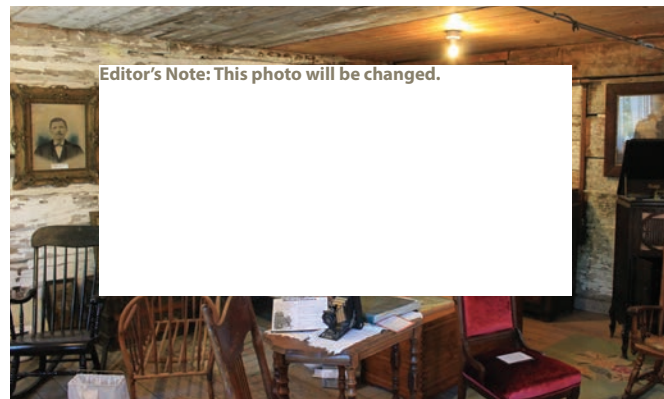


Photo Credit: News on the 'Net

The Protar Home is one of four sites on Beaver Island registered on the National Register of Historic Places. Maintained by the Beaver Island Historical Society, the historic home and tomb of Feodor Protar draws visitors interested in learning more about this cherished philanthropist and important figure in Beaver Island's history. Recently the Society installed two self-directed tours: a walking tour with 17 signs, and a driving tour that loops around the Island with 22 signs.

## CULTURAL AND HISTORIC SITES

Cultural resources on Beaver Island include natural areas important to Native American tribes, historic structures built by early settlers, and a number of museums that seek to preserve the Island's history. Many of the Island's cultural resources were described in Chapter 2 when discussing the importance of preserving the environment. However, the Island's natural and cultural resources are also important draws for tourists. Institutions such as the Mormon Print Shop Museum and the Marine Museum are important tourist attractions.



The Mormon Print Shop Museum was built in 1850 by the Island's Mormon settlers. The building is now used as the Beaver Island Historical Society's main museum, with exhibits on important historical figures as well as diaries and other artifacts. The Beaver Island Historical Society raised funds for an expansion of this museum, which will invite more people to come visit the Island.



Heritage Park is maintained by the Beaver Island Historical Society and located on Donegal Bay Road. The park features several historical items, including the generator that first provided power to the Island and an old tilt-wheel grader. These outdoor exhibits are easily seen from the bike path and the library.

## SPECIAL EVENTS

Special events draw thousands of visitors to the Island each year. Some prominent events on the Island are highlighted here, though there are others organized by various volunteers and organizations. This Master Plan inventories these special events to acknowledge the immense contribution these events have on the Island's economy. It is important that the Island support these events however possible, whether through marketing, designating space, or other strategies as listed in Chapter 6. Along with the events pictured here, several other notable events are listed as follows.



The Beaver Island Music Festival is held every July at the Beaver Island Hideaway Acreage. The Music Festival draws thousands of people over three days to come hear bands and musicians. Photo Credit: BIMF.net



Baroque on Beaver is a musical festival and concert series that draws thousands of visitors and musicians from Michigan and beyond. The event is hosted by the Beaver Island Performing Arts Alliance and is held in various locations throughout the Island. Photo Credit: Beaver Island Beacon

**Warblers on the Water:** Both novices and experts alike migrate to the Island to view and learn more about the birds of the Beaver Island Archipelago. Expert speakers and field trip leaders offer tours and learning sessions to people of all ages.

**Beaver Island Bike Festival:** Typically held in June, bike riders are welcomed to enjoy a 20- or 42-mile bike ride at their own pace on a combination of pavement, gravel roads and two-tracks with incredible scenery, Island monuments and historic sites.



The dark skies of the Beaver Island Archipelago are world class, and events held in recent years have had turnouts from a handful of people to 50 or more. The Beaver Island Dark Sky Project hosts events all summer long from May to September, including a Dark Sky Week in August that features the Perseid Meteor Shower on or about August 12-13 (weather or phases of the moon may impact viewing).



Beaver Island's St Patrick's Day and Fourth of July holidays both offer parades and activities. The Fourth of July weekend on Beaver Island is widely regarded as the busiest weekend on the Island for tourism. Photo Credit: BeaverIsland.org

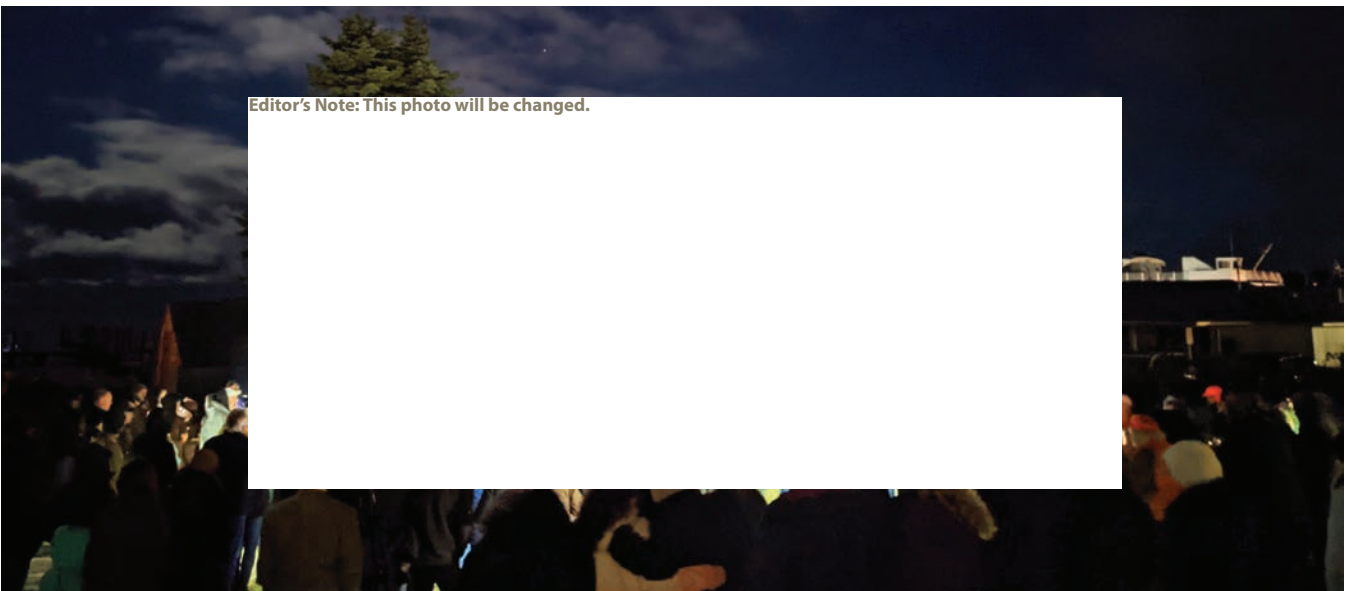
**“For the future of the Island, I envision more tourism and more families moving here, but there has to be a reason to bring them here.”**  
**Beaver Island Resident**

**St Patrick’s Day:** Held every year to celebrate the rich Irish cultural heritage on the Island, visitors may experience music, food, a classic cart race on Main Street, a fish toss, or a tug-of-war.

**Beaver Island Sustainability Fair:** This free event celebrates the Archipelago’s resilient community, culture and environment. Islanders share information about their own sustainability practices as well as plans that are in the works to create and support food, energy and environmental/cultural sustainability.

**Museum Week:** A week full of informative and entertaining events including presentations on nature, history and Native American culture, nature walks and cruises, music, and an art show.

Photo Credits: Becca Foli







Beaver Island has long been a critical stopover for migratory birds flying up Lake Michigan on their way to northern breeding grounds. As a result, the Island attracts many “birders” who seek to see and photograph rare and uncommon bird species. In 2014, a formal birding trail was established around the Island. The trail includes 34 designated spots in which birds have been known to locate. The Island hosts an annual birding event, Warblers on the Water, that features field trips, demonstrations and presentations. Map 5.2 shows the Beaver Island Birding Trail stops.



The Dark Sky can be enjoyed all over Beaver Island, but particularly within the proposed Dark Sky Sanctuary Wildlife Research Area on Beaver Island. The Dark Sky Project (also known as the Dark Sky Sanctuary Committee) is currently working with the International Dark Sky Association to obtain International Dark Sky Sanctuary status through the application process.

## NATURAL ASSETS AND TOURISM

Beaver Island’s many parks, trails and natural areas form the basis of the Island’s tourism industry. A number of organizations and initiatives have formed to help leverage natural areas for increased tourism on the Island. Several of those organizations and initiatives are highlighted here, while a number of ideas for leveraging natural areas for tourism are described in Chapter 6.

### THE DARK SKY

According to the International Dark Sky Association and the “World Atlas of Night Sky Brightness,” as of 2016, nearly 80% of the world’s population lives under light-polluted skies, and 99% of Americans and Europeans experience skyglow at night. Accordingly, as these numbers increase, so does public awareness and *astrotourism* — the travel to locations in search of unpolluted views of the cosmos.

As previously mentioned, Beaver Island is home to a Night Sky Quality average between 21 and 21.6 out of 22.0 on any given night, based on conditions including cloud coverage and/or moonlight. The Dark Sky Project is working with both DSSWRABI land stakeholders and the local community to put into place sanctuary policies and provide community lighting management guidelines to preserve and protect this natural asset. These efforts:

- Support the Birding Trail, Water Trail, natural resources, the Beaver Island Archipelago Trails Association management, and human health;
- Address environmental concerns of maintaining wildlife habitat, including the protection of wildlife and fauna; and
- Promote the reduction of energy consumption that also lowers our carbon footprint. Lower utility costs and dark sky tourism are the payoff.

### TRAILS

As described in Chapter 4, there are many paths and trails on the Island that support, hiking, biking, cross-country skiing, paddling and motorized activities. Some trails are well-marked and on public property, while others are unmarked and meander through both public and private property. Some paths were once logging roads now used for hiking. One separated trail along Donegal Bay Road connects the library and several hotels with downtown. Additionally, most of the Island’s roads are used for walking and biking. Map 5.1 at the end of this chapter was created as a summary of several other trail maps. A new trail map and trail map smartphone application have been developed and made available by the Chamber of Commerce.

## ECONOMIC BENEFITS OF TRAILS

Trails and outdoor recreation opportunities can attract new visitors, support the existing tourism industry, and spur new business opportunities. In fact, the outdoor recreation industry is one of the leading economic drivers in the United States in terms of consumer spending. On Beaver Island, the impact of outdoor recreation reaches far beyond the recreation industry, directly supporting other sectors like accommodations, food services, and retail trade. According to a 2012 report from the Outdoor Industry Association, 6.1 million Americans work in the outdoor recreation industry. In Michigan, the outdoor recreation industry generates \$18.7 billion in consumer spending annually.<sup>1</sup> The continued success of this industry in Michigan depends on the wise management of natural lands and waters.

### WATER TRAILS

Paddlesports, including stand-up paddleboarding and kayaking, are one of the fastest-growing recreational activities nationwide. The Outdoor Industry Association notes more than 21.7 million people — or 7.4% of Americans — participated in paddling activities in 2014. Kayaking, which is the most popular form of paddling, had approximately 13 million participants in 2014. Kayaking is becoming more popular in America, with 4.4% of Americans kayaking in 2014 compared to 3% in 2010. Surveys show that kayakers tend to be evenly represented across age groups, but tend to be more highly educated with relatively higher incomes. The average kayaker goes on about eight kayaking trips each year.

The *Michigan Blue Economy* report states that the small but growing canoe and kayak industry annually contributes roughly \$140 million to Michigan's economy.<sup>2</sup> Local water

1 [https://outdoorindustry.org/pdf/OIA\\_OutdoorRecEconomyReport2012.pdf](https://outdoorindustry.org/pdf/OIA_OutdoorRecEconomyReport2012.pdf)

2 <http://michiganblueeconomy.org>

Using the basic elements of the Trail Town strategy, local officials and economic development officials can help create local and regional tools for trail-based economic development.

trails have also been proven to yield economic benefits. In 2013, the Huron River Watershed Council conducted an economic impact analysis of the Huron River Water Trail. The analysis found that the water trail generates more than \$49.5 million annually from current users! The analysis also discovered paddlers traveled an average of 117 miles for an overnight trip.<sup>3</sup>

According to a report from the River Management Society, “towns that already have dining, lodging and rental services are more likely to see an increase in paddlesports tourism when they advertise and promote their water trail, as contrasted with communities that market their water trail, but do not provide standard amenities for paddlers.”<sup>4</sup> The report also defines amenities that tend to attract new audiences most

3 <http://www.hrwc.org/>

4 <http://www.river-management.org/assets/WaterTrails/economic%20argument%20for%20water%20trails.pdf>



effectively. These include access to the water, outfitters, lodging, dining, integrated recreation (such as hiking and biking paths), other activities (such as museums and interpretive centers), and proximity to other places to recreate.

The Beaver Island Water Trail was dedicated in 2016 after five years of work and collaboration by a unique mix of business, government and special interest organizations. At 43 miles in length, the non-motorized water trail circumnavigates Beaver Island and is geared for adventure paddling and those accustomed to rustic camping on state-designated areas. Highlighted by numerous natural and cultural features, the water trail is unique for many reasons, including its beautiful natural environment complete with shipwrecks to be paddled over. Family-friendly areas to paddle include Paradise Bay, the island’s natural harbor, and segments on the Island’s inland lakes.

Water-trail amenities are documented in the Beaver Island Paddling Guide, which can be accessed through the Michigan Water Trails website at [michiganwatertrails.org](http://michiganwatertrails.org) or available for sale in a waterproof, printed version. The water trail was developed with safety in mind and includes signs at each stopover site indicating where on the Island the paddler has landed. For added safety, personal locator beacons and voluntary paddler trip check-ins and checkouts are available at the Beaver Island Community Center. In addition, two emergency call towers are noted in the paddling guide at Wagner Campground and Iron Ore Bay.

While much has been achieved, more of the comprehensive Beaver Island Water Trail Plan needs to be implemented in order to complete its development.

## TRAIL TOWNS

This Master Plan identifies ways for Beaver Island to capitalize on its trail systems to maximize trail-based tourism for future economic development. The Island should consider borrowing the concept of a “Trail Town.” The Trail Town concept was first developed by the Allegheny Trail Alliance for communities along the Great Allegheny Passage, a 150-mile multi-use trail. A Trail Town community meets the needs of both trail users and residents of the community, and it has the physical amenities that support trail users (such as accessible launches). A Trail Town also has the business amenities to support day-trip users (e.g., kayak rental) and overnight trail users (e.g., campground, casual restaurant and laundromat). Using the basic elements of the Trail Town strategy, local officials and economic development officials can help create local and regional tools for trail-based economic development.

### BASIC ELEMENTS OF A TRAIL TOWN STRATEGY

- Entice trail users to get off the trail and into the town.
- Welcome trail users to your town by making information about the community readily available at the trail.
- Make strong and safe connections between your town and the trail.
- Educate local businesses on the economic benefits of meeting trail tourists’ needs.
- Recruit new businesses or expand existing ones to fill gaps in the goods or services that trail users need.
- Promote the “trail-friendly” character of the community.
- Work with neighboring communities to promote the entire trail corridor as a tourist destination.

Photo Credit: Becca Foli



## TOURISM AMENITIES

This section provides an overview and general assessment of the Island's tourism-related amenities and services. The Island's economy depends on the health of the tourism industry. Many ideas to improve the tourism industry are included in Chapter 6. Implementing these ideas will require creative partnerships and collaborations between many of the groups and organizations discussed here and in the next section.

### ACCOMMODATIONS

Beaver Island has a handful of lodging accommodations, including motels, B&Bs, and rental homes. During summer weekends, most of the rooms on the Island are full. In fact, when there is a large event like Independence Day or even a large wedding, it can be difficult to find rooms on the Island. If the Island is looking to build on the summer tourism industry, more hotels and accommodations will be needed. During the winter months, there are two hotels open for visitors.

Many homes on the Island are purchased as vacation homes and are also rented out as short-term rentals when the owners aren't using them. Homes on the Island do not currently need a permit from the Townships to rent rooms on a short-term basis, and there is no cap on the number of homes that can be used as short-term rentals. There are approximately 300 rental properties currently available on the Island, 18 of which are year-round.

One of the most unique lodging opportunities on the Island is The Brothers Place, a former summer retreat that was owned and operated by the Christian Brothers religious order. Each room in the rustic lodge is individually decorated along with shared amenities. A long screened-in porch runs the entire length of the building.

### CAMPGROUNDS

There are also a number of campgrounds on Beaver Island. Two campgrounds are publicly owned by the Townships and



are described more in the inventory of public recreational facilities at the end of this chapter. The St. James Township Campground sits on a bluff overlooking Lake Michigan and has 11 rustic sites, six electrical sites, recently installed outdoor showers, ADA portable restrooms, and RV parking sites with hookups. The Bill Wagner Peaine Township Campground located on the east shore of Lake Michigan has 17 rustic campsites with picnic tables, fire rings, and potable water. There are no showers, electricity, or modern restrooms available.

The Beaver Island Retreat provides an outdoor adventure with the ease of modern furnished tents and facilities tucked into the woods. The campground is nestled on several acres among pines, cedars, junipers and ferns, with no civilization in sight. The Retreat is more than a convenient way to camp; it is a lesson on how to interact with the landscape in a responsible manner.

The Port of St. James Association campground is privately owned and is available only to association members.

### **RESTAURANTS AND OTHER SERVICES**

Beaver Island has a handful of restaurants and bars located in and around St. James and a few in Peaine, offering menu items and drinks. Several of the restaurants shut down during the winter months. Groceries and other wares can be purchased at McDonough's Market, which is a full-service grocery store. The gas station on Kings Highway, Island Energies, also has a convenience store. Visitors who don't bring their car over on the ferry can rent a vehicle, E-vehicle, bicycle or E-bike from several establishments on the Island.

The Brothers Place offers a unique screened-in porch for guests (left). Treasures collected by campers at the Bill Wagner Peaine Township Campground (below).





The Beaver Island Toy Museum is a unique shop owned by a local artist and is a mainstay of the Island.



The Community Center is a hangout spot for all ages and provides a number of informational services to visitors.

## RECREATION AND TOURISM GROUPS AND BOARDS

Many organizations and coalitions have formed over the years to enhance Beaver Island's tourism industry. A number of these groups are mentioned elsewhere in this plan because of their involvement in other community activities. This section is meant to highlight the many groups and organizations responsible for managing tourism opportunities, reducing the negative impact of tourism on natural areas, marketing tourism opportunities, and improving the experience of visitors to Beaver Island. Each group has activities and projects in mind for the future. This Master Plan seeks to offer support to these various activities and projects, in so far as they promote the holistic growth of the tourism industry on the Island. The photos on this and the next page highlight several of the Island's many businesses and establishments.

