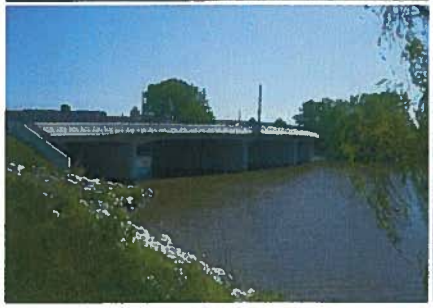

Harbor Master Plan

City of Two Rivers, WI

Adopted as an Amendment to the City of Two Rivers 20-Year Comprehensive Plan on January 21, 2013

CITY OF TWO RIVERS

Foth SMITHGROUP JJR

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Plan Purpose

The harbor is an integral part of Two Rivers and surrounding areas, and coupled with Downtown has always been the centerpiece of the City. The economic and social health of the City is dependent on the success of the harbor and it's adjacent land uses so it is crucial to ensure that this area remains vital and thrives into the future.

The purpose of the Harbor Master Plan is to build on and supplement the City's past planning efforts in order to continue to improve and reinvest in the harbor. This plan should be used as a tool to strategically prioritize future City projects in order to stimulate private redevelopment in the harbor.

This planning concepts presented in this document, however, are not intended to represent a definite course of action for the City. The projects are intended as conceptual options to help guide decision-making when appropriate funding is available. Furthermore, identification of these projects as part of a cohesive plan is essential to competing for and obtaining grant funding in the future.

Harbor Strengths

Plans for the future of the harbor should continue to build on its many strengths including the nearby downtown, abundant fishing, significant culture and history, land use mix, beautiful beaches, high quality water-related facilities, and the City's location between other Lake Michigan ports.

Harbor Issues & Opportunities

Despite the strengths, there are areas within the harbor that warrant investigation and improvement. Some of the major issues and opportunities are deteriorating seawall conditions, the surge into the channel from the lake, lack of transient docking facilities, the disconnect from downtown, under-utilized waterfront property, and limited public access tot he waterfront.

Plan Goals

Key goals of Harbor Master Plan include increasing opportunities for boat docking (including pleasure boats from outside of the area), planning infrastructure improvements that will serve as catalysts for private redevelopment, improving public access to the waterfront, and promoting redevelopment of key sites.

Master Plan and Catalyst Projects

The priority catalyst projects recommended for this plan focus on the harbor entrance channel, the lower East Twin River (and their junction), and the lakefront (west of the piers). Additional key projects on each of the Twin Rivers and on adjacent land are also recommended.

The Master Plan and Catalyst projects are depicted as two overall options depending on the approach to Lake Michigan surge mitigation (internal harbor or external lake strategies). The projects include:

- Lake Michigan surge mitigation.
- A port of call/docking facility directly across the entrance channel on City property.
- Lake Michigan beach restoration west of the south pier.
- Redevelopment of the East Eggers site as either a marina, mixed-use development, or combination.
- Extension of Mariner's Trail to connect with the Rawley Point Trail.
- Additional/alternative docking in the West Twin River.
- Re-use of the railroad swing bridge.
- Dredging of the West Twin River.
- Redevelopment of the Fisher Hamilton complex.
- Ongoing riverfront/riverwalk public connectivity.
- Improvements at Harbor Park.

Funding and Implementation

The plan outlines the major considerations for each of the projects, conceptual cost estimates where possible, and potential funding sources applicable for each project.

As a result of this planning effort it was found that a wave modeling

study is needed before serious consideration can be given to a majority of the concepts and projects described in this plan. Essentially, the first step will be to look for grants to help fund such a study. Until the wave modeling study is complete, this plan does not recommend spending significant funds on the major projects described within except for *maintenance* (including necessary dredging), *repairs*, *project components not dependent on surge mitigation options*, and those *funding efforts already underway* to address the failing seawall at Harbor Park.

Funded by the Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act, Grant #NA11NOS4190097.

Wisconsin Coastal Management Program

This Plan also funded by the Community Development Block Grant Funds administered by the Wisconsin Development Corporation.

Plan Purpose & Goals

Purpose

The Two Rivers "Waterfront Land Use Plan" was completed in 1999 and set forth a comprehensive future vision for the harbor and surrounding land. The Plan outlined the waterfront history, major goals, and land use and connection recommendations. The Planning Framework section of the Harbor Master Plan (what you are currently reading) contains a summary of those major plan recommendations.

Those recommendations remain valid today and are intended to be used to continue to guide decision and policy making moving forward for the larger waterfront area. In contrast, the Harbor Master Plan will serve as a more specific guide to harbor infrastructure improvements. These improvements are intended to serve as catalysts to spur additional redevelopment in the surrounding area in the context of the previously completed "Waterfront Land Use Plan."

The specific recommendations of the Harbor Master Plan are prioritized and tied directly to funding mechanisms to elevate the potential for implementation.

Harbor Master Plan Goals:

The overall goal of the Harbor Master Plan is maintain and enhance the existing setting, but also to stimulate the implementation of the overall "Waterfront Land Use Plan." The following specific goals helped guide the development of the Harbor Master Plan:

- Increase opportunities for boat docking (including pleasure boats from outside of the area) in the harbor.
  - Mitigate the surge from Lake Michigan.
  - Provide visible amenities when entering the harbor.
  - Repair seawalls conditions where necessary.
- Plan infrastructure improvements that will serve as catalysts for private redevelopment.
  - Focus improvements in a limited area so that the results are more visible and have a greater impact.
- Improve public access to the waterfront within the harbor.
  - Improve visual connections to the waterfront.
  - Provide easy to get to public plazas or riverwalks directly adjacent to the water.
- Promote redevelopment of key sites in the harbor area including public and private land.

Planning Process

The Harbor Master Plan was developed with guidance by the Master Plan Steering Committee. The Committee was comprised of key City Staff and a mix of harbor commercial and recreational users. The Committee members included:

- Vince Alber, City Council Representative
- Greg Buckley, City Manager
- Jim McDonald, City Engineer
- Judy Goodchild, Parks & Rec Director
- Tim Klinkner, Advisory Recreation Board Member
- Mike LeClair, Commercial Fishing Representative
- Kent Anderson / Scott Anderson, Recreational Boating Representative
- Ed Kakes / Scott Kakes, Charter fishing Representative
- Fred Pospeschil, Public Member (Boater)

The Steering Committee discussed and refined Plan goals and concepts over a series of four meetings. Two of the meetings were joint meetings with the City Plan Commission.

On December 10, 2012, the Steering Committee unanimously recommended the Plan for adoption. On the same date, the Plan Commission unanimously recommended by resolution that the Plan be adopted as a component of the

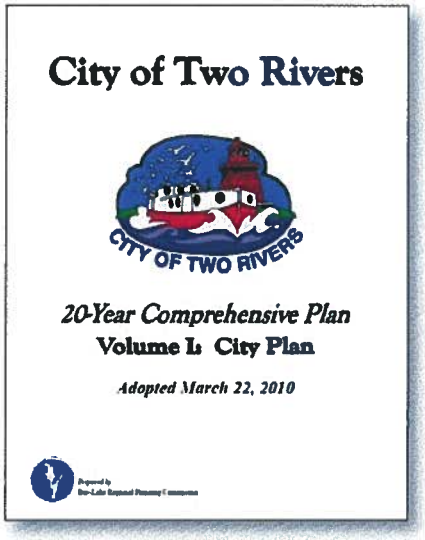
City Comprehensive Plan by the City Council.

The public hearing with the City Council is scheduled for January 21, 2012.

Two Rivers recognizes the importance of planning for the growth and development of the City and its waterfront. The Two Rivers Harbor Master Plan is one component within the City's overall planning framework, and builds on the information, data, goals, objectives, policies, and recommendations of previous plans.

Following are key highlights of previous planning efforts.

City of Two Rivers Comprehensive Plan



The City of Two Rivers adopted a 20-year Comprehensive Plan in March 2010. The Plan was prepared by the Bay-Lake Regional Planning Commission and was part of a multi-jurisdictional cooperative planning effort which included 20 local communities and Manitowoc County.

The Comprehensive Plan is a public policy document that guides decision making as it relates to growth and development within the City. The following are key recommendations as they relate to the Harbor.

Residential

- Some of the City's greatest redevelopment opportunities are waterfront sites. Where redevelopment of such sites occurs, the City must strive to **incorporate public access to and along the water** as a key consideration in assisting such development.

Commercial and Service Business

- Direct and encourage **commercial businesses, tourist related and service oriented uses to the downtown area** to retain and maintain the Central Business District.
- Emphasize **redevelopment along the East Twin and West Twin River corridors** adjacent to the Central Business District.

Industrial

- Redevelopment of existing industrial sites. Conduct an **assessment and cleanup of environmentally contaminated sites** in the City and utilize the areas for more productive uses.

Tourism

- Continue to expand promotion of **Neshotah Beach** as a regional attraction.
- Continue to expand and promote **recreational trails** as a tourism attraction.
- Pursue **enhanced public access to the North and South piers** with links to area recreational trails.
- Work with various community groups to continue and expand **local festivals and special events, focusing such activities in the Central Business District** and in the Neshotah Park/Walsh Field complex.
- Explore the feasibility of **new private campground facilities** as well as the update and **modernizing of existing facilities** to **increase area campground "carrying capacity"** during the summer and fall seasons.
- Evaluate the feasibility of adding **new and expanding existing tourist lodging facilities,** including motel/hotel, high quality seasonal vacation rentals, and timeshares.
- Pursue funding for development of safe, convenient facilities for **short-term transient dockage for Lake Michigan boaters.**

Transportation

- Encourage **both pedestrian and vehicular movement** throughout the downtown area.
- Create a **Multi-Modal Trail Master Plan** for bike/pedestrian trails.
- Expand existing **bike/pedestrian trail connections**. The existing lakefront trail system consists of Mariner's Trail between Manitowoc and Two Rivers and Rawley Point Trail between Two Rivers and Point Beach State Forest. Additional Trails should be developed as follows:
  - Improved **downtown area connection** between Mariner's and Rawley Point trails.
  - The city should pursue an **off-street connecting trail** between Washington Street bridge, utilizing a waterfront route through Harbor Park and along the river frontage owned by Thermo Fisher south of 17th Street.

Parks and Open Space

- Advocate for the development of non-motorized, **pedestrian trail connections** within the community to improve public safety, promote community fitness, conserve fossil fuels and reduce carbon emissions.
- **Reference the City's Waterfront Land Use Plan**, adopted in November 1999, when waterfront development is considered. The waterfront plan illustrates possible land uses and areas for preservation and maintenance that will enhance the overall appearance of the waterfront properties. Types and locations of future developments along with design standards, public access, landscaping and lighting should be taken into consideration.
- Explore possible **funding resources** for park upgrades or future recreation development. The City should seek public and private **donations** for funding recreational facilities. The City is encouraged to contact agencies (e.g., WDNR, Coastal Management, Bay-Lake RPC, etc.) and apply for **grant funding** to further enhance the quality of the City's beaches and other recreational resources.
- Continue to promote the City's **marine-related facilities** and the recreation/sport activities associated with Lake Michigan.

Smart Growth Planning Areas

The Plan designates several Smart Growth Planning Areas (SGAs) that encourage (re)development within the City where the sites are already fully served by infrastructure and where new development would have a positive impact on the City.

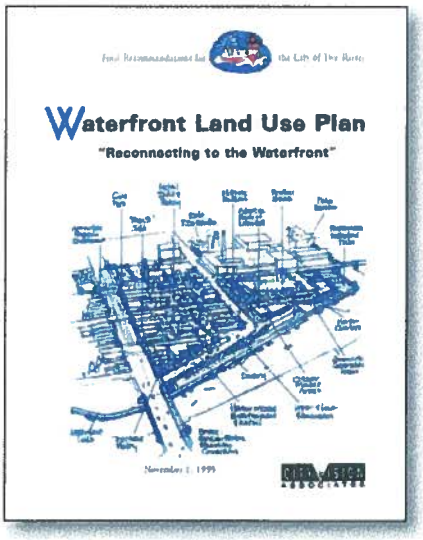
The majority of the SGAs are within the Harbor Master Plan study area as follows:

- **SGA 1:** Redevelopment of the Former Eggers Site.
  - 3.5 acres two blocks east of Washington Street/STH 42.
  - Recommended for mixed-use including public waterfront access.
- **SGA 2:** Redevelopment of Brownfield Site along West Twin River
  - 24 acres at the end of 21st Street.
  - Requires site assessment: environmental contamination, geotechnical, wetland/floodplain.
- **SGA 6:** Redevelopment of Former Concrete Patch Plant
  - 1.1 acre site along 12th Street between Adams and Monroe Streets.
  - Remediation for minor soil contamination required.
  - Recommended for office, commercial or service business use (though recently rezoned residential).
- **SGA 8:** Redevelopment of the Burrows and Neshotah Land
  - 3.7 acres along the east side of the West Twin River (south of 16th Street).
  - Previously used for industrial purposes and may require environmental remediation.
  - Recommended for mixed use and public waterfront access.
- **SGA 9:** Wilson Street Site #1
  - Located on the west side of Wilson Street between 28th and 29th Streets on the East Twin River.
  - Would require extension of Wilson Street for utilities and access.
  - Upland portion recommended fro residential uses.
- **SGA 10:** Wilson Street Site #2
  - 2 acres on the west side of Wilson Street between 26th and 27th Streets on the East Twin River.

- Recommended for residential development with proper buffering from existing food processing facility.

- **SGA 11:** Redevelopment of the Seagull Marina and Adjacent City-Owned Lands
  - Existing uses include the Seagull Marina Campground, McDonald's restaurant, and the City functions including the wastewater treatment and potable water plants, public works yard, municipal utility offices, and vehicle storage.
  - Recommended for a mix of uses through a detailed redevelopment plan that would build on Seagull Marina's recreational functions including buffering from City uses.

Waterfront Land Use Plan



Adopted in 1999, The Waterfront Land Use Plan was prepared by CityVision as a framework for improving community access to the water; enhancing land-based and water-based recreational use; improving the City's aesthetic and ecological character, and capturing new real estate and economic opportunities that will expand the tax base and create jobs.

Goals

1. Improve regional connections to the waterfront
   - Bikeway north to Point Beach State Forest and Kewaunee County
   - Bikeway to Manitowoc/Ferry
   - Connection to the Ice Age Trail
   - Lake Michigan Tourism Trail - Door County, Algoma, Kewaunee, Two Rivers, Manitowoc, Sheboygan, Port Washington
   - Heritage Tourism - Wisconsin Ethnic Settlement Trail
   - Link to 1-43
   - Improve wayfinding with directional and gateway signs
   - Investigate designation of Memorial Drive as a scenic byway
2. Improve community connections to the waterfront (riverwalks, bikeways, pedestrian streets)
   - Connect Downtown to the rivers and lake
   - Interconnect community park system
   - Create new destinations along the waterfront
3. Improve active and passive recreation use of the waterfront, creating more opportunities for:
   - Land-based and water-based activities
   - Scenic enjoyment
   - Outdoor education
   - Family-oriented activities
   - Tourism related activities
   - Coordinating use with unique attributes of each site
   - ADA accessibility
   - Upgraded boat launch facilities
   - Recreational safe harbor facilities
   - Shoreline fishing
4. Develop comprehensive master plans for key areas
   - Neshotah Park
   - Rogers Street Fishing Village
   - Harbor Park
   - Memorial Drive
   - Brownfield redevelopment sites
5. Improve character of waterfront areas
   - Identify unique character zones
   - Highlight community entrance points
   - Enhance destination character with theme and identity
   - Concentrate resources on focal points - Harbor Entrance, Memorial Drive, Public Square, Rogers Street Fishing Village, Neshotah Beach
   - Capitalize on historical and natural resource character
   - Develop design guidelines for key waterfront areas

6. Improve land use
   - Create destinations - expand use and activities for residents and visitors Identify key redevelopment sites
   - Expand tax base and create new job opportunities

Waterfront Framework Plan

This framework plan describes a variety of connections including major travel routes, bicycle and pedestrian paths, waterfront walkways and local streets, street ends, and water-based transportation and recreation. Following is a summary of recommendations:

- **Major Travel Routes**: Community wayfinding should be developed for the STH 42, 310, 147, 42 and CTH O travel corridors, to direct visitors to waterfront destinations in Two Rivers. Memorial Drive (STH 42) should be designated as a State Scenic Highway and the primary gateway entrance to the Two Rivers waterfront.
- **Bicycle and Pedestrian Routes**:
  - A major bicycle route should be developed along the Lake Michigan shoreline and through the central harbor area to connect the community to Lake Michigan and Neshotah Park. This route should also be extended to connect the community to Point Beach State Forest and Manitowoc.
  - Two Rivers should work with other jurisdictions and agencies to develop connections between this regional bicycle facility and the Ice Age National Scenic Trail.
  - A trailhead including a visitor center and comfort station should be located in the downtown/harbor area as a primary orientation point for this regional bicycle facility.
  - Secondary bicycle routes should be developed to provide additional bicycle access to waterfront areas and community destinations.
  - Two Rivers should coordinate with Manitowoc County and the State Heritage Tourism office to identify and develop bicycle connections to local heritage tourism sites that are part of Wisconsin's Ethnic Settlement Trail Project.
- **Waterfront Walkways and Local Streets**
  - Two Rivers should give high priority to the development of a continuous waterfront walkway system, to provide direct public access to the East Twin River, West Twin River and harbor area.
  - These walkways should be planned and developed in conjunction with local streets to establish pedestrian loop systems that connect with community destinations.
  - A special signage system should be designed to direct pedestrians and describe points of interest along these routes.
- **Street Ends:** The street ends that terminate at the water provide opportunities for community residents to gain additional physical and visual access to the river. Beautification and maintenance could become the responsibility of neighborhoods that directly benefit from street end improvements.
- **Water-based Transportation and Recreation**
  - Enhancing the use of the water for transportation and active and passive recreation is an important part of reconnecting the community with its rivers and lakefront.
  - Transient docking facilities, marinas as and public boat launches for large and small craft are needed to ensure public access to the water.
  - Periodic dredging is necessary to maintain channels for boater access to upper river areas and allow continued use of docking and boat ramp facilities.
  - Redesign of the harbor entrance should be considered to mitigate wave impacts and allow for additional docking and mooring in the harbor area.
  - Improved docking facilities, visitor attractions and character improvements should be focused in the harbor area to reestablish Two Rivers as a Lake Michigan destination and port of call.

Waterfront Planning Districts

The Plan divides the City's Waterfront into distinct districts with recommendations for character/ land use, buildings and uses, public spaces, and links. Following is a

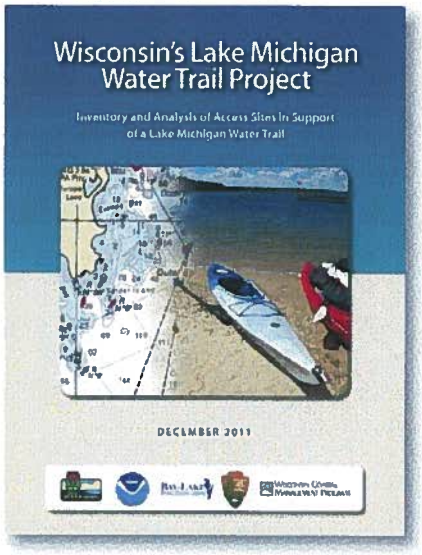
basic overview:

1. **Central Harbor District**
   - Public Waterfront Square: Includes a significant public open space (festival market place with a strong commercial center integrated with some residential.
   - South Pier District: Mixed-use redevelopment/recreation area related to the Lake; Residential views of the Lake; High quality landscaping.
   - North Pier District: Waterfront residential related to the Lake and connected to Neshotah Park.
   - Main Street (Washington Street): Retail, social, and institutional heart of Two Rivers; Special retail environment integrated with new waterfront development; Upgraded streetscaping.
2. **South Lakeshore District** (Memorial Drive)
   - Downtown Lakeshore District (Lakeshore Park south to Madison Street): Community entry features/gateway; Integrated trail/path along the lake; Improved streetscaping.
   - South Lakeshore Corridor (Madison Street to Woodland Drive): Incorporation of trail/path; Mixed-use development; Transition of key housing areas to higher density waterfront residential areas.
3. **North Lakeshore District** (Neshotah Park): Relocation of beachfront parking to enhance the natural character; Restroom and park facility improvements; Development of integrated bike path.
4. **East Twin River District** (Upstream of 17th Street Bridge): Expansion of Fishing Village and Museum development; Riverwalks; Residential and mixed-use redevelopment.
5. **West Twin River District:** Commercial and residential redevelopment of waterfront areas; Expansion of marina and boat launch facilities; Riverwalks.

Implementation

The Plan establishes priority and longer term implementation strategies.

Wisconsin's Lake Michigan Water Trail Project



The Lake Michigan Water Trail project was a joint effort between the WDNR, Bay Lake RPC, and the National Park Services and was funded in part by the Wisconsin Coastal Management Program and the NOAA, Office of Ocean and Coastal Resource Management.

Goal

To secure and increase public access to Lake Michigan, encourage public stewardship of the Lake Michigan ecosystem, promote outdoor recreation, and promote tourism in communities near Lake Michigan.

What is the Water Trail?

The trail is an aquatic pathway primarily intended for non-motorized travel. It allows users to locate legal access points that offer public amenities along its length. The project includes and inventory of each access point (organized by commu-

nity and access type) and identifies whether it includes signage, fees, power, shelter, camping, vehicle access, or rest rooms. It is proposed to unify the access points with signage, maps, and expand the quality and quantity of legal access points where required. Surrounding states are also collaborating on the completion of the entire Lake Michigan Trail.

Benefits

- Public recreation
- Public health
- Environmental stewardship
- Economic benefits

Two Rivers

The City of Two Rivers falls within the Point Beach (Town of Two Creeks) to Sheboygan (Town of Wilson) section of the trail.

Seven access points are listed within the City of Two Rivers:

Developed Access (Ramp or dock):

- Point Beach State Park

Carry In Access (Beach):

- Neshotah Park
- Parkway Boulevard
- Thiede Road

Alternate Access (Less than ideal carry in access):

- CTH V
- Davis Street
- Woodland Drive

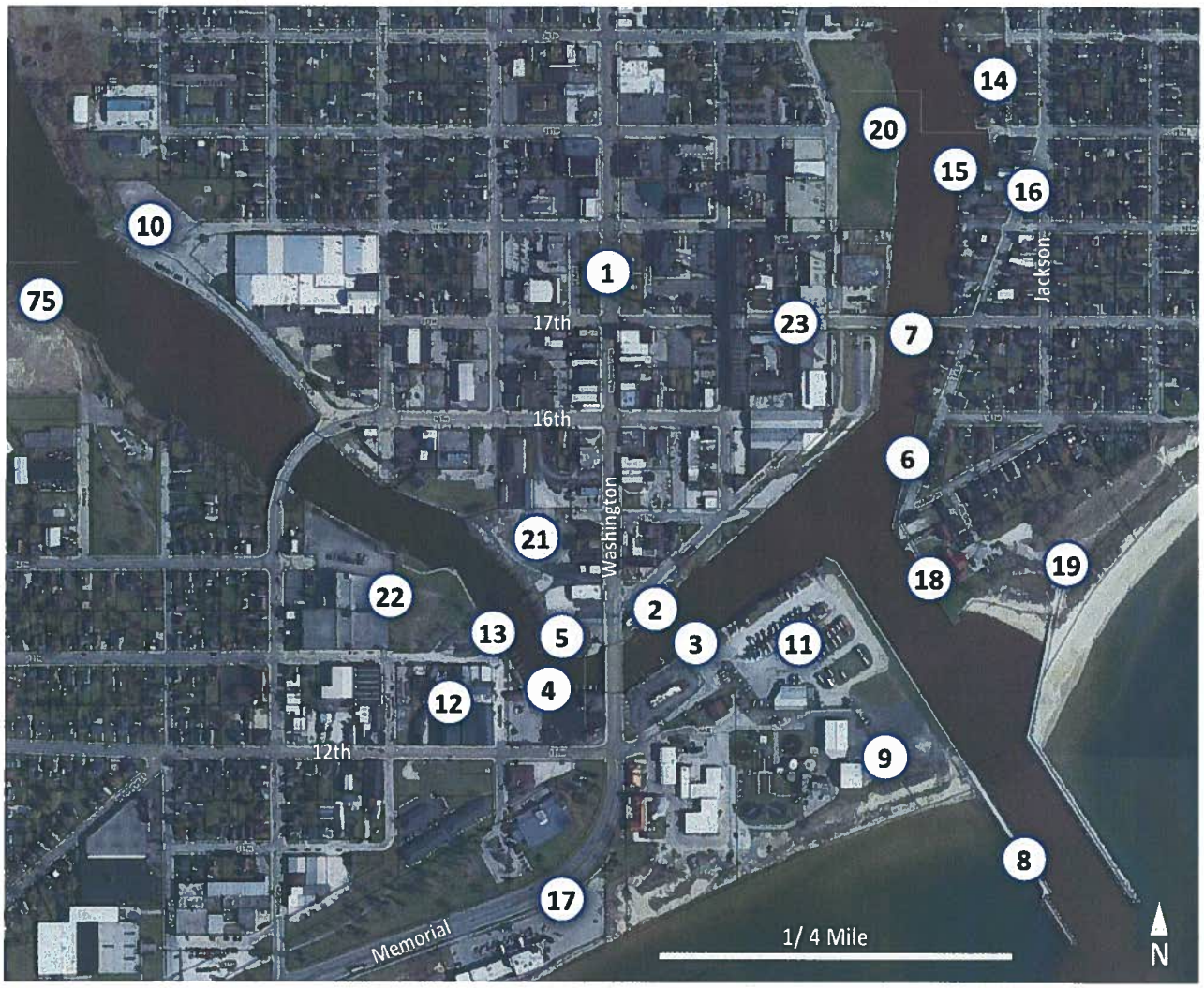
Enhancement Zones

The project includes an analysis of gaps between access points, the need for additional access points, or the need for additional amenities. The built out trail should have no more than five miles between sites with rest room access and no more than ten miles between sites with camping. The City of Two rivers is not identified within an enhancement zone.

Implementation

Implementation is planned to include:

- Branding/marketing
- Web resources
- Map distribution
- Resource stewardship through partnerships
- Acquisition/expansion
- State and National Trail designation



The above aerial image shows the location of photographs (keyed by number) used in the discussion of existing conditions on the following pages.

