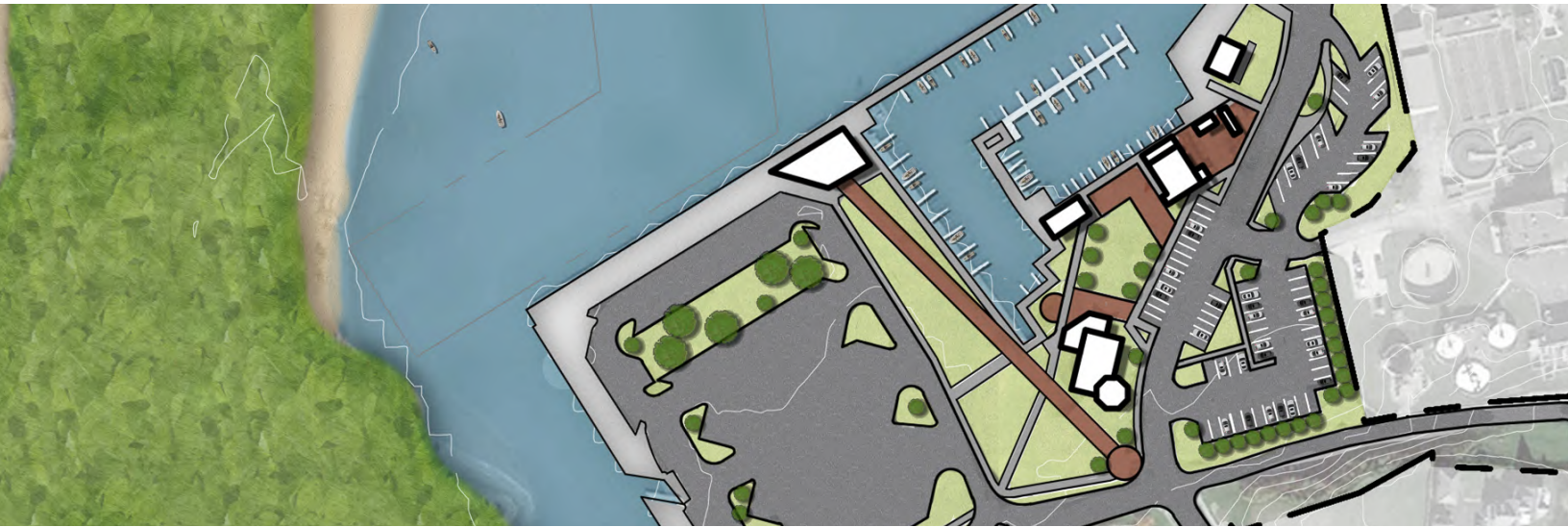


> **CONNEAUT PORT AUTHORITY**
PRELIMINARY PORT DISTRICT MASTER PLAN



May 19, 2023



>Acknowledgements

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1 > PROJECT GOALS

The Conneaut Port Authority (CPA) retained the project team in the Fall of 2022 to study the land and water resources under the CPA's control and offer recommendations for future development. This area, collectively referred to as the Port District, has played a critical role in the history of Conneaut and the surrounding region. The Conneaut Port and rail system serve as a major receiving port on the Great Lakes for commodities including iron ore, steel, aggregates, minerals, limestone, and food and farm products. In addition, this area provides some of northeastern Ohio's most accessible outdoor recreation opportunities. As the region's economy has shifted over the past 50 years from manufacturing and heavy industry (e.g., coal) to the service sector, opportunities have grown in the outdoor tourism industry. Other changes which affect the future of Port District, include impacts related to climate change. Lake Erie and its surrounding communities have faced, and continue to be vulnerable to, the impacts of more frequent and severe storms, increased flooding, erosion, fluctuating lake levels, and degraded water quality.

The CPA wants to direct future changes in the Port District with a holistic plan that considers the needs of a variety of stakeholders. A successful plan will integrate resiliency, natural resources, socioeconomic impact, and recreational use throughout the area, and will:

- Create a regional attraction for waterfront recreation, dining, community events, and economic benefit;
- Provide a popular destination for nature enthusiasts, bird and marine lovers, recreational enthusiasts, and visitors & guests to thoroughly enjoy the region;
- Showcase an area that the residents of the entire Community, County, and State can be proud of and look to as a flagship development and gold standard for other similar types of developments;
- Attract new and existing businesses, investors, residents, and visitors to Conneaut as a form of economic diversification and development in a changing region; and
- Address ecological needs and concerns, consistent with the regional, state, and federal regulation – and position Conneaut as a positive steward of the Great Lakes.



Port District showing Phase 1 and Phase 2 areas

PRELIMINARY MASTER PLAN

As the first step for bringing this vision into reality, the plan identifies environmental, economic, life safety, and cultural conditions that need to be addressed. A master plan for future improvements is then proposed with **nine** specific projects. These projects showcase a variety of approaches to support local businesses, protect natural resources, and improve the resiliency of critical infrastructure. The scope of the plan is focused on the Phase 1 region identified in the graphic below. Future planning efforts will address improvements in the Phase 2 area.

2 > PAST EFFORTS



2016 Conneaut Charrette Harbor Plan (Kent State's Cleveland Urban Design Collaborative)

One of the goals of this master plan is to build upon previous planning efforts and coalesce their recommendations into a single plan. Plans that were reviewed included:

- 2011 Conneaut Port Authority Recreational Boating Analysis and Waterfront Plan (MB3 Consulting)
- 2013 Ashtabula County Coastal Management Plan
- 2014 Conneaut Charrette Report (Kent State's Cleveland Urban Design Collaborative)
- 2016 Conneaut Charrette Harbor Plan (Kent State's Cleveland Urban Design Collaborative)
- Ohio Coastal Atlas (3rd Edition)
- 2015 - Guidance for Considering the use of living shorelines (NOAA)
- 2017 - City of Conneaut Comprehensive Master Plan - Update
- 2020 - Wetland Delineation Report (Envirosciences)
- 2022 - Constructed Wetland Concept for CDF
- 2022 - Marina Expansion plan
- 2022 - Application for Coastal Management Assistance Grants
- 2023 - Capital Improvement Plan - Port Conneaut (Oasis Marinas)

3 > EXISTING CONDITIONS

CHALLENGES & OPPORTUNITIES

Existing conditions in the District are assessed for their impacts to four key areas:



Environmental issues are identified by this symbol. The unique features of this coastal environment support important flora and fauna, but are also under threat from climate change and human activities.



Economic factors within the district are identified by this symbol. There is great potential for infrastructure to support the evolution of the district from an industrial harbor to one focused on recreational activities.



Issues related to life/safety and access issues are identified by this symbol. The plan aims to mitigate hazards in the District while also improving connectivity to the larger region.



Cultural and recreational assets are identified by this symbol. The Port District is a vital cultural asset to the Conneaut region, and this plan builds on this important relationship.

SANDBAR



The dynamic sandbar environment has the **opportunity to support rare coastal marsh habitat**. **Fluctuating lake levels and climate change impacts** threaten to disturb the accumulation of sand and alter the hydrology of the wetland marsh. The breakwall impedes the natural flow of sediment down the coastline depleting **sand resources** east of Conneaut. **Invasive plants** are dominating most of the vegetation communities and require long-term management.



The sandbar is a popular **recreation** spot. It is a unique feature that differentiates Conneaut from other harbor communities and draws many visitors.



The **breakwall** is an attractive hazard. The currents running through the breakwall passage are extremely dangerous and have led to several fatalities.



The **lighthouse** has long been a central image in Conneaut's identity - there are good views to the lighthouse from the sandbar. The **sandbar** itself has become a part of Conneaut's local identity. The calmer waters behind the breakwall are ideal for activities like swimming and kayaking.



Aerial View of Sandbar



The sandbar contains wetlands and vegetated shallows. The wetlands are dominated by Common Reed (*Phragmites australis*) and Black Willow (*Salix nigra*)



Unightly barriers have been installed at the breakwater to prevent access

LAGOON



This dynamic area receives windblown sand from the sandbar as well as washed in sediment from upland drainage areas. Impacts to **wetland habitats** would require permitting and mitigation. The calm backwater of the lagoon provides **important nursery habitat for fish and other aquatic life.**



This is an important area for **birdwatching** which supports a fledgling **eco-tourism industry.** The area is also the largest sheltered water under the CPA's control which can support an **expanded marina.** A recent market analysis of the marina suggested that there is an **unmet demand for boat slips** within the Port District's service area. It recommended that the CPA add slips for larger vessels (16-26 ft length) in order to attract higher-income owners with more discretionary spending power.

