United States Environmental Protection Agency
Regions 1 and 2

Informational Webinar

Dredging and Dredged Material Management

Dredging Permit Process, Testing, and Dredged Material Disposal

April 3, 2014

AGENDA

9:30am – 10:30am

Presentation 1: Dredging/Dredged Material Management

10:30am – 11:00am

Q&A/Discussion

11:00 am – 12:00 pm

Presentation 2 : Dredged Material Permit Process and Testing

12:00 pm – 12:30 pm

Q&A/Discussion

Dredging and Dredged Material Management

Patricia Pechko
U.S. Environmental Protection Agency

April 3, 2014

Dredging

The removal of sediments from the bottom of lakes, rivers, harbors and other water bodies.

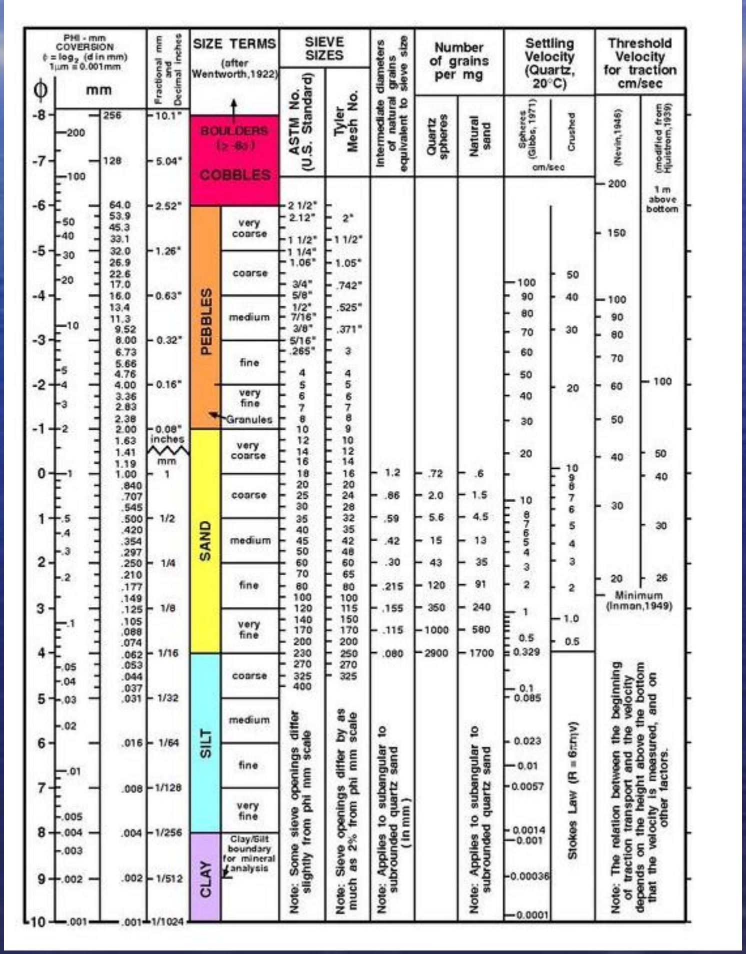
- Navigation dredging provides and maintains safe depths for vessels

