







# Cleveland Harbor Eastern Embayment Resilience Strategy

# Embrace the Lake

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CHEERS brings the needs of the natural environment and the community into balance to create a resilient lakefront. The proposed improvements will Embrace the Lake as an asset for future generations. In order to achieve this vision, the plan includes goals that: connect people and communities to the lake, program spaces that meet the needs of the community, protect critical infrastructure and expand natural habitat areas, and celebrate the legacy, history, and significance of the lake.

CHEERS envisions returning the hardened edge of Cleveland's east side lakefront to a natural shoreline with places for people and nature. The beneficial use of dredge will expand parks and habitat north of I-90, mitigate the impacts of the highway on existing parkland, protect infrastructure, and create a sheltered embayment where visitors can safely access the lake.



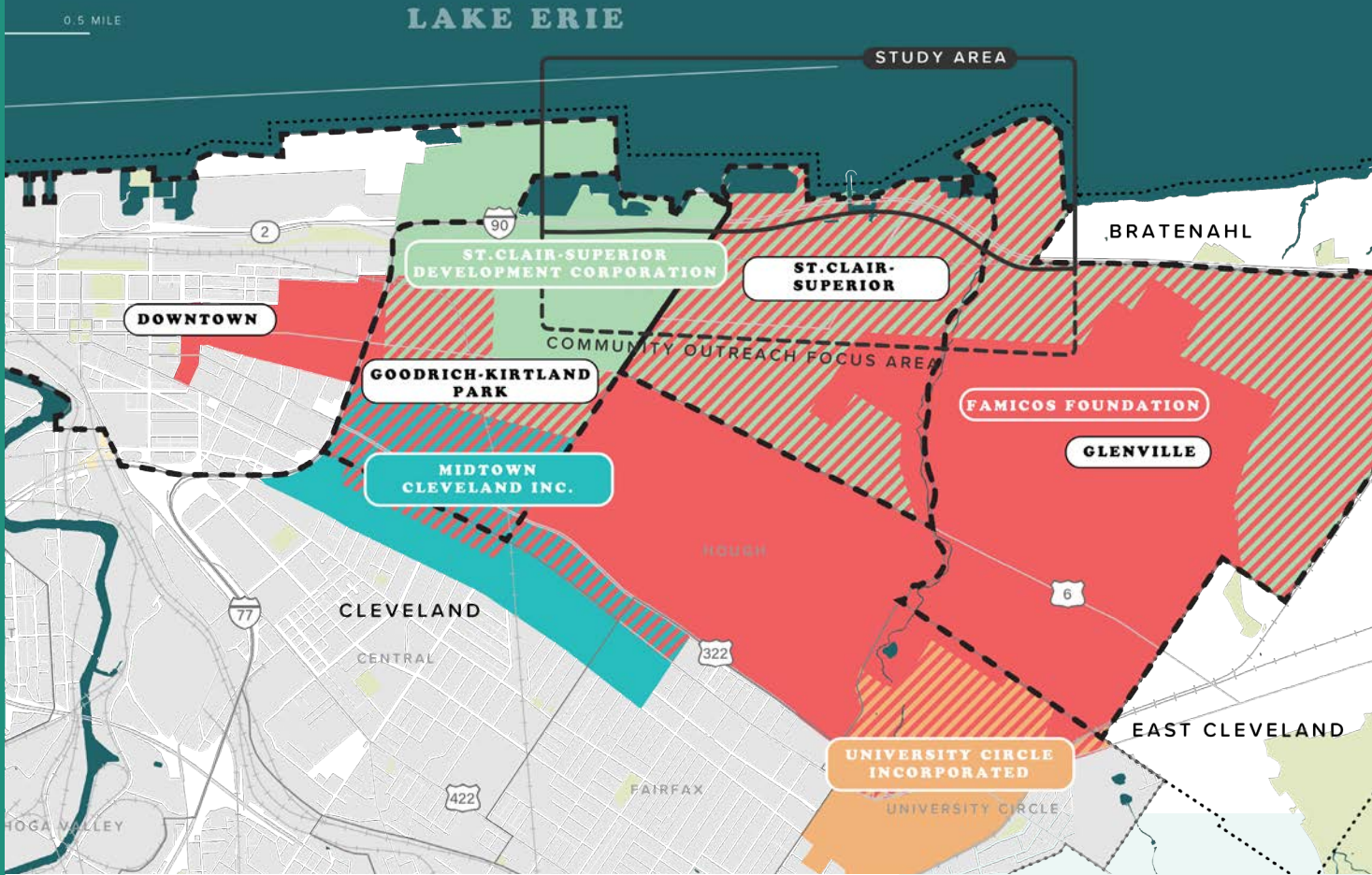
# Creating Interwoven Systems of Mobility, Nature, Water & Community