NAYLOR DRIVE



At over a 1/4 mile long, Naylor Drive fails to **connect** the **important civic resources** of the Beach at Conneaut Township Park and the Marina. The empty frontage along Naylor Drive represents an untapped **opportunity for future lakefront development.**



Naylor Drive's narrow width does not provide sufficient **space for pedestrians and cyclists.** The narrow plank bridge connecting Township Park Beach and the Marina is **unsafe and insufficient** to link these important uses.



A view of the unprogrammed pland area at the west end of Naylor Drive



A pedestrian connection between Township Park Beach and the Marina is provided with this narrow plank bridge



Aerial View of Lagoon



Birdwatchers are frequent users of this viewing platform along Naylor Drive



Naylor Drive is too narrow to safely accommodate pedestrians and cyclists

MARINA



The marina is the **hub of commercial activity** for the District. Important waterfront uses include boat/jet ski slips, boat launches, fuel docks, shower/restroom facilities, and the Breakwall restaurant. Shower facilities for boaters are located in the same building as the Breakwater restaurant which is not a **compatible use of space**. Portside Marine Repair occupies a valuable lot. It's industrial use could be located elsewhere to **reserve space for critical near-shore uses**. **The Fish House has remained underutilized for a long time**. A recent RFP process designed to attract developer/tenants was not successful. The cost to renovate the building may be more than what it would cost to build a new one.



The lack of efficiently marked parking spaces restricts **access to commercially run businesses** during peak hours. Visitors would benefit from more **direct and clearly defined pedestrian/cyclist access to the strolling pier** from the Lakeside/Harbor street intersection.



The view of the marina from Lakeside Drive is often the first one visitors have of Conneaut's commercial lakefront and is important for **establishing first impressions**. The main pier offers **passive recreation for strolling and viewing** the sandbar, lighthouse, and passing boats. A large "script Conneaut" sign is planned for installation here.



The fish house occupies a prime lot in the District



The lack of efficiently marked spaces limits parking availability and increases hazards for pedestrians



Aerial View of Marina



Visitors would benefit from better pedestrian access to the strolling pier



Though not evident from this mid-January scene, the Breakwall restaurant is a popular place during peak summer hours

RECREATIONAL CHANNELS



A backlog of material needs to be dredged from the channels to keep **access to recreational marinas** open.

MARINA DRIVE EXTENSION



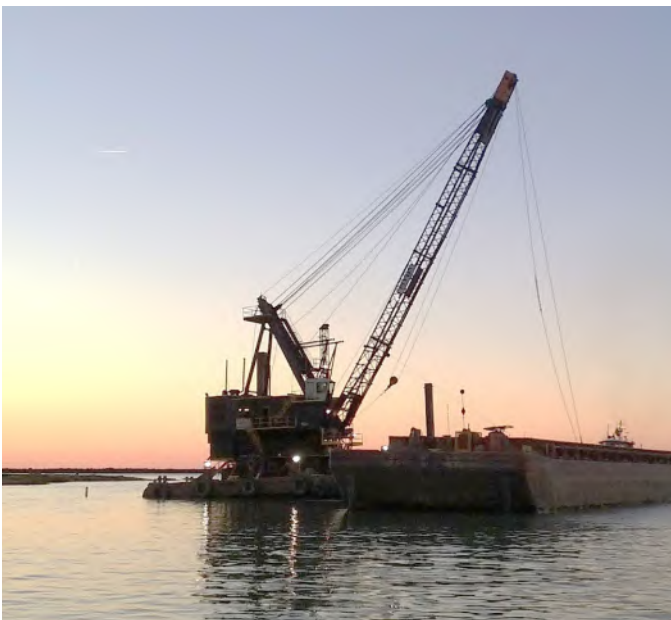
Frequent storms and **wind driven waves wash erodible gravel into the lake**. There is no **treatment of stormwater runoff** from the road before it reaches the lake.



The lack of efficiently marked parking spaces results in a jumble of vehicles that makes conditions dangerous for **pedestrian navigation**. The broken rocks that stabilize the shoreline prevent **fully-accessible fishing** activities.



The Marina Drive extension is a **popular location to fish** from the shoreline.



The CPA is dealing with a backlog of material that needs to be dredged from the recreational channels



Nearby Conneaut Creek is a popular place to fish for Steelhead Trout



Aerial View of the Marina Drive Extension



Stormwater runoff from the Marina Drive extension sheet flows directly into Lake Erie



Fierce storms often disturb the loose gravel surface of the Drive

CANADIAN NATIONAL LAKEFRONT



The service roads on this property are located very close to the shoreline which shows signs of erosion in several locations. This area is controlled by Canadian National Railroad, but is outside of the Federal navigation channel. **Living shoreline interventions could stabilize the shore, add habitat, and protect water quality.**

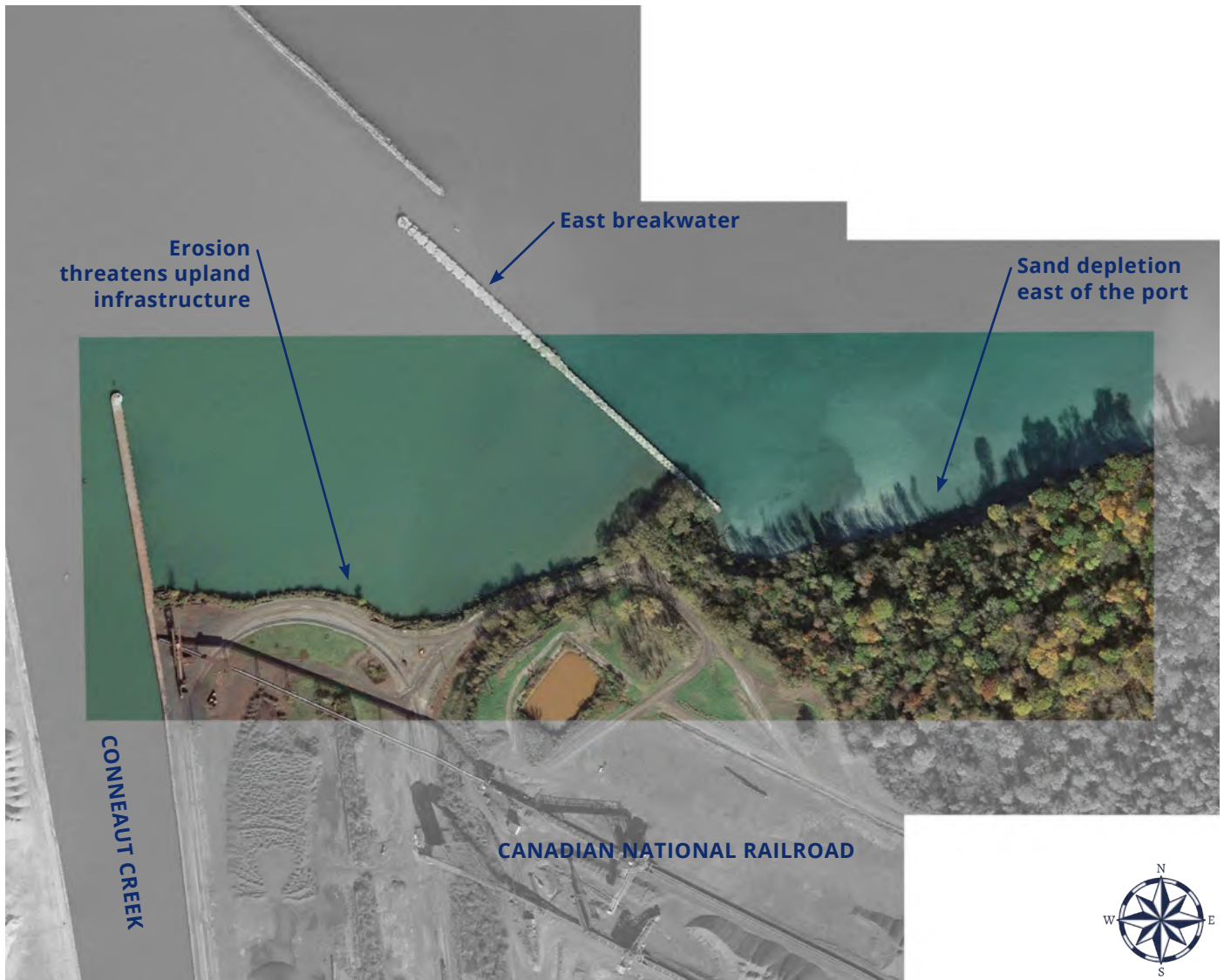
SHORELINE EAST OF PORT



Coastal structures like Conneaut's breakwaters have been constructed to create safe harbors and navigation channels. However, they have also caused the loss of beaches in Lake Erie. Sediments that enter the coastal system are carried by longshore currents and get trapped by shore perpendicular structures. This results in the accumulation of sand on one side of the structure and deprivation of sand on the other. As a result, a large depositional beach has formed west of the port (Township Park Beach), while sediment shortages and bluff erosion have occurred east of it. The shoreline east of the port would benefit from **beach nourishment to address this loss of near-shore sediment.**