### BEAVER ISLAND CHAMBER OF COMMERCE

The Beaver Island Chamber of Commerce is charged with providing information about the Island and its businesses in both print and online. The annual Visitors Guide provides maps, guides and tourist information (e.g., transportation options, accommodations, shopping, restaurants, etc.). All this information, along with links to videos, a listing of special events, a message board and other material, can be found on the Chamber's website, [beaverisland.org](http://beaverisland.org). The Chamber of Commerce also organizes and sponsors several popular events on the Island every year, most notably the Fourth of July parade. The Chamber of Commerce is located inside the Beaver Island Community Center straight across from the ferry dock along Main Street.

### BEAVER ISLAND COMMUNITY CENTER

The primary role of the Beaver Island Community Center is to provide a central meeting place for Island residents. The Community Center also hosts movies, plays, concerts, a teen center, and local events. Due to its location directly across from the ferry, its welcoming storefront and staff, comfortable sitting areas, free Internet access, information materials (e.g., brochures, maps), and its designation as a trailhead for the birding trail, the Community Center has become the unofficial hub for information about the Island for both residents and tourists. The center is also the keeper of Personal Locator Beacons for those setting out on hikes or paddles.

### BEAVER ISLAND PERFORMING ARTS ALLIANCE

BIPAA engages with the Beaver Island community in multiple types of artistic presentations, with both summer-season and year-round arts programming. The Alliance's signature event is the annual Baroque on Beaver Festival, which runs from the last weekend of July through the first weekend of August.

### BEAVER ISLAND ASSOCIATION

The BIA represents the combined interests of members on issues that affect the fundamental character and beauty of Beaver Island. This includes, but is not limited to, providing a forum to discuss governance, preservation and conservation of natural resources, collaboration (tribes, environmental organizations, schools, etc.), and invasive species monitoring and control.

### BEAVER ISLAND HISTORICAL SOCIETY

The Beaver Island Historical Society was founded in 1957 to collect and share the history of Beaver Island. The Historical Society currently operates two museums on the Island, the Mormon Print Shop Museum and the Marine Museum; and two additional historical sites, Heritage Park and the Protar Home. The Historical Society offers several resources and services to Island visitors, including genealogical research free of charge, copies of archival photos, and a series of historical journals and other books for purchase. The Historical Society hosts several events throughout the year to celebrate the Island's history.

### BEAVER ISLAND MUSIC FESTIVAL

Organized by the Patrons of the Arts in Rural Communities (PARC), the Beaver Island Music Festival began as a small passion project and has grown into a large event each summer that draws thousands of people over three days. In addition to hosting the festival, PARC is a non-profit organization that also seeks to educate musicians and enhance musical opportunities on the Island.

### BEAVER ISLAND WILDLIFE CLUB

BIWC is one of the longest continually active organizations on Beaver Island. For more than 70 years, BIWC has worked to preserve and enhance fish and wildlife habitat throughout the entire Beaver Island Archipelago. Several of the Club's most successful conservation efforts and programs have been in place for many years. For example, BIWC's fish-stocking program has created an excellent walleye fishery in Lake Geneserath that helps excite anglers for the annual Lake Geneserath Ice Fishing Tournament hosted by the Wildlife Club. For several years, BIWC worked to reintroduce wild turkeys to the Island. Today, the Island has a robust wild turkey population that is continuously monitored and maintained by Club members. BIWC has worked with the DNR to aid in the management of game species on the islands and to record the annual deer harvest. These collaborative efforts have allowed the DNR and BIWC to make more informed decisions about the management of the deer population on the islands.

### BEAVER ISLAND ELKS LODGE NO. 2886

In 2021, Beaver Island, Mich., Lodge No. 2886 was instituted into the Order. The Beaver Island Lodge is the Island's only fraternal organization and has become a hub for socializing and community service.

### BEAVER ISLAND SUSTAINABILITY FAIR

The fair is an annual event hosted by an Island non-profit known as Tara's Meadow that focuses on outreach and collaboration for sustainability practices such as dark sky preservation, local ecology and cultural preservation, alternative/smart energy, and a variety of other areas.



Dalwhinnie's Bakery and Deli boasts a large front porch overlooking the harbor.



Paradise Bay Gifts is a souvenir shop and outfitter, providing rentals of bikes, kayaks, and paddling equipment.



Happy Paddle is a rental shop located in the harbor area of St. James. The shop offers recreational equipment and guided tours of the Island.

## RECREATIONAL FACILITIES

One purpose of a Master Plan is to inventory the community facilities and amenities that are currently available in order to better plan for the future. While Beaver Island has many natural areas used for rustic tourism such as hiking and fishing, there are a number of more traditional recreational amenities such as playgrounds, ballfields, and parks. Table 5.5 on this and the next page list the recreational facilities included in the recreation plans for St. James and Peaine Townships. Maps 5.3 and 5.4 show the locations of the points listed on Table 5.5

### RECREATION PLANS

Because St. James and Peaine Townships are recreation-based communities, they have drafted recreation plans to guide the development of public facilities. These plans should be legally adopted and should meet the requirements of the Michigan Department of Natural Resources to qualify the Townships for DNR grant programs.

**TABLE 5.5 RECREATION SITES LOCATED IN ST. JAMES TOWNSHIP**

NAME	LOCATION	SIZE	OWNERSHIP	PURPOSE/USE	ACCESS
Jewell F. Gillespie Park	St. James Harbor	~1 acre, 300 ft of shoreline	SJT	Public beach with playground equipment, parking lot, outhouses	Public
St. James Yacht Club/ Beaver Island Yacht Dock	St. James Harbor	1 acre	St. James Yacht Club	Docks, clubhouse	Limited
Bud McDonough Memorial Ballpark	St. James Harbor	Over 2 acres	SJT and PT	Baseball/softball field	Public
Veterans Memorial Park	St. James Harbor	0.5 acre	SJT leased from Wolverine Power	Benches, harbor overlook, monuments, flagpole, brick pathway	Public
St. James Township Campground	Northern shore	42 acres	SJT and CCRC	18 campsites - 12 rustic, 6 elec w/ 2 ADA, water pumps, outdoor showers, pit toilets	Public
Font Lake Boat Launch	North shore of Font Lake; small strip of inland lake frontage, lots across the road	14 acres, 150 ft of lake frontage	SJT, PSJA and CCRC	Boating and fishing	Public
Harbor Light Park	St. James Harbor at Whiskey Point	1 acre, 300 ft of shoreline	SJT	Beaver Harbor lighthouse, lake frontage, benches, memorial	Public
St. James Township Hall	St. James Harbor at Whiskey Point	0.25 acre	SJT	Meeting room	Limited use
Tennis Courts	Beaver Lodge Dr inland, west of St. James Village	1.5 acres	SJT	Two tennis courts, one picnic table, small park	Public
LaFreniere Park	St. James Harbor	0.2 acre	SJT	Flower garden, benches	Public
Beaver Island District Library	Donegal Bay Rd	1 acre	SJT & PT	Library	Public
Gull Harbor Natural Area	East of St. James harbor	14 acres	SJT	Trails, wetland coastal frontage, woods	Public
Boat Launch	Gallagher Ave and Main St		Charlevoix County Road Commission	Boat ramp	Public
Heritage Park	Donegal Bay Road across from library	1 acre	SJT leased to BI Historical Society	Outside historic displays	Public



**TABLE 5.5 RECREATION SITES LOCATED IN ST. JAMES TOWNSHIP (CONTINUED)**

NAME	LOCATION	SIZE	OWNERSHIP	PURPOSE/USE	ACCESS
BI Marine Museum	St. James Harbor	0.25 acre	BI Historical Society	Inside and outside historical marine displays	Public
Mormon Print Shop Museum	St. James Harbor	0.1 acre	BI Historical Society	Museum with historic displays	Public
George & Althea Petritz Nature Preserve	Northeast of St. James Harbor shoreline	27 acres, 500 ft of shoreline	Little Traverse Conservancy	Trails, forest, lake frontage	Public
BI Community School	Kings Highway Harbor Area	2 acres	BI Community School	School with soccer field, gymnasium, playground	Limited use
BI Community Center	Main Street	0.5 acre	Preservation Association of BI	Two-story facility with auditorium, kitchen, game area, radio station studio	Public
Donegal Bay Road Bike Path	Donegal Bay Rd at Kings Hwy West to St. James Twp Campground	0.8 miles	Controlled by SJT through easement rights with private homeowners	Paved bike path, non-motorized only	Public
Beaver Island Municipal North Marina	St. James Harbor	~1 acre	SJT	50-slip dock, Harbormaster building with restrooms, picnic area	Open to boaters; public
Beaver Island Municipal South Marina	St. James Harbor	~1 acre	SJT	25-slip dock, Harbormaster building with restrooms, laundry, picnic area	Open to boaters; public
Harbor View Park	St. James Harbor, Main St across from Boat Dock	0.5 acre	SJT	Restrooms with changing stations, picnic area, solar charging station	Public
Port of St. James Association (Mt. Pisgah)	Association property, northwest corner of Island	~500 ft of shoreline	PSJA & SJT	Hiking trails, picnic area, beach	Dunes open to public
Stanhope Family Nature Preserve	East of St. James Harbor	13 acres	LTC	Trails, forest	Public
St. James Township Governmental Center	Kings Highway	0.5 acre	SJT	Township offices, outdoor Chimney Swift education station, BIEMS offices and ambulance garage	Limited use
Donegal Bay "Sunset Beach"	Donegal Bay	0.5 acre, 140 ft of shoreline	SJT & PSJA	Beach area	Public
Edward B. Wojan Park	St. James Harbor	~3 acres, 360 ft of shoreline	SJT	Undeveloped, currently under acquisition	Undeveloped
Island Treasures Resale Shop	Donegal Bay Road	0.8 acres	SJT & PT	Fire Dept. Auxiliary, Resale Shop Charitable Business	Limited hours of operation

**TABLE 5.6 RECREATION SITES LOCATED IN PEAINE TOWNSHIP**

Name	Location	Size	Ownership	Purpose/Use	Access
Peaine Township Hall	Kings Highway	~10 acres	PT	Meeting room, Township offices and kitchen	Meetings, community events
Font Lake Park	Kings Highway, behind Peaine Township Hall	~10 acres	PT	Picnic tables, covered shelter, outhouses, boardwalk to Font Lake, bocce ball court, pickleball court	Public
Bill Wagner Campground	East Side Dr on Lake Michigan	14.7 acres	Owned by DNR; leased and administered by PT	Primitive campsites, outhouses, fire pits, beach access	Public
Beaver Head Lighthouse and Buildings	South End Road	17,245 acres	Charlevoix County and Networks Northwest	52 steps to tower, stairway to rocky beach, walkway to Old Signal Station and School buildings, parking lot, basketball court	Public; limited hours
CMU Biological Station	East Side Drive	500 acres	CMU	Guided nature tours	By appointment
Kuebler Trail	Access on Allen's Lakeview and Sloptown roads	2.2 miles	Private ownership and Little Traverse Conservancy	Trail, old narrow-gauge railroad bed	Public/private
McCauley's Point	South end of Donegal Bay	30 acres	DNR	Rocky beach access, shorebird habitat	Public
Barney's Lake Nature Preserve	Barney's Lake Road	120 acres, 2,200 ft lake frontage	Little Traverse Conservancy	Fishing, hiking trails through woods, seasonal canoe, kayak, rowboat storage	Public; no hunting or motorized vehicles
Bonner's Bluff State Beach (Bonner's Landing)	End of private road off Sloptown Road	74.6 acres, 1,500 ft of shoreline	DNR	Part of the Beaver Island Water Trail	Water access only
Miller's Marsh	West Side Drive	230 acres	CMU	Diverse ecosystem including a wetland dominated by sedges, turtles, beaver lodge, 1-mile walking trail, picnic table, outhouses	Public
French Bay Road and French Bay North and South	West Side Drive	0.6x0.45 mile	Private land & DNR	Trail known for dwarf iris; rocky Lake Michigan bay, 0.45 miles of shoreline	Public
Greene's Lake Public Access	Greene's Lake Road	~2 acres, 200 ft of lake frontage	Owned by DNR; leased and administered by PT	Fishing, kayaking, canoeing	Public
Fox Lake Public Access & Boat Launch	Fox Lake Road	16 acres, 150 ft of lake frontage	PT	Fishing, kayaking, canoeing, picnic table, outhouse	Public

**TABLE 5.6 RECREATION SITES LOCATED IN PEAINE TOWNSHIP (CONTINUED)**

Name	Location	Size	Ownership	Purpose/Use	Access
McFadden’s Point	On Greene’s Bay	50 acres, 1,600 ft of shoreline	DNR	Ecologically important for rare parabolic dunes	Public, but access over private land
Oliver’s Point	West side off Mrs. Redding’s Trail	100 acres, 2,000 ft of shoreline	DNR	Trail to Lake Michigan and public beach	Public
Little Sand Bay	East Side Drive	60 acres, 1,300 ft of shoreline	Little Traverse Conservancy	Parking lot, trails, boardwalk through cedar swamp, benches, historical building (no access)	Public
Martin’s Bluff	East Side Drive	~ 10 acres	Owned by DNR; leased and administered by PT	Trail along bluff, picnic tables, rope railing to beach below	Public
Lake Geneserath Public Access	Off East Side Drive, Fishing Site Road	~2.5 acres, 300 ft of shoreline	Owned by DNR; leased and administered by PT	Public boat launch, large fishing lake (489 acres), outhouses, trail	Public
Cable’s Creek Access Beach	Off East Side Drive, Cable’s Creek Road	86.6 acres, 0.3-mile foot trail, 1,500 ft of shoreline	Owned by DNR; leased and administered by PT	Scenic trail, picnic tables, beach, bridge over creek	Public
Iron Ore Bay Public Beach Access	South End Road	22.6 acres, 600 ft of shoreline	PT & SJT	Beach, picnic table, outhouses	Public
Mike Boyle’s Access Site	Off East Side Drive, Mike Boyle’s Beach Road	66 ft of shoreline, easement ~1 acre	Charlevoix County	Public access beach site	Public
Protar’s House & Tomb	Sloptown Road	1.9 acres	Beaver Island Historical Society	Historical sites	Public
Angeline’s Bluff Observation Deck	Mrs. Redding’s Trail	0.5 acre	SJT & PT	Lookout area, memorial	Public
Sarah Martin Forest Preserve	Mrs. Redding’s Trail	106 acres	Little Traverse Conservancy	Working forest reserve	Public
Conn’s Cove Nature Preserve	East Side Drive	226 acres, 1,360 ft of shoreline	Little Traverse Conservancy	Working nature preserve	Public
Karl J. Erber Nature Preserve	East Side Drive	0.5 acre, 450 ft of shoreline	Little Traverse Conservancy	Working nature preserve	Public
Beaver Island Golf Course	East Side Drive	100 acres	Private	9-hole golf course, driving range, club and cart rental	Public, hours of operation

**“Create a mobile kiosk/booth that could be set up in various towns or events to promote the Island. Keep the Island as it is: an escape from commercialization and hustle and bustle.”**

**Beaver Island Resident**



The Beaver Head Lighthouse and Fog Signal Station is the second Island site registered on the National Register of Historic Places. This important site could serve as an additional tourist attraction on the Island if public access and restoration is prioritized.

## **KEY CHALLENGES IN THIS CHAPTER**

The economic challenges on Beaver Island are often related to the Island’s reliance on tourism. Changes in the housing market, as well as the regional economy, also have an impact. A short summary of the challenges related to topics described in this chapter is listed below.

### **MARKETING THE ISLAND**

Currently, marketing the Island is primarily handled by the Beaver Island Chamber of Commerce. However, through this planning process, many Island businesses and organizations expressed ideas to market the Island through new avenues such as web and video and with more contributions from other Island organizations.

In order to effectively market the Island, it should be clear who the primary audience is. In other words, who is most likely to come visit Beaver Island? Map 5.5 helps answer part of this question, although more work should be done on this topic. A drive-time assessment is a common way to understand who is most likely to visit a tourism destination. Using Charlevoix as the destination, people living within a 60-minute, 120-minute, and 180-minute drive time were mapped. The journey to Beaver Island from Charlevoix would represent additional time, either 2.5 hours on the ferry or about 20 minutes for a flight. It seems reasonable that a vacationer would be willing to travel about 1-2 hours for a day trip, and longer for a weekend trip. Map 5.5 shows that the population centers of Petoskey and Traverse City are easily within a day-trip distance of Beaver Island, while Ludington, Bay City, and parts of the Grand Rapids area are more likely to come for a weekend. Southeast Michigan, where the majority of Michigan’s population lives, would be most likely to visit the Island as part of a longer trip. Drive-time assessments don’t tell the whole story, as the Archipelago regularly also receives visitors from Lansing, Ann Arbor and Chicago, but drive-time is a useful way to begin to understand the population that may visit a tourist destination.

Marketing the Island to tourists, outdoor recreation enthusiasts, and families continues to be a challenge for the Island. A number of ideas are included in Chapter 6 for ways to strengthen marketing of the Island.

### **PUBLIC ACCESS**

The Beaver Island App was created in 2022 to help visitors find and navigate trails. Trail maps are also available at the Community Center as well as the trailheads. Boat launches, public parks, and other public sites are often not signed, and locations suitable for public parking (especially for boats) are also unclear. One of the outcomes of this Master Plan is a set of maps describing the public land on the Island. Island groups and government leaders have taken

a leadership role in creating a comprehensive wayfinding strategy. Many ideas for communicating information to tourists are included in Chapter 6, although not all of these ideas are popular. Creating a kiosk in downtown St. James with clear information on accommodations, recreation amenities, and transportation would be helpful.

### **JOB GROWTH**

Job growth, especially to support young families, is a continued challenge on the Island. Outside of the service sector, a number of construction jobs, entrepreneurial businesses, and natural-resource jobs such as logging have traditionally helped families work on the Island year-round. Today, jobs in many of these industries have declined, just as they have in the region and the nation as a whole. Jobs in roles at the school and in the medical field still attract workers.

Some thoughts have turned to the Island's natural lands and Island culture for new ideas on possible exports for the Island. Artisan foods, furniture, and even alcohol have been discussed in recent years as possibly viable industries. However, new businesses need a supportive environment, and a cohesive effort to attract new business leaders has yet to be sustained on the Island. Chapter 6 contains a number of ideas and partnerships that could be formed to help connect job-seekers and entrepreneurs to opportunities on the Island.

### **TRAIL PLANNING**

Although additional trail development around Beaver Island has been cited as a high priority, questions regarding which organization(s) would be responsible for funding, maintaining and managing the trail systems have been raised. All of these questions are very important and should be addressed for each trail type (e.g., land, water) before existing trails are improved or additional trails are developed. Several needs identified in this planning process include:

- Maintain and groom trails for particular uses.
- Create trailheads and clear markings for tourists looking to access trails.
- Better understand and map the public trails available.
- Purchase several existing private trails in order to better connect existing public trails.
- Protect sensitive landscapes near trails and proposed trail expansions from unwise intensity and type of use.
- Accommodate bicyclists through a separated bike path.
- Educate tourists on the seasonal conditions of the trails.
- Collaborate with the DNR to facilitate trails and trail improvements on state-owned land.
- Collaborate with the Little Traverse Conservancy to define trail easement access on private land as requested.