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The plan's frameworks of community, nature, water, and circulation adapt to the changing needs of the surrounding communities and the environment. Together these systems work to bolster the quality of the natural environment, physical and mental well-being, safety, and Cleveland's economic development and tourism.



# CHEERS CONTEXT



Diverse and vibrant communities and neighborhoods surround the eastern lakefront.

Four Cleveland neighborhoods – St. Clair-Superior, Goodrich-Kirtland Park, Downtown Cleveland, and Glenville – directly intersect the CHEERS area. Each of these neighborhoods is unique with its own community conditions and cultural identity. Strengthening and creating safe connections from these neighborhoods to the lakefront are a key focus of CHEERS to ensure that all Clevelanders have the opportunity to enjoy the lakefront for generations to come.

The Community Development Corporations (CDCs) in the surrounding neighborhoods provided crucial support throughout the engagement process, helping to connect residents to the project.

## Economy

**33.1%**  
Poverty Rate

**252**  
Total Businesses

**\$38,501**  
Average Household Income

## Demographics

**3,416**  
Total Population

**36.1**  
Median Age

**\$20,584**  
Median Household Income

## Addressing Community Resilience

The eastern lakefront sits at the intersection of social vulnerability, storm hazards, and environmental risk vulnerable to the impacts of climate change with many residents living in poverty, a large minority population, and low owner-occupied housing rates. Improving the resilience of the lakefront & communities is one of the key drivers for CHEERS.



### Why we need to improve environmental resilience on the eastern lakefront:

- + Impact of Climate Change
- + More Frequent and Intense Storm and Weather Events
- + Impact of Waves, Ice, and Erosion on the Shoreline and Critical Infrastructure
- + Flooding and High Lake Levels
- + Limited Nearshore Habitat
- + Degraded Water Quality and Aquatic Habitat
- + Lack of Natural Shoreline Protection
- + Large Availability of Dredge Material that Needs to be Beneficially Used or Stored
- + Increase in Average Temperatures



