Ohio Beneficial Use Projects – An Update

Lessons Learned, Remaining Challenges, and Future Opportunities

Ohio Department of NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

Ohio Environmental Protection Agency

Ohio Lake Erie Commission

US Army Corps of Engineers

Beneficial Use Challenges in Ohio

- Mostly fine-grained material (silts and clays)
- Dredged sediments are poorly characterized
  - Geotechnical properties
  - Contaminants
- Dredged material currently regulated as a Waste
- Public Perception
- Each port/harbor is unique – no silver bullet solution
- Toledo volume is excessive (800,000 to 1,000,000 cubic yards annually)
- Available land for sediment retention/processing
  - Dewatering
  - Transportation
- Short timeframe to implement projects (tied to USACE dredging cycle)
- Limited funding (sustainable operations, market development)
- Potential impending budget cuts (federal and state)
- July 1, 2020 deadline to eliminate open-lake disposal of dredge material into Lake Erie (Senate Bill 1, 2015)

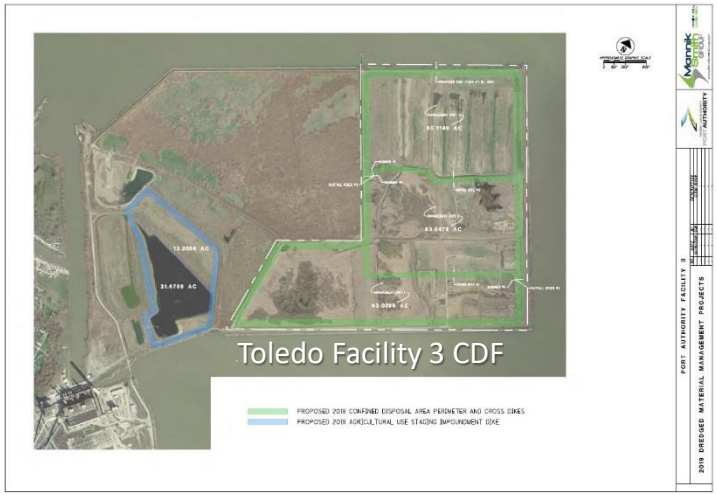
Paradigm Shift: Dredged Material is a Resource! Not a Waste!

- **Environmental Enhancement**
  - In-water wetland habitat restoration
  - Nature-based shorelines
- **Soil Processing Facilities**
  - Sediment separation and sorting
  - Fill and cap material (brownfield restoration)
  - Soil blending (organic leaf debris)
- **Manufactured Products**
  - Component of another product (cement)
  - Ohio Materials Marketplace
- **Agricultural**
  - Agricultural (farm field) applications

Ongoing Implementation Strategies

- Ohio EPA, Ohio DNR are changing Beneficial Use rules
- General Guidance and Policy Development
  - Soil background studies, sediment profiles
  - Establishing BMPs that work for industry (public-private partnerships)
  - Addressing public perception
- Dredging Center for Innovation
  - Engaging agricultural community
  - Dewatering, yield, contaminant uptake
  - Implement larger-scale project (WIN 1122)
- Funding Capital Improvements
  - <u>Sediment Processing/Retention Facilities</u>
    Port of Toledo, Port of Cleveland
    Port of Conneaut, and Port of Lorain
  - <u>In-water Habitat Restoration</u>
    Port of Toledo, Port of Ashtabula,
    Sandusky Bay Initiative