  -maintenance vs. construction

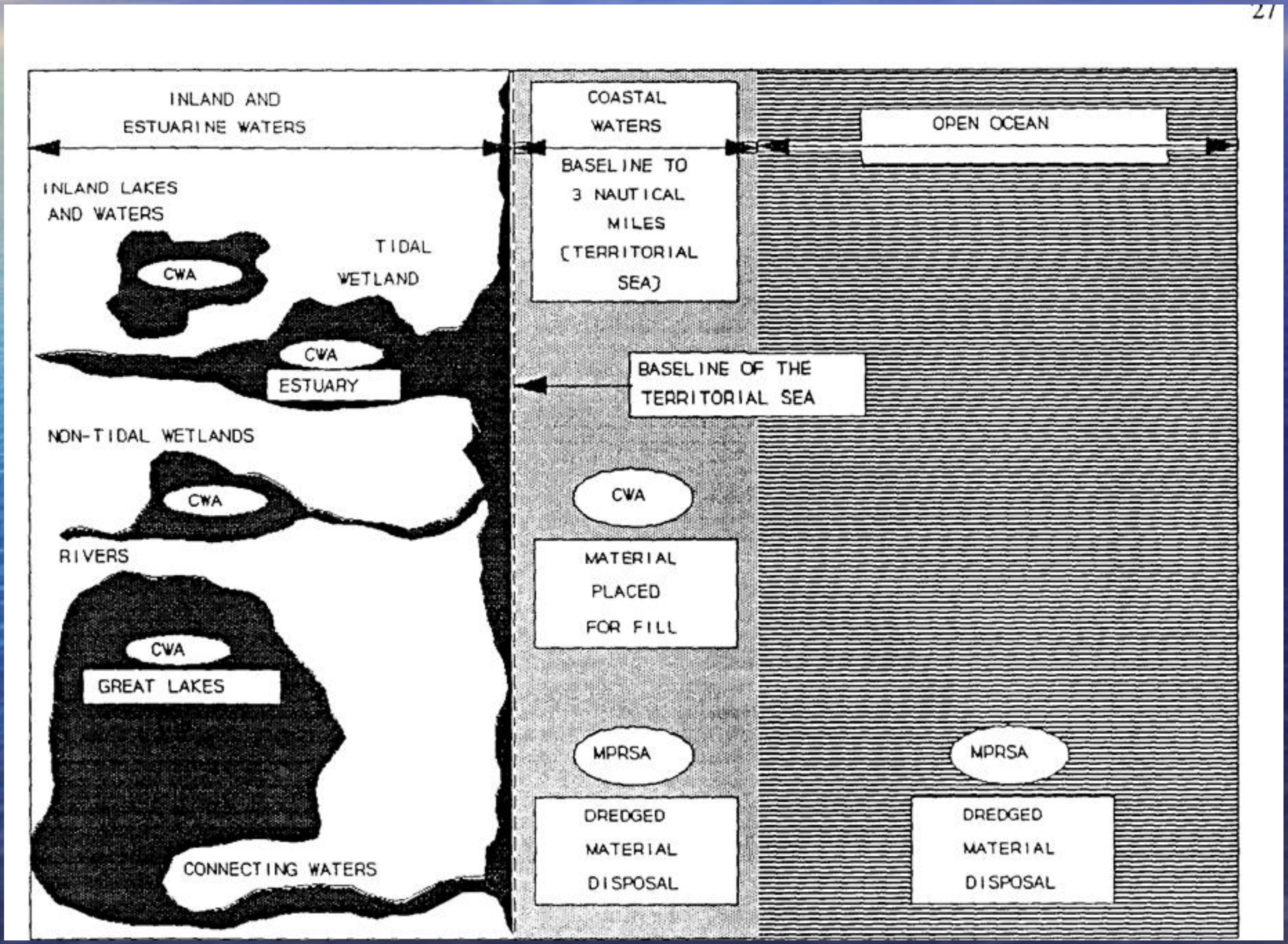
- Remediation dredging

Types of Materials

- Rock
- Gravel
- Coarse Sand
- Fine Sand
- Silt
- Clay
- Mixture



Regulation of Dredged Material Jurisdictional Boundaries



