BROWN COUNTY PORT & RESOURCE RECOVERY

RENARD ISLAND STRATEGIC MASTER PLAN

DECEMBER 2019

ACKNOWLEDGMENTS

The Renard Island Strategic Master Plan is the result of a collaborative process led by Brown County Port & Resource Recovery, a group of stakeholders called the Renard Island Working Group, other stakeholders, regulatory agencies, and citizens. We would like to acknowledge the following individuals for their leadership and contributions during the master planning process:

Dean Haen, Brown County Port & Resource Recovery

Mark Walter, Brown County Port & Resource Recovery

Matt Kriese, Brown County Parks

Dani Wagner, Brown County Parks

Devin Yoder, Brown County Planning

Chip McDonald, McDonald Companies

Chester McDonald, McDonald Companies

Jim Loreti, McDonald Companies

Brian Vanderloop, NEW Water

Wendy Townsend, Green Bay Community & Econ. Development

Bernie Erickson, Brown County Board of Supervisors

Jean Romback-Bartels, Wisconsin Dept. of Natural Resources

Mary Long, UW-Green Bay Student

FUNDING ACKNOWLEDGMENT

Funded by the Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration, Office for Coastal Management under the Coastal Zone Management Act, Grant # NA18NOS4190091.

WISCONSIN COASTAL MANAGEMENT PROGRAM

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

RENARD ISLAND COLLABORATIVE (CONSULTANT TEAM)

SMITHGROUP

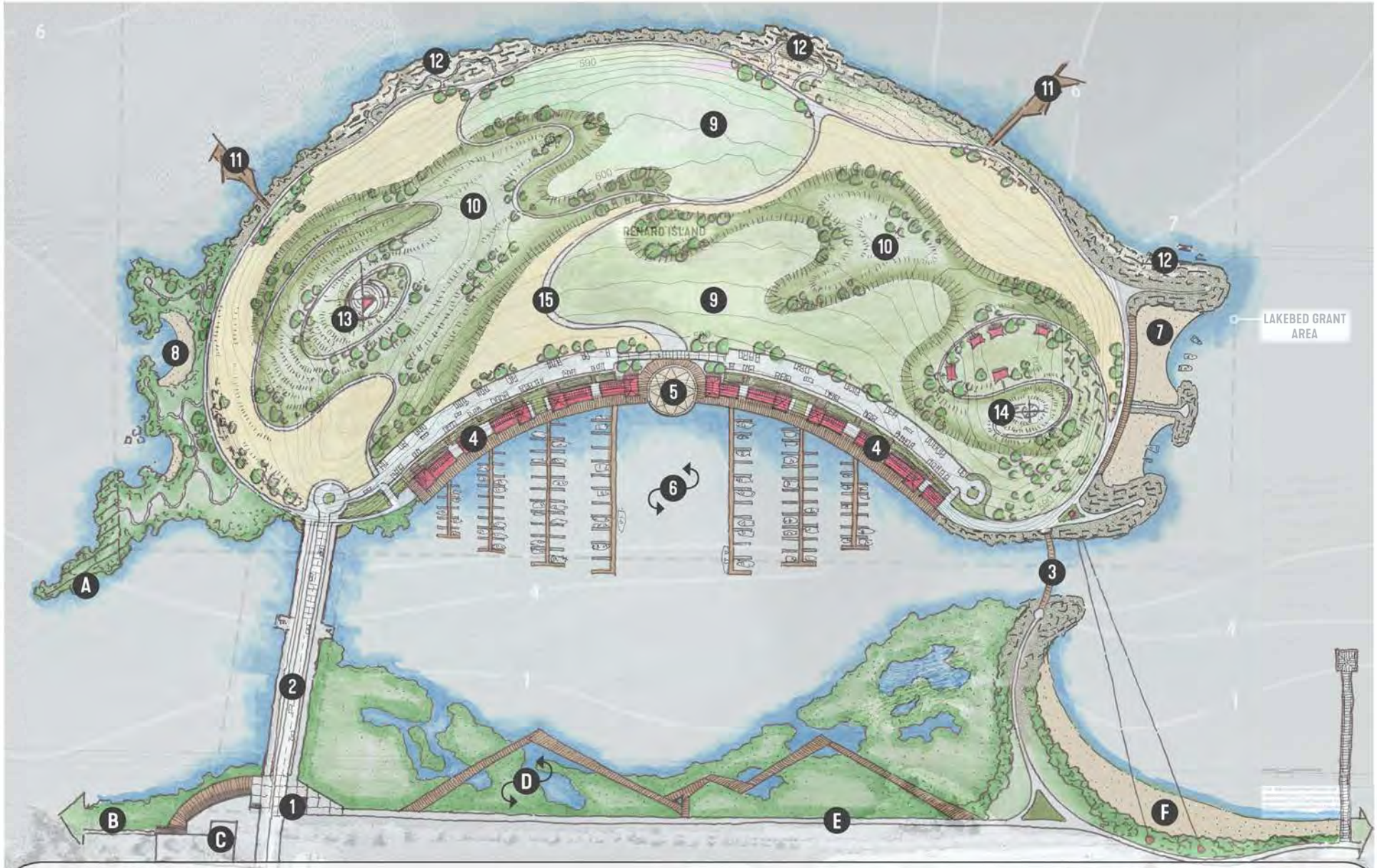
APPLIED ECOLOGICAL SERVICES

Edgewater resources

Foth

mfa

TABLE OF CONTENTS



RENARD ISLAND IMPROVEMENTS

1. Gateway plaza & trailhead
2. Vehicular access / causeway enhancements
3. Pedestrian access / movable bridge
4. Promenade w/ boardwalk, support concessions, retail & parking (+/-300 spaces)
5. Interactive plaza
6. Marina w/ programmable water & transient facilities
7. Beach w/ boat access & dog area
8. Cobble beach & wetland habitat
9. Flex lawn / event area
10. Landforms / habitat w/ picnic & yurt camping
11. Fishing pier
12. Stepped stone edge
13. Interpretive overlook w/ wind energy / public art / cultural celebration
14. Overlook hill w/ picnic & adventure play
15. Trail system

IMPROVEMENTS BY OTHERS

- A Regional habitat links
- B Regional trail / open space links
- C Museum or commercial development
- D Boardwalk & wetland habitat
- E Harbor loop trail
- F Beach w/ adventure play / zip-line

EXECUTIVE SUMMARY

Renard Island is a 55-acre man-made island located in southern Green Bay which represents a significant opportunity for waterfront access for the greater Green Bay community. This Strategic Master Plan outlines a vision for the island, which has sat unoccupied since it was closed as a confined disposal facility in 1997 and capped in 2015. This plan was created through a process that engaged stakeholders, regulators, adjacent property owners and interested public citizens with the purpose of coming together to determine a path for the island that represents the values and needs of the community.

Community Engagement

The strategic planning process was modeled after the National Charrette Institute (NCI) method of engaging the community in an inclusive, transparent and exciting planning effort. The intent was to have multiple touch-points with stakeholders and the community to allow them to guide the development of ideas, programming, alternatives generation and voting, and ultimately the selection of a preferred direction. This collaborative design process took place over the month of October 2018, starting with a day of stakeholder focus group meetings and an initial public meeting to get feedback on programming and uses for Renard Island, as well as to educate citizens on the island's history. Subsequently, a three day interactive planning event, or charrette, was structured with an open studio format that culminated in a draft Renard Island Master Plan. During the event, the public and stakeholder groups were invited to visit the studio space throughout the day and provide comments and ask questions as the design evolved. Each evening the project history and design process were presented at a public meeting for feedback.

Master Plan Alternatives

Three master plan alternatives were developed during the interactive planning event:

- "Eco Island" was the most passive of the three, and focused on creating a series of natural habitats on the island and its shoreline for visitors to passively observe and enjoy.
- "Exploration Island" introduced a variety of destination spaces nestled into rolling landforms for visitors to discover during their journey throughout the island.
- "Active Island" featured a marina and retail /concessions facilities intended to complement the amusement theme at the adjacent Bay Beach Amusement Park and draw visitors to the island as an active waterfront destination unique to the Green Bay area.

Ultimately, the Active Island alternative received the most enthusiastic feedback however components of each of the three alternatives were seen as favorable.

Renard Island Strategic Master Plan

The final Renard Island Strategic Master Plan is a combination of the three alternatives including ecological enhancements, landforms, a variety of places to explore, and active marina and retail /concessions facilities. This Renard Island Strategic Master Plan document summarizes the history of the island, planning process, major design elements, and economic feasibility of the master plan. Moving forward, this document can act as a framework to help guide and identify future improvements on Renard Island and the adjacent Green Bay shoreline.

Key features of the master plan include something for everyone:

- A marina development with transient dockage and seasonal slips and open water space for programmed events
- A promenade featuring water and recreation-focused shops, dining, concessions and a festival plaza space
- An improved causeway for two-way vehicular and pedestrian access
- A surface parking lot with 300 spaces and green infrastructure
- Sculpted landforms for visual interest and to create different experiences throughout the island for discovery
- An interpretive overlook/tower for viewing out over the Bay, incorporating a wind spire and/or public art
- Fishing/overlook piers
- Cobble habitat beaches and a sand beach for boat tie-ups and dog access
- A hierarchy of paths including boardwalks, paved multi-use trails, soft primitive trails for exploration, a perimeter loop trail, and winding trails
- Softened edges and stepped stone revetment areas for water access and viewing
- Flexible open lawn space for programming
- Picnic shelters, yurt camping facilities
- Adventure playground with zip-line

Economic Feasibility Analysis

Implementation of the master plan requires a viable funding strategy. Three funding strategies are proposed as part of the Renard Island Strategic Master Plan:

- Leverage new assets such as the marina and retail / concessions facilities to generate the revenue necessary to fund their development and additional amenities.
- Work with Federal, State and Local sources to identify grant funding opportunities.
- Use public private partnerships to guide private investment that also generates sufficient revenues to help fund long-term improvements and operations.

INTRODUCTION

1.0 INTRODUCTION

1.1 OVERVIEW

Renard Island is a 55-acre confined disposal facility (CDF) at the southern end of Green Bay, near the Port of Green Bay. The island was created by the U.S. Army Corps of Engineers as a disposal facility for material dredged from shipping channels in the Fox River and lower Green Bay. The facility was closed in 1997 and the final cap was completed in 2015. Renard Island is now owned by Brown County and maintained by the Port and Resource Recovery Department. More information about the island itself is described in Section 2.0 Inventory and Analysis.

This section describes the process that was followed for development of this Renard Island Strategic Master Plan and outlines the goals and objectives for the project.

1.2 PROJECT PROCESS

Stakeholder Meetings and Initial Public Meeting

To kick off the community engagement process for Renard Island planning, a series of stakeholder focus group meetings were held on October 2nd, 2018 followed by an initial public meeting at the Neville Public Museum. The purpose of the events was for the design team to learn more about the goals, existing conditions, constraints, and ideas that the community has with regards to the island. The following groups were engaged on October 2nd, 2018 (a full list of focus group attendees and notes are included in the appendix):

- Brown County Leaders & Staff
- City of Green Bay Leaders & Staff
- Adjacent Property Owners
- Ecology & Environment
- Recreation & Tourism
- Renard Island Working Group

The public meeting held on the evening of October 2nd was held to get feedback from the community on the types of uses they would like to see on Renard Island. The polling results and comments received during the October 2nd public meeting are included in the appendix, and an example is shown in Figure 1-2.

Some common themes heard during the first outreach meetings included the following:

- Focus on public access to the water
- Provide a mix of passive and active recreation
- Incorporate winter programming
- Use Renard Island as a educational resource
- Complement Bay Beach Amusement Park activities
- Incorporate an observation tower to take advantage of views

Interactive Planning Event

The community engagement process for the Renard Island Strategic Master Plan featured a three-day interactive planning event, or charrette, held during the week of October 15th, 2018 at the T2 Accelerator space in Green Bay. The purpose of the event was to allow the public and project stakeholders to actively engage in the planning process for Renard Island. It also allowed the consultant team and Brown County's core team to devote several consecutive days together, a more efficient way to get to a solution than other planning processes (the process is illustrated in Figure 1-1). The event followed a condensed version of the National Charrette Institute (NCI) process for community engagement. The agenda for the three days is included as Figure 1-3.

The interactive planning event included public tours of the island to educate more people about the island and to give

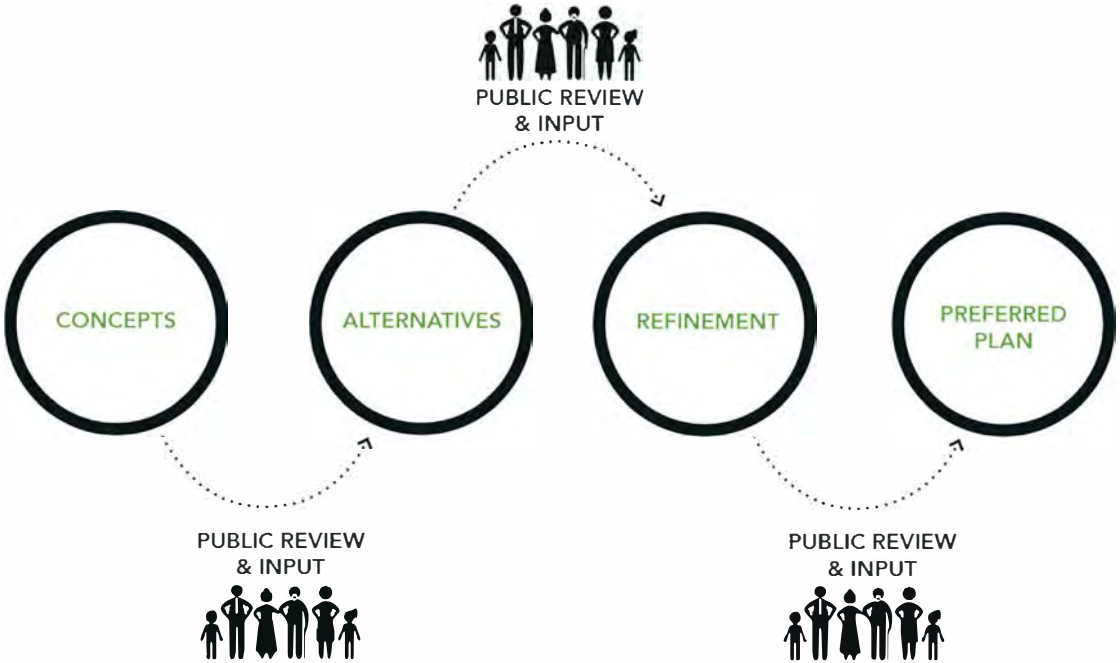


Figure 1-1. Illustration of the NCI community engagement process

Participants of a stakeholder focus group meeting of adjacent landowners

Public meeting input boards

Figure 1-2. Wordle representing feedback received during the public meeting on October 2nd in response to the question "I would go to Renard Island if...")

Renard Island Strategic Master Plan Interactive Planning Event

T2 Accelerator, Suite 200, 340 N. Broadway, Green Bay

TIME	DAY ONE 16-Oct	DAY TWO 17-Oct		DAY THREE 18-Oct
7:00 AM	Studio setup	7:00 - 8:00am Design Team/Core Team Breakfast Debrief		
8:00 AM		Project Team Coordination Meeting		8:00 - 9:00 am Breakfast Debrief with Core Team
9:00 AM	9:00am Public Site Tour #1 (meet near causeway)	STUDIO OPENS		STUDIO CLOSED
10:00 AM	10:00am Public Site Tour #2 (meet near causeway)	9:00 - 11:30am Develop Alternative Design Concepts		Production Design Preferred Alternative
11:00 AM				
12 Noon	11:30am - 1:30 pm Design Team/Core Team Working Lunch	11:30am - 1:00pm Renard Island Working Group Lunch Review Alternative Design Concepts		Working Lunch
1:00 PM	Opportunities, Goals Principles and Program	1:00 - 5:00pm Refine Alternative Design Concepts	1:00 - 2:00pm Technical Meeting #1	
2:00 PM	STUDIO OPENS		2:00 - 3:00pm Technical Meeting #2	Production Design Final Presentation
3:00 PM	2:00 - 5:00pm Organize Program and Alternative Design Options		3:00 - 4:00pm Technical Meeting #3	
4:00 PM			4:00 - 5:00pm Technical Meeting #4	
5:00 PM	Meeting Set-Up	Meeting Set-Up and Team Dinner		Meeting Set-Up
6:00 PM				
7:00 PM	6:00 - 8:00pm Community Meeting #1 Issues/Ideas & Programming Workshop	6:00 - 8:00pm Community Meeting #2 Alternative Concepts Pin-Up and Presentation		6:00 - 8:00pm Community Meeting #3 Issues/Ideas & Programming Workshop
8:00 PM				
9:00 PM	Team Dinner/Debrief	STUDIO CLOSED Continue Design Work/Production		Studio Breakdown

LEGEND:

- Studio Open to Public
- Renard Island Working Group
- Meetings
- Community Events
- Studio Closed

Figure 1-3. Renard Island Interactive Planning Event agenda, October 16 - 18, 2018

them a better feel for the size, scale and views. It also included open studio times when the public was allowed to observe the design team working and ask questions, technical working sessions with stakeholders, and public open houses each evening. Figure 1.3 shows the schedule and agenda for each day of the interactive planning event.

The public meetings held the first two evenings included activities meant to engage the public in the design process. During the first night of the planning event on October 16th, attendees participated in a game board activity. They were asked to arrange program elements on a map of the island to indicate what kind of recreational activities they wanted on the island and where they should be located. Photographs of these boards can be found in the appendix.

Based on the feedback from the stakeholder meetings and the results of the game board activity, three design alternatives were developed. On the second night of the planning event on October 17th, attendees were asked to participate in a poll and rank elements of three design alternatives. The polling results and comments are included in the appendix. The three alternatives are described in more detail in Section 3.0 Concept Development.

On the third and final night of the planning event, the draft master plan was presented for public comment. The preferred elements of the three alternatives, based on feedback from Night 2 and from discussions with the Core Team, were combined into one comprehensive plan which is reflected in the final master plan depicted in Section 4.0 Final Master Plan.

1.3 GOALS & OBJECTIVES

During the first day of the planning event, the consultant team worked with the Core Team to define the goals and objectives for the Renard Island Strategic Master Plan using input received during the stakeholder meetings and the first public meeting held on October 2nd. Following a strategy which defines successful projects based on how well they balance the four pillars of sustainability (Economic, Ecological, Social, and Human Spirit), the following goals for the project were distilled:

Economic Goals

- Cost recovery of operations
- Include revenue sources
- Attract public/private investments
- Low maintenance costs
- Attract visitors from city & region
- Stimulate economic development
- Attract capital funding

Ecological Goals

- Water quality improvements
- Enhance habitat
- Align ecological efforts with existing restoration efforts
- Ecological resiliency
- Follow principles of landscape ecological design
- Connect to other regional ecosystems
- Deter nuisance wildlife
- Model green infrastructure /BMPs

Social Goals

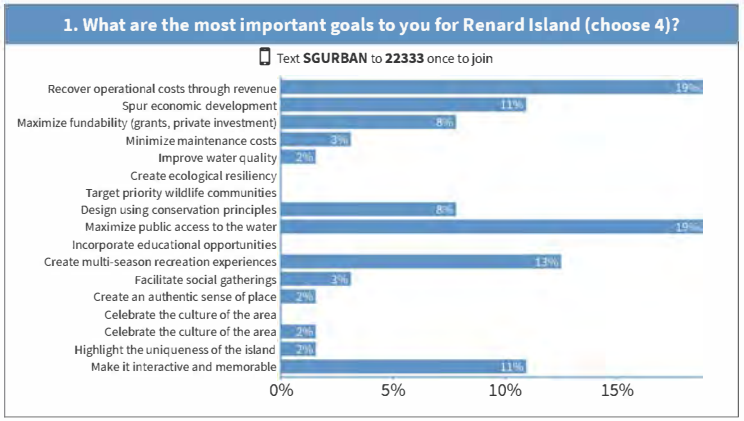
- Access regardless of age/ability/demographics/income
- Bring people to the water
- Provide recreational opportunities
- Opportunity for community gathering
- Encourage social interaction
- Create a unique space for kids to get outdoors and explore
- Celebrate year-round seasons
- Provide multi-modal access
- Complement adjacent uses

Figure 1-4. The four pillars of sustainability

Human Spirit Goals

- Celebrate regional culture and history
- Create a sense of fun
- Interactive/hands-on experiences
- Place-making
- Interpretive/education elements
- Celebrate island's wildness
- Experience transcends the design

The goals listed above were distilled into the four primary goals for each category (for a total of sixteen) and those were weighted and then used for scoring during the alternatives evaluation process to determine which alternative best achieved all of the goals of the project.