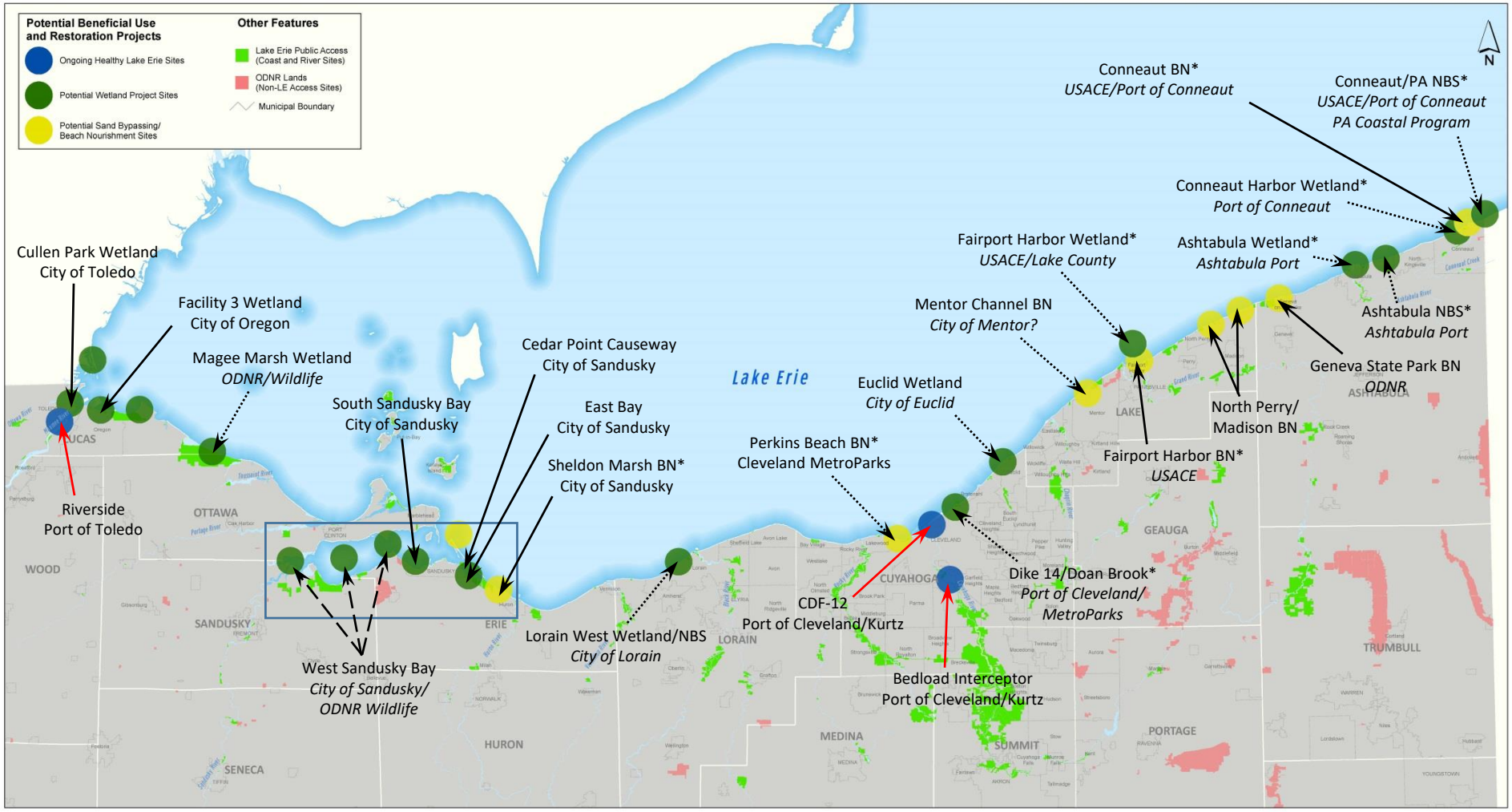
Riverside Project Toledo



Beneficial Use and In-Water Habitat Restoration

- Perform systematic analysis of Beneficial Use opportunities along entire 312 mile Ohio Lake Erie coastline.
- Similar to financial investments, develop a “portfolio of projects” that achieve desired goals and objectives.
  - Design for project linkages that yield cumulative benefits that achieve desired goals and benefits.
  - Avoid “Random Acts of Restoration”
  - Use technical expertise and guidance to identify and create new restoration (i.e. investment) opportunities.
  - Structure project investments based on short-, intermediate-, and long-term timeframes.
  - Will allow us to coordinate federal and non-federal match, dredging activity, and to develop a similar strategy for upland beneficial use projects.