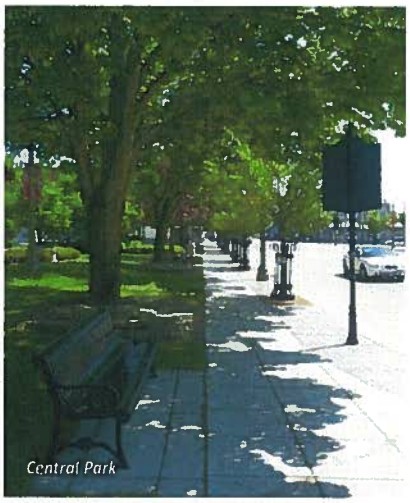
As explained in the City's 1999 "Waterfront Land Use Plan," Two Rivers grew from the intersection of Lake Michigan and the East and West Twin Rivers. It was a port city with thriving commercial fishing and ship building industries.

As the City grew, these industries declined, making way for other industries and land uses that weren't dependent on the water. In many cases, the waterfront as a celebrated community amenity or economic engine was diminished.

Today, the land uses surrounding the City of Two River's Harbor are extremely diverse including commercial and charter fishing, industrial, commercial, residential, civic, utilities, vacant land, and more.

The following pages examine the current conditions and setting in the harbor and immediate surroundings. The numbers on photographs refer to the location on the map on the previous page.


Downtown Two Rivers

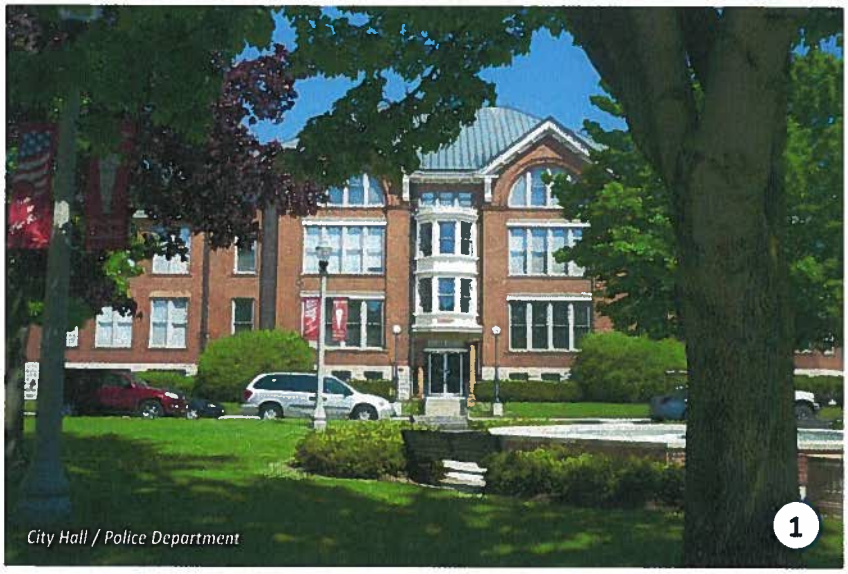

Central Park


Central Park

Downtown

One of the City's greatest assets is the downtown. It's vibrant, includes many public amenities and streetscaping, and variety of land uses including commercial, civic, and entertainment.

The downtown, almost half a mile in length and centered on Washington Street. Two River's Harbor touches the downtown only at the south end of Washington Street.


City Hall / Police Department

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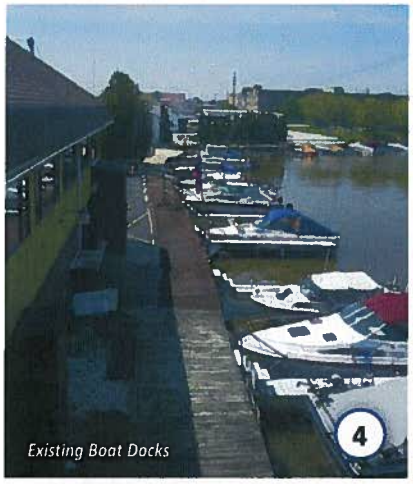
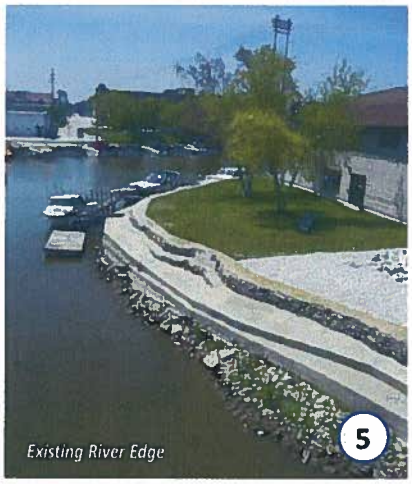




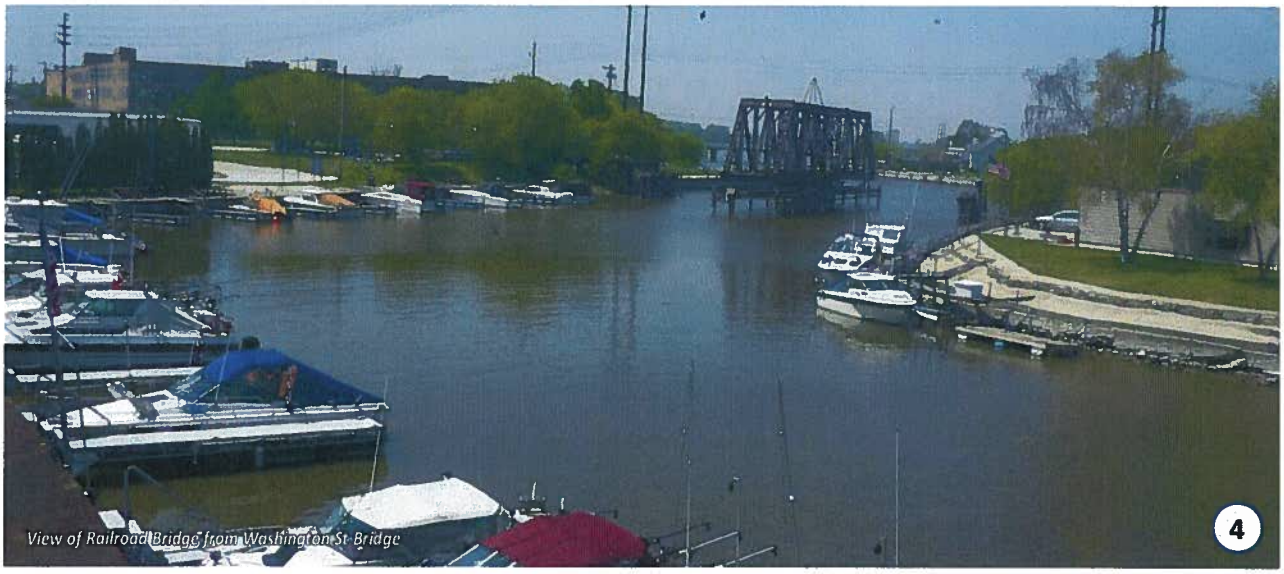
Harbor Waterways

The East and West Twin River come together with the entrance channel to form the basis of the City's Harbor.

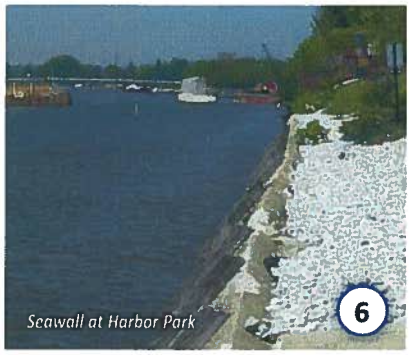
All wet docking and boat slips are directly in the rivers and not contained within any marina basin. At present, surge from Lake Michigan at certain times limits docking of watercraft near the entrance channel.

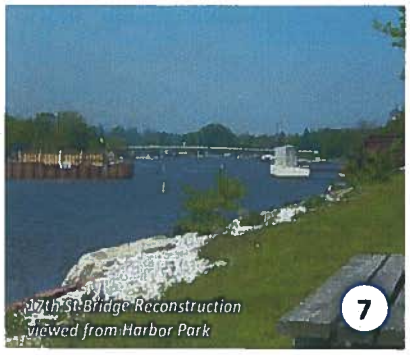
Water depths in the entrance channel are approximately 14 to 15 feet (dredged in 2009 by the ACOE). Currently, the City is dredging a channel from 16th Street to the 22nd Street Bridge to a depth of approximately 10' (WDOT Harbor Assistance Program Grant) on the East Twin River. The West Twin River is generally much more shallow and limited to smaller watercraft.

River Edge Treatment along the rivers are of varying types of construction from riprap on riverbanks to sheet piling in various conditions. The city is currently investigating



design considerations for replacement/ restoration of the seawall adjacent to Harbor Park. This seawall is currently severely deteriorating. The improvements would remedy this, make it possible for transient boaters to dock, set the stage for future park improvements, and designate the area as a "Harbor of Refuge."


Seawall at Harbor Park 6


17th St Bridge Reconstruction viewed from Harbor Park 7

Waterfront Access

The vast majority of waterfront in the harbor is private property. There are few opportunities for pedestrian access to the water in the harbor besides Veteran's and Riverside Parks (far removed from the central harbor), the former west Egger's site, the short riverwalk at Rogers Street Fishing Village, Harbor Park, and the Lake Michigan Piers.

Access to the south pier is less than ideal as it requires travelling through an easement on private property and is not clearly marked with signage. This condition is shown below.


South Pier 8


Access to South Pier 9

Marina and Boat Launch Facilities

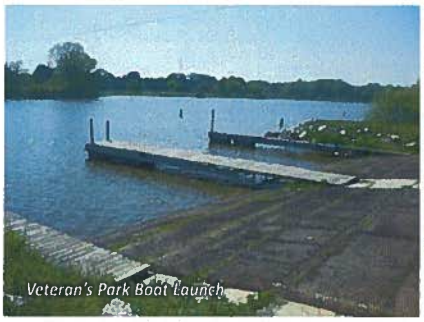
Veterans Park provides the only public boat launch near the harbor, but is limited to small watercraft as the water is shallow in the West Twin River. The park also includes a fish cleaning station. Riverside Park is located directly across the river.

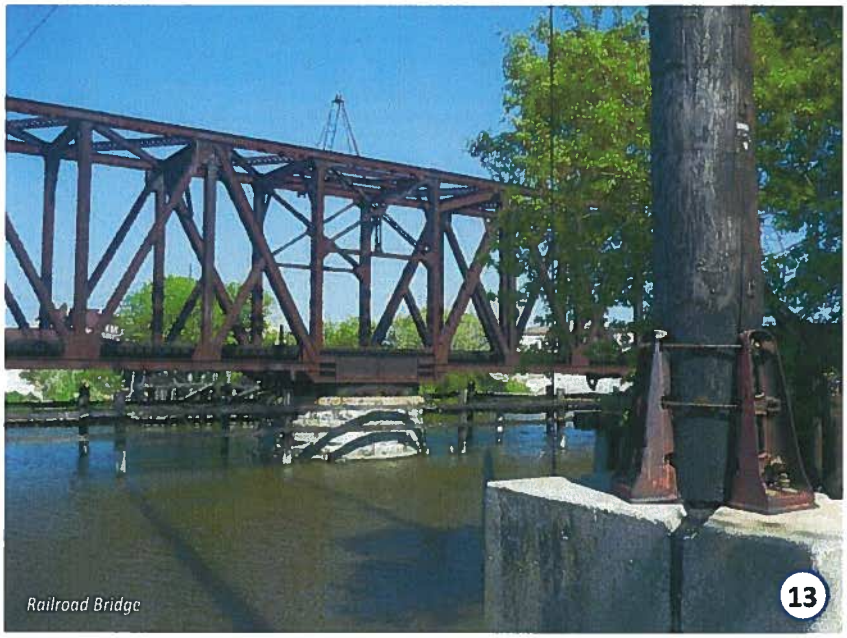
Seagull Marina provides:

- Temporary and overnight boat dockage, with water and power available
- Boat launch
- Boat sales and service
- RV and tent camping with full hook-ups
- Charter fishing
- Fish cleaning and freezing
- Ship's store
- Fuel and head pump out
- Rest rooms and showers

Twin Cities Marine provides:

- Floating docks
- Fish cleaning station
- Ship's store
- Fuel dock
- Boat launch
- Boat sales and service
- Rest rooms and showers

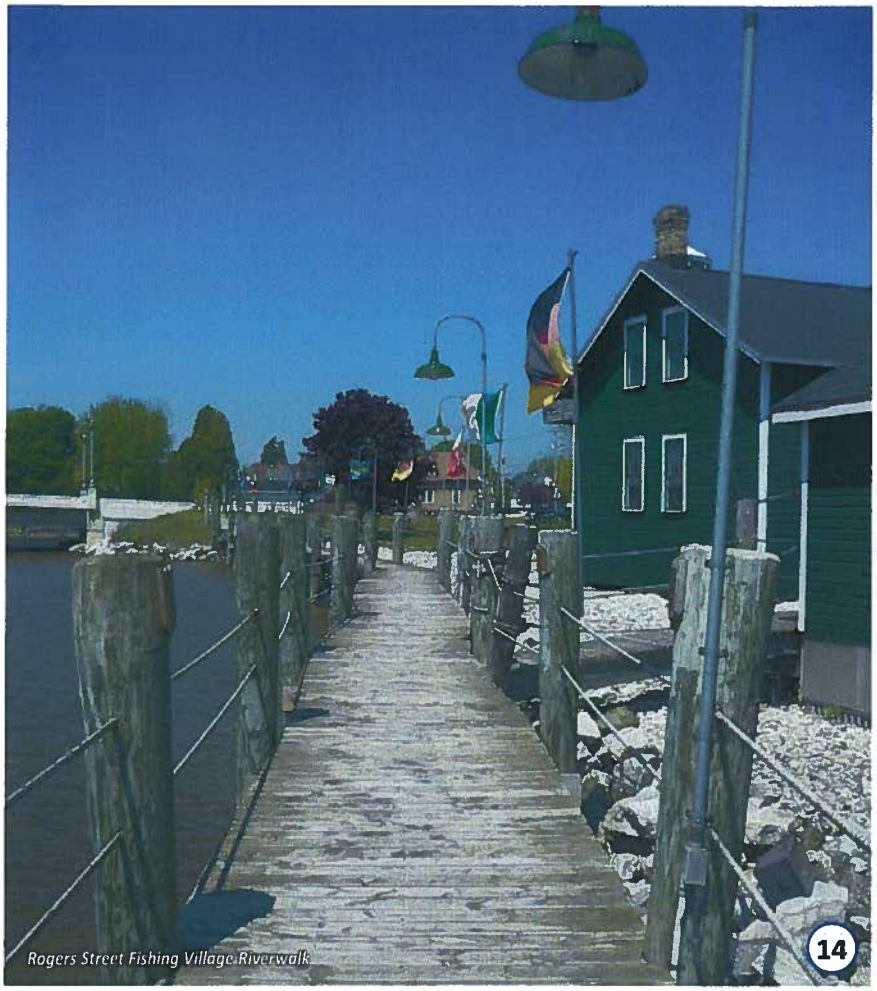

Veteran's Park Boat Launch



Railroad Bridge Icon

The Chicago & North Western Railroad swing bridge is a remnant from a time when the railroad ran directly through downtown.

This iconic structures is a landmark in the West Twin River and could someday form the basis for a creative public amenity.



Fishing

The City of Two Rivers has been a commercial fishing port since 1838. Fishing remains one of the major defining aspects of the harbor today.

Roger's Street Fishing Village

Part of a larger historic district listed in the National Register of Historic Places, Roger's Street Fishing Village celebrates the City's commercial fishing heritage through exhibits and direct public access to the waterfront along the riverwalk.

In addition to significant cultural preservation and education, the fishing village provides a location for community events an aesthetic to the East Twin River that should be leveraged for future economic growth.

Commercial Fishing Today

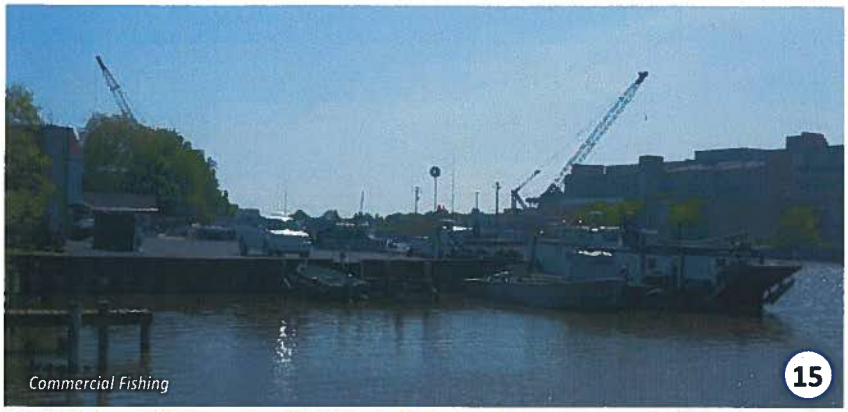
Commercial fishing remains an important part of Two River's economy today. The Susie Q Fish Company operates three commercial fishing tugs, a processing plant, and a retail store. Other, smaller operations also exist.

Access to Lake Michigan is vital for these operations. The current East Twin River dredging project will help ensure this access remains.

Charter and Recreational Fishing

Recreational fishing is another key component of the City's economy. The waterfront draws many people (outside of local fishermen) for the abundant fishing, and the City hosts a large fleet of charter fishing boats and captains.

Two Rivers is also home to the annual Wisconsin Carp Championship drawing people from all over the world, and the Two Rivers Fish Derby.


Commercial Fishing

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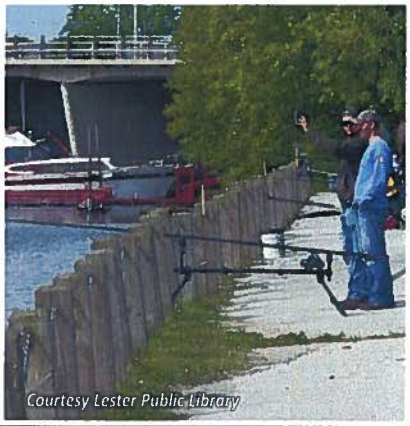
Courtesy Lester Public Library

Susie-Q Fish Market

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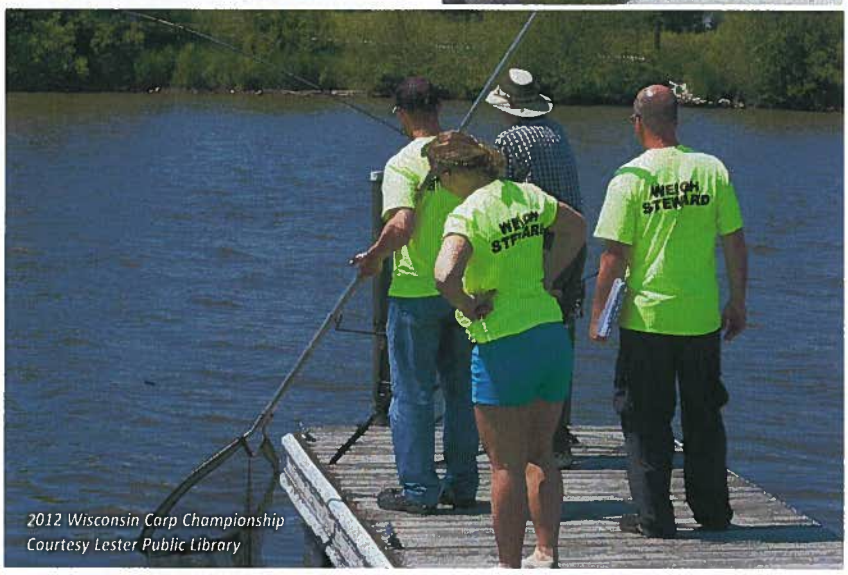


2012 Wisconsin Carp Championship
Courtesy Lester Public Library

Mariner's Trail

Connecting the cities of Manitowoc and Two Rivers, this lakefront trail provides the longest continuous scenic view of Lake Michigan in Wisconsin.

Though signage directs users through the City, the dedicated paved trail ends before it reaches the harbor. There is opportunity to continue the trail to eventually link with the Rawley Point Trail and eventually the Point Beach State Forest. The new 17th Street Bridge crossing the East Twin River is being constructed with a ten foot dedicat-


Mariner's trail - end of dedicated path

The Lighthouse Inn along the trail

17


US Coast Guard Station

18

ed path with this goal in mind.

US Coast Guard

Two Rivers is one of only six Wisconsin ports with a Coast Guard Station. The first lifeboat station is thought to have been built during the Civil War and rebuilt and renovated over the years. Today it is billeted for 22 enlisted personnel and is a prominent component of the City's harbor.


Neshotah Beach, Courtesy Lester Public Library

Neshotah Beach

Directly across from Neshotah Park, Neshotah Beach is a major destination for the surrounding area. While the beach proper is located northeast of the City's harbor, the scenic, natural stretch of the beach is directly adjacent to the north pier.


Neshotah Beach, Natural Area

19

Redevelopment Opportunities

The City's Comprehensive Plan outlines the major redevelopment opportunities in the City. These "Smart Growth Areas" (SGAs) are summarized in the "Planning Framework" section of this plan (Harbor Master Plan).

SGAs

The SGAs that are most central to the harbor with immediate redevelopment potential include SGA 1: the former Eggers Site on the East Twin River and SGA 8: the largely vacant site at the end of 15th Street on the West Twin River. SGA 11: Seagull Marina and the City utilities is central to the harbor, but not necessarily ready for major redevelopment at present.

West Eggers Site

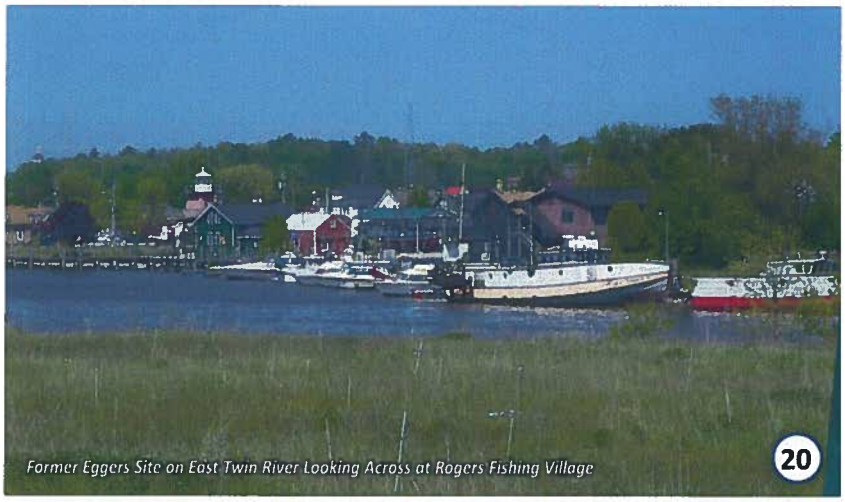
In addition, since the writing of the Comprehensive Plan, the West Eggers Site is now vacant. All operations have been consolidated at the new facility away from the harbor.

Fisher Hamilton Complex

The Fisher-Hamilton complex is also a major redevelopment consideration since the Comprehensive Plan was written, as the vast majority of the complex is now vacant.

This is a crucial issue as this massive facility is located in the heart of the City directly between Downtown and the waterfront.

Though this Plan will begin to address some of the issues with this area, a major redevelopment implementation strategy is outside the scope of this Plan.


Former Eggers Site on East Twin River Looking Across at Rogers Fishing Village 20


Potential Redevelopment Site at 15th St 21


Former Eggers Site on West Twin River 22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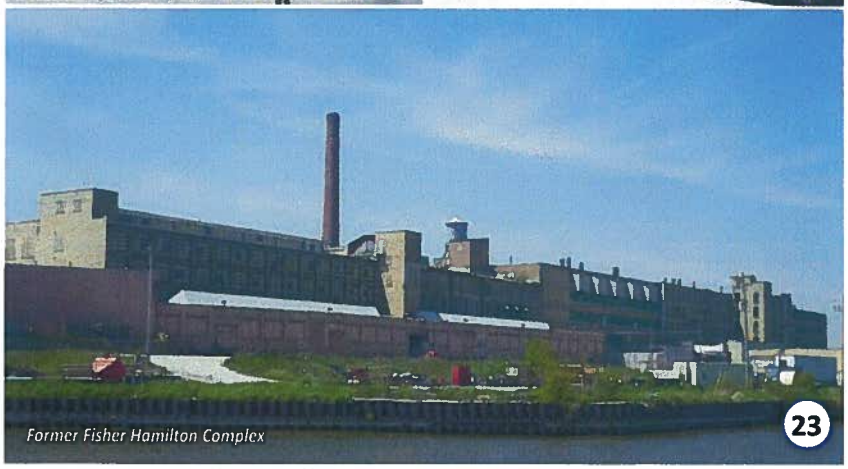

Former Fisher Hamilton Complex 23

The harbor is an integral part of Two Rivers and surrounding areas, and coupled with Downtown has always been the centerpiece of the City. The economic and social health of the City is dependent on the success of the harbor and it's adjacent land uses so it is crucial to ensure that this area remains vital and thrives into the future.