Beach nourishment projects would benefit the shoreline east of the port



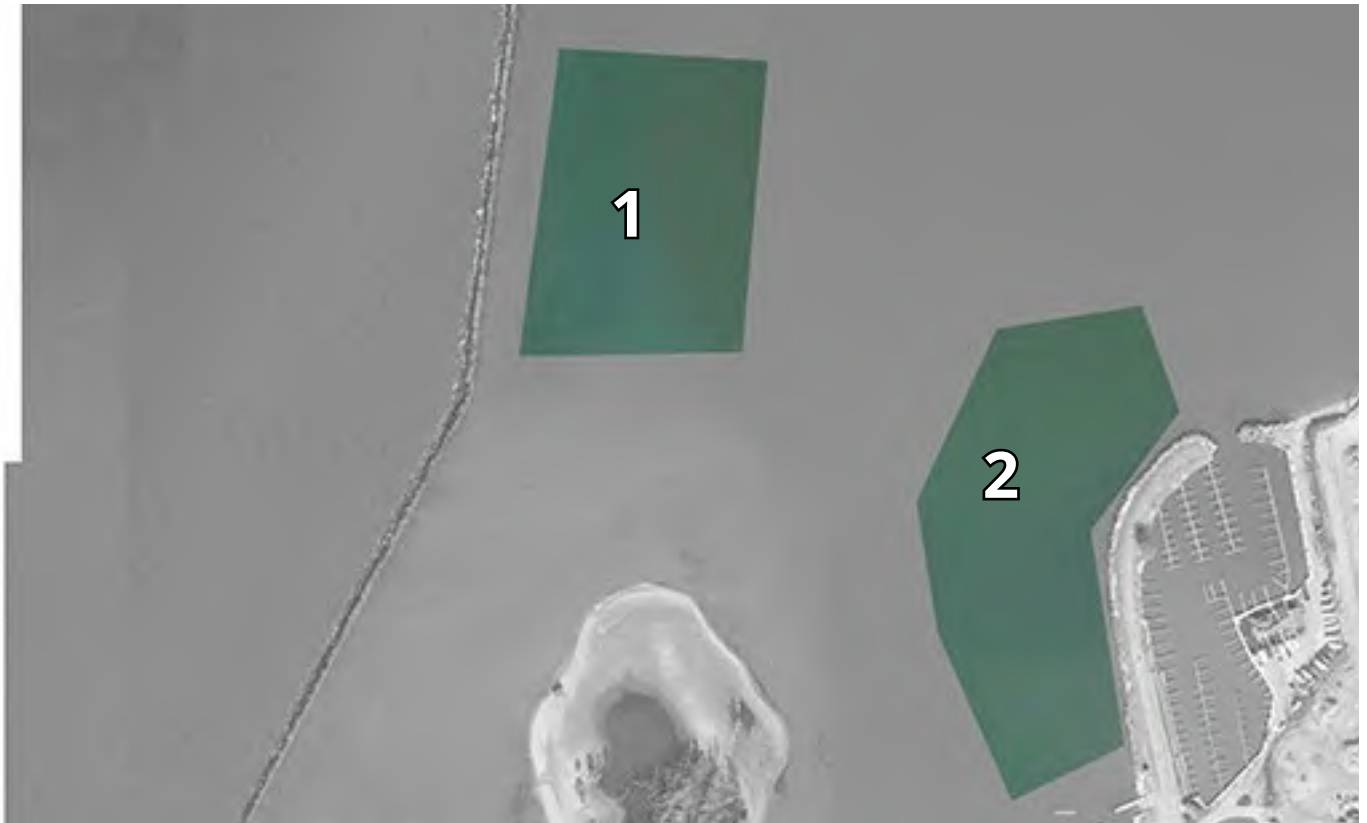
Aerial view of the lakefront east of Conneaut Creek



A view of the shoreline looking east towards Pennsylvania

4 > BENEFICIAL USE OF DREDGE MATERIAL

The management of material dredged from the lake bed to keep boat channels open is a critical economic and environmental issue. Some methods for disposal, such as open lake dumping, have yearly quantity restrictions and cannot manage all dredged sediment. Upland disposal is also possible, but can be cost prohibitive. In an effort to determine if beneficial uses of the material are possible in the Port District, the team shared four potential locations for future wetland creation with the US Army Corps of Engineers. Below is a summary of the pros and cons of each location that resulted from that discussion.



AREA 1

PROS:

The area is protected from lake generated wave erosion, and is proximate to the existing sandbar habitat.

CONS:

The area is within the federal harbor, and would require a Section 408 permit. Additionally, boat traffic may be a deterrent to fauna. There are also possible impacts from future dredging activities, and using this area may add to the attractive nuisance of the breakwall

AREA 2

PROS:

The area is protected from lake generated wave erosion, is within the existing submerged lands lease, and is proximate to the existing sandbar habitat. Additionally, it offers protection of the marina drive extension and the marina, and could support shoreline fishing activity.

CONS:

The area is within the federal harbor. Boat traffic may be a deterrent to fauna. There are also possible impacts from future dredging activities, and using this area may add to the attractive nuisance of the breakwall.



AREA 3

PROS:

The Canadian National Shoreline is protected from lake generated wave erosion, and the natural shoreline approaches could support erosion control and increased habitat measures. The shoreline is also outside of federal dredging limits.

CONS:

This area would require partnership or easements with Canadian National including a submerged lands lease.

AREA 4

PROS:

Natural shoreline approaches could support erosion control and increased habitat measures, as well as beach replenishment efforts.

CONS:

This area is highly susceptible to lake generated wave erosion. Additionally, the near shore placement area is used by the US Army Corps of Engineers, and may require coordination with their efforts.

5 > PRELIMINARY MASTER PLAN

Recommendations to increase the Port District's recreational activities, improve access and safety, spur economic growth, and preserve the coast's critical natural resources are grouped into **nine** project areas (A-I). Elements within these project areas are further described on subsequent pages.



PROJECT AREAS:

(A) BREAKWALL PLATFORM, (B) COASTAL MARSH REHABILITATION, (C) WETLAND PARK & BOARDWALK, (D) MARINA & NAYLOR DRIVE EXPANSION, (E) WATERFONT LOTS, (F) MARINA REDEVELOPMENT, (G) MARINA DRIVE RECONSTRUCTION & CONSTRUCTED WETLAND



PROJECT AREAS:

