

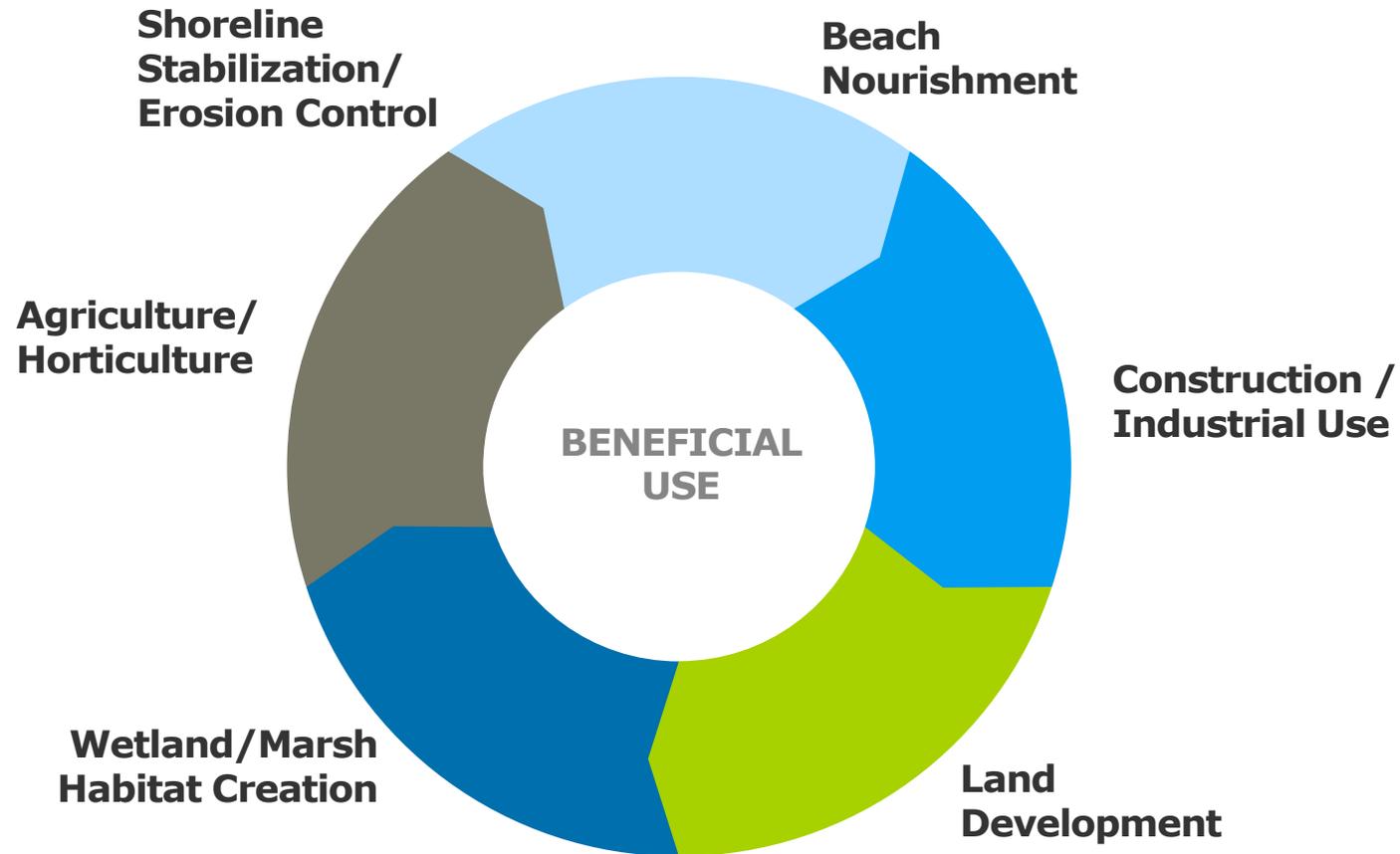
# OVERCOMING BARRIERS TO BENEFICIAL USE OF DREDGED MATERIAL IN THE US

WEDA Dredging Summit  
June 2021

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*Brandon Boyd, Donald Hayes, Burton Suedel (USACE-ERDC)*