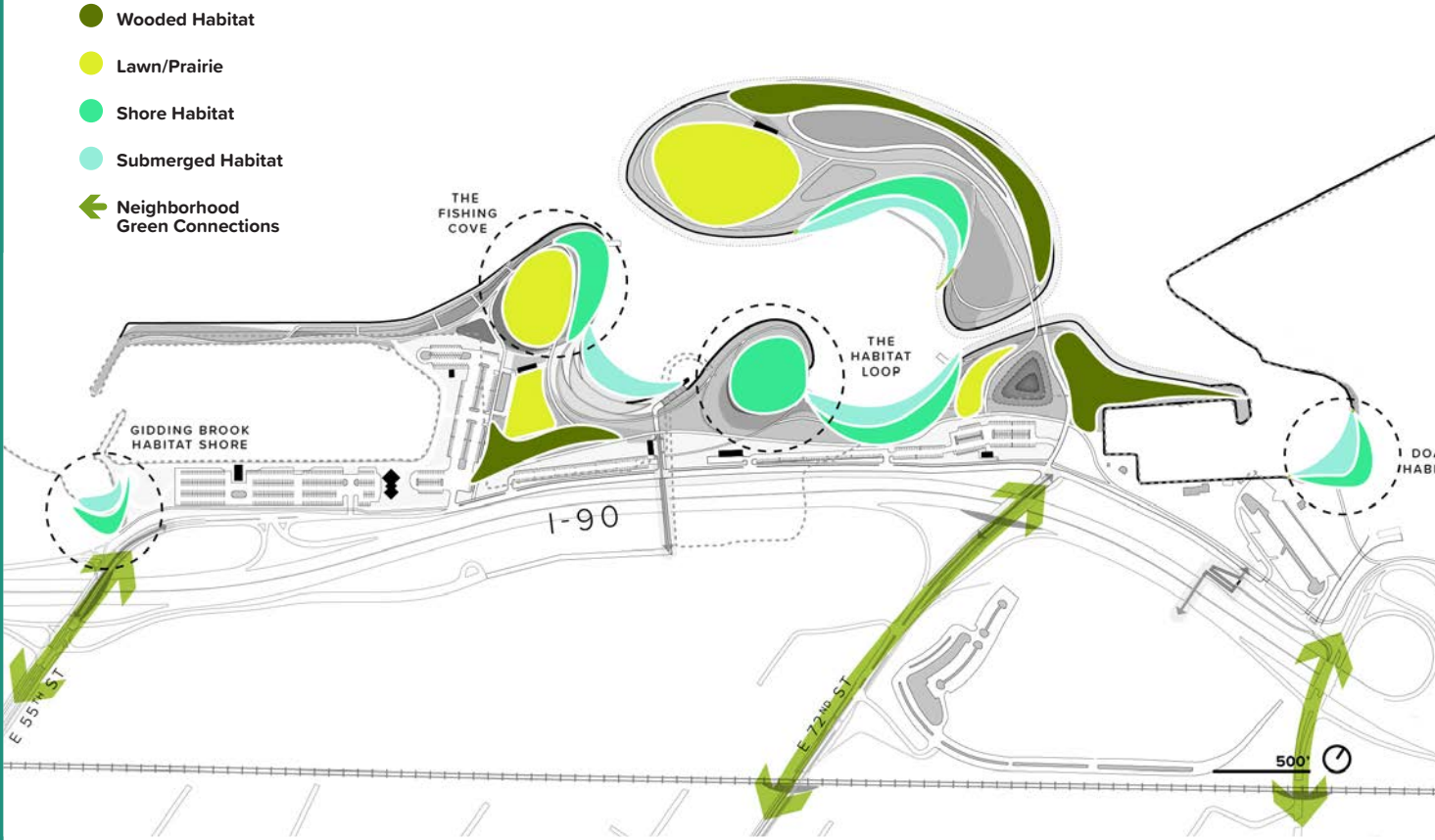
### Why we need to improve economic resilience on the eastern lakefront:

- + Limited Economic Opportunity for Adjacent Communities
- + Lack of a Destination or Draw to the East Side of Cleveland
- + Increasing Costs Associated with Maintaining and Repairing Infrastructure Damaged by Weather and Waves
- + Limited Lakefront Amenities for Potential Development



### Why we need to improve community resilience on the eastern lakefront:

- + Barriers to Accessing the Lakefront
- + Lack of Equity in Availability and Access to Open Spaces and Recreational Amenities
- + Safety and Security Concerns
- + Vulnerable Communities with Limited Ability to Respond to Environmental or Economic Shocks
- + Need for Intergenerational and Community Gathering Spaces



## **NATURE FRAMEWORK:**

Enhanced, restored, and newly established habitat areas will improve the ecological function of the lakefront, provide connectivity to adjacent areas, improve recreational experiences for visitors, and provide an immersive and educational experience.

The proposed project will build and strengthen the community's relationship with the waterfront while also enhancing, restoring, and creating ecosystems. To achieve the balance between nature and human use, the design and restoration of natural habitats will focus on the re-establishment of historic habitat complexes along Cleveland's Lake Erie shoreline.

- 1** Balance nature and human use.
- 2** Improve upland shore habitat.
- 3** Improve aquatic and in-water habitats.
- 4** Soften edge conditions to improve ecosystem services & increase coastal resiliency.
- 5** Create emergent wetlands.







A newly formed *Habitat Loop* will provide an immersive natural experience along the shores of Lake Erie that supports recreational opportunities for birding and hiking, protects critical lakeshore infrastructure, and restores and improves coastal habitat areas through beneficial use of dredge material.