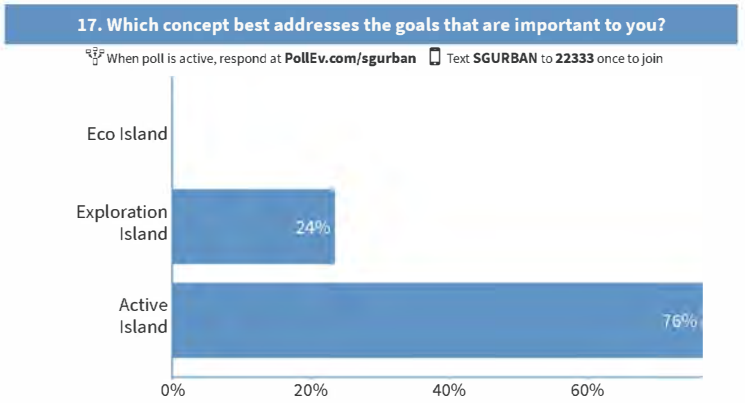


Figure 1-5. Examples of polled questions and interactive live results during the Interactive Planning Event

Game board activity on the first night of the planning event

Developing plan alternatives on Day 2 of the planning event

Polling exercise on the second night of the planning event

INVENTORY & ANALYSIS

RENARD ISLAND
STRATEGIC MASTER PLAN

2.0 INVENTORY & ANALYSIS

2.1 SITE HISTORY

Renard Island is a 55 acre confined disposal facility (CDF) located on a legislative lakebed granted by the State of Wisconsin for the disposal of dredging materials from the Green Bay Harbor and navigation channel. From 1978 to 1997, approximately 2.7 million cubic yards of dredged sediments were placed on the island by the U.S. Army Corps of Engineers. In 1977, the land was conveyed through a legislative act from the State of Wisconsin to Brown County, which maintains ownership today. The land is overseen and maintained by the Port and Resource Recovery Department.

Today Renard Island is one of the few publicly-owned areas in Green Bay that could provide access to the shoreline of the Bay and has the potential to become a great asset to the community.

Lake Bed Grants

The lake bed grants upon which Renard Island and the access causeway were built were created through acts of the Wisconsin Legislature in 1997 and 2015, respectively. The land grants stipulated that the submerged lands were to be used for certain purposes in the interest of the public, including: public slips, basins, docks, wharves, structures, wildlife refuges, recreation, and park purposes. Structures erected on the land are limited to facilitating public use, maintenance, and navigation purposes. Figure 2-1 shows a dashed line in a rectangular shape around the island which represents the approximate limits of the original 1977 lake bed grant. The causeway lake bed grant can be seen on Figure 2-7.

Renard Island Closure Plan

Once Renard Island was no longer used as an active disposal facility, Brown County and the Corps began a closure process with the Wisconsin Department of Natural Resources (WDNR), the state regulating authority for CDFs. The plans included the construction of a causeway for access, grading of the island to maintain positive drainage, and the import of approximately 660,000 cubic yards of clean fill material to cap the dredged sediment material composing the Island with a minimum depth of 2.5 ft.

The Renard Island Closure Plan was approved by WDNR in 2008. Closure construction activities extended until 2015. The Closure Plan described all of the requirements for closing the CDF including stabilization and revegetation procedures, and post-closure sediment monitoring, inspection and maintenance requirements,

Access Easements

There are currently two easements in place on the land side of the causeway for access to Renard Island. Brown County does not own any land adjacent to the causeway; the land to the west is owned by McDonald Lumber Company and the land to the east is owned by the City of Green Bay. McDonald has granted the County a permanent 12-foot wide easement along the eastern-most edge of their property located at 705 Bay Beach Road for maintenance and service work (roughly 0.21 acres). In addition, the City of Green Bay has granted the County a temporary easement for access to Renard Island.

2.2 CONTEXT

Site Context

Renard Island is surrounded by a variety of complementary land uses. Bay Beach Amusement Park, Green Bay Metro Boat Launch, the South Bay Marina, and Green Bay Yacht Club offer active recreational opportunities for adults and families. The nearby Bay Beach Wildlife Sanctuary and future ecological improvements on property owned by the McDonald family will provide enhanced vegetation and habitat in the surrounding context. In addition to natural areas and park and marina space, Renard Island is located near industrial and residential land uses. Some of the industrial parcels have the potential to transform into complementary land uses such as retail, restaurants or museum spaces in the future.

The Island is located centrally within Green Bay which provides the opportunity for visitors to access Renard Island by land or water through a network of roads, bike paths and pedestrian paths. Webster Avenue and N. Irwin Avenue will become major Island access corridors with the potential to create gateways that act as wayfinding elements and visually connect visitors to the Island. Figure 2-1 highlights some of the major adjacent land uses and circulation routes.

Bay Beach Master Plan

The most well known neighboring property is the Bay Beach Amusement Park, which is owned by the City of Green Bay and supported by fundraising through the nonprofit group, Friends of Bay Beach. The 80-acre park, which was originally developed in the late 1800s, welcomes millions of visitors per year and is a major tourism draw for the Green Bay area for families. Bay Beach currently has a roller coaster, a miniature train, a giant slide, concessions, and many other amusement rides which are available at an affordable price. The park does not charge admission fees. Parking is free and available via surface parking lots to the west and southeast of the facility.

The City of Green Bay completed a master plan in 2008 and updated in 2013 (see Figure 2-5) for Bay Beach Amusement Park. The master plan shows proposed improvements including waterfront modifications that have implications for the Renard Island development. The master plan document refers to future access to Renard Island, and recommends passive uses on the island to complement the amusement activities at Bay Beach. However, more recent plans developed by the City to improve the shoreline at Bay Beach stop short of making any physical connections to Renard Island.

More recently, a proposed 450-foot long pier that extends into the bay running perpendicular to the shoreline with a new Ferris wheel located at the shoreline end of the pier is planned for construction in the near term (see Figure 2-4). In addition, the City intends to restore the swimming beach that originally existed in front of the Bay Beach Pavilion by supplementing the sand

Figure 2-1. Site context diagram

along the shoreline (see Figure 2-3). It is our understanding that the beach and pier have already been permitted for construction, however the detailed plans were not readily available for viewing. The swimming beach in particular has the potential to impact plans at Renard Island due to the likely sand migration that will occur along the shoreline between the island and the mainland, unless suitable engineered solutions are put in place. Likewise, proposed appendages to the island could have adverse effects on the Bay Beach shoreline if not designed in concert. Therefore it is critical for the success of both projects that the County and City communicate and share plans to cross-inform the work, from a coastal engineering standpoint as well as for efficient circulation of people.

NRDA Project Along McDonald Property

Another project that dovetails with Renard Island and is currently in the early planning stages is a project sponsored by the U.S. National Oceanic and Atmospheric Administration (NOAA) through its National Resource Damage Assessment (NRDA) process. The NRDA project is looking at ways to improve ecological resources along the south end of Green Bay and found a willing partner in the McDonald Companies, which owns the shoreline from the mouth of the Fox River to the Renard Island causeway.

The project aims to construct offshore shoreline stabilization structures in the shallow waters east of the South Bay Marina which will serve the dual purpose of reducing wave energy and providing habitat improvements. A sketch of some early concepts for this area is shown in Figure 2-6. Knowing this project was happening helped inform the Renard Island master planning team and suggested that the west end of the island may be a good place to focus on ecological improvements within this context.

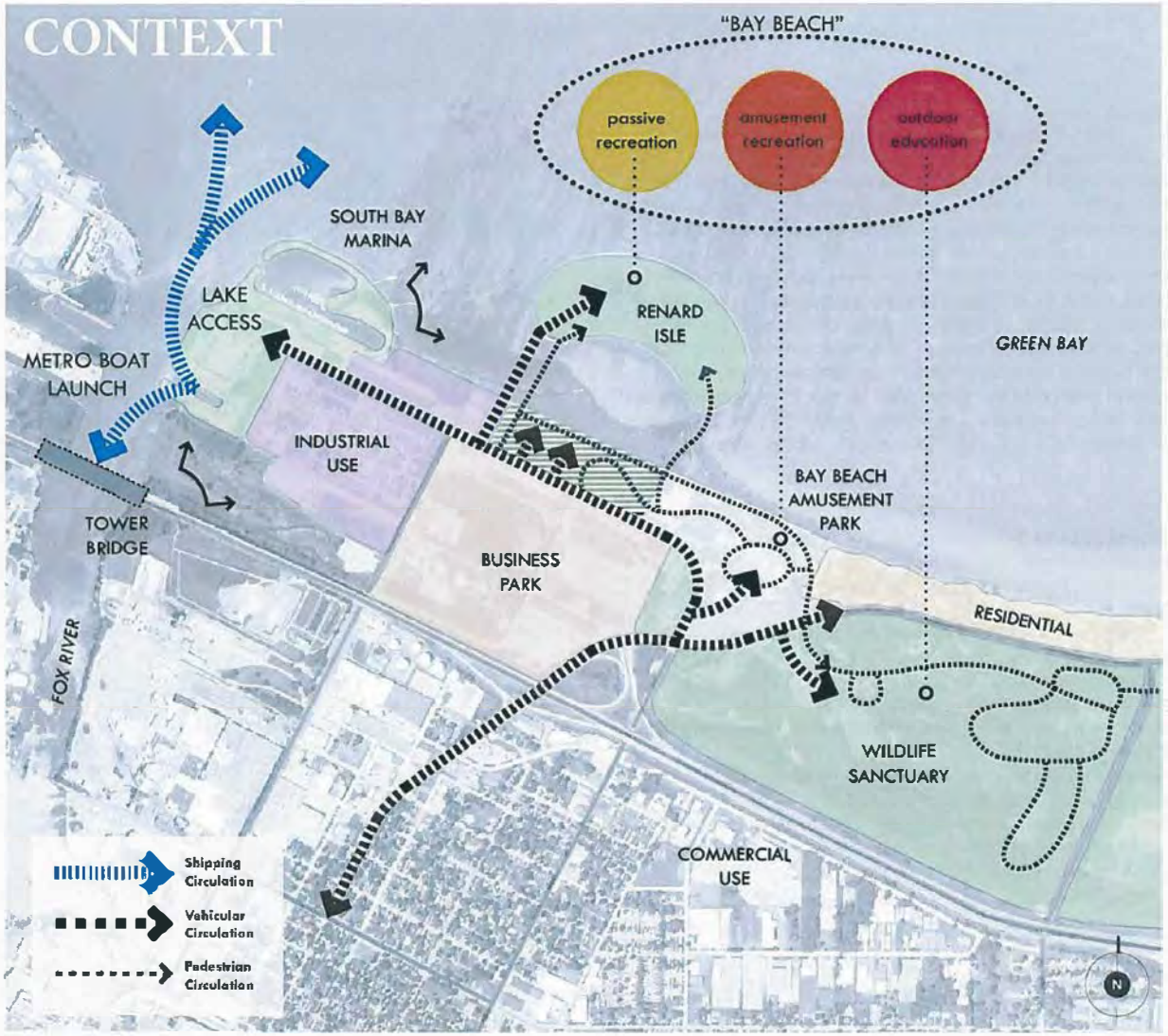


Figure 2-2. Context and circulation diagram from Bay Beach Amusement Park Master Plan Update, 2013 (courtesy City of Green Bay)

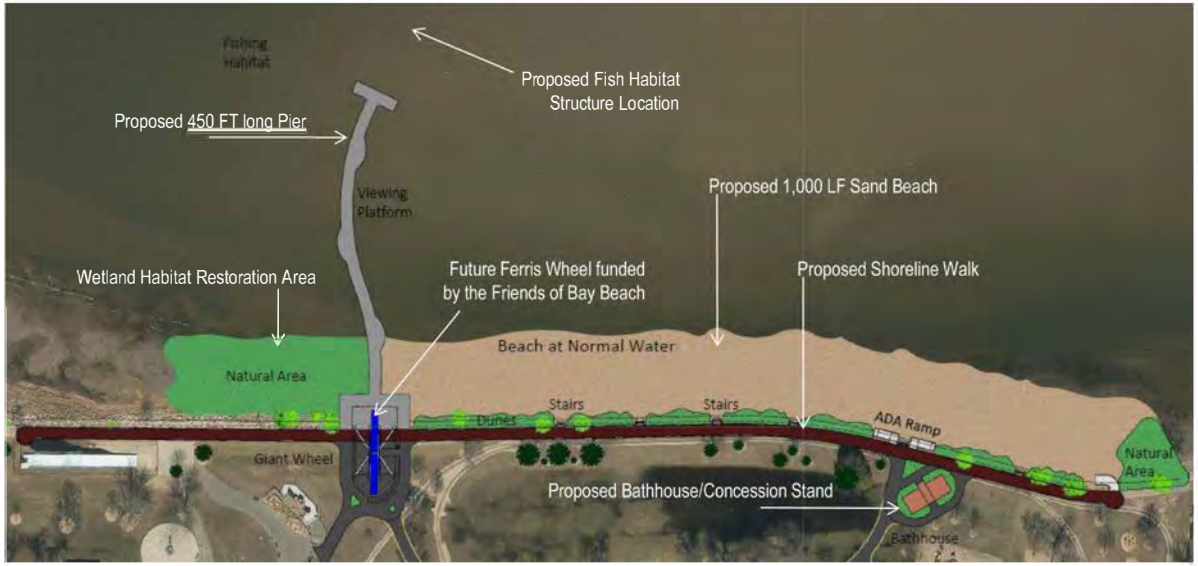


Figure 2-3. Proposed Bay Beach Amusement Park shoreline improvements plan (courtesy City of Green Bay)

Figure 2-4. Proposed Bay Beach pier (courtesy City of Green Bay)

Figure 2-5. Bay Beach Amusement Park Master Plan, 2012 (courtesy City of Green Bay)

Figure 2-6. Potential ecological shoreline improvements at the McDonald property (draft sketch is preliminary and subject to change)

2.3 SITE CONDITIONS

The existing conditions on Renard Island are largely a result of the history of the site as a CDF. The island is graded to provide positive drainage with a ditch along the perimeter of the Island. The overall topography of the site consists of a saddle flanked by two high points. Three monitoring wells are located on the Island to measure groundwater water quality. An abandoned weir and docking area are located along the island's shoreline.

The island is currently accessible via a causeway composed of stone revetment, a gravel road, and a culvert and pipes to encourage water movement. The stone revetment continues along the perimeter of the island.

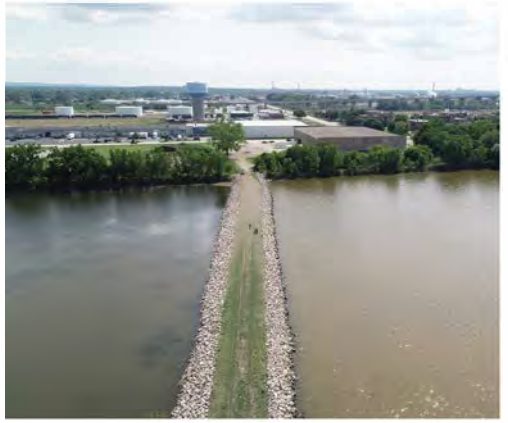
Current vegetation on the island consists primarily of stinging nettle, phragmites and other pioneering weeds. Vegetation along the shore is unknown but likely consists of weedy woody vegetation including box elder, hackberry, buckthorn, honeysuckle and wild cherry. Phragmites has become established at some locations on the island and on the shore, though some phragmites management has occurred.

The existing habitat quality on the island, within the lagoon, and along the shore is likely low, but the restoration potential is high. Since the closure, fish habitat has been established in several locations along the shoreline.

As discussed in the coastal analysis in Section 2.4, water levels fluctuate around the Island. During low water, 1/3 to 1/2 of mudflat is exposed on the mainland shoreline. Along the high water mark is a stand of cottonwood trees and shrubs.

Figure 2-7 illustrates some of the existing features of the island including approximate locations of monitoring wells, three culverts which exist below the causeway for water circulation, some fish habitat features that had been installed previously, etc.

Aerial photo showing the Island vegetation and revetment



Causeway access

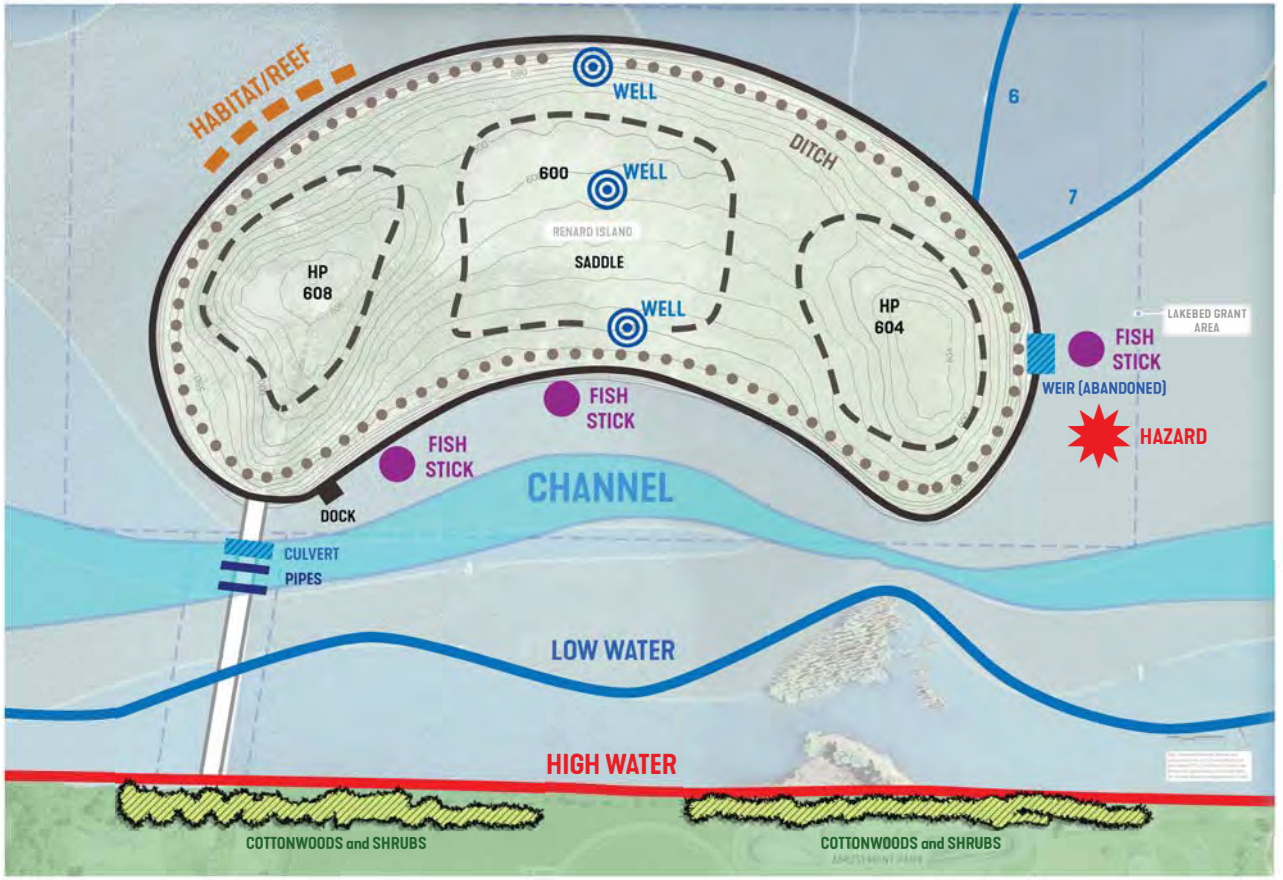


Figure 2-7. Renard Island existing conditions diagram (generated during the charrette)

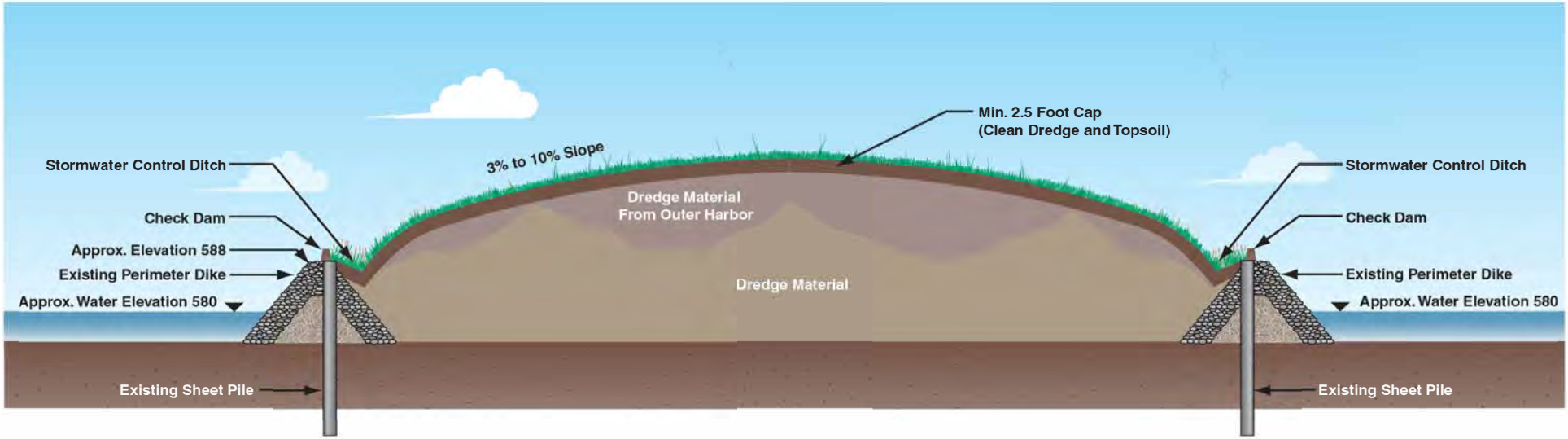


Figure 2-8. Renard Island cross section illustration - post closure after settlement to maintain positive drainage

Renard Island tour during the interactive planning event

2.4 COASTAL CONSIDERATIONS

The following describes the primary coastal conditions to be considered in future infrastructure planning for Renard Island:

- Bathymetry: Green Bay is generally shallow. Water pushed into the Bay from Lake Michigan, such as when winds are out of the northeast, results in higher surge levels. Gentle shoreline slopes suggest that more land is exposed at low water levels and higher water levels result in inundation.
- Water Levels: The monthly average water level range in this area is approximately 6.4 feet and this is without surge. Fixed, permanent structures will have to be positioned to either be outside of the zone of risk or built to withstand issues associated with inundation and water movement (waves, currents).
- Waves: Waves predominately are in-line with the orientation of the Bay, north through northeast. Storm waves can easily reach 5 feet or higher offshore. During high water, waves have the potential of reaching 8 feet near the island. See wave rose in Figure 2-8.
- Winds: Winds are more common from the south through west though these winds do not result in waves. Storm winds (>15 mph) are most common from the west and the northeast. See wind rose in Figure 2-9.
- Surge: Occurs when the winds are out of the north-northeast and can happen quickly, last for a span of hours (~24 hours), and increase the water level locally by 3 to 5 feet.