# TYPES OF BENEFICIAL USE



Drake Wilson Island, FL

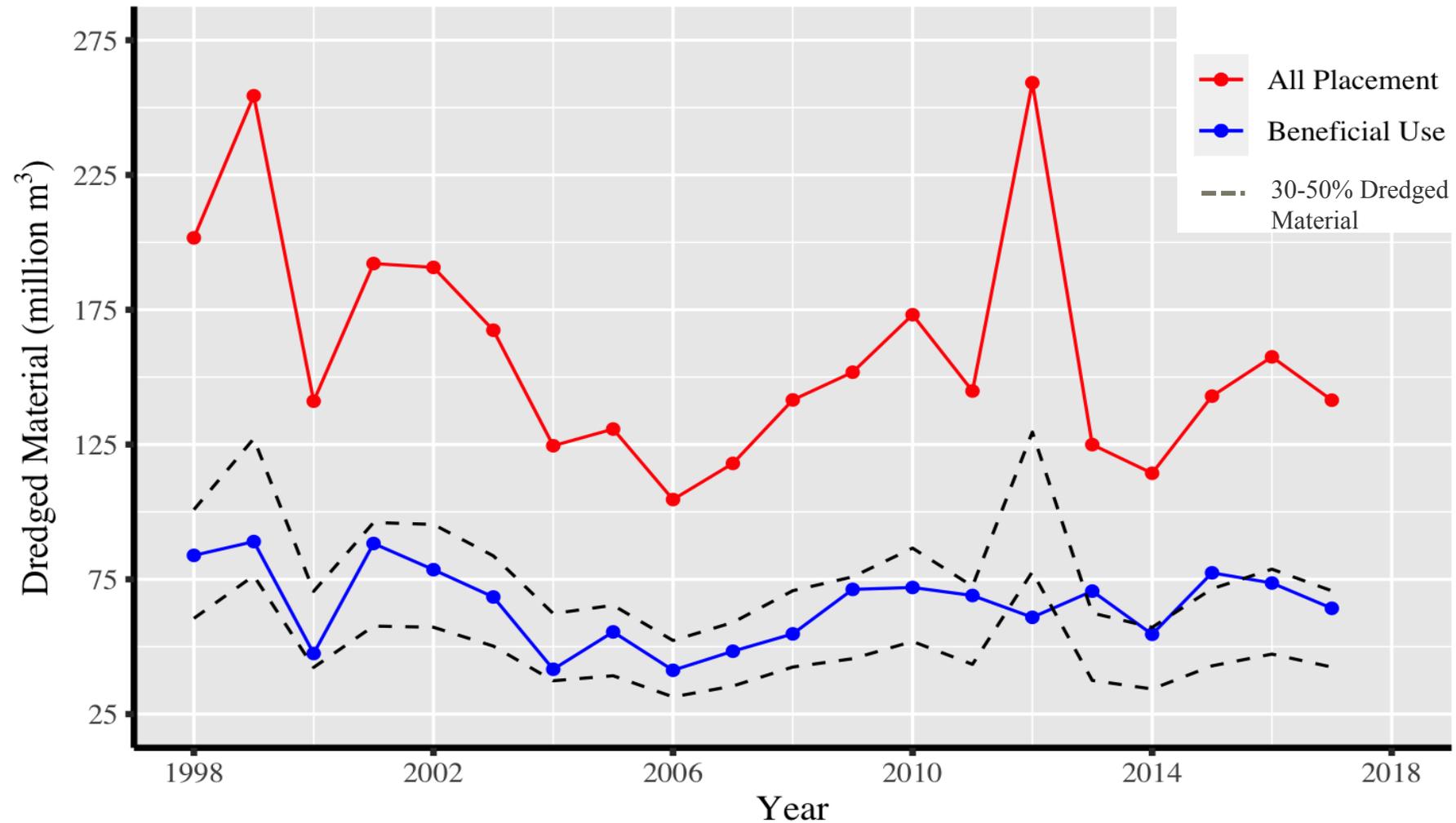


Seven Mile Island Innovation Laboratory, NJ

# GUIDANCE PROMOTING BENEFICIAL USE

- Identifying, Planning, and Financing Beneficial Use Projects Using Dredged Material, Beneficial Use Planning Manual (USEPA and USACE 2007)
- Working with Nature (PIANC 2008)
- Building with Nature (BwN) (EcoShape, the Netherlands)
- Engineering With Nature (EWN®) (USACE, since 2010)
- Dredged Material as a Resource: Options and Constraints (PIANC 2009)
- Guide for Applying Working with Nature to Navigation Infrastructure Projects (PIANC 2018)
- Sustainable Management of the Beneficial Use of Sediments (CEDA 2019)
- The Sustainable Development Goals Report (United Nations 2019)
- Environmental Evaluation and Management of Dredged Material for Beneficial Use: A Regional Manual for the Great Lakes (USACE Great Lakes Districts, ERDC, projected 2021)