The Habitat Loop will be located at the current pinch-point where I-90 curves so near to the lake that the highway has been forced to shut down after large storm events due to hazardous roadway conditions. Dredge material will be used to expand the narrow area between the park and the highway and fill in two inlets and a cooling basin associated with the former FirstEnergy power plant, creating a new immersive natural experience. The Habitat Loop will also allow the closure of two decked or bridged portions of the highway, reducing overall maintenance costs for the Ohio Department of Transportation and improving the safety of motorists.






#### **AT A GLANCE:**

- + Protects I-90
- + Creates a new habitat typology
- + Increases nature-based recreation
- + Estimated Cost = \$35m
- + 366,400 cubic yards of dredge material storage





-  Vehicular Circulation
-  RTA Bus Route 39
-  Parking








## **MOBILITY FRAMEWORK:**

Improved systems of mobility will reconnect residents from adjacent communities to the lakefront with expanded bike and pedestrian access, opportunities for transit, and revised vehicular circulation.

Community greenways along existing streets, new multi-use paths, protected bike routes, and new and improved pedestrian bridges over I-90 will provide safer, more accessible routes to the lakefront from adjacent communities.

- 1** Improve access to the lakefront.
- 2** Simplify and improve vehicular circulation and parking.
- 3** Create a diversity of trail experiences that connect park spaces.
- 4** Establish new park gateways and a clear wayfinding system.



-  Multi-Use Trail
-  Nature Trail
-  Boardwalk Trail
-  Lake Erie Water Trail
-  Land Access Point



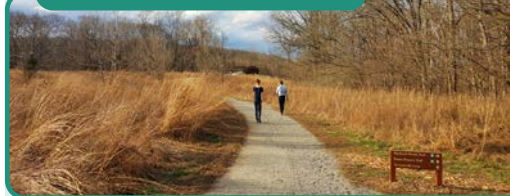
The CHEERS plan creates a diversity of accessible trails and experiences that loop through the park’s wetlands, grasslands, marshes, and community park spaces.

Multi-use, natural surface, and boardwalk trails provide a varied, but connected experience. The trail systems link the eastern lakefront park spaces from east to west and to existing regional and local trails into adjacent neighborhoods. Multi-use paved trails will provide space for biking, walking, and running. Natural surface trails will meander through new wetlands, marshes, and grasslands. Boardwalk trails will extend over the Cove, wetlands, and marsh areas providing a closer link to the water.