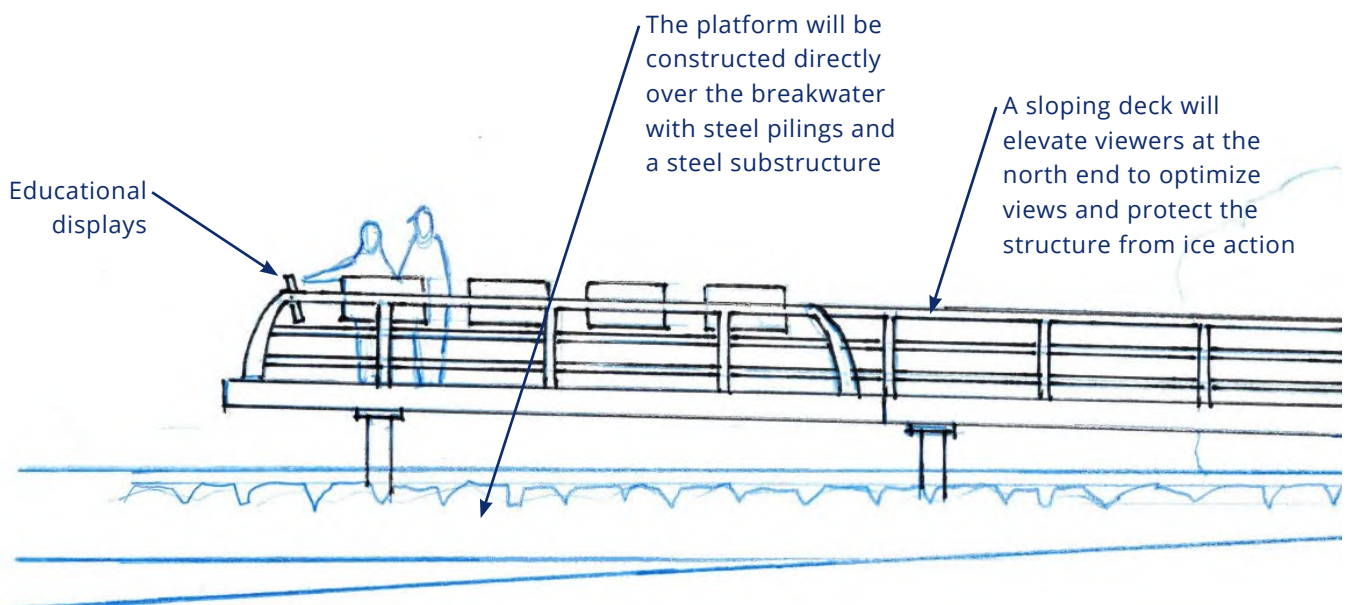
(H) LIVING SHORELINE, (I) BEACH REPLENISHMENT EAST OF PORT

(A) BREAKWALL PLATFORM

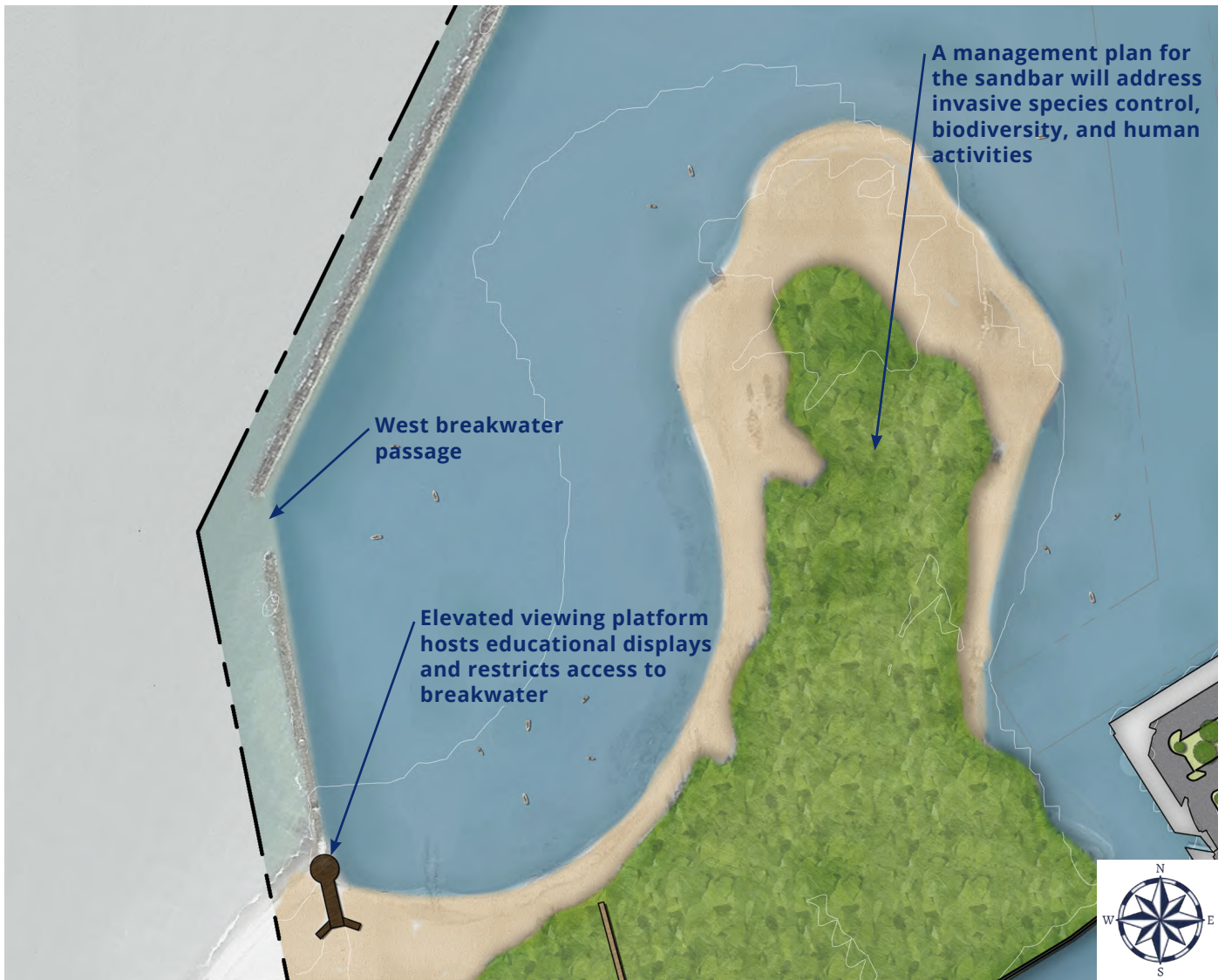
An elevated deck will offer a safe place to view the breakwall, sandbar, and lighthouse. Guardrails surrounding the deck will deter access to the dangerous conditions around the breakwall. They will also support signage that will interpret the history of the lighthouse, the ecology of the sandbar, and the dangers of the currents at the breakwall passage.

(B) COASTAL MARSH REHABILITATION

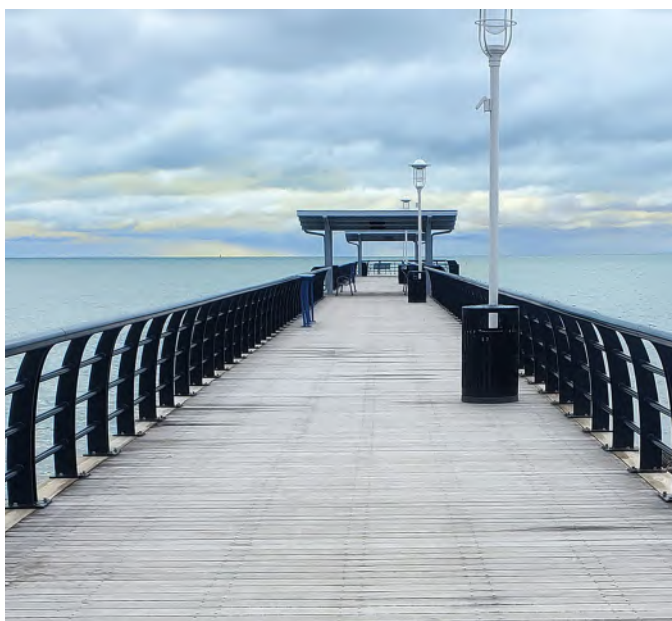
A management plan will be developed with the goal of accommodating historical activities on the sandbar, while maximizing the biodiversity of native plant and animal life. The plan will address impacts related to invasive plants (primarily Common Reed), fluctuating lake levels, visitor impacts, and wave action from recreational boating. Near-term and long-term goals will be established along with metrics for evaluating performance. Strategies for management may include weed control, soil stabilization, exclusionary measures, and re-planting measures. Likely costs and funding sources will be identified.



