

# ODNR Office of Coastal Management

- Coastal and Climate Resiliency

- Nature-Based Shorelines – Innovative designs that incorporate natural materials in ways that mimic natural coastal and ecological functions
- Framework Study for Resilient GLRI Investments – Incorporate Climate Resiliency into GLRI Projects
- USACE Great Lakes Coastal Resiliency Study – USACE and Great Lakes States

- Beneficial Use of Dredge Material

- Cedar Point Causeway Project – ODNR, City of Sandusky (site visit at 1:00 pm)

- Sandusky Bay Initiative

- Pickerel Creek Wildlife Area - Riparian Floodplain Restoration & Nature-Based Barrier Wetlands (H2Ohio)

- Infrastructure Investments



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# Nature-Based Shorelines

Need: Encourage the use of nature-based shore protection and restoration techniques along Ohio's Lake Erie Coast

Solution: Development & Implementation of Certification Program

ODNR Office of Coastal Management  
**Nature-Based Design Certification Program**





# Framework for Resilient GLRI Investments

- Purpose – Federal/State collaboration will identify the expected range of future Great Lakes **water levels**, **wave heights**, and **ice conditions**.
- Primary Study Components
  - **Stochastic Weather Generator** (Cornell University, USACE E
  - **Water Level/Ice Modeling** (NOAA GLERL, CIGLR Univ Mich, USACE)
  - **Wave/Surge Modeling** (USACE ERDC – Coastal Hydraulics Laboratory
- Develop and prepare guidance materials and checklists to be made publicly available (web-based) to assist planning , design, and implementation of **resilient and sustainable** projects along Great Lakes Coasts.
  - Incorporate into Great Lakes Coastal Resiliency Study
  - Consultants, Contractors
  - Agencies, NGOs, Municipalities, and Local Communities...



# USACE Great Lakes Coastal Resiliency Study

- Overall Objective – To protect the long term economic, environmental, and social value of the Great Lakes Coast through proactive planning:
  - Vulnerability Assessments
  - Resilient Measures
  - Risk-Informed Decision Framework
  - Coastal Resiliency Plan
- 
- USACE/Great Lakes States Project Kick-Off Meeting held June 6, 2023
  - Project Management Plan fully executed by Brigadier General Peebles on June 6, 2023
  - \$14.4M over five years...

**GREAT LAKES COASTAL RESILIENCY STUDY**  
REVIEW STUDY SCOPE PER 2019 PMP


**OVERALL OBJECTIVE** - To protect the long-term economic, environmental and social value of the Great Lakes coast through proactive planning:

**VULNERABILITY ASSESSMENT** - Identify coastal areas that could be vulnerable to future storms, flooding, low water elevations, erosion and accretion

**RESILIENT MEASURES** - Identify range approaches to improve coastal resilience across various shoreline types (e.g. high coastal bluffs, dunes, rock), including design and cost considerations

**RISK-INFORMED DECISION FRAMEWORK** - establish a collaborative framework to support the effective management of coastal resources, and the identification, selection and prioritization of future coastal investments

GLCRS State Coastal Program Managers Discussion 14MAR2022




**GREAT LAKES COASTAL RESILIENCY STUDY**  
REVIEW STUDY SCOPE PER 2019 PMP

**INTERIM PRODUCTS:**

1. Publicly accessible database of relevant geospatial data
  - GIS analysis of flooding impacts on critical coastal resources, accounting for social vulnerability
2. Literature review
3. Data gap analysis
4. Recommended protocols for future data collection
5. Forecast scenario(s) of anticipated future conditions
6. Risk and vulnerability assessments
  - Site specific assessments
7. Suite of measures to improve coastal resilience
8. Risk-based decision framework to guide evaluation of measures to address coastal vulnerabilities
9. Great Lakes Coastal Resiliency Plan

