Beneficial Uses of Dredged Material

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National Dredging Team Conference

Managing Sediments in the Watershed: Bringing Dredged Material and Watershed Managers Together

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The beneficial use of dredged material

- Embraces the idea that this material can be used in manners that benefit society and the natural environment by providing services and filling needs

- A common misperception is that dredged material is usually contaminated
  - In fact, the large majority of material dredged from U.S. waters is clean.
  - The quality of the dredged material varies, depending on the particular location dredged, and the nature of the material itself (sands, silts, and/or clays).
  - Up to 80% of material dredged in the US is removed from the Mississippi River System; virtually all of this material is uncontaminated sand.
  - Material dredged in some of our major harbors may be more likely to be contaminated because this material is generally silt and clay particles to which contaminants can easily bind.

- In any case, promoting beneficial uses require a shift from the perspective of dredged material as a waste product, to one of it as a valuable resource that can provide multiple benefits to society.

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General Categories of Beneficial Use

- Engineered uses
- Agricultural and product uses
- Environmental enhancement

- See: http://el.erdc.usace.army.mil/dots/budm/budm.cfm

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Categories of Beneficial Use

- ***Habitat Restoration and Development:*** to build and restore wildlife habitat, e.g.wetlands or other water-based habitat, nesting islands, offshore reefs
- ***Beach Nourishment:*** to restore beaches subject to erosion (sandy material)
- ***Parks and Recreation:*** foundation for parks and recreational facilities
- ***Agriculture, Forestry, Horticulture, and Aquaculture:*** replace eroded topsoil, elevate soil surface, improve soil physical and chemical characteristics
- ***Strip-Mine Reclamation and Solid Waste Management:*** reclaim strip mines, cap solid waste landfills, or to protect landfills
- ***Construction/Industrial Development:*** support commercial or industrial activities (including brownfields redevelopment), e.g. expanding, or raising the height of the land base, providing bank stabilization; as construction material

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Evaluating dredged material suitability for a given use.

- Physical and chemical characteristics of the sediments to be dredged, e.g. grain size and levels of contamination
  - Useful initial screen of possible beneficial use options.
  - Clean, coarse-grained sediments (sands) are suitable for a wide range of beneficial uses.
  - Fine-grained sediments can be suitable for wetlands and other habitat development
  - Other characteristics: salinity of the sediments, water content,organic content, acidity, levels of nutrients, and engineering properties such as shear strength and compressibility.

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Challenges

- Project cost and logistical issues
- Perceptions and biases, often because the concept of beneficial use may not be familiar to all parties in a decision-making process (e.g., regulators, dredging sponsors, and the public)
  - these projects can suffer from being seen as a “novel” approach with unclear standards and practices
- Because beneficial use projects entail connecting a dredging project to a use project, coordinating the timing and physical location of activities can be a challenge

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Beneficial Uses of Dredged Material Program

