



*This research initiative is funded under the auspices of the CFIRE Tier 1 University Transportation Center.*

**Title:** Beneficial Use of Dredging Materials from Harbors and Channels

**Description:**

Dredging is necessary for maintaining marine freight transport. However, dredged material management options for commercial ports, particularly those involving confined disposal facilities or other long term or permanent placement, are diminishing. Many existing Great Lakes disposal facilities serving these ports are at or near capacity and high costs plus limited new site availability make prospects for new or expanded capacity increasingly unlikely.

Beneficial use of dredged materials, alone or in mixtures, can have a major impact on the cost of dredging and on associated environmental benefits. Given the declining placement capacity, “disposal” of non-toxic dredged material into existing disposal facilities is no longer feasible as an ongoing management practice. Reuse or recycling of material suitable for beneficial use has emerged as the most practical approach to sustainable management. Using dredged materials instead of natural mined materials could contribute to environmental sustainability and energy independence. Beneficial reuse could include applications in construction of transportation facilities such as structural fills, backfills behind retaining walls, and pavement sub-base material.

One factor favoring increased beneficial use is the improving physical quality of the material; however this message needs to be shared with potential users who historically have not utilized this material in the past. This project will bring dredged material property information and example beneficial use projects to a major partner in the overall freight coalition: the state departments of transportation.

**Outcomes:**

This project includes a Summit that engages twenty (20) state departments of transportation geotechnical and environmental specialists in discussions about material properties and potential uses for dredged materials. The Summit workshop format will be held at the conclusion of the Mid-America Freight Coalition Meeting to be held in Louisville, Kentucky in March of 2013. The Summit, its results, and further research will form the primary outcomes of this project.

**Deliverables:**

Project deliverables will be published summit presentations, summary of proceedings, reference materials, and potential draft memorandums of understandings concerning beneficial use of dredged material in state department of transportation projects.

**Industry Impact:**

The beneficial use of dredged material on highway projects will benefit both the commercial maritime transportation industry by assisting them in working towards a sustainable method of material disposal and the state DOTs by supplying potentially new sources for project material.

**Research Team:**

- Teresa Adams, University of Wisconsin-Madison (Executive Committee Representative)
- Gene Clark, University of Wisconsin-Madison (Project Coordinator)
- Dave Knight, Great Lakes Commission, Ret.
- Richard Stewart, University of Wisconsin-Superior
- Habib Tabatabai, University of Wisconsin-Milwaukee
- William Likos, University of Wisconsin-Madison

**Funding:**

- Total: \$33,915
- UTC Funds: \$16,954

**Student Involvement**

- University of Wisconsin-Madison: One graduate student for one year