Common Dredges

Mechanical/Hydraulic

Common Dredges

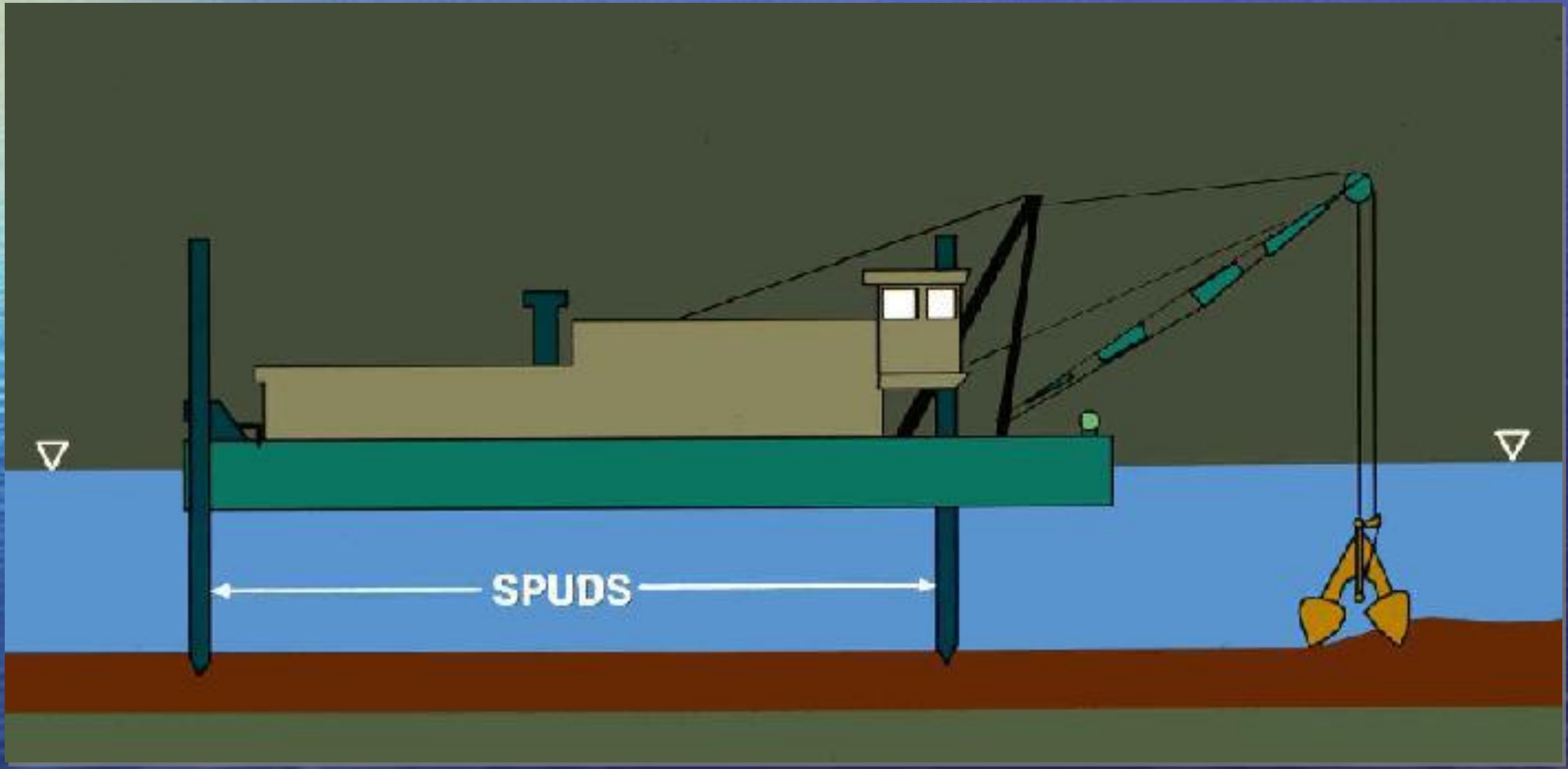
- Mechanical
  - Clamshell (most common in LIS)
  - Backhoe
- Hydraulic
  - Hopper
  - Pipeline/Cutterhead