# TRENDS IN USACE NAVIGATION DREDGING PLACEMENT



Source: USACE RSM BU Database

# BARRIERS TO EXPANSION OF BENEFICIAL USE

**01**

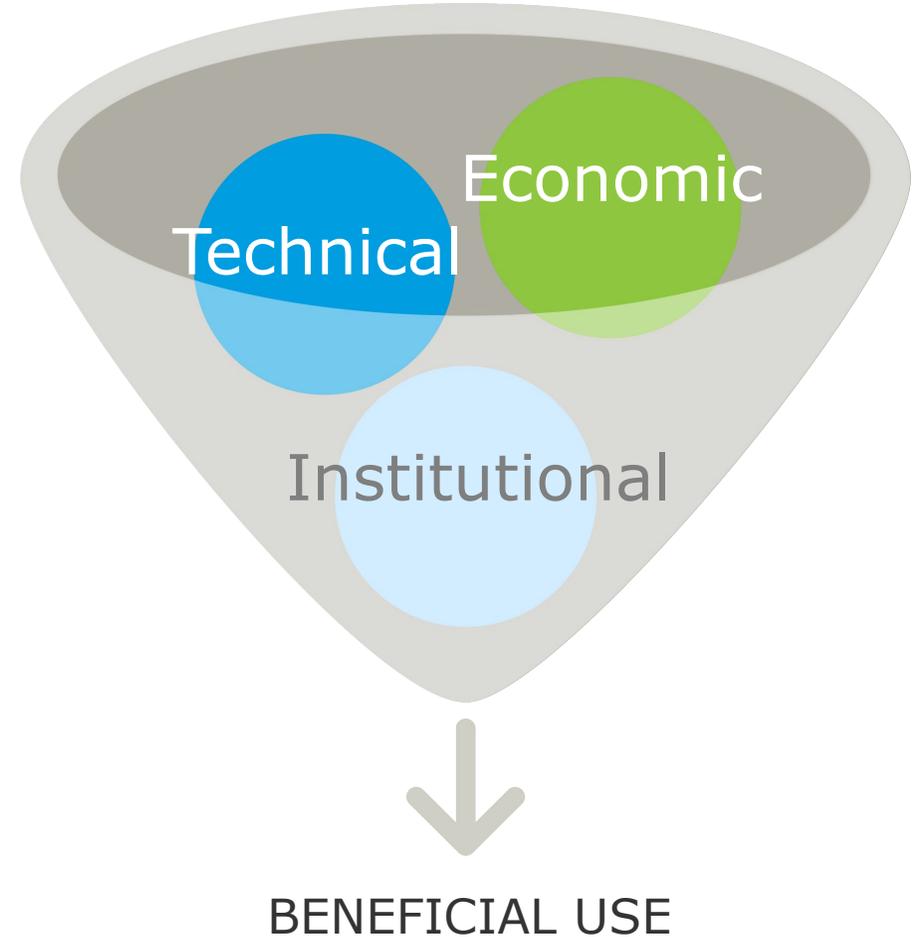
**TECHNICAL**

**02**

**ECONOMIC**

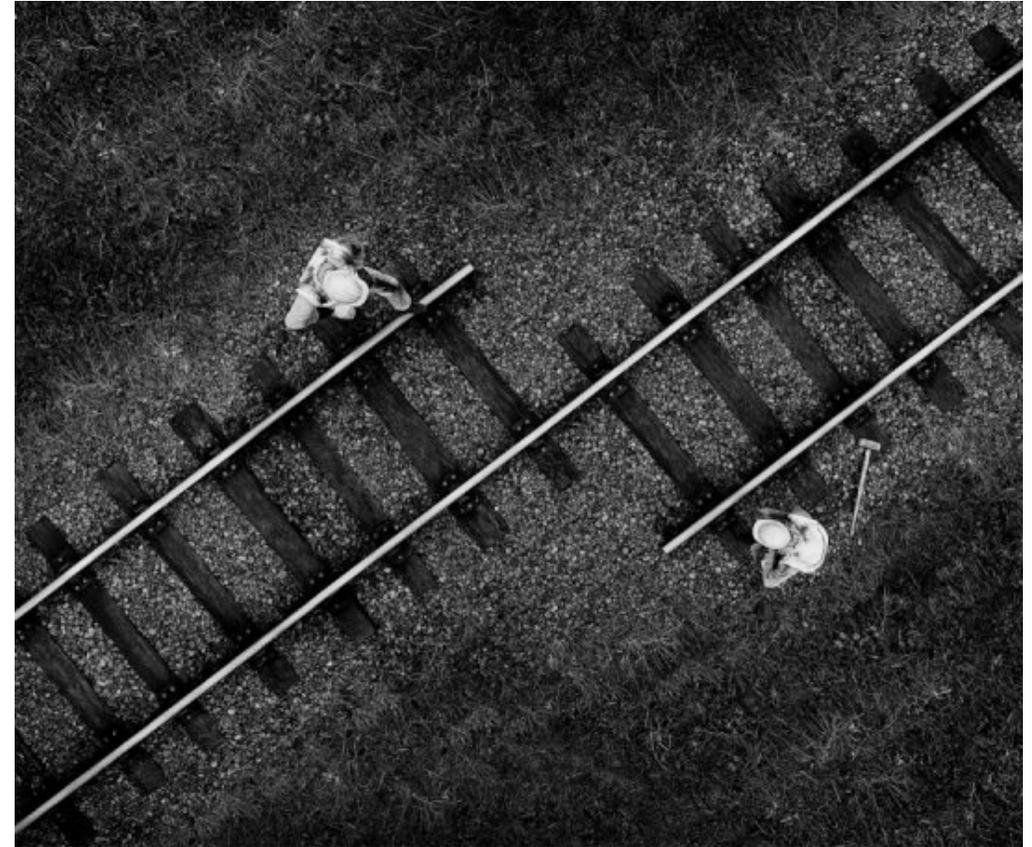
**03**

**INSTITUTIONAL**



# TECHNICAL BARRIERS

- Physical characteristics
- Inconsistent sediment quality
- Volume incompatibility and project timing
- Sediment contamination
- Treatment of dredged material



# ECONOMIC BARRIERS

## MATERIAL TESTING

- Additional testing typically required for BU vs disposal

## LIABILITY

- Project owners concerned with potential liability associated with future impacts from contaminants

## TREATMENT

- Physical processing or contaminant treatment may be required
- Associated costs vary based on required treatment, scale, market value of end product, etc.