- Background
- Program Foundation
- Current Initiatives

Beneficial Uses of Dredged Material Background

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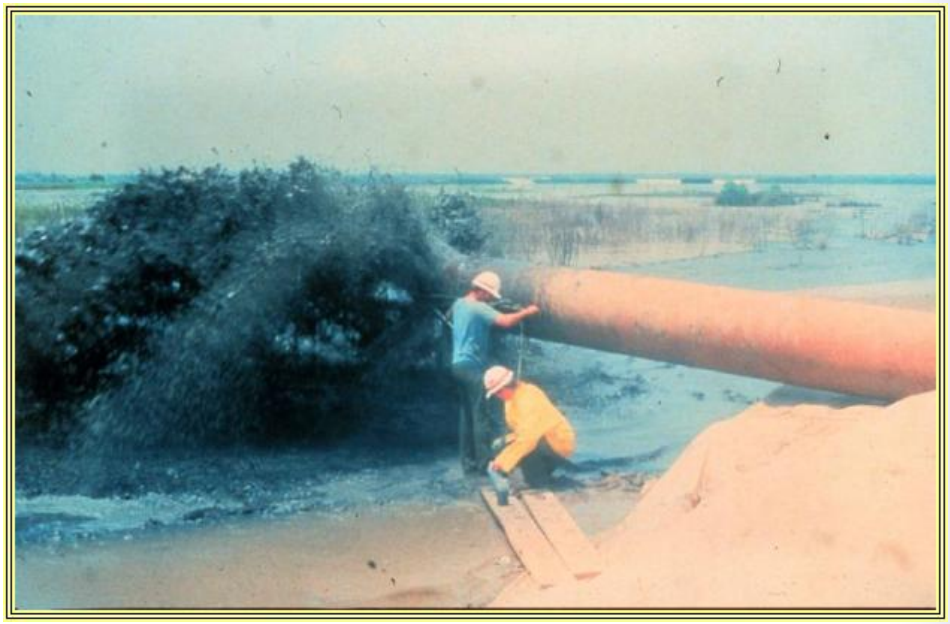
History

- W/in Bank Disposal
  - Increased Traffic
- Upland Disposal
  - Reliability
  - Reduced Dredging Cycle
  - Capacity



…each year the Corps moves 250-300 MCY of sediment at a cost of more than $700 Million.

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Background

- **Extremely Costly To Create Additional Capacity**

- **Political, Real Estate & Environmental Issues Creating New Sites**

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Current Initiatives

- Environmental Uses

- Industry Uses

- Construction

- Support to other Public Projects

Environmental Efforts

- Deer Island Section 204
- Mississippi Gulf Coast
- Olin Chemical – BWT Sand
- Wetland Creation on the Tenn-Tom Waterway
- Bird Islands

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DOER/DOTS Coastal Bird Conservation

Problem:

- **Many species of coastal waterbirds and shorebirds have been declining**
- **Coastal engineering projects are often affected by bird or habitat-based restrictions**
- **Potential missed opportunities to create or enhance bird habitat at coastal projects**

Image by Bob VanHoff

Solutions:

- **Work with the American Bird Conservancy to conduct 4 regional workshops with the Corps and the coastal bird conservation community**
- **Develop guidelines for integrating bird conservation needs into coastal projects**

Benefits/Value:

- **Expand capabilities of the Corps to contribute to various bird conservation efforts**
- **Make the bird conservation community aware of opportunities that exist by working with the Corps**
- **Reduce conflict (e.g., T&E Species)**

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Industry/Agricultural Uses

- The Scotts Company – Potting Soil From BWT Sand
- Soil Manufacturing – Mobile Harbor Material
- Florida Road Construction - GIWW Material
- ST Bunn – Asphalt from BWT Sand

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Private Uses – Asphalt

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Support of other Public Projects

- **Municipalities**
  - City of Mobile
  - City of Spanish Fort
  - City of Pensacola
- **Alabama Port Authority**
  - Choctaw Point
- **Other Federal Projects**
  - Morganza to the Gulf
  - Louisiana Coastal Area
  - US Air Force

Support to Municipalities

- City of Mobile
  - Mobile Harbor Material – City of Mobile and Auburn University
  - Landfill Capping
- City of Spanish Fort
  - Bluff Repair
- City of Pensacola
  - Beach Renourishment