Dredges - Mechanical

Clamshell

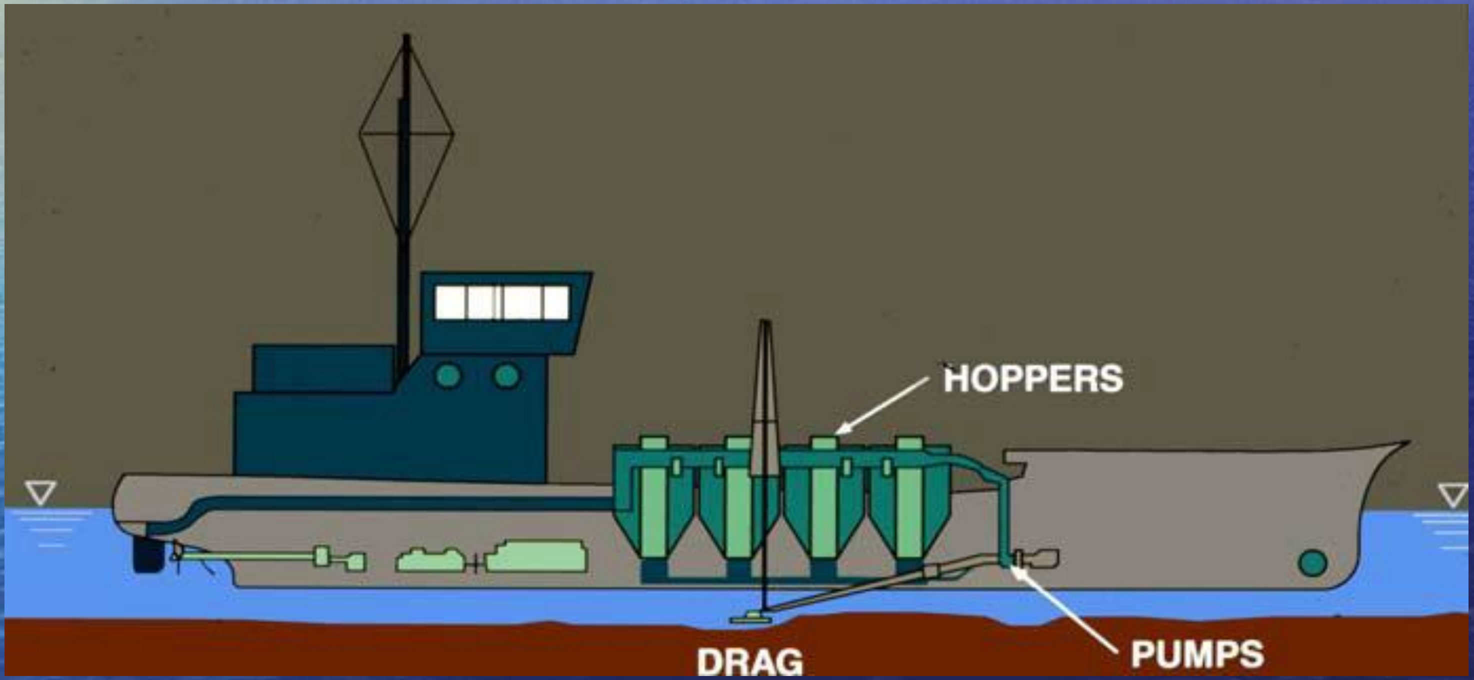
Backhoe

Dredges - Mechanical



Dredges – Hydraulic - Hopper

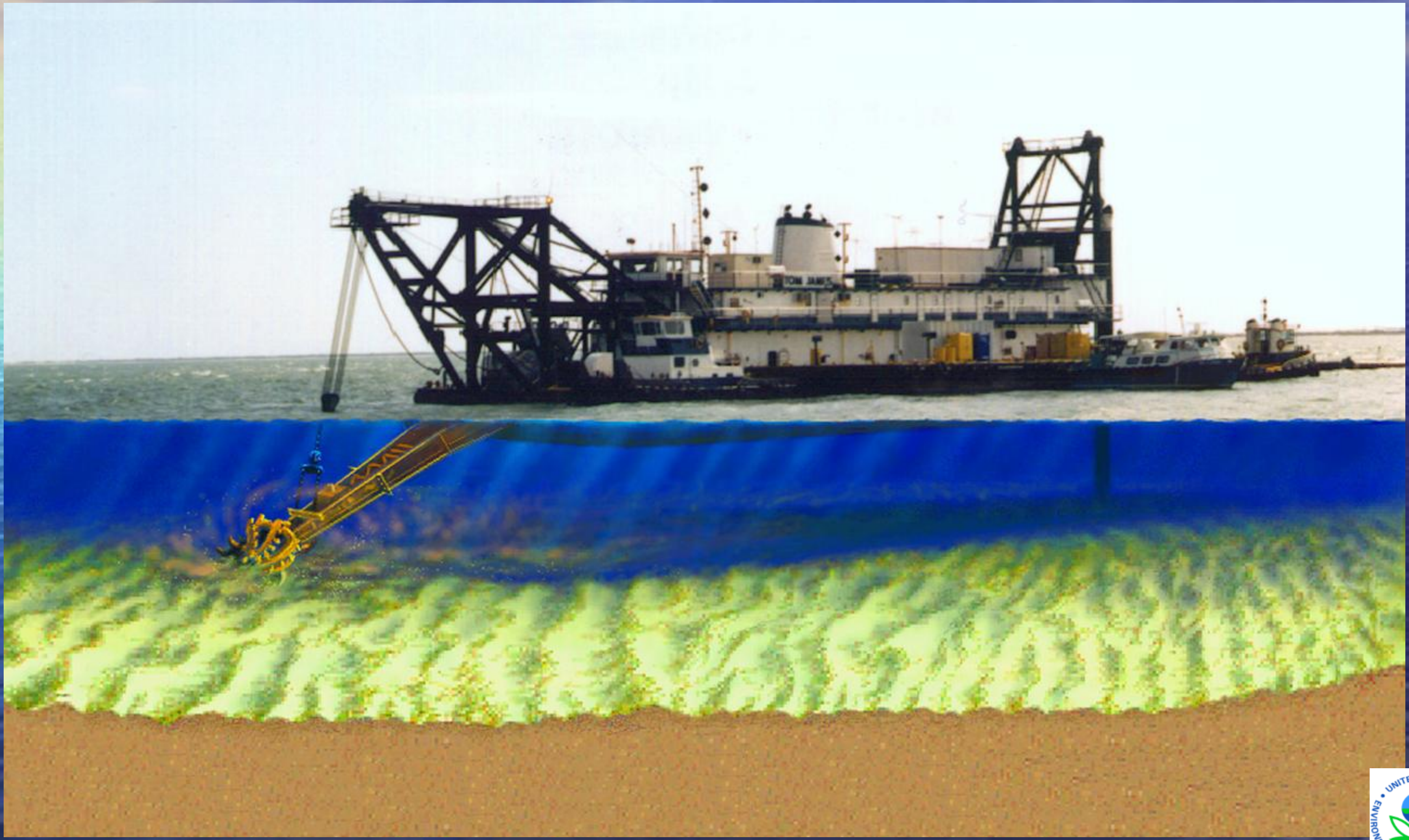
Dredges – Hydraulic - Hopper



Dredges – Hydraulic - Hopper

Dredges – Hydraulic Hopper

Dredges – Hydraulic Pipeline/Cutterhead



Dredges – Hydraulic Pipeline/Cutterhead

Containment Vessels

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Best Management Practices

Best Management Practices (BMPs) are methods and measures employed to reduce the potential for, and magnitude of, adverse environmental impacts resulting from a dredging or disposal activity. The effectiveness of a particular BMP will vary with the on-site conditions. The applicability and use of a particular BMP for a dredging or disposal activity will be evaluated on a case-by-case basis and may be included in permit conditions.

Best Management Practices

Closed bucket

Hydraulic dredging

Limiting barge overflow

Shunting

Seasonal/Migratory windows

Tidal Dredging

Silt Curtains

Dredging practices

Disposal practices

Capping/Sequential Dredging

Dredged Material Management/Disposal

Contamination

Dredged material can be contaminated to varying degrees by:

- -Metals
- -Organics
- -Project Specific (e.g., nutrients, TBT)

"Toxic/Hazardous Materials"

- Dredged materials are not sewage sludge, garbage nor toxic or hazardous waste.
- Materials meeting the definition of these wastes are not suitable for disposal in Waters of the United States and are managed under applicable regulatory or remediation programs at the federal and state level.

Toxic/Hazardous Materials Authorities and Programs

- Toxic Substances Control Act (TSCA)
  - PCBs
- Resource Conservation and Recovery Act (RCRA)
  - Subtitle D Solid Wastes
  - Subtitle C Hazardous Waste
- Comprehensive Environmental Response, Compensation and Liabiltiy Act (CERCLA aka Superfund)