Strengths

Plans for the future of the harbor should continue to build on its many strengths. Some of the major strengths include:

- Proximity to a vibrant downtown with a mix of land uses and attractions.
- Abundant fishing including annual derbies which draw visitors from far outside the area
- Successful commercial fishing industry which contributes to the local economy and culture
- Roger's Street Historic Fishing Village and surrounding area including its cultural heritage, attractions, and visual character
- Mix of land uses adjacent to the waterfront including commercial, residential, industrial, and recreation
- Adjacent beautiful beaches that draw visitors to the area
- High quality marina facilities and waterfront recreation including charter fishing and camping
- Recognizable landmarks including the lighthouse and remnant railroad bridge
- The City's location along a major boating route between other Lake Michigan ports

Issues and Opportunities

Despite the strengths, there are areas within the harbor that warrant investigation and improvement. Some of the major issues and opportunities are:

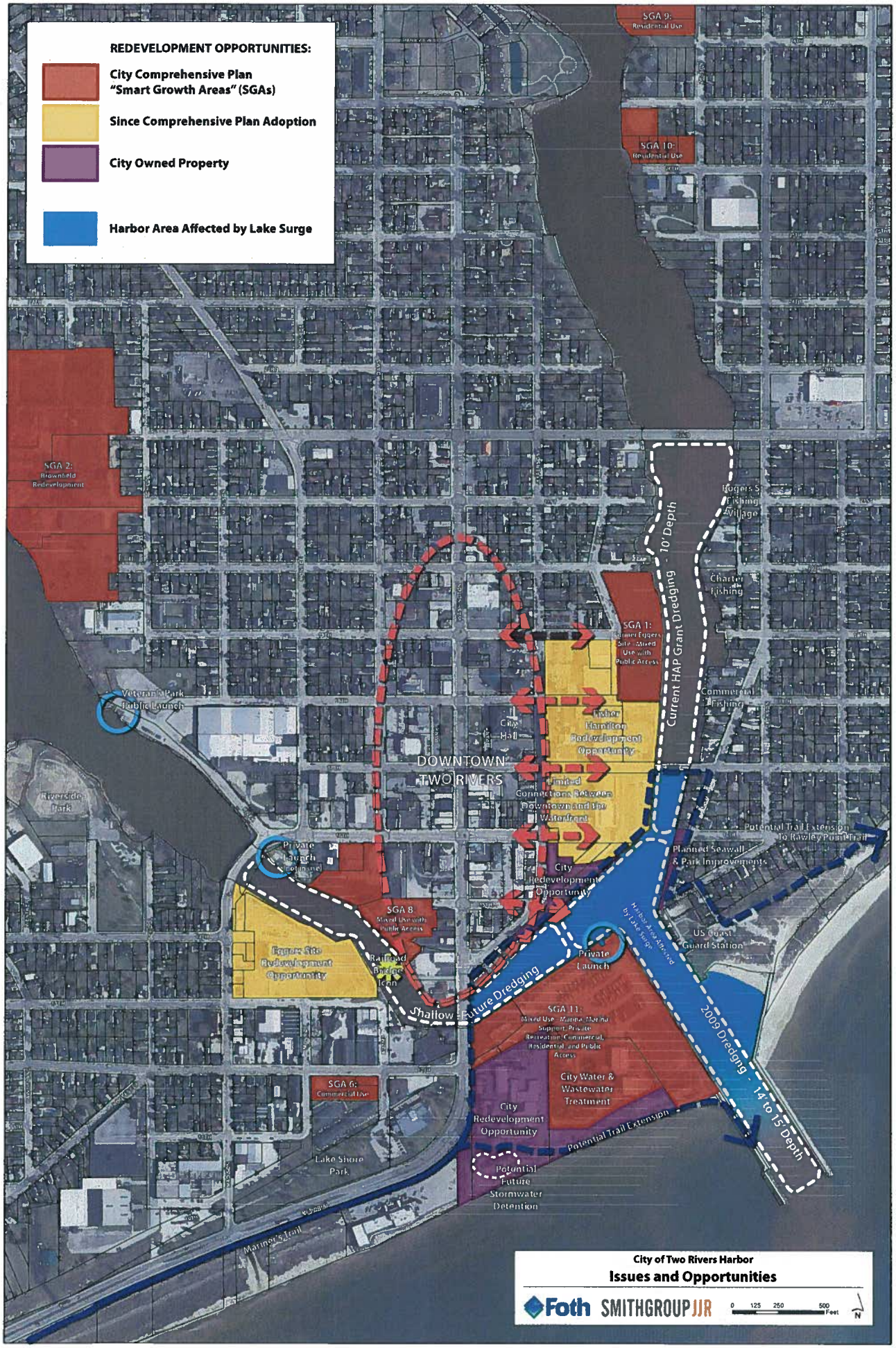
- Deteriorating seawall conditions in various locations limit docking options and give a run-down appearance
- Surge from Lake Michigan limits wet docking near channel
- Lack of transient docking facilities for pleasure boaters with larger vessels
- Nearby Downtown attractions and establishments are not apparent when entering Two Rivers from the harbor
- West Twin River is relatively shallow and prohibits larger vessels
- Under-utilized waterfront property including multiple redevelopment sites within the harbor area including some of the most visible:
  - City-owned property
  - Former Egger's sites
  - Fisher-Hamilton complex
- Access to the waterfront is limited:
  - Few opportunities for direct, connected pedestrian access (e.g. riverwalks, parks, plazas, outdoor dining, etc.)
  - Lakefront adjacent to City water and wastewater treatment plan is under utilized.
  - South pier is difficult to reach (minimal signage, access across private easement, disconnected from rest of harbor)
  - Downtown disconnected from harbor both visually and physically

Harbor Master Plan Goals:

The overall goal of the Harbor Master Plan is to stimulate the implementation of the overall "Waterfront Land Use Plan." The following specific goals, developed by City Staff and the Plan Steering Committee, helped guide the development of the Harbor Master Plan:

- Increase opportunities for boat docking (including pleasure boats from outside of the area) in the harbor.

  - Mitigate the surge from Lake Michigan.
  - Provide visible amenities when entering the harbor.
  - Repair seawalls conditions where necessary.
- Plan infrastructure improvements that will serve as catalysts for private redevelopment.
  - Focus improvements in a limited area so that the results are more visible and have a greater impact.
- Improve public access to the waterfront within the harbor.
  - Improve visual connections to the waterfront.
  - Provide easy to get to public plazas or riverwalks directly adjacent to the water.
- Promote redevelopment of key sites in the harbor area including public and private land.


REDEVELOPMENT OPPORTUNITIES:
City Comprehensive Plan "Smart Growth Areas" (SGAs)
Since Comprehensive Plan Adoption
City Owned Property
Harbor Area Affected by Lake Surge
SGA 9: Residential Use
SGA 10: Residential Use
SGA 2: Brownfield Redevelopment
SGA 1: Former Eggers Site - Mixed Use with Public Access
Rogers St Fishing Village
10' Depth
Current HAP Grant Dredging
Charter Fishing
Commercial Fishing
Veteran's Park Public Launch
City Hall
Fisher Hamilton Redevelopment Opportunity
DOWNTOWN TWO RIVERS
Limited Connections Between Downtown and the Waterfront
Riverside Park
Private Launch
City Redevelopment Opportunity
Potential Trail Extension to Rawley Point Trail
Planned Seawall & Park Improvements
SGA 8 Mixed Use with Public Access
Eggers Site Redevelopment Opportunity
Railroad Bridge Icon
Private Launch
US Coast Guard Station
Harbor Area Affected by Lake Surge
Future Dredging
Shallow
SGA 11: Mixed Use - Marine Related Support, Private Recreation, Commercial, Residential and Public Access
2009 Dredging - 14 to 15 Depth
City Water & Wastewater Treatment
SGA 6: Commercial Use
City Redevelopment Opportunity
Potential Trail Extension
Lake Shore Park
Potential Future Stormwater Detention
Mariner's Trail
City of Two Rivers Harbor
Issues and Opportunities
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There are many opportunities to build on existing strengths, improve issues and weaknesses, and take advantage of opportunities within the harbor area. As previously mentioned, the City's existing "Waterfront Land Use Plan" and "20-Year Comprehensive Plan" lay out broad strategies for continued improvement within the harbor.

The purpose of Harbor Master Plan, however, is to hone these visions into a handful of strategic catalyst projects. These projects are intended to be highly visible with meaningful impact to the surrounding are in order to stimulate further private redevelopment, economic activity, civic pride, and recreational activity.

In addition, one of the goals of this plan is to focus any projects into a well-defined area rather than spread across the entire harbor area for maximum impact.

To this end, the priority catalyst projects recommended for this plan focus on the harbor entrance channel, the lower East Twin River (and their junction), and the lakefront (west of the piers). Additional key projects on each of the Twin Rivers and on adjacent land are also recommended.

The Master Plan and Catalyst projects are depicted as two overall options. Some of the elements are the same for either option and others vary depending on the approach to Lake Michigan surge mitigation.

Option 1 focuses on an external surge mitigation approach, while Option 2 uses an internal approach. These concepts are explained within the text of this chapter as well as the attached technical memorandum in Appendix A.

The Master Plan drawings are not intended to depict final designs of any sort, but simply to show conceptual ideas for a series of potential future projects.

Priority Catalyst Projects

1: Lake Michigan Surge Mitigation

Use of the Twin Rivers including docking opportunities are currently diminished by wave agitation that is funneled into the entrance channel. The attached Technical Memorandum (Appendix A) prepared by SmithGroupJJR details the conditions and explores potential options for mitigating the condition.

The preliminary options explored at this time for Two Rivers include an external option (shown in Master Plan Option 1) and an internal option (shown in Option 2).

Option 1

The external surge mitigation option includes the addition of a hooked south jetty and breakwater extension sized to limit waves to less than 4 feet at the existing harbor mouth during storm events. Under this option, the harbor channel and inner harbor area would be relatively calm allowing boats to be moored within the rivers closer to the Lake.

Option 2

The internal surge mitigation option does not include the hooked jetty and breakwater extension, but instead is comprised of three key internal harbor features.

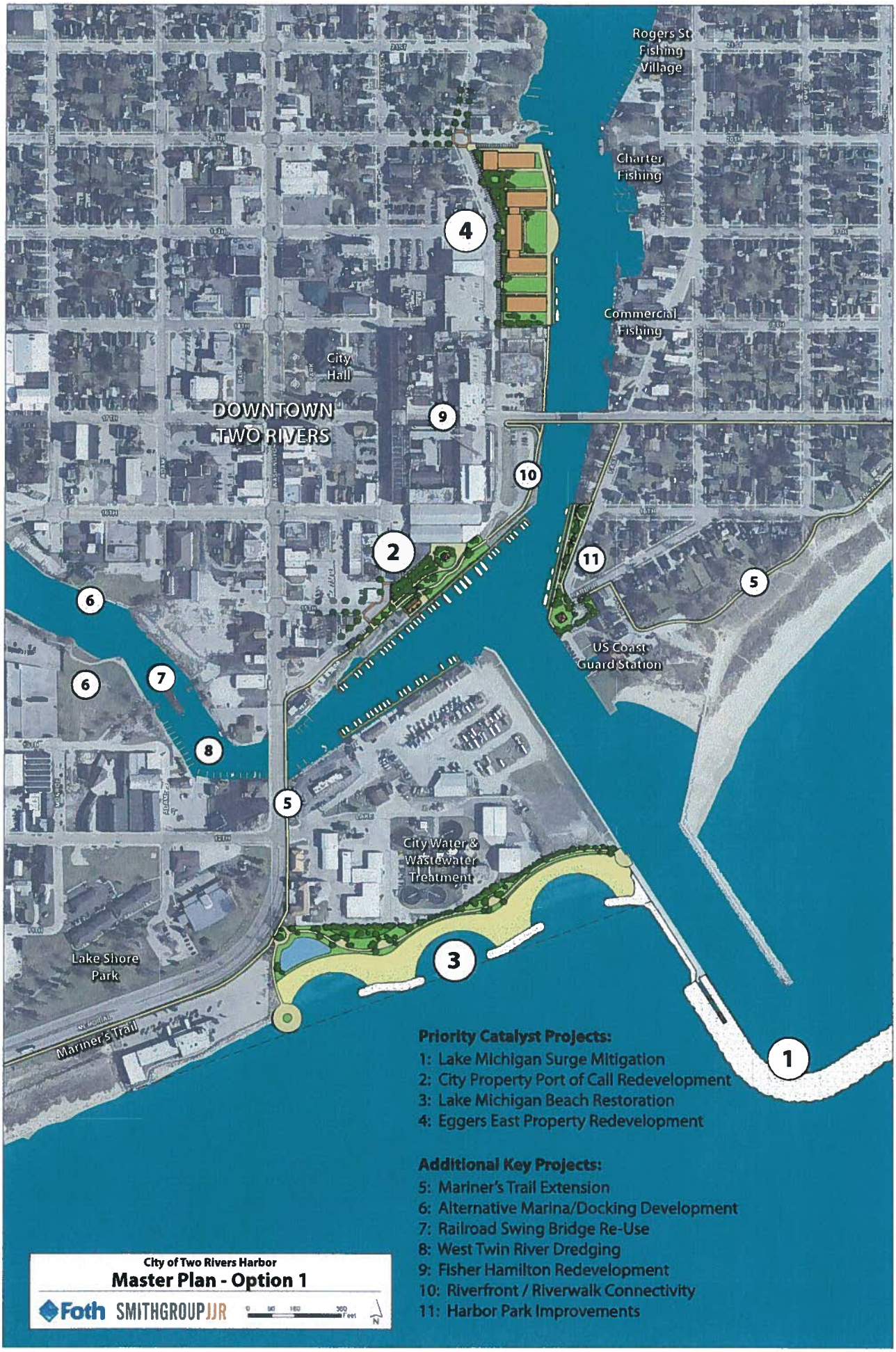
These include:

- Wave energy absorbing revetments along the flanks of the south entrance jetty and shoreline bulkhead
- A wave absorber to minimize wave refection back out of the channel and into the rivers.
- A terraced side pocket wave spending beach to further reduce surge on the south side of the channel this would mirror the pocket beach adjacent to the Coast Guard station. Land acquisition from Seagull Marina would be required in this option. It may also be beneficial to enlarge the beach adjacent to the Coast Guard station, but that alone would do nothing to reduce the wave action running along the south edge of the channel.

Further Study Required

A definitive solution is beyond the scope of this project, and the next steps include discussing the options with the US Army Corps of Engineers and conducting a more extensive analysis which will require

modeling and testing of potential design solutions.


Rogers St Fishing Village
Charter Fishing
Commercial Fishing
City Hall
DOWNTOWN TWO RIVERS
US Coast Guard Station
City Water & Wastewater Treatment
Lake Shore Park
Mariner's Trail
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Priority Catalyst Projects:
1: Lake Michigan Surge Mitigation
2: City Property Port of Call Redevelopment
3: Lake Michigan Beach Restoration
4: Eggers East Property Redevelopment
Additional Key Projects:
5: Mariner's Trail Extension
6: Alternative Marina/Docking Development
7: Railroad Swing Bridge Re-Use
8: West Twin River Dredging
9: Fisher Hamilton Redevelopment
10: Riverfront / Riverwalk Connectivity
11: Harbor Park Improvements
City of Two Rivers Harbor
Master Plan - Option 1
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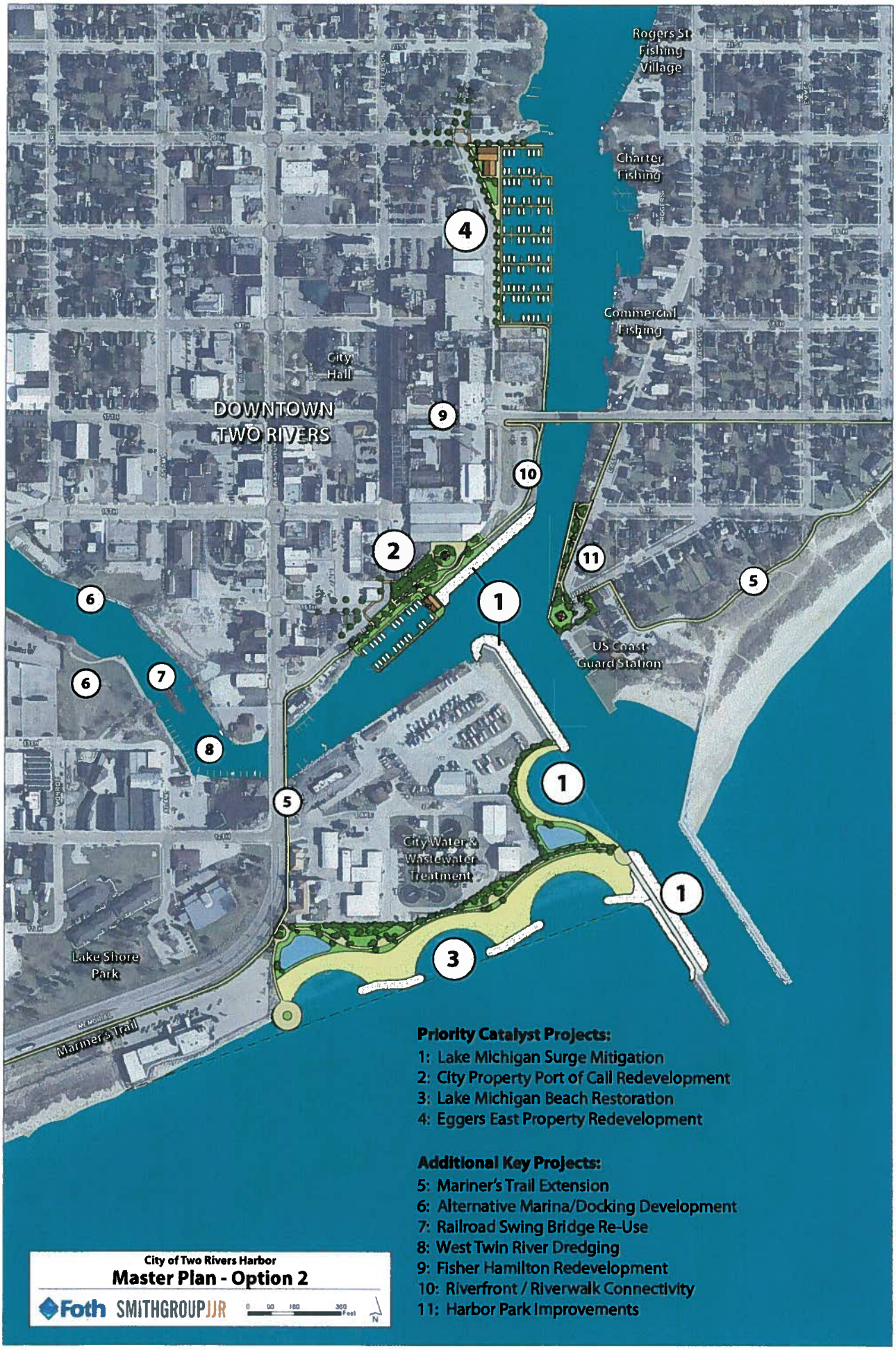
Rogers St Fishing Village
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10: Riverfront / Riverwalk Connectivity
11: Harbor Park Improvements
City of Two Rivers Harbor
Master Plan - Option 2
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2: City Property Port of Call Redevelopment

At the inner terminus of the channel, some of the adjacent land is owned by the City of Two Rivers and provides an excellent opportunity for redevelopment in order to:

- Provide an immediate land access and focal point for transient boaters.
- Begin to establish a real connection between the harbor and downtown.
- Increase waterfront access and utilization.
- Continue Mariner's Trail along the waterfront to eventually connect to Rawley Point Trail.

This is a challenging redevelopment site due to the existing topography. Adjacent East River Street is considerable higher than the portion of the property adjacent to the water. Any substantial redevelopment will likely include added fill and retaining walls.

The redevelopment should include a prominent building or structure that could include marina-related, restaurant, and other community service uses.

Depending on the level of development sought, the remainder of the site could include additional buildings containing water-oriented uses, community recreational spaces, or plazas. These uses, along with immediate transient boat docking is also intended to be the visual icon for the approach to the city and the natural port of call to bring visitors directly to the commercial center.

Streetscaping and intersection treatments along East River, 15th and 16th Streets should also be included to strengthen the connections between this site and Downtown to make it intuitive and inviting to get back and forth until more redevelopment of the surrounding area occurs.

Redevelopment could begin solely on City-owned land and expand as momentum is gained. In addition, the far eastern end of East River Street could remain open as long as necessary, or it could be closed in

order to more fully develop the public spaces near the water.

This site would include the proposed Mariner's Trail extension and would also be the beginning of the establishment of a riverwalk system in the harbor. The next logical continuation would be up the east River (as redevelopment happens) to connect with the Egger's site at the end of 19th Street.

Option 1

Under the external surge mitigation option (hooked jetty and breakwater extension into the lake), the greatest amount of flexibility to develop boat dockage occurs because wave agitation will be minimal. In this instance, boat docks can be located along most of the adjacent shoreline on either side of the river.

A conceptual representation of this scenario is shown on the previous page.

Option 2

Under the internal surge mitigation option, a new wave absorber would be constructed against the existing shoreline bulkhead, to minimize wave reflection back out the channel and into the East and West Twin Rivers branches. To the west/south of the revetment, a transient boat dock, protected by a panel breakwall will provide immediate boater access to the downtown zone.

Depending on the amount of wave agitation still penetrating down the channel (resulting from surge mitigation options), some protection of the boat launch ramp at the Seagull Marina may be needed. Alternately the alignment of the panel breakwall may be adjusted during wave modeling to direct the wave action away from the launch ramp.

A conceptual representation of this scenario is shown below.

3: Lake Michigan Beach Restoration

According to an agreement between the City and WDNR, the City has the right to place fill on the lake bed out to the designated bulkhead line. Uses are limited, however to recreational and/or marina related.

This is a key redevelopment opportunity for a number of reasons:

- The waterfront is under utilized along the lake in this area.
- The development will include a buffer to the city treatment plant that can be maintained until a time if/when the treatment plant is relocated.
- The land is highly visible, especially for transient boaters.
- Access to the waterfront and the south pier will be dramatically improved through a dedicated trail/pathway.
- Stormwater management facilities can be incorporated which would help clean run-off before it reaches the beach and lake.

The project options as shown will require coordination with the owners of Seagull Marina as a portion of their property is shown as beach (though to a lesser degree in Option 1).

The beach redevelopment would include a series of pocket beaches protected and stabilized by rubble revetments.

Option 2 is shown below. In this option, a naturalized pocket beach is shown in the channel (mirroring the beach adjacent to the US Coast Guard station) as part of the internal surge mitigation strategy.

4: Eggers East Property Redevelopment

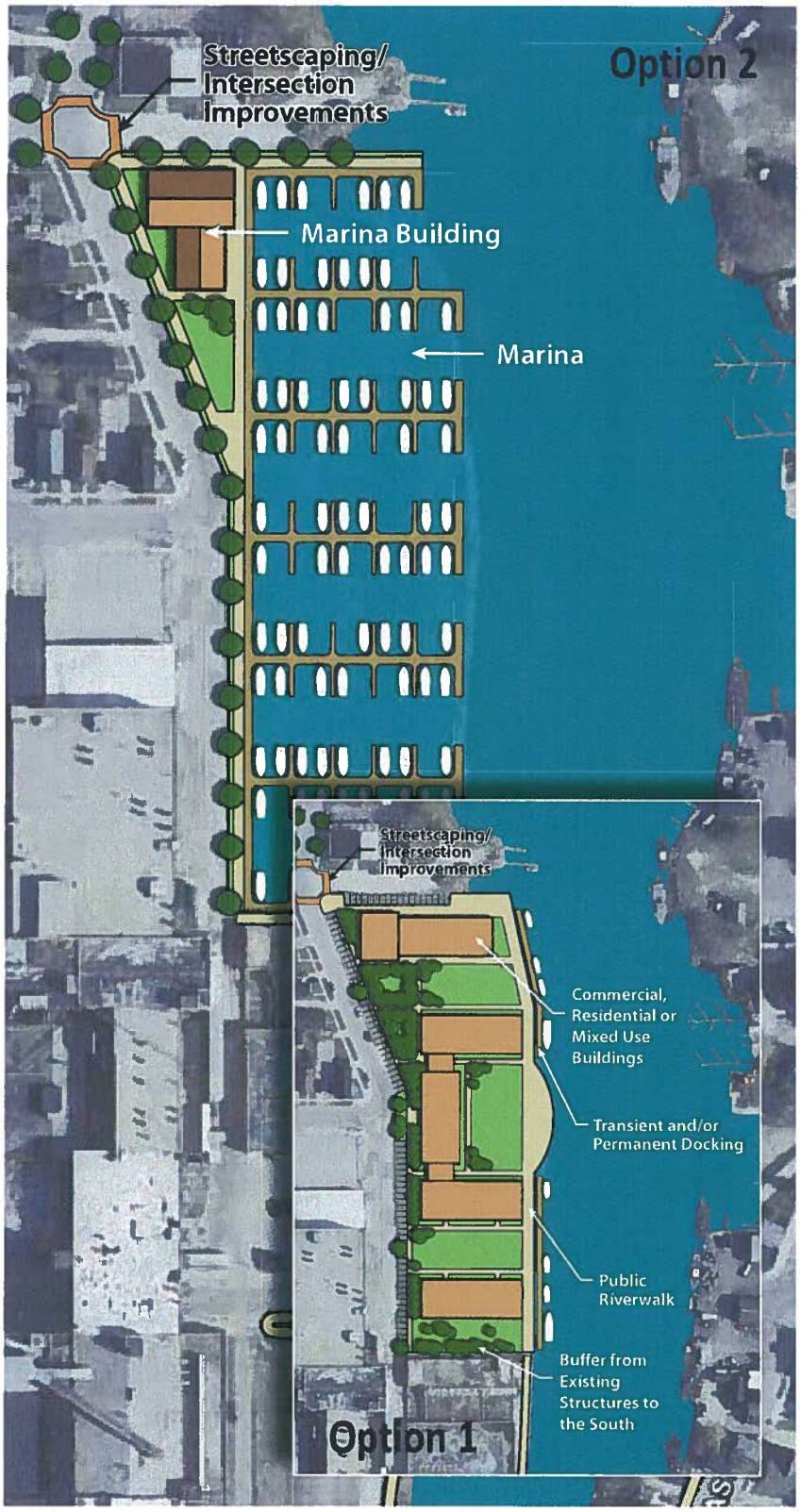
Redevelopment of the Egger's site along the East Twin River is a major opportunity within the harbor area. The site has been recently cleared and is vacant along the riverbank.

The redevelopment potential of this property is unique for a few reasons:

- The site is currently vacant.
- The site is situated across the river from the charter and commercial fishing fleet as well as Rogers Street Fishing Village. This is one of the most characteristic and maritime views in the harbor.
- The site is uniquely suited for a marina development. A marina isn't the only option for the site, but this is the location within in the harbor that could realistically be used for a sizable marina basin. The use of the site for a marina is most compatible with Master Plan Option 2 (internal lake surge mitigation) where additional dockage directly in the river near the entrance channel is limited.

If developed for marina purposes, approximately 100-150 slips could be carved from the bank. The marina could also potentially accommodate a small boat launch ramp at the end of Twentieth street, and a fuel pier at the foot of Eighteenth street. Additional uses could include marina support facilities and a small shopping/dining experience, which would act as catalysts for adjacent property revitalization.

Alternatively, the site could be developed as a mix of uses including waterfront shopping/dining and housing which would also capitalize



on the exceptional views across the East Twin River.

Streetscaping and intersection improvements would also be added to 18th, 19th, and 20th Streets to establish a connection with downtown. Eventually, the site would also be linked via riverwalk south adjacent to the current Fisher Hamilton property connecting to the City Property Port of Call Redevelopment and beyond.

One of the major uses with redevelopment of this site is the proximity and views of the adjacent Fisher Hamilton complex. Views of nearby waterfront facing industrial buildings may limit certain development scenarios of the Eggers site in the short term. This is one reason why a marina development is particularly suited for the site. Other uses such as commercial or housing are also appropriate, but would require appropriate site design and buffering.