Water levels, potential for inundation, and waves over-topping on the north side of the island will influence the design of shoreline infrastructure and vegetation in regard to the robustness and resiliency of the materials. Shallow bathymetry will limit water uses or require dredging to accommodate larger boats in the areas surrounding the island.

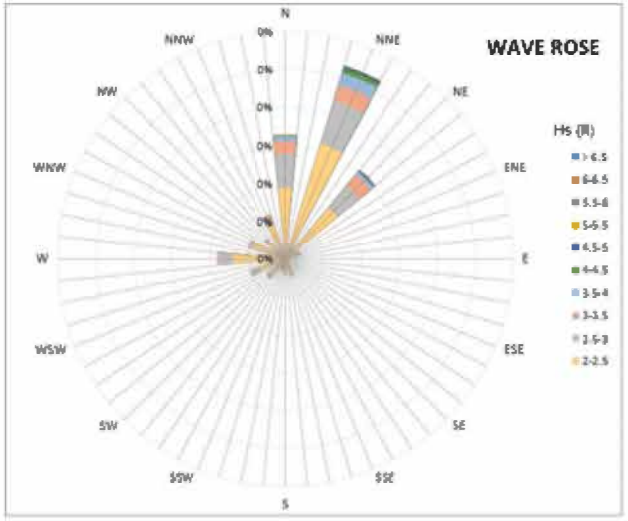


Figure 2-8. Wave rose for Renard Island, showing average wave heights (feet) and direction frequency

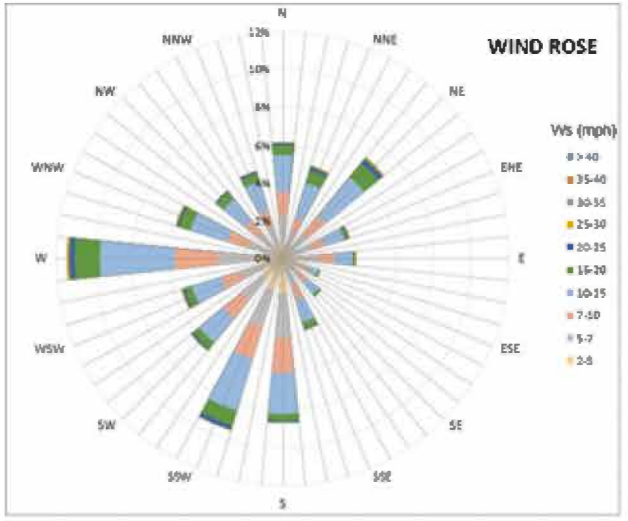


Figure 2-9. Wind rose for Renard Island, showing average wind speeds (mph) and direction frequency

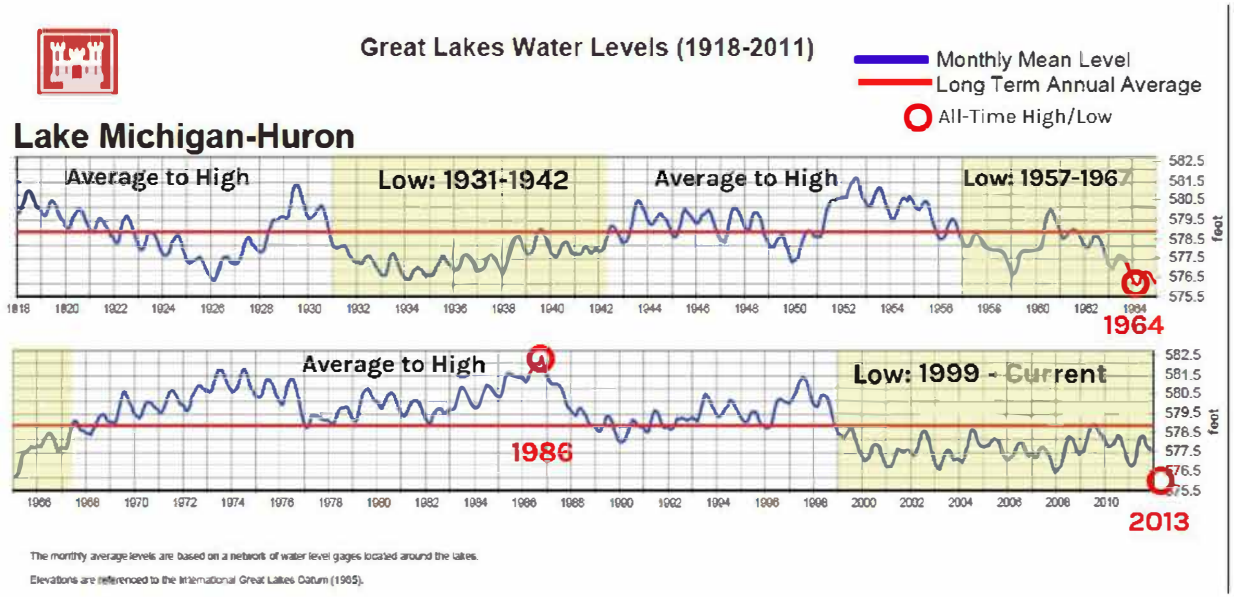


Figure 2-10. Historic water levels on Lake Michigan indicating record high and low elevations

Aerial photo from 1992, pre causeway, average water level

Aerial photo from 2009 showing ice accumulation, low water

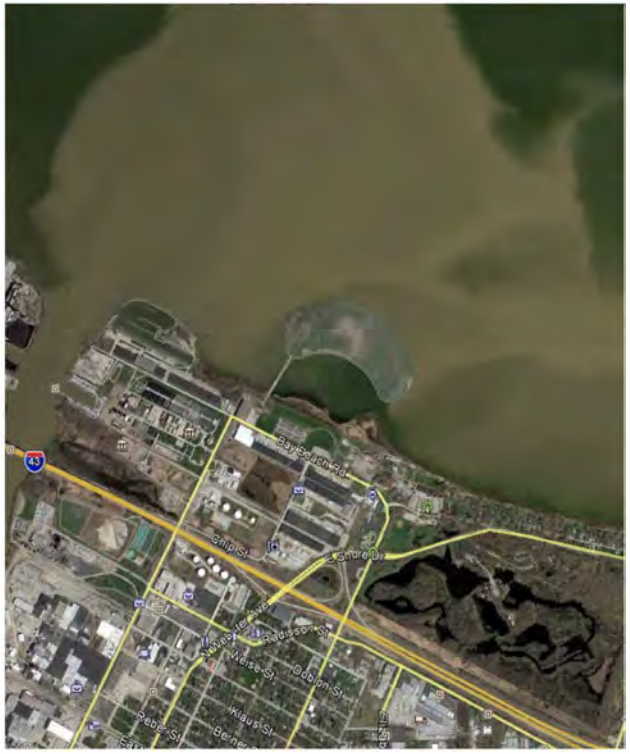
Aerial photo from 2011 showing waves, low water

Littoral Sediment Transport

A review of aerial photography using Google Earth reveals some interesting patterns around Renard Island. As shown in the aerial images on this page, the shape and proximity of the island has caused sediment to accumulate in a pattern that resembles tombolos, filling out from the mainland to meet the bean-shaped island. This is a natural coastal process created as a response to the island construction and has little to do with the construction of the causeway, which occurred much later (see photo from 2011). During high water periods like today, the fill is mostly submerged but remains very shallow and is likely continuing to grow (aerial images shown here from 2009 and 2011 show the amount of land exposed during lower water periods).

In addition, the aerial photo from 2017 to the right shows a plume of suspended material, likely fine silt flushed from the watershed, coming out of the Fox River. The existence of the causeway actually may prevent additional sediment coming from the river from creating turbidity within the lagoon area. However, poor water circulation within the lagoon has caused stagnant conditions that can become anaerobic, trap floating debris and trash, and create undesirable water quality conditions for recreation and habitat. While there are three culverts under the causeway (two 48-inch round culverts and one 7-ft by 16-ft box culvert), they allow only minimal exchange of water and don't influence the larger sediment transport patterns along the littoral region.

The dynamic nature of southern Green Bay means that Renard Island coastal conditions are influenced by many factors. Littoral transport of sediment comes from multiple directions depending on waves, wind, river currents, time of year, water elevation, etc. This indicates that engineering solutions that modify the shape of the island, introduce sand or other fill materials, or dredging, should be designed using advanced coastal modeling and testing. Proposed island modifications must also reflect and incorporate proposed shoreline modifications at nearby properties such as Bay Beach and the NRDA project.



Aerial photo from 2017 showing plume originating from the mouth of the Fox River

2.5 ECOLOGICAL CONSIDERATIONS

Since Renard Island is a man-made site, the ecological analysis must draw from the regional history and existing context. Regional vegetation was historically a mosaic capturing a great diversity of the original vegetation communities that occur in Wisconsin including oak openings, oak woodland, shrubland, prairie, coniferous swamp, mesic woodland and jack pine barrens.

Renard Island is within a number of ecological planning areas that each have habitat goals that can inform and leverage the restoration of the Island. The Lower Green Bay and Fox River Area of Concern 2018 Action Plan identifies several objectives that could be applied to Renard Island, the lagoon between the Island and the shore, and the shore. These objectives include:

- Providing habitat for wildlife including shorebirds, turtles, furbearers (mink, muskrat, river otter), amphibians and native fish species.
- Control of invasive weeds and restoration of native plant communities such as emergent wetland and fruiting shrubs for migratory birds.
- Improved water quality that can support submerged aquatic vegetation.

The master plan can also tie into adjacent ecological improvements. The McDonalds, property owners just southwest of the Island, are enhancing habitat along the shoreline of their property. Restoration goals for the McDonald parcel include restoration of aquatic and shoreline habitat, enhanced spawning and nursery habitat for centrachids, accommodation of fluctuating water levels, and habitat for birds.

As ecological improvements are integrated into the Renard Island, several known stressors and constraints will need to be considered:

- Hydrology: Lake water levels fluctuate dramatically which stress native plants adapted to more stable water levels.
- Wave climate: Wave energy on the bay side of the island likely will limit restoration efforts on the bay side.

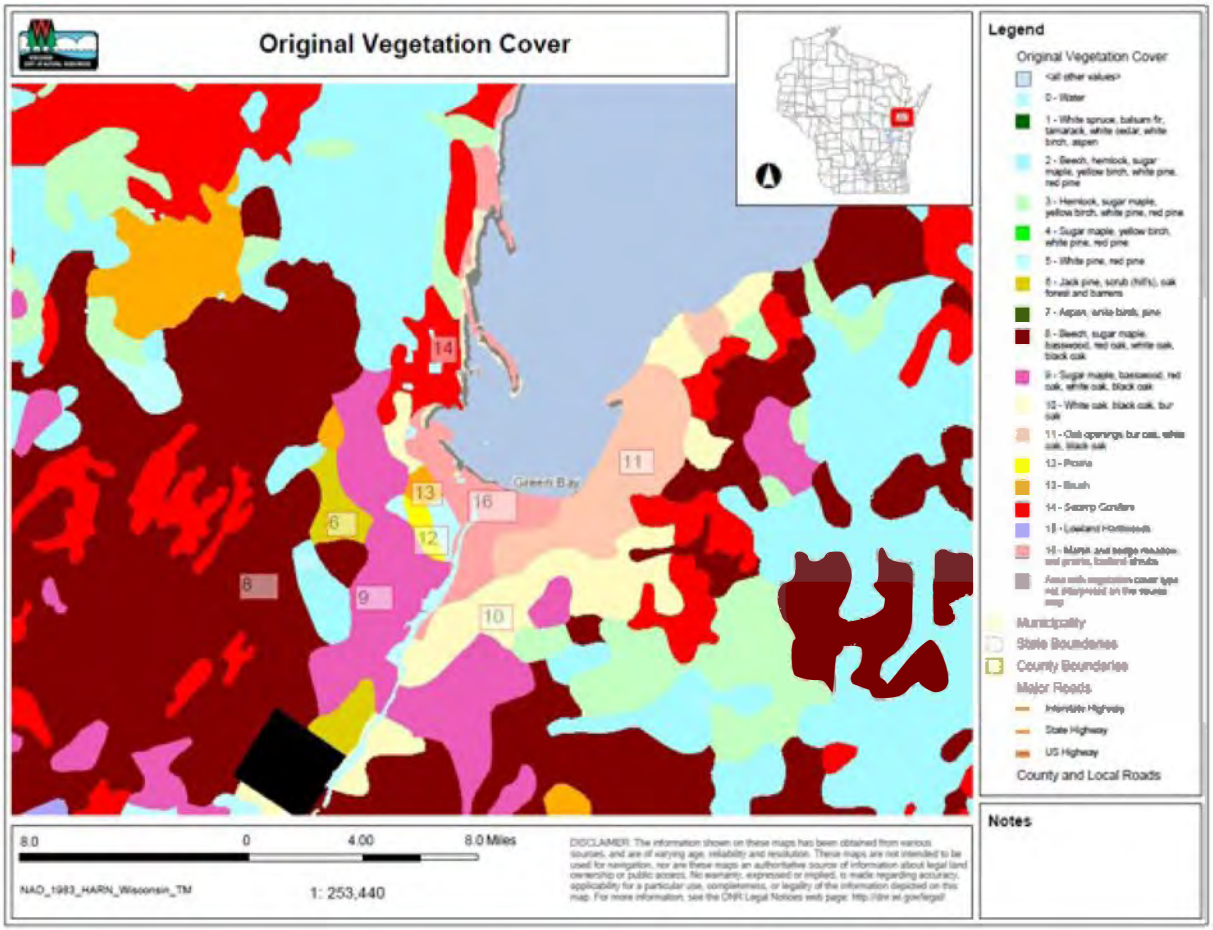
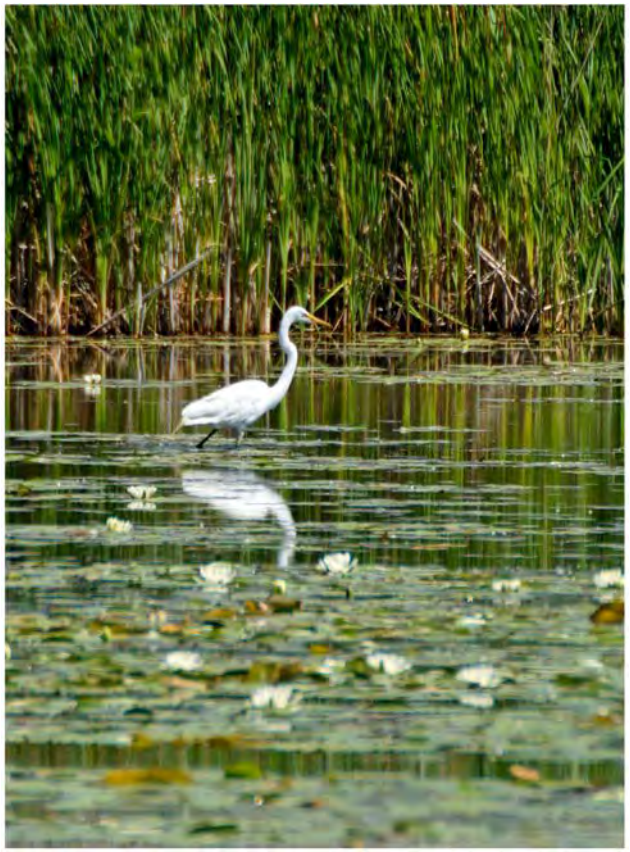


Figure 2-11. Map of pre-settlement vegetation cover in the Green Bay region (as reference for vegetative communities that would be appropriate to introduce on Renard Island)

- Water quality: The lagoon between the island, causeway and shore tends to become stagnate. Likely causes are poor circulation due to the causeway, shallow water that warms up in the summer, and non-point source pollution from development along the shore.
- Edge condition: Renard Island is entirely surrounded with riprap. The near shore consists of rubble, as well as some soil banks that have become vegetated with weedy woody species and phragmites. The steep slopes along most of the shore limit the establishment of wetland plant communities driven by hydrology.



2.6 INFRASTRUCTURE CONSIDERATIONS

Since Renard Island is constructed on a CDF composed of dredged sediments and imported soils, several considerations will influence the design of infrastructure on the island:

- The perimeter sheetpile wall and rock armor stone must stay in-place but it can be built upon.
- Smaller structures like picnic shelters or small restroom facilities should be constructed on floating slabs to avoid penetrating the cap.
- Larger structures like the observation tower or the zip-line platforms which require significant foundations will need additional considerations when penetrating the cap with a pier or footing to prevent contact or release of contaminants. WDNR has stated that permitting these types of structures is feasible.
- Tree planting is acceptable provided the root penetration depth is considered.
- Dredging activities will require appropriate chemical and physical testing of the sediment for use or disposal depending on the levels of contamination.
- Utility infrastructure on the island will be required including electric, gas, water, sanitary sewer, and communication. The services are expected to be connected on the mainland via the City of Green Bay and routed out to the island underground. Special consideration will need to be made for any utilities located on the island or in the causeway that go beyond the perimeter.
- Fill material is anticipated to be brought on the island to create elevation, land forms and various topography. Construction could include pre-loading critical sections of the island to force settlement and consolidation prior to construction.
- During design storm water and geotechnical stability calculations will need to be completed to analyze how the proposed changes will affect the island.
- More soil could be added from Bay Port for structures with footings.

Table 2-1. Summarized Development Feasibility Matrix for Renard Island (see Appendix for more detailed recommendations)

Development Categories	Example	Description	Recommendation
Buildings and Structures			
Shallow Slab Foundations	Concession Stands	Light structural load, stick frame	Recommended
Earth Structure	Amphtheater berm	Moderate structural load	Limited recommendation
Shallow Strip Footing	Food Pavilion	Moderate structural load	Limited recommendation
Deep Footing/Pile Foundation Off the Island	Large structures/buildings	Moderate to high structural load	Limited recommendation
Deep Footing/Pile Foundation On the Island	Large structures/buildings	Moderate to high structural load	High cost likely
Transportation			
Unpaved Roads	Access roads & parking	Light vehicle load only	Recommended
Amusements Rail	Amusement ride	Light recreational load	Limited recommendation
Paved Roads	Access roads & parking	Light vehicle load only	High cost likely
Utility Services			
Point Source Utility Alternatives	Generators, gas tanks	Portable or above-ground temporary or backup services	Limited recommendation
Power Utility from Mainland	Electric service	Underground or power poles from mainland	Limited recommendation
Pipe Utility from Mainland	Sanitary, water	Hard connections to mainland	High cost likely
Recreation			
Trails	Walking trails	Gravel or mulch trails	Recommended
Small Vegetation	Green space	Shrubs, grasses, prairie	Recommended
Water Access	Fishing piers	Permanent piers connected to perimeter dike	Limited recommendation
Trees	Tree groves	Tree planting in area with thicker cap sediment	Limited recommendation

CONCEPT DEVELOPMENT

RENARD ISLAND
STRATEGIC MASTER PLAN

3.0 CONCEPTUAL ALTERNATIVES

Day 2 of the Renard Island Interactive Planning Event involved the development of three conceptual alternative plans based on feedback garnered from stakeholders and the community during the game board activity on the first night. The alternatives are purposely contrasting to gauge the public's interest in a range of island programs and spatial organizations.

