

Dredging Innovations Program and Update on Environmental Risks of Open Water Placement

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Dredging Environmental Research

- **The Goal:** *Find the least costly dredged material management alternatives (method), consistent with sound engineering and environmentally acceptable management practices*

* The Federal Standard (33 CFR 336.1) *



Federal Programs Supporting R&D in the Great Lakes

- **USACE – R&D & Technical Support**
 - ▶ Dredging Operations Environmental Research (DOER)
 - ▶ Dredging Innovations Program (DIG)
 - ▶ Dredging Operations Technical Support (DOTS)
- **USACE – Technology Develop & Application within Specific Projects**
 - ▶ Continuing Authority Projects (CAP)
 - ▶ General Investigation (GI)
 - ▶ Operations and Maintenance (O&M)
- **USEPA – Removing AOC BUI's**
 - ▶ Great Lakes Restoration Initiative (GLRI)



On-going R&D Projects in the Great Lakes

- DOER - Risk/Benefits for Dredge Material Placement in the Great Lakes
- DOER - Long Term Impacts From Phosphorus Release on Water Quality
- DOER – In Situ - Sediment Collector Technology (Not quite a GL project - Illinois River)
- DOER – Evaluation of Suspended Sediment Impacts on Walleye
- DOER – Engineering with Nature - Duluth/Superior 21st Ave Habitat Restoration
- DOER - Engineering with Nature – Ashtabula Green Breakwaters for Tern Habitat



On-going Projects

- DIG – Duluth/Superior 21St Ave – Assessment of Habitat Restoration On Mercury Bioaccumulation Potential
- GLNPO – Pilot In Situ amended sediment cap – Manistique River AOC
- GLNPO – Monitoring of Active Caps – Grand Calumet AOC
- Specific Projects
 - ▶ Beneficial Use of Dredged Material
 - Cleveland, Buffalo, Duluth, others....
 - ▶ Influence of Dredged Material Placement on Western Lake Erie Basin Harmful Algal Blooms
 - ▶ Volatilization of Organics from Indiana Harbor CDF
 - ▶ Incremental Sampling to Characterize Heterogeneity of Dioxin/furans - Saginaw Harbor CDF



Risk/Benefits of Unconfined Dredge Material Placement in Great Lakes

- Project Driven Focus – Cleveland, Duluth, Buffalo
- Four DOER Technical Notes
 - ▶ Identifying and evaluating ammonia toxicity during Tier 3 dredged material evaluations
 - ▶ Applying spatially explicit bioaccumulation analysis to Tier 3 dredged material evaluations
 - ▶ Statistical guidance for applying the spatially explicit bioaccumulation analysis in Tier 3 dredged material evaluations
 - ▶ Evaluating the short-term impacts of phosphorus releases during dredged material placement



Future Research Priorities?

- Potential ideas for new R&D projects
 - ▶ In situ sediment harvesting in GL harbors
 - ▶ Benefits of DM mounds to fisheries
 - ▶ Application of geotubes for DM management and BU
 - ▶ Regulatory database for sediment quality screening and BU
 - ▶ Invasive species testing protocol for BU
 - ▶ Screening GL harbors for BU ecosystem restoration
 - ▶ HH risk from unrestricted use of DM in garden crops
- Significant concern regarding value of R&D and acceptance of new science/technical data by States
- Ideas and future participation by States and other non-Federal partners



Environmental Acceptability Sticking Points

- Scientific Method—Can't prove a negative





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Questions? . . .



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