Development as a marina basin would require further investigation into environmental conditions of the site. In addition, the property is currently privately owned and is not under direct control by the City of Two Rivers. Whether the City should actively pursue redevelopment of the site (which could include a public/private partnership) will ultimately depend on the lake surge mitigation solution that is implemented.

Additional Key Projects

5: Mariner's Trail Extension

Mariner's Trail runs adjacent to the lake shore along Memorial Drive and is heavily for a variety of recreational activities. The signage for the trail continues through Two Rivers, but the dedicated trail effectively ends just east of the Lighthouse Inn.

The dedicated trail should be extended into the City to touch the Downtown, stretch along the river, and finally continue east to connect with the Rawley Point Trail. The Trail should be a hard surface of at least 10 feet wide to accommodate a variety of users. The reconstruction of the 17th Street Bridge includes a 10' wide path on the south side of the road in anticipation of the trail connection.

The trail would contribute to expanding recreational uses within the City, connect key areas of the city, and contribute value to key redevelopment sites such as the City Property Port of Call Redevelopment and Harbor Park.

6: Alternative Marina/ Docking Development

Additional or improved marina/ docking facilities could be located west of Washington Street in the West Twin River if required.

This alternative location is important because it does not rely on either surge mitigation strategy due to the location away from lake surge.

The existing private docking facilities located along the north shore of the West Twin River could be easily improved as an option, especially in the short term until more is certain about potential surge mitigation strategies. On a larger scale, the West Eggers Site on the south shore could be excavated for a marina basin. In this case the existing, vacant Eggers buildings could be used for marina and waterfront-related uses.

7: Railroad Swing Bridge Reuse

The Chicago and North Western Railroad swing bridge is an iconic structure within the West Twin River. There is opportunity to reuse this structure to develop a greater public amenity that could become a signature piece for the City of Two Rivers. The bridge could be transformed into a unique park which would include fishing opportunities. One or more pedestrian bridges could be extended to the structure to gain access.

Prior to reuse, the structure would need to be evaluated for integrity and an agreement with the railroad reached.

8: West Twin River Dredging

While the West Twin river is relatively shallow, water moves at a faster rate than the East Twin River which helps to maintain navigable channels.

At any rate, water depth conditions could be improved to accommodate a variety of water craft. Dredging of the East Twin River is currently scheduled, but future dredging of the West Twin River should be sought especially as marina development happens on the west side.

9: Fisher Hamilton Redevelopment

This large complex situated directly between Downtown and the East Twin River is largely vacant and is a major future redevelopment opportunity in the City. This is an important transition area between the central business district and the waterfront and should eventually be redeveloped as a mix of uses that support both. Strong connections between the Downtown and waterfront should also be established here that do not exist today.

The City of Two Rivers should continues to reach out to Fisher Hamilton to form a partnership to further explore redevelopment/reuse options that benefit both the community and property owners.

10: Riverfront/Riverwalk Connectivity

Access to the waterfront in the harbor is limited and could be improved through the addition of riverwalks wherever redevelopment occurs along the waterfront. The City should strive to ensure that all redevelopment along the rivers within the harbor includes pedestrian access along the water where practical.

Of particular note is the potential connection between the City Property Port of Call Redevelopment and the redevelopment of the Eggers East property. A portion of this stretch is planned for the extension of Mariner's Trail, but it is vital to ensure that public river access is included in any redevelopment of the remainder of the area to ensure connectivity between major waterfront sites.

11: Harbor Park Improvements

Seawall improvements along Harbor Park are currently in the design phase which will greatly improve the condition and provide tie ups for transient boaters in storms. General improvements to the park should also be made to maximize the use of the park, beautify the harbor entrance, and connect to the future Mariner's Trail extension.

The concept below shows an example of potential park improvements that would provide greater usable space, dedicated parking, and a possible future park structure that would help define the harbor entrance. The concept also shows a transient boat dock that would be possible under the Master Plan Option 1 scenario (external lake surge mitigation).

In the concept, the entrance to the US Coast Guard station is also reworked in order to maximize usable river frontage and would need to be coordinated.

Overview

Implementation of the Harbor Master Plan will be an incremental process and will require coordination between the City, landowners, regulatory agencies, and granting agencies.

The purpose of this section is to outline the major considerations for each of the recommended projects within the Plan and match potential funding opportunities for each. Potential funding sources are listed for each project and detailed later on in the pull-out table.

Preliminary cost estimates are provided for projects where possible and include contingency and soft costs (25%). Appendix B includes additional cost estimate detail. The estimates are based on preliminary planning concepts using 2012 information, however, and not on detailed engineered plans. These "ballpark" estimates are intended to provide a general level of cost associated with the projects. When each project moves forward with detailed design and engineering, cost estimates will need to be refined. Some projects cannot be estimated at this time because the exact nature of the project is yet to be determined and/or may mostly be a private development effort.

Priority Catalyst Projects

1: Lake Michigan Surge Mitigation

Major considerations:

Before any final conclusion on the best approach and final solution to lake surge mitigation in the harbor can occur, a detailed modeling study must done.

Permitting. Permit submittals typically follow a coordinated permit process referred to as the Joint Application Process. Through this process, the Wisconsin Department of Natural Resources receives all materials and collaborates with the Corps of Engineers and other key agencies including the U.S. EPA, State Historic Preservation Office, and the U.S. Fish and Wildlife Service. Specific required permits vary based on which project elements are to be implemented. Additional consultation with the WDNR and Corps of Engineers should be undertaken as part of the next phases of project development to confirm permit and environmental review requirements. Permits are likely to be required for improvements and enhancements include:

- Section 401 Water Quality Certification
- Section 10 of the Rivers and Harbors Act of 1899/Section 404 of the Clean Water Act
- Section 106 of the National Historic Preservation Act
- Chapter 30 Permit
- Waterway Marker Permit

Based on preliminary consultations with USACE and WDNR, the following issues will be important to address prior to and as part of future permit negotiations.

Riparian Interests. Property owners along the shoreline may have rights that extend into the water. Physical improvements or impacts resulting from installation of the physical improvement that encroach past the riparian interest limits of an owner require specific agreements. Agreements between the City and private entities should be in place prior to seeking permits.

Lakebed Wetland. Lake Michigan is designated as an area of special natural resource interest. Portions of land within and around the harbor area may be part of lakebed wetlands – wetlands that are directly connected to Lake Michigan. Lakebed wetlands are a rare environment and are highly regulated. Prior disturbance in the planned harbor expansion area should be further investigated and wetland boundaries need to be evaluated prior to advancing with detailed design of the improvements.

Federal Channel. Portions of the harbor are within a Federal Navigation Channel. It is likely that the Corps of Engineers will require those portions of the marina encroaching

within the Federal Channel to be de-authorized as a Federal Channel.

In order to ensure that the wave modeling study includes all pertinent findings, a meeting with the WDNR Northeast Region administrative staff is advised. Once the modeling study is complete, the City can pursue funding and design of appropriate surge mitigation structures. A City of Two Rivers/ACOE joint Chapter 30 permit application can then be submitted to the WDNR to construct structures (including on the state lake bed for the hooked jetty option) once designs are underway. ACOE's partnership in the application is independent of any funding that may be used for design/construction of any surge mitigation structures. A lake bed grant is not required if a Chapter 30 Permit is issued, but if a lake bed grant is ultimately needed, the City can pursue this with the State legislature.

Cost estimate range:

In general, the two options for surge mitigation are roughly similar at first glance. The outer jetty and breakwater extension (Option 1) is estimated at about $6,000,000. Option 2 is also estimated at about $6,000,000: the three internal revetment structures are estimated at about $4,500,000 and the wave spending beach (which may be required) is estimated at $1,500,000 including at a minimum: seawall removal, excavation, beach creation, and possibly land acquisition costs.

Option 2, however, does increase the costs associated with the City Port of Call Redevelopment Project due the required marina configuration and panel breakwall.

As previously mentioned, the first step is a detailed modeling study which would help determine the best option and design direction. The cost of this study is estimated at about $200,000.

Potential funding sources:

- Harbor Assistance Program (HAP)
- US ACE (Sections 22, 103, 107)
- Transportation Infrastructure Finance and Innovation Act Program (TIFEA)
- Coastal Management Program
- Recreational Boating Facilities Program (RBF)
- Great Lakes Restoration Initiative (GLRI)
- Boating Infrastructure Grant Program (BIG)

2: City Port of Call Redevelopment

Major considerations:

The City of Two Rivers owns the majority of the land shown in the development concept options. To begin, limiting the improvements to City-owned land will be easiest to coordinate. Expansion beyond City-owned land and whether to close the extension of East River Street will require greater coordination with surrounding landowners.

This site also provides an opportunity to utilize TIF funding for infrastructure improvements in the area. Once of the major purposes of this project is to bridge the gap between the downtown and the harbor. TIF funds used in this area can help stimulate redevelopment of surrounding private properties in order to truly redevelop this gateway into the City. The exact boundaries and extent of the TIF District will need to be determined.

See also the *Permitting* and *Riparian Interest* discussion (under the Major Considerations section) described in the Lake Michigan Surge Mitigation project.

Cost estimate range:

The costs for this project vary most depending on which surge mitigation option is chosen. If an internal surge mitigation strategy is used (Option 2), there would be greater costs associated with the panel breakwall required to protect the marina basin. There is also likely to be some excavation for the basin and new seawall construction in this option.

The basic costs for development of the Port of Call project are estimated at about $1.5 million depending on the exact nature of improvements, the size and finish of the marina building, whether any utilities would need to be relocated, the extent of seawall replacement/repairs, and other factors.

In addition to the basic land (re) development costs, we can estimate some costs associated with the associated marina. Option 1 is significantly less expensive assuming the same number of boat slips as Option 2. In Option 1, the boat docks are estimated at $800,000 (which does not include any potential seawall repairs/replacement. The marina costs for Option 2 are estimated at about $3.2 million. The higher cost for this option results from the panel breakwall (protecting the marina from any wave agitation, excavation, and a new seawall.

Potential funding sources:

- Clean Vessel Act Grant Program (CVA)
- Sport Fish Restoration Act (SFR)
- Boating Infrastructure Grant Program (BIG)
- Recreational Boating Facilities Program (RBF)
- Urban Rivers Program
- Coastal Management Program
- Tax Increment Financing (TIF)

3: Lake Michigan Beach Restoration

Major considerations:

See the *Permitting, Riparian Interest, and Lakebed Wetland* discussion (under the Major Consideration Section) described in the Lake Michigan Surge Mitigation project.

Cost estimate range:

The exact nature of the beach restoration project is unknown at this time, but for very general cost estimating purposes we can assume approximately a range of $3,750,000 to $4,500,000. Additionally, any amenities such as a promenade, landscaping, walls, and utilities would be about an additional $2,250,000 based on the length of the project.

Potential funding sources:

- US ACE (Section 103)
- Great Lakes Restoration Initiative (GLRI)
- Urban Nonpoint Source and Stormwater Runoff Pollution Program (UNPS & SW)

4: Eggers East Property Redevelopment

Major considerations:

The biggest challenge of redeveloping this property will be determining the City's level of direct involvement. For example, if the property is developed as a marina, will it be owned/operated by the City, will there be a pubic/private partnership, or will it be entirely privately developed? The approach needs to be studied further and determined prior to redevelopment. If the site is not developed as a marina, then it is likely that it will be privately developed with assurances for public easements/right-of-way along the river edge.

If developed as a marina, there will be permitting considerations. See the *Permitting* and *Riparian Interest* discussion (under the Major Considerations section) described in the Lake Michigan Surge Mitigation project.

Cost estimate range:

The costs associated with Option 1 depicting the mixed-use development is difficult to estimate at this time, because it is uncertain what the uses will be, the intensity of use, or the quality of construction.

We can make some assumptions about Option 2, the marina development. The estimate for excavation, new seawall, and boat docks is approximately $7.8 million. This assumes nearly the entire site would be used for a marina basin and parking would be handled off-site. The costs would change if portions of the site were used for parking and/or boat launch facilities as well.

The upland portion of the site (as shown on the concept) which includes the marina building, streetscaping, and public spaces is estimated at approximately $1.6 million. This depends largely on the size and nature of the marina building.

Potential funding sources:

- Site Assessment Grants (SAG)
- Community Development Block Grants (CDBG-PF)
- EPA Brownfield Assessment Grants (EPA BA)
- Knowles-Nelson Stewardship Program

Additional Key Projects

5: Mariner's Trail Extension

Major considerations:

The extension of Mariner's Trail is shown on the Master Plan in conceptual format. The major considerations include whether the trail/path segments are located in existing right-of-way (on-street or off-street) or beyond the right-of-way (which may require property acquisition). Further design feasibility studies will include this analysis.

Cost estimate range:

A precise cost for the trail extension cannot be determined at this time. The largest unknown factor is where land acquisition would be required and how much it would cost since a detailed feasibility study has not yet been conducted.

For reference purposes, however, about $45/LF can be assumed for a 10' wide path which would include

design and construction, but not land acquisition. Outside of the projects that contain portions of the extended trail, the total length as shown on the concepts is about 4,000 ft. for a total of $180,000 without land acquisition costs.

Potential funding sources:

- Knowles-Nelson Stewardship Program
- Recreational Trails Act (RTA)
- Transportation Enhancement Assistance Program (TEA)
- Local Transportation Enhancements Program (TE)
- Coastal Management Program

6: Alternative Marina/ Docking Development

Major considerations:

Development of additional/ improved docking facilities in this area will depend on lake surge mitigation options and whether the East Eggers site is ultimately used as a marina. In the short term, improvement of existing private facilities along the north shore of the West Twin River is a viable option.

Cost estimate range:

Since it is not known at this time whether facilities will be needed in this area, nor the extent of such facilities, an estimate cannot be provided.

Potential funding sources:

- Clean Vessel Act Grant Program (CVA)
- Sport Fish Restoration Act (SFR)
- Boating Infrastructure Grant Program (BIG)
- Recreational Boating Facilities Program (RBF)
- Urban Rivers Program
- Coastal Management Program

7: Railroad Swing Bridge Reuse

Major considerations:

Cost estimate range:

Since it is not known at this time the extent of the reuse, the structural integrity of the bridge, or the future ownership of the bridge, an estimate cannot be provided.

Potential funding sources:

- Sport Fish Restoration Act (SFR)
- Coastal Management Program
- Community Development Block Grants (CDBG-PF)
- Recreational Trails Act (RTA)

8: West Twin River Dredging

Major considerations:

The West Twin River is generally narrower and used by smaller boats than the East Twin River. Because it is relatively narrow, current in the West Twin moves fast enough to maintain channels for smaller boats. If, however, the marina within the Port of Call project or the alternative boat docks/marina west of Washington is developed, dredging of the West Twin should occur to accommodate larger boats.

The City may also want to investigate the economics of jointly purchasing dredging equipment with a nearby harbor community(ies) to maintain the river depths into the future. Securing future grant funding for continued dredging to ensure necessary water depths is uncertain.

Cost estimate range:

The current East Twin River dredging project has a cost of $2.047 million. For cost estimating purposes, it can be assumed that dredging the West Twin River will have a similar cost. In actually, however, the cost will likely be lower for the West Twin as it is narrower, used by smaller boats and will require less depth than the East Twin River.

Potential funding sources:

- Harbor Assistance Program (HAP)
- Recreational Boating Facilities Program (RBF)
- Sport Fish Restoration Act (SFR)

9: Fisher Hamilton Redevelopment

Major considerations:

The City should continue attempting to work with the owners of the complex to explore a redevelopment strategy for this critical component of the City's downtown and harbor. Initial efforts should be focused on determining the extend of any environmental issues and the potential for reuse of any existing buildings.

Cost estimate range:

Since it is not known at this time the extent or nature of the future redevelopment, the involvement of the current property owners, or the extent of the environmental remediation required, an estimate cannot be provided.

Potential funding sources:

- Site Assessment Grants (SAG)
- Community Development Block Grants (CDBG-PF)
- EPA Brownfield Assessment Grants (EPA BA)

- Knowles-Nelson Stewardship Program

10: Riverfront/Riverwalk Connectivity

Major considerations:

As (re)development on private property happens along the East and West Twin Rivers in the harbor, the City should ensure that options for public access along the river edge are established or maintained.

The city should also explore partnerships with landowners in improving public access through the use of grant funding where possible.

Cost estimate range:

Since it is not known at this time the extent of the future riverwalk system in the harbor, or whether any site acquisition needs to occur, an estimate cannot be provided.

Potential funding sources:

- Recreational Trails Act (RTA)
- Coastal Management Program
- Community Development Block Grants (CDBG-PF)
- Knowles-Nelson Stewardship Program

11: Harbor Park Improvements

Major considerations:

Any redevelopment of Harbor Park should include the extension of Mariner's Trail.

Also, because the site is relatively narrow and slopes toward the water, a retaining wall should be used to maximize the usable space within the park.

The conceptual drawing reorganizes the south end of the park to maximize river frontage such that the existing driveway to the US Coast Guard station is moved. This will need to be coordinated appropriately.

Cost estimate range:

The cost estimate for total Harbor Park improvements is approximately $2.2 million.

At the time of writing this plan, the majority of funding for this project has been allocated through grants and the City's capital improvement budget. Items outside of the current budget include the dock adjacent to the seawall in Option 1, the park structure and redesigned parking lot.

The City should continue to seek grant funding on this project.

Potential funding sources:

- Community Development Block Grants (CDBG-PF)
- Sport Fish Restoration Act (SFR)
- Coastal Management Program
- Knowles-Nelson Stewardship Program
- Recreational Trails Act (RTA)

Ongoing Maintenance and Repair

In addition to the specific project and initiatives outlined in this Plan, the City should continue to maintain the general infrastructure of the harbor, a component of which is the seawalls. High priority should be given to the repair and improvement of failing seawalls on both public and private riparian properties on an ongoing basis to support the continued health and value of the harbor.

Funding Source Details

Appendix C outlines the details of each of the potential funding sources listed in this section.

In addition, many of the projects outlined in this Plan may be eligible for Community Development Block Grant Funding (CDBG). CDBG funds must be used within an area determined to be blighted. Appendix D includes the outcome and boundaries of the determination.

Two Rivers Harbor Surge Mitigation and Beach Restoration Concept Study

TWO RIVERS HARBOR

SURGE MITIGATION AND

BEACH RESTORATION CONCEPT STUDY

Technical Memorandum

SMITHGROUP JJR

December 10, 2012

SMITHGROUPJJR 625 WILLIAMSON STREET, MADISON, WI 53703 T 608.251.1177 F 608.251.6147

TWO RIVERS HARBOR SURGE MITIGATION AND BEACH RESTORATION CONCEPT STUDY

INTRODUCTION

The Two Rivers Harbor is located on the west shore of Lake Michigan, roughly 80 miles north of Milwaukee and 30 miles southeast of Green Bay, Wisconsin. The Two Rivers Harbor is currently experiencing lake generated surge that result in wave agitation conditions between the entrance jetties and within the harbor entrance channel that render the harbor unacceptable as a small craft harbor of refuge. In common usage, the expression "surge" implies that the water level is elevated due to wind stress during storms. In this case the inference to surge is related to substantial wave agitation which is funneled into the entrance channel, and potentially amplified by the geometry of the harbor. Visual observations of the Two Harbors entrance channel wave conditions by SmithGroupJJR during a mild summer wind event on May 24, 2012, found that even in mild conditions, waves easily penetrated the entire length of the channel. Further, the waves appear to be guided up the channel, reflecting obliquely from the jetty walls to become amplified along the walls in a phenomenon known as Mach stem, which makes the edges of the channel the most agitated.

Vessels seeking safe harbor during these severe storm conditions must run the gauntlet of surge action the full length of the entrance channel to get further up the river, and escape the reach of these waves. The purpose of this technical memorandum is to evaluate the apparent conditions of the Two Rivers Harbor, and develop concept level solutions for mitigating the effects of lake surges within the harbor and entrance in support of the ongoing harbor master planning study by Foth Infrastructure & Environment, LLC.

Background

Presently the harbor serves a community of small craft recreational boat users, charter boats and a commercial fishing fleet. The existing configuration of the Two Rivers Harbor and entrance is shown in Figure 1. This graphic indicates major dimensions, water depths, and property ownership boundaries, as well as the delineation of the lake bulkhead line, which the City believes is within their jurisdiction and eligible for reclamation.

The harbor entrance channel is composed of roughly 755 feet of jetty and another 977 feet of bulkhead. This intersects with the confluence of the East and West Twin Rivers. The jetties, constructed originally around 1880 are composed of wooden piling as a cribwork. A concrete cap was poured over the crib in the 1930's, and remains federally controlled and maintained. More recently the inner flank of the north harbor entrance jetty was armored with large rock (see Figure 3b). The main entrance channel is 12-16 feet deep and the two branching channels are between 8-10 feet deep. Bridges across the two river branches limit the distance a dredged channel can be sustained.

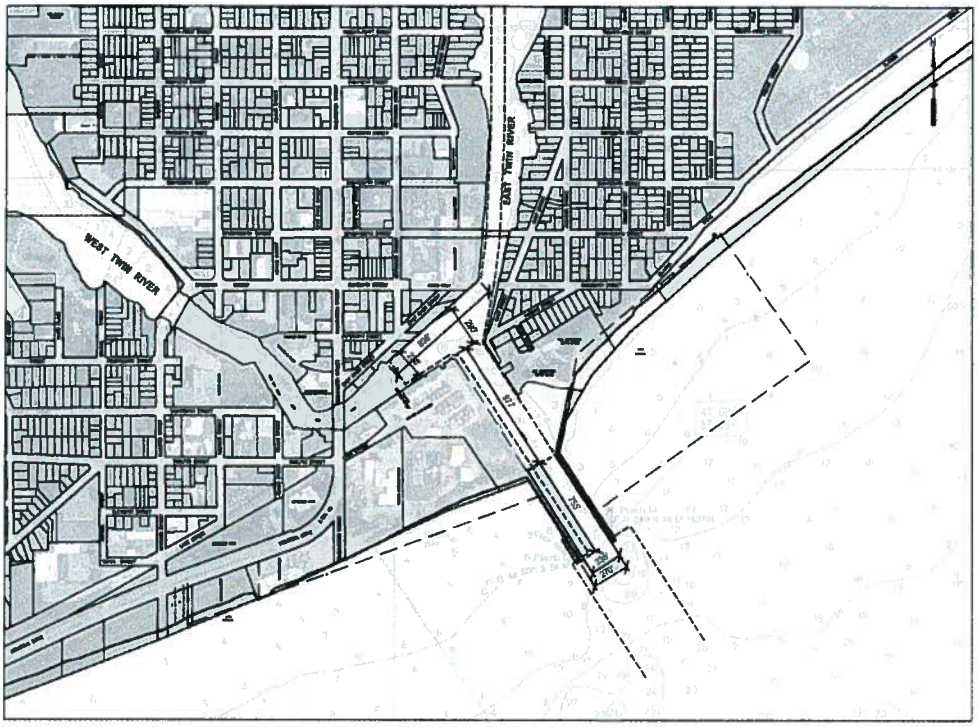
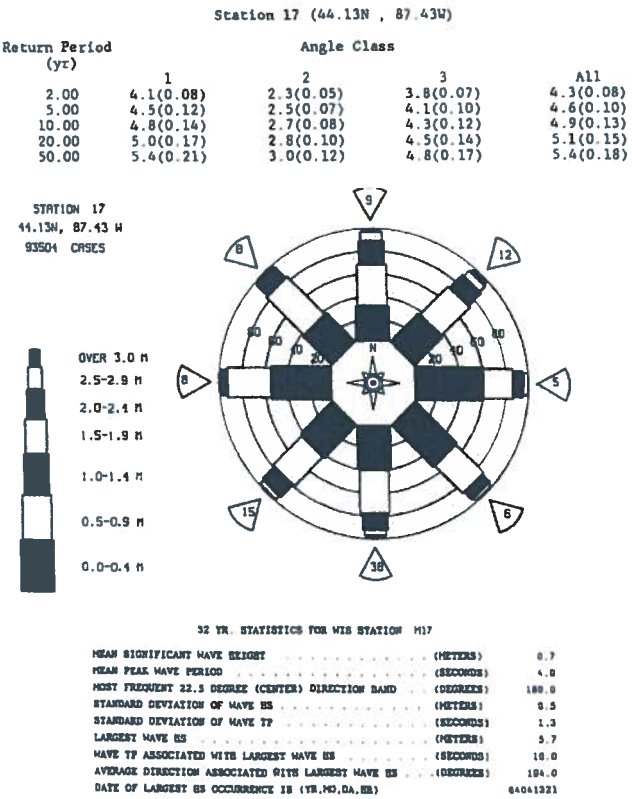


Figure 1: Two Rivers Harbor

Waves and Sediment Transport

The deep water wave conditions within the vicinity of the Two Rivers harbor entrance is summarized in Figure 2. This reporting station is located several miles offshore and reports the wave conditions in deep water, not necessarily those which arrive at the harbor mouth. In the deeper open lake, waves in this area can reach up to 18 feet; however, the heights of waves become restricted in shallow water to 60 – 80% of the water depth. Therefore the wave conditions at the harbor entrance are limited in height to 8 feet or less as they shoal from offshore and sometimes break.

The harbor channel is oriented toward the southeast, making the entrance subject to wave effects arriving anywhere from east to south. While the largest waves come from the northeast, 49% of the waves come from the southeasterly quadrant, making surge activity within the harbor persistent. Waves arrive from the southerly quadrant 53% of the time, so net sediment drift potential is expected to be toward the north along this stretch of shoreline. Geomorphically, this is evident by the shoreline offset on the north side of the jetty entrance.



Station 17 (44.13N , 87.43W)

Return Period (yr)	Angle Class 1	2	3	All
2.00	4.1(0.08)	2.3(0.05)	3.8(0.07)	4.3(0.08)
5.00	4.5(0.12)	2.5(0.07)	4.1(0.10)	4.6(0.10)
10.00	4.8(0.14)	2.7(0.08)	4.3(0.12)	4.9(0.13)
20.00	5.0(0.17)	2.8(0.10)	4.5(0.14)	5.1(0.15)
50.00	5.4(0.21)	3.0(0.12)	4.8(0.17)	5.4(0.18)

32 YR. STATISTICS FOR WIS STATION #17

MEAN SIGNIFICANT WAVE HEIGHT	(METERS)	0.7
MEAN PEAK WAVE PERIOD	(SECONDS)	4.0
MOST FREQUENT 22.5 DEGREE (CENTER) DIRECTION BAND	(DEGREES)	180.0
STANDARD DEVIATION OF WAVE HS	(METERS)	0.5
STANDARD DEVIATION OF WAVE TP	(SECONDS)	1.3
LARGEST WAVE HS	(METERS)	5.7
WAVE TP ASSOCIATED WITH LARGEST WAVE HS	(SECONDS)	10.0
AVERAGE DIRECTION ASSOCIATED WITH LARGEST WAVE HS	(DEGREES)	194.0
DATE OF LARGEST HS OCCURRENCE IS (YR,MO,DA,HR)		84041321

Figure 2: Deep Water Wave Statistics near Two Rivers, WI

Figure 3a: An aerial view of the coastal processes typically experienced at the site. In this photograph, the waves can be seen arriving from the northeast, so on this day, sediment drift would be toward the south. However the sand shoals that are apparent in the foreground (south of the harbor entrance) are the result of the net northerly littoral sediment transport which results from the predominantly occurring waves from the south which also produced the retreat (offset) of the shoreline on the north side of the entrance jetties.