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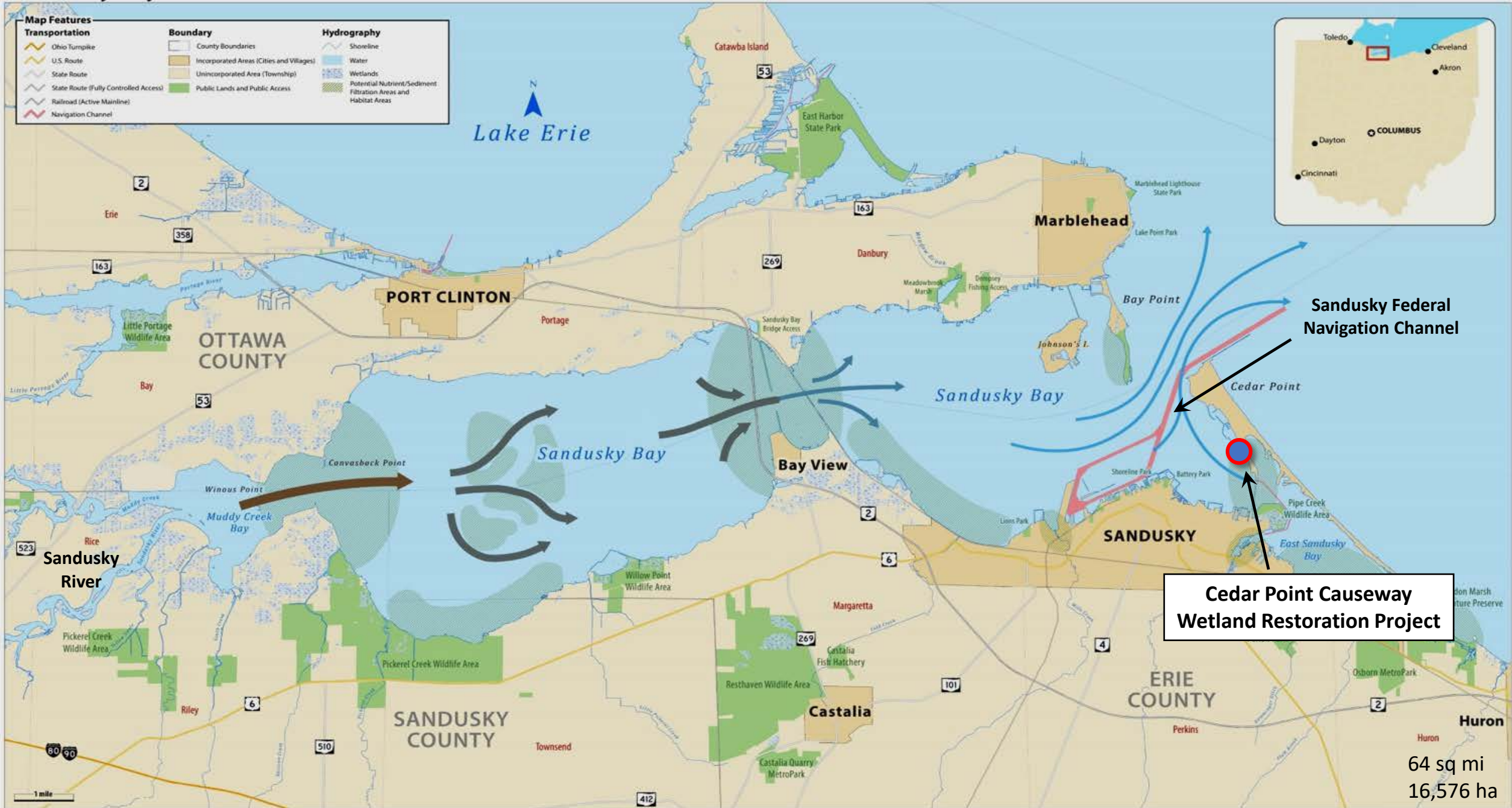
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# Sandusky Bay Initiative

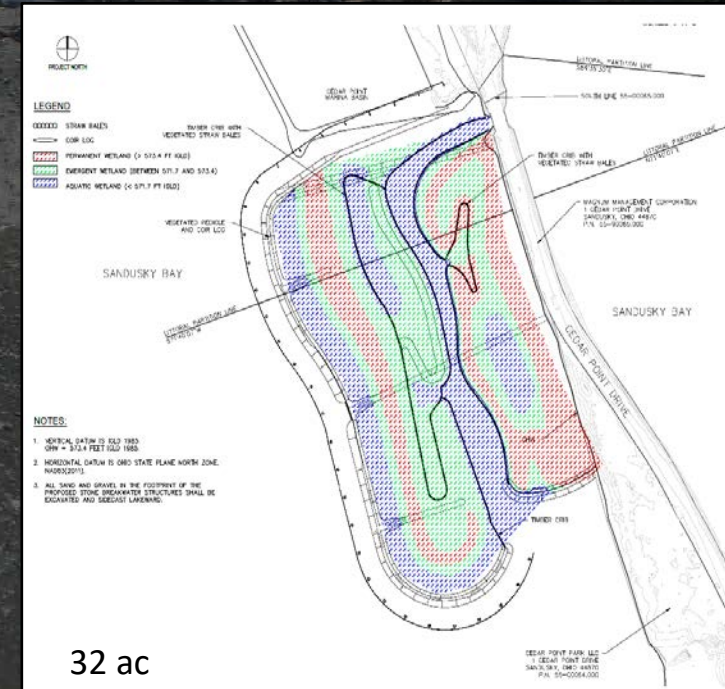




# Sandusky Bay Initiative - Cedar Point Causeway Wetland



- 32 Ac Wetland - Beneficial Use Dredge Material
- 140,000 cubic yards (2 - 3 cycles)
- Fish & Wildlife Habitat, Water Quality
- Nature-Based Retaining Structure
- GLRI-Funded Dredge Material Placement