Table 3-1 summarizes the three concepts that were developed and how they differ through key variables including revenue models, vehicular access, habitat creation, landscape character, trail hierarchy, intensity of facility development, edge conditions, how the lagoon is treated (the area between Renard Island and the mainland), the causeway treatment, the level of amenities provided, the types of event spaces, cultural and art offerings, and how access to the Bay Beach Amusement Park is or isn't provided.

The alternatives were developed during Day 2 of the planning event by dividing the consultant team into three groups; each group tackled one of the concepts and tried to flesh out the ideas listed in Table 3-1 in a graphic form. The alternative concepts were presented at the public meeting on the evening of Day 2, although visitors of the studio were able to watch the development of the concepts throughout that day as the studio was open to the public.

The following pages describes each conceptual alternative in more detail including precedent images that visually describe programmatic and design elements.

Table 3-1. Renard Island conceptual alternatives summarized using key variables

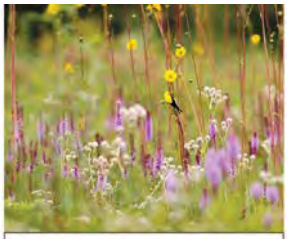
Variable	Concept 1 Eco Island	Concept 2 Recreation Island	Concept 3 Active Island
Revenue model	Indirect revenue	Cash neutral	Direct revenue
Vehicular access	No vehicles	Restricted vehicular access (ADA)	Limited public parking
Habitat	Habitat-heavy, eco-island, natural palette	Hybrid (mixed habitat/people)	Minor habitat (most people)
Landscape character	Native Eco-system	Traditional park palette w/ some native features	Park-like setting with flexible lawn space
Trails	Boardwalks, soft trails	Multi-use recreational trails	Hard trail loop
Facilities	Minimal structures	Seasonal vendor/venue/rental space	Year-round restaurant/retail/rental space
Edge conditions	Natural shoreline	Mix of natural and engineered	Developed shoreline
Lagoon/Cove	Backwater bayou	Quiet craft basin	Slips or active boating
Causeway	Fully open/bridge w/ channel	Partially open (mechanical flow)	Mostly closed (built up)
Amenities	Primitive camping, beach dunes	Leashed dog walking, yurt camping	Dog park, disc golf park, transient ships, floating barge
Gatherings/events	Outdoor classroom, council ring	Flexible lawn space	Informal performance venue/stage
Cultural/Art	Eco/native culture interpretation	Island as art (Green Bay heritage)	Active fishing/working waterfront theme
Access to Bay Beach	Island hopping/boardwalk to Bay Beach (or no connection)	Pedestrian bridge to Bay Beach	Zip line to/from Bay Beach

Visitors were welcome to tour the studio during concept development

Eco Island

As alluded to by the name, Eco Island emphasizes wildlife and vegetation habitat enhancements. The Island program focuses on nature based activities and spaces for more passive interactions and recreational opportunities such as walking trails, boardwalks, observation areas, ecological education, primitive camping, and kayaking and canoing. No vehicles are permitted on the Island, with access restricted to small boats, pedestrians, and bicyclists. Floating Islands in the cove between the Island and mainland provide a serene area for island hopping and wildlife viewing. Sandy dunes on the north side of the Island offer a quiet escape from the City with expansive views of the Green Bay waters.

Revenue for this alternative would come mainly from indirect sources such as grants and philanthropy, but also through eco-tourism dollars (visitors spending money such as boat rentals, nearby restaurants and hotel stays).


NATIVE RESTORATION


CULTURAL CELEBRATION


LANDFORM


WETLAND SOFT EDGE


INTERPRETIVE SIGNAGE


PRIMITIVE CAMPING / BEACH DUNES


FLOATING ISLANDS


WETLAND RESTORATION


BACKWATER BAYOU


FULLY OPEN BRIDGE


BOARDWALK


SOFT SURFACE TRAIL


SHADE STRUCTURE


OUTDOOR CLASSROOM


OBSERVATION TOWER


KAYAK LAUNCH

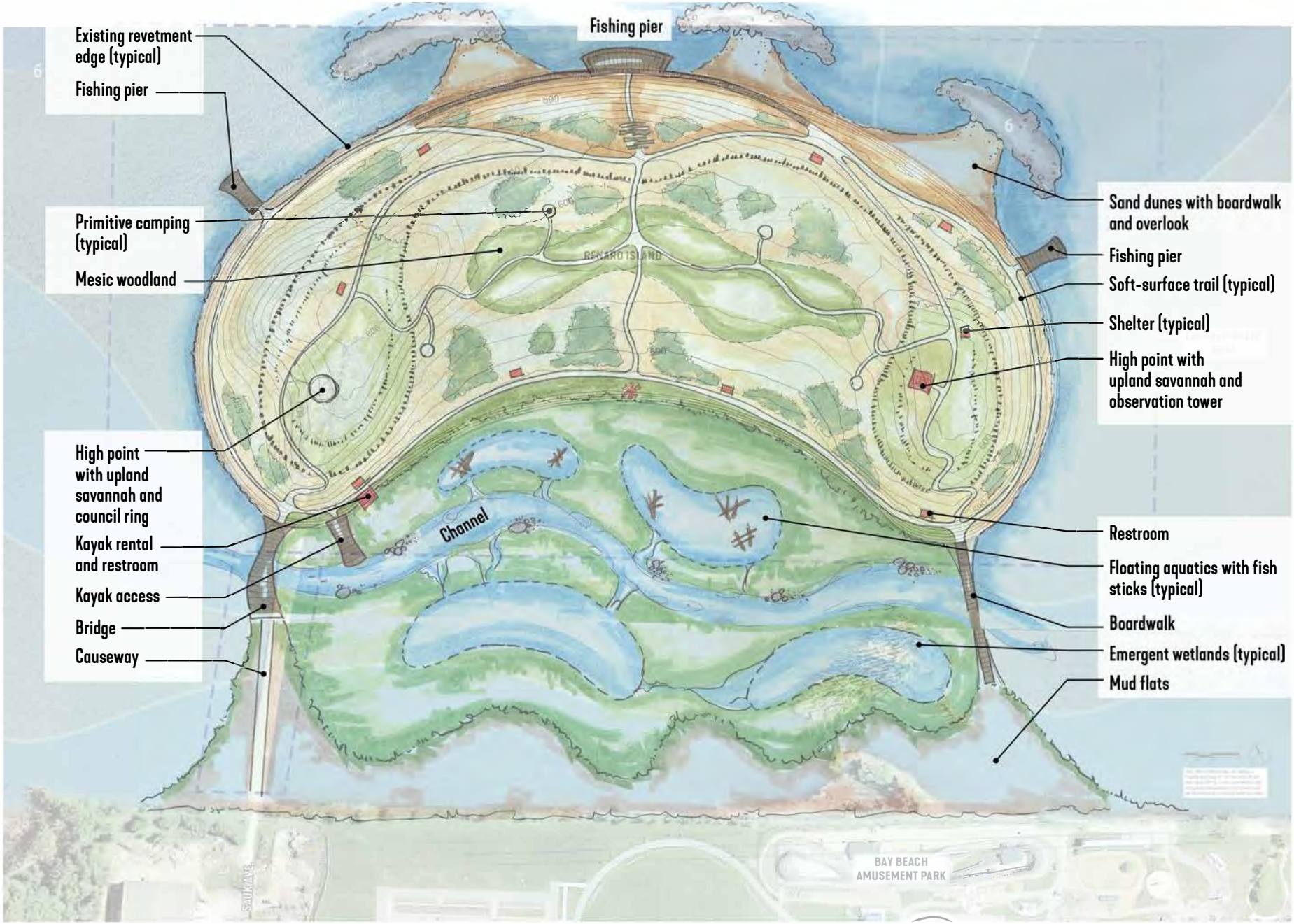


Figure 3-1. Conceptual Alternative 1 - Eco Island

Exploration Island

Exploration Island focuses on creating a wide range of recreational experiences as visitors journey through the Island. The emphasis is on providing a hybrid of wildlife habitat and human focused spaces with a mixture of native and traditional plantings. Restricted vehicular access and a lagoon/cove area that accommodates quiet water crafts also help to achieve this goal.

On the Island, rolling landforms divide the park into rooms and create a series of thresholds as visitors explore the Island using the trail system. Two high points on the Island feature interpretive elements such as an observation tower and wind energy infrastructure. The Island itself begins to act as art as all of these elements come together to celebrate the unique character of the Green Bay community and waterfront.

Direct revenue for this alternative comes primarily from rental fees for boats (e.g. kayaks and canoes), shelters and yurt camping areas. Indirect revenue sources include tourism investments such as those described for “Eco Island.”


TRADITIONAL PARK PALETTE WITH SOME NATIVE


PUBLIC ART


LANDFORM


MULTI-USE LAWN


WETLAND SOFT EDGE


STACKED STONE EDGE


BREAKWATER / HARD EDGES


BOARDWALK


FISHING


QUIET CRAFT BASIN


DOGS ON LEASH


CROSS-COUNTRY SKIING


PEDESTRIAN CROSSING


FULLY ENCLOSED STRUCTURE


OBSERVATION TOWER


YURT CAMPING

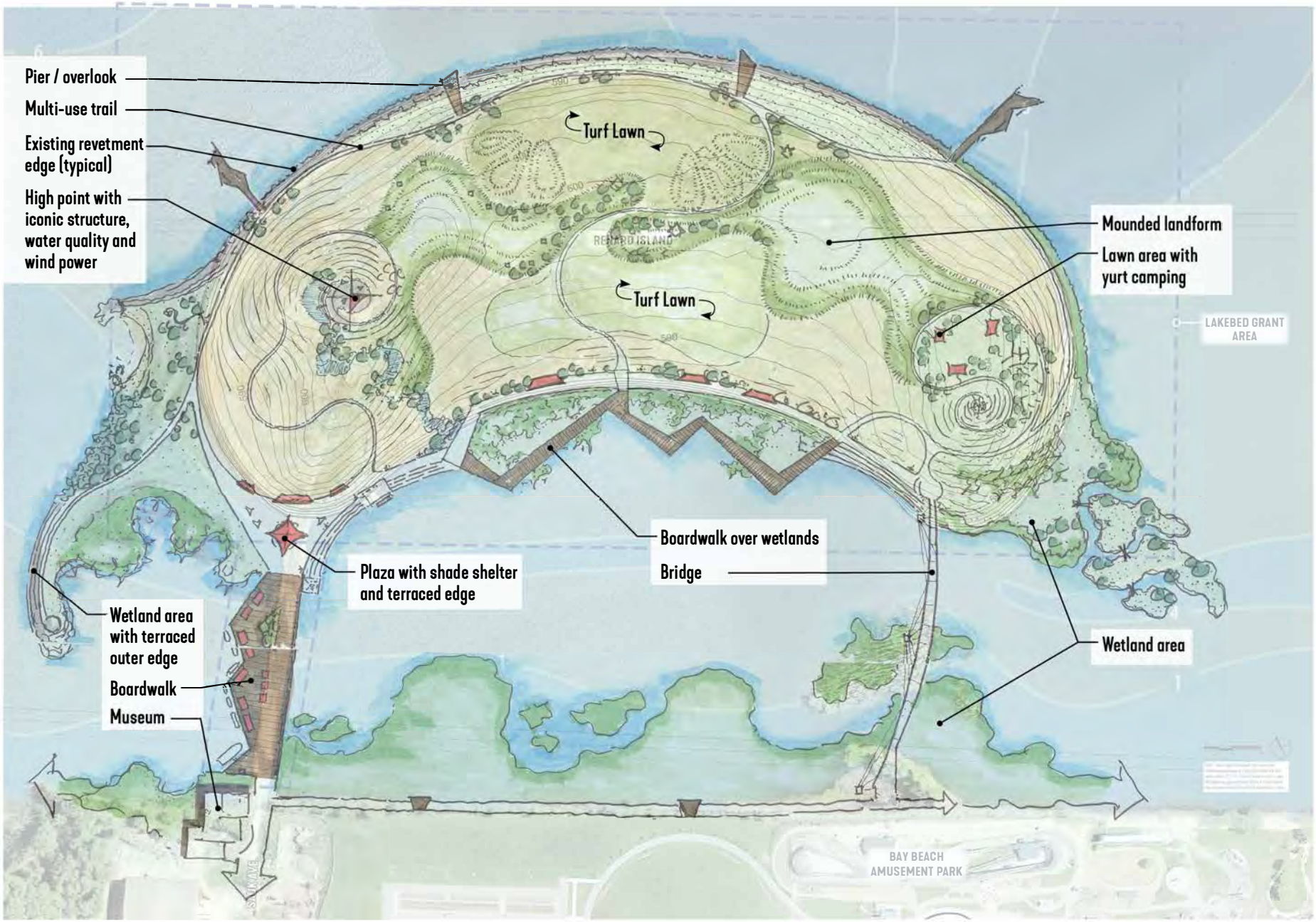


Figure 3-2. Conceptual Alternative 2 - Exploration Island

Active Island

Active Island differs from the previous two alternatives with a strong emphasis on human activities and a lesser focus on wildlife habitat enhancements. Vehicular and pedestrian access to the Island is encouraged through an enhanced causeway, parking promenade and pedestrian bridge. For adventurous visitors a zip-line also provides access to the southeast end of the Island and draws from the amusement theme of the nearby Bay Beach Amusement Park. The lagoon/cove area is highly active with active boating and slips. Embracing the lagoon is a boardwalk with year-round mixed-use development. The open spaces and trails have a more traditional park-like character with large flexible lawn spaces.

The revenue for this alternative primarily comes from the marina, boat rentals, and mixed-use commercial development. This conceptual alternative has the greatest direct revenue potential.


MANICURED ECO
WITH NATIVE PLANTINGS


PUBLIC ART


BOAT LAUNCH


BREAKWATER / HARD EDGES


ACTIVE FISHING


DISC GOLF


DOG PARK


PARKING


PEDESTRIAN BRIDGE


ZIPLINE


WATER TAXI


LIGHTING

KAYAK RENTAL


FULL RESTAURANT


CONCESSIONS


YURT CAMPING

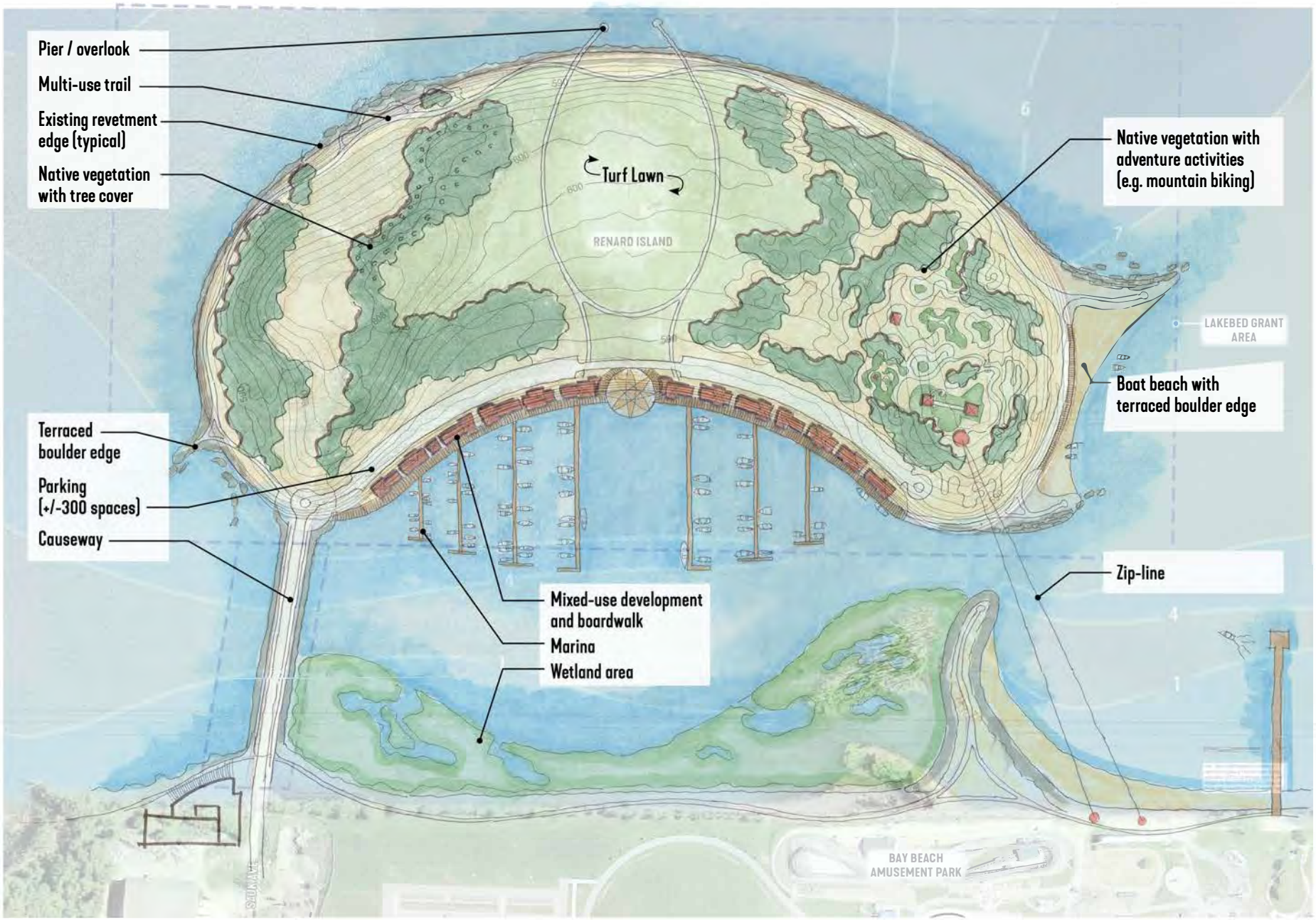


Figure 3-3. Conceptual Alternative 3 - Active Island

Alternative Ranking

On the second night of the interactive planning event, public meeting attendees were asked to vote on the three alternatives and how their program elements achieve the summarized project goals, divided into categories of economic, ecological, social and human spirit. The goals were ranked by the audience in terms of how much each goal mattered to those in attendance. Polling results are included in the Appendix.

As shown in the matrix below, Active Island received the most points with high ratings regarding the potential revenue and active recreational opportunities. Exploration Island received the second highest ratings with a good balance of points in all the categories. Eco Island received the lowest ratings showing the desire to balance human focused activities and habitat enhancements.

Based on the alternative rating and general feedback, the final master plan will ultimately be a combination of all three alternatives. While ecological improvements are important, they should not be the focus of the design. Revenue generation and active recreational opportunities are highly valued with the potential to attract a wide variety of park users. Educational and interpretive opportunities, and the celebration of the Green Bay community and waterfront also ranked highly.

Table 3-2. Alternative rating matrix showing scores for the conceptual alternatives based on polling on Day 2 of the planning event

		Goal	Weighted Priority	Concept 1: Eco Island		Concept 2: Exploration Island		Concept 3: Active Island	
				Score	Points	Score	Points	Score	Points
Economic	1	Recover operational costs through revenue	3	0	**0**	0	**0**	100	**0**
	2	Spur economic development	3	0	**0**	12	**0**	88	**0**
	3	Maximize fundability (grants, private investment)	2	25	**50**	31	**100**	44	**200**
	4	Minimize maintenance costs	3	38	**114**	38	**342**	25	**1026**
Ecological	5	Improve water quality	1	50	**50**	36	**36**	14	**14**
	6	Create ecological resiliency	2	44	**88**	19	**38**	38	**76**
	7	Target priority wildlife communities	1	94	**94**	0	**0**	6	**6**
	8	Design using conservation principles	2	6	**12**	53	**106**	41	**82**
Social	9	Maximize public access to the water	3	0	**0**	27	**81**	73	**219**
	10	Incorporate educational opportunities	2	13	**26**	50	**100**	37	**74**
	11	Create multi-season recreation experiences	3	0	**0**	25	**75**	75	**225**
	12	Facilitate social gatherings	2	0	**0**	18	**36**	82	**164**
Human Spirit	13	Create an authentic sense of place	1	13	**13**	50	**50**	37	**37**
	14	Celebrate the culture of the area	1	12	**12**	53	**53**	35	**35**
	15	Highlight the uniqueness of the island	1	6	**6**	47	**47**	47	**47**
	16	Make it interactive and memorable	3	0	**0**	29	**87**	71	**213**
		Total Score		**465**		**1151**		**2418**	

FINAL MASTER PLAN

RENARD ISLAND

STRATEGIC MASTER PLAN

4.0 FINAL MASTER PLAN

4.1 OVERARCHING THEMES

The following summarizes some overarching themes that drove the Renard Island Strategic Master Plan based on input and feedback received during the community outreach phase:

Public Access to the Waterfront

The community expressed a clear desire to significantly expand public ownership of the waterfront wherever possible, while still supporting viable waterfront businesses that activate the waterfront and draw visitors to the community. This careful mix of uses includes:

- Passive green space with continuous waterfront trails that link as much of the waterfront as possible.
- Functional green infrastructure that cleans stormwater while creating habitat.
- New waterfront restaurants and businesses that serve local residents and attract visitors to downtown Green Bay.
- Expansion of wet slips and boater services infrastructure to the east of the causeway, including seasonal and transient slips, and expanded ADA compliant access for kayaks, canoes, and other small craft.
- ADA compliant fishing piers.
- Water trail access linking the rivers in downtown to the waters of Green Bay, Renard Island, UWGB, and points farther north.