Figure 3b: A view of the harbor entrance from along the south bulkhead wall.

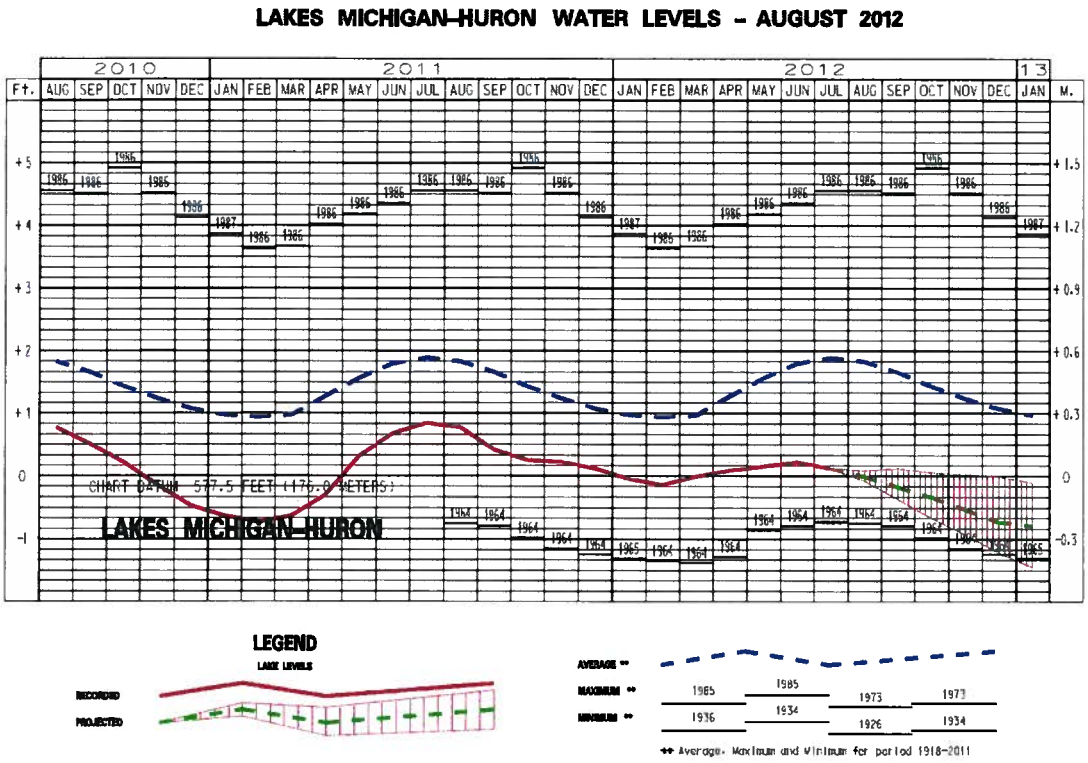


Figure 4: Water level projections and extremes for Lake Michigan.

Water Levels

Wave conditions in and around the harbor entrance are also affected by lake levels. A summary of these lake levels for Lake Michigan are shown in Figure 4. Average monthly water levels in Lake Michigan have varied by approximately 6.3 feet over the last 30 years, though there is evidence that water level fluctuations have been much more extreme than data collected over the last 145 years. Water levels in Lake Michigan during June 2012 were about 19 inches below the average June levels that are indicated in Figure 4.

Low lake levels, which are at near historic lows, can have a substantial effect on wave behavior as they propagate up the entrance channel. Sedimentation at the entrance of the harbor is more pronounced during lower lake levels, and in extreme storm conditions can trigger wave breaking right in the harbor mouth. During higher lake levels the opposite occurs. Sedimentation is less of an issue; however waves become bigger at the entrance channel, overtop walls, and cause shoreline damage. Based on historic extremes, it is possible that future lake levels will rise nearly 4 feet higher than current lake levels.

METHODOLOGY

This memorandum presents two case studies of harbors similar to Two Rivers. The case study methodology and results were applied to the situation at Two Rivers, and analyzed to arrive at site specific options for this harbor. Two general solution types were developed, an internal to the harbor solution, and external to the harbor solution.

Case Studies: Previous Surge Mitigation Efforts

Rochester Harbor New York Case Study

A range of surge dissipating options have been explored for other harbor river entrances similar to Two Rivers. The most extensive published study was performed by the US Army Corp of Engineers for the Rochester Harbor, Rochester, New York (Bottin and Acuff, 1995). The general conditions, wave exposure, and entrance geometry are similar in that study to Two Rivers, though the Rochester Harbor jetties are longer and extend into deeper water. The depth between the jetties in Rochester is 23 feet, while Two Rivers is closer to 15 feet. The Rochester Harbor originally experienced 2-4 foot waves at the inner end of the entrance channel, while waves outside the harbor were 6-9 feet. This is similar to what Two Rivers experiences.

Figure 5 summarizes the various options considered for the Rochester Harbor, which include both external and interior solutions. The exterior options show the construction of an offshore detached breakwater to shelter the entrance, and a jetty extension with a dogleg to close off the exposure of the open harbor entrance. The interior options show the addition of wave absorbing revetments and short spur dikes that line the inside of the channel jetty and bulkhead. Those options that meet the surge attenuation goals are framed in bold in Figure 5.

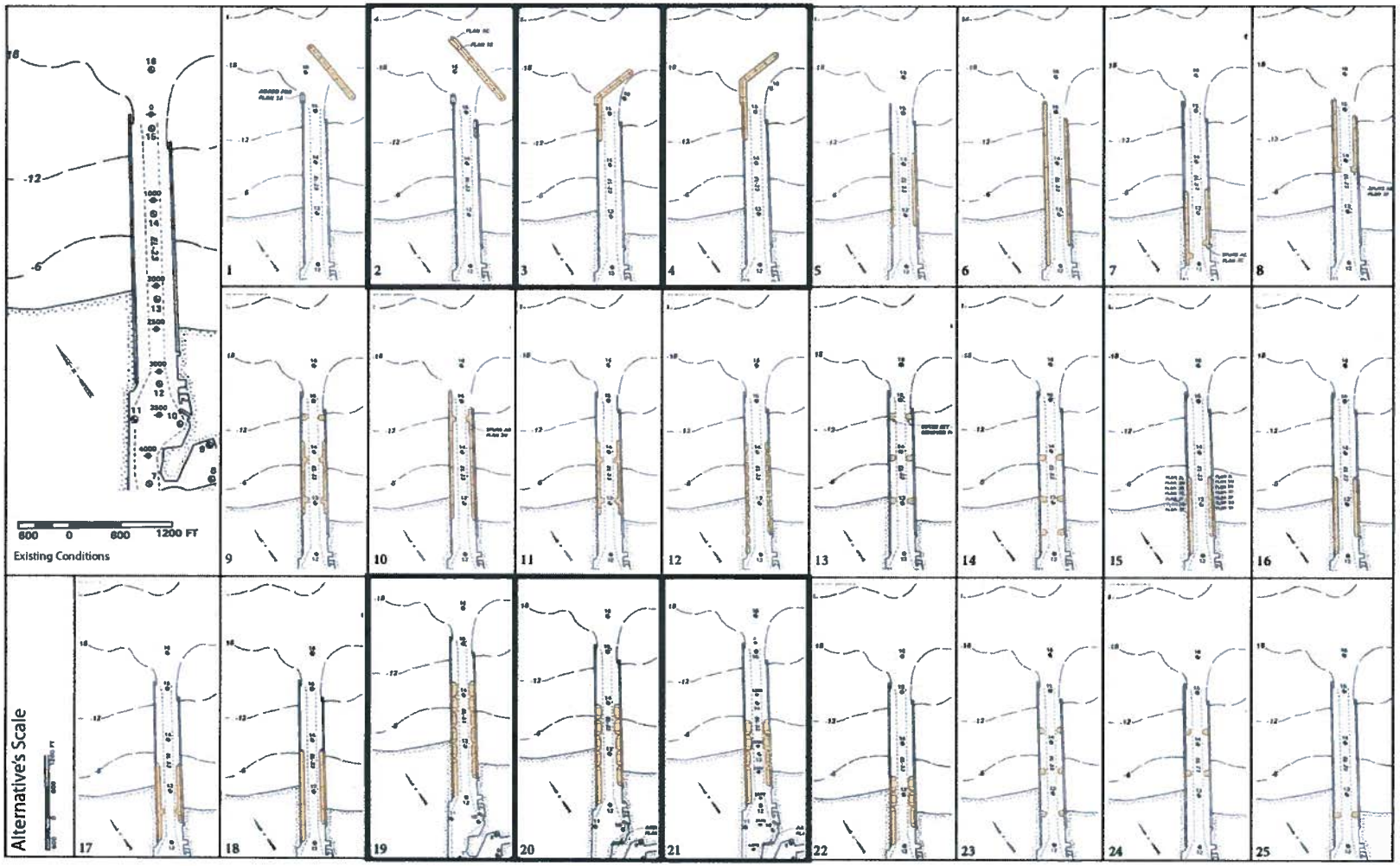


Figure 5: Entrance surge mitigation options for Rochester Harbor, Rochester, NY

External Solution

As expected, both the detached breakwater and the jetty dogleg extension work well to reduce the wave action in the channel. The detached breakwater requires lengthening to produce the desired wave shadow at the harbor entrance to properly attenuate waves from all directions. Examination of the cost of these external options precluded their further consideration as viable options for Rochester Harbor, but still need to be explored for applicability at Two Rivers Harbor.

Internal Solution

The Bottin and Acuff study of the interior channel options revealed some viable and relatively less expensive options to reduce wave action to 1 foot at the inner end of the channel. However, not all solutions were successful, including those presupposed to be the most effective. There were some very specific geometries and dimensions required to achieve the desired performance. First, solutions that involved placing short spur jetties perpendicular to the channel did NOT break up the wave action or sufficiently dampen the agitation. Further, the tests showed that at least 1900 feet of energy absorbing revetment flanking each side of the channel was required to reduce the wave height to 1 foot or less at the inner end of the channel. When only 1600 feet of revetment was tested, an additional wave absorbing "spending beach" needed to be added across the root of the channel end to eliminate wave reflections back up the channel.

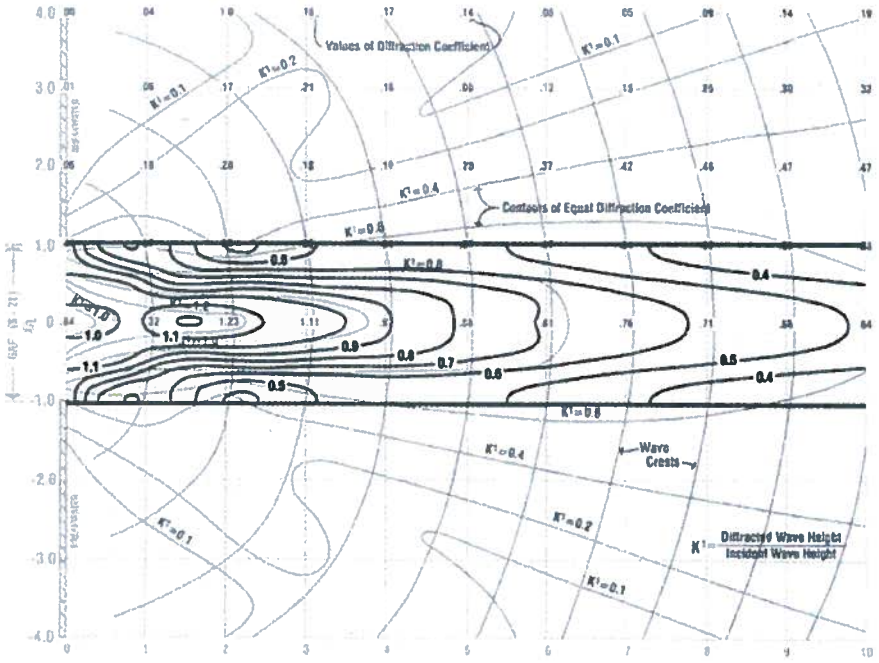


Figure 6: Jetty induced wave attenuation compared to slip diffraction

Figure 6 illustrates the significance of the length of wave absorption required to dampen a wave running down a navigation channel. This plot, adapted from Melo and Guza (1990) shows how much wave damping occurs along the length of a pair of parallel jetties due to just a rock edge lining as a function of wave length. Theoretically, for the conditions at Rochester Harbor, a typical wavelength could be in the order of 150 – 200 feet. A roughly 500 foot gap between jetties required a length of 2000 feet of absorbing jetty to reduce the wave height by 50%. With 1600 feet of absorbing jetty, the reduction is only 40%, which correlates with the wave model study results, and explains the need for further wave absorption at the end of the channel.

The nature of an absorbing revetment was also examined. A typical cross section of the absorbing revetment found most effective in damping waves is shown in Figure 7. The cross sections are built as a highly porous matrix of rocks with no core to produce maximum energy dissipation.

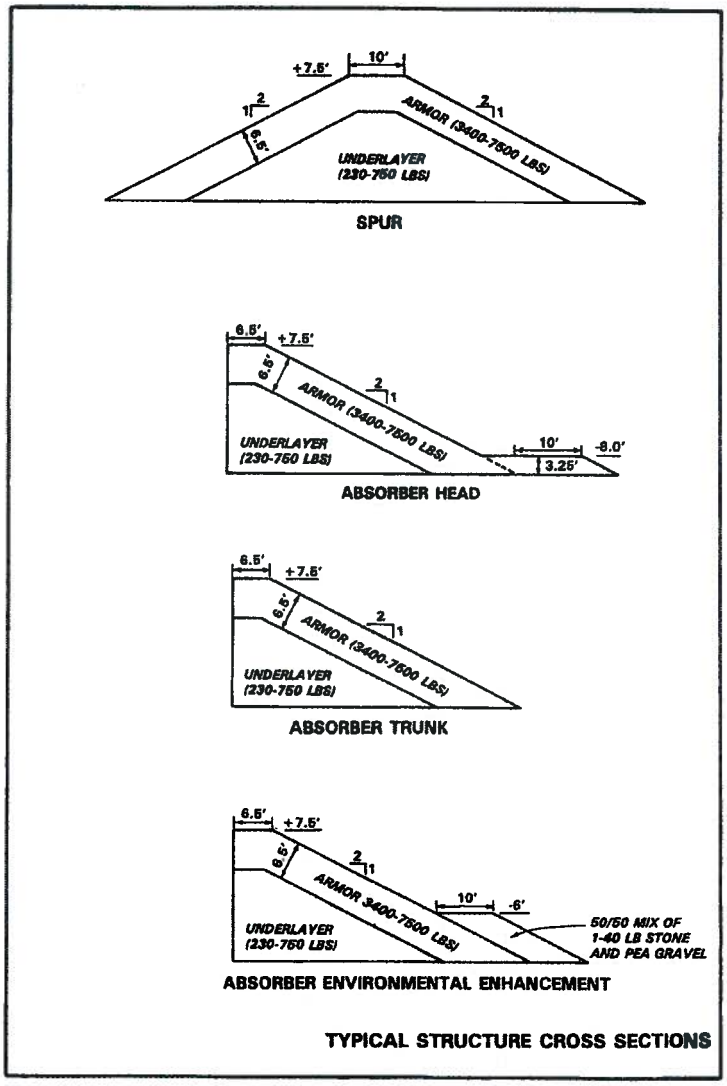


Figure 7: Surge absorbing structures from the Rochester Harbor study

South Haven Marina Case Study

A second study was performed by JJR for the South Haven Municipal Transient Marina, located on the eastern shore of Lake Michigan, as part of the design effort for the City's Downtown Riverfront Park. This location also experiences comparable wind, wave and water level conditions to Two Rivers. Physical model tests of the South Haven entrance wave behavior determined that a special energy absorbing revetment was needed at the inner end of the entrance channel to prevent waves from following the channel and agitating the berthing in the marina. This solution was similar to the Rochester condition when insufficient lateral wave absorption was available. To maximize the absorption potential of the revetment, atypical revetment slopes and rock armor gradations were employed. In this case, the revetment slope was flattened to no steeper than 1V:2.5H with the majority of the revetment at a slope of 1V:3H or flatter. The benefit of this detail is revealed in Figure 8, which shows the reflection coefficient χ for various absorbing revetment slopes given a common deep water storm wave condition. Note that reflected energy reduced more than 50% as the revetment slope changed for 1V:1.5H to 1V:3H. (USACE,

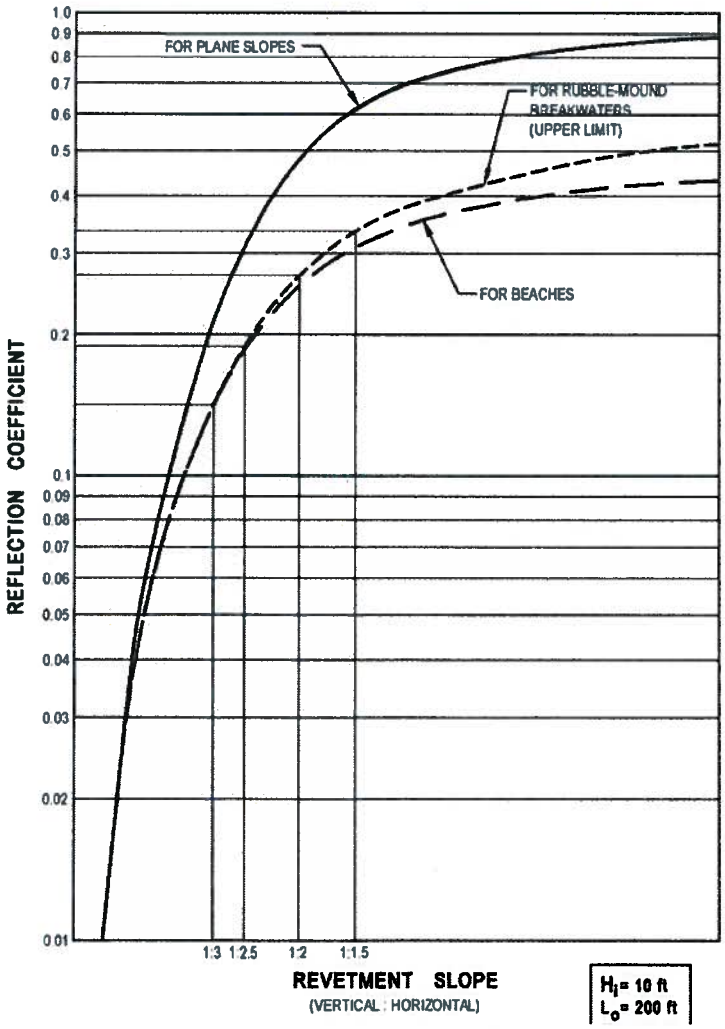


Figure 8: Wave reflection coefficient

1984)

The armor was sized to be stable for a more typical 1V:2H reveted slope so it was oversized for a 1V:3H slope. At the flatter slope, the oversize stone revetment became more effective in energy absorption because its roughness and porosity was increased. The typical wave absorbing section used for South Haven is shown in Figure 9.

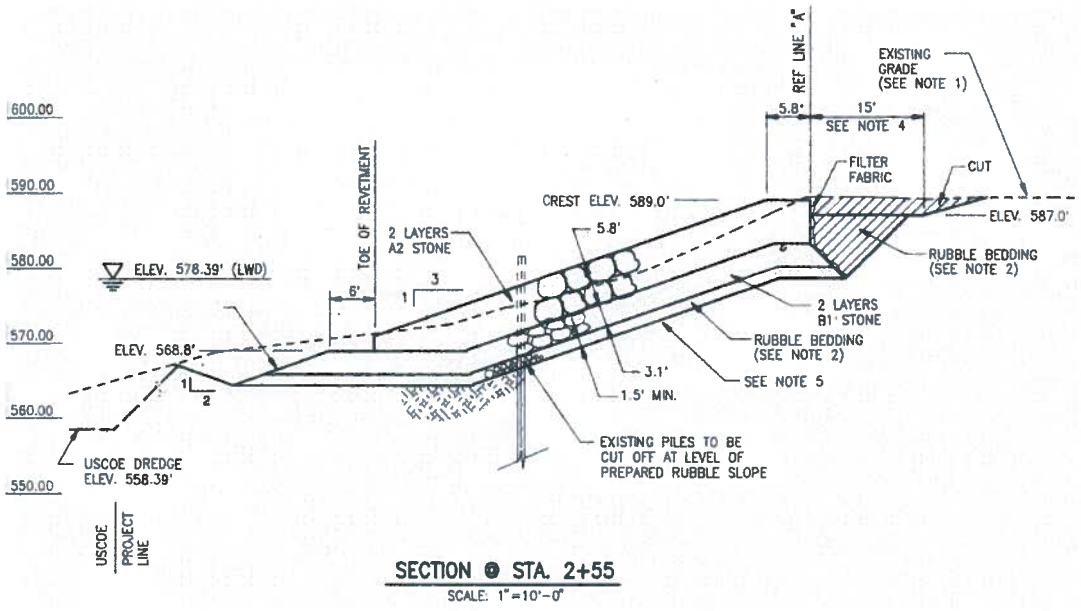


Figure 9: Example of energy absorbing flat revetment section used at South Haven, Michigan

The implementation of the flattened slope revetment for better wave absorption at the head of the South Haven Harbor entrance channel is shown in Figures 10a and 10b.

Figure 10a: Revetment at end of channel, South Haven

Figure 10b: Flat slope revetment, South Haven

INFERRED TWO RIVERS SURGE MITIGATION SOLUTIONS

The Two Rivers Harbor entrance presents similar characteristics to both Rochester, NY and South Haven, MI. The findings from the Rochester Harbor study explore the largest range of options, while South Haven Marina demonstrates an effective implementation. However, the two applications differ in end goals. In Rochester, the goal was to create a safe harbor of refuge within the straight run of the harbor and improve navigational safety by dampening waves along the channel. In South Haven, the attenuation was designed to achieve special tranquility at an exposed berthing area. Both will be used to develop a suggested surge mitigation solution for the Two Rivers Harbor.

External Surge Mitigation Option

Using the two case studies as a framework, two solutions were developed for Two Rivers. Figure 11 illustrates an exterior surge control solution for the entrance similar to one of the Rochester solutions. It shows a hooked south jetty extension sized to limit waves to less than 4 feet at the existing harbor mouth during storm events. The required breakwater length and orientation are extrapolated based on simple theories of monochromatic wave diffraction around detached structures, and a general inference of the dominant wave conditions (USACE, 1984). Each arced line represents one wave length in spacing. For a 10 second wave in 12 ft of water, this is approximately 190 ft. The plot roughly projects the expected size of the wave and direction of the wave as it is bent around the tip of the proposed J-Hook breakwater. The 0.50 contour line is the prediction of the amount of wave height reduction that would occur at the mouth of existing jetties once the J-Hook has been added. The 8 ft storm wave would be diminished to 4 ft or less. Because wave height is limited by the water depth due to breaking, the 8 ft wave is the largest wave that could physically occur in 12 ft of water, regardless of conditions further out in Lake Michigan. Therefore, ignoring lake level rise, which would impact this inference somewhat, the new harbor would never be expected to suffer waves greater than 4 ft anywhere and in fact the waters between the existing jetties would be expected to be mild even during the worst storms.

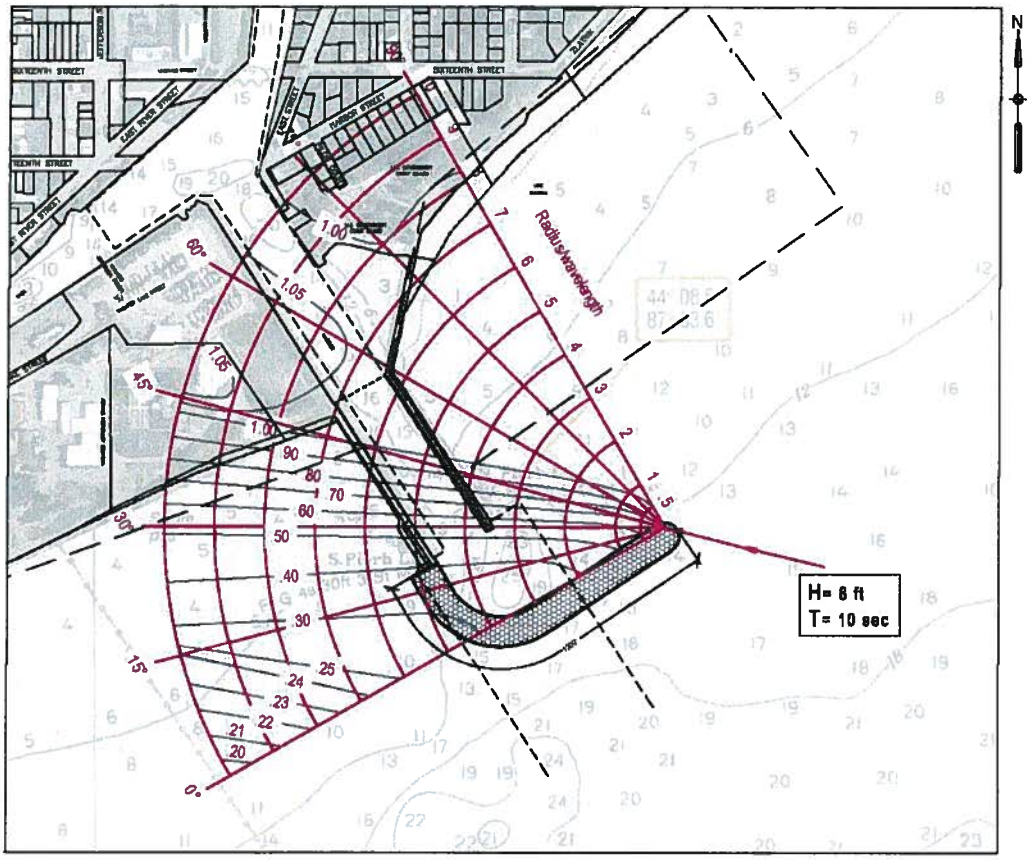


Figure 11: A simple prediction of the size of a hooked jetty extension required to achieve desired navigation tranquility in the entrance channel given the wave height and period of the wave based on end diffraction.