### MULTI-USE TRAILS












### NATURAL SURFACE TRAILS

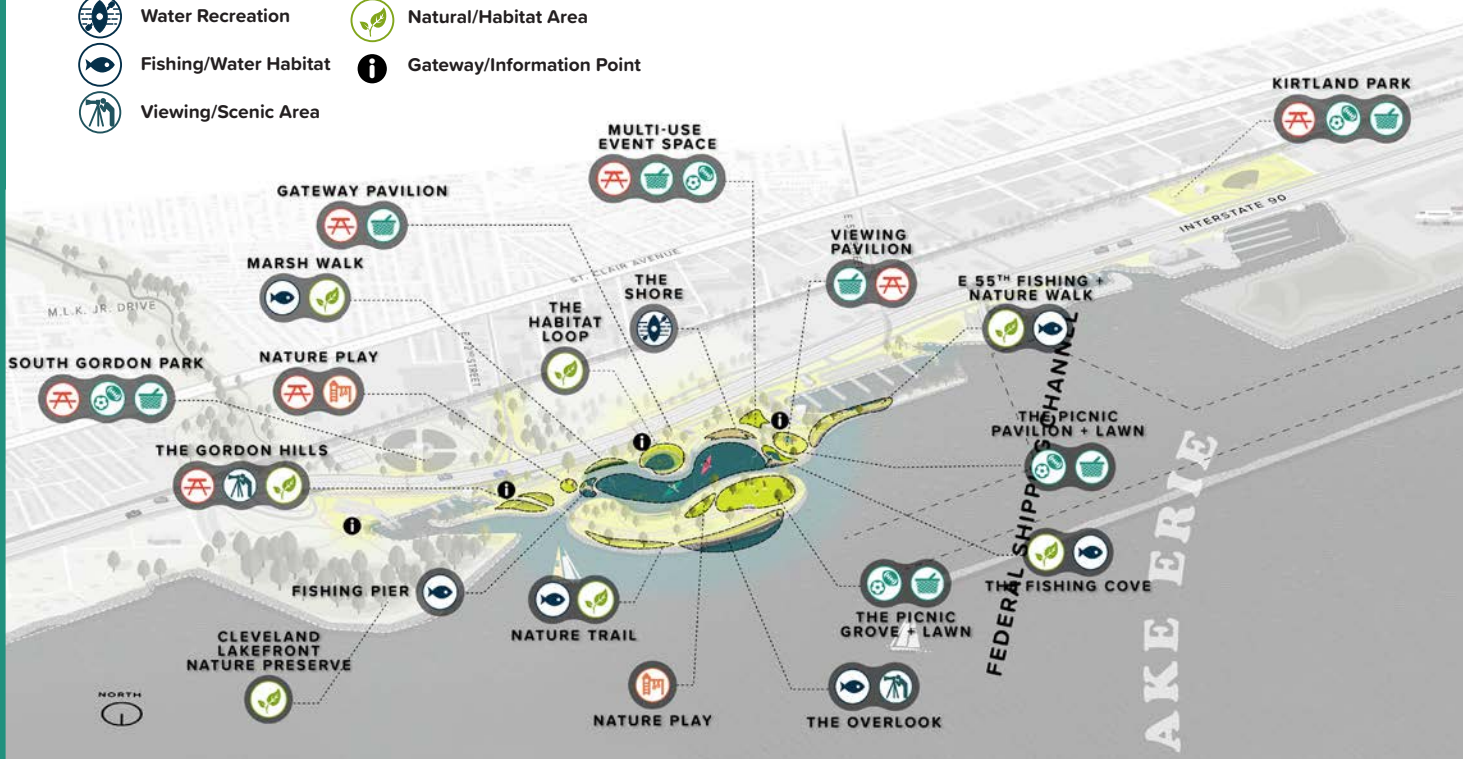


### BOARDWALK TRAILS





-  Visitor Amenities
-  Play Areas
-  Water Recreation
-  Fishing/Water Habitat
-  Viewing/Scenic Area
-  Lawn - Picnic Area
-  Lawn - Recreation Area
-  Natural/Habitat Area
-  Gateway/Information Point



## COMMUNITY FRAMEWORK:

Expanded parkland and recreation experiences will provide new visitor amenities, activity zones, space for events without disrupting daily use, and gathering areas for the community.

The proposed plan includes new recreational amenities and assets not currently available on the east side of Cleveland, including nature-based recreation, opportunities to wade and walk into the water, places to rent and operate watercraft, and intergenerational play spaces.

- 1** Ensure equity in access to recreational assets.
- 2** Build upon and improve existing recreational areas.
- 3** Create flexible spaces that adapt to community needs and recreation trends.





Situated at the terminus of E. 72nd Street, the Gordon Hills will rise over 40 feet above the existing lakefront giving visitors stunning views of Lake Erie and the Cleveland skyline.

Accessible natural surface trails will lead visitors on a climb to the top of the hill providing moments to pause and reflect on the tranquility of the lake. The Gordon Hills will become a year-round node of activity, changing with each season. In the summer, visitors will trek up to the top of the hills to view fireworks or watch the Cleveland National Air Show and relax as refreshing breezes roll off the water. As the air cools and the leaves begin to change color, visitors will enjoy hiking up the hills to take in the vibrant colors and natural splendor of autumn. During the winter months, as portions of the lake freeze over, the hills will become a prime destination for sledding and frolicking in the snow, viewing wave-created ice sculptures along the lake, and appreciating the stillness of nature. Then as the snow melts and the ice begins to thaw, spring visitors will be greeted by a meadow of wildflowers and native grasses that drape the hills attracting pollinators and birds.