### **DETERMINING APPROPRIATE TRAIL CAPACITY**

One fundamental question and dilemma that is often cited by land, resource and trail managers is: *How do we determine the maximum amount and type of visitor use that a resource can accommodate while still achieving and maintaining desired resource conditions and a visitor experience consistent with the purpose for which the resource was established?*

One way to determine if the Island has balanced the needs and activities of all trail stakeholders is to establish and monitor expectations for the trail systems. For example, if solitude is important to Islanders on the trails, periodic assessments could be conducted to count the number of other parties encountered while hiking the Island's trail systems. Trail maintenance could be monitored by counting the number of miles impassable in the spring due to mud, erosion, or other conditions. Trail planning on Beaver Island should begin with a discussion of the type of experience desired on the Island's trails and with the development of a set of indicators that could be used to measure the desired experience.



## MAPS IN THIS CHAPTER

The maps for this chapter are included on the following pages. This page provides a brief description of each map, while data sources and other information can be found on each map.

### MAP 5.1 TRAILS

This is a working map of existing public trails on Beaver Island, though it may not be complete.



### MAP 5.4 RECREATION FACILITIES (DETAIL)

This map shows the recreation facilities in St. James Township’s harbor area, as noted in the draft recreation plan for St. James Township.



### MAP 5.2 BIRDING TRAIL

This map shows the locations of the Beaver Island Birding Trail stops.



### MAP 5.5 DRIVE-TIME ASSESSMENT

This map shows the areas within a 60, 120, and 180 minute drive of Charlevoix.



### MAP 5.3 RECREATION FACILITIES

This map shows the recreation facilities on the Island as noted in the draft recreation plans for St. James and Peaine Townships.



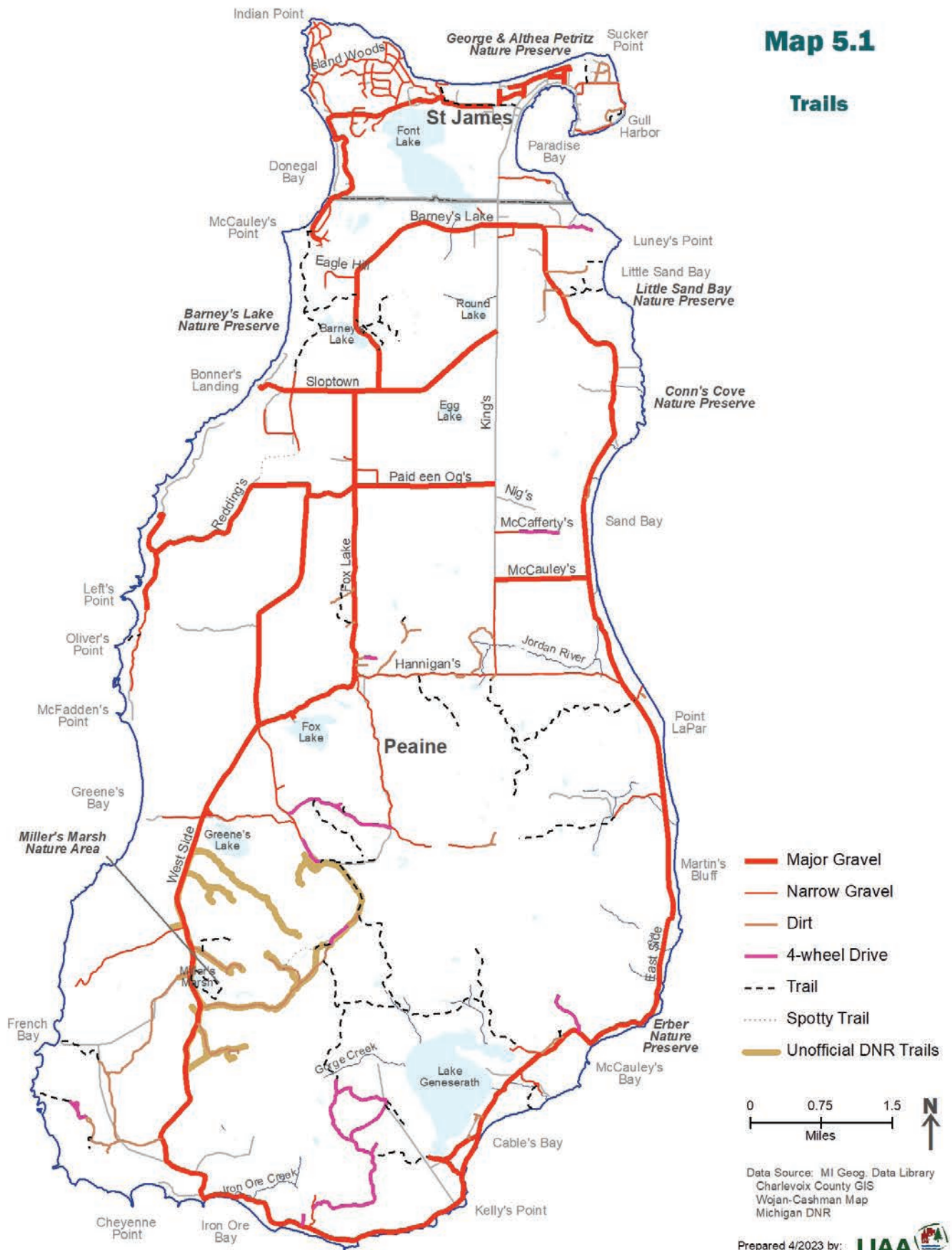
### MAP 5.6 BEAVER ISLAND WATER TRAIL

This map shows the Beaver Island Water Trail.



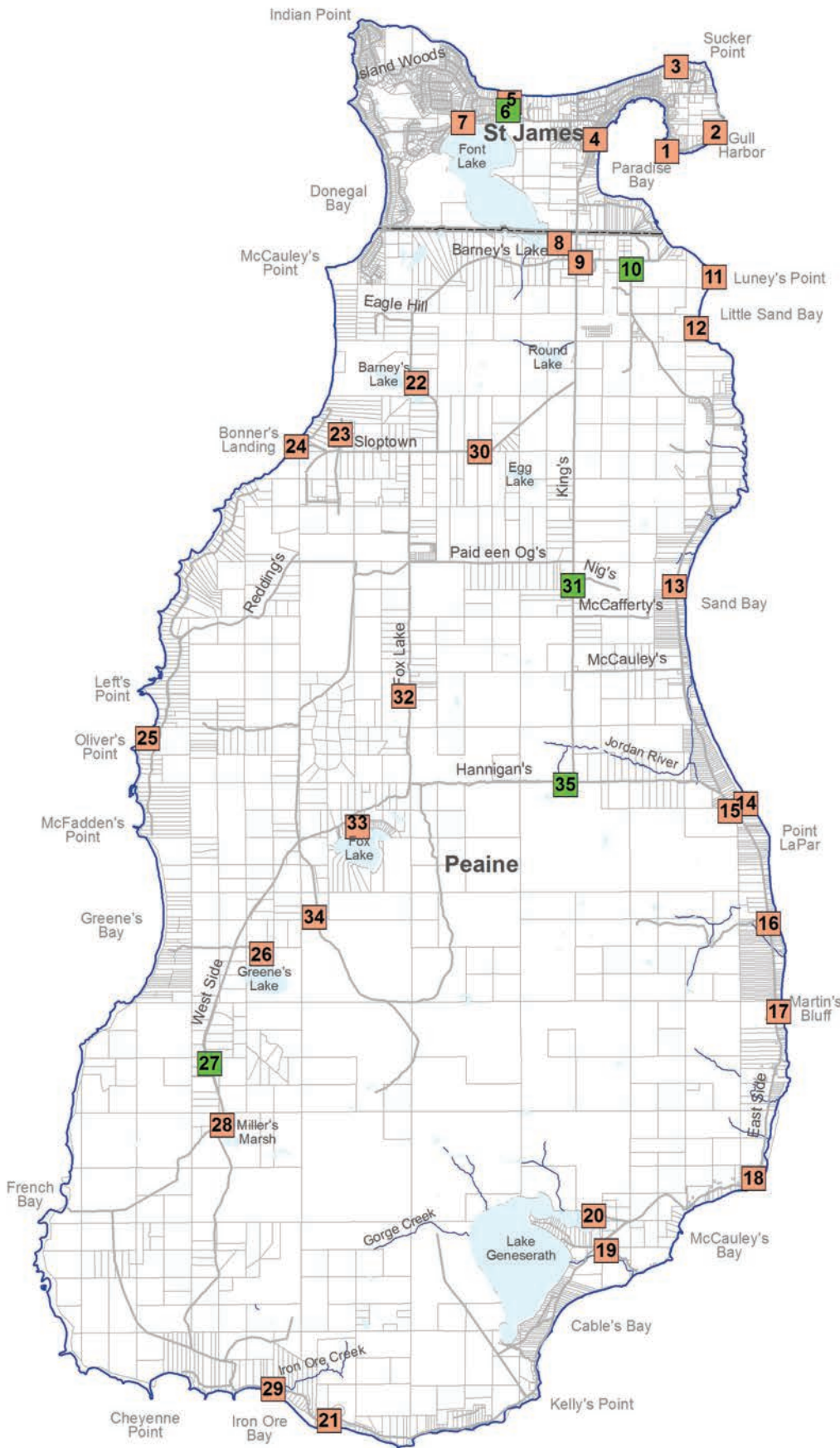
# Map 5.1

## Trails



## Map 5.2

### Birding Trail



#### North End Birding Sites

- 1 - Beaver Island Lighthouse
- 2 - Gull Harbor Natural Area
- 3 - George and Althea Petritz Preserve
- 4 - Chimney Swift Tower
- 5 - St. James Township Campground
- 6 - Indian Point
- 7 - Font Lake (Public Boat Launch on Donegal Bay Rd.)
- 8 - Font Lake (Peaine Township Park)
- 9 - Holy Cross Cemetery

#### East Side Birding Sites

- 10 - "East Side Drive - Bobolink Bend"
- 11 - Luney's Point
- 12 - Little Sand Bay Preserve
- 13 - Paula Simpson Trail / CMU / Old Burke Farm
- 14 - Bill Wagner Campground
- 15 - Seven Bridges Trail
- 16 - Johnny Martin's Trail
- 17 - Martins Bluff
- 18 - Erber Preserve
- 19 - "Cable's Creek Road - Warbler Alley"
- 20 - Lake Geneserath Public Boat Launch
- 21 - Beaver Head Lighthouse

#### West Side Birding Sites

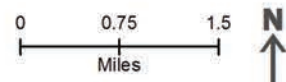
- 22 - Barney's Lake Preserve
- 23 - Protars Tomb / Kuebler Trail
- 24 - Bonner's Bluff Landing
- 25 - Oliver's Point via Mrs. Redding's Trail
- 26 - Greene's Lake
- 27 - Tara's Meadow
- 28 - Miller's Marsh
- 29 - Iron Ore Bay

#### Central Birding Sites

- 30 - Microwave Tower on Sloptown Road
- 31 - King's Highway Wetland
- 32 - Black Hills Clearing
- 33 - Fox Lake
- 34 - Camp #3 Clear Cut
- 35 - Hannigan's Road

■ Go Out and Explore

■ Observe from Roadside



Data Source: MI Geog. Data Library  
Charlevoix County GIS  
Beaver Island Birding Trail

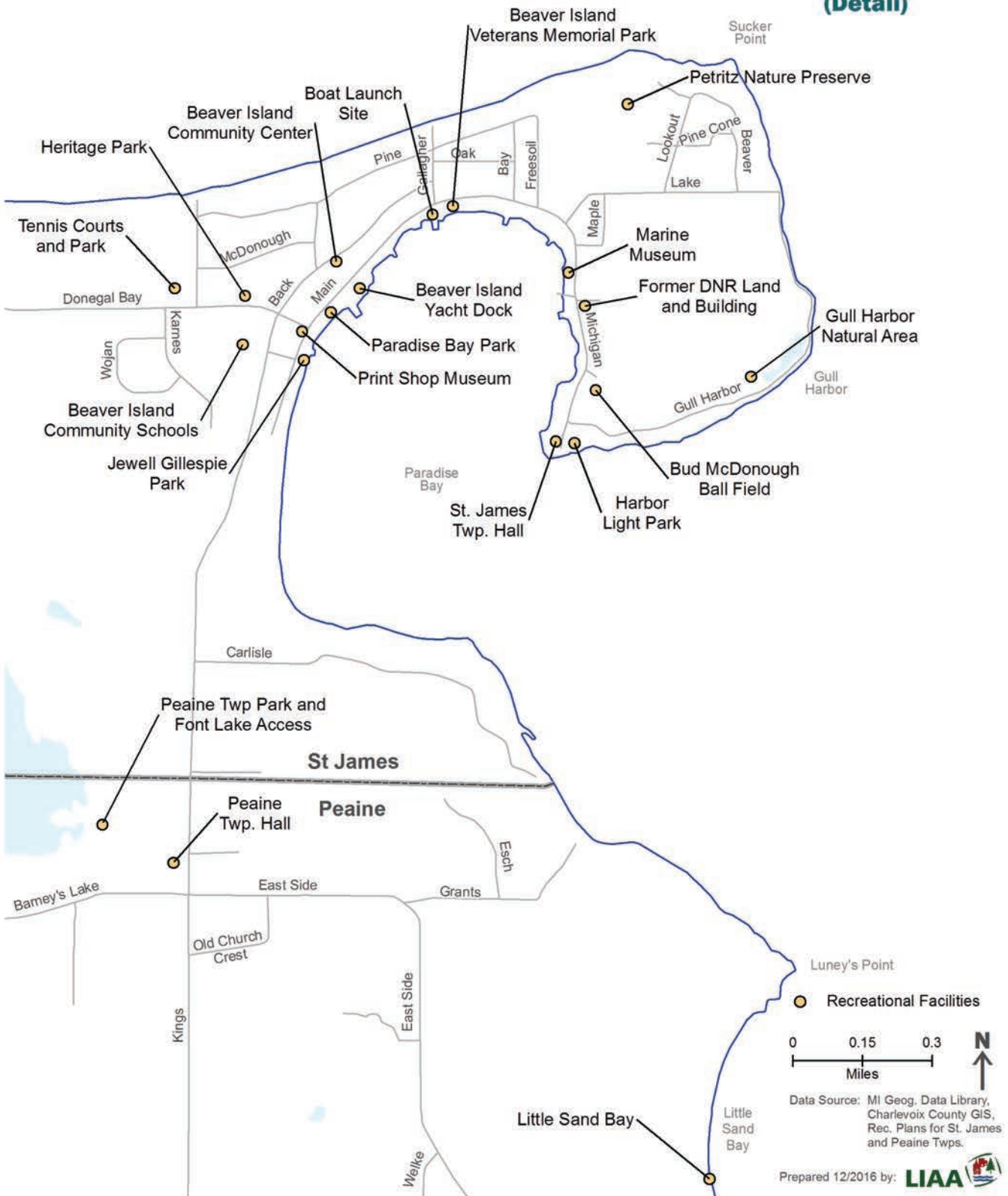
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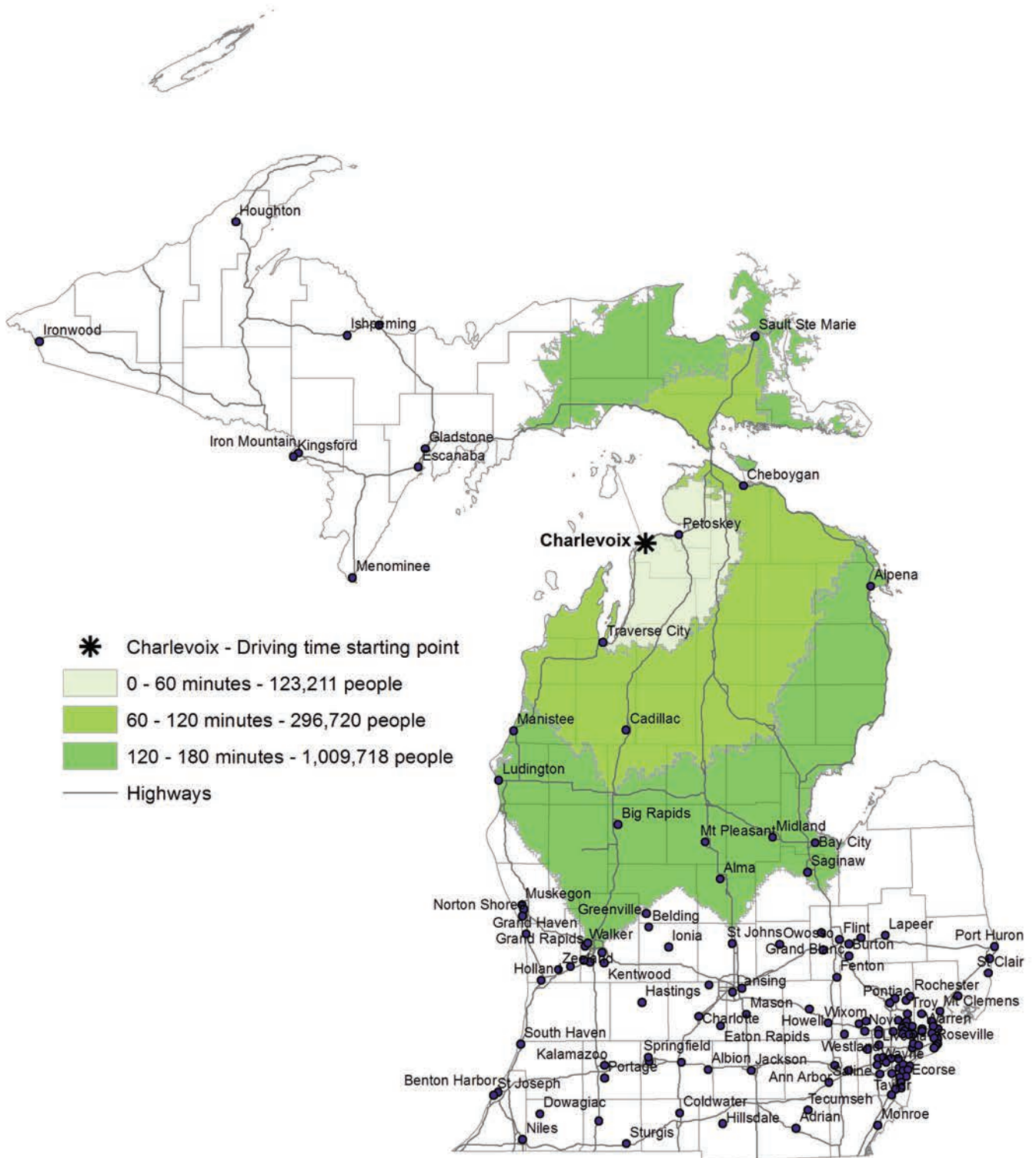
### Map 5.4

### Recreational Facilities (Detail)



# Map 5.5

## Drive Time Assessment



**Map 5.6**  
**Water Trail**  
**Access Sites**



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“These Master Plan activities give all residents and seasonal property owners a unique opportunity to [create] the future desired vision for the Island to be used by the township boards, should they choose to use them.”