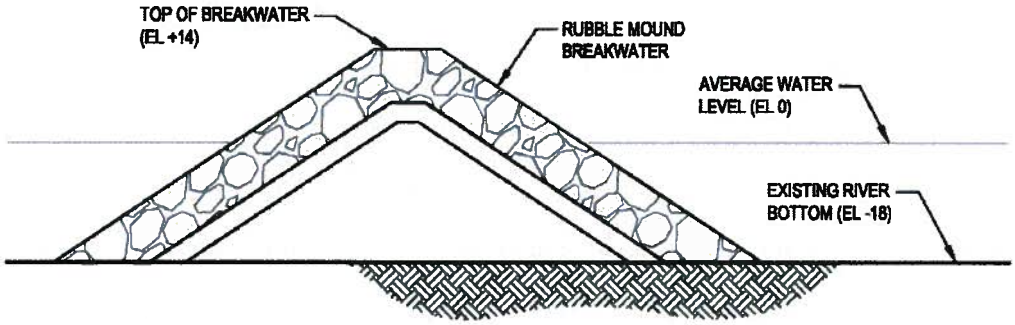


Figure 12: Typical cross section for detached breakwater and jetty extension

Internal Surge Mitigation Option

The Two Rivers channel is approximately 1600 feet from the outer tips of the jetties to the branching of the two rivers. Using the Rochester model as a precedent, it can be expected that at least 2000 feet of flanking wave absorbing revetment is necessary to achieve small craft harbor tranquility goals. At a minimum, an additional wave absorbing feature (see feature B, Figure 13) will be required along the entrance channel south wall. Because the overall length of the flanking absorbing revetment is not at least 2000 feet, supplemental absorption at the head of the channel will also be required (see feature C, Figure 13).

The Two Rivers channel has an additional feature that was not evaluated in the Rochester study but contribute to wave dampening; an off channel wave spending beach adjacent to the Coast Guard station on the north channel bank. Qualitative observations of wave action in the channel during an aggressive lake wave event indicate that the spending beach wave is noticeably effective in reducing wave energy running along the north channel jetty, as compared to the south. Conceivably, a wave spending beach (see feature A on Figure 13) could be introduced in the entrance channel along the south bulkhead line and reduce the need for additional inner harbor wave control measures. The same benefit would not be expected by just enlarging the north beach area instead. While long term northern sedimentation has filled much of the north beach cove, it is now in equilibrium with the wave action. While it will do nothing to reduce the wave action running along the south edge of the channel.

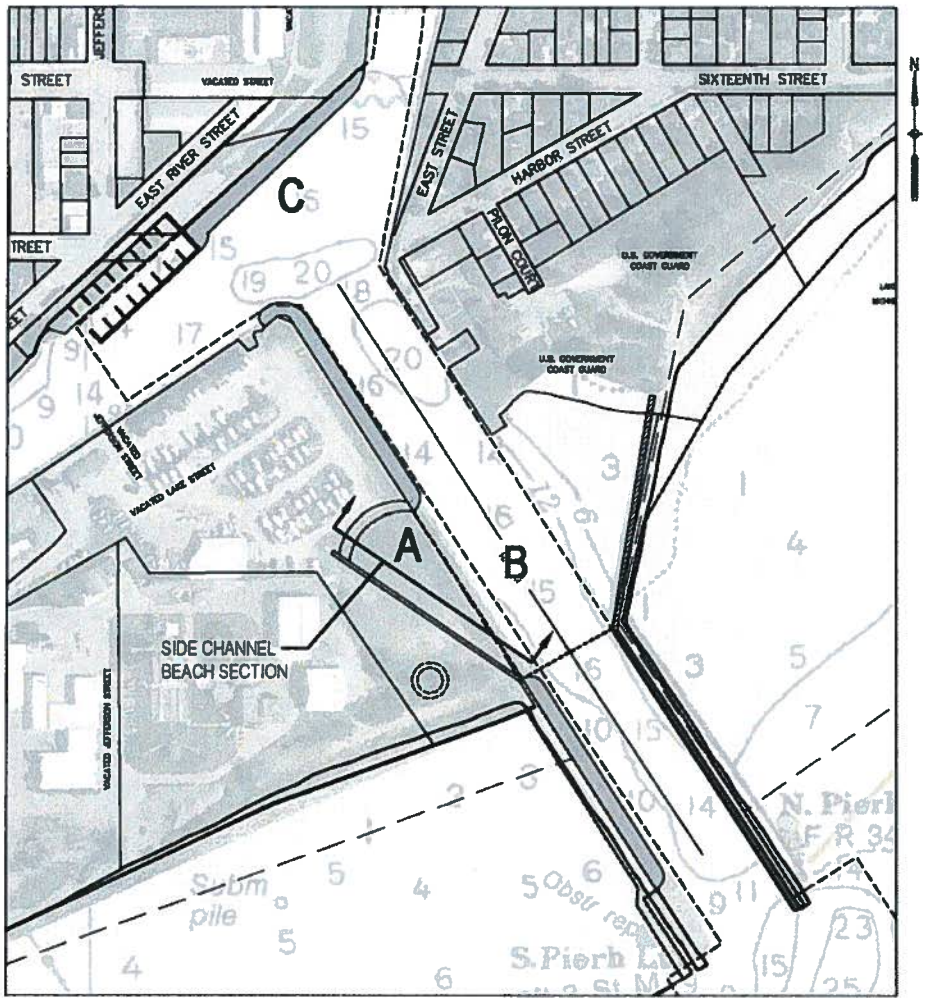


Figure 13: Internal surge protection options

Due to the sedimentation of the north beach area over time, that beach has become considerable smaller than when initially created. Dredging that beach embayment might further decrease the amount of wave energy propagating along the north side of the channel. However it is unlikely that this action alone would produce any substantial reduction in the overall agitation level, since significant energy can still propagate along the south face.

Note that a south spending beach area would need to be carved from land currently owned but unutilized by Seagull Marina. It would take a similar form to the beach area next to the Coast Guard station, and be retained by an underwater sill formed by cutting off the bulkhead sheeting 5 to 10 feet below the surface. An illustrative section for the spending beach feature, including the necessary breach through the existing jetty bulkhead, is shown in Figure 14.

A cursory check of the cost of the external breakwater hook extension option versus the internal absorbing berm approach suggests that they may be similar. Therefore the selection of a preferred solution should factor in the legal and permitting process of implementation, as well as other added value that might result from a given design. For example, in the exterior offshore jetty/breakwater extension option, the entire entrance channel will be tranquil, potentially allowing for transient or permanent moorage along the existing bulkhead if ownership questions are addressed. The interior solution will limit moorage to the existing conditions. Discussions about the impact on the federal harbor limits with the US Army Corp of Engineers are critical under either surge mitigation option.

Feature A: To further reduce surge, a terraced side channel pocket beach is proposed for the south side of the channel, mirroring the beach pocket adjacent to the Coast Guard Station. Functionally this remedy works by capturing and dissipating wave energy by diffracting it out of the channel and onto a beach. The beach is created by breaching through the existing bulkhead to a depth of nominally 8 feet, or twice the wave height experienced at that location. The actual size and depth of the breach must be verified by detailed engineering and model studies. The land required for this mitigation feature is currently privately controlled by Seagull Marina and would require public acquisition. A typical section for the breach and absorbing beach is shown in Figure 14.

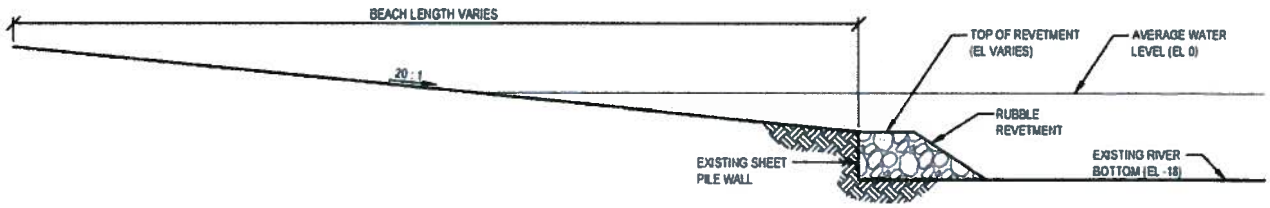


Figure 14: Typical section of proposed spending beach along south side of the entrance channel

Feature B: Wave energy absorbing revetments are proposed lining the flanks of the south entrance jetty and entrance shoreline bulkhead under this internal wave surge mitigation option. These are placed against the south jetty interior flank and along the south inner bulkhead. There is a need for temporary mooring in the channel at the Coast Guard Station; therefore no energy absorber is placed on that bulkhead. The absorbing revetments do encroach into the channel width approximately 30 feet on either side, but do not overstep the Federal navigation dredge limits, and do not compromise the navigation safety of the channel for the number and size of boats using the entrance. A typical section, inferred from the Rochester case study, is a fully porous rock revetment as shown in Figure 15. Unlike revetments designed to resist wave erosion, this section is made especially porous to maximize energy absorption as waves pass over the rock mound longitudinally.

The design solutions offered here are based on solutions previously evaluated in a similar environment and are sized based upon engineering judgment and basic coastal engineering principles. They should not be presumed to be appropriate for final design or budgeting purposes, as shown, until a more extensive analysis and design effort is undertaken, which will require modeling and testing of the design effectiveness or viability. Similarly, the presumption of cost at this level is for comparison between options only, and may or may not represent the real cost

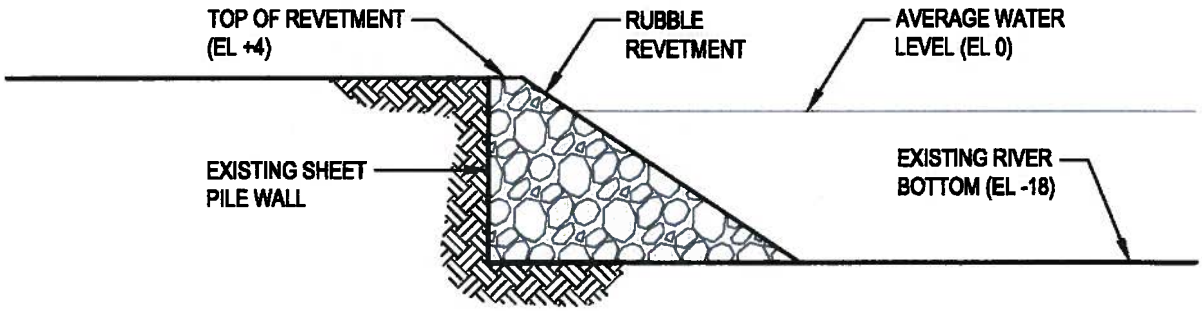


Figure 15: Proposed typical revetment section along south entrance jetty and bulkhead. Note that it is composed of highly porous rock matrix.

Feature C: At the inner terminus of the channel, against the existing shoreline bulkhead, a new wave absorber (see Figure 16) similar to that used in South Haven would be constructed to minimize wave reflection back out of the channel and into the East and West Twin Rivers branches. To the west/south of the revetment, a transient boat dock, protected by a "zero footprint" panel breakwall, would provide immediate boater access to the downtown zone. This type of protection is required due to limited navigation channel width but is an ideal application for the inner harbor wave environment application. A possible concern with a panel breakwall is the potential for wave reflections that could impact the boat launch ramp at Seagull Marina. Depending on the amount of wave agitation still penetrating down the channel, some protection of the boat launch ramp at the Seagull Marina may also be needed. Alternately the alignment of the panel breakwall may be adjusted during wave modeling to direct the wave action away from the launch ramp.

POTENTIAL WATERFRONT DEVELOPMENT OPPORTUNITIES

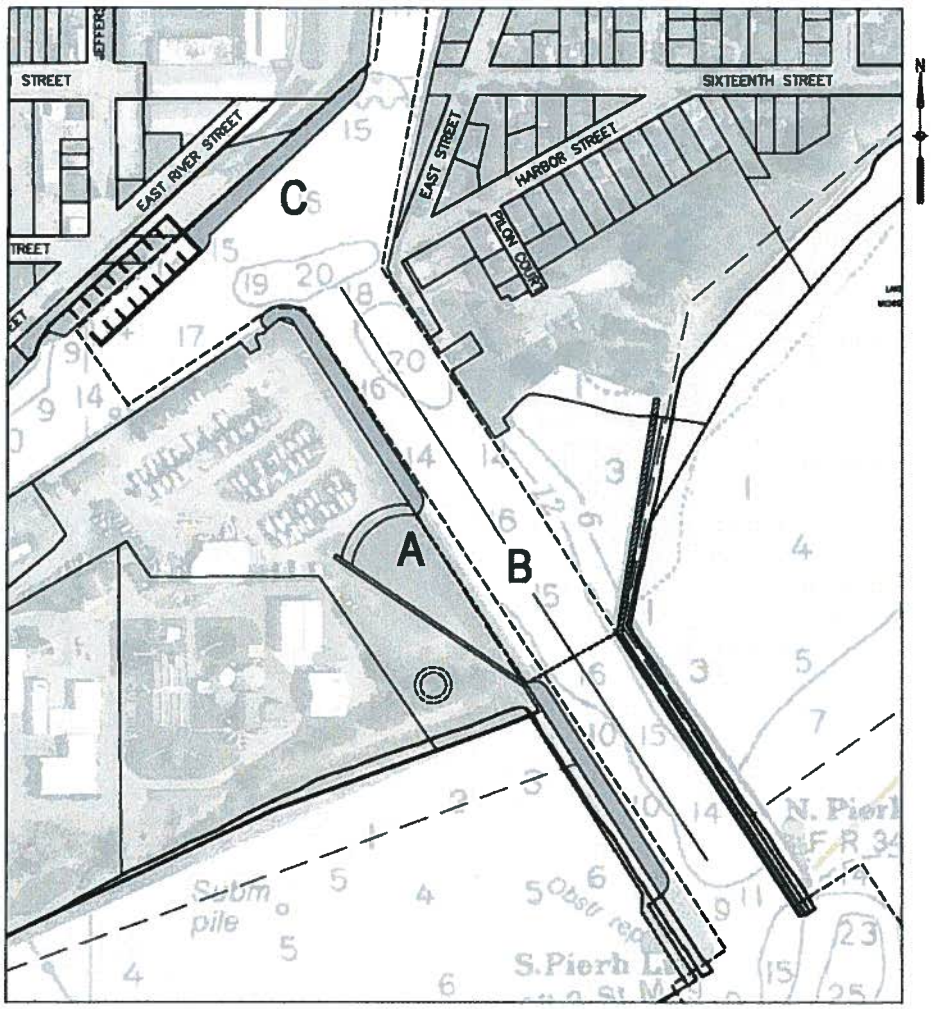


Figure 16: Internal Surge Mitigation Option

The proposed surge mitigation solutions are based on those changes that can be made to the harbor within the constraints of the present and projected future uses of the harbor, which include accommodating recreation and shallow draft commercial fishing craft with safe harbor docking conditions. The demand for deep draft navigation at this harbor no longer exists, and is not expected to resume. The Corps of Engineers has now restricted future funding to dredging and harbor maintenance for those facilities that process at least one million tons of product annually. Therefore the surge mitigation solutions should best serve the small boat user. The objective is to incorporate these surge mitigation methods with potential marina redevelopment opportunities based on the goals of the community. The internal surge mitigation option is comprised of three primary features: A through C in Figure 16.

Marina/Dockage Development Scenarios

Two marina development scenarios were explored. The first is associated with the internal surge mitigation solution; the second, the exterior surge mitigation solution.

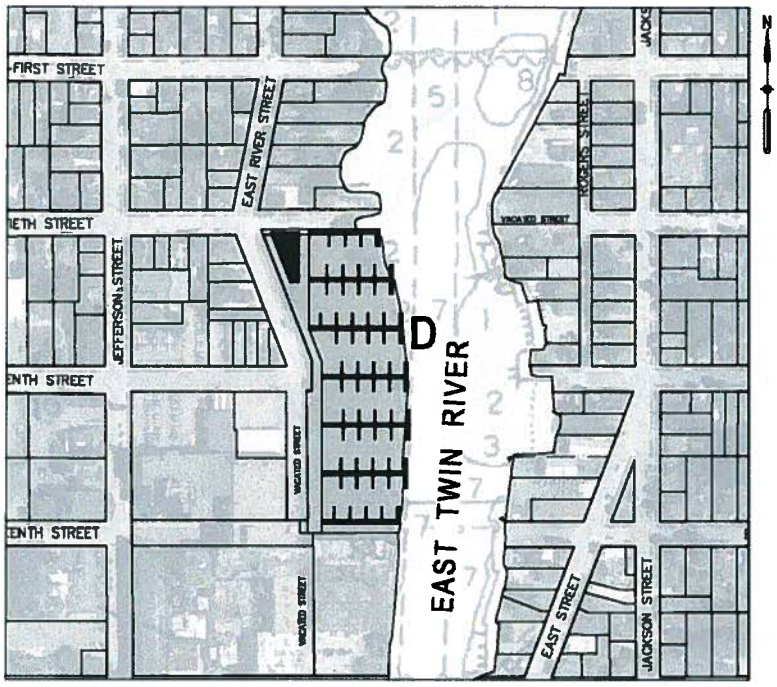


Figure 17: East Twin River marina scenario

Feature D - Upriver Marina Scenario: Under the Internal Surge Mitigation Option, a 100-150 slip marina is proposed to be incised into the bank at a location up the East Twin River branch between Eighteenth and Twentieth Streets where an open field presently lays fallow at the Eggers property (see Figure 17). The proposed marina is situated across the river from the fishing fleet berths and shanty town. Although the marina would be located upstream from the Seventeenth Street bridge, a new draw bridge is scheduled to be rebuilt that would allow boater access to the harbor entrance from this site. There is also potential for small boat launch ramp to be located at the foot of Twentieth Street.

Feature E – Inner Harbor Marina Scenario: Under the external surge mitigation option that features a hooked breakwater extension to the south jetty, both the existing harbor channel and inner harbor area become quiescent and potentially suitable area for moorage closer to the lake. Figure 18 illustrates a possible scenario for adding additional dockage along the existing bulkhead walls lining the inner harbor. This marina development scenario would allow the Seagull Marina to expand on the south side of the inner harbor and could provide a separate

marina development opportunity along the north side of the inner harbor. Development of dockage along the main harbor entrance channel is constrained by the width of the existing entrance channel and is also subject to severe wake action during emergency egress runs by the Coast Guard boats berthed on the opposite side of the channel. Dockage at this location would require the protection of a floating wave attenuator. However, it is recommended that transient dockage be provided along the northerly portion of the south bulkhead wall as a positive welcoming feature for visiting transient boaters and side ties for larger yachts coming to the town and finding immediately recognizable moorage.

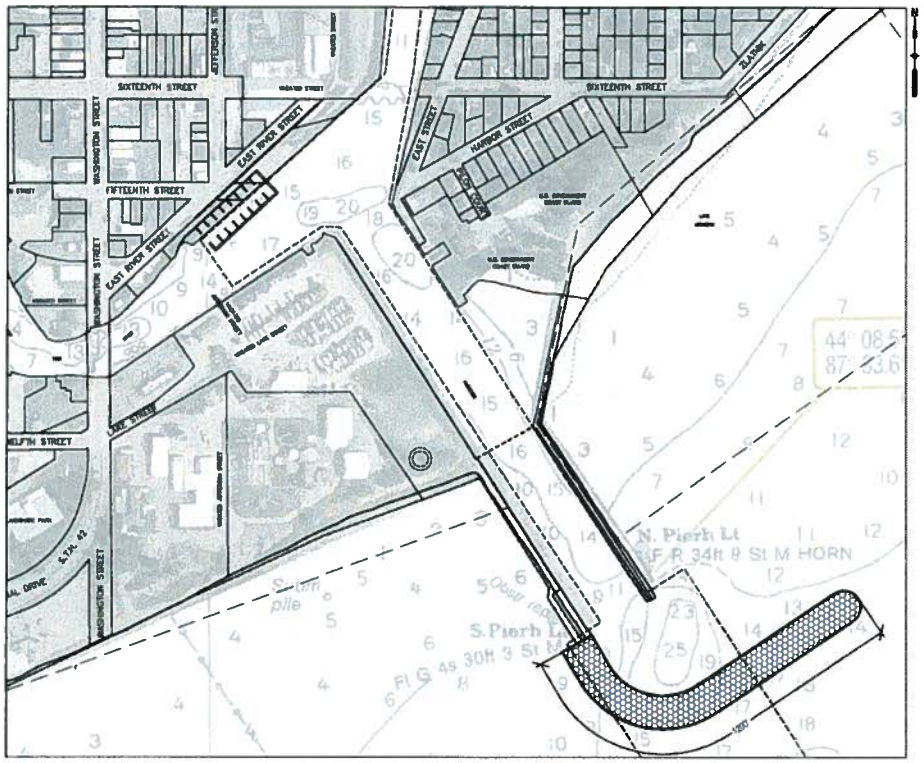


Figure 18: Inner Harbor marina scenario

LAKE MICHIGAN BEACH RESTORATION

In addition to the surge mitigation solutions and potential scenarios for marina development, the City wishes to maximize their legal domain granted them along the Lake Michigan shoreline located between the Lighthouse Inn and the existing harbor entrance south jetty. An agreement between the City of Two Rivers and the Wisconsin DNR gives the City the right to place fill on the lakebed to a defined bulkhead line provided the use of the fill is for public recreational and/or marina related purposes. A suggested solution to stabilize that reach of shoreline and enhance both ecological value and recreational user benefit is shown in Figure 19. This solution is similar to the shoreline restoration work recently completely for Concordia University in Mequon, Wisconsin (Figure 19), integrating a naturalized shoreline and beach with robust erosion resistance. Secondarily it can be designed to retain drifting sand that may otherwise be lost off-shore and eventually deposited into the harbor entrance (requiring maintenance dredging).

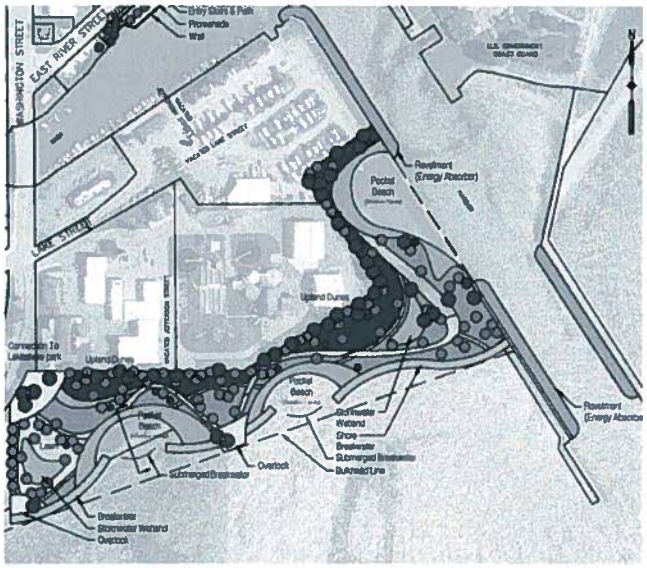


Figure 19a: Design of a more naturalized shoreline and beach area.

Figure 19a: Implementation of the Concordia University natural shoreline

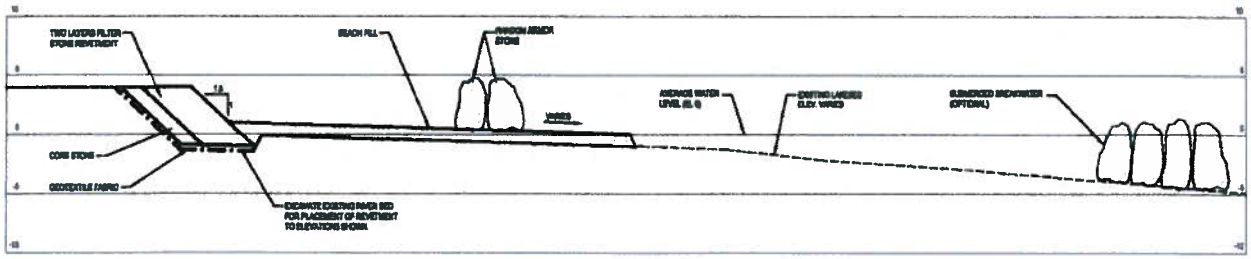


Figure 20: A typical section illustrating an environmental protection approach to beach restoration.

Another option to consider is the scalloped beaches that were created by the City of Lake Forest, Illinois (Figure 21b). Segmented offshore breakwaters were used to contain sand beach cells which were shaped by natural wave action. This beach restoration has performed as predicted by the hydraulic model studies under taken in 1985. Figure 21a depicts how a similar design can be incorporated at Two Rivers. This option creates much more recreational beach area than the previous option, which creates smaller, more naturalized beaches.

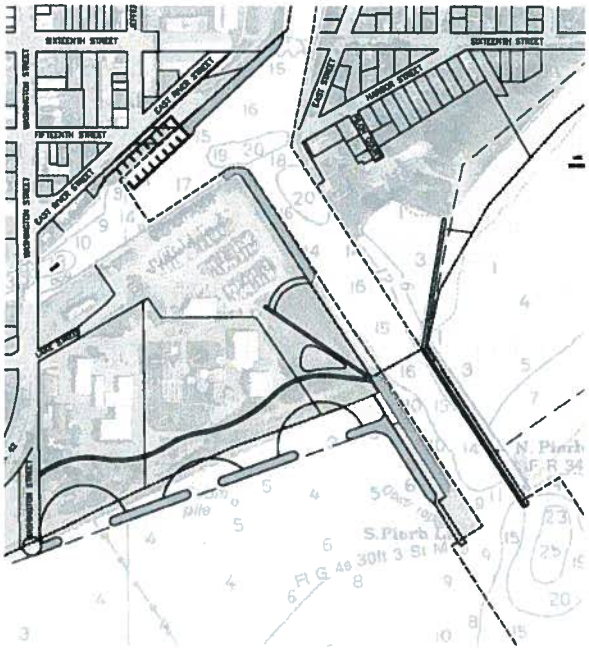


Figure 21a: Scalloped beach design using offshore breakwaters.

Figure 21b: Scalloped beaches were created at Lake Forest, Illinois.

References

Bottin, R and H Acuff, (1995) "Rochester Harbor, New York, Design for Wave Protection: Coastal Model Investigation", USACE, Technical Report CERC-95-7

Melo, E. and R. Guza, (1990) Wave Propagation in a Jettied Entrance Channel", California Department of Boating and Waterways, SIO Reference series No. 90-1

USACE, (1984), Shore Protection Manual, Vol I.