While not part of this plan, a series of proposals on a regional scale aim to reconfigure the southern shore of Green Bay into a tiered series of habitat zones and green spaces connecting the community to the water's edge and transforming the way Green Bay residents experience the Bay. New pedestrian pathways will extend the length of Green Bay's waterfront, linking UWGB to the river and downtown, with Renard Island becoming the centerpiece of Green Bay's new waterfront. Existing submerged woody areas will be reconfigured to protect nearby structures from flooding, invasive plant species removed, and a series of wetland water quality ponds that will capture storm water runoff from the surrounding areas will filter all water entering the Bay. This wetland environment will create extensive habitat for plant and wildlife, and a series of public paths and bridges will encourage the community and visitors to explore this new open park space. This area will be preserved in perpetuity, so no future development will block the views of the water created by this new park space.

Habitat Expansion

As mentioned above, Renard Island and the adjacent mainland have the opportunity to transform into high quality habitat for native wildlife and vegetation. Several ecological principles can be used to inform the design of habitat on Renard Island. These principals include:

- Restoration template based on regional remnant ecological communities.
- Align with goals articulated in existing ecological plans in the area such as the Lower Green Bay and Fox River Area of Concern 2018 Action Plan.
- Work with existing physical processes such as changing water levels to create resilient ecological spaces.
- Follow the landscape conservation design principals which include planning at the regional scale, working collaboratively with partners, using an adaptive management framework, and using scientific information to inform design.
- Create contiguous ecological corridors.

Drawing on these ecological principals will benefit the environment through improvements to water quality, restoration of wildlife communities, and the creation of a resilient landscape that is tolerant of the fluctuating water levels.

In addition to the environmental benefit, ecological improvements will honor and bring people into contact with the indigenous landscape and wildlife and provide an opportunity for environmental education. Visitors can experience the living story of the regional natural communities and enjoy a quiet, peaceful space for reflection and contemplation.

Non-Revenue Generating Recreational Programs

The recreational programs at Renard Island that do not generate revenue are also important to the success of the master plan. The proximity of amenities such as trails, gathering spaces, interpretive features, overlooks, fishing piers, open spaces and boardwalks enhances the value of the marina and mixed-use commercial development. These additional program elements provide a variety of high quality recreational opportunities that will benefit the community and attract a wide range of visitors and residents. In combination with the revenue generating features, these program elements will help transform the island into a waterfront attraction unique to the Green Bay area.

Expansion of Recreational Boating Opportunities

The proposed marina is intended to create direct access to Renard Island, Bay Beach Amusement Park, the shops and restaurants along the marina edge through seasonal slips (all season long), longer term transients (a few days to a few weeks), and "shopper docks" (used for a few hours while boaters have dinner or shop). In addition to providing facilities for recreational boaters, the new marina will expand ADA compliant access to the water for kayaks and other small craft, as well as enhance operational opportunities for existing kayak rental operations. This area would be the key point of access to the Bay for the broader community, many of whom are not boaters now and have had limited access to the Bay in the past.

A range of boating opportunities designed to make the Bay accessible to everyone regardless of age, income, or ability will be provided, including boat clubs and rentals (power and sail), and paddle craft including kayaks, canoes, and stand-up paddle boards. These boating programs will draw many visitors to Renard Island, make affordable boating opportunities available for residents and visitors of all incomes, and provide a source of significant revenue.

Figure 4-1. Three-dimensional artistic rendering of Renard Island Strategic Master Plan, looking west

Mixed Use Development

The Waterfront Village will create an entirely new waterfront experience for Brown County, and will build on the existing strengths of the waterfront to transform the current parking dominated waterfront into a vibrant, all-season waterfront district. New marina facilities will provide space for both local boaters looking for a slip for the summer as well as creating access to the waterfront for visiting boaters, in a setting of small shops, restaurants and a boardwalk plaza with a fountains and water features

The centerpiece fountain will easily convert from a spray jet splash pad to a performance venue, or stage for a fishing tournament awards ceremony or even an ice rink in the wintertime. The fountain overlook plaza will be home to movies in the park, facing both the land and the lake so boats can moor in the transient basin and enjoy the "boat-in" movie theater experience.

The Waterfront Village will provide a mix of restaurants, pubs and shops built to take advantage of views of the island and farther up the Bay. Built on land newly created from dredging for the marina, the design of these structures will be carefully controlled to ensure views are preserved, and the occupants will provide 24/7 surveillance and activity in the park.

When complete, the Village will be the heart of the waterfront on Renard Island and a destination for boaters all over the Bay

Landside Context

While not part of this study, the potential development patterns described above could positively influence the adjacent privately owned upland areas to the south of Renard Island and Bay Beach Drive, with positive economic impacts on the broader community. The majority of the privately owned lands are currently in use for light industrial and warehousing, some of which is dated and no longer as functional as more modern facilities. During the public outreach process, the community supported the idea of the long term transformation of some of these areas, particularly the waterfront parcels, into a vibrant mixed-use waterfront neighborhood. With as much as 45 acres of land that could be considered reasonably likely to be viable for redevelopment, the tax revenue generation potential for the adjacent parcels over time could be as much as five times that generated on Renard Island. If for some reason the proposed mixed-use development on Renard Island proves infeasible, then the focus for public private partnerships could shift to the adjacent landside parcels, keeping in mind that the value of the landside parcels for development will be significantly enhanced once the proposed improvements to Renard Island are complete.

Synergy of Elements

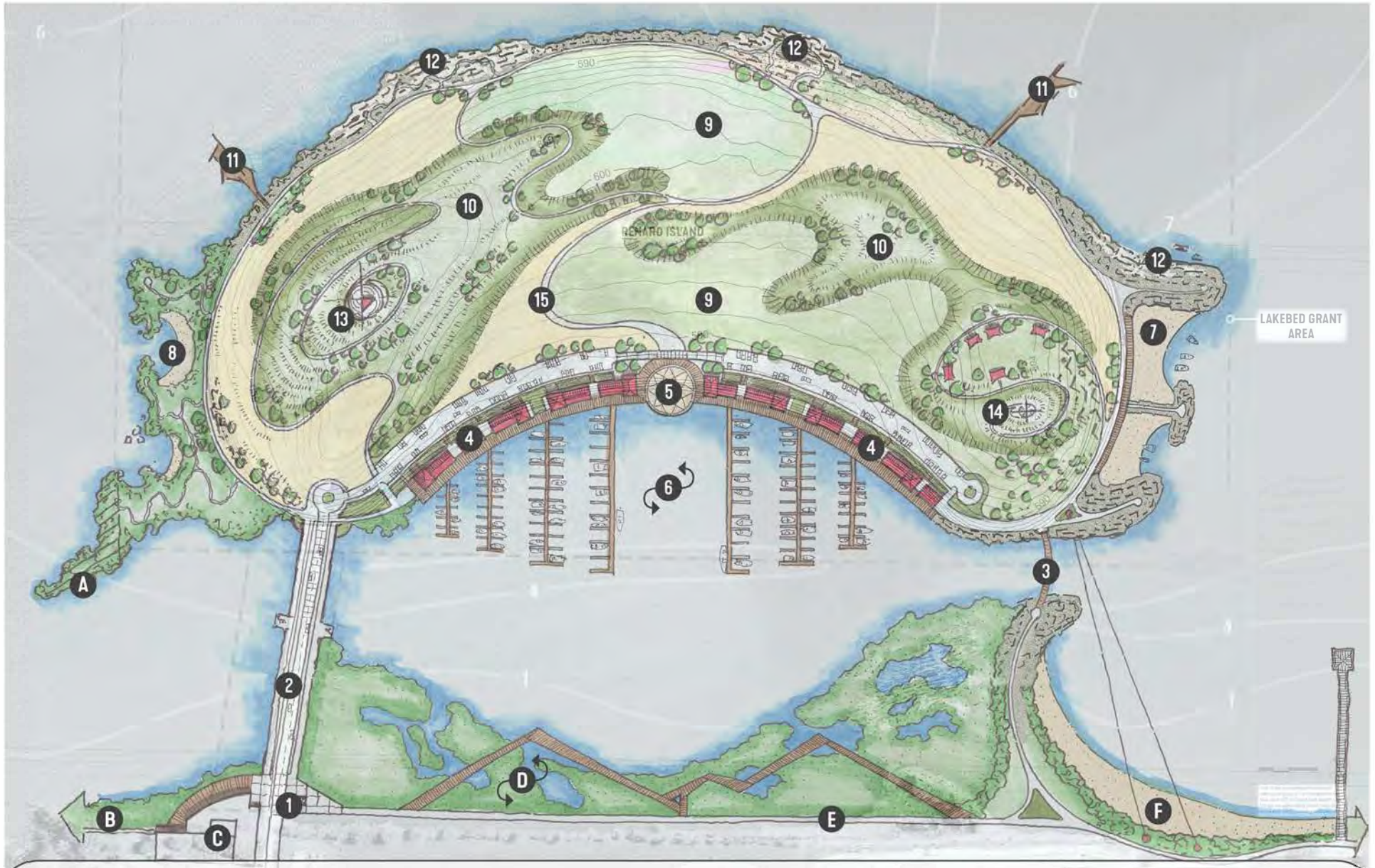
Increasing tourism interest and activity in the Brown County region to facilitate the growth of the local economy and improve Brown County's competitiveness in attracting businesses will be a major benefit of the plan. As outlined above, the plan proposes a wide range of new activities and destinations that are expected to draw significantly more visitors to the community.

While many of the destinations will attract visitors by themselves, including the new amenities on Renard Island, the marina, shops, cultural attractions, Bay Beach Wildlife Sanctuary, and Bay Beach Amusement Park, the larger opportunity is the synergy created by these attractions as a group. For maximum economic benefit, the goal is to encourage overnight stays, and strategic partnerships among these attractions as a group could help facilitate that goal. For example, a visitor may initially be drawn to the region for a day trip to Bay Beach Amusement Park. If they learn that they can enjoy the whole weekend including fishing, playing on Renard Island, the Wildlife Sanctuary and cultural attractions, along with a boat ride across the lake to Renard Island and back, and perhaps a hotel stay on the waterfront on the island, they may be much more likely to spend the weekend. Along the way they'll need dinner – at the restaurants by the marina and on the shore - and maybe a tank of gas from a local service station. As a whole, the value of the combined attractions is greater than the sum of the individual attractions.

While these elements will attract regional visitors, these attractions will also serve to support the recruiting and retention efforts of local businesses, making Brown County more competitive in the race to keep existing business and recruit new businesses. Expanding the number of things to do in Brown County will generate excitement on the part of people who may have been born and raised in Green Bay, but moved away for college and didn't return. When the time comes to start families, find a place to settle down, and think about where to start a business, they will be more likely to consider Brown County if it is moving forward and growing rather than staying the same as it was when they were raised there.

OPPOSITE PAGE:

Figure 4-2. Renard Island Strategic Master Plan



RENARD ISLAND IMPROVEMENTS

1. Gateway plaza & trailhead
2. Vehicular access / causeway enhancements
3. Pedestrian access / movable bridge
4. Promenade w/ boardwalk, support concessions, retail & parking (+/-300 spaces)
5. Interactive plaza
6. Marina w/ programmable water & transient facilities
7. Beach w/ boat access & dog area
8. Cobble beach & wetland habitat
9. Flex lawn / event area
10. Landforms / habitat w/ picnic & yurt camping
11. Fishing pier
12. Stepped stone edge
13. Interpretive overlook w/ wind energy / public art / cultural celebration
14. Overlook hill w/ picnic & adventure play
15. Trail system

IMPROVEMENTS BY OTHERS

- A Regional habitat links
- B Regional trail / open space links
- C Museum or commercial development
- D Boardwalk & wetland habitat
- E Harbor loop trail
- F Beach w/ adventure play / zip-line

4.2 PLAN COMPONENTS

The following pages are organized into a series of diagrams and precedent images that break the master plan down into its basic functional, experiential and aesthetic elements to illustrate the reasoning and process involved in the creation of the final master plan design. These diagrams include the following:

- Framework / Big Ideas
- Programming
- Getting to the Island
- Pedestrian Circulation
- Edges
- Vegetation
- Structures / Facilities
- A Place to Explore

Framework / Big Ideas

The Renard Island framework is composed of several major zones: the mixed-use marina development, landforms integrated with various ecological communities, flexible lawn space, and the outer perimeter of the island or shoreline. The mainland, while not part of Renard Island, serves as an arrival to the island and adjacent development potential.

The flex lawn and landforms function as a framework for a variety of activities to occur on the island. The landforms help to divide the island into several distinct “rooms.” The northern portion of the island has less visual connection to the mainland and feels more secluded with vast views of the Bay. The southern edge of the island embraces the City and lakefront and feels more active and connected to the adjacent land uses.

Proposed shoreline enhancements, another major element of the plan, are discussed in “Edges.”

The marina development is described more under Programming, Structures/Facilities and A Place to Explore.


Landforms


Flex lawn


Marina


Stepped stone terraced edge


Boaters beach shoreline edge


Pedestrian connection

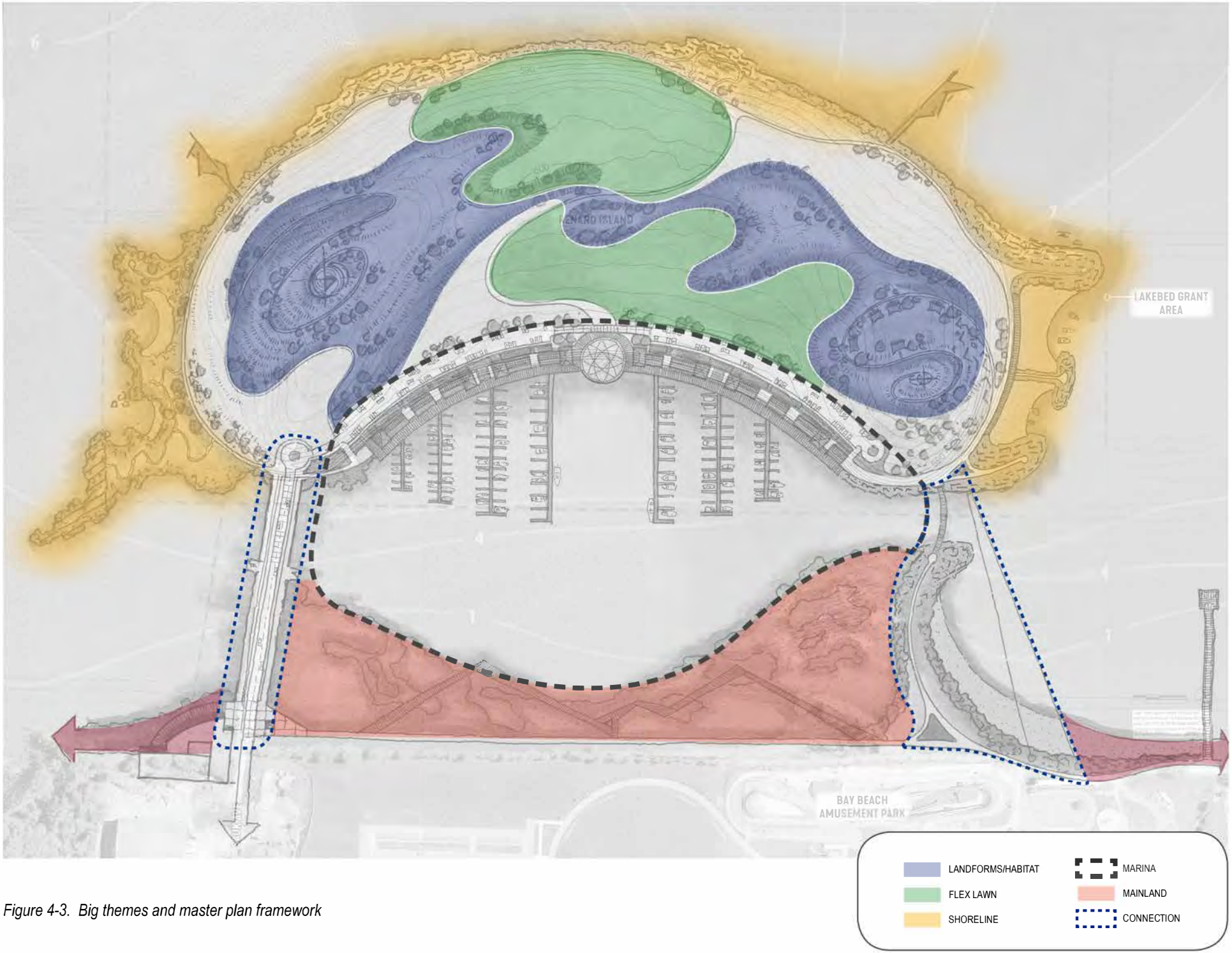


Figure 4-3. Big themes and master plan framework

Programming

Within the overall framework, Renard Island offers a variety of programmed spaces. The area between the Island and mainland is shown as a marina with a programmable water space and transient facilities. The programmable water space can host a variety of activities ranging from film screenings to ice boating.

The Island also offers other active recreation opportunities with a zip-line connection to Bay Beach Amusement Park. This feature not only ties into the existing mainland activities at Bay Beach, but also functions as a fun Island access point and destination for Green Bay visitors.

Once on Renard Island, a range of programmed spaces provide activities for everyone. Retail and concessions are shown on the boardwalk against the Marina edge. A boating and dog beach provide a pet friendly destination as well as an area for boaters to pull off as they tour the Green Bay shoreline via water. Together, the Marina, programmable water space, boating and dog beach, and zip-line anchor the southern end of the Island with a range of active recreational opportunities.

Moving towards the center of the Island, interpretive site amenities such as landforms, signage, overlooks and/or wind energy facilities offer learning opportunities unique to the Green Bay area and its history. These interpretive features are integrated into the topography of the Island along with yurt camping areas. Yurt camping facilities, which are a more comfortable form of camping within a permanent structure, can be leased out for revenue while offering visitors a unique camping experience in the Green Bay area.

In the center of the Island between the two high points, large flexible lawn spaces set the stage for a range of activities including large music events or smaller gatherings such as a family picnic.

As visitors make their way to the north end of the Island, they can enjoy more passive activities such as fishing at a pier or stone overlook, or taking in expansive views of the Bay.


Picnic flex event space


Interpretive signage & nature trails


Local commerce and markets

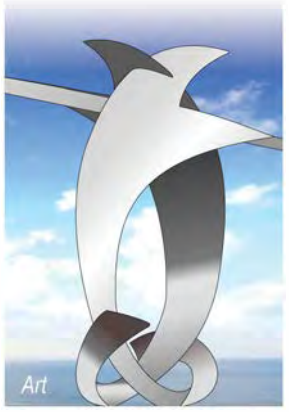

Boating and dogs


Cultural celebration


Retail concession/support


Fishing


Adventure play


Art

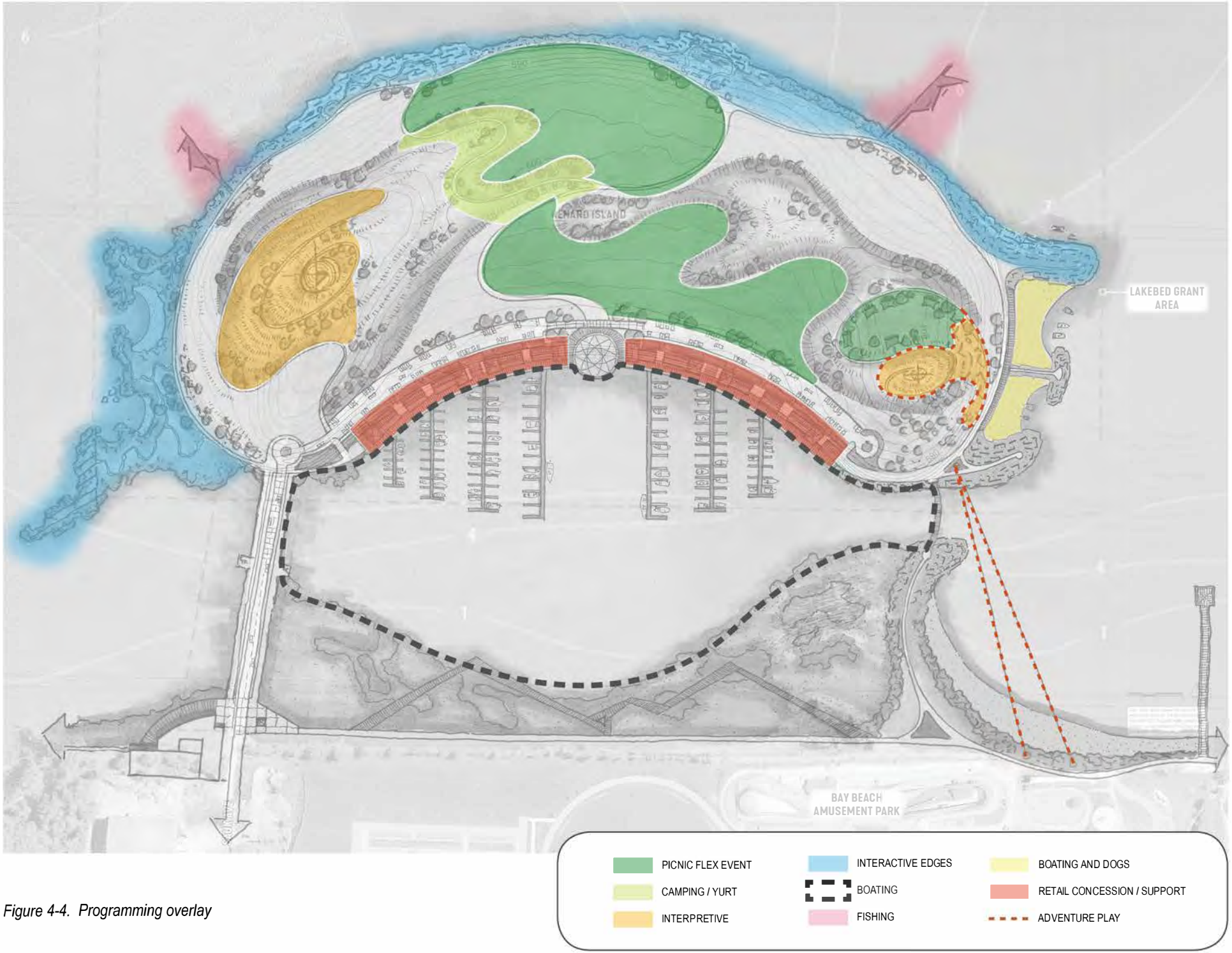


Figure 4-4. Programming overlay

Figure 4-5. Summer Scene: Boardwalk / Marina / Retail / Concession

Figure 4-6. Winter Scene: Boardwalk / Marina / Retail / Concession

Getting to the Island

Renard Island visitors can access the Island in a variety of ways. An approximately 300 space parking lot is nestled between the concessions and retail buildings and gently sloping Island topography. Visitors can drive their cars over the enhanced causeway and find a shady spot in the tree-lined parking lot. Stormwater planters treat runoff from the parking lot before it enters the Bay. In addition to functioning as a parking lot, this paved space can also act as a staging zone for larger events or a pull-off area for food trucks.