Elevated Viewing Platform at West Breakwater



Enlargement of the Breakwall Platform and Coastal Marsh project areas



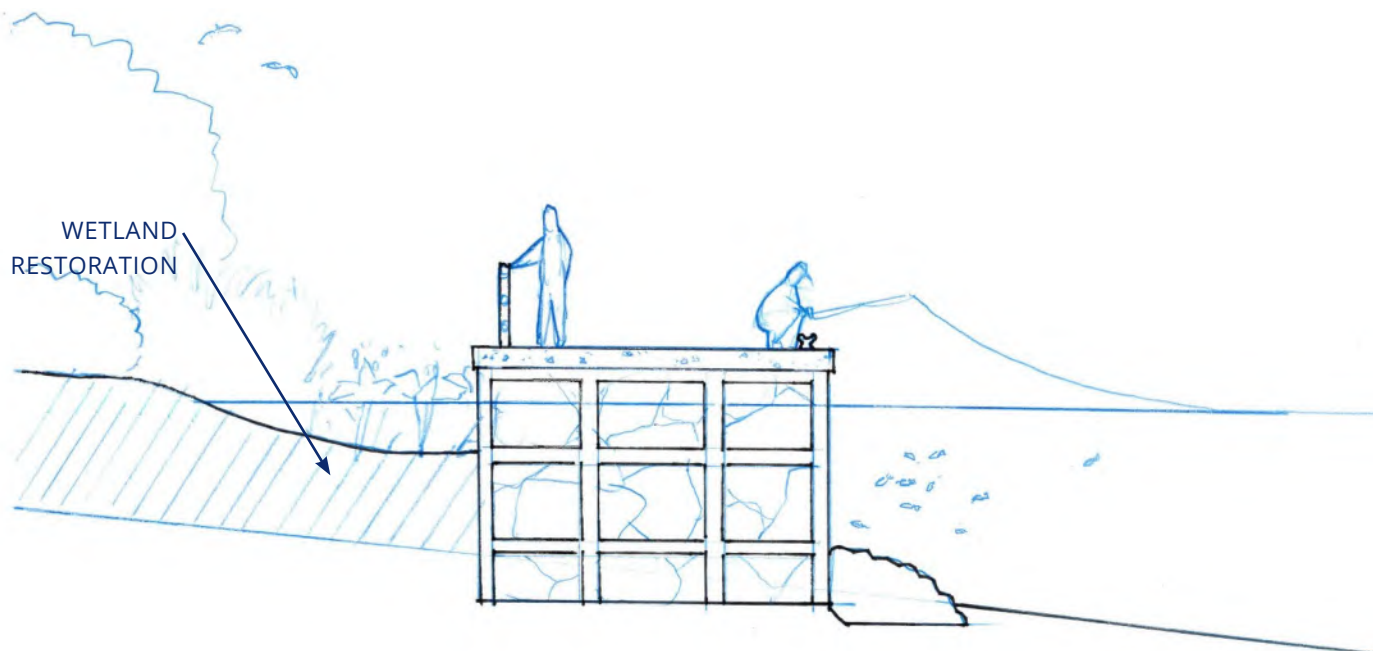
A recently constructed pier in St. Clair Shores, MI features an elevated substructure to protect from ice damage



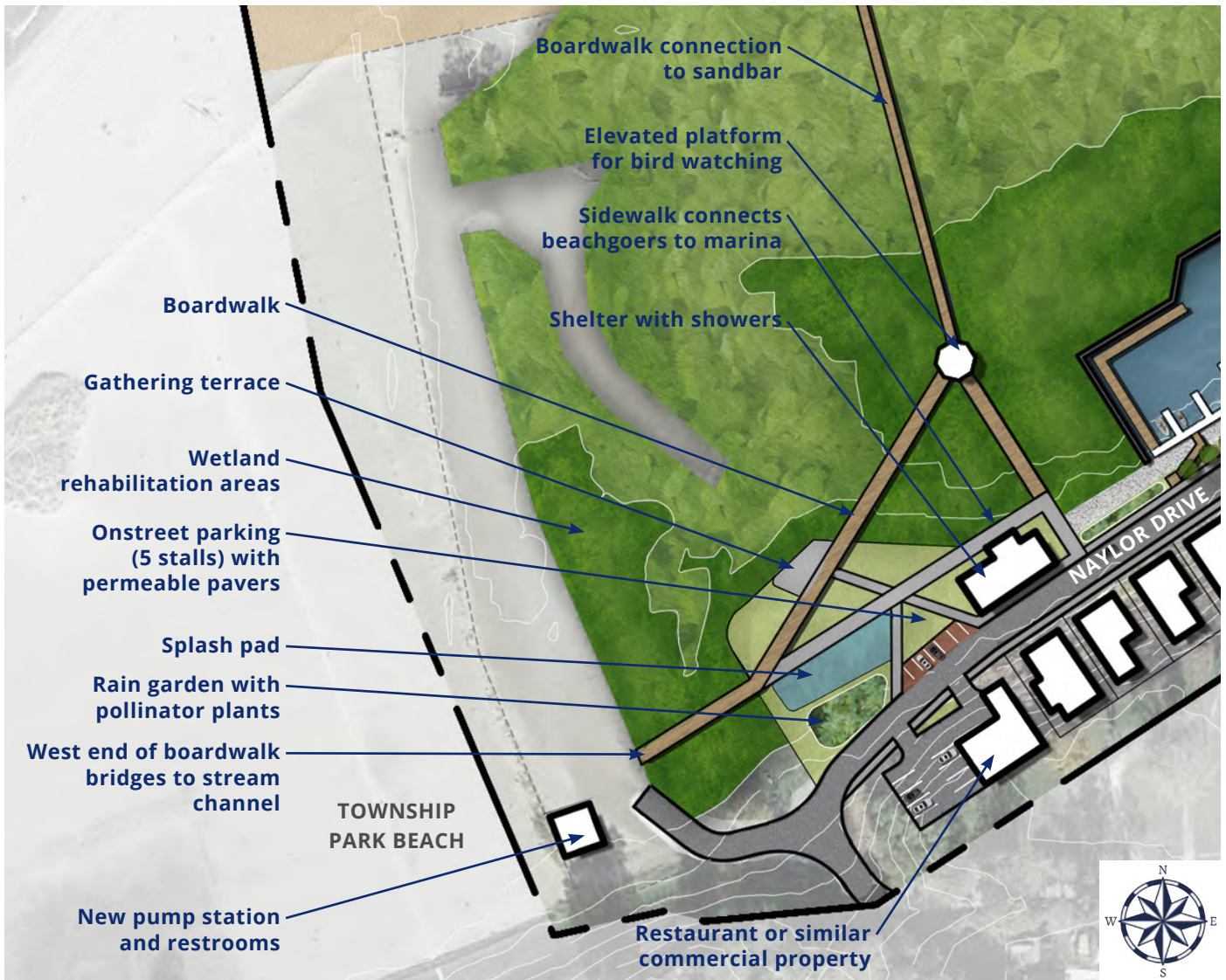
Educational displays can be made with porcelain enamel coatings for durability in even the harshest environments

(C) WETLAND PARK AND BOARDWALK

A new parklet will anchor the west end of the Naylor Drive redevelopment. A primary feature of the park will be a boardwalk that connects Conneaut Township Park with the sandbar. At the west end of the park, the boardwalk will replace the narrow plank bridge. It will offer direct access to the new marina areas from the beach. Visitors that use it to access the sandbar will encounter an elevated viewing platform which will offer excellent views of the coastal marsh along with educational signage. The degraded drainage ditch and the shallow areas between the shore, sandbar, and marina breakwall will be restored with native wetland plants. A small splashpad will offer water play for small groups. The park will be serviced with a new recreational building housing restrooms, showers, and storage. Parking will be accommodated with several onstreet accessible stalls as well as a larger off-street lot built into the hillside.



Structures installed to create an expanded marina can be used to assist with wetland restoration and can also offer future fishing opportunities



Enlargement of the Wetland Park and Boardwalk project area



A splash pad, which offers safe and economical water play, would be an enticing feature for beachgoers



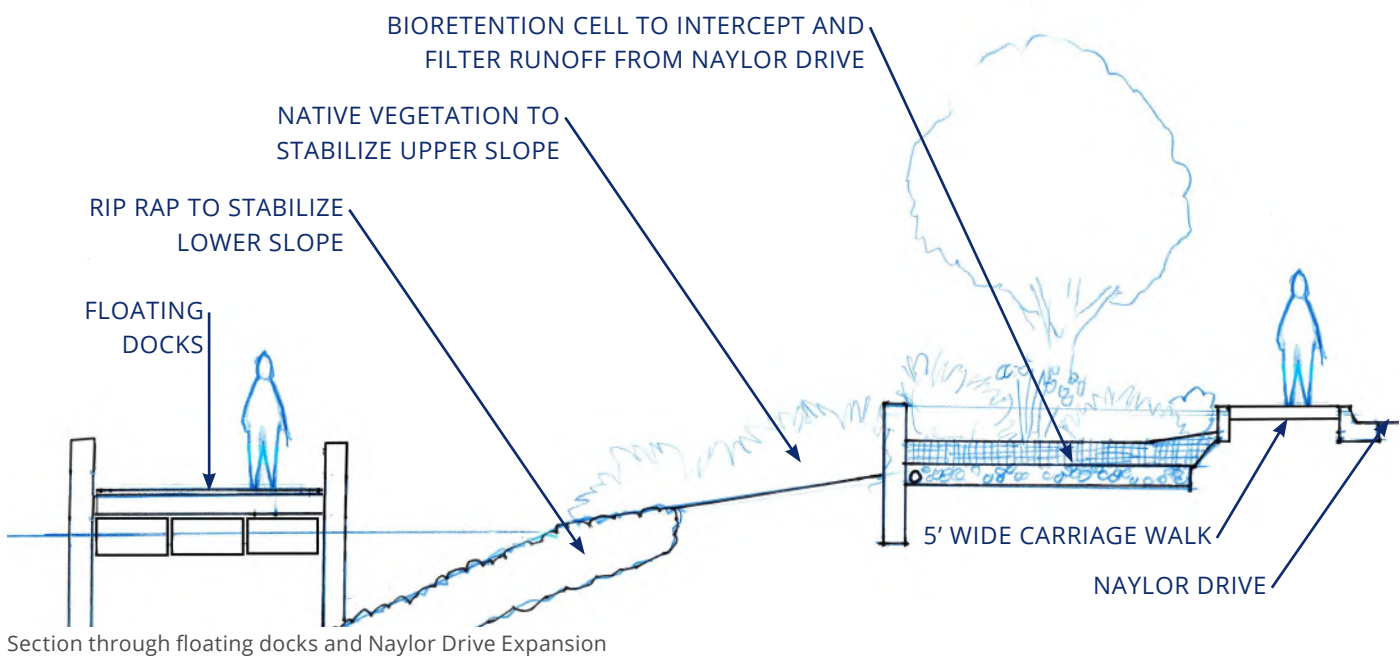
A cedar boardwalk through a wetland in Oregon, IL