Preliminary Cost Estimates

Two Rivers Preliminary Cost Estimates
Harbor Master Plan Draft

1	**Lake Michigan Surge Mitigation**				
	Wave Modeling Study	**$200,000**			
	Option 1 Outer Jetty Breakwater Extension	**$6,000,000**			(1,200 LF @ $5,000/LF)
	Option 2 Internal Revetments	$4,500,000			(1,800 LF @ $2,500/LF)
	Wave Spending Beach	$1,500,000			
	Option 2 Total	**$6,000,000**			
2	**City Port of Call Development**				
	Option 1				
	Marina Building	$800,000			(4,000 SF @ $200/SF)
	Retaining Wall	$150,000			(6,000 SF @ $25/SF)
	Site Improvements, Amenities, Landscaping	$360,000			
	Iconic Structure	$100,000			
	Utiltiies	$100,000			
	Boat Docks	$800,000			(32 Slips @ $25,000/Slip)
	Option 1 Total	**$2,310,000**			
	Option 2 Additional Costs	$201,000			
	Excavation	$134,000			(6,700 CY @ $30/CY)
	Seawall Construction	$1,125,000			(450 LF @ $2,500/LF)
	Panel Breakwall (Protecting Marina)	$1,900,000			(315 LF @ $6,000/LF)
	Option 2 Additional	$3,159,000			
	Option2 Total	**$5,469,000**			
3	**Lake Michigan Beach Restoration**				
	Beach Improvement	$3,750,000	- $4,500,000		(1,500 LF @ $2,500 - $3,000/LF: Includes breakwaters, revetments, and sand beaches)
	Park Features	$2,250,000			(1,500 LF @ $1,500/LF: Promenade, walls, utili landscaping)
	Total	**$6,000,000**	- **$6,750,000**		
4	**Eggers East Property Redevelopment**				
	Option 2 Marina				
	Excavation	$2,340,000			(78,000 CY @ $30/CY)
	Seawall Construction	$2,600,000			(1,040 LF @ $2,500/LF)
	Boat Docks	$2,900,000			(116 Slips @ $25,000/Slip)
	Marina Building	$1,400,000			(7,000 SF @ $200/SF)
	Site Improvements, Amenities, Landscaping, Utilities	$200,000			
		$9,440,000			
5	**Mariner's Trail Extension**	N/A			($45/LF)
6	**Alternative Marina/Docking Development**	N/A			($25,000/Slip)
7	**Railroad Swing Bridge Re-Use**	N/A			N/A
8	**West Twin River Dredging**	$2,047,000			(Based on East Twin Dredging Costs)
9	**Fisher-Hamilton Redevelopment**	N/A			N/A
10	**Riverfront/Riverwaik Connectivity**	N/A			N/A
11	**Harbor Park Improvements**				
	Seawall Improvement	$1,125,000			(450 LF @ $2,500/LF)
	Site Improvements, Amenities, Landscaping	$400,000			
	Utilities	$200,000			
	Park Shelter/Restrooms	$240,000			(1600 SF @ $150/SF)
	Boat Dock (Option 1)	$250,000			(10 Slips @ $25,000/Slip)
		$2,215,000			

Note: All estimates include 25% for contingency and soft costs.

Funding Opportunities Table

Two Rivers Harbor
Funding Opportunities

Project	Source	Source 2	Grant	Funding	Match	Purpose	Eligibility Criteria	Eligible Projects	Appls Due	Contact	Phone /Email
Lake Michigan Surge Mitigation; Lake Michigan Beach Restoration	US ACE		Section 103 (Beach Erosion Control Projects)	< $2,000,000	65/35	Construct beach restoration and protection projects against damages caused by storm driven waves and ocean currents		Study, design, and construct small coastal storm damage reduction projects		Mr. Terry Long, Chief of the Plan Formulation Branch	(313)-226-6758
Lake Michigan Surge Mitigation	US ACE		Section 107 Funding (Navigation)	<$7M	100 % federally funded up to $100,000; 10 % of cost of developing plans and specifications; 80% / 20%, 75% / 25%, or 50% / 50%, depending on depth	Improve navigation	Needs Congressional support; requires "reconn" study (USACE fund)	Navigation, including dredging of channels, anchorage areas, and turning basins and construction of breakwaters, jetties and groins ; feasibility study (100% federally funded up to $100,000. Costs over the $100,000 are cost shared with the non-federal sponsor on a 50/50 basis) ; project development and construction; substantial benefits to recreation and commercial navigation;	open	Chief of the Plan Formulation Branch	(313)-226-6758
Lake Michigan Surge Mitigation	US ACE		Section 22 Funding	<$100,000	50% (inkind allowable)	Planning Assistance to States (PAS) Program for the preparation of comprehensive plans for the development, utilization, and conservation of water and related land		Study and Remediating			
Lake Michigan Surge Mitigation; City Port of Call; Alternative Marina/Docking Development	US DOI - FWS	WI DNR	Boating Infrastructure Grant Program (BIG)		75 / 25	An annual maximum of $100,000 is available to each state. This program is designed for smaller projects that add transient boating infrastructure to the area	Available to public and private agencies and marinas and other facilities that provide transient tie-up (10 days or less) opportunities for non-trailerable (26 foot or over in length) recreational boats; BIG Program was created to provide funding for construction of facilities that will enhance boating for non-trailerable (26 ft. or over in length) recreational boats when such boats are in transient status	Construct, renovate, and maintain tie-up facilities: docks, boat slip, mooring buoys; navigational aids limited specifically to direct entry to transient, nontrailerable tie up facilities; safe harbors for transients; initial dredging only to provide transient vessels with safe channel depths, etc.	May 1 thru August 15; Awards are generally issued in the spring	DNR federal aid coordinator ; or Karl Beetham, DNR grant manager	608-264-6138; 608-264-6207
Lake Michigan Surge Mitigation	US DOT		Transportation Infrastructure Finance and Innovation Act (TIFIA) Program	No Data Available	not applicable	Through TIFIA, the DOT provides Federal credit assistance to eligible highway, transit, rail, and intermodal freight projects, including access to seaports to facilitate the financing of projects that would otherwise have been significantly delayed because of funding limitations or difficulties accessing the capital markets; Federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit	States, local governments; transit agencies; special authorities		open		TIFIACredit@dot.gov
Eggers East Site Property Redevelopment; Fisher Hamilton Redevelopment	US EPA		Brownfield Assessment Grants	$200,000	none	Funding for brownfields inventories, planning, environmental assessments, and community outreach.	State, local, and tribal, regional council or redevelopment agencies, coalitions; community-wide or site specific	Inventory, characterize, assess/investigate, cleanup planning petroleum and/or hazardous sites	Oct / Nov	Regional Brownfields Coordinator	
Eggers East Site Property Redevelopment; Fisher Hamilton Redevelopment	US EPA		Brownfield Cleanup Grants	$200,000 per site	20%	Provide direct funding for cleanup activities at specific sites	State, local, and tribal, regional council or redevelopment agencies, coalitions; Applicant must own the property by June 30th; Phase 1 assessment must be completed, and Phase 2 must be underway	Environmental cleanup ; ready to proceed	fall or winter	Regional Brownfields Coordinator	
Lake Michigan Surge Mitigation; Lake Michigan Beach Restoration	US EPA		Great Lakes Restoration Initiative		none	EPA-led, interagency Great Lakes restoration initiative, which will target the most significant problems in the region, including invasive aquatic species, non-point source pollution, and contaminated sediment		By Focus Area; planning,cresearch, cmonitoring, outreach, and implementation in furtherance of the Great Lakes Restoration Initiative and the Great Lakes Water Quality Agreement	spring	Regional Coordinator	
Eggers East Site Property Redevelopment; Fisher Hamilton Redevelopment; Railroad Swing Bridge Reuse; Riverfront/Riverwalk Connectivity; Harbor Park Improvements	WEDC		CDBG-PF			To increase the capacity of local infrastructure systems; expand services offered to local citizens through construction or expansion of eligible public facilities; or prevent or remove slum and blight	Project must meet at least one of the following National Objectives: 51 percent LMI Benefit, Slum and Blight Removal, or Urgent Local Need	Needed infrastructure and public building projects that contributes to its overall community and economic development	open	WEDC Community Account Manager	
Eggers East Site Property Redevelopment; Fisher Hamilton Redevelopment	WEDC		Site Assessment Grants	up to $150,000	50%	Identify and quantify the degree and extent of soil and groundwater contamination	local governments	environmental investigations; demolition of structures; and removal of abandoned containers and underground tank systems	open	WEDC Community Account Manager	
City Port of Call; Alternative Marina/Docking Development	WI DNR	US DOI-FWS	Clean Vessel Act Grant Program (CVA)		no statutory formula	CVA provides States with Federal funding to support their ongoing efforts to improve recreational boating opportunities and provide boaters with the clean, efficient facilities to prevent waste disposal into public waterways and other ecosystems	Private marina/business or local units of government; applicant must send a letter of application detailing: The project description; An explanation of project necessity; A detailed cost breakdown; A proposed timetable for project completion; A site map and location map of the project.	Mooring buoys, Day-docks, Construction, renovation, operation and maintenance of pump-out and dump stations(including Floating restrooms not connected to land or structures, and Structures connected to the land, used solely by boaters); Education/information materials	open	Regional Community Services Specialist	
Eggers East Site Property Redevelopment; Mariners Trail Extension; Fisher Hamilton Redevelopment; Riverfront/Riverwalk Connectivity; Harbor Park Improvements	WI DNR		Knowles-Nelson Stewardship Program		grants up to 50%	To preserve valuable natural areas and wildlife habitat, protect water quality and Fisheries, and expand opportunities for outdoor recreation		Acquisition of land and easements, development of recreational facilities, and restoration of wildlife habitat			
Lake Michigan Beach Restoration	WI DNR		Land & Water Conservation Fund (LWCF) Program (Stewardship-Federal Recreation)		grants up to 50%	Federal program administered in all states that encourages creation and interpretation of high-quality outdoor recreational opportunities. Funds received by the DNR for this program are split between DNR projects and grants to local governments for outdoor recreation activities;	Project must be supported by a local comprehensive outdoor recreational plan; outdoor public recreation purposes; create parks and open spaces, protect wilderness, wetlands, and refuges, preserve wildlife habitat, and enhance recreational opportunities	Land acquisition and facilities development for public outdoor recreation purposes; Land or development within urban areas for day use picnic areas; Land or development of nature-based outdoor recreation trails	May 1	Regional DNR Community Services Specialist; Amy Bradley, Stewardship and LWCF Grants Manager	

Two Rivers Harbor
Funding Opportunities

Project	Source	Source 2	Grant	Funding	Match	Purpose	Eligibility Criteria	Eligible Projects	Appln Due	Contact	Phone /Email
Lake Michigan Surge Mitigation; City Port of Call; Alternative Marina/Docking Development; West Twin River Dredging	WI DNR		Recreational Boating Facilities		~ 50 %	Development of recreational boating facilities and related activities	Counties, towns, cities, villages, tribes, sanitary districts, public inland lake protection and rehabilitation districts, and qualified lake associations	Channel dredging; Construction or Rehabilitation (capital improvements that will provide safe recreational boating facilities; Feasibility studies (related to the development of safe recreational boating facilities); Locks; Navigation aids; Purchase aquatic weed harvesting equipmen or trash skimming equipment	open; awards made quarterly	Regional DNR Community Services Specialist	
Railroad Swing Bridge Reuse; Riverfront/Riverwalk Connectivity; Harbor Park Improvements	WI DNR		Recreational Trails Act (Stewardship-Federal Recreation)		50%	Federal program for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized recreational trail uses. Funds may be used in conjunction with funds from the state snowmobile or ATV grant programs and Knowles-Nelson Stewardship development projects	Municipal governments and incorporated organizations whose primary purpose is trails or trail usage	Maintenance or restoration of existing trails; Development or rehabilitation of trailside/trailhead facilities and trail linkages; Construction of new trails; Property acquisition for trails	May 1	Regional DNR Community Services Specialist or Tim Parsons	(608-267-9385)
Lake Michigan Beach Restoration	WI DNR		UNPS & SW			Controlling urban nonpoint source and storm water runoff pollution	Local governments; urban lands with population density of at least 1,000 people per square mile or non-permitted commercial or municipally-owned industrial use	Planning Grant (planning; local ordinances; SW utilities/programs evaluation; discharge detection/elimination; public info/education); Construction Grant (BMPs; design/construction services for installation; land acquisition/easement; sewer re-routing/removal; shoreline stabilizations)	15-Apr	DNR NPS coordinator; Linda Talbot; or Tim Parsons	
City Port of Call; Alternative Marina/Docking Development	WI DNR		Urban Rivers Program (Stewardship-Local Assistance)		grants up to 50%	Restore or preserve the character of urban riverways through the acquisition of land or easements adjacent to rivers; Purposes: for economic revitalization through the restoration or preservation of urban rivers; improve outdoor recreational opportunities by increasing access to urban rivers; preserve or restore significant historical, cultural, or natural areas; serve public recreation or resource conservation purposes	Towns, villages, cities, counties, tribal governments, and NCOs; Priorities: acquire land; new/expanded diverse recreational opportunities; new/expanded access to urban waterways; aquire blighted lands to restore to complement riverfront redevelopment activities; encourage compreshensive palnning; increase tourism; improve/protect water quality; enhance shore after dam removal; relationship to State CORP; part of local approved plan		01-May	Regional Community Services Specialist	
City Port of Call; Alternative Marina/Docking Development; Railroad Swing Bridge Reuse; West Twin River Dredging; Harbor Park Improvements	WI DNR	US DOI-FWS	Sport Fish Restoration Act		no statutory formula	May be used to construct fishing piers and motorboat access projects. Eligible components include boat ramp construction and renovation, along with related amenities such as parking lots, accessible paths, lighting and restroom facilities. Funding for this program comes from federal excise taxes on fishing equipment and a portion of the federal gas tax.	Counties, towns, cities, villages, tribes, sanitary districts, public inland lake protection and rehabilitation districts, and qualified lake associations. Funded from federal excise taxes on fishing equipment and a portion of the federal gas tax. NOTE Projects that have received funding from other federal grants are not eligible to receive sport fish restoration grant funding.	Construct fishing piers and motorboat access projects. Eligible components include boat ramp construction and renovation, along with related amenities such as parking lots, accessible paths, lighting and restroom facilities. The DNR uses the balance of their Sport Fish Restoration (SFR) funds for other fish management projects such as land acquisition, habitat restoration and development, aquatic education, public fishing piers and shorefishing, fish propagation and stocking, and research.	open ; for consideration in the federal FY(begins October) applications must be received by the regional Grants specialist no later than December 1 of the previous year.	Regional DNR Community Services Specialist.	
Lake Michigan Surge Mitigation; City Port of Call; Alternative Marina/Docking Development; Railroad Swing Bridge Reuse; Riverfront/Riverwalk Connectivity; Harbor Park Improvements	WI DOA	US COMM	Coastal Management Program	<$60,000; >$60,000	50%; 60%	Supports the management, protection and restoration of Wisconsin's coastal resources, and increases public access to the Great Lakes.		Coastal Wetland Protection and Habitat Restoration; Nonpoint Source Pollution Control; Nonpoint Source Pollution Control; Coastal Resources and Community Planning; Great Lakes Education; Public Access and Historic Preservation	~November 1	Mike Friis	608-267-7982; michael.friis@wisconsin.gov
Lake Michigan Surge Mitigation; West Twin River Dredging	WI DOT		Harbor Assistance Program (HAP)	<$2.6 million	20% (w/o USACE funding) or 50% (w/USACE funding)	Assist local governments to provide necessary water access and to maintain or improve the economically effective commodity and passenger movement capabilities of Wisconsin's harbors on the Great Lakes and the Mississippi River.	The project must benefit facilities that are used for cargo transfer, ship building, commercial fishing or regular ferry service; applicant must be a local unit of government or a private owner of a harbor facility; project must pass a rigorous benefit-cost analysis; project must have been identified in a current Three-Year Harbor Development Plan	Dredging, dredged material disposal (including acquisition, construction, operation and maintenance of a disposal site and the cost of transporting dredged material to the site), construction and repair of dock walls and other harbor improvement projects that benefit commercial transportation	Aug 1; Feb 1	Sheri Walz	608-267-9319
Mariner's Trail Extension	WI DOT		Local Transportation Enhancements (TE) program		up to 80%	Projects that increase multi-modal transportation alternatives and enhance communities and the environment		Bicycle or pedestrian facilities, landscaping or streetscaping and the preservation of historic transportation structures		Tressie Kamp	(608) 266-3973
Mariner's Trail Extension	WI DOT		Transportation Economic Assistance (TEA) program	up to $1 million	50%	Road, rail, harbor and airport projects that help attract employers to Wisconsin, or encourage business and industry to remain and expand in the state.	Grants to governing bodies, private businesses, and consortiums; The businesses cannot be speculative and local communities must assure that the number of jobs anticipated from the proposed project will materialize within three years from the date of the project agreement and remain after another four years.	Transportation improvements that are essential for an economic development project	open	Dennis Leong	608) 266-9910

Central Harbor Area Blight Determination Report

CENTRAL HARBOR AREA

BLIGHT DETERMINATION REPORT

February 4, 2013

CITY COUNCIL:

Vince Alber
Herb Bunke
Barb Schweltzer
James Taddy
Bradely Yaggie
Lee Brocher
Kay Koach
Bonnie Shimulunas
David VanGinkel

PLAN COMMISSION:

Vince Alber
David England
Jayne Rulseh
Gregory Buckley
Jim McDonald
Jelane Stone

COMMUNITY DEVELOPMENT AUTHORITY (CDA):

Vince Alber
Gregory Coenen
Dick Klinkner
Tracy Yaggie
Betty Bittner
Donald Karman
David VanGinkel

CITY OFFICIALS:

Gregory Buckley, City Manager
James McDonald, Public Works Director/City Engineer
Scott Ahl, Civil Engineer II
Vicky Berg, Zoning Administrator

LEGAL REVIEW PROVIDED BY:

Attorney Rebecca Speckhard, Quarles & Brady

TECHNICAL ASSISTANCE PROVIDED BY:

Martin Marchek, City Planner

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MAPS OF THE CENTRAL HARBOR AREA SHOWING BLIGHTED PARCELS

APPENDIX

PURPOSE OF THIS BLIGHT DETERMINATION REPORT

The purpose of this Blight Determination Report is related to certain key activities which are currently affecting the City of Two Rivers. Those activities are:

- Preparation of a Harbor Master Plan
- Closure of the Thermo-Fisher Plant along Jefferson Street
- Application for Community Development Block Grant (CDBG) funds for seawall repairs
- Possible preparation of a Redevelopment Plan for areas yet to be determined
- Possible creation of Tax Increment District(s) related to the Central Harbor Area.

This Blight Determination Report is intended to support the above activities and serve multiple purposes.

The Harbor Master Plan includes recommendations for both harbor area improvements and land use/redevelopment recommendations for lands adjacent to the harbor area. That plan does not include specific findings related to blighted areas. This report is intended to be an Appendix to the Harbor Master Plan because its findings are related to specific parcels within the study area for that plan.

The closure of the Thermo-Fisher Plant along Jefferson Street is currently in the process of being finalized. No final plans have yet been announced by Thermo-Fisher for the disposal of either the buildings or the land. However, removal of machinery, equipment and supplies is underway. All of these activities indicate there is no current intended reuse of the manufacturing plant buildings for industrial purposes by Thermo-Fisher. Consequently, planning needs to begin for the long-term potential redevelopment of the Thermo-Fisher properties. Declaring such properties blighted where appropriate is a first step in the redevelopment planning process.

At the time of preparation of this report, the City has an application pending with the State Department of Administration who administers the Community Development Block Grant (CDBG) funding program. The CDBG Program provides funds for public infrastructure. The City has an application pending for funds from this program to reconstruct the seawall along Harbor Park. The application would provide funds to reconstruct approximately 470 lineal feet of seawall from Harbor Street to 16th Street along the east edge of the East Twin River. The seawall improvements along Harbor Park will improve the dilapidated and deteriorated conditions of the seawall and will also provide tie-ups for transient boaters to maximize use of the City-owned parkland along East Street. One of the requirements of the CDBG Program is whenever such funds are used, they should eliminate dilapidation or blight. This report is intended to satisfy this requirement by documenting the condition of existing seawalls and shoreline protection in the Central Harbor Area.

In addition to the above short-term needs for this Blight Determination Report, there are likely other possible needs related to the Central Harbor Area.

Preparation of a Redevelopment Plan for all or portions of the Central Harbor Area will likely require a blight determination finding to fulfill specific statutory requirements.

Also, future redevelopment within the Central Harbor Area may require creation of one or more Tax Incremental Districts (TIDs) to provide funding for redevelopment activities. Such TIDs typically require a blight determination for areas proposed for redevelopment. This report is intended to support the possible creation of such TIDs.

BOUNDARIES OF THE CENTRAL HARBOR AREA

The Central Harbor Area as defined for this study is shown on Maps 1 and 2. The areas are generally bounded as follows:

- On the north by 22nd Street
- On the east by east side of Jackson Street and continue along the east side of East Street
- On the southeast by the north pier
- On the south by the proposed bulkhead line in Lake Michigan south of the City's Water/Wastewater Treatment Plant property
- On the west by west side of Washington Street, the west side of Jefferson Street and the west side of East River Street.

The above area was determined to contain the City's Central Harbor Area. Most of the properties have frontage along the East Twin River, Lake Michigan or the West Twin River. However, some properties without water frontage were included. They are located between 15th Street and East River Street, west of Jefferson Street between 15th and 16th Streets and along Jackson Street between 19th and 21st Streets. These properties were included because they were adjacent to the Central Harbor Area properties and they met certain criteria and thus were determined to be blighted properties. Other properties without direct water frontage included were the block between East River and Jefferson Streets between 19th and 20th Street. Within this block, some properties were determined to be blighted, but not all properties within the area are blighted.

The boundaries of the Central Harbor Area may be adjusted as necessary.

STATUTORY AUTHORITY AND DEFINITIONS OF "BLIGHTED AREA"

This report and the determinations of blight described herein have been prepared in accord with the provisions of Wisc. Stats., Sec.66.1331, the "Blighted Area Law" and Sec 66.1333, the "Blight Elimination and Slum Clearance Act".

Both of the above statutes contain specific definitions of a "blighted area". Section 66.1333(b)1. 2 and 3 contains three broad definitions of a blighted area. It is important to understand these are statutory definitions and should not be interpreted to mean that a property is slum-like or in a totally dilapidated condition.

Since the definitions are very detailed, the statutes cited above are included in Appendix A for reference purposes. These statutes provide a broad spectrum of reasons, which are spelled out in the statutes and the methodology used herein to determine whether a property is blighted or not.

METHODOLOGY USED TO DETERMINE BLIGHT

The determination of blight described herein was made by City staff using the following methodology:

- A visual inspection was done of building exteriors and photos were taken as documentation
- A water-side visual inspection by boat was done including photos of the condition of existing seawalls and shore protection along all shorelines
- A review of the configuration of existing lots and street patterns was done
- A review of certain properties to accommodate off-street parking was done.

Based on the methodology conducted in the steps described above, the information for each parcel within the boundaries of the Central Harbor Area was entered on an individual property "Blight Determination Data Sheet". That data sheet also includes the photos of both existing structures and existing seawall/shoreline conditions. There were 100 Blight Determination Data Sheets prepared.

The methodology described above did not include an analysis of any environmental factors such as soil contamination, building material contamination, structural problems within individual buildings or structures or the inadequacy of public utilities services such as lead water laterals. Findings such as these are outside the scope of this study.

FINDINGS AND RECOMMENDATIONS

Parcels determined to be blighted are listed in Appendix B of this report on a table entitled "Summary Table of Parcels Determined to be Blighted". On this table, certain criteria or conditions described in each of the aforementioned State Statutes Sec.66.1331 and 66.1333 are listed. Where an "X" appears on the table, it is an indication that the blighting factor listed in that column heading exists at that parcel.

Note that on the summary table in Appendix B, most parcels have more than one blighting factor. Many of the findings relate to the dilapidation, deterioration and age of the seawalls adjacent to many properties.

Also, some of the blighting conditions relate to the obsolescence of the existing Thermo-Fisher manufacturing buildings and their resulting land use patterns which "substantially impair the sound growth and expansion of the community".

Following is a summary of key sectors within the study area which were determined to be blighted and commentary on their blighted conditions:

- Parcels along East River Street between 22nd and 20th Streets: The majority of these parcels are blighted due to dilapidation and age of their seawalls or lack of shore protection

- Parcels along East Street from 18th to 16th Streets: Blighted predominately by dilapidation, deterioration and age of their seawalls
- East Street/Harbor Park parcels south of 16th Street: Blighted predominately by condition of their seawalls
- McDonald's parcel: Blighted by condition of its seawall only as building was recently improved
- Seagull Marina parcel: Blighted by condition of its seawall
- Small parcels along the east side of East River Street: Blighted by condition of their seawalls and lack of adequate off-street parking for the liquor store parcel
- Suettinger Hardware: Blighted by conditions of existing structures
- Mike's Tire and Auto: Blighted due to unique parcel configuration and no open space resulting in difficult redevelopment potential
- Thermo-Fisher parcels between Jefferson Street and East Twin River: Blighted by obsolescence of the existing multi-story manufacturing buildings, age of the structures and impairing sound growth of the community
- Former Eggers East Plant: Blighted by questionable soil conditions and the age and obsolescence of its seawall
- 1915 Jefferson Street: Blighted due to no open space, no off-street parking and use of the loading dock for the building being dependent on a separate vacant parcel facing 20th Street

The above is intended to be a summary and not a description of specific parcels evaluated in this report. For specific information on a particular parcel, see the individual Blight Determination Data Sheet and photos in the Inspections Department at City Hall during normal business hours.