## PERMITTING

- Additional permitting typically required
- Can increase costs, schedule, and project uncertainty

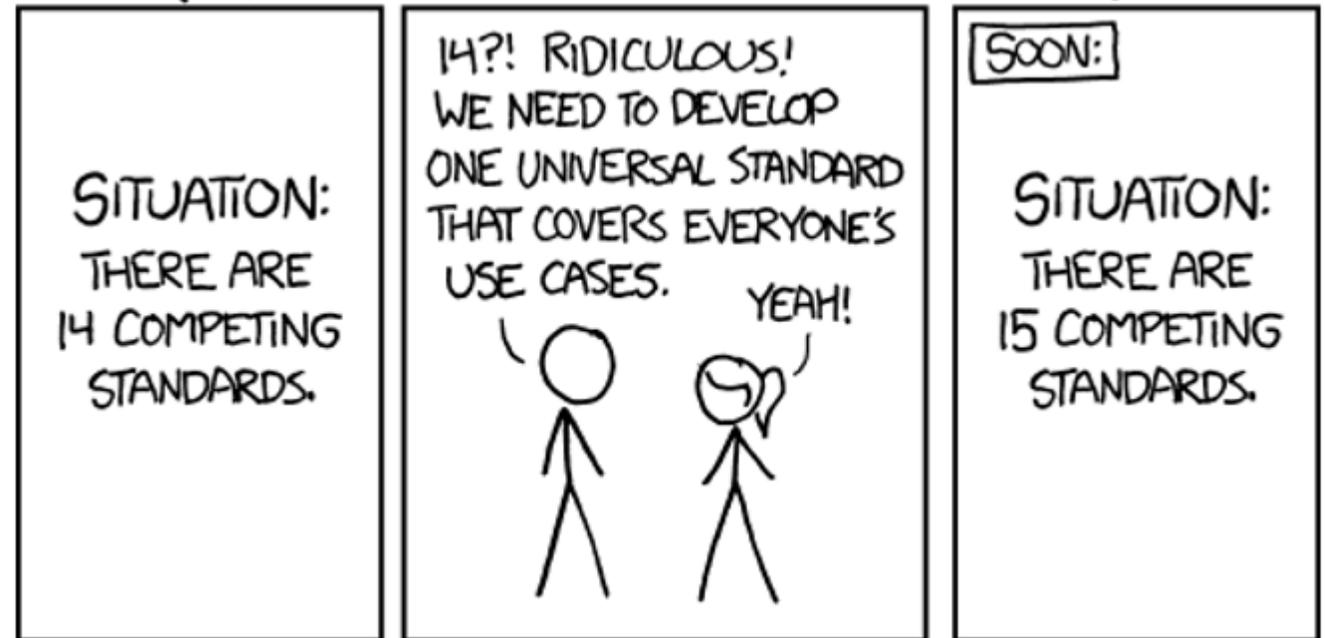
## PROJECT RISKS

- Higher financial and schedule risks compared to conventional disposal

# INSTITUTIONAL BARRIERS

- Lack of harmonized approaches between state and federal regulations
  - Quality regulations
  - Connecting waterways - permitting and regulatory ambiguity
- Public and agency acceptance
  - Perception material as waste and associated risks
  - Complex permitting

## HOW STANDARDS PROLIFERATE:



SOURCE: RANDALL MUNROE'S XKCD COMIC: [HTTPS://XKCD.COM/927/](https://xkcd.com/927/)

# OVERCOMING ECONOMIC BARRIERS

- Conduct holistic cost evaluation beyond short-term disposal costs:
  - Societal benefits
  - Ecological benefits
  - Long-term economic benefits or future cost avoidance
    - Reduced disposal volume capacity
    - Avoidance of raw material purchase
    - Coastal/shoreline resiliency
- Net-Environmental Benefit Analysis or Ecosystem Services Analysis can provide a quantitative value of these benefits



# OVERCOMING BARRIERS THROUGH POLICY

- Develop clear and consistent policy and guidance at local, state, and federal levels that fosters project coordination
- Join state and federal permitting processes
- Develop and implement long-term management plans with input of multiple stakeholders



Methodology for Evaluating Beneficial Uses of Industrial Non-Hazardous Secondary Materials



Environmental Evaluation and Management of Dredged Material for Beneficial Use: A Regional Beneficial Use Testing Manual for the Great Lakes



Beneficial Use Compendium: A Collection of Resources and Tools to Support Beneficial Use Evaluations



Revised Draft Master Plan for the Beneficial Use of Dredged Material for Coastal Mississippi

Innovative Reuse and Beneficial Use of Dredged Material Guidance Document

December 2019

Maryland Department of the Environment  
1800 Washington Boulevard | Baltimore, MD 21230 | www.mde.maryland.gov | 410-537-3000

## Beneficial Uses of Dredged Materials



## Fact Sheet: Public Involvement and Outreach

### Informing and Involving the Public

The success of beneficial use dredging projects often depends on informing and involving those who feel a project will affect them. Effective public involvement identifies and addresses issues of public concern to be resolved before project implementation. Involving stakeholders can improve the quality of decisions about the beneficial use of dredged material.