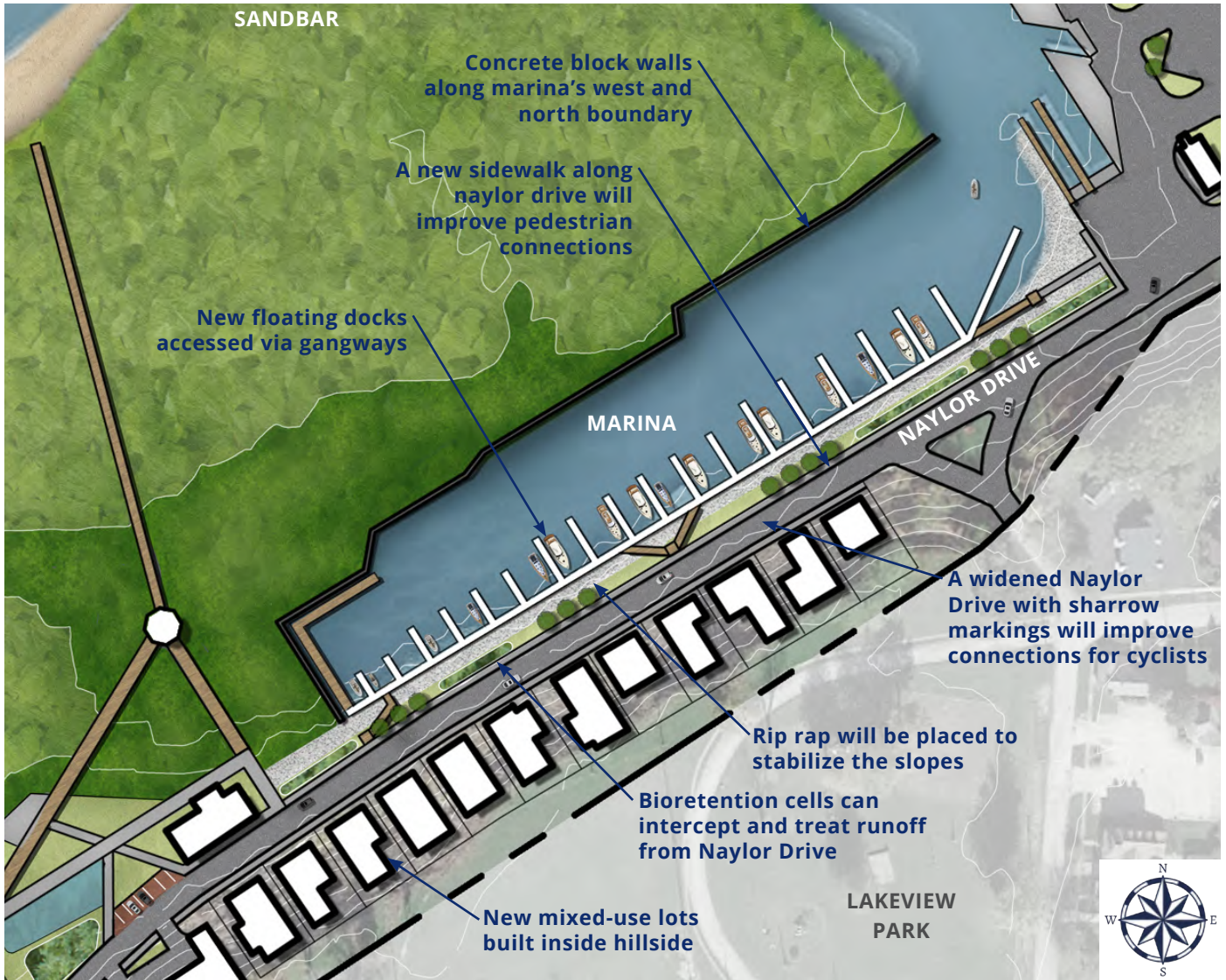
(D) MARINA & NAYLOR DRIVE EXPANSION

A new marina with floating docks will be bound by concrete block walls on the north and west sides. The expanded marina will provide dockage for eight 30-foot vessels, eight 40-foot vessels, twelve 50-foot vessels, twelve 60-foot vessels, and a side-berthing dock for vessels up to 100 feet in length. The marina will be constructed in the shallow basin at the west end of the harbor and will require excavation of approximately 50,000 cubic yards of material. The banks on the south side of the basin will be stabilized with stone placed at a slope of 1.5 horizontal feet to 1 vertical foot. Gangways will allow visitors to access the docks from a new sidewalk built along Naylor Drive. Rainwater runoff from the Drive will be treated by permeable paving and/or bioretention cells planted with native and adapted plants. Sharrow markings will be added to the street to make access safe for cyclists.

(E) WATERFRONT LOTS

A mixture of residential and retail commercial lots will be carved into the existing hillside to take advantage of the Naylor Drive frontage and views of the marina and lake. It is anticipated that a planned development would be negotiated with the City that would permit two-story structures with narrow side, front, and rear yards. Heights would be capped to preserve views from the adjacent Lakeview Park.





Enlargement of Marina/Naylor Drive Expansion and Waterfront Lots



Dense development along Naylor Drive could consist of mixed-use two-story buildings on 50'x100' lots



A mix of permeable paving and bioretention practices will detain and treat runoff from the expanded Naylor Drive

(F) MARINA REDEVELOPMENT

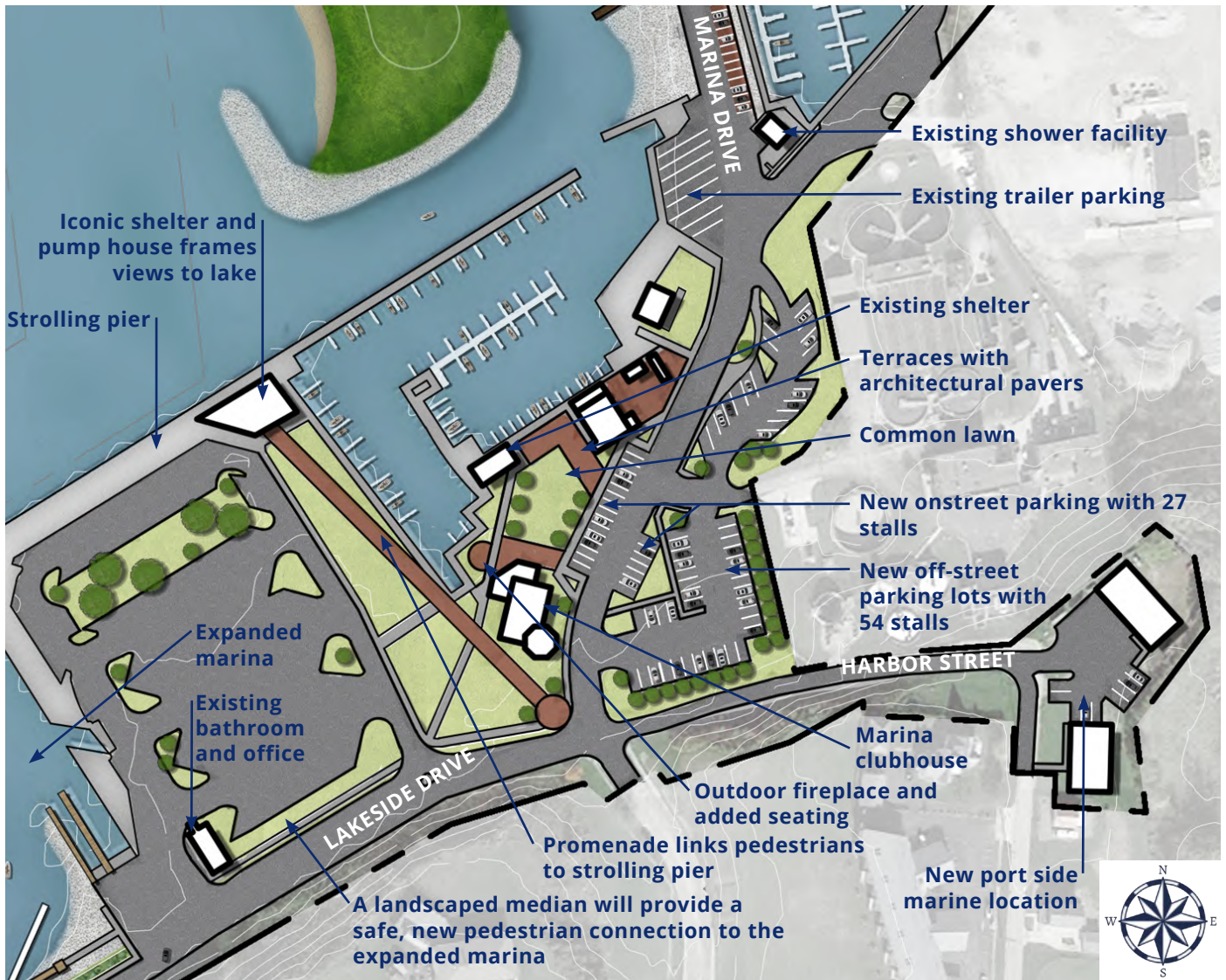
A new marina clubhouse will anchor the development where the current Fish House is located at the prominent corner of Lakeside and Marina Drive. Amenities will include restrooms, showers, laundry, a lounge, and office space. Reconstructed onstreet and offstreet parking will optimize access for drivers while a pedestrian promenade connects pedestrians and cyclists to a new iconic pier shelter. Connections to the expanded marina are improved with a landscaped walk through the parking lot. The portside marine repair business is moved a block east to a more appropriate lot.