Tying into the Bay Beach Amusement Park adventure theme, users can also access the Island via zip-line and water taxi. These types of access will provide a source of revenue while offering a unique experience and transforming the Island into a destination for Green Bay visitors.

One potential idea that is shown is a temporary or movable connection to the Bay Beach Amusement Park on the east side of the island. The design team felt it was important to have a pedestrian connection at this location due to the proximity of Bay Beach and the desire for patrons and visitors to connect to Renard Island and vice versa without using a boat or the possible zip-line. However, a permanent bridge at this location could limit the development of the marina for taller boats such as sailboats. This is something that should be taken into consideration during the next phase of design in concert with the marina developer. The movable pedestrian bridge could be a draw bridge or a swing bridge or one that can be operated via a pulley system (all of which could provide a fun and unique crossing experience on its own). Admission could be charged for the bridge, and it could be seasonally operated.


Parking promenade


Causeway improvements


Movable bridge

Water taxi


Green parking lot


Zip-line

Figure 4-7. Access to the island

Pedestrian Circulation

Once on the island, pedestrians can choose from a variety of paved trails, boardwalks and more rustic overlooks. Pedestrians and bicyclists can use the primary 10' wide trails to loop around the Island, or the secondary 8' wide trails which direct visitors over landforms and to destinations including an interpretive overlook and yurt camping areas. In the winter, the trails will also function as cross-country skiing paths and/or snowmobile routes.

Piers and boardwalks on the mainland and Island edge offer different tactile sensations and a journey along the water's edge with areas for pedestrians to stop, sit and enjoy views of the City and/or out onto the Bay.

Rustic 6' wide paths in natural areas connect visitors with habitat and wildlife on the island.

Low levels of lighting would be provided on select paths and along the parking lot and marina promenade for safety and to encourage visitors after dark. However, one of the great benefits of Renard Island is that it is removed from the glow of the City lights and is a great place for stargazing, so lighting on most of the island should be minimal or none.

See the section on "Structures/Facilities" for a description of the movable bridge concept on the east end of the island connecting to Bay Beach.


Boardwalk


Paved trails


Rustic trails


Paved trails


Overlook trail


Boardwalk


Winter use of trails

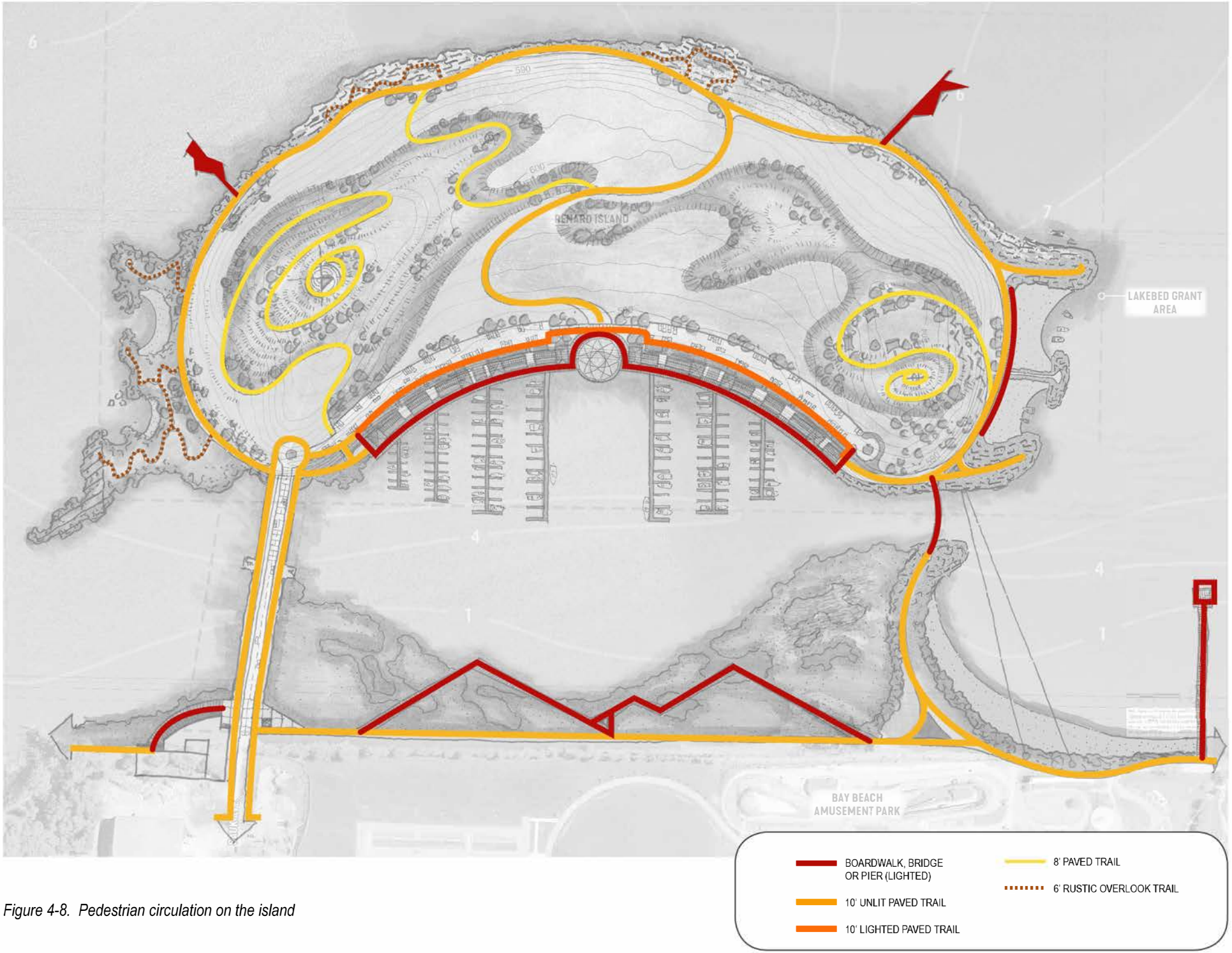


Figure 4-8. Pedestrian circulation on the island

Figure 4-9. Rendering of the west overlook/fishing pier

Figure 4-10. Rendering of the potential future boardwalk / wetland habitat on the mainland, looking across the lagoon towards Renard Island (not part of Renard Island scope)

Edges

Along the perimeter of the Island, a variety of edges including stepped stone, stone revetment, cobble and sand beaches and sheetpile bulkheads create a variety of aesthetic experiences and offer the opportunity for visitors to interact with water in select areas.

The beaches proposed for Renard Island are not meant to compete with the proposed swimming beach at Bay Beach Amusement Park. The eastern beach is intended as a boat and dog beach, and a coarse sand would be appropriate for these uses. The western beach cells are intended as a cobble beach for habitat. Coarse sand and cobble can hold steeper slopes than fine sand, which will minimize the amount of fill required. This will reduce the project cost as the sand and cobble will need to be imported, as well as minimize the amount of lake bed fill from a regulatory standpoint.

Stepped stone revetments are shown in select areas to allow visitors to get closer to the water, fish, or pull up a small boat such as a kayak. They are proposed to be made of natural stone with some variability for a softer feel, but concrete could also be used as an alternative (potential for cracking is higher on the outer part of the island with ice and wave forces). The stepped stones could be set adjacent to the sheetpile wall that exists around the perimeter of the island.


Revetment


Stepped stone


Vertical edge/sheetpile


Aquatic wetland


Beach


Beach

Figure 4-11. Edge conditions

Vegetation

The vegetation throughout Renard Island ranges from native habitat to manicured lawn areas. On the mainland just west of the Island, aquatic wetland habitat improvements are planned on property owned by the neighboring McDonalds. In order to connect to these future improvements, the master plan shows aquatic habitat on the mainland across from the marina as well as along the western edge of the Island. In addition to providing habitat for wildlife, these aquatic wetland areas allow visitors to interact with the natural vegetation surrounding the boardwalks and rustic paths, and closely observe natural habitat as they enjoy the Island experience.

Native prairie and wooded savannas also provide habitat for wildlife and native ecosystems for trail users to learn about through interpretive elements such as signage. In contrast, flexible turf lawn areas can be used for larger gatherings such as music events or sports games.

Along the proposed parking lot, a vegetative bioswale is proposed that would collect, filter, and convey stormwater runoff from the parking lot. This can be designed in such a way as to not disturb the cap, or to float over the cap with a liner below it. This is a good opportunity for interpretive signage/education of visitors, for a display of stewardship, and to mitigate the impacts of the development on water quality. In addition, grant funding could be available for such a feature.

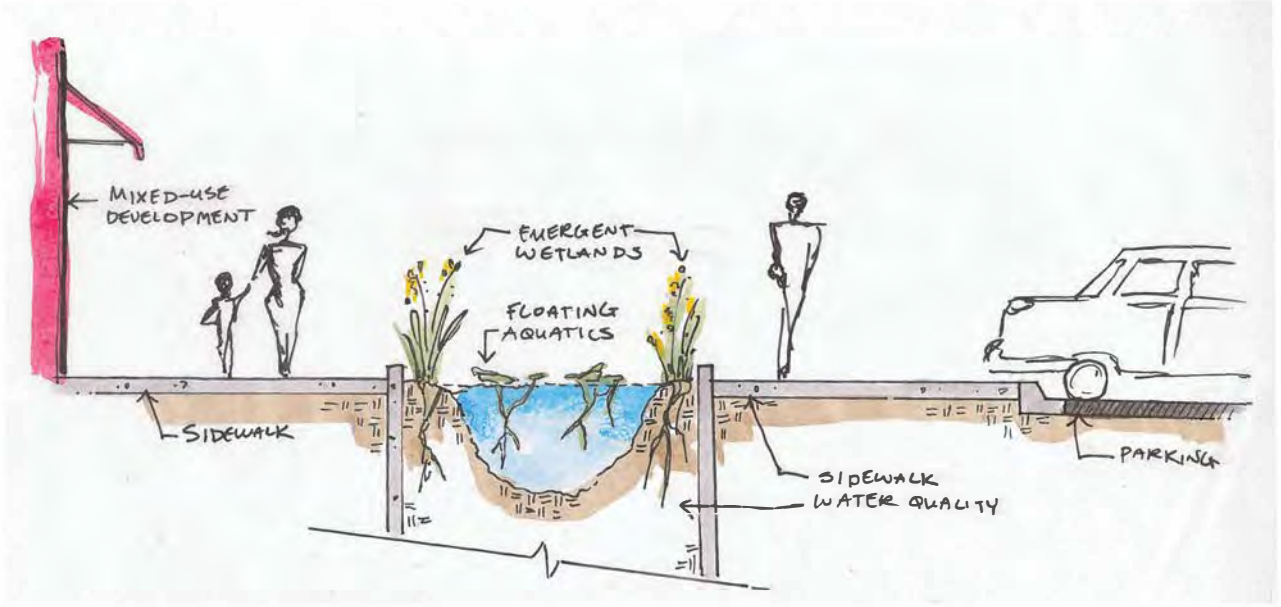


Figure 4-12. Section illustrating how a stormwater BMPs might be incorporated between the promenade and parking

Figure 4-13. Vegetative communities overlay

Structures / Facilities

Pending regulatory review and constructability issues, the structures and facilities envisioned for Renard Island are intended to complement other activities and provide shelter from the elements including wind, sun and precipitation. Overlooks and seasonal shelters can be used during the spring, fall and summer months as gathering areas for smaller events or a spot to rest and enjoy the views.

The retail and concessions buildings are intended to be used all year round, providing shade from the sun in the summer and escape from the cold during the winter months.


Seasonal shelter


Retail and concessions


Camping yurts


Marina


Interpretive overlook


Wind energy


Overlook

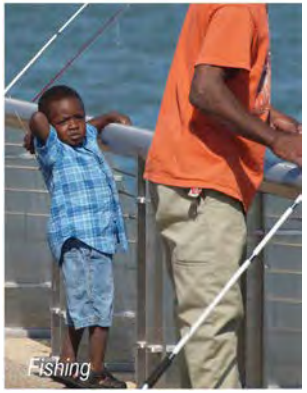
Figure 4-14. Structures and facilities on the island

A Place to Explore

Within the overall framework of Renard Island are a variety of places to explore. For those looking for more active recreational activities, visitors can use the marina and programmable water space, boating and dog beach, event areas, yurt camping, and adventure flex features including a zip-line.

The Island also offers a series of more passive activities including fishing piers, seating areas with views out onto the Bay and picnic flex spaces for smaller events.

These places also provide a framework for winter activities. The programmable water space can host ice boating, fishing and/or skating. The landforms and trails can be used for sledding, snow-shoeing, cross-country skiing and/or snowmobile routes. Visitors will then have the opportunity to warm up in the retail and concessions buildings located along the marina edge.


Fishing


Frisbee Golf


Event area

Retail and concessions


Trail skating in the winter


Sledding

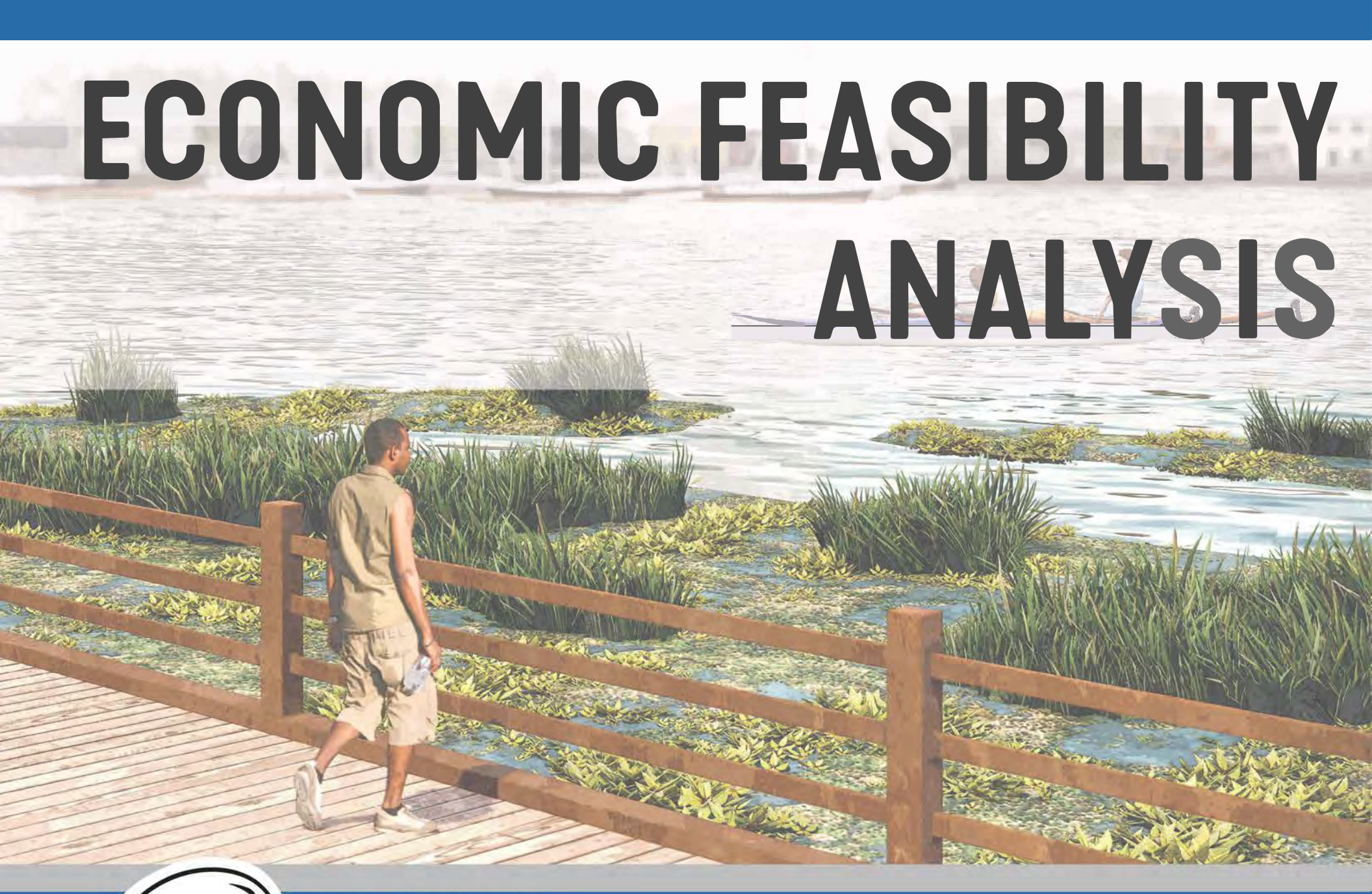

Ice boating


Boat rentals


Picnic areas

Figure 4-15. Places to explore on the island

ECONOMIC FEASIBILITY ANALYSIS



RENARD ISLAND
STRATEGIC MASTER PLAN

5.0 ECONOMIC FEASIBILITY ANALYSIS

The fundamental implementation strategy behind the Renard Island Master Plan is the recognition that all of the elements proposed by the community have significant price tags attached, and therefore a financially viable funding strategy is required. The funding strategies proposed focus on three primary sources, which are described in detail later in this report. The first strategy is to leverage new assets such as the proposed marina and concessions/rentals, and potentially mixed-use retail products to generate revenues necessary to fund their development and additional amenities where possible. The second strategy is to work with Federal, State, and Local sources to identify grant funding opportunities to help with construction. The third strategy is to leverage public-private partnerships to guide private investment in ways acceptable to the community that also generate sufficient revenues to help fund long term improvements and operations. This strategy could most easily be implemented on adjacent landside properties to generate tax revenues that can be leveraged to fund new infrastructure and amenities, with the possibility of some development on or adjacent to the island if supported by the community.

These strategies were reviewed with the community and focusing on them as prioritized above was the desired general consensus of the participants of the community engagement process. During the community engagement process, the community identified the plan elements proposed, which are described in Section 4. The preferred primary source of project funding was to begin with leveraging all revenues from operational elements such as ground leases and concessions. The next funding priority is to leverage all possible grant sources, which could potentially provide millions of dollars in funding for public infrastructure. The final funding opportunity is to leverage private development to generate revenues from ground leases and utilizing long-term financing based on the taxable values created by new development through Tax Increment Financing or similar strategies to capture tax revenues. The planning team conservatively estimates that these revenues, shared through intergovernmental agreements, will be sufficient to construct and operate the basic facilities proposed in the master plan, and depending on the extent of development on adjacent landside areas and potentially on or adjacent to the island, it may be possible to fund additional community improvements through the revenue sharing from the taxable values created.