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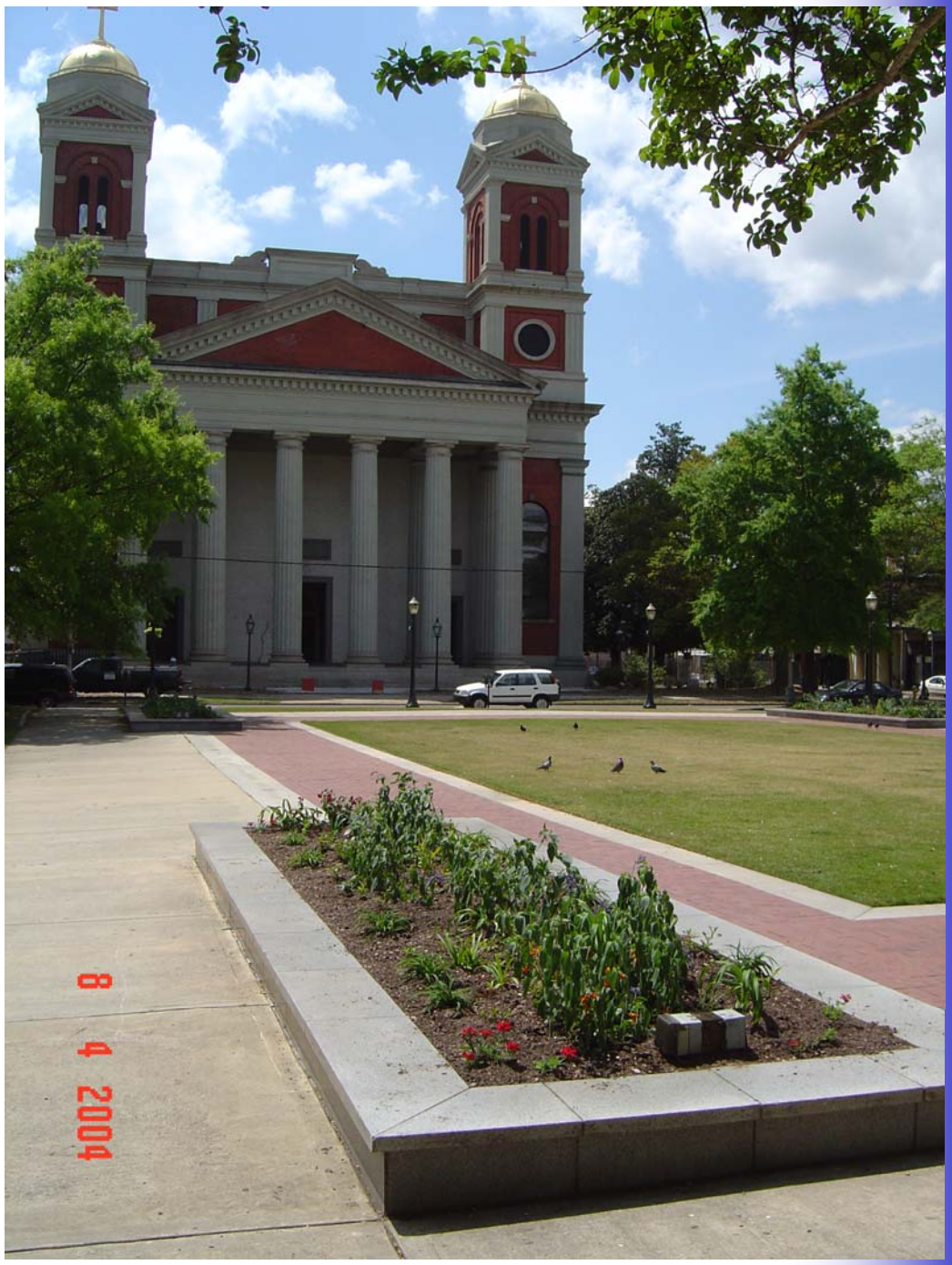
City of Mobile