The public, represented by groups and individuals, have different levels of interest and concern about beneficial use projects. Therefore, it is important for project sponsors to use a range of methods to inform and involve the public. People participate when they believe a project may have a significant impact on them. They may be motivated by the proximity of the project to economic, social, or environmental concerns; or by personal values. The concerned public will be different for each beneficial use project, and interest may grow and change as a final decision approaches.

### Planning

The best way to effectively involve the public is to develop a public involvement plan that includes active participation by project managers. Managers' philosophical and financial commitment to public outreach is essential from the outset.

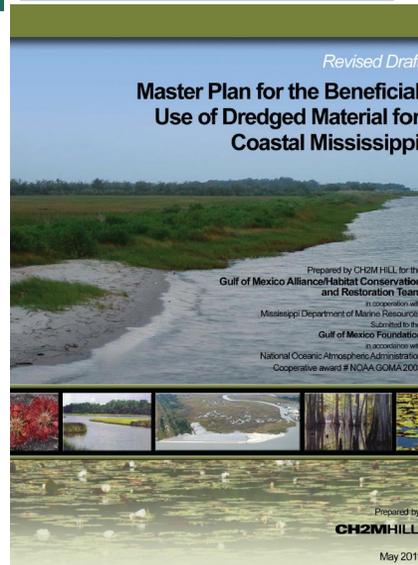
In developing a public involvement plan, project sponsors and managers should know who will make key project decisions and when these decisions will be made. The public should be informed and provided the opportunity to be involved sufficiently in advance of these decisions points so that any public input is available to, and can be considered by, the decision maker. It is much wiser and more successful to involve the public throughout the process in numerous smaller constituent decisions than to request public approval on a final, complex decision. The public's participation may result in a design somewhat different from the original plan, but it will be more likely to materialize into a successful project.

Think of the public as a circle with concentric rings. In the outer ring are people whose involvement will be limited to receiving information about the project primarily through the media. As long as they are interested and know how to make their views known, they will seek no greater involvement.

People interested in dedicating more time are in the next (second) ring of the circle (moving inward and increasing in involvement). They may be members of civic, religious, or service groups, and can be reached through one-on-one discussion and presentations to their organizations. Informing these people is important because they, in turn, will inform others in the community. In general, individual and personal discussion is extremely important to successful public involvement.

It is important to inform and work closely with elected officials, who are featured in the next (third) ring. Public involvement enhances communication and establishes constructive relationships that foster wise decisions.

Closer yet to the center of the public involvement circle are those directly affected by a project (ring four). These people need and deserve extensive information. They may seek to participate in decision making. People with this level of interest can be reached through direct mail, informal neighborhood meetings, and possible participation on project coordinating committees.



Revised Draft

## Master Plan for the Beneficial Use of Dredged Material for Coastal Mississippi

Prepared by CH2M HILL for the  
Gulf of Mexico Alliance Habitat Conservation  
and Restoration Team  
in cooperation with  
Mississippi Department of Marine Resources  
Submitted to the  
Gulf of Mexico Foundation  
in cooperation with  
National Oceanic Atmospheric Administration  
Cooperative award # NQAA GOMA 2009

Prepared by  
CH2M HILL

May 2011

# OVERCOMING BARRIERS THROUGH POLICY

- Federal standard required USACE's dredged material disposal to represent **least costly** alternatives
- WRDA 2020 requires USACE to maximize beneficial use of dredged material, considering **environmental, economic, and societal benefits**
- Now need to consider how BU project produces benefits beyond the estimated short-term costs