Beaver Island Resident

# COMMUNITY SERVICES

IDEAS FOR STRENGTHENING BEAVER ISLAND'S COMMUNITY SERVICES

## TRANSPORTATION

James and Peaine Townships should plan together for shared improvements to infrastructure. ★

Add bike racks to the County transit vehicles. ★

Explore alternative funding models for managing the Emerald Isle. ★★

Subsidize the cost of getting to and around Beaver Island through fare discounts, travel packages, or coupons. ★★

Improve knowledge of transportation modes for tourists by putting clear information in a kiosk downtown. ★

Look for opportunities to make the Island more walkable and bikeable. ★

Work with the Sheriff's office to protect lands that are inappropriate for ORV and snowmobile use. ★

## COMMUNICATIONS

Use the Beaver Island Association's Broadband survey results to identify the community's needs and prioritize funding. ★★

Offer educational forums on the importance of Broadband for local officials and institutions. ★★

Recruit a local grassroots group that is willing to work together to increase Broadband accessibility. ★★

Identify "case study" communities similar to the Island that have increased Broadband access. ★★

Explore fiber optic installation through rural economic development grants. ★★

Inform tourists of the area on the Island that lack cellphone reception. ★★

## PUBLIC SERVICES

Obtain new and replacement signage for Township roads. ★★

Explore options to improve the Transfer Station so as to process large metal items, like cars. ★★

Update the sign ordinances in each Township to be legally enforceable. ★★

Provide public trash and recycling cans in the Downtown area, especially near the boat dock. ★★

Continue to support municipal programming of Community

## EMERGENCY PLANNING

Reduce the number of flights impaired by bad weather through runway improvements at the public airport. ★★

development in hard-

to

# CHAPTER 6

## ACTION PLAN

**This chapter contains an Action Plan and Top Priorities for the future of Beaver Island and the Archipelago. The Action Plan was developed through input received via an online survey and in-person open house conducted during the summer of 2022. Additional feedback was received from both township Planning Commissions after the surveys were completed and the results were tabulated. The Action Plan, along with the future land use and zoning plans in the next chapter, serve as the mechanisms for implementing the community's vision for the future of the Island and the Archipelago.**

### **PURPOSE OF THE ACTION PLAN**

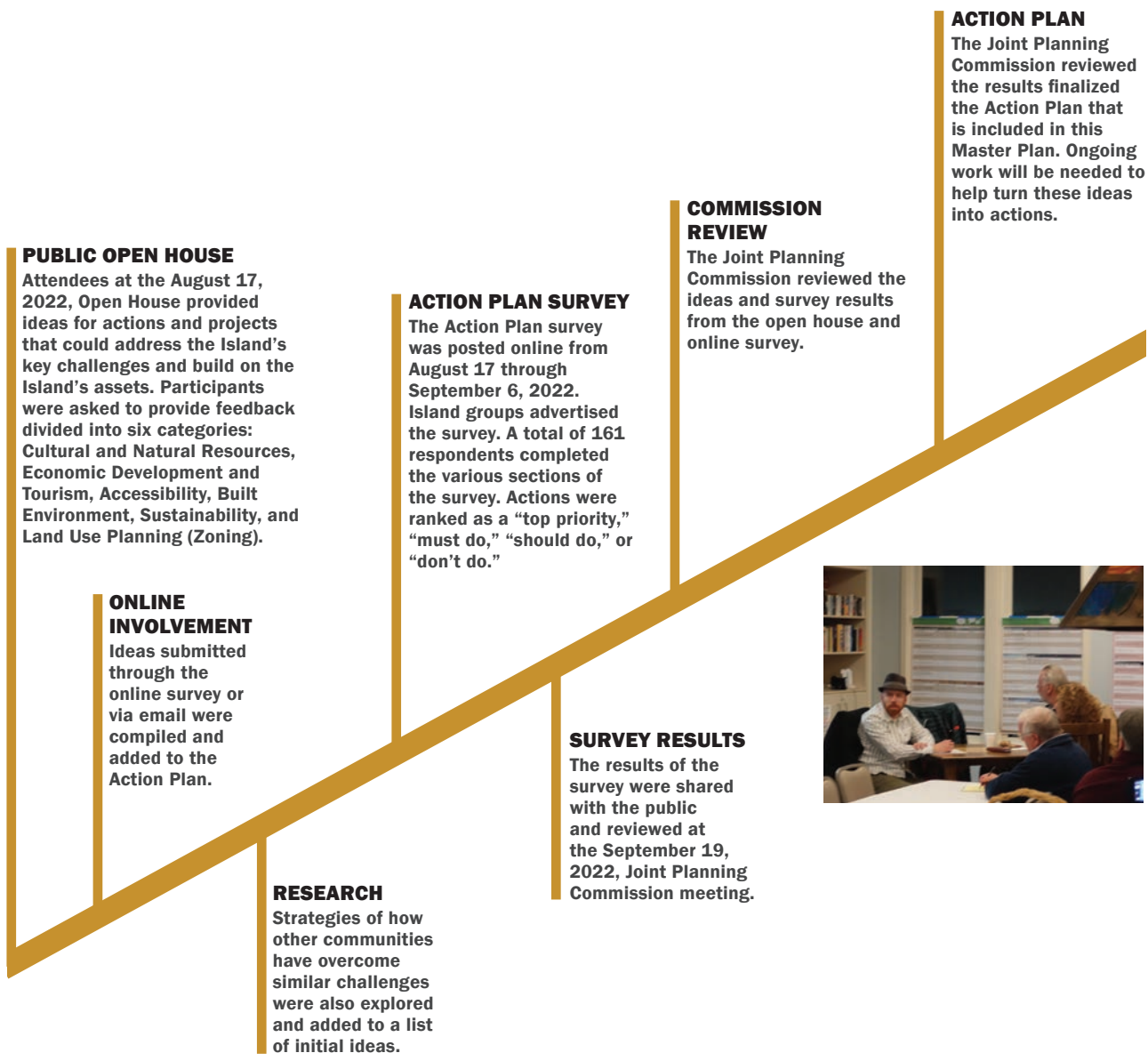
The primary function of this Master Plan is to guide the preservation, development, and enhancements desired by the public on Beaver Island and the Archipelago. This Master Plan identifies a vision for the future and a series of guiding principles to be followed when making decisions regarding preservation and development (see Chapter 1). The action steps in this chapter of the Master Plan were written and prioritized by Islanders and are meant to provide guidance for the future planning of Beaver Island and the Archipelago.

Islanders frequently cite projects and initiatives that the Island's strong network of both government and non-government groups have led. Many of the Island's most cherished institutions and events are organized, funded and owned by private citizens, non-profit organizations and volunteers. This Action Plan was created to identify how these groups and networks might be able to collaborate with local officials and each other to invest time, research, funding, or other support in order to improve quality of life and the preservation of rural character on the Island. In addition, the Action Plan reflects the data gathered during the Master Plan process. In other words, if implemented, the Action Plan holds promise to help the Island overcome key challenges, and improve the quality of life for current and future generations of Islanders.

This Action Plan was shared widely with the Island and the groups mentioned in this chapter as noted on the timeline on the following page. The Action Plan first lists the ideas that would require direct government leadership in a color-coded table by topic area. The second section of the Action Plan lists ideas that would also require some township or government support, but rely most heavily on community partners to implement.

# ACTION PLAN PROCESS TIMELINE

The Action Plan was created as part of the Master Plan update. The Action Plan is a crucial piece of the overall Master Plan, as it identifies priority ideas for improving and maintaining quality of life on the Island. The graphic on this page outlines the major steps involved in creating the Action Plan.



**PUBLIC OPEN HOUSE**

Attendees at the August 17, 2022, Open House provided ideas for actions and projects that could address the Island’s key challenges and build on the Island’s assets. Participants were asked to provide feedback divided into six categories: Cultural and Natural Resources, Economic Development and Tourism, Accessibility, Built Environment, Sustainability, and Land Use Planning (Zoning).

**ONLINE INVOLVEMENT**

Ideas submitted through the online survey or via email were compiled and added to the Action Plan.

**RESEARCH**

Strategies of how other communities have overcome similar challenges were also explored and added to a list of initial ideas.

**ACTION PLAN SURVEY**

The Action Plan survey was posted online from August 17 through September 6, 2022. Island groups advertised the survey. A total of 161 respondents completed the various sections of the survey. Actions were ranked as a “top priority,” “must do,” “should do,” or “don’t do.”

**SURVEY RESULTS**

The results of the survey were shared with the public and reviewed at the September 19, 2022, Joint Planning Commission meeting.



**COMMISSION REVIEW**

The Joint Planning Commission reviewed the ideas and survey results from the open house and online survey.

**ACTION PLAN**

The Joint Planning Commission reviewed the results finalized the Action Plan that is included in this Master Plan. Ongoing work will be needed to help turn these ideas into actions.



## TOP PRIORITIES

The following is a summary of the top priorities as identified throughout the public input process:

- Continue to ensure Advanced Life Support and Emergency Medical Services are available.
- Both Townships should continue to work together to conduct CIP (capital improvement planning) and consider other efforts to increase efficiency.
- Improve trail maintenance and conduct planning activities with an emphasis on appropriate activities in appropriate locations.
- Provide affordable options for removing junk cars and large debris.
- Support adoption of proposed Light Management Plans and installation of Beaver Island Dark Sky signage at viewing areas by both Townships.
- Require that new developments protect native species, wildlife, and sensitive landscapes (such as investigating dune erosion and migration rates to determine appropriate setbacks).
- Continue to support invasive species control through the TIS Program and the Wood Movement Ordinance.
- Support the Affordable Housing Committee to investigate options for various types of housing and programming including affordable housing, workforce housing, and critical care worker housing.
- Allow and incentivize small-scale wind and solar installations.
- Improve Internet access.
- Support environmental education programming in local schools.
- Update the Beaver Island Emergency Operations Plan Appendix to the Charlevoix County Emergency Operations Plan.

Photo Credit: Becca Foli



**TOP PRIORITIES FOR LAND USE**

The following is a summary of the top priorities for land-use related decisions and actions as identified throughout the public input process:

- Keep the natural/wooded areas.
- Protect critical dune areas from development and high traffic.
- Develop affordable housing and workforce housing near the harbor for access to services and transportation.
- Green energy could be located near parks or implemented on a smaller scale on individual lots.
- “Cultural areas” on public lands should be identified and development should be prohibited to protect the areas.
- Identification and protection of “cultural areas” on private land should be encouraged.
- Inclusion of the “outer islands” into the future land use map, zoning regulations and updated ordinances.

**RECURRING THEMES**

The following are general recurring themes from the public input process. While there were several comments regarding each topic, this list is intended to be a brief summary.

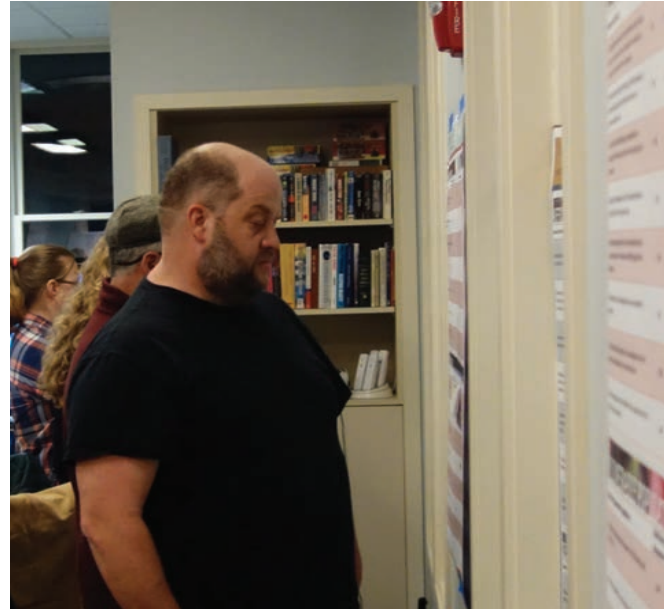
	<p><b>CULTURAL AND NATURAL RESOURCES</b></p> <ul style="list-style-type: none"> <li>• Planning efforts and regulations are needed to maintain natural areas (including outer islands).</li> <li>• Dark skies.</li> <li>• Protect and respect historical sites.</li> </ul>
<p><b>TOURISM AND ECONOMIC DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>• Maintain a rural environment.</li> <li>• Education materials for visitors to protect public lands.</li> <li>• Workforce housing.</li> </ul>	
	<p><b>ACCESSIBILITY</b></p> <ul style="list-style-type: none"> <li>• EMS services.</li> <li>• Affordable housing – update zoning requirements.</li> <li>• Trail management (motorized/non-motorized infrastructure and connectivity).</li> <li>• Reliable high-speed Internet.</li> </ul>
<p><b>BUILT ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>• Differentiate and regulate ORV trails and maintain and improve walkable trails.</li> <li>• Speed on roadways (fast vehicles).</li> </ul>	
	<p><b>SUSTAINABILITY</b></p> <ul style="list-style-type: none"> <li>• Livability for families.</li> <li>• Develop energy strategy.</li> <li>• Update the Beaver Island Emergency Operations Plan and provide adequate staffing.</li> <li>• Education about shoreline/lake level fluctuations and regulate construction.</li> </ul>

## READING THE ACTION PLAN

Each idea submitted by the public was reviewed and discussed by the Joint Planning Commission and the public through the process described earlier. The ideas were categorized into topic areas and formatted into the tables and lists included in this chapter.

## PARTNERSHIPS

Each idea is given a priority (high, medium, or low) and at least one suggested partner who might be best suited to take the lead on the idea. It is important to note that just because an organization is listed as a possible partner, it does not necessarily mean the organization has committed to take on the responsibility associated with each task. Many of the ideas will require significant time, cost, research and collaboration in order to implement them wisely. *Including an idea in this Action Plan does not commit the government or the partners listed to funding or working on the idea.* The organizations listed as possible partners are simply suggestions, submitted by citizens, as to who might be best positioned to take on a task or is already working on a task. It is the responsibility of the Joint Planning Commission to continue work on the Action Plan by contacting the various Island groups and initiating the process to determine the most viable path forward to implement the ideas in this plan. Ideas may evolve over time or be found unsuitable for the Island in the future.



The Action Plan works to identify partners that might be best suited to work on the ideas submitted by the public.



# ACTION PLAN

## IDEAS FOR GOVERNMENT ACTION

This Action Plan **does not commit** the government or the partners listed to funding or working on the idea.

<b>ECONOMY AND RECREATION</b>		
<b>Ideas for Paradise Bay</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Improve the boat docks to be more flexible to changes in water levels.	<b>Medium</b>	Michigan Coastal Zone Management Program; Michigan Small Harbors Coalition; Army Corps of Engineers
b) Build a new public boat ramp/launch.	<b>Medium</b>	Michigan Coastal Zone Management Program; Michigan Small Harbors Coalition; Army Corps of Engineers; cruiseship companies; fishing groups; festivals and events such as the Tall Ship Festival
c) Designate areas for public parking for boaters.	<b>Medium</b>	"St. James Township Planning Commission; St. James Township Board"
d) Clearly mark, with signs, the waterfront areas for public use and boat launching.	<b>Medium</b>	
e) Create conceptual designs for downtown and the harbor that show what future improvements might look like.	<b>Medium</b>	St. James Township Planning Commission; Michigan Coastal Zone Management Program
f) Provide directional signs or a kiosk to welcome tourists that arrive downtown and at various beaches and throughout the Island.	<b>High</b>	St. James Township Planning Commission; Peaine Township Planning Commission; Preservation Association of Beaver Island; Beaver Island Association; Island Institute
g) Make the Harbor area even more "charming" with holiday street lights, landscaping, and beautification projects.	<b>Medium</b>	St. James Township
h) Update the downtown public restrooms.	<b>Medium</b>	St. James Township; Beaver Island Historical Society
<b>Ideas for Marketing</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Undergo a branding process to develop a slogan and logo for the Island.	<b>Medium</b>	
b) Comprehensively market the Island's year-round opportunities.	<b>Medium</b>	
c) Market hunting and fishing on the Island.	<b>Medium</b>	St. James Township; Peaine Township; Beaver Island Association; Wildlife Club
d) Market the Island toward those looking to live "off the grid".	<b>Low</b>	
e) Market the Island toward middle-aged couples / empty nesters.	<b>Medium</b>	
f) Market the Island toward outdoor sports enthusiasts.	<b>High</b>	
g) Market the Island to professionals who could work remotely via the Internet.	<b>High</b>	
h) Market opportunities to host corporate retreats and professional conferences.	<b>Medium</b>	
i) Create an Island office or kiosk in a prominent area of Charlevoix's main street to better promote Beaver Island.	<b>High</b>	
j) Promote Beaver Island as a great place for families to live.	<b>Very High</b>	

<b>Ideas for Tourism</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Construct showers and improve restrooms at the Township campgrounds.	<b>Medium</b>	St. James Township; Peaine Township
b) Support the expansion of the Beaver Island Birding Trail, especially in the shoulder seasons of spring and winter.	<b>Medium</b>	St. James Township; Peaine Township; Beaver Island Association; Wildlife Club
c) Construct docks on the inland lakes.	<b>Medium</b>	St. James Township; Peaine Township; Beaver Island Association; Wildlife Club
d) Increase access to and quality of fishing.	<b>Medium</b>	St. James Township; Peaine Township; Beaver Island Association; Wildlife Club
e) Increase the capacity for tourism by encouraging new hotels/accommodations.	<b>Medium</b>	St. James Township; Peaine Township; Chamber of Commerce; hotel and business owners
f) Focus on improving tourism experiences in the "shoulder" seasons of fall and spring.	<b>Medium</b>	
g) Create more universally accessible areas for recreation at beaches, the marina, campgrounds, and in park areas.	<b>Medium</b>	St. James Township; Peaine Township; Planning Commissions; Michigan Department of Natural Resources; recreational grants through the State of Michigan
<b>Ideas for Nature-Based Economy</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Support sustainable commercial logging on Beaver Island.	<b>Low</b>	
b) Grow and export products such as juniper berries and hops.	<b>Medium</b>	
c) Market and sell agricultural products with a special "Beaver Island" brand.	<b>Medium</b>	
d) Regenerate cranberry bogs on the Island for foraging or agricultural growth.	<b>Medium</b>	
e) Explore opportunities to manage habitat to improve the quality of the hunting experience.	<b>Medium</b>	
f) Program a family camp or summer camp with amenities for family camping.	<b>Medium</b>	
g) Allow downed or dead wood to be removed for use at homes or campsites.	<b>Medium</b>	
<b>Ideas for Trails</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Fund a seasonal position to maintain trails.	<b>Medium</b>	St. James Township; Peaine Township; Michigan Department of Natural Resources; Chamber of Commerce; Beaver Island Community School; Wildlife Club
b) Support land acquisition by the DNR and others to connect existing trails.	<b>Medium</b>	"St. James Township; Peaine Township; Little Traverse Conservancy, Tribal Groups, Michigan Department of Natural Resources"
c) Mark, map, and groom trails for their appropriate use (ORV, snowmobile, biking, walking, etc.).	<b>Medium</b>	St. James Township; Peaine Township; Tribal Groups, Michigan Department of Natural Resources
d) Clearly mark the seasonal conditions of trails on maps and tourist information.	<b>Medium</b>	
e) Create a separated bike path along King's Highway.	<b>Medium</b>	"St. James Township; Peaine Township; Charlevoix County Road Commission"
f) Look for ways to accommodate bicyclists through separate paths, bike lanes, and signs where appropriate.	<b>High</b>	St. James Township; Peaine Township; Planning Commissions; Charlevoix County Road Commission
<b>Ideas for Business Growth</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Equip entrepreneurs with resources on creating and funding startups, writing business plans, and applying for grants.	<b>Medium</b>	
b) Attract Internet-based businesses to the Island.	<b>High</b>	
c) Explore economic ventures that utilize the skilled labor on the Island, such as the exporting of woodworking products, furniture, or other artisan products.	<b>Medium</b>	
d) Invest in a technical career center or cooperatively-owned "maker space" on the Island with equipment, skill-sharing, and educational classes.	<b>Medium</b>	
e) Advertise apprenticeship opportunities on the Island with plumbers, carpenters, electricians, and other trade jobs.	<b>Medium</b>	
f) Host an annual workshop or training for those in the hospitality industry.	<b>Medium</b>	