Auburn University

Partnership



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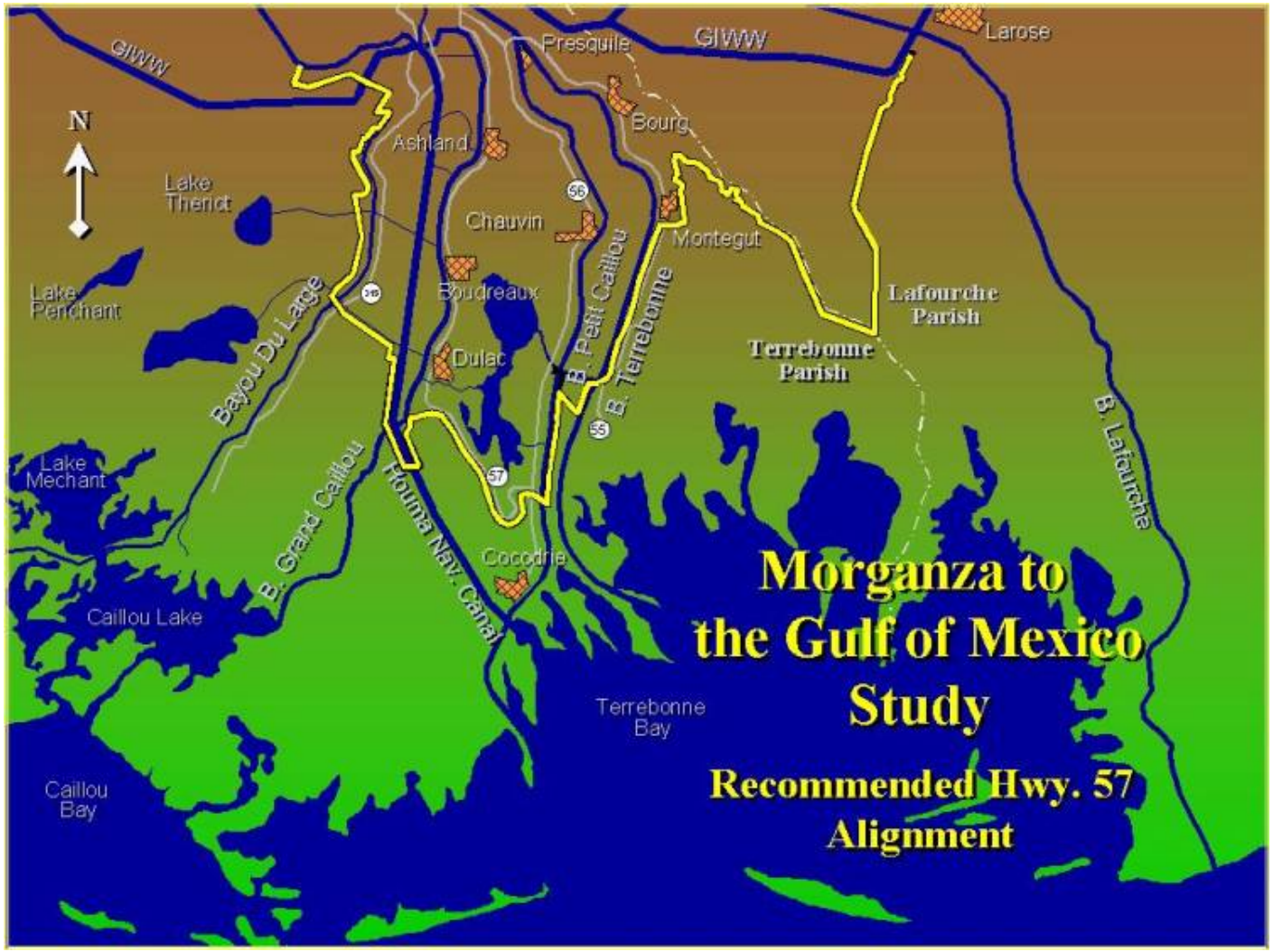
Support to other Federal Projects