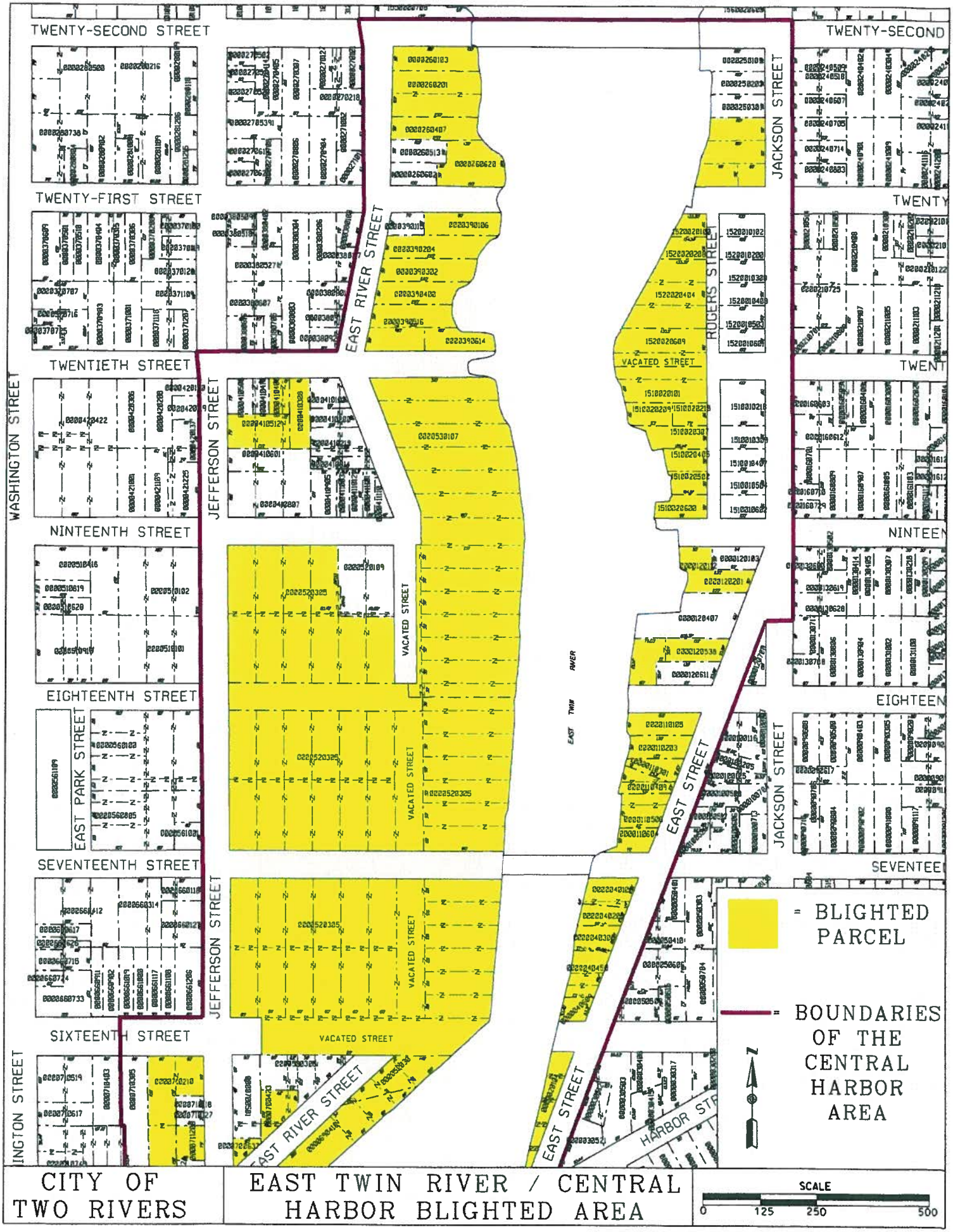
It is important to note that not all parcels in the study area were determined to be blighted. The individual parcel data sheets for such parcels will so indicate that certain parcels are not blighted.

In summary, the parcels determined to be blighted as described on the Summary Table in Appendix B total 43.19 acres in area, excluding water surface. The total Central Harbor Study Area as defined herein is 56.55 acres in area, excluding water surface. The 43.19 acres determined to be blighted constitute 76.4% of the 56.55 acres total study area.

Wisconsin State Statutes 66.1331(3)(a) and 66.1333(2m)(b) (see Appendix A) contain definitions of blighted area which use the term "a predominance of buildings or improvements" and a "substantial number of deteriorated or deteriorating structures" which constitute a blighted area. The findings of this report are that 76.4% of the study area is determined to be blighted and does constitute "a predominance of buildings or improvements" within the Central Harbor Area.

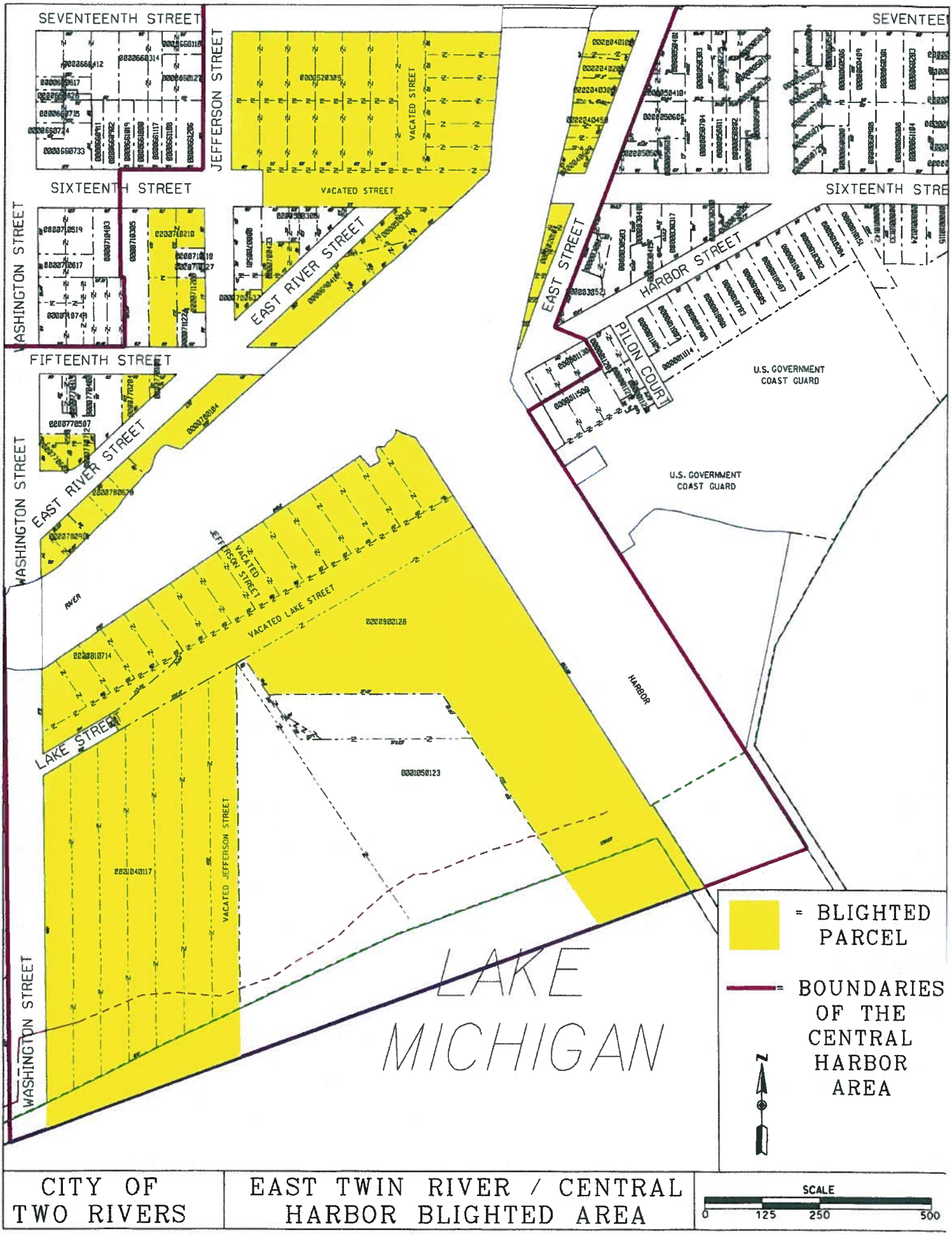
RECOMMENDATIONS

It is recommended this Blight Determination Report be recommended for approval by the Plan Commission and Community Development Authority (CDA) and be approved by the City Council in accordance with procedures in Wisconsin Statutes.



CITY OF TWO RIVERS

EAST TWIN RIVER / CENTRAL HARBOR BLIGHTED AREA



CITY OF TWO RIVERS

EAST TWIN RIVER / CENTRAL HARBOR BLIGHTED AREA

APPENDIX A

EXCERPTS FROM
WISCONSIN STATE STATUTES 66.1331 AND 66.1333
DEFINING "BLIGHTED AREA" AND "BLIGHT"

66.1331 Blighted area law.

(1) SHORT TITLE. This section shall be known and may be cited and referred to as the "blighted area law."

(2) FINDINGS AND DECLARATION OF NECESSITY. It is found and declared that there have existed and continue to exist in cities within the state, substandard, insanitary, deteriorated, slum and blighted areas which constitute a serious and growing menace, injurious and inimical to the public health, safety, morals and welfare of the residents of the state. The existence of these areas contributes substantially and increasingly to the spread of disease and crime (necessitating excessive and disproportionate expenditures of public funds for the preservation of the public health and safety, for crime prevention, correction, prosecution, punishment, and the treatment of juvenile delinquency and for the maintenance of adequate police, fire and accident protection, and other public services and facilities), constitutes an economic and social liability, substantially impairs or arrests the sound growth of cities, and retards the provision of housing accommodations. This menace is beyond remedy and control solely by regulatory process in the exercise of the police power and cannot be dealt with effectively by the ordinary operations of private enterprise without the aids provided in this section. The acquisition of property for the purpose of eliminating substandard, insanitary, deteriorated, slum or blighted conditions or preventing recurrence of these conditions in the area, the removal of structures and improvement of sites, the disposition of the property for redevelopment incidental to these activities, and any assistance which may be given by cities or any other public bodies, are public uses and purposes for which public money may be expended and the power of eminent domain exercised. The necessity in the public interest for the provisions of this section is declared as a matter of legislative determination.

(2m) DISCRIMINATION. Persons otherwise entitled to any right, benefit, facility, or privilege under this section may not be denied the right, benefit, facility, or privilege in any manner for any purpose nor be discriminated against because of sex, race, color, creed, sexual orientation, status as a victim of domestic abuse, sexual assault, or stalking, as defined in s. 106.50 (1m) (u), or national origin.

(3) DEFINITIONS. In this section, unless a different intent clearly appears from the context:

(a) "Blighted area" means any area, including a slum area, in which a majority of the structures are residential or in which there is a predominance of buildings or improvements, whether residential or nonresidential, and which, by reason of dilapidation, deterioration, age or obsolescence, inadequate provision for ventilation, light, air, sanitation, or open spaces, high density of population and overcrowding, or the existence of conditions which endanger life or property by fire and other causes, or any combination of these factors, is conducive to ill health, transmission of disease, infant mortality, juvenile delinquency and crime, and is detrimental to the public health, safety, morals or welfare.

(c) "Housing" includes housing, dwelling, habitation and residence.

(d) "Land" includes bare or vacant land, the land under buildings, structures or other improvements, and water and land under water. When employed in connection with "use", for instance, "use of land" or "land use", "land" includes buildings, structures and improvements existing or to be placed on land.

(e) "Lessee" includes the successors or assigns and successors in title of the lessee.

(f) "Local legislative body" means the board of alderpersons, common council, council, commission or other board or body vested by the charter of the city or other law with jurisdiction to enact ordinances or local laws.

(g) "Planning commission" means the board, commission or agency of the city authorized to prepare, adopt or amend or modify a master plan of the city.

66.1333 Blight elimination and slum clearance.

(1) SHORT TITLE. This section shall be known and may be cited as the "Blight Elimination and Slum Clearance Act".

(2) FINDINGS. In addition to the findings and declarations made in ss. 66.1331 (2) and 66.1337, it is found and declared that the existence of substandard, deteriorated, slum and blighted areas and blighted properties is a matter of statewide concern. It is the policy of this state to protect and promote the health, safety, morals and general welfare of the people of the state in which these areas and blighted properties exist by the elimination and prevention of these areas and blighted properties through the utilization of all means appropriate for that purpose, thereby encouraging well-planned, integrated, stable, safe and healthful neighborhoods, the provision of healthful homes, a decent living environment and adequate places for employment of the people of this state and its communities in these areas and blighted properties. The purposes of this section are to provide for the elimination and prevention of substandard, deteriorated, slum and blighted areas and blighted properties through redevelopment and other activities by state-created agencies and the utilization of all other available public and private agencies and resources. State agencies are necessary in order to carry out in the most effective and efficient manner the state's policy and declared purposes for the prevention and elimination of substandard, deteriorated, slum and blighted areas and blighted properties. State agencies shall be available in all the cities in the state to be known as the redevelopment authorities of the particular cities and carry out and effectuate the provisions of this section when the local legislative bodies of the cities determine there is a need for them to carry out within their cities the powers and purposes of this section. Assistance which may be given by cities or any other public bodies under this section is a public use and purpose for which public money may be expended. The necessity in the public interest for the provisions of this section is declared a matter of legislative determination. Nothing in this subsection contravenes, repeals or rescinds the finding or declaration of necessity before the recreation of this subsection on June 1, 1958.

(2m) DEFINITIONS. In this section, unless the context clearly indicates otherwise:

(a) "Abandoned highway corridor" means land in any city designated by the department of transportation for use as part of an expressway or a freeway, which is no longer designated by the department for that purpose.

(am) "Arts incubator" has the meaning given in s. 41.60 (1) (a).

(ar) "Authority" means a redevelopment authority.

(b) "Blighted area" means any of the following:

✳ **1.** An area, including a slum area, in which there is a predominance of buildings or improvements, whether residential or nonresidential, which by reason of dilapidation, deterioration, age or obsolescence, inadequate provision for ventilation, light, air, sanitation, or open spaces, high density of population and overcrowding, or the existence of conditions which endanger life or property by fire and other causes, or any combination of such factors is conducive to ill health, transmission of disease, infant mortality, juvenile delinquency, or crime, and is detrimental to the public health, safety, morals or welfare.

✳ **2.** An area which by reason of the presence of a substantial number of substandard, slum, deteriorated or deteriorating structures, predominance of defective or inadequate street layout, faulty lot layout in relation to size, adequacy, accessibility or usefulness, unsanitary or unsafe conditions, deterioration of site or other improvements, diversity of ownership, tax or special assessment delinquency exceeding the fair value of the land, defective or unusual

conditions of title, or the existence of conditions which endanger life or property by fire and other causes, or any combination of such factors, substantially impairs or arrests the sound growth of a city, retards the provision of housing accommodations or constitutes an economic or social liability and is a menace to the public health, safety, morals, or welfare in its present condition and use.

✶ 3. An area which is predominantly open and which because of obsolete platting, diversity of ownership, deterioration of structures or of site improvements, or otherwise, substantially impairs or arrests the sound growth of the community.

(bm) "Blighted property" means any property within a city, whether residential or nonresidential, which by reason of dilapidation, deterioration, age or obsolescence, inadequate provisions for ventilation, light, air or sanitation, high density of population and overcrowding, or the existence of conditions which endanger life or property by fire and other causes, or any combination of such factors, is conducive to ill health, transmission of disease, infant mortality, juvenile delinquency or crime, and is detrimental to the public health, safety, morals or welfare, or any property which by reason of faulty lot layout in relation to size, adequacy, accessibility or usefulness, insanitary or unsafe conditions, deterioration of site or other improvements, diversity of ownership, tax or special assessment delinquency exceeding the fair market value of the land, defective or unusual conditions of title, or the existence of conditions which endanger life or property by fire and other causes, or any combination of such factors, substantially impairs or arrests the sound growth of a city, retards the provisions of housing accommodations or constitutes an economic or social liability and is a menace to the public health, safety, morals or welfare in its present condition and use, or any property which is predominantly open and which because of obsolete platting, diversity of ownership, deterioration of structures or of site improvements, or otherwise, substantially impairs or arrests the sound growth of the community.

(c) "Blight elimination, slum clearance and urban renewal program", "blight elimination and urban renewal program", "redevelopment, slum clearance or urban renewal program", "redevelopment or urban renewal program", and "redevelopment program", mean undertakings and activities for the elimination and for the prevention of the development or spread of blighted areas.

(d) "Blight elimination, slum clearance and urban renewal project", "redevelopment and urban renewal project", "redevelopment or urban renewal project", "redevelopment project", "urban renewal project" and "project" mean undertakings and activities in a project area for the elimination and for the prevention of the development or spread of slums and blight, and may involve clearance and redevelopment in a project area, or rehabilitation or conservation in a project area, or any combination or part of the undertakings and activities in accordance with a "redevelopment plan", "urban renewal plan", "redevelopment or urban renewal plan", "project area plan" or "redevelopment and urban renewal plan", either one of which means the redevelopment plan of the project area prepared and approved as provided in sub. (6). These undertakings and activities include all of the following:

1. Acquisition of all or a portion of a blighted area.
2. Demolition and removal of buildings and improvements.
3. Installation, construction, or reconstruction of streets, utilities, parks, playgrounds, and other improvements necessary for carrying out in the project area the objectives of this section in accordance with the redevelopment plan.
4. Disposition of any property acquired in the project area, including sale, initial leasing or retention by the authority itself, at its fair value for uses in accordance with the redevelopment plan.
5. Carrying out plans for a program of voluntary or compulsory repair and rehabilitation of buildings or other improvements in accordance with the redevelopment plan.

APPENDIX B

SUMMARY TABLE OF PARCELS DETERMINED TO BE BLIGHTED

CITY OF TWO RIVERS
SUMMARY TABLE OF PARCELS DETERMINED TO BE BLIGHTED
IN THE CENTRAL HARBOR AREA

			Blight 66.1331							Blight 66.1333											
Parcel	Location	Acres	Dilapidation	Deteriorated Structures	Age	Obsolescence	Lack of Open Space	Overcrowding	Life Safety Risks	Dilapidation	Deterioration	Age	Obsolescence	Lack of Open Space	Overcrowding	Life Safety Risks	Inadequate Street Layout	Faulty Lot Layout	Diversity of Ownership	Impairs Sound Growth	Obsolete Platting
000-071-021-0	1407 - 16 St	0.53	X		X	X				X		X	X								
000-071-120-6	1510 Jefferson St	0.11	X		X					X		X									
000-070-063-7	1326 E River St	0.05																X			
000-070-042-3	1316 E River St	0.14	X		X					X		X						X		X	
000-104-011-7	1415 Lake St	6.95			X	X						X	X								
000-077-060-5	1411 Washington St	0.08			X		X					X		X				X			
000-077-010-6	15 St	0.04				X							X					X			X
000-077-020-4	1411 - 15 St	0.11	X		X					X		X						X			
000-041-030-8	1305 - 20 St	0.16	X		X					X		X									
000-041-040-6	20 St	0.08																	X		
000-041-051-2	1915 Jefferson St	0.23												X					X		
151-002-021-8	Rogers St	0.09																X			
000-004-060-9	1602 East St	0.07	X	X	X					X	X	X									
000-004-045-0	1608 East St	0.18	X	X	X					X	X	X									
000-004-030-6	1612 East St	0.10	X	X	X					X	X	X									
000-004-020-8	1616 East St	0.10	X	X	X					X	X	X									
000-004-010-0	1620 East St	0.15	X	X	X					X	X	X									
000-011-060-4	1702 East St	0.10	X	X	X					X	X	X						X			
000-011-050-6	1706 East St	0.16	X	X	X					X	X	X									
000-011-040-9	1710 East St	0.11		X	X						X	X									
000-011-030-1	1714 East St	0.10		X	X						X	X									
000-011-020-3	1718 East St	0.15	X	X	X					X	X	X									
000-011-010-5	1722 East St	0.17	X	X	X					X	X	X									
000-012-053-8	East St	0.30	X	X	X					X	X	X									
000-012-011-2	19 St	0.08	X	X	X					X	X	X									
151-002-060-0	Rogers St	0.12	X	X	X					X	X	X									
151-002-040-6	1908 Rogers St	0.20	X	X	X					X	X	X									
151-002-030-7	1912 Rogers St	0.15	X		X					X		X									
151-002-020-9	Rogers St	0.11	X	X	X					X	X	X									
151-002-010-1	1920 Rogers St	0.34	X	X	X					X	X	X									
152-002-060-9	2000 Rogers St	0.38	X	X	X					X	X	X									
152-002-040-4	2010 Rogers St	0.49	X	X	X					X	X	X									
152-002-020-8	2018 Rogers St	0.10	X	X	X					X	X	X							X		
152-002-010-0	Rogers St	0.07	X	X	X					X	X	X							X		
000-025-040-9	2102 Jackson St	0.46	X	X	X					X	X	X									
000-026-010-3	1233 - 22 St	0.23	X	X	X					X	X	X									
000-026-020-1	2117 E River St	0.44	X	X	X					X	X	X									
000-026-040-7	2109 E River St	0.22	X	X	X					X	X	X									
000-026-062-0	1216 - 21 St	0.30	X	X	X					X	X	X									
000-039-010-6	1225 - 21 St	0.19	X	X	X					X	X	X				X					
000-039-020-4	2019 E River St	0.25		X							X										
000-039-030-2	2015 E River St	0.24		X							X										
000-039-040-0	2011 E River St	0.20		X							X										
000-039-051-6	2007 E River St	0.35		X							X										
000-039-061-4	1218 - 20 St	0.16		X							X										
000-041-110-1	19 St	0.07																X		X	X
000-077-071-2	1413 Washington St	0.11					X							X				X		X	X
000-012-020-1	1818 East St	0.16	X	X	X					X	X	X									
000-053-010-7	E River St	3.51		X							X										
000-069-041-6	1401 E River St	0.58	X	X	X					X	X	X									
000-078-010-4	E River St	0.41	X	X	X					X	X	X									
000-078-067-8	E River St	0.25	X	X	X					X	X	X									
000-078-091-6	1431 E River St	0.17			X							X				X	X	X			
000-081-071-4	1414 Lake St	1.17	X	X	X					X	X	X									
000-080-012-8	1400 Lake St	9.51	X	X	X					X	X	X									
000-002-010-4	East St	0.19	X	X	X				X	X	X	X				X		X			
000-052-030-5	1316 - 18 St	11.72	X	X	X	X	X			X	X	X	X	X						X	

43.19 Total acres

APPENDIX C

RESOLUTIONS APPROVING THE DECLARATION OF BLIGHT

CITY OF TWO RIVERS
RESOLUTION

Adopting Blight Determination Report for the Central Harbor Area
As Recommended by the Community Development Authority
And Plan Commission

WHEREAS, City staff has undertaken a review of 100 properties located within a 56.55 acre area surrounding the City's Central Harbor area, extending along both sides of the East Twin River from the 22nd Street Bridge to Seagull Marina and up the West Twin River to the Washington Street bridge; and

WHEREAS, the purpose of such review was to determine the extent to which properties lying within the study area meet the definition of "blighted properties" as set forth in Wisconsin Statutes; and

WHEREAS, based on this review, City staff has prepared a "Blight Determination Report," documenting its determination that parcels comprising 43.19 acres, or 76.4 percent of this area meet the statutory definition of "blighted;" and

WHEREAS, this determination is based on criteria contained in Sections 66.1331 and 66.1333 of Wisconsin Statutes; and

WHEREAS, said report further documents that, based these determinations, "a predominance of buildings or improvements" in said Central Harbor Area present conditions that qualify the area as a "Blighted Area," consistent with the definition of that term contained in Sections 66.1331 and 66.1333 of Wisconsin Statutes; and

WHEREAS, such a blight determination for the Central Harbor Area will assist the City in seeking funds to help eliminate such blight and to formulate and implement redevelopment strategies for this area, from sources including Community Development Block Grant (CDBG) programs for public facilities and for redevelopment planning, administered by the Wisconsin Economic Development Corporation and Department of Administration; and

WHEREAS, such a determination also provides a basis for formulation and adoption of a formal redevelopment plan for this area, and for possible creation of a redevelopment tax incremental financing district for redeveloping the 12-acre former Thermo Fisher Scientific/Hamilton complex located in the heart of the Central Harbor Area; and

WHEREAS, said Blight Determination Study has been reviewed and is recommended for adoption by the City's Plan Commission and its Community Development Authority, and is consistent with the City's Harbor Master Plan, recently adopted as Amendment No. 1 to the City's Comprehensive Plan;

NOW, THEREFORE, BE IT RESOLVED that the City Council hereby expresses its concurrence with the methodology, findings and recommendations of the Central Harbor Area Blight Determination Report, and hereby formally adopts said report.

Dated this 4th day of February, 2013.

Council Member

City Manager

CITY OF TWO RIVERS
COMMUNITY DEVELOPMENT AUTHORITY
RESOLUTION

Recommending City Council Approval of a
Determination Report for the Central Harbor Area

WHEREAS, City staff has undertaken a review of 100 properties located within a 56.55 acre area surrounding the City's Central Harbor area, extending along both sides of the East Twin River from the 22nd Street Bridge to Seagull Marina and up the West Twin River to the Washington Street bridge; and

WHEREAS, the purpose of such review was to determine the extent to which properties lying within the study area meet the definition of "blighted properties" as set forth in Wisconsin Statutes; and

WHEREAS, based on this review, City staff has prepared a "Blight Determination Report," documenting its determination that parcels comprising 43.19 acres, or 76.4 percent of this area meet the statutory definition of "blighted;" and

WHEREAS, this determination is based on criteria contained in Sections 66.1331 and 66.1333 of Wisconsin Statutes; and

WHEREAS, said report further documents that, based these determinations, "a predominance of buildings or improvements" in said Central Harbor Area present conditions that qualify the area as a "Blighted Area," consistent with the definition of that term contained in Sections 66.1331 and 66.1333 of Wisconsin Statutes; and

WHEREAS, such a blight determination for the Central Harbor Area will assist the City in seeking funds to help eliminate such blight and to formulate and implement redevelopment strategies for this area, from sources including Community Development Block Grant (CDBG) programs for public facilities and for redevelopment planning, administered by the Wisconsin Economic Development Corporation and Department of Administration; and

WHEREAS, such a determination also provides a basis for formulation and adoption of a formal redevelopment plan for this area, and for possible creation of a redevelopment tax incremental financing district for redeveloping the 12-acre former Thermo Fisher Scientific/Hamilton complex located in the heart of the Central Harbor Area; and

WHEREAS, said Blight Determination Study has been reviewed and is recommended for adoption by the City's Plan Commission, and is consistent with the City's Harbor Master Plan, recently adopted as Amendment No. 1 to the City's Comprehensive Plan;

NOW, THEREFORE, BE IT RESOLVED that the Community Development Authority of the City of Two Rivers hereby expresses its concurrence with the methodology, findings and recommendations of the Central Harbor Area Blight Determination Report, and hereby formally adopts said report consistent with provisions of Section 66.1333(6)(b)1 of Wisconsin Statutes.

Dated this 29th day of January, 2013.

Gregory J. Coenen, President