# ACTION PLAN

## IDEAS FOR GOVERNMENT ACTION

### NATURAL AND CULTURAL RESOURCES

<b>Ideas for Water Quality</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Require additional inspections of septic systems of private property and the community septic system in St. James Township.	<b>Medium</b>	Charlevoix County; Planning Commissions; Zoning Administrator; Tip of the Mitt Watershed Council
b) Look for ways to improve existing requirements for a vegetative buffer on properties adjacent to lakes and streams.	<b>High</b>	Planning Commissions; Beaver Island Association; Northern Lake Michigan Islands Collaborative; Michigan Department of Natural Resources
c) Widely share knowledge and data about the water quality of the Island's inland lakes.	<b>High</b>	
d) Regulate the amount of impervious surface permitted on waterfront lots (i.e., roads, buildings, driveways).	<b>High</b>	
<b>Ideas for Habitat Protection</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Provide washing stations for boaters to clean crafts.	<b>Medium</b>	Township governments; Michigan Coastal Zone Management Program; Tribal governments; Beaver Island Association
b) Survey the Archipelago's plant and animal species.	<b>Medium</b>	
c) Protect dunes and beaches with educational signs at public access points.	<b>High</b>	St. James Township; Peaine Township; Northern Lake Michigan Islands Collaborative; Beaver Island Association; Chamber of Commerce
d) Enforce dark sky protections to protect nocturnal habitat.	<b>High</b>	St. James Township; Peaine Township; Planning Commissions; Northern Lake Michigan Islands Collaborative; Headlands International Dark Sky Park; Beaver Island Association
e) Identify and fix culverts that are damaging fish migration and health.	<b>High</b>	St. James Township; Peaine Township; Charlevoix County Road Commission; Conservation Resource Alliance; Tribal governments
f) Protect tree canopy, especially near streams and rivers.	<b>High</b>	Planning Commissions; Little Traverse Conservancy; Michigan Department of Natural Resources; Beaver Island Association
g) Manage the marina and near-shore areas for additional fish habitat.	<b>Medium</b>	St. James Township; Peaine Township; Michigan Department of Natural Resources; marina operator
h) Require that new developments are provided educational materials about how private property owners can protect native plants, animals, and preserve the environment on their land.	<b>Medium</b>	Planning Commissions; Beaver Island Association; realtors

<b>Ideas for Resource Management</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Provide affordable options for removing junk cars and large debris.	<b>High</b>	Townships governments; Beaver Island Transfer Station; Beaver Island Transportation Authority; scrapping companies
b) Enforce code violations for blight removal and strengthen code requirements.	<b>High</b>	Township governments
c) Protect tree canopy near the Island's Forest Roads.	<b>High</b>	Township governments; Charlevoix County Road Commission
d) Protect air quality through increased dust control.	<b>Medium</b>	Township governments; Charlevoix County Road Commission
e) Enforce noise ordinances for fireworks, ORV use, and other loud disturbances.	<b>Medium</b>	Township governments; Charlevoix County Sheriff
f) Remove beech trees killed by Beech Bark Disease before damage to homes and other trees can occur.	<b>Medium</b>	Township governments; Michigan Department of Natural Resources; Charlevoix County Road Commission; loggers; property owners
g) Evaluate coastal setbacks and erosion rates to determine where new buildings should be set farther back from the water.	<b>High</b>	Township governments; Central Michigan University; Michigan Coastal Zone Management Program
<b>Ideas for Climate Adaptation</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Stock native fish in inland lakes that are more tolerant to warm water as lakes continue to warm.	<b>Medium</b>	
b) Work with DNR to fund forest adaptation projects, focused on trees most at risk of disease or decline due to climate change.	<b>High</b>	
c) Continue to map the locations of invasive species with an understanding of areas more at risk to future infestation.	<b>High</b>	
d) Coordinate with the Beaver Island Community School to incorporate environmental education.	<b>High</b>	
e) Work with DNR to assess wildfire risk and identify actions to reduce the risk.	<b>Medium</b>	
<b>Ideas for Cultural Resources</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Secure cultural easements for ceremonies in sacred spaces. A cultural easement is a voluntary legal agreement that preserves cultural or historically significant sites on privately owned land.	<b>Medium</b>	
b) Review the state-documented cultural resources on the Island and add to them as needed.	<b>Medium</b>	
c) Protect cultural assets through conservation easements (not for public access).	<b>Low</b>	
d) Inventory historic structures in disrepair and identify priorities for reuse and preservation.	<b>Medium</b>	
e) Protect and preserve the lighthouse at the south end of the Island.	<b>Very High</b>	
f) Honor the Island's use by Native Americans and other groups through interpretative, bilingual signage along paths and trails.	<b>Medium</b>	
g) Develop a management plan for the Island's cultural resources.	<b>Medium</b>	

# ACTION PLAN

## IDEAS FOR GOVERNMENT ACTION

### HOUSING

<b>Ideas for Affordability</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Broaden the responsibility of the Beaver Island Community Development Corporation (a 501c3), the developer, owner and operator of Forest View, a senior living complex, to include affordable housing.	<b>High</b>	Beaver Island Community Development Corporation
b) Continue to develop an Affordable Housing Taskforce to assist the BICDC's board in developing affordable housing that includes expanded senior living units, workforce housing (including for critical care workers), and recreational facilities, including therapy options. Utilize available property near town and the rural health center.	<b>High</b>	Beaver Island Community Development Corporation
c) Develop and implement an affordable housing plan.	<b>High</b>	Township governments; Beaver Island Community Development Corporation
d) Update local ordinances for affordable options.	<b>High</b>	Township governments
e) Assure sanitary and safe living standards are utilized.	<b>High</b>	Township governments
f) Develop and implement short-term and long-term rental regulations.	<b>High</b>	Township governments
g) Incentivize affordable monthly rentals for those looking to try out life on Beaver Island with little risk.	<b>Medium</b>	Township governments; Beaver Island Association; hotels; realtors
h) Alleviate cost burdens on low-income households by subsidizing housing costs through energy efficiency and home repair programs.	<b>Medium</b>	Township governments; Michigan State Housing Development Authority; Great Lakes Energy; Northwest Michigan Community Action Agency
i) Lower the minimum building size through proactive zoning to enable tiny-home development.	<b>Medium</b>	Planning Commissions
j) Designate an area of land for micro-housing. Location should be near existing infrastructure and perhaps on lots unsuitable for traditional development.	<b>Medium</b>	Construction business owners; Port of St. James Property Owners Association; Beaver Island Association
k) Consider development of a community land trust to ensure the long-term affordability of properties even as they sell.	<b>Low</b>	
l) Maintain the quality and appearance of existing subsidized housing.	<b>High</b>	Planning Commissions; Beaver Island Community Development Corporation
m) Start an affordable housing committee endorsed and supported by the Townships.	<b>Medium</b>	Township governments; realtors
<b>Ideas for Seasonal Housing</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Explore cooperative models to maintain and care for rental properties designed for summer laborers.	<b>Medium</b>	Township governments; business owners; property owners; seasonal employees
b) Research opportunities to house more summer labor on the Island.	<b>Medium</b>	
c) Encourage additional lodging and accommodations on the Island.	<b>Medium</b>	
<b>Ideas for Energy Efficiency</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Encourage private property owners to retrofit homes with local programs.	<b>Medium</b>	Great Lakes Energy; Northwest Michigan Community Action Agency
b) Allow and incentivize small-scale wind and solar on private property.	<b>High</b>	Planning Commissions; Great Lakes Energy; Island Institute
c) Pilot clean-energy projects in public buildings.	<b>High</b>	Township governments; construction business owners; Beaver Island Community School



# ACTION PLAN

## IDEAS FOR GOVERNMENT ACTION

COMMUNITY SERVICES		
<b>Ideas for Capital Improvement</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Each Township should work with all Islanders to develop a CIP that covers public infrastructure, including parks, roads, trails, marinas, parking, sewer and water systems, waste management, buildings, and other publicly owned infrastructure.	<b>Very High</b>	Township governments; Charlevoix County
b) The Townships should work together on shared/commonly owned elements (e.g., waste management facility, municipal airport, certain parks, fire halls, library, etc.) with the non-township-based operators of these facilities for the development of a common CIP.	<b>Very High</b>	Township governments; Charlevoix County
<b>Ideas for Transportation</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Consider traffic operational options for the downtown area during the peak season given the congestion when the ferry is offloading/loading customers, vehicles, and freight.	<b>High</b>	St. James Township
b) Consider traffic speed mitigation measures at locations of high-speed traffic.	<b>High</b>	Township governments; County Road Commission
c) Consider alternative parking options for reducing parking congestion caused by on-street parking of rental vehicles in town near the boat dock, including recreational vehicles and trailers and including those placed near the launches.	<b>High</b>	St. James Township
d) Explore alternative funding models for managing the Emerald Isle.	<b>Medium</b>	Beaver Island Transportation Authority; Beaver Island Boat Company; St. James Township; Office of the Great Lakes; Northern Michigan Great Lakes Island Collaborative
e) Subsidize the cost of getting to and around Beaver Island through fare discounts, travel packages, or coupons.	<b>Medium</b>	County Transit; private transportation service providers
f) Improve knowledge of transportation modes for tourists by putting clear information in a kiosk downtown.	<b>Medium</b>	Township Governments; County Transit
g) Look for opportunities to make the Island more walkable and bikeable.	<b>High</b>	Township governments; Michigan Department of Natural Resources; Michigan Department of Transportation; recreational clubs
h) Work with the Sheriff's office to protect lands that are inappropriate for ORV and snowmobile use.	<b>Medium</b>	County Sheriff; Township governments; DNR
i) Obtain funding and modify the ferries to be able to run more frequently (daily or twice daily) through the spring and fall season.	<b>Medium</b>	Beaver Island Transportation Authority
j) Add bike racks to the County Transit vehicles.	<b>Low</b>	Township governments; Charlevoix County

## COMMUNITY SERVICES CONTINUED

<b>Ideas for Emergency Planning</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Reduce the number of flights impaired by bad weather through runway improvements at the public airport.	<b>Medium</b>	Township governments; Beaver Island Airport; Fresh Air Aviation; Island Airways
b) Ensure new development in hard-to-reach areas takes steps to reduce fire risk.	<b>Medium</b>	Planning Commissions; Beaver Island Fire Department; Michigan Department of Natural Resources; Michigan Coastal Zone Management Program
c) Ensure Advanced Life Support services are available on the Island.	<b>Very High</b>	Township governments; Beaver Island Emergency Services
d) Rehearse the Emergency Plan for Island evacuation and sheltering.	<b>Medium</b>	Township governments; Beaver Island Fire Department; Beaver Island Emergency Services; County Transit; County Emergency Management; County Planning Department; airports; Beaver Island Rural Health Center; Beaver Island Community School
e) Work with Charlevoix County to continue work on a new Disaster/ Emergency Management Plan.	<b>Medium</b>	Township governments; Charlevoix County; medical providers
f) Ensure EMS services remain on the island.	<b>Very High</b>	Township governments; Charlevoix County; medical providers
g) Improve communications infrastructure for EMS. This includes providing regular community updates and infield access.	<b>High</b>	Township governments; Charlevoix County; medical providers
<b>Ideas for Communications</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Use the Beaver Island Association's Broadband survey results to identify the community's needs and prioritize funding.	<b>High</b>	
b) Offer educational forums on the importance of Broadband for local officials and institutions.	<b>Medium</b>	
c) Recruit a local grassroots group that is willing to work together to increase Broadband accessibility.	<b>High</b>	
d) Identify "case study" communities similar to the Island that have increased Broadband access.	<b>High</b>	
e) Explore fiber optic installation through rural economic development grants.	<b>High</b>	
f) Inform tourists of the areas on the Island that lack cellphone reception.	<b>Medium</b>	
g) Increase cell phone signal strength and extend coverage.	<b>Very High</b>	
<b>Ideas for Public Services</b>	<b>Priority</b>	<b>Possible Partners</b>
a) Obtain new and replacement signage for Township roads.	<b>Low</b>	County Road Commission
b) Explore options to improve the Transfer Station so as to process large metal items, like cars.	<b>Medium</b>	Township governments
c) Update the sign ordinances in each Township to be legally enforceable.	<b>Medium</b>	Planning Commissions
d) Provide public trash and recycling cans in the Downtown area, especially near the boat dock.	<b>Medium</b>	Township governments; Transfer Station
e) Continue to support extracurricular programming at the Beaver Island Community School.	<b>High</b>	Beaver Island Community School

# ACTION PLAN

## IDEAS FOR GOVERNMENT ACTION

### SOCIAL SERVICES AND LEADERSHIP

Ideas for Leadership	Priority	Possible Partners
a) Consolidate surveys and current initiatives led by various groups in a common location, accessible to newcomers looking to volunteer their time or resources.	<b>Medium</b>	
b) Prioritize, instead of replicate, projects led by non-governmental groups on the Island. Do this in an inclusive manner, perhaps facilitated by an outside party.	<b>High</b>	
c) Provide education on grant writing, conflict resolution, and networking support for government and non-government leaders alike.	<b>Medium</b>	
d) Hire a full-time Island Manager, responsible for management of joint Township projects and pursuit of grant opportunities.	<b>Low</b>	
e) Support the continued work of the Island Institute through the Office of the Great Lakes.	<b>High</b>	Township governments; Preservation Association of Beaver Island; Beaver Island Association
f) Include representatives from all Township boards and commissions in the Northern Lake Michigan Islands Collaborative.	<b>Medium</b>	Northern Lake Michigan Islands Collaborative
g) Consolidate the two Townships into one Township government.	<b>Very High</b>	Township governments; Michigan Townships Association; Charlevoix County
h) Require Township Boards and Commissions to write yearly reports published for community use.	<b>High</b>	Township governments
i) Review progress on the Master Plan’s goals yearly and revisit/revise as needed.	<b>High</b>	Planning Commissions
Ideas for Vulnerable Populations	Priority	Possible Partners
a) Increase awareness and support of the Beaver Island Food Pantry.	<b>Medium</b>	
b) Increase availability and funding of in-home senior care.	<b>High</b>	
c) Increase education about foraging opportunities on the Island.	<b>Medium</b>	
d) Identify the needs of vulnerable populations like the disabled, low-income, and elderly.	<b>High</b>	
e) Form a neighborhood “buddy network” to help ensure that care is provided to residents who may be isolated, especially in the winter months.	<b>High</b>	
Ideas for Family Support	Priority	Possible Partners
a) Provide childcare options, such as in-home daycare and after-school care.	<b>Medium</b>	
b) Provide pediatric services and women’s services on the Island, such as monthly visits from providers.	<b>Medium</b>	
c) Provide regular programming for children and youth such as weekly dance classes or skill-based activities.	<b>Medium</b>	
d) Create programming to get residents active in sports and exercise, especially in the winter months.	<b>Medium</b>	
e) Invest in recreational equipment and/or a community gym.	<b>Medium</b>	
f) Affiliate the Rural Health Center with a mainland hospital.	<b>Very High</b>	

# ACTION PLAN

## IDEAS FOR COMMUNITY ACTION

This section contains ideas that had broad community support in the Action Plan survey but appear to require tremendous support, funding, and leadership from non-governmental groups on or off the Island. The ideas on the previous pages are those that the Township governments would be best suited to lead (with the assistance of other partners); the ideas that follow below could be led by others with the formal support of the Townships (e.g., by submitting a grant application, providing funding, or providing complementary projects or programs).

### IDEAS FOR MARKETING

- Comprehensively market the Island's year-round opportunities.
- Market hunting and fishing on the Island.
- Market the Island toward middle-aged couples and empty nesters, outdoor enthusiasts, professionals who could work remotely via the Internet, young families, and to those looking to host corporate retreats and professional conferences.
- Create an Island office or kiosk in a prominent area of Charlevoix's main street to better promote Beaver Island.
- Subsidize the cost of getting to and around Beaver Island through fare discounts, travel packages, or coupons.
- Improve knowledge of transportation modes for tourists by putting clear information on a kiosk downtown.
- Market the Dark Sky Sanctuary Wildlife Research Area at Beaver Island (DSSWRABI) and astrotourism on the Island.
- Market low-impact tourism such as bird watching, astrotourism, botany vacation area, etc.

### MARKETING PARTNERS:

Chamber of Commerce; Preservation Association of Beaver Island; Beaver Island Community Center; Beaver Island Association; GLIA; all Island businesses; Island Institute; special event groups like Baroque on Beaver and the Beaver Island Music Festival.



Beaver Island residents helped to complete the Action Plan found in this chapter.

# ACTION PLAN

## IDEAS FOR COMMUNITY ACTION

### IDEAS FOR TOURISM

- Continue to maintain and expand access points and safe refuges for kayakers and paddlers on the Beaver Island Water Trail.
- Support the expansion of the Beaver Island Birding Trail, especially in the shoulder seasons of spring and fall.
- Increase access to and quality of fishing and hunting.
- Continue to focus on improving tourism experiences in the “shoulder” seasons of spring and fall.
- Assess the quality of visitor experiences through surveys conducted on the boats, planes, and at the Community Center.
- Provide rental options for winter sporting equipment.
- Create winter festivals and events.
- Continue to create dark sky viewing events throughout the year.
- Continue to promote “low-impact” tourism.

#### TOURISM PARTNERS:

Township governments; Beaver Island Association; Michigan Department of Natural Resources; Northern Lake Michigan Islands Collaborative; Beaver Island Wildlife Club; Beaver Island Chamber of Commerce; Preservation Association of Beaver Island; GLIA; Beaver Island Historical Society; Island Institute; Beaver Island Retreat.