The final consensus plan for Renard Island is the result of extensive community engagement and is a potentially financially viable vision that achieves a balance of uses that will significantly enhance public access to the Green Bay waterfront. Achieving this vision will require active support and participation from the community, private investors, and intergovernmental partnerships between Brown County, the City of Green Bay, the State of Wisconsin, and federal agencies such as USFWS.

5.1 REVENUE GENERATING OPPORTUNITIES

The financial basis for the Renard Island Master Plan is the generation of direct revenues on site through concessions, rentals, and ground leases to Brown County, as well as potential revenues from a new Brown County tax on any development on the island which would replicate the City of Green Bay tax rates or a Payment In Lieu Of Taxes (PILOT) payment. Separate from these sources which would provide revenue directly to Brown County, an intergovernmental agreement with the City of Green Bay could potentially provide indirect tax revenues to both Brown County and the City of Green Bay that are shared and directed towards the implementation of improvements on the waterfront. This is achieved through public-private partnerships that generate sufficient revenues to encourage the private sector to engage in a partnership with Brown County to construct revenue generating projects directly, and the generation of tax revenues to be directed towards the construction of non-revenue generating infrastructure. For example, the marina is expected to generate sufficient revenues to cover the cost of its construction and long-term maintenance and operations, which

will be confirmed with a more detailed market and financial feasibility study completed by the developer during their due diligence efforts. The proposed mixed-use commercial program proposed adjacent to the island will require a public-private partnership to fund some non-revenue generating elements such as utilities. Since the revenue generated must be sufficient to cover the cost of revenue generating infrastructure, operational expenses, and a reasonable return for the investor, to ensure private investment in the project, public investment in the development of infrastructure will be required to encourage desirable development, which will benefit the public sector through direct property or sales taxes and indirect economic impacts such as job creation and secondary spending impacts.

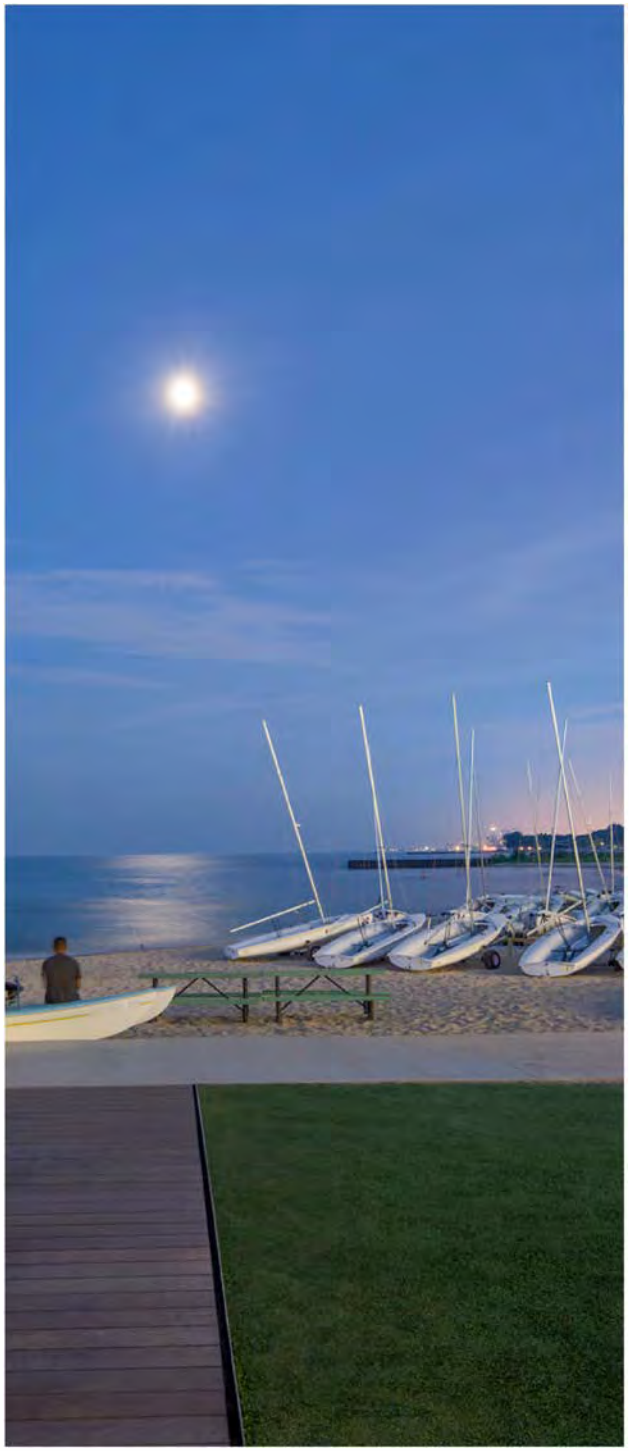
Since the tax revenues and indirect economic impacts are generally much more significant than the initial direct impacts, it makes sense for local governments to enter into public-private partnerships with private developers to make projects a reality. The local government generally participates in the partnership by providing land at low or no cost, and/or the government covers some or all of the cost of non-revenue generating infrastructure, such as utilities, dredging, structures, roads, parking, etc. The private sector constructs and operates the revenue generating infrastructure, in this case the floating docks and utilities and/or the mixed-use buildings. The government recovers its initial investment in the non-revenue generating infrastructure by collecting the property and sales taxes generated by the private sector and directs those revenues to the repayment of the initial investment using a mechanism such as a Tax Increment Financing (TIF) District. Generally, the tax revenues collected will far exceed the initial investment over time.

The public-private partnership approach outlined above can be established between the private sector and local government to incorporate specific terms and agreements suitable for each development. In the case of Renard Island, Brown County and the City of Green Bay will both gain significant benefits from the implementation of the master plan, and we recommend that the City and County enter into an intergovernmental agreement to determine the best way to share in and benefit from the public-private partnerships to be established.

There are three types of revenue the following analysis will consider, including direct, indirect, and secondary.

- Direct revenues are those revenues which are generated on the island itself in the form of rental income from concessionaires (boat slip rental, boat/kayak rental, and commercial space rental), or possibly revenues from County-owned concessions on the island.
- Indirect revenues consist entirely of property and sales tax revenues generated on the island and/or adjacent upland areas for the purposes of this analysis.
- Secondary revenues include the secondary economic benefits generated as a result of the direct revenues. For example, each employee who earns a salary working on the island then leaves the island and spends that salary in shops and restaurants elsewhere in Green Bay. While these impacts are very real and can be quantified, for the purposes of this analysis, we will not include those secondary revenues.

When determining the financial viability of the proposed projects, we will treat the public and private sectors as integrated partners, so comparing the total cost of all construction with the total revenues generated (direct and indirect) will determine if sufficient value is created to justify the construction of the project. The precise breakdown of how the separate entities share in the costs and revenues will be determined on a case-by-case basis during the establishment of the public private partnerships.



5.2 DIRECT REVENUE GENERATION

As described above, the first priority for direct revenues are those revenues which are generated on the island itself in the form of concessionaire rental income (boat slip rental, boat/kayak rental, and commercial space rental), as well as possible County-owned concessions. The first element implemented would be concessions, followed by the marina, and then finally commercial space rental on the promenade.

Renard Island Concessions Assessment

The recreational activities proposed in the Renard Island Master Plan offer the potential for private concessionaires and/or County-owned concessions on the island. These concessions could include small scale food and beverage operations, such as a snack shop or small café, which would support extended recreational use of the island by reducing the need for visitors to bring food with them. Additional concessions could include a rental facility that could offer rental of bicycles, rollerblades, snow shoes, cross country skis, ice skates, fishing gear, and paddle sports equipment such as kayaks, canoes, and/or stand up paddleboards.

In general, concession activities of this type are not recognized as being overly profitable ventures, but some activities – paddle sports rentals in particular – do have the potential to generate significant revenues. At minimum, they should be sufficiently profitable to fund construction of the infrastructure needed to operate, which could also include and offset the cost of some park elements such as restroom facilities. Some concessions, such as food trucks and/or food carts, require no special infrastructure beyond existing vehicular or pedestrian circulation. Lease agreements with concession operators of small facilities such as these are generally established on sharing the cost of construction of initial infrastructure, with rental payments determined as a percentage of gross revenue basis. The rate charged for rent could vary from business to business, but would generally range between 5% and 15%.

While these small-scale concessions are important and create real value and activity on the island, they will not likely generate sufficient revenue to construct significant portions of the master plan program beyond the cost of the concession facility itself and integral shared uses. The one exception to this estimate could include paddle sports rentals, which we believe could generate $50,000 to $55,000 per year in net revenue. If the rental concession were to average ten boats rented at four hours per day over the course of a 100-day season (summer weather only), at $20 per hour, they would generate $80,000 per year in gross revenues. Subtract approximately 35% for operational expenses, and this could potentially fund $750,000 in construction over time through a revenue bond at 3% interest over 20 years. While most easily implemented as part of the proposed marina, it could also be implemented entirely separately from the marina as a separate concession.

Implementation Considerations

The implementation of the concession elements described above will not likely encounter any significant permitting issues. The most significant issue would be the construction of the proposed small structures on Renard Island, which may be challenging due to geotechnical conditions.

Renard Island Marina Financial Assessment

The financial success of a marina must consider revenue, The financial success of a marina must consider revenue, cash flow, construction costs, and operational expenses. The following economic assessment is a static one-year analysis at stabilization (generally 3 to 5 years after opening), and assumes that the developer will implement the following assumptions:

Revenue / Cash Flow

Revenues included as part of this income analysis are based solely on seasonal and transient rental rates, and boat/kayak rentals. Revenues for service, boater services sales, winter storage, and other potential revenue sources are excluded.

Proposed Rate Structure

Based on our analysis of the regional market, we believe the rates should match or exceed those charged at the adjacent South Bay Marina, as follows:

- 30' = $61/lf, or $1,830 per year
- 35' = $60/lf, or $2,100 per year
- 40' = $67/lf, or $2,680 per year
- 50' = $79/lf, or $3,950 per year
- Transient Daily Rates = $1.50/lf

Depending on the final public private partnership, it may make sense to require the operator of Renard Island Marina to increase their rates to at least 3 to 5% above nearby privately operated marina facilities to avoid the reasonable concern that Renard Island Marina may benefit from partial governmental subsidy and therefore may be perceived to have an unfair competitive advantage over nearby privately run facilities.

Boat Rentals

The proposed boat rental program takes into consideration two fundamental goals of the marina program. One is to expand access to the water to residents and visitors at all income levels, and the second is to introduce new potential owners to boating through an affordable rental program. Boat rentals can be a significant source of revenue for marinas, and in some locations, boat rental income can exceed wet slip rental income. For this analysis, we have taken a very conservative approach and propose the following:

- Fishing and Small Powerboat Rentals: Average two boats rented at four hours per day over the course of a 200 day season (fishing encourages early and late season rentals), at $70 per hour = $112,000 per year
- Kayaks and Stand Up Paddleboard Rentals: Average ten boats rented at four hours per day over the course of a 100 day season (summer weather only), at $20 per hour = $80,000 per year

We believe this rental opportunity could potentially generate two or three times the proposed revenue over time, however we have conservatively estimated a total revenue of $192,000 per year.

Table 5-1. Renard Island Marina revenue and funding bond value

Slip Size	Seasonal Rental Rate (per LF)	Annual Slip Fee	Number of Slips	Seasonal Occupancy Rate	Annual Gross Revenue
30	$61	$1,830	40	85%	$62,220
35	$60	$2,100	20	85%	$35,700
40	$67	$2,680	45	85%	$102,510
50	$79	$3,950	24	85%	$80,580
				Seasonal Gross Revenue:	**$281,010**

Slip Size	Transient Rental Rate (per LF)	Total Transient Dockage (LF)	100 Day Slip Revenue	Seasonal Occupancy Rate	Annual Gross Revenue
Broadside	$1.50	4,815	$722,250	50%	$361,125
				Transient Gross Revenue:	**$361,125**

Rental Operations	Annual Revenue
Boat Rentals	$112,000
Kayak / SUP Rentals	$80,000
Rental Gross Revenue:	**$192,000**
Total Gross Revenue:	**$834,135**
Operational Expenses at 35%:	$291,947
Annual Net Revenue:	**$542,188**
Marina Income Revenue Bond Funding Value:	**$8,150,000**

Occupancy

We anticipate a conservative seasonal occupancy of 85% and a transient occupancy of 50% upon stabilization of the marina for the purposes of this analysis. This compares well with the performance of nearby facilities on seasonal occupancy, and the lack of existing dedicated transient slips means the Renard Island transient slips will support a broad range of boaters who currently have little opportunity to visit the area.

Construction Costs

Construction costs for the marina include mobilization/ demolition, construction of docks, utilities, site work, and contingency for marina specific elements only. The cost of landside elements, including the promenade, fill, and adjacent structures is not included in the marina specific analysis.

Examples of direct revenue generation

Operational Costs

Operational expenses for marinas generally range between 30% and 45% of gross revenues. The range accounts for differences in services provided, labor and benefit costs, age of facilities, maintenance requirements, and size of the facility (size and services offered being the largest factors). The specific operational elements typically covered in this category include marina specific activities for slip services, launch/haul-out, cleaning, maintenance, dock hands, small marina pools, etc. Specific elements not covered in this category include expenses for restaurants, yacht clubs, and boat services such as mechanical, painting, fiberglass, repairs, etc. Detailed analyses of these elements are based directly on the revenues generated and will be detailed as the program of these elements becomes better defined.

We anticipate that the operating expenses for the combined facilities should be at the lower end of the range with the efficiency of the marina size and layout; however we are using 35% of gross revenues as a reasonably conservative factor. For comparison, operational expenses at similar marinas follow:

- Insurance: 2 - 3%
- Maintenance: 3 - 8% (varies widely with age of facility)
- Utilities: 5 - 7%
- Administration: 5 - 7%
- Taxes: 2 - 4%
- Wages: 13 - 21%

Debt Funding Analysis

The static analysis identifies anticipated net revenues after operational expenses. For the purposes of determining if the project is financially viable, we estimate the amount of funding that could be supported by the net revenue if financed through a revenue bond at 3% over a 20 year period. The lifespan of the proposed marina infrastructure is 25 to 35 years, so again the 20 year period is conservative and appropriate.

Grant Funding Considerations

USFWS Boating Infrastructure Grant Funding is available for transient facilities in amounts up to $1.5 million, so the anticipated revenues outlined below could provide sufficient matching funds to achieve maximum points for that award criteria. This is important, because the scoring criteria used in the determination of award of USFWS BIG grants places an emphasis on non-federal matching dollars. We believe this project is a good candidate for this program. While we believe grant funding for this project is likely, no grant funding is considered in the final analysis.

Renard Island Marina Financial Assessment

Renard Island Marina as described has an estimated cost of $5,100,000 if constructed in full and generates sufficient revenue to support approximately $8,150,000 in revenue bond funding at 3% over 20 years. This revenue is sufficient to cover the total anticipated construction costs without any additional outside funding or grant support, as well as approximately $3,000,000 in additional infrastructure elsewhere on Renard Island.

Implementation Considerations

The implementation of the marina as proposed will require completion of the Joint Permit Application Process to Wisconsin DNR and USACE. Construction of the marina itself lies essentially entirely within the existing WDNR Lakebed Grant to Brown County, and we believe the likelihood of success in achieving successful completion of the permitting process is very high, particularly if the final implementation plan includes the marina only and no additional fill areas adjacent to the island.

Permit requests for dredging of the marina basin will likely be approved, however the most cost-effective disposal of the dredge spoils and is the use of those materials for the construction of other major Renard Island master plan elements, including the proposed commercial edge, habitat areas, and landforms on the island will receive additional scrutiny from the permitting agencies. Placing dredged materials on land is easier to permit, assuming the spoils are not contaminated. Placing the dredged materials in the

water as fill to construct the proposed habitat areas and/or the commercial edge may be allowed, but the permitting process will be more involved and challenging. Water quality is a significant concern of Wisconsin DNR, and all elements proposed below the Ordinary High Water Mark (OHWM), such as fill, changes to the causeway, marina construction, etc, will require detailed review. A broader regional hydrodynamic/sediment transport analysis of potential impacts on water quality, sedimentation, and prevention of stagnation considering all proposed improvements to the area between the mouth of the river and UW-Green Bay is recommended.

Renard Island Mixed-Use Commercial Development

Retail / Restaurant Market Assessment

The market assessment indicates an overall regional under supply of nearly $39 million annually in restaurants, and nearly $4.5 million annually in bars that serve alcohol, while supply of specialty food services currently exceeds demand. Therefore, there is unmet demand in the local market for additional high quality bars and restaurants. We believe the unique setting proposed, along with the density of development, create a viable setting for a new waterfront restaurant district.

The financial success of a mixed-use development project must consider revenue, construction costs, and operational expenses. The following economic assessment is a static one-year analysis at stabilization (generally 3-5 years after opening), and assumes that the developer will implement the following assumptions:

Revenue / Cash Flow

Revenues included as part of this income analysis are based solely on rental of commercial spaces for shops, restaurants, and bars.

Proposed Rate Structure

Based on our analysis of the regional market, we believe the rates should be as follows:

- Ground Floor Commercial Rental at $15/sf per year
- Upper Floor Restaurant /Commercial Rental at $12.50/sf per year
- Rooftop Commercial Rental at $4/sf per year (equates to 26% of Ground Floor Rental Rate due to summer seasonal use only)

The unique location and improved views of Green Bay and Renard Island, plus the adjacency to the new Renard Island Marina and new waterfront district justify the reasonably conservative rates proposed.

Construction Costs

Construction costs for these structures is estimated at $100/sf for the "white box" commercial rental spaces, which allows for a Tenant Improvement budget of $100+/sf for the renter.

Operational Costs

Operational expenses for a commercially leased property like the one proposed are estimated at 10% of gross income.

Debt Funding Analysis

The static analysis will identify anticipated net revenues after operational expenses. For the purposes of determining if the project is financially viable, we estimate the amount of funding that could be supported by the net revenue if financed through a revenue bond at 3% over a 20 year period.

Table 5-2. Renard Island commercial leasing potential

Rental Income	Quantity/SF	Rent	Yearly Gross Revenue
Ground Floor Retail	38,500	$15	$577,500
Second Floor Retail/Restaurant	38,500	$12.50	$481,250
Roofdeck (Summer Only)	15,000	$4	$60,000
		Gross Income:	**$1,118,750**
		Operating Expenses @10%:	$111,875
		Net Lease Revenue/Year:	**$1,006,875**
		Rental Income Revenue Bond Funding Value:	**$15,500,000**

Grant Funding Considerations

Projects such as the one proposed are generally constructed Projects such as the one proposed are generally constructed with shared infrastructure for adjacent public uses, such as parking and utilities. Grant funding for economic development projects is generally available for high quality public private partnership projects such as that described herein.

While we believe grant funding for this project is likely, no grant funding is considered in the final analysis.

Renard Island Development Financial Assessment

The Renard Island Development as described herein has an estimated cost of $16,574,000 if constructed in full and generates sufficient rental revenue to support approximately $15,500,000 in revenue bond funding at 3% over 20 years. As this revenue is not sufficient to cover the total anticipated construction costs without any additional outside funding, it will require public participation in the non-revenue generating infrastructure costs such as utilities of construction of the promenade edge to encourage the private sector to take on the risk of construction the project. As will be noted in the section on indirect revenues, the proposed commercial development

would generate sufficient tax revenues to support over $9,700,000 in revenue bond funding, making this a very good opportunity for a public-private partnership.

Implementation Considerations

The implementation of the commercial edge with fill as proposed will require completion of the Joint Permit Application Process to Wisconsin DNR and USACE to allow the use of dredge spoils as fill below the OHWM of Green Bay. If permission for the proposed fill is denied, then two options could be considered. First, the structures could be moved onto Renard Island itself, assuming geotechnical considerations can be addressed. Second, the proposed commercial edge could be potentially be constructed on a deck structure / platform over the water rather than on fill materials.

5.3 INDIRECT TAX REVENUE GENERATION

All of the development models described herein generate significant property and/or sales tax revenues. The average property tax in Green Bay is 1.931%, and the Green Bay/Brown County combined sales tax is 5.5%. These revenues can be leveraged to encourage or accelerate high quality development that provides broad community benefits.

Tax Increment Financing

One of the most effective ways to leverage the tax revenues generated by the proposed development is to utilize Tax Increment Financing (TIF), whereby the increase in taxable revenues over the existing taxable value (the "increment") is used to directly fund improvements, or service a longer term revenue bond for the improvements that generated the increase in taxable value.

For example, since the existing property is owned by Brown County, the taxable value of the site is zero, as government-owned properties are not taxed. Once the marina and mixed-use development is constructed, all of the taxable value created would become the "increment". The increment could fund a revenue bond, which is one way municipalities borrow money.

Table 5-3. Renard Island combined tax revenue bond funding value (without residential)

Tax Generation	Value	Tax Rate	Revenue
Yearly Marina Tax Revenue	$834,135	3.000%	$25,024
Yearly Rental Property Tax Revenue	$9,200,000	1.931%	$177,652
Sales Tax Revenue on Commercial	$8,075,000	5.500%	$444,125
			$646,801
		Combined Tax Revenue Bond Funding Value:	**$9,700,000**

Revenue bonds are essentially like a mortgage, and paid off over a period of twenty or thirty years, with current interest rates ranging from 2%-3%.