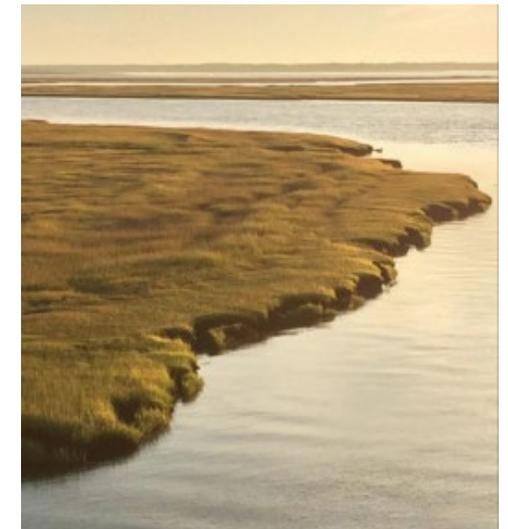
# OVERCOMING BARRIERS THROUGH PARTNERSHIPS

- Engage stakeholders and form partnerships early in the process
- Partnerships can assist in upfront coordination of project schedules → cost savings
- Examples of inter-agency, multi-stakeholder beneficial use partnerships
  - San Francisco Bay Long Term Management Strategy for Placement of Dredged Material
  - New York/New Jersey Harbor Regional Dredging Team



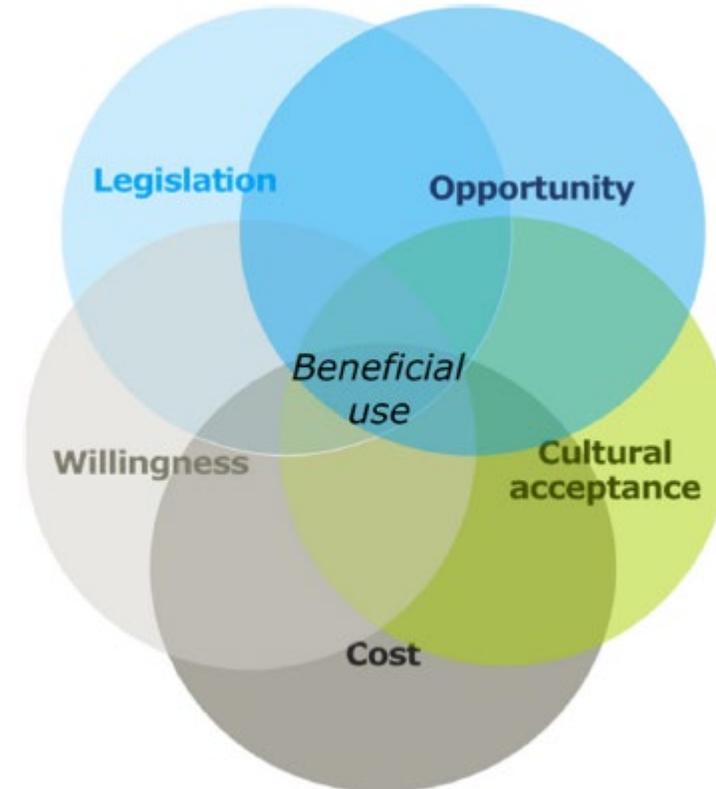
# CASE STUDY – SEVEN MILE ISLAND, NJ

- Marsh restoration and habitat creation project along NJ coast
- Collaborative partnership: USACE Philadelphia District, State of NJ, Wetland Institute, and other stakeholders
- Location benefits
  - NJ marshes at risk due to sea level rise, sediment starvation → reduced resiliency
  - Near dredged NJ Intracoastal Waterway
- Ongoing monitoring allows for lessons learned / adaptive management



# SUMMARY

- Consider social, sustainable, environmental, and long-term economic benefits rather than short-term costs
- Develop policy and guidance advances such as WRDA 2020
- Engage public-private partnerships early in the project to facilitate collaboration and coordination
- Develop and implement long-term management plans



# THANK YOU

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