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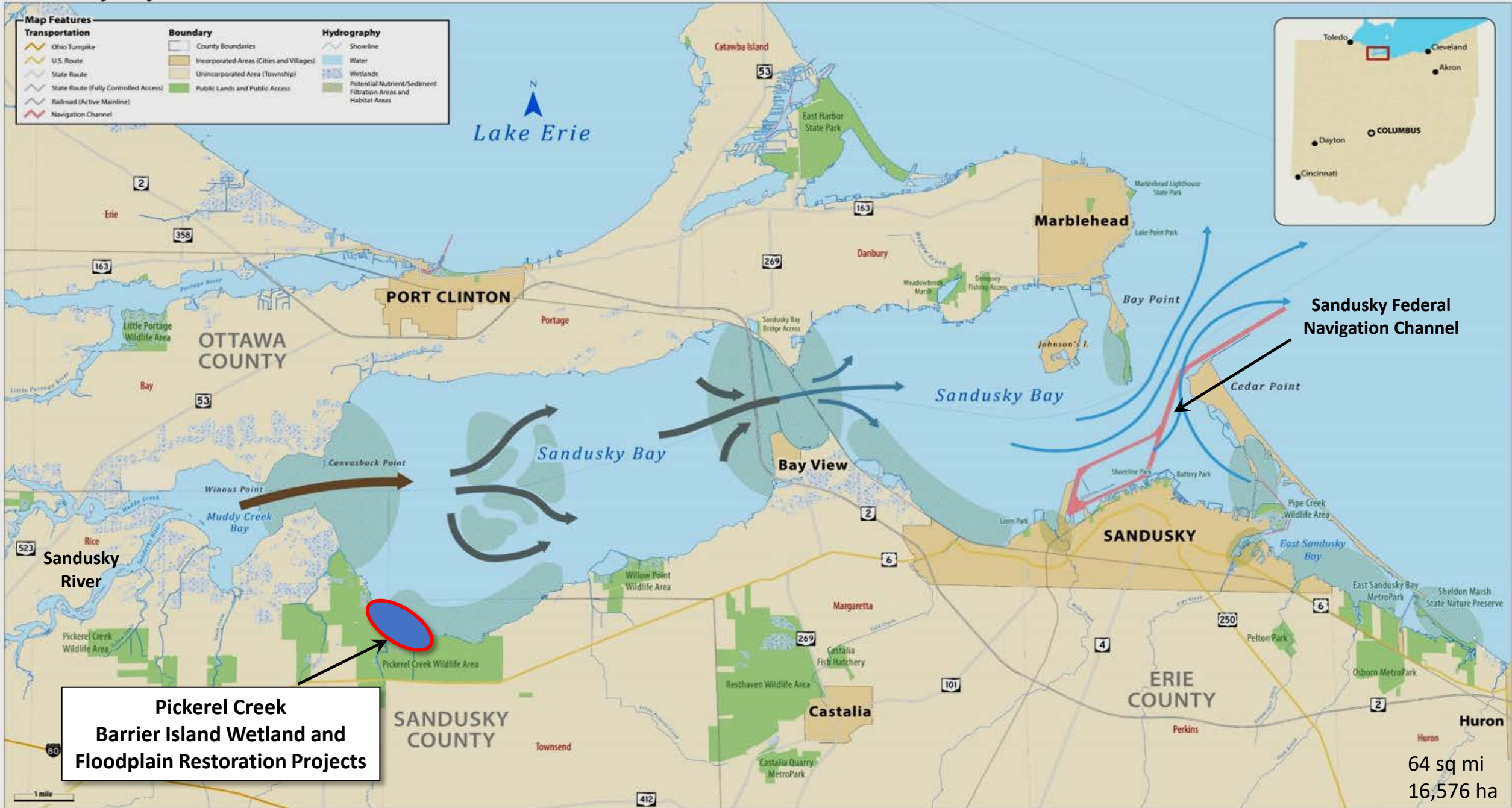
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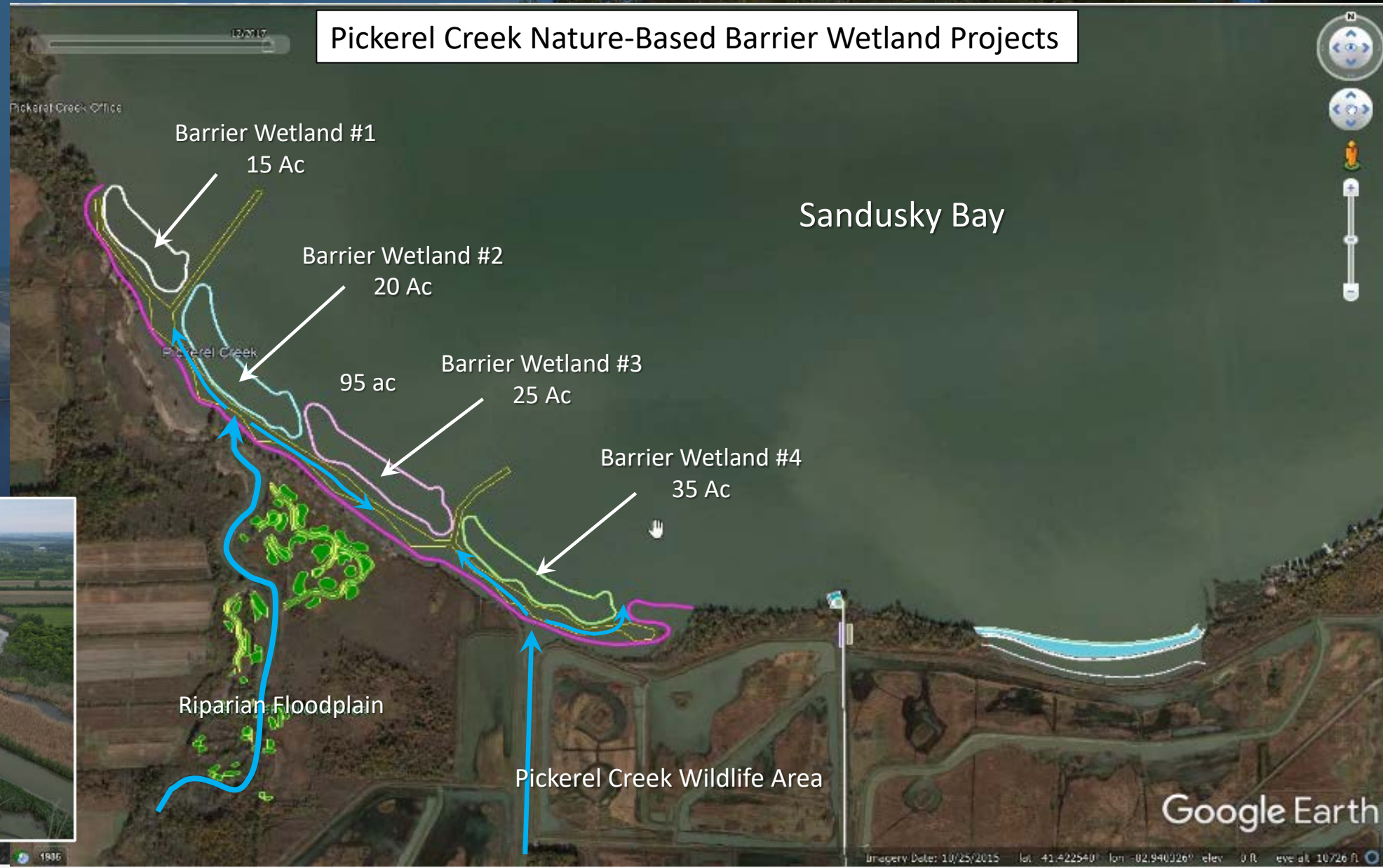




# Sandusky Bay – H2Ohio Investments

## Pickerel Creek Barrier Island/ Floodplain Wetland Habitat

- Coastal Resiliency
- Nutrient assimilation
- Enhance connectivity
- Habitat Restoration
- Habitat Diversity
- Enhance Public Access





# Investing in Natural Infrastructure

- Similar to financial investments, develop a “portfolio of projects” designed to achieve desired goals and objectives (retirement fund).
- Develop and promote innovative nature-based solutions that are affordable, leverage available resources, and are opportunistic.
- Build support with local partners who have a vested interest in outcomes through local project design and management.
- Develop adaptive long-term monitoring, maintenance, and funding programs – requires long-term sustainable funding.







# Thank You!

# Questions?

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