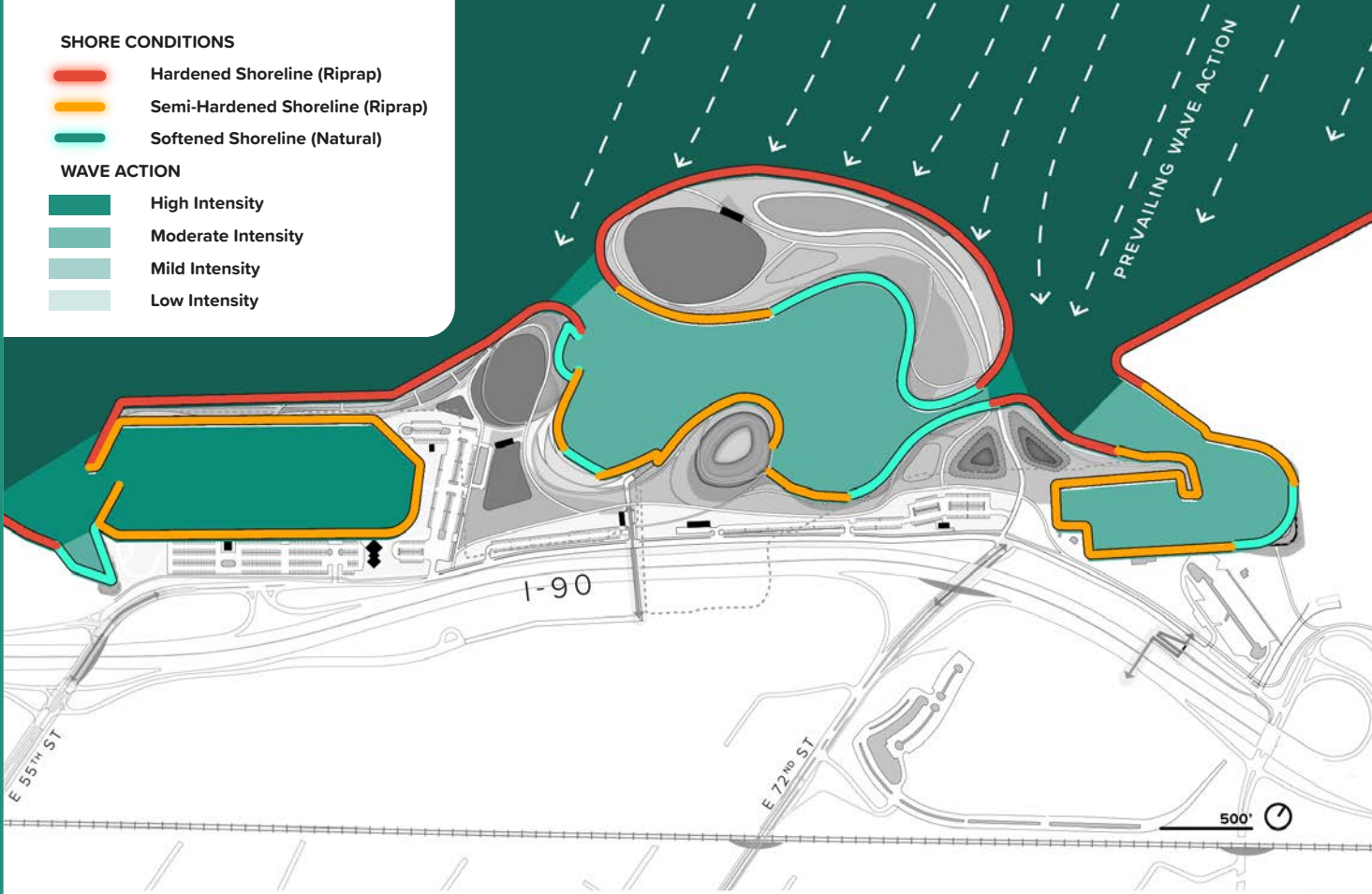


#### AT A GLANCE:

- + Panoramic views of the Cleveland skyline
- + Beneficial use of dredge material
- + Increases flexible community recreation space & access to open space
- + Provides a new trail experience
- + Estimated Cost = \$37m
- + 208,750 cubic yards of dredge material storage







## **WATER FRAMEWORK:**

The creation of the Isle using dredge material will provide protection from wave action, storms, and ice, allowing the establishment of expansive new habitat and natural areas within the Cove and along the Lakeshore.