Strategic Implementation of Potential Beneficial Use Restoration Projects

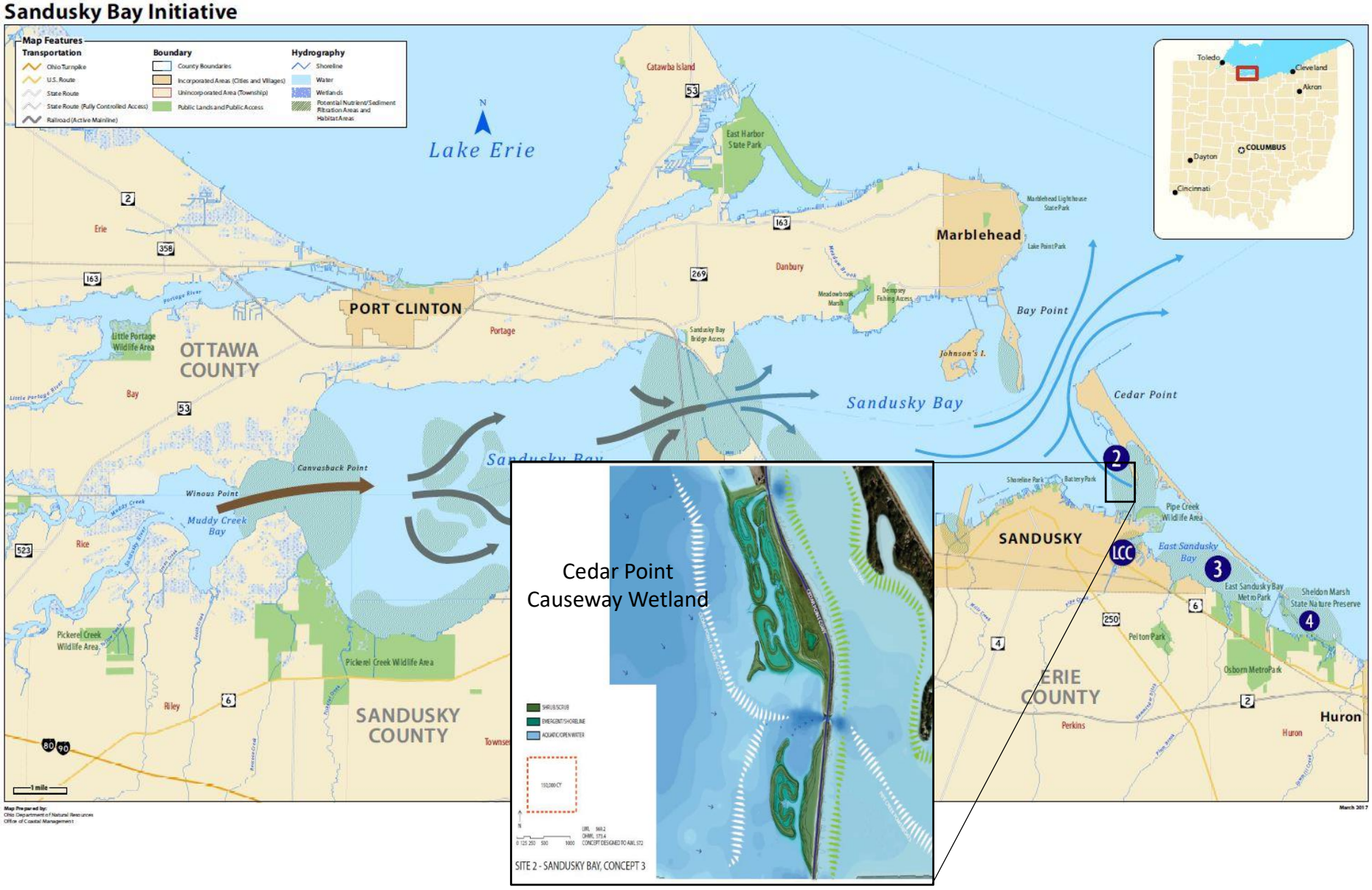


PUBLIC ACCESS GIS - ODNR Office of Coastal Management, 2015
Map Prepared: July 2016

PREPARED BY:
ODNR Office of Coastal Management

Sandusky Bay Initiative

Systems Thinking at Scale

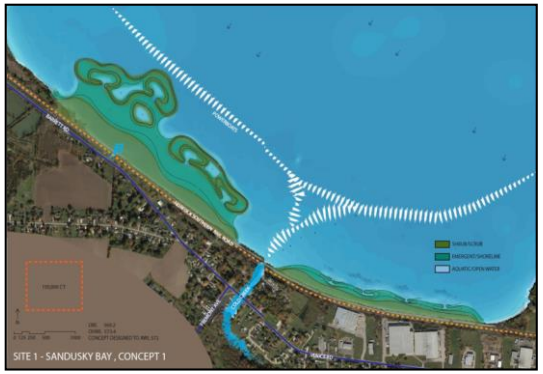


Remaining Challenges/New Opportunities

- How do we define success?
  - Goals and Objectives of beneficial use projects may be different
  - Success is currently defined by traditional engineering approaches, i.e. usually based on design life – is this necessary?
  - How do we define risk for these types of projects?
  - How much risk is acceptable?
- Expectations need to change for in-water wetland/nature-based shoreline designs, for example:
  - Is it OK to have a “leaky structure” and/or intermittent failure?
  - How do we address potential regulatory/liability issues?
  - How do we address public perception?
- How do we design projects that mimic nature, i.e. exhibit a natural dynamic response to changing conditions/events?
  - Draw on existing expertise internally and externally
  - What are critical research needs?

Remaining Challenges/New Opportunities

- Development of non-traditional engineering approaches for beneficial use projects
  - Overcome traditional engineering practices/design criteria
  - Develop innovative designs that reduce implementation costs (traditional approaches are too expensive)
  - Explore the use of New and Different materials
- Innovative projects don't necessarily fare well under our current regulatory framework
  - Do we need to develop new Evaluation Criteria?
  - Can we incorporate a Design-Build approach?
  - How do we simplify authorizations for pilot projects?
- Funding Capital Improvements
  - Over-reliance on public/grant funding
  - Explore public-private partnerships
  - How do we design self-sustaining projects?



Comments/Discussion?

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