Amenities such as seating and an outdoor firepit will be added to the marina



An iconic shelter will anchor the end of the promenade and frame views to the lake beyond



Enlargement of Marina Redevelopment



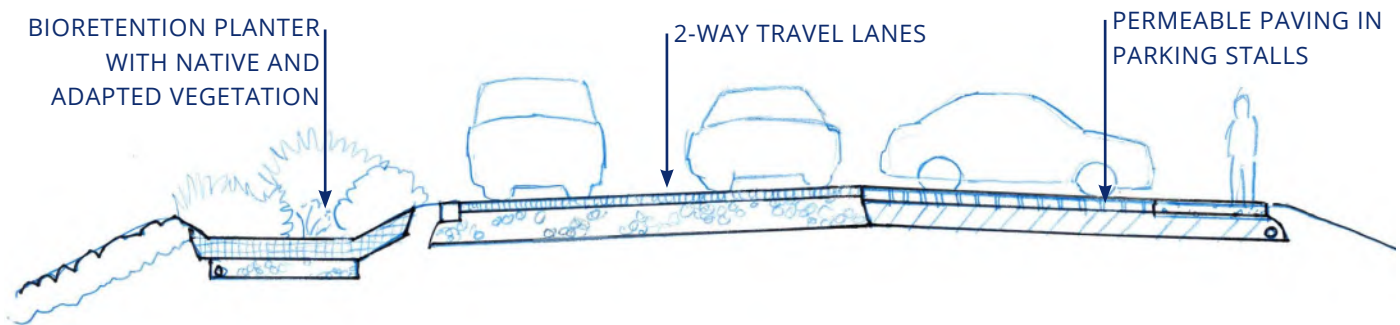
A new marina clubhouse will greet visitors arriving to the marina



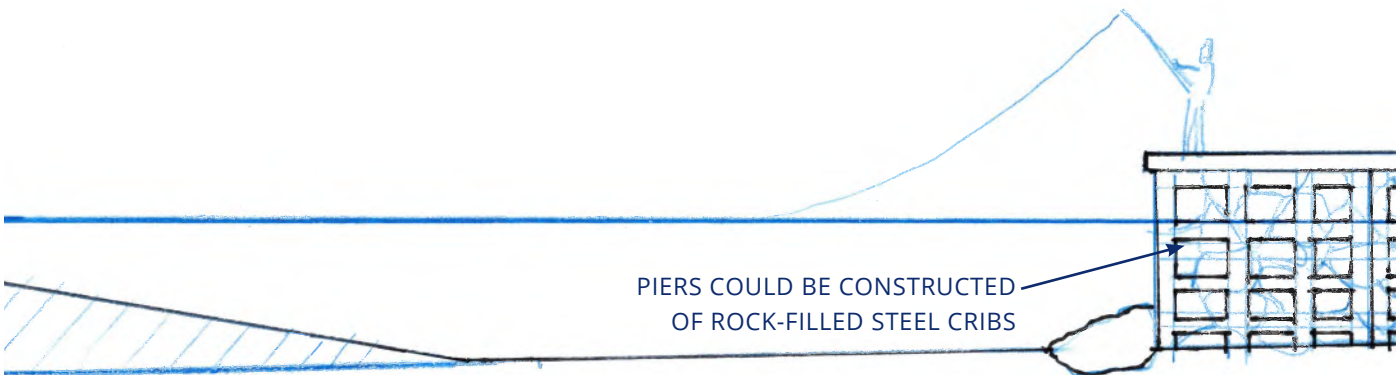
The main buildings in the marina will be arranged around a central lawn

(G) MARINA DRIVE RECONSTRUCTION & CONSTRUCTED WETLAND

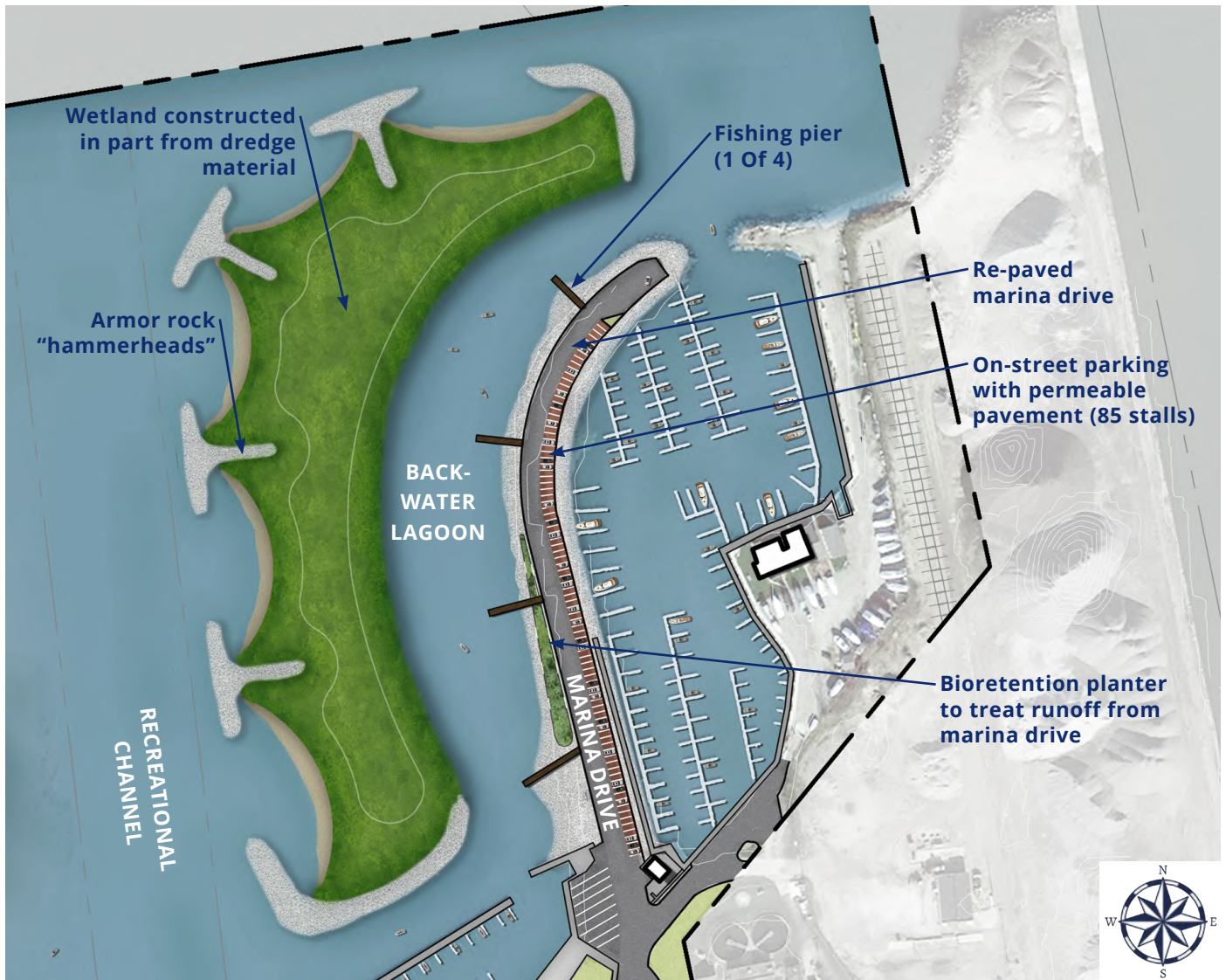
Damaged paving will be replaced with a more durable concrete surface. Rain water runoff will be treated with a combination of bioretention planters and permeable paving. Constructed wetlands will shelter the drive and the adjacent marina from powerful storms and will be constructed in part from dredge material. Piers constructed of rock filled steel cribs will provide access for anglers. Clearly marked parking spaces will greatly increase the number of available spaces and make pedestrian access safer.