Potential Tax Revenues - Commercial Leasing Model

The property tax rate for Green Bay/Brown County is 1.931%, which is applied to the sales cost of for-sale units, and the construction cost of the rental units to the developer responsible for payment of the taxes. Sales tax generated by the commercial businesses is 5.5% of gross revenues for the City of Green Bay and Brown County combined. For the purposes of this analysis, we anticipate a conservative gross revenue of $100sf/year for lower floor units, and $25sf/year for rooftop units to account for the shorter season. Yearly tax revenues on the marina are proposed at 3% of gross revenues.

5.4 SUMMARY OF DIRECT AND INDIRECT REVENUE GENERATION POTENTIAL

When combined, the total value of direct revenues generated on Renard Island by marina revenues, rental of commercial space, and revenue bond funding supported by TIF capture of tax revenues amounts to a total of $25,200,000, compared to an estimated construction cost of $21,674,000. This suggests a capacity of approximately $3,526,000 that could be used to encourage high quality development and/or provide funding for construction of additional amenities on Renard Island.

This excludes all revenues generated outside of the Renard Island project, such as mixed-use and development on adjacent upland areas. With 45 acres of privately-owned land in adjacent upland areas that could potentially be converted to mixed-use commercial/residential projects, the indirect revenue generation potential to support the implementation of the Renard Island master plan could easily be three to five times the revenues generated on Renard Island itself over time.

5.5 INDIVIDUAL PROGRAM ASSESSMENT / ECONOMIC SUMMARY EVALUATION

Non-Revenue Generating Park Amenities

The primary role of the non-revenue generating park activities, including trails, play areas, observation tower, decks, overlooks, and natural open spaces, etc in the economic analysis of the project is to establish a level of quality of program that benefits the community and attracts a wide range of visitors and residents. While somewhat intangible, the value generated is very real, even though the value is captured through other program elements, including:

- Creating an attraction on the waterfront that transforms what is now perceived as a contaminated waste site into a waterfront destination
- The value of that destination increases the value of adjacent properties both on the island and in nearby areas, greatly enhancing the market viability of the transformation of

existing warehouse/light industrial activities into Green Bay's most vibrant waterfront neighborhood

- The presence of park activities and public access make the proposed marina a viable operation and therefore an economic catalyst
- The improvement of the island makes the proposed mixed-use commercial residential area the most unique waterfront district in all of Green Bay, driving value creation based on adjacent amenities and unparalleled views up Green Bay

In summary, without the proposed recreational improvements to Renard Island, the feasibility of all of other elements are greatly diminished.

Marina

The proposed marina is financially viable and will be both a destination attracting visitors and a recreational amenity that contributes to the increased value of the surrounding neighborhoods similar to the non-revenue generating park amenities summarized above. The marina could potentially be constructed in phases to better respond to market absorption rates, and is likely viable even in smaller phases, although operational expenses would consume a larger portion of gross revenues due to the relatively less efficient operation of smaller facilities. While the marina is compatible and complementary with the proposed adjacent mixed-use development, it is not critical to the viability of the marina that the adjacent development be constructed.

A comprehensive marina market analysis should be performed to refine the concept master plan, confirm slip sizes, rates, and required services.

Mixed-Use Commercial

The proposed mixed-use commercial is potentially financially viable with significant participation through a public-private partnership to attract the desired level of quality of development in a timely manner. As described above the direct and indirect economic benefits to the City and County justify such a partnership, and the benefits will offset significant portions of the Renard Island non-revenue generating improvements and long-term operations.

A comprehensive market analysis should be performed to refine the concept master plan, confirm product mix, pricing, etc, followed by either issuance of a development RFP or preparation of a form based code document to clarify community intent and encourage development be resolving potential entitlement concerns. Discussion with Wisconsin DNR and other relevant agencies to address potential permitting concerns should be a part of the final feasibility study, and consideration should be given to shifting the proposed development onto the island itself if permitting obstacles prove too complex to overcome. The feasibility study team should engage with an engineer to determine the best approach to construction on the island and accurately estimate costs.

Upland Development

The potential for ongoing mixed-use development on adjacent upland light industrial properties that would be similar to that proposed on the island is the largest potential source of tax revenue generation created as a result of this plan. The improvement of Renard Island is the key to transforming what is currently a light industrial area into a vibrant mixed-use waterfront neighborhood that attracts residents and families of all ages and a wide range of incomes to Green Bay's waterfront. With as much as 45 acres potentially available for transformation from light industrial/warehouse uses to a mixed-use urban waterfront neighborhood, the tax revenues generated on the adjacent properties could be five times that generated on Renard Island, if not significantly more, depending on density.

Cultural Facilities

Potential development of community cultural facilities on lands adjacent to Renard Island would serve in a similar capacity as the non-revenue generating recreational park activities described above. Most such facilities are non-profit and tax exempt, but they can serve as neighborhood anchors and attract a large population of both local residents and visitors. The presence of such facilities, if of high quality and compatible with surrounding uses, such as a children's museum, would be a significant addition to the attractions proposed on Renard Island.

IMPLEMENTATION

RENARD ISLAND
STRATEGIC MASTER PLAN

6.0 IMPLEMENTATION

6.1 PLANNING LEVEL COST OPINION

The project team has prepared a planning-level cost opinion for infrastructure and non-development portions of the preferred master plan, which is presented in Table 6-1. The estimate is based on a range of work categories such as the causeway upgrades, trails/paths, shoreline edge improvements, fishing piers, boater beach, parking, wetland restoration and plantings, open program space, bay beach bridge, the iconic tower interpretative center (West Overlook), and the active play and picnic area (East Overlook). The estimate represents a fair assessment of the probable construction cost of the envisioned improvements based on the master planning level. The items are broken into general categories of work. Note that the Table 6-1 figures do not include the private development portions of the marina including the marina dockage (or utilities on the docks) or commercial/support buildings but does include the sheetpile bulkhead wall, dredging and fill, parking lot and promenade, and upland utilities to serve the marina.

Table 6-1. Planning level cost opinion (non-private development)

Item	Subtotal
Causeway	$ 855,000
Icon Tower	$ 3,455,000
Edge fill/softening on SW	$ 630,000
Edge softening mainland shore	$ 884,500
Bridge to Bay Beach	$ 1,772,000
Boat Beach	$ 780,000
Active Fun Lookout	$ 1,750,000
Trails/Paths/landforms	$ 1,087,500
Restoration plantings	$ 536,000
Fishing Piers	$ 570,000
Event/Gathering Areas	$ 246,000
Marina Support (parking lot, bulkhead wall, etc.)	$ 4,830,000
Subtotal	$ 17,396,000
Contingency (30%)	$ 5,218,800
Design, Engineering & Permitting (25%)	$ 5,653,700
Total	**$ 28,268,500**

Appropriate contingency amounts have been assigned based on the master planning level of detail. Typical fees associated with design/permitting and construction management for this type of project have also been included.

This estimate can be used for the basis of discussions moving forward to establish an understanding of the magnitude of costs potentially involved to accomplish this type of project. The assigned values are in current dollars. Further refinement, in greater detail, can be established as individual elements of the project are vetted through future design efforts. Furthermore, the identified dollar values can be used for budgetary planning and for discussions regarding potential funding for the project from various stakeholders and agencies.

6.2 FUNDING STRATEGIES

As outlined above, the primary funding strategies proposed focus on three primary sources. The first strategy is to leverage proposed operational assets such as the new marina and shops to generate revenues necessary to fund their development and operation, as well as adjacent public amenities. The second strategy is to work with Federal, State, and Local sources to identify grant funding opportunities to help with construction. The third strategy is to leverage public-private partnerships to guide private investment in ways acceptable to the community that also generate sufficient revenues to help fund long term improvements and operations.

Operational Revenues

The primary sources of direct revenue to Brown County include long term leases and increased revenues from taxes generated by development activities on the island and increased visitation and economic activity across Brown County generated by Renard Island as a regional destination. As described above, the proposed development components are financially viable presuming they are completed as part of a public-private partnership, and the cost of operating the facilities is included in those calculations.

Grant Funding / Public Partnerships

There are many State and Federal grant programs that could potentially contribute to funding portions of the Consensus Master Plan through Public Partnerships. A matrix of grant opportunities in Wisconsin is included in the appendix. At the Federal level, the US Fish and Wildlife Service offers the Boating Infrastructure Grant Program, which is intended to expand transient boating infrastructure for transient vessels 26' and longer. They offer grants up to $1.5 million, which could be used to fund the construction of the new marina. We believe the proposed project is a very good candidate for this program.

Wisconsin Coastal Management Program

The Wisconsin Department of Administration (DOA) administers the Wisconsin Coastal Management Grant program, which offers funding to municipalities and non-profit organizations for planning and implementation of projects within the Lake Michigan watershed which meet the grant program criteria. This includes projects which provide wetland and habitat protection/ restoration, nonpoint source pollution control, coastal resource and community planning, Great Lakes education, public access, and/or historic preservation.

Natural Resources Damage Assessment (NRDA)

The Natural Resources Damage Assessment (NRDA) program supports construction projects that restore and expand habitat lost due to environmental degradation caused by polluters. The NRDA funding comes from settlements with the polluters, and there are a number of ongoing NRDA projects in Green Bay, including the Rock Reef Restoration project immediately to the west of Renard Island. It is possible that new or existing NRDA projects could help fund the construction of portions of the habitat creation projects proposed in the Renard Island Master Plan.

Economic Development Grants

At the State of Wisconsin level, there are a number of programs that may be complementary to the goals of the Master Plan. These include grants from agencies such as Wisconsin DNR, Wisconsin DOT, and Wisconsin Economic Development Corporation (WEDC). WDNR offers a range of grant programs both through the State alone and in partnership with Federal agencies such as USFWS. Grants for projects that include water quality and ecosystem restoration, stewardship, sport fishing, transient boating, and conservation should be considered.

WEDC provides funds through its Community Development Investment Program, which benefits projects associated with mixed use components similar to what is proposed in the Consensus Plan.

While generally at the very end of the list, it is also possible to fund dredging or other improvements through general funds, taxes, or special assessment districts. We do not recommend special assessment districts related to docks or boaters, as they are very difficult to collect and/or enforce, and they reinforce the misconception that navigable water depths only benefit boaters, where the truth is that the long term economic viability of the entire community is greatly enhanced by the presence of an active recreational harbor.

Finally, many communities benefit from significant private and corporate philanthropy, and most communities are happy to recognize donors for their contributions through naming of public facilities in honor of donors. Challenge grants can engage donors at all levels, down to individual donation of trees, benches, or bricks, and philanthropic donations communicate solid public support for projects that can help secure additional grant funding. Local corporations should recognize the value of the proposed improvements on the recruitment and retention of employees and support projects that benefit the whole community.

Public Private Partnerships

Public-Private Partnerships between local municipalities and private entities have become one of the most effective funding strategies to achieve shared objectives, and we highly recommend that the County lead the waterfront development process. One of the most effective ways to leverage this approach in Green Bay is to utilize Tax Increment Financing (TIF), whereby the increase in taxable revenues over the existing taxable value (the "increment") is used to directly fund improvements, or service a longer term revenue bond for the improvements that generated the increase in taxable value.

For example, the taxable value of the bottomlands of the area south of Renard Island is zero, and the new tax revenues could be directed towards construction of infrastructure and amenities on the island. The development of a new marina and/or the mixed-use retail will generate new taxable value that would become the "increment". The increment could fund a revenue bond, which is one way municipalities borrow money. Revenue bonds are essentially like a mortgage, and paid off over a period of twenty or thirty years, with current interest rates ranging from 2% to 4%, which is very low.

The example used in the planning process to suggest the value of an individual unit on adjacent uplands was based on a taxable value of $250,000. At 1.9% property tax rate, the yearly taxes would be $4,750. $4,750 would fund roughly $72,000 in public improvements over 20 years at 3%, so 10 units would fund $720,000 in public improvements, 100 units $7.2 million, and so on.

6.3 CONSENSUS MASTER PLAN DEVELOPMENT SEQUENCE

As with all major projects of this scale, it is critical to implement a range of "early wins" to generate a sense of inevitability in the successful implementation of the plan. Since the value of the Renard Island site as a value generating amenity is critical to the success of the proposed private development, the private sector will need assurances that the proposed improvements will be constructed or underway in order for them to invest in the proposed private development projects. While the park improvements need not be entirely complete, there must be a high level of confidence that they will be if a successful public private partnership is to be implemented.

The recommended sequence for private development would be market based, and would start with the dredging of the marina in order to construct the proposed new land for habitat areas, recreational programming, and commercial lease development along the south side of Renard Island. This initial phase of development would occur simultaneously with the initial phases of habitat and recreation improvements on Renard Island. While final phasing will be based on the results of the detailed market feasibility analysis to be completed by the developer, we anticipate that the initial phase would include 30,000 to 40,000 square feet total of ground floor mixed-use with restaurant uses on upper floors. Development would continue in phases based on market demand.

Utility Strategy

Utility infrastructure on the island will be required for the build out of the master plan including electric, gas, water, sanitary sewer, and communication lines. An underground utility installation corridor will be designed as part of the causeway improvement. A utility hub will likely be placed at the entrance to the island that may include an electrical service transformer, a sanitary lift station, and other service access points. The primary goal for utilities will be to connect to service on the mainland via the City of Green Bay. This will likely require an intergovernmental agreement to establish this service. The secondary plan for utilities could include local water supply tanks, local septic holding tanks, and local propane gas service. Alternative renewable power sources will be considered in particular for the features located beyond the perimeter of the island. All utilities that extend beyond the island perimeter for service to items like the interpretive overlook, the primitive camping or the adventure play area will need special considerations to account for possible differential settlement.

Overall Development Strategy

As described above, the community supports a process whereby private development is leveraged to fund community improvements, and the Consensus Master Plan recommends the following strategy to allow Brown County to lead the process to protect the authentic character of the community from inappropriate development. The County would then build on the process already completed through the creation of this Consensus Master Plan, whereby the community has identified areas where development is acceptable.

The next step in the process would be the development of a form based code for Renard Island, which currently has no zoning. Form Based Zoning is a different approach to land use zoning that focuses on defining what type of development is desired, where it is to be located, what uses are allowed, and a range of requirements describing how the buildings are to be constructed, including height, setbacks, materials, density, and other characteristics deemed necessary to achieve the community's goals. Whereas traditional zoning simply defines allowable uses, density, and setbacks, Form Based Zoning clearly communicates what is desired and expected. This is a critical difference, and one that gives the County significantly more influence over the end result.

The final step in the process is for the County to issue a Development Request for Proposal (RFP) offering up certain portions of the property for development of the marina and commercial lease properties. Design Guidelines would be included in the RFP as a controlling document, and we recommend that parcels be offered for development in smaller phases rather than as a single large phase. This gives the County more control if the selected developer runs into problems or performs poorly. The inclusion of the Design Guidelines provides benefits to both the County and the

Developer and establishes expectations for the development. For the County, there is a high degree of confidence that the development will be delivered as the community expects. For the Developer, they know that if they follow the requirements of the Design Guidelines, their project is essentially approved. This means a significant savings in design and entitlement costs, as well as a meaningful saving of time during the development phase. We recommend this approach as it can truly provide a "win-win" outcome for both the community and the developer.

6.4 IMPLEMENTATION PLAN / NEXT STEPS

Following adoption of this Consensus Master Plan, we recommend the following actions be taken to begin implementing the plan:

- Establish a viable marina operational strategy through the existing or another operator.
- Work with the State of Wisconsin on:
  - Permitting Considerations
  - Functional Considerations
  - Bottomlands Permitting
  - Identify all viable grant opportunities and actively pursue them
- Prepare Design Guidelines establishing the following elements through a public process:
  - Allowable Development Areas
  - Required Build-To Lines
  - Allowable Uses – Restaurants, Marina Uses, etc
  - Three Dimensional Allowable Building Envelopes
  - Allowable Materials
- Issue a Development RFP for an initial development
  - Release Development Parcels Individually Based on Performance in Previous Phases
  - Hold Land To Encourage Better Developers
  - Consider Temporary Tax Incentive to Increase Absorption Rate

6.5 PERMITTING CONSIDERATIONS

Permitting will be a fundamental milestone in the implementation of the Renard Island Master Plan. Initial and ongoing conversations with the WDNR are developing strategies to permit and implement the design. Permitting activities will need to address the confined disposal facility aspect of the site as well as the lakebed disturbance activities, and habitat restoration. All actions will need to demonstrate continued isolation of any contaminated sediments from the environment and people.

Approved Closure Plan

Conditional approval for the closure of the Renard Island facility was granted in 2008 by the WDNR. The facility is regulated under such conditions and Chapters NR 500 to 538 Wisconsin Administrative Code due to its nature as a Confined Disposal Facility (CDF). In accordance with the current WDNR closure plan approval any and all changes from the approved features will require a Plan Modification request and approval from WDNR in accordance with NR 500. However, many of the NR 500 code requirements are not applicable to CDFs like Renard Island. Therefore, discussions with WDNR have included possible permit modifications to bring the Renard Island CDF under the Low Hazard Exemption requirements of WI statues 289.43(8) and NR 500.08. This categorization will allow for more flexibility in end use development.

Closure Plan Modification

The approved 2008 closure plan for Renard Island included use as a public recreational facility. Any change to the Closure Plan grades or end-use development requires WDNR approval prior to beginning work, via the submittal of a Plan Modification. The plan to bring in fill material and place structures on the island will require approval from WDNR to demonstrate continued isolation of the CDF materials disposed of at the site.

A geotechnical analysis will be performed to assess stability for structural developments. This will include investigation into the existing CDF cap and protective measures to ensure preservation of the integrity of the cap. Construction of the site will require a Water Resources Application for Project Permit (WRAPP) to obtain site storm water permit coverage during construction activities. This permit has its own set of requirements and monitoring that will need to be followed to prevent sediment or other materials from entering the bay of Green Bay.

Legislative Lakebed Grant

A legislative lakebed grant was established by the State of Wisconsin to allow the formation of Renard Island by the USACE and transfer of ownership to Brown County during post-closure. The legislative lakebed grant area is indicated by the dashed line shown in the figure on page 5. This area was approved for CDF use, and additional filling is proposed in this area for the Renard Island Master Plan. Since approval was already obtained for this area, it is anticipated that Brown County will reactivate the legislative lakebed grant area via the Chapter 30 permit process. The shoreline filling for the establishment of the island edge improvements including public water access, wetland habitat, and the pile wall for the marina area development are all proposed within the legislative lakebed grant limits. Chapter 30 of the Wisc. Adm. Code encompasses development within navigable waters and harbors and DNR approval will be obtained to ensure all structural development accommodates regulations.

Chapter 30

A Joint Chapter 30 permit requires numerous reviews by a number of different sectors within the WDNR. Prior to the start of dredging activities, an investigation of the sediments in the proposed dredge area will be conducted. Sampling and analysis will need to be performed as required by ch. NR 347 Wisc. Adm. Code. Sediment sampling results will determine the level of permitting and additional WDNR approvals are needed to continue on with disposal and possible reuse of the dredge sediments. Dredge materials could be used as fill on the island

with the granting of a low hazard waste exemption, allowing the material to be placed within the CDF. A geotechnical analysis will be performed to assess applicability of the sediments for fill use and stability.

Wastewater generated by dredging activates could require a permit for disposal under the Wisconsin Pollutant Discharge Elimination System program (WPDES), dependent on the initial sediment investigation. The WDNR review will also include investigation of possible Wisconsin Environmental Policy Act (WEPA) requirements at the site. An endangered species review of the area is required, along with a historical review of the areas proposed to be disturbed conducted by the State Historical Preservation Officer (SHPO).

Another factor in the Renard Island development is the presence and possible disturbance of wetlands on the island and surrounding areas slated for development. Any man made artificial wetlands that have developed on the island will likely be exempt from wetland permitting. Any wetlands that are located in the surrounding area of proposed development will need to be delineated. Should these surrounding developments alter any existing wetlands, a wetlands permit will be required, along with associated fees.

Alternative Approaches to Development

If for some reason some elements of the plan can not be implemented as a result of the permitting process, alternative strategies are proposed. The use of dredge material as fill for the marina development is one of the more innovative and cost saving strategies considered in the plan. Alternatives to manage the dredge material generated by the marina development include shipping the material to the Brown County Bay Port Dredge Material Rehandling Facility. Additional alternatives include moving the structures onto the edge of Renard Island itself and engineering suitable foundations to avoid negative impacts to the containment system. Another option would be to construct the proposed structures on piles. If the existing or potential alternatives outlined above prove infeasible, then the proposed development should be relocated to the upland landside areas along Bay Beach Drive. If filling the lake becomes infeasible for any reason, the marina promenade could either be constructed on land, or as a cantilevered boardwalk system.


SMITHGROUP
APPLIED ECOLOGICAL SERVICES
Edgewater resources
Foth
mfa