### IDEAS FOR ECONOMIC GROWTH

- Grow and export products responsibly such as juniper berries and hops.
- Market and sell agricultural products with a special “Beaver Island” brand.
- Regenerate cranberry bogs on the Island for foraging or agricultural growth.
- Explore opportunities to manage habitat to improve the quality of the hunting experience.
- Program a family camp or summer camp with amenities for family camping.
- Equip entrepreneurs with resources on creating and funding startups, writing business plans, and applying for grants.
- Attract Internet-based businesses to the Island.
- Explore economic ventures that utilize the skilled labor on the Island, such as the exporting of woodworking products, furniture or other artisan products.
- Invest in a technical career center or cooperatively-owned “maker space” on the Island with equipment, skill-sharing, and educational classes.
- Advertise apprenticeship opportunities on the Island with plumbers, carpenters, electricians, and other trade jobs.
- Host an annual workshop or training for those in the hospitality industry.

#### BUSINESS AND ECONOMIC GROWTH PARTNERS:

Chamber of Commerce; Northern Lake Michigan Islands Collaborative; Michigan Department of Natural Resources; Wildlife Club; Preservation Association of Beaver Island; churches and religious groups; Beaver Island Community Schools; Beaver Island Association; Beaver Island Dark Sky Project; Elks Club; GLIA; existing businesses and special events groups.

“Beaver Island preserves an authentic American experience, almost like a trip back in time. The Island would strongly benefit from increased development within the town of St. James, including supporting local business, promoting higher density development within town (expanding downtown strip, mixed use development zoning, while encouraging pedestrian and cyclist-oriented development). The Island should strive to limit any “car dependence” and ensure walkability and bikeability to all of the Island’s attractions and sights.”

Island Resident

# ACTION PLAN

## IDEAS FOR COMMUNITY ACTION



Beaver Island's work to remove invasive Phragmites stands as a national example for how a community can overcome this significant challenge. Ongoing invasive species monitoring and removal was identified as a high priority by Island residents.

### NATURAL RESOURCES

- Identify threats to water quality and provide education and appropriate services such as septic system care, disposal of pharmaceuticals, household chemicals, proper boat cleaning and more to Islanders and visitors.
- Work with the MDNR and/or tribal governments to appropriately stock native fish in inland lakes that are more tolerant to warm water as lakes continue to warm.
- Work with MDNR to fund forest adaptation projects, focused on trees most at risk of disease or decline due to climate change.
- Continue to map the locations of invasive species with an understanding of areas more at risk of future infestation.
- Coordinate with the Beaver Island Community School to incorporate environmental education.
- Work with MDNR to assess wildfire risk and identify actions to reduce the risk.
- Survey the Archipelago's plant and animal species with a special focus on protecting threatened, endangered and endemic species.
- Develop regulations, ordinances and other protections for the native flora and fauna of the outer islands with special focus to protect rare, threatened and endangered species and natural communities.
- Promote the creation of native plant pollinator fields/ gardens/landscapes and regulations towards the transporting of non-native species to the Archipelago.
- Work with the MDNR to effectively manage deer populations within the Archipelago.
- Work with the MDNR and tribal governments to fund dark sky awareness projects and implement a lighting management plan within the DSSWRABI.
- Continue to provide educational programming geared toward dark sky preservation awareness.
- Monitor and evaluate Night Sky Quality by implementing a Sky Quality Meter Reading program.

### NATURAL RESOURCE PARTNERS:

Tribal governments; Township governments; Wildlife Club; Michigan Department of Natural Resources; Central Michigan University; Charlevoix County Sheriff; Beaver Island Fire Department; Island Institute; the Nature Conservancy; Beaver Island Dark Sky Project; CAKE Cooperative Invasive Species Management Area; Tip of the Mitt Watershed Council; Conservation Resource Alliance; Northwest Community Health Department; Michigan State University; Little Traverse Conservancy; US Fish and Wildlife Service; Department of EGLE.

# ACTION PLAN

## IDEAS FOR COMMUNITY ACTION

### CULTURAL RESOURCES

- Secure cultural easements for ceremonies in sacred spaces. A cultural easement is a voluntary legal agreement that preserves culturally or historically significant sites on privately-owned land.
- Review the state-documented cultural resources on the Island and add to the list as needed.
- Continue to work with the State Historic Preservation Office, Tribal Historic Preservation Office, the Beaver Island Historical Society, the Amik Circle Society and other entities to preserve and protect cultural resources on public and private land.
- Inventory historic structures in disrepair and identify priorities for reuse and preservation.
- Collaborate on efforts to protect and preserve the lighthouse at Whiskey Point and at the south end of the Island including the Fog Signal Building.
- Honor the Island's use by Native Americans and other groups through interpretative, bilingual signage along paths and trails.
- Develop a management plan for the Archipelago's cultural resources.

#### CULTURAL RESOURCE PARTNERS:

Amik Circle Society; Beaver Island Historical Society; Northern Lake Michigan Islands Collaborative Cultural Subcommittee; Tribal governments; Preservation Association of Beaver Island; State and Tribal Historic Preservation Offices; MDNR.

### INTERNET AND COMMUNICATIONS

- Use the Beaver Island Association's Broadband Survey results to identify the community's needs and prioritize funding opportunities.
- Offer educational forums on the importance of broadband for local officials and institutions.
- Continue to support the Beaver Island Joint Telecommunications Committee working to increase broadband accessibility for the Island.
- Identify case-study communities similar to the Island that have increased their broadband access.
- Explore fiber optic installation through rural economic development grants.
- Inform tourists of the areas in the Archipelago that lack cellphone reception.
- Research opportunities to leverage franchise agreements and other funding mechanisms to increase the quality of services.
- Increase cell phone signal strength and extend coverage.
- Increase radio signal strength and extend coverage for EMS, Sheriff and Fire Departments.

#### INTERNET AND COMMUNICATION PARTNERS:

Beaver Island Association; WVBI Radio; Preservation Association of Beaver Island; Beaver Island Rural Health Center; Central Michigan University; Connect Michigan; Chamber of Commerce; Great Lakes Energy; Island Institute; Beaver Island Historical Society; Beaver Island Community School; MERIT; Tribal governments; Beaver Island Library; Township governments.

“Success depends on reliable fast Internet connections. Starlink is one option but fiber-optic lines are needed for another option and should be pursued with vigor. If more and more people can work from home, this will require an infrastructure and supporting businesses to support more people.”

Island Resident

# ACTION PLAN

## IDEAS FOR COMMUNITY ACTION

“Impacts on the soundscape and landscape from mechanized off-road vehicles and jet skis needs to be closely regulated. Clearly identified areas and times open for these activities are needed as well as clear time and geographic zones where these activities are prohibited.”

Island Resident

### NON-PROFIT LEADERSHIP AND SOCIAL PROGRAMMING

- Consolidate surveys and current initiatives led by various groups in a common location, accessible to newcomers looking to volunteer their time or resources.
- Provide education on grant writing, conflict resolution, and networking support for government and non-government leaders alike.
- Work to increase communication across Island groups and to create supportive networks for special-events marketing and enrichment opportunities.
- Increase awareness and support of the Beaver Island Food Pantry.
- Increase education about foraging opportunities on the Island.
- Provide childcare options, such as in-home daycare and after-school care.
- Provide pediatric services and women’s services on the Island, such as monthly visits from providers.
- Provide regular programming for children and youth such as weekly dance classes or skill-based activities.
- Provide senior services such as Aging in Place and continue to increase medical services overall.
- Create programming to get residents active in sports and exercise, especially in the winter months.
- Invest in fitness equipment and/or a community gym.
- Affiliate the Rural Health Center with a mainland hospital.

### NON-PROFIT LEADERSHIP AND SOCIAL PROGRAMMING PARTNERS:

Preservation Association of Beaver Island; WVBI Radio; Beaver Island Community Center; Charlevoix County Community Foundation; Beaver Island Association; Beaver Island Community School; Island churches; Beaver Island Food Pantry; Charlevoix County Commission on Aging; Beaver Island Rural Health Center; Elks Club; Tribal governments.



## DEVELOPING AFFORDABLE AND WORKFORCE HOUSING

Develop affordable and workforce housing to expand options for year-round residents and critical workforce.

- Collaborate with the Beaver Island Community Development Corporation (BICDC) — a 501(c)3, the developer, owner, and operator of Forest View, a senior living complex — to include affordable and workforce housing complexes.
- Continue to develop an Affordable and Workforce Housing Taskforce to assist the BICDC’s board in developing affordable and workforce housing that includes expanded senior living units, workforce housing (including for critical care workers), veterans housing, and other housing that considers low-income status.
- Utilize available property near town and the rural health center.
- Charge BICDC and the Affordable and Workforce Housing Taskforce to work with officials to accommodate affordable and workforce housing developments for residents by:
  - Developing and implementing an affordable and workforce housing plan.
  - Updating local ordinances for affordable and workforce options.
  - Assuring sanitary and safe living standards are utilized.
  - Developing and implementing short-term and long-term rental regulations and purchase option regulations.

“Think about worker housing differently. How can we make housing that is very attractive to workers? People have to want to live here and enjoy their experience as workers.”

Island Resident

This Action Plan was written by the Joint Planning Commission using Island-generated ideas and survey results.



## HAZARD MITIGATION AND EMERGENCY OPERATIONS PLANNING



Charlevoix County has a 2016 Hazard Mitigation Plan in place, though it is currently undergoing an update. This plan considers natural hazards and risks, and identifies mitigation actions to reduce future risks via a process set forth by the State of Michigan and the Federal Emergency Management Agency (FEMA).

Charlevoix County has an Emergency Operations Plan in place since 2022. This plan includes a prioritized list of mitigation actions including activities that, over time, will help minimize and reduce safety threats and damage to public and private property. Beaver Island has an allied Emergency Operations Plan given our isolation from the mainland. Developed in 2019, this plan is scheduled to be updated in 2023.

- An Island Safety & Health Advisory Committee will report to the two Township Boards with a focus on providing updates and implementation regarding these plans.
- Public input will be sought as these plans are updated.
- A CIP relative to the needs of these plans will be developed.



## CONTROVERSIAL IDEAS/IDEAS WITH LESS SUPPORT


The following list shows the ideas that received more “don’t do” responses than the other priority options. Many of these ideas also had significant numbers of votes ranking them as top, high, or medium priorities. In other words, Islanders likely feel strongly about a number of these topics, and more community discussions are needed before pursuing any action on these ideas.

- Market the Island specifically toward those looking to “live off the grid.”
- Protect cultural assets through conservation easements (not for public access).
- Obtain new and replacement signage for Township roads.
- Consider the development of a community land trust to ensure long-term affordability of properties even as they sell.
- Hire a full-time Island Manager responsible for managing Joint Township projects and pursuing grant opportunities.

## FULL SURVEY RESULTS

The full list of survey results, including the number of responses received for each idea, is included in Appendix A.

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A photograph of a field of pink flowers, likely geraniums, with a large, smooth grey rock in the background. The flowers are in various stages of bloom, and the background is softly blurred. The text is overlaid on the lower right portion of the image.

**“I am strongly supportive of all these initiatives, including the Dark Sky Sanctuary, and education and enhancement of the Island’s rich cultural heritages. This includes celebrating Odawa and Irish cultural traditions, both historically and presently via living public festivals. It involves education on and preservation of sacred places as per support of the Amik Circle Society. The Ottawaing UNESCO Biosphere Region is a great positive potential source of regional identity that Beaver Island can share in and greatly benefit from!”**

**Beaver Island Resident**

# CHAPTER 7

## FUTURE LAND USE AND ZONING PLAN

**This chapter includes two components legally required to be included in local Master Plans in Michigan: a future land use plan and a zoning plan. Both of these serve to help Beaver Island’s leaders integrate the public’s input into local policies and ordinances.**

### **ABOUT THIS CHAPTER**

According to the Michigan Planning Enabling Act, a Master Plan in Michigan must contain a future land use plan and a zoning plan. These are each important tools for taking the public’s input and ensuring it is reflected in the legal ordinances that shape development, environmental protection, transportation, and other policies on the Island. In general, the *future land use plan* depicts the preferred, general composition of land uses and seeks to answer the question, “How should land be used in the future?”

The *zoning plan* is designed to identify amendments to the Peaine and St. James Township Zoning Ordinances that would be supported by the public’s vision identified in this Master Plan.

### **RELATIONSHIP TO THE MASTER PLAN**

The Master Plan describes the Island’s vision for the future, including a vision for the way land is used and developed. As a key component of the Master Plan, the future land use plan is the framework upon which land use and policy decisions should be based.

The zoning plan then identifies areas where existing zoning is inconsistent with the objectives and strategies of the Master Plan. The zoning plan is designed to guide the development of the Zoning Ordinance, based on the recommendations of the Master Plan. As the primary implementation tool for the future development of the Island, the Zoning Ordinance contains written regulations and standards that define how properties in specific geographic zones can be used and how they can look.



The next several pages identify the features to protect, the characteristics to promote, and the places to build. The shoreline (left) is an example of a feature to protect, while a view of the water in the St. James Harbor area (above) is a characteristic to promote.

## FUTURE LAND USE PLAN

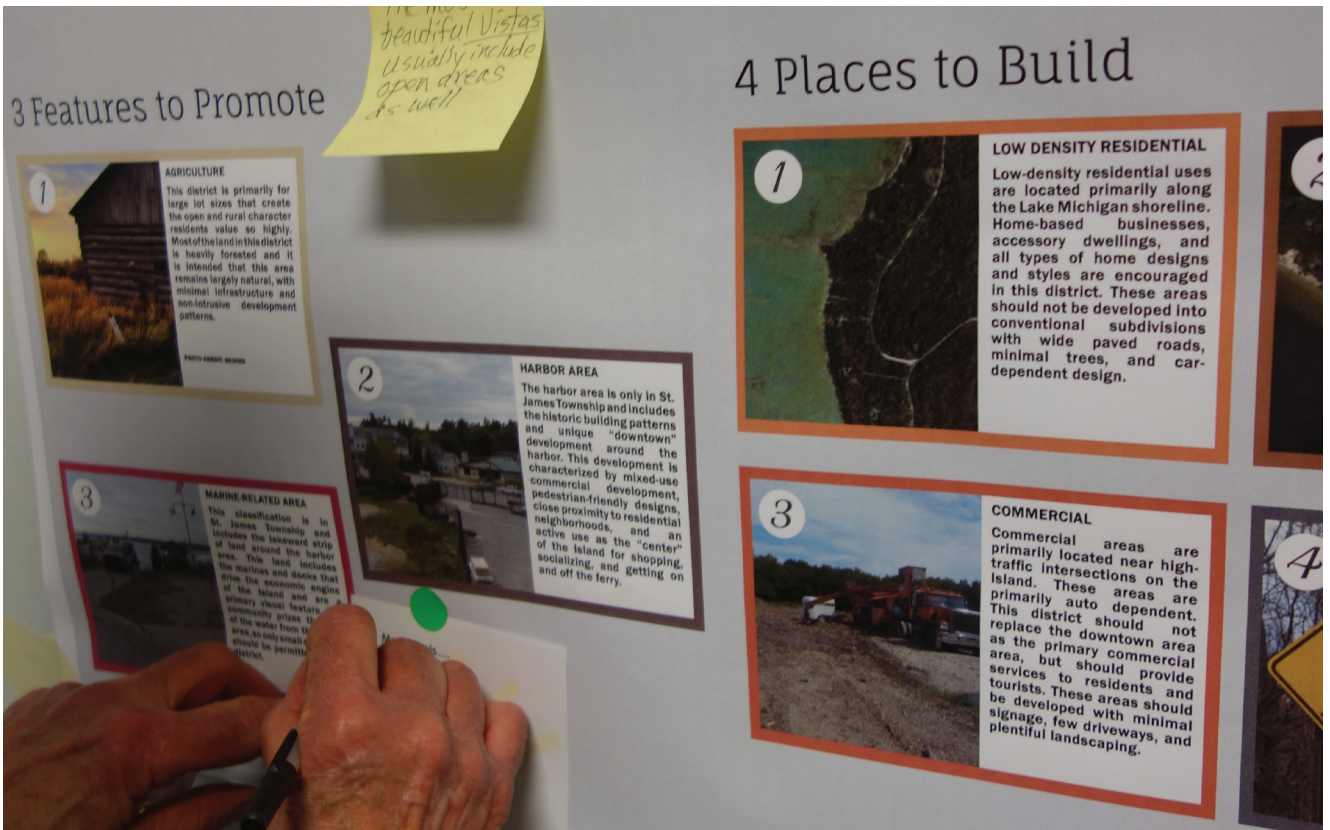
Developing a future land use plan is an important component of any master planning effort. The future land use plan depicts the general preferred organization of land uses in the community. This plan for Beaver Island was developed with careful consideration of several factors, including existing land use patterns, demographic trends, the location of environmental features, desired community character, public input from the planning process, and the availability of utilities and road infrastructure. The future land use plan guides the development of the zoning plan and ultimately influences changes that may be made to the Zoning Ordinance.

There are two key elements to a future land use plan: the future land use map, which designates specific land uses that are to occur on certain parcels or areas of the Island; and the future land use text, which defines the map's classifications and summarizes the map's overall purpose.

### THEMES OF THE FUTURE LAND USE PLAN

In general, the land use patterns and trends identified in earlier chapters are largely consistent with the way land is currently zoned. The Planning Commissions and Township Boards have done considerable work to ensure that a number of community values — including environmental protection, water quality preservation, and rural character — are reflected in the Zoning Ordinances.