Considering the wave and ice forces in the project area, substantial shore protection was included for edges exposed to open-lake wave energy. Areas sheltered by improvements were designed with a softer, more natural water interface. The proposed plan includes 7,300 linear feet of hardened shoreline, 12,000 linear feet of semi-softened or hybrid shorelines, and 5,000 linear feet of naturalized or softened shoreline.

- 1 Improve water quality in Lake Erie.
- 2 Provide protection from wave action and recreational areas.
- 3 Manage stormwater and impervious surfaces.
- 4 Incorporate flexibility in design elements to allow the shoreline to adapt to changing conditions.





Nestled between the Isle and the Lakeshore, *the Cove* will provide a protected inlet for watersports and extensive habitat restoration and expansion at *the Shore and the Launch*.

Newly created land on the Lakeshore and the formation of the Isle will facilitate the creation of a protected cove that provides calm water for water-based recreation as well as habitat restoration. Emphasis on nearshore and in-water habitat restoration provides a better habitat for fish, birds, and other local flora and fauna. The insulated area will offer a space for visitors to interact with and touch the water in a way that has not been available on the east side. Visitors can wade at the Shore, learn to kayak or operate other watercraft in an area insulated from wave energy at the Launch, or walk along elevated boardwalk trails along marsh and wetland habitat that ring the outer edge of the Cove. These newly created habitat areas will provide space to increase the biodiversity of the lakefront, protect the shoreline and critical infrastructure, and improve water quality and in-water habitat.



#### AT A GLANCE:

- + Provides spaces to view and interact with the Lake
- + Increases equitable access to recreation
- + Improves water quality
- + Enhances in-water and nearshore habitat
- + Creates new education opportunities
- + Estimated Cost = \$42m





# BENEFICIAL USE OF DREDGE

FEDERAL BREAKWALL

OVERALL AREA:  
150 ACRES



The beneficial use of 3.1 million cubic yards of dredge material will expand parks and habitat north of I-90, mitigate the impacts of the highway on existing parkland, protect infrastructure, and create a sheltered embayment where visitors can safely access the lake.

Beneficial uses of dredge material may include creating habitat, nourishing beaches, creating new park spaces, shore protection, and supporting industrial and commercial uses. Reusing dredge material is a great example of the “circular economy” in action where materials are recycled providing economic impact and community and environmental benefits.

*The Port has been leading the way in creating new ways to sustainably use dredge material. In collaboration with the Ohio Environmental Protection Agency (OEPA), they researched the environmental impact of dredged material. These studies confirmed that sediment is suitable for unrestricted upland use and causes minimal, if any environmental impact. Since 2021, the Port has harvested 8,000 tons of dredge material that has been used for beneficial purposes.*



The creation of *the Isle* will provide an immersive natural experience for hiking, picnicking, fishing, and connecting with nature.

A new seven-acre lawn will provide a new passive space where visitors will be encouraged to gather and create their own recreation adventures. Its location on the point of the Isle will provide panoramic views of the lake and the city skyline. While the Lawn will provide space for formal events like a summer concert series or festivals, it will also serve as an informal community space year-round where all will be welcome to enjoy a picnic, fly a kite, or play a pick-up game of football or soccer. The Lawn will be ringed by the lakefront multi-use trail, which will connect visitors to nearby nature and boardwalk trails. A viewing pavilion located on eastern edge of the lawn will serve as a comfort station with restrooms, drinking fountains, a covered patio space and other amenities.



#### **AT A GLANCE:**

- + Protects the shore & creates a Cove
- + Panoramic views of the Cleveland skyline
- + Beneficial use of dredge material
- + Increases flexible community recreation space & access to open space
- + Estimated Cost = \$162m
- + 1,884,250 cubic yards of dredge material