A section through Marina Drive



Fishing piers will provide fully accessible fishing opportunities



Enlarged view of Marina Drive reconstruction and constructed wetland



Constructed wetlands could add important coastal marsh habitat and protect adjacent infrastructure from erosion

(H) LIVING SHORELINE

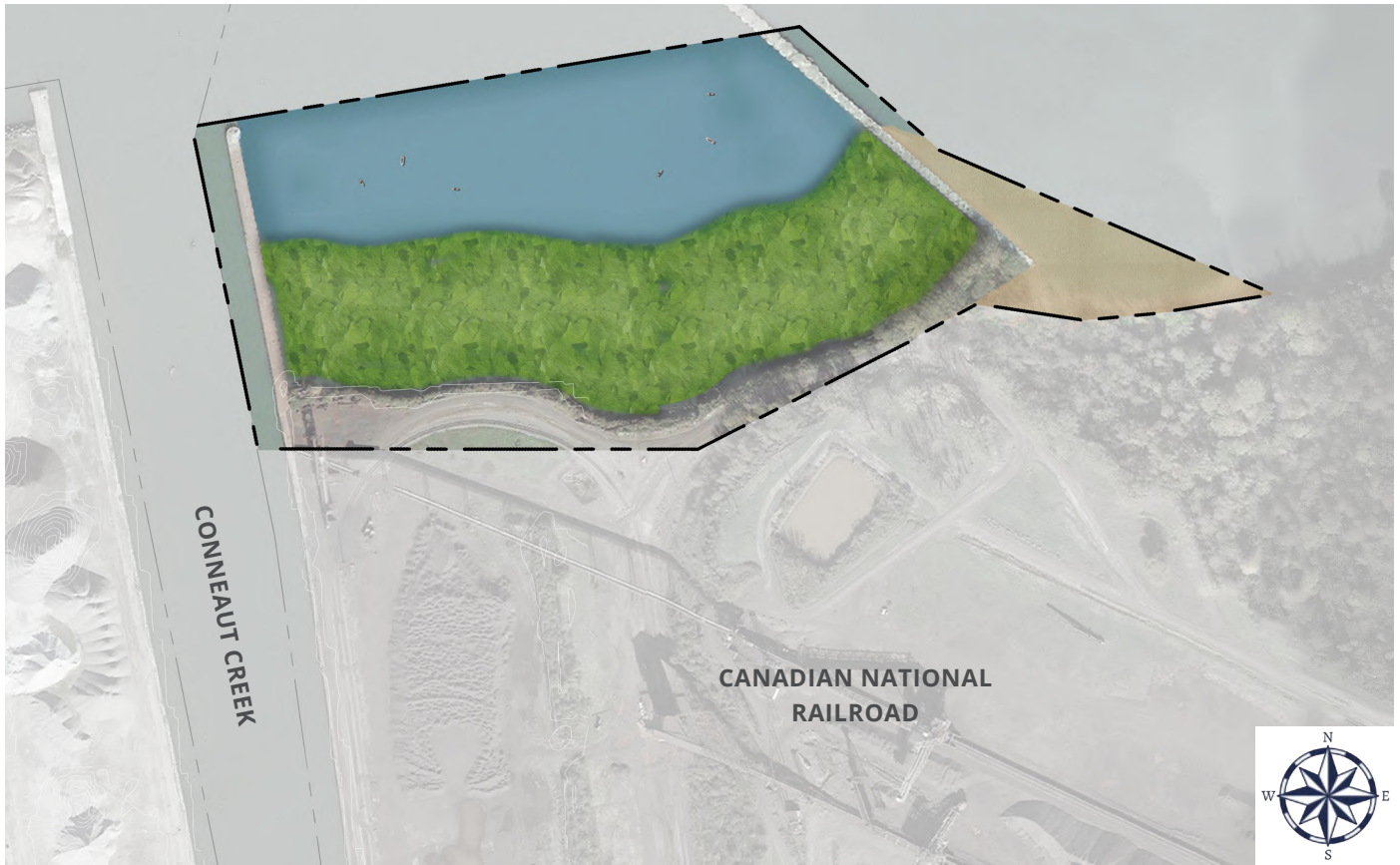
The shoreline in front of the Canadian National property will be stabilized using living shoreline techniques. This approach will utilize soft-engineering that relies primarily on soil and vegetation to control erosion. Soil will be imported from off-site with some material coming from dredging activities in the harbor. Native plant communities will be established to create habitat for native plants, fish, and animals.

(I) BEACH REPLENISHMENT EAST OF PORT

Dredge material meeting the requirements for beach replenishment will be placed in the near-shore zone east of the east breakwall (1,500 feet to the east of the east breakwater, between -11 and -8 feet mean low water). A plan for placement of sand will be created that will address the following steps:

- **Assessing the Beach:** Before any sand is placed, the shoreline will be assessed to determine where it's needed most.
- **Sourcing the Sand:** Likely sources of the new material will be evaluated including an assessment of material pulled from Conneaut's harbor areas.
- **Transporting the Sand:** Once the sand has been sourced, it needs to be transported to the beach where it will be placed.
- **Placing the Sand:** This may involve placement using hydraulic pipes or with heavy equipment like bulldozers or excavators to move the sand into place. The sand is typically placed in a way that mimics the natural shape of the beach, with a gentle slope leading down to the water.





Enlargement of the Canadian National Railroad and Beach Replenishment project areas



6 > PROJECT BUDGETS

Recommended construction budgets are provided for each project identified in the plan. These budgets are based upon consultant's prior experience with projects of a similar size and type. Like many other sectors of the economy, the construction industry in the United States has experienced a period of volatile price fluctuations due to the Covid 19 pandemic. These budgets should be used as guides for general planning purposes - they are not a guarantee of actual construction cost.

Project #	Description	Recommended Construction Budget		Soft Costs*	Recommended Total Project Budget	
		Low	High		Low	High
A	Breakwall Platform	\$1,250,000	\$2,500,000	20%	\$1,500,000	\$3,000,000
B	Coastal Marsh Rehabilitation	\$150,000	\$600,000	15%	\$225,000	\$690,000
C	Wetland Park & Boardwalk	\$2,750,000	\$5,000,000	20%	\$3,300,000	\$6,000,000
D	Marina & Naylor Drive Expansion	\$2,000,000	\$3,000,000	20%	\$2,400,000	\$3,600,000
E	Waterfront Lots	\$500,000	\$1,200,000	12%	\$560,000	\$1,344,000
F	Marina Redevelopment	\$2,500,000	\$3,800,000	18%	\$2,950,000	\$4,484,000
G	Marina Drive Reconstruction & Constructed Wetland	\$3,500,000	\$5,000,000	20%	\$4,200,000	\$6,000,000
H	Living Shoreline	\$2,500,000	\$3,500,000	15%	\$2,875,000	\$4,025,000
I	Beach Replenishment East of Port	\$2,000,000	\$3,000,000	12%	\$2,240,000	\$3,360,000

* Soft costs include A/E fees, testing, permits

C Includes \$800K-\$1.5M restroom building

E Assumes land is cleared/graded, and utilities provided in Naylor Drive. Properties will be developed privately

F Includes \$1.5-2.0M clubhouse building and \$400-\$600 for new Portside Marine facility

H Assumes 500,000 square feet are treated with 37,000 cubic yards of dredged material and capped with 15,000 cubic yards of imported topsoil

I Assumes 50,000 cubic yards of dredged material is placed using hydraulic pipes directly into lake at -11 to -8 feet mean low water