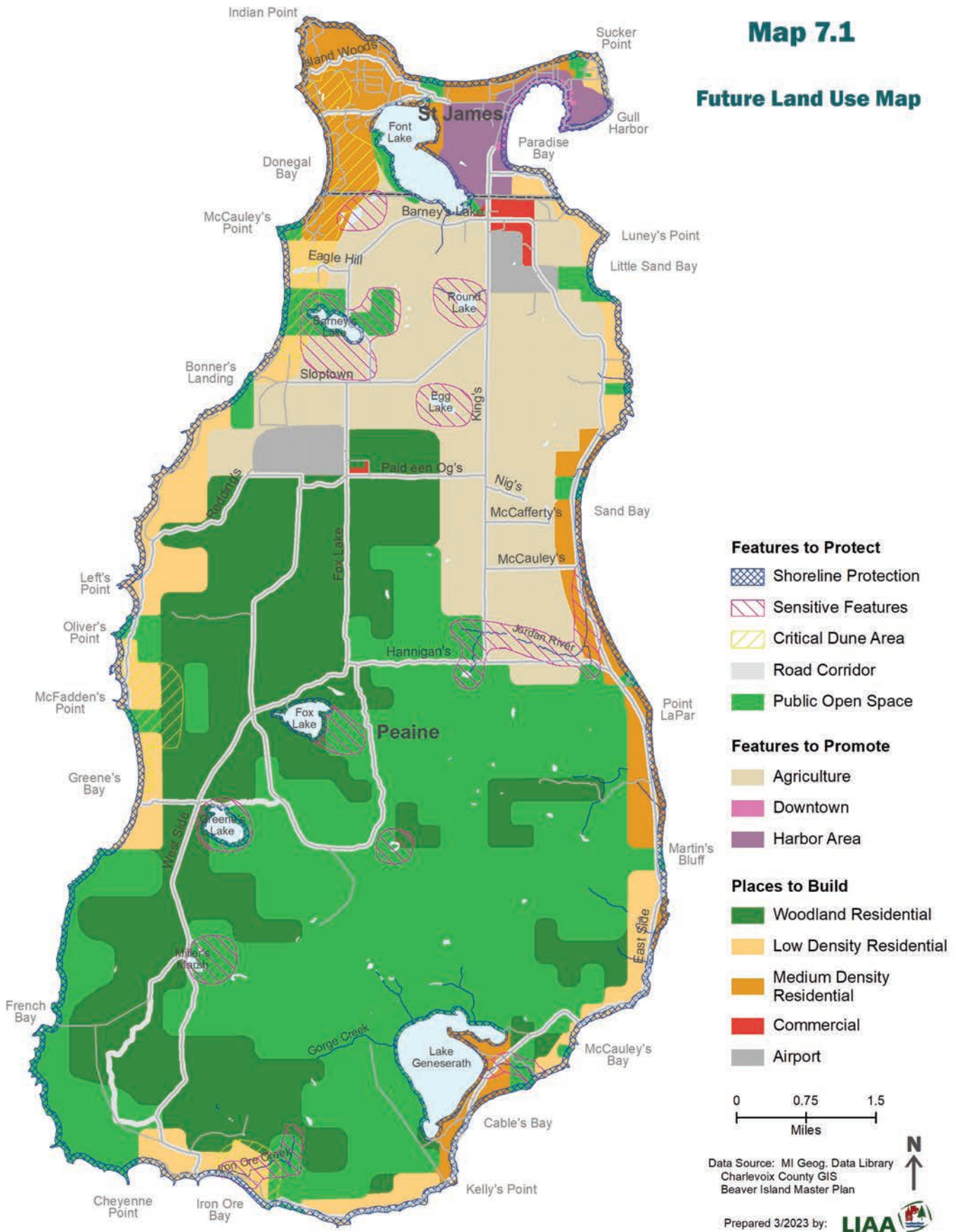
This 2023 Master Plan generally upholds the broad categories identified in the 2017 Master Plan, with some changes to reflect more accurately the way land should be used in the future. The next several pages clearly describe each classification on the future land use map and outline any changes that have been made to the 2017 future land use plan.



The Future Land Use Plan was created using the public input gathered at the August 17, 2023 open house. Additional public meetings were held with the Joint Planning Commission to create the updated 2023 Future Land Use plan.

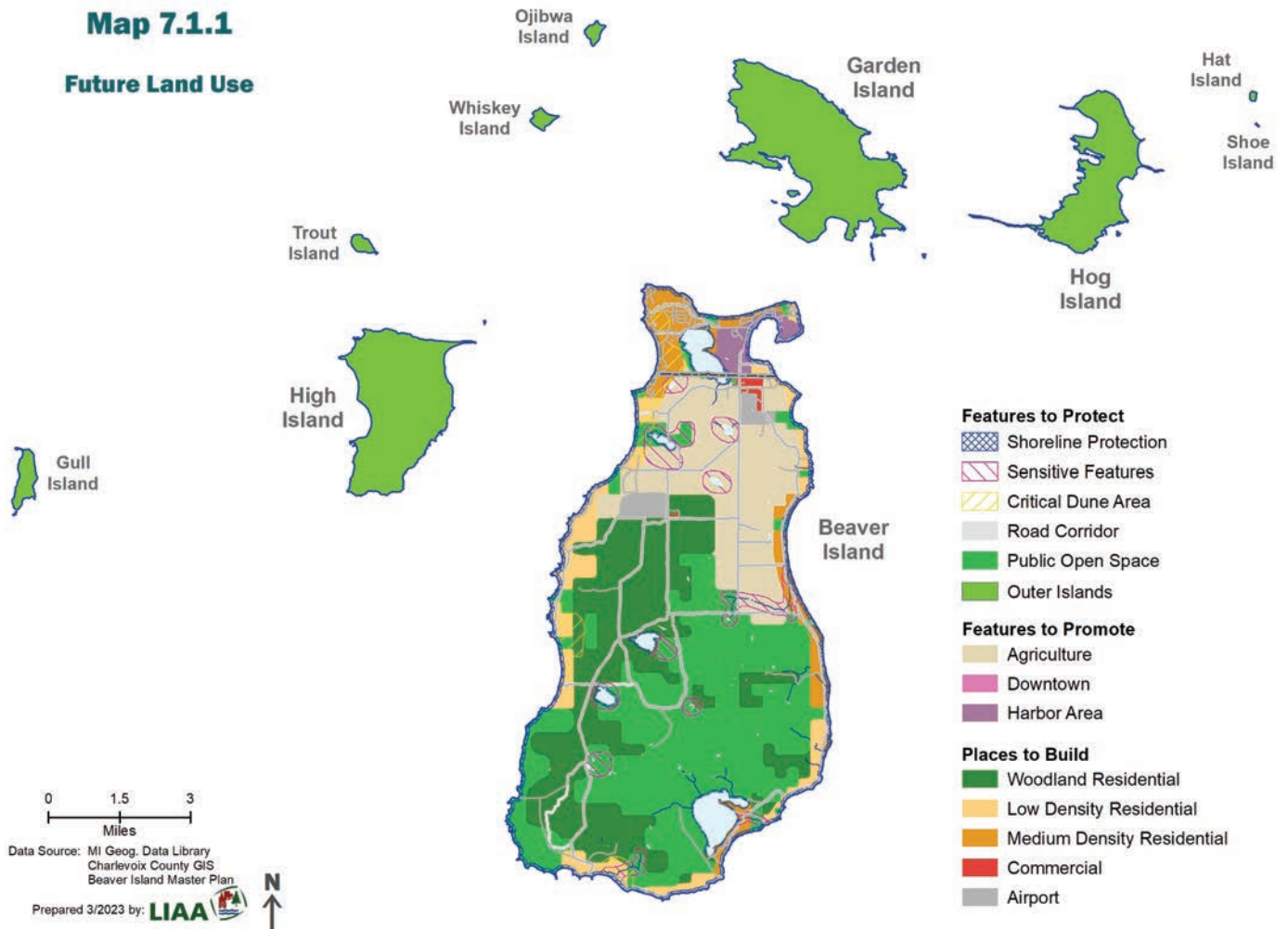
# Map 7.1

## Future Land Use Map



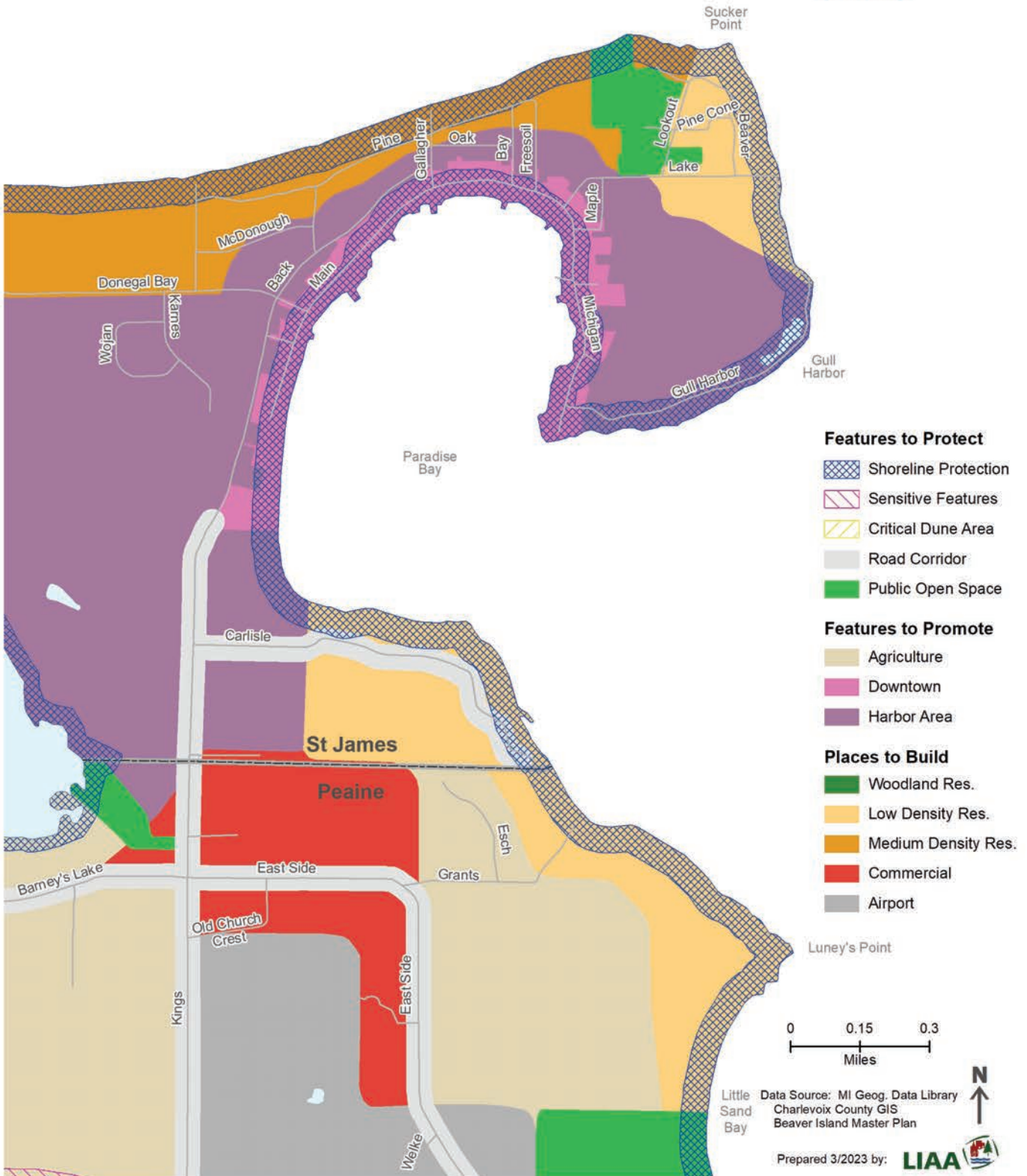


**Map 7.1.1**  
**Future Land Use**



## Map 7.2

### Future Land Use Map (Detail)



# 9 FEATURES TO PROTECT



## SHORELINE

The shoreline includes the land 25-foot landward of the ordinary high water mark of Lake Michigan. Protecting this area from overdevelopment and visual degradation will preserve sensitive environmental features, scenic views, and public accessibility to the waterfront.

### HOW DO WE PROTECT THE SHORELINE?

- Keep the existing protections listed in the Zoning Ordinance including a vegetative buffer, a 100-foot setback

from the ordinary high water mark line, an invasive species eradication zone, and limitations on building size and number allowed close to the shoreline.

- Evaluate areas where erosion and coastal flooding are concerns. Possibly increase the setback in these areas.
- Prohibit expansions of seawalls or other shoreline hardening structures.
- Encourage the number of properties that can share a single access point to the water.
- Work with the MDNR and Little Traverse Bay Bands in the protection of the endangered piping plover when nesting on several shorelines within the Archipelago.

## PUBLIC OPEN SPACE

Public open space includes publicly-owned land and conservancy lands. Public land on Beaver Island provides many opportunities for residents to recreate and is the cornerstone of the Island's tourism industry.

### HOW DO WE PROTECT PUBLIC OPEN SPACE?

- Encourage connections between existing public lands with trails and acquisition. If public land is sold, the Township governments should prioritize the acquisition of public land. This is especially true in light of the current MDNR land consolidation strategy that might allow non-contiguous land to be sold.
- Encourage joint planning for the future of public lands and the maintenance of parks and trails in recreation plans.
- Densities and uses of future development on public lands should be consistent with the area.



## CRITICAL DUNES

Critical dune areas are unique and highly attractive, but are also delicate, fragile ecosystems. Protecting these irreplaceable areas will ensure development in and near the dunes does not cause negative impacts to these sensitive landscapes.

### HOW DO WE PROTECT CRITICAL DUNES?

- Encourage public ownership of dunes as land becomes available.
- Work with land conservancies and other groups to protect sensitive areas.

- Continue to support the Beaver Island Terrestrial Invasive Species Program and work with environmental groups of every level, from non-profit, county, state, tribal and more, to educate and protect critical dune and swale areas.
- Stay well-informed on State of Michigan regulations for these areas and be familiar with any potential changes to regulation. As of 2012, this means the Townships cannot enact restrictions on critical dune development that are more restrictive than the State of Michigan's regulatory requirements.
- Install educational signage near sensitive areas, trails, paths and public beaches.

Photo Credit: News on the 'Net



## SENSITIVE FEATURES

Sensitive features include a number of areas surrounding the Archipelago’s inland lakes and streams such as wetlands, rare forest types, and other fragile ecosystems. Protecting these areas will ensure development does not cause harm to these sensitive areas while protecting the Archipelago’s water quality, natural communities and recreational opportunities.

### HOW DO WE PROTECT SENSITIVE FEATURES?

- Create and distribute an updated inventory and map of sensitive features.

- Work with landowners to place these lands in conservancies in exchange for development rights in other less-sensitive areas.
- Maintain and/or strengthen existing zoning standards, including buffers around sensitive areas and restrictions on building size and activities.
- Determine appropriate intensity and type of recreational uses on these lands.
- Continue to work with environmental and conservation groups to identify and protect sensitive features throughout Beaver Island and the Archipelago.

## ROAD CORRIDORS

The Island’s scenic roadways are cited by many as a unique and cherished asset. Protecting these corridors will ensure the view from the road is mostly forested with few to no signs.

### HOW DO WE PROTECT ROAD CORRIDORS?

- Work with loggers to create reasonable and sustainable forestry requirements for replacing downed trees, regulating clearcutting, and screening development.

- Revise the sign regulations in the Zoning Ordinance to be legally enforceable and consider aesthetic standards.
- Promote shared driveways to reduce the number of access points along roads.
- Continue requiring deep setbacks from the road.
- Maintain existing Natural Beauty Roads as designated by the State of Michigan. Seek to expand the number of roads with this designation.

Photo Credit: Red Crow Productions



## DARK SKY

The star-filled night sky is a shared heritage benefiting people, animals, aquatic life, flora and fauna. Light pollution disrupts the natural patterns of wildlife, contributes to the increase in carbon dioxide (CO<sub>2</sub>) in the atmosphere, disrupts human sleep, and obscures views of the cosmos.

### HOW DO WE PROTECT THE DARK SKY?

- Work with the International Dark Sky Association to preserve and protect the dark skies through responsible lighting policies and public education.
- Develop appropriate local regulations to protect the dark sky.



Photo Credit: Taffy Raphael



## OUTER ISLANDS

There are 11 outer islands in the Beaver Island Archipelago. Garden, High, Gull and Hog islands are all now uninhabited. The smaller Whiskey Island, Trout Island, Shoe Island, Hat Island, and privately owned Ojibwa Island make up the remainder of what is known as the Beaver Island Archipelago off the northern end of Beaver Island. North Fox and South Fox islands are to the south of Beaver Island.

### HOW DO WE PROTECT THE OUTER ISLANDS?

- Develop zoning standards to prioritize protection of the natural environment from future development.
- Continue to work with the DNR to identify and catalogue the natural features of the islands and to protect the outer islands from invasive species and heavy traffic from visitors.

## CULTURAL/HISTORICAL SITES

Many open-house attendees noted the unique history of the islands and the importance of protecting, maintaining and preserving cultural and historical resources.

### HOW DO WE PROTECT CULTURAL/HISTORICAL SITES?

- Work with organizations such as the Beaver Island Historical Society and Little Traverse Bay Bands of Odawa Indians to preserve and share the unique history of Beaver Island and the Archipelago.
- Continue to provide educational opportunities for cultural and historic site visitors.
- Work closely with Township and state governments to identify funding opportunities to continue to maintain sites.

Photo Credit: Becca Foli



## INLAND LAKES

Beaver Island has several inland lakes that are important to both the environment and for recreation. The lakes include Barney's Lake, Lake Geneserath, Font Lake, Egg Lake, Fox Lake, Green's Lake and Round Lake. Additionally, there are several wetland areas such as Miller's Marsh that play important roles in the local ecology. There are also some inland lakes and marshes on the outer islands.

### HOW DO WE PROTECT INLAND LAKES?

- Eliminate or reduce nonpoint sources of pollution (such as fertilizers, chloride from road salt, or pesticides).
- Maintain healthy shorelines with native plant species and monitor and eliminate invasive species.
- Regulate structures on or near the lakes.
- Work with environmental and conservation groups to protect the lakes and wetlands.

# 3 FEATURES TO PROMOTE



## AGRICULTURE

The agriculture district includes the land on Beaver Island that is more likely to be farmed due to the presence of tillable land, historic farms, or active farming uses today. This district is intended to encourage agricultural use and preserve larger tracts of land for the reestablishment of agricultural activities and large-lot residential development. This district contains much of the open and rural land that residents value. There are a mix of uses in this district including non-intrusive residential, recreational, and community facilities.

Photo Credit: GKDoig

## HOW DO WE PROMOTE THE AGRICULTURE DISTRICT?

- Maintain existing zoning regulations for large minimum lot sizes and deep setbacks.
- Allow and promote clustering of development to preserve open space and sensitive landscapes.
- Continue to promote home-based businesses in this district and allow for accessory buildings and units.
- Minimize the number of public infrastructure investments made in this area. No significant expansion of infrastructure should be promoted.
- Allow for and encourage roadside stands.

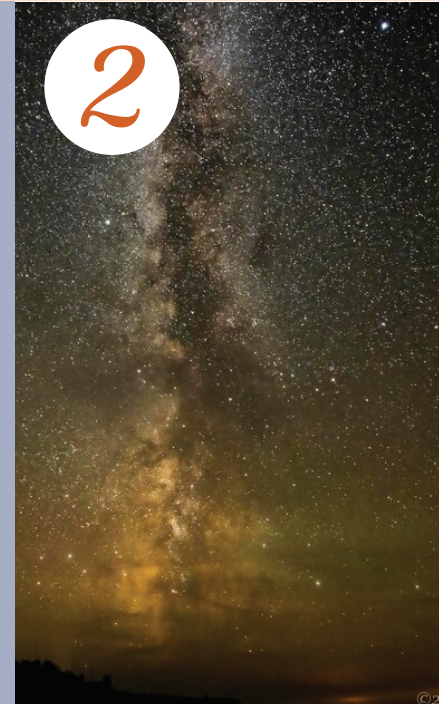
## DARK SKY SANCTUARY

The Dark Sky Project has selected 9,195.5 acres of the land designated as a State Wildlife Research Area (owned and managed by the MDNR Wildlife Division and protected by state laws), along with 230 acres of land at Millers Marsh (owned by Central Michigan University and kept protected as a Biological Research Area), to be designated as the Dark Sky Sanctuary Wildlife Research Area on Beaver Island (DSSWRABI). This land shall be further protected from light pollution and designated as a Dark Sky Sanctuary. As previously mentioned, Beaver Island is home to a Night Sky Quality average between 21 and 21.6 out of 22.0 on any given night, based on conditions excluding cloud coverage and/or moonlight.