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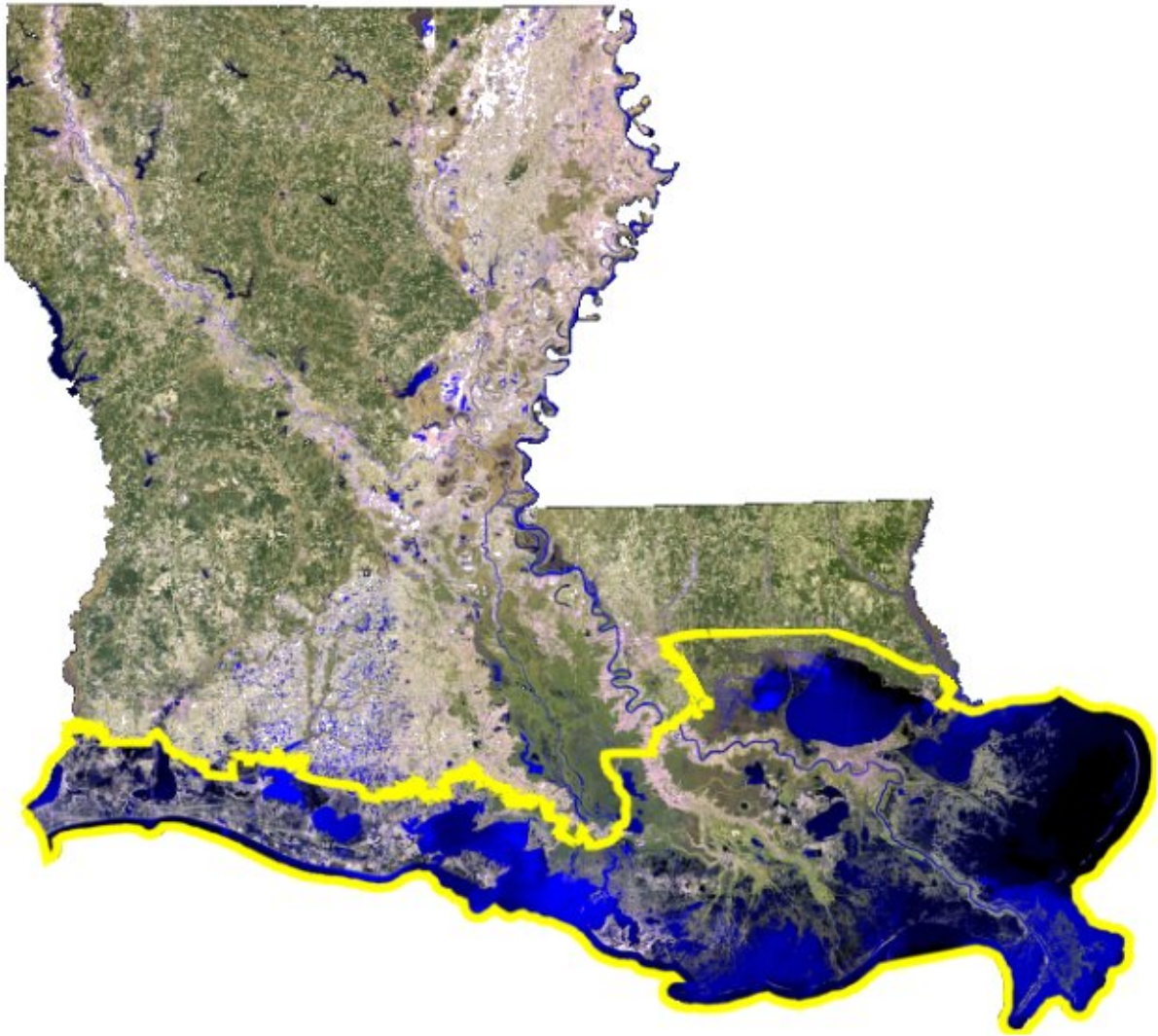
LOUISIANA COASTAL AREA
Ecosystem Restoration Project



U.S. Air Force/Navy Island Creation Project

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BUDM Lessons Learned
"Keys to Success"

- **Marketing –** Getting the word out
- **PMBP**
  - **RSM Based Program**
- **Demand Diversification –** Private, Federal, local, etc.
- **Benefit/Cost –** "A Dime for a Dollar" Opportunities
- **Data on Material –** GIS, Bureau of Mines &ERDC
- **SOP –** Real Estate Issues
  - State Royalty Waiver
  - Fast Hold Harmless Agreement

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