## HOW DO WE PROMOTE THE DARK SKY?

- Establish and communicate clear and strong positions regarding the abatement of light pollution.
- Establish strategic collaborative relationships with advocates, including agencies, organizations, educational institutions, and influential individuals to advance.
- Develop astrotourism marketing strategy.
- Use technology to encourage citizen scientist participation in collection of data to measure starlight visibility.

Photo Credit: Taffy Raphael



3



**DOWNTOWN**

The harbor area is only in St. James Township and includes the development and developable land within an easy walking distance of downtown. This district is characterized by mixed-use commercial development, pedestrian-friendly designs and residential neighborhoods. Commercial development in this district should provide services to residents and visitors. Development in this district should complement downtown’s use as a central gathering place for residents and visitors. The downtown area is the “center” of the Island for shopping, socializing, and getting on and off the ferry. For many Islanders, this area is the primary source of essential goods, services and community activities. This downtown future land use area includes all parcels that front Main Street. In other words, Main Street splits this area in half into lakeward and landward sections.

This area includes the historic building patterns and unique, pedestrian-scaled development around the harbor. The parcels landward of Main Street are characterized by mixed-use commercial development, pedestrian-friendly designs, and residential neighborhoods. It is intended that this development pattern continue and intensify in the future on the landward side of Main Street.

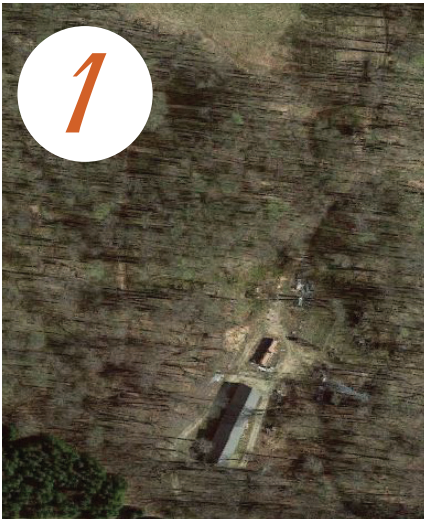
The lakeward side of Main Street is also within the downtown area. Development in this area

should be highly planned and thoughtful to allow views of the water, accentuate the downtown character, and prioritize public access and use of the harbor. Many of the parcels on the lakeward strip of land are used for marinas, docks, and other marine-related infrastructure. These uses support the Island’s economy and are a primary visual feature of Island life.

**HOW DO WE PROMOTE THE DOWNTOWN AREA?**

- Use flexible parking standards, remove mandatory parking minimums, and designate areas for public and boat parking.
- Encourage the development of land in this district for housing, commercial, and a mix of uses.
- Encourage foot traffic with pedestrian-friendly design.
- Allow new marine-related development on the lakeward side of Main Street that considers the public’s view and access to the water, and that accentuates the area’s walkable, downtown character.
- Promote the acquisition of new public lands and the enhancement of existing public lands through signage, dock and launch improvements, and other public projects.
- Prioritize historic preservation in this area. Restrict alterations of historic structures while promoting a lively historic district. To do so, blighted structures need to be demolished or improved.
- Develop standards that retain and enhance the marine-related character of downtown development.

# 5 PLACES TO BUILD



1

## WOODLAND RESIDENTIAL

This area has the lowest density of residential development of any area on the Island. Most of the land in this district is heavily forested and it is intended that this area remains largely natural, with minimal infrastructure and non-intrusive development patterns. Property owners are permitted to use land in this area for agriculture.

### HOW DO WE SUPPORT WOODLAND RESIDENTIAL AREAS?

- Continue to allow residential development to occur at densities consistent with the Agricultural District in the Zoning Ordinance.
- Identify areas where wildfire risk is a serious concern. Properties within high wildfire risk areas can be encouraged or required to take steps to reduce risk, such as fuel breaks near buildings.

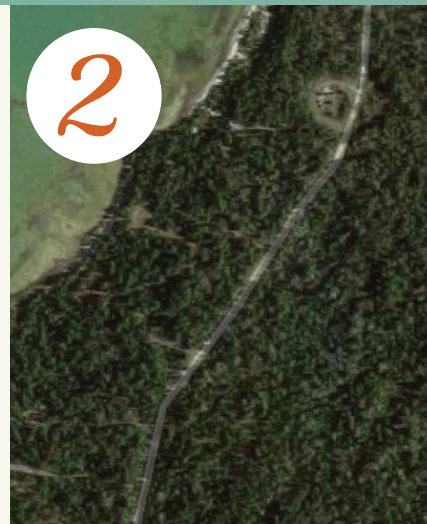
## LOW-DENSITY RESIDENTIAL

Low-density residential uses are located primarily along the Lake Michigan shoreline. Home-based businesses, accessory dwellings, and all types of home designs and styles are encouraged in this district. These areas should not be developed into conventional subdivisions with wide paved roads, minimal trees, and car-dependent design.

### HOW DO WE SUPPORT LOW-DENSITY AREAS?

- Continue current zoning standards to encourage a mix of amenities in this district, such as parks, preserves, trails, and home-based businesses.
- Encourage cluster development to preserve natural features.

2



3

## MEDIUM-DENSITY RESIDENTIAL

The medium-density residential areas are primarily located in St. James Township and areas along the Lake Michigan shoreline. This district allows for a greater number of homes per acre. This district should retain a pedestrian-scale design with amenities for bikers and walkers, affordable housing options such as accessory dwelling units, and a mixture of home styles.

### HOW DO WE SUPPORT MEDIUM-DENSITY AREAS?

- Encourage connections to trails and other public amenities.
- Continue allowing and encouraging accessory dwelling units. Consider lowering the minimum living area requirement.
- Encourage unique building types and designs.





## COMMERCIAL

Commercial areas are primarily located near high-traffic intersections on the Island. These areas are primarily auto dependent. This district should not replace the downtown area as the primary commercial area, but should provide services to residents and tourists. These areas should be developed with minimal signage, few driveways, and plentiful landscaping.

### HOW DO WE SUPPORT COMMERCIAL AREAS?

- Require standards for building design, site design, and landscaping to ensure commercial uses fit the aesthetics of the Island.
- Coordinate access and driveways to encourage limited impervious surfaces.
- Promote commercial buildings with multiple uses.
- Support well-planned, concentrated development by limiting the amount of land in this district.

## AIRPORTS

The airports on Beaver Island provide many essential services. There is primarily rural development near the airports, which is ideal in the future to prevent sprawling development near these commercial hubs. Additionally, the areas near the airports should remain low density and low intensity to remain compatible with the approach of airplanes.

### HOW DO WE SUPPORT AIRPORTS?

- Seek funding for runway improvements that would reduce the

number of flights impacted by weather.

- Encourage airports to have updated and modern facilities.
- Encourage airports to establish pollinator fields to aid in management of woody regrowth within runways and surrounding areas.
- Retain two airports on the Island; a third is not needed at this time.
- Evaluate the existing zoning and land uses near the airports and make adjustments as needed to ensure compatibility. Investigate uses for the areas near the airports that would not conflict with airport use. This might include trails or recreational land uses the public could enjoy.



Photo Credit: Tom Hawkins



The Marine-Related District is intended to preserve the public's view of the water.



The Public Lands and Facilities District accommodates publicly-owned land such as the Beaver Island Public Library.



The Beaver Island Transfer Station is currently zoned for Industrial use. This district helps ensure that neighboring properties are safe from excessive noise and odor.

## ZONING PLAN

The Townships on Beaver Island and the Archipelago regulate land use through Zoning Ordinances. An updated Joint Zoning Ordinance between both Townships is expected to be developed within the next two years. The zoning plan serves as the basis for the Zoning Ordinance in that it depicts the various zoning districts and their use, as well as standards for height, bulk, location, and use of buildings and premises. The zoning plan also identifies changes that should be made to the existing Zoning Ordinance as a result of a master planning process. These can be changes to either the zoning map or the requirements of existing or new zoning districts.

### EXISTING ZONING CLASSIFICATIONS

The Michigan Planning Enabling Act requires the zoning plan to inventory the community's existing zoning districts. The following section summarizes the existing zoning districts on Beaver Island. This section is meant to provide a general overview of the Township zoning districts and standards. In order to review zoning definitions, standards, and regulations in full detail, please see the Peaine and St. James Township Zoning Ordinances.

### RESIDENTIAL DISTRICTS

A number of uses, most notably home occupations and accessory dwellings, are permitted in the residential districts. There are four residential districts identified in the Zoning Ordinances:

- R-1 Single-Family Residential District — This district provides for a stable and sound low-density residential environment. The regulations of this district encourage proper development of land abutting lakes and waters to avoid pollution and preserve lakefront and waterfront properties. This district is primarily located along the waterfront at the south and west ends of the Island in Peaine Township and on the north side of the Island in St. James Township. Currently, 5.5% of Beaver Island is zoned R-1.
- R-2 Single-Family Residential District — This district is similar to R-1 in that it provides for a stable and sound residential environment. The density of development in this district is higher than the R-1 district. The R-2 district is primarily located around the north side of Font Lake, the northeast corner of the Island (near Lookout Point), and along the east side of the Island adjacent to the shoreline. Currently, 4.6% of Beaver Island is zoned R-2.
- R-3 Manufactured Home Development District — This district provides for the creation of manufactured home developments. The R-3 district allows for a relatively high density of homes on smaller lots than the other residential districts. However, the standards for development in this district are intended to result in high-quality residential units that would have minimal adverse impacts on the natural environment. There is currently no land on the Island zoned in this district.

- R-4 Multiple Family Residential District — This district is intended to provide for the creation of multiple-family and two-family dwelling units. The Zoning Ordinance regulates the amount of open space, off-street parking, distance between buildings, maximum density permitted, and the maximum lot coverage in order to preserve the natural environment and ensure that development in this district is compatible with nearby residential uses. There is currently no land on the Island zoned in this district.

### COMMERCIAL AND INDUSTRIAL DISTRICTS

There are two commercial districts on Beaver Island that support the reasonable expansion of business services, as well as an industrial district.

- C-1 Resort Commercial District — This district provides for businesses primarily designed to meet the needs of tourists and the resort industry on Beaver Island. Permitted uses include souvenir shops, restaurants and taverns, excursion businesses, and other uses as listed in the Zoning Ordinance. Residential uses are allowed through a Special Use Permit. Currently, about 7 acres on Beaver Island are zoned in the C-1 District, including several parcels along Donegal Bay Road and along the north shore of the Island.
- C-2 General Commercial District — This zoning district provides for the general commercial needs of the community. In general, C-2 land should be located near existing retail service centers in the rural areas of Beaver Island. In addition to the uses allowed in C-1, the C-2 district allows for automobile sales and repairs, equipment storage, nursery and garden shops, and other uses listed in the Zoning Ordinance. Currently, about 147 acres are within this district on Beaver Island. This district is primarily located in the “Four Corners” area at the intersection of Barney Lake Road and King’s Highway.
- I Industrial District — This district accommodates the needs of industrial uses while providing that nearby properties are not exposed to unreasonable noise, dust, vibration, or other negative impacts associated with industrial activities. This district includes, for example, lumber yards, manufacturing facilities, and public utility buildings. Currently, about 12 acres on Beaver Island are within this district. There is currently only one parcel zoned within this district, and it is located in the “Four Corners” area.

### NATURAL AND RURAL DISTRICTS

There are several districts on Beaver Island and the Archipelago that are designed primarily to protect and preserve the natural features that make the islands unique, rural places to live and visit. These districts include:

A Agricultural District — This zoning district is the largest on Beaver Island, with 45% of Beaver Island’s land zoned as Agricultural. While much of this land is not being farmed, the intent of the Agricultural District is to allow for the reestablishment of agricultural uses by preserving large lots. Residential uses are generally permitted in this district, provided they remain at low densities and keep a relatively far distance from the road and waterways. Most of Peaine Township’s privately-owned land is zoned in this district. Some of the land in this district is unbuildable due to wetlands or other environmental conditions. Planned Unit Residential Development (PURD) and Site Condominiums available in this district are overlays that provide standards for greater flexibility and variations in density, lot widths and setbacks that preserve undisturbed large areas in their existing natural state.



The Beaver Island Lodge is an example of a property within the C-1 Resort Commercial District.



Much of Beaver Island’s land is within the Agricultural District.



The St. James Township Campground is another example of land in the Public Land and Facilities District.



Many of the zoning districts require forested lots to remain mostly forested. This means that homes will continue to be screened from the road, providing the scenic views that many Islanders cherish.

Photo Credit: Tom Hawkins



The Marine-Related District encourages the preservation of the Island's working waterfront, such as the stockyard, boat storage, and marinas.



The Harbor District contains much of the land traditionally thought of as "downtown." The Zoning Ordinance requires that the architectural character of any new development enhances the charming aesthetic of this area.

- **PLFD Public Land and Facilities District** — This district is intended to regulate the buildings, land and uses on properties owned or leased by the Township governments, other government agencies, or public institutions. This includes land such as the Beaver Island Fire Station, the Public Library, and the Michigan Department of Natural Resources Land concentrated in the southern half of Beaver Island. Currently, 36.3% of Beaver Island's land is zoned in this district.
- **CD Critical Dune District** — This district was created to protect the unique and irreplaceable dune land on Beaver Island. This district is consistent with the State of Michigan's Critical Dune Program that regulates the type of development that is permitted in critical dunes. In general, one single-family house is allowed on each lot in this district, with some provisions for guest houses and other accessory dwellings. Currently, 3% of Beaver Island's land is within this district, primarily located along the northwest shoreline of the Island.
- **AB Airport Protection District** — This district regulates the type of land uses and development patterns that are compatible with flight paths. Currently, no land on the Island is zoned within this district, although if airports expand in the future, this district could be applied to surrounding land to ensure the safety of the community and prevent hazards related to aircraft operation.
- **MR Marine-Related District** — This district is intended to preserve the historical uses and appearances related to the waterfront in St. James Harbor. Covering the strip of land nearest the water in the harbor area, this district requires that development be related to marine operations, such as fishing, swimming, docking, and sightseeing. One priority within this district is that a view of the water be retained as much as possible from Main Street. Many of the existing retail uses in this district are nonconforming uses. Currently, 12 acres on Beaver Island are zoned within this district.
- **H Harbor District** — This district promotes the welfare of the harbor area by protecting its mixed-use character, preserving the architectural character of existing structures, and ensuring new development is compatible with the historic character of this district. Commercial uses such as banks, offices, museums and restaurants are encouraged in this district. A number of residential uses are permitted by right or with the granting of a Special Use Permit. Currently, 321 acres on Beaver Island are zoned within this district.

### **SPECIALIZED DISTRICTS**

There are a number of districts on Beaver Island that support specialized uses in unique areas of the Island. Specialized districts include the following:

- **AA Airport District** — This district accommodates the two airports on Beaver Island by regulating the use of airport lands to ensure that any development is compatible with airport uses. This includes land used for airports, runways, terminals, hangars, fueling, and other similar uses. Currently, 1.4% of Beaver Island is within the Airport District.



Protecting sensitive coastal landscapes from encroaching properties and development is an important goal of the Zoning Ordinance.



Zoning is one tool that can protect water quality of inland lakes and streams. Water quality was an important concern raised by many Islanders during the master planning process.



Zoning can also help discourage blight and unsightly storage of large debris. Chapter 4 contains an overview of waste management on the Island.

- OI Outer Islands District — This district is intended to protect the existing natural environment to the greatest extent possible on the outer islands in the Beaver Island Archipelago by regulating manmade development and by conserving natural and cultural resources. It encompasses all of the outer islands.

### OTHER ZONING CONCERNS

The previous pages identify each zoning district on Beaver Island and the Archipelago. The Townships have also accommodated several additional zoning concerns in the Zoning Ordinances. The section is not meant to be fully comprehensive, and more information is available in the Peaine and St. James Townships Zoning Ordinances.

- Currently, properties that abut Lake Michigan must follow additional regulations to ensure properties remain safe from coastal damage and that sensitive coastal ecosystems are adequately buffered from development.
- Those wishing to install a telecommunication tower must comply with additional regulations to ensure the type, size, design and location will have limited visual impact on the community and not interfere with aviation.
- Those wishing to install an alternative energy wind tower must meet particular restrictions as noted in the Zoning Ordinance. However, these towers are generally encouraged on Beaver Island as long as they do not exceed height limitations or interfere with animal migration paths. Other alternative energy methods are similarly encouraged, and the following section identifies the Joint Planning Commission's goal of incorporating these methods into future zoning amendments.

- The unique topography, ecosystems and natural characteristics of the outer islands are fragile, irreplaceable resources that are vital to the general welfare of all residents and must be protected. Effective conservation of the outer islands requires an understanding of those resources and the place or context in which they are found. This includes the history, traditions, values and attitudes of the people living in the Archipelago. The goal is for the Joint Planning Commission to consider the conservation and protection of these islands when studying and considering future zoning amendments.

### FUTURE CHANGES TO THE ZONING ORDINANCES

In order to remain consistent with the community's vision for the future of Beaver Island and the Archipelago as identified in this Master Plan, and to remain consistent with changes in national and state laws pertaining to zoning, a number of zoning ordinance amendments may be necessary. The following list identifies several opportunities to amend the Peaine and St. James Township Zoning Ordinances to be consistent with the goals and vision set forth in this Master Plan and to be consistent with changes in law.

- Encourage alternative energy through zoning. Allow by right a number of non-intrusive alternative energy installations such as small-scale solar or geothermal. The Joint Planning Commission should work closely with the Building Inspector and Zoning Administrator to identify appropriate changes to ordinances and codes.

- Evaluate the Zoning Ordinance to determine if coastal setbacks are restrictive enough to prevent homeowners from experiencing harm, given the climate trend of increasingly severe coastal storms and increased erosion risk.
- Review the Zoning Ordinance sign regulations to ensure the signage requirements are legally enforceable given changes in federal law.
- Consider the water protection recommendations identified in the 2011 Charlevoix County Local Ordinance Gaps Analysis conducted by the Tip of the Mitt Watershed Council. Possible Zoning Ordinance changes address shoreline protection, impervious surfaces, stormwater control, soil erosion and sedimentation, septic systems, wetlands, and groundwater.
- Develop a community vision for the size, scale and type of appropriate development and public infrastructure in the downtown through a design charrette.
- Identify appropriate locations for workforce housing and allow for flexibility in the development or reuse of parcels to meet the needs of workers.
- Develop regulations to reasonably protect the natural environment of the outer islands.





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