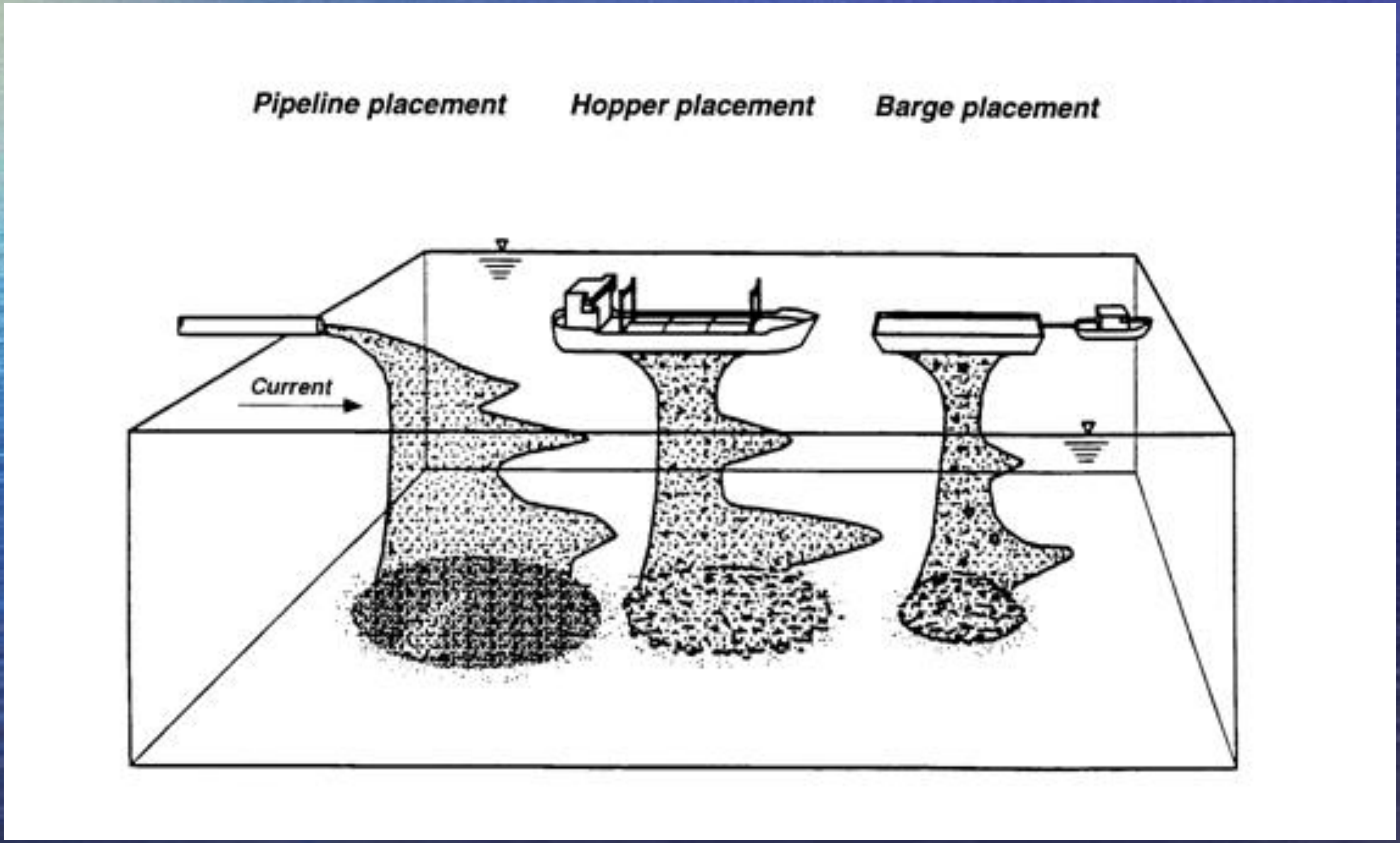
Dredged Material Management Options

- Ocean or Open Water Placement
- Confined Placement
  - Confined Disposal Facilities (CDFs)
  - Contained Aquatic Disposal (CADs)
- Beneficial Use
- Landfill/upland disposal facility

ALL OPTIONS ARE SITE SPECIFIC

Open Water Placement

Ocean/Open Water Placement (unrestricted)



Site Management and Monitoring

- prevent significant adverse environmental impacts
- recognize and correct any potential unacceptable conditions before they cause any significant adverse impacts to the marine environment or present a navigational hazard to commercial waterborne vessel traffic;
- determine and enforce compliance with ocean disposal permit conditions;
- provide a baseline assessment of conditions at the site;
- outline a program for monitoring the site;
- describe special management conditions/practices to be implemented at the site;
- estimate the quantity of material to be disposed at the site, considering the presence, nature, and bioavailability of the contaminants in the dredged material;
- specify the intended use and possible closure date, if necessary, of the site;
- provide a schedule for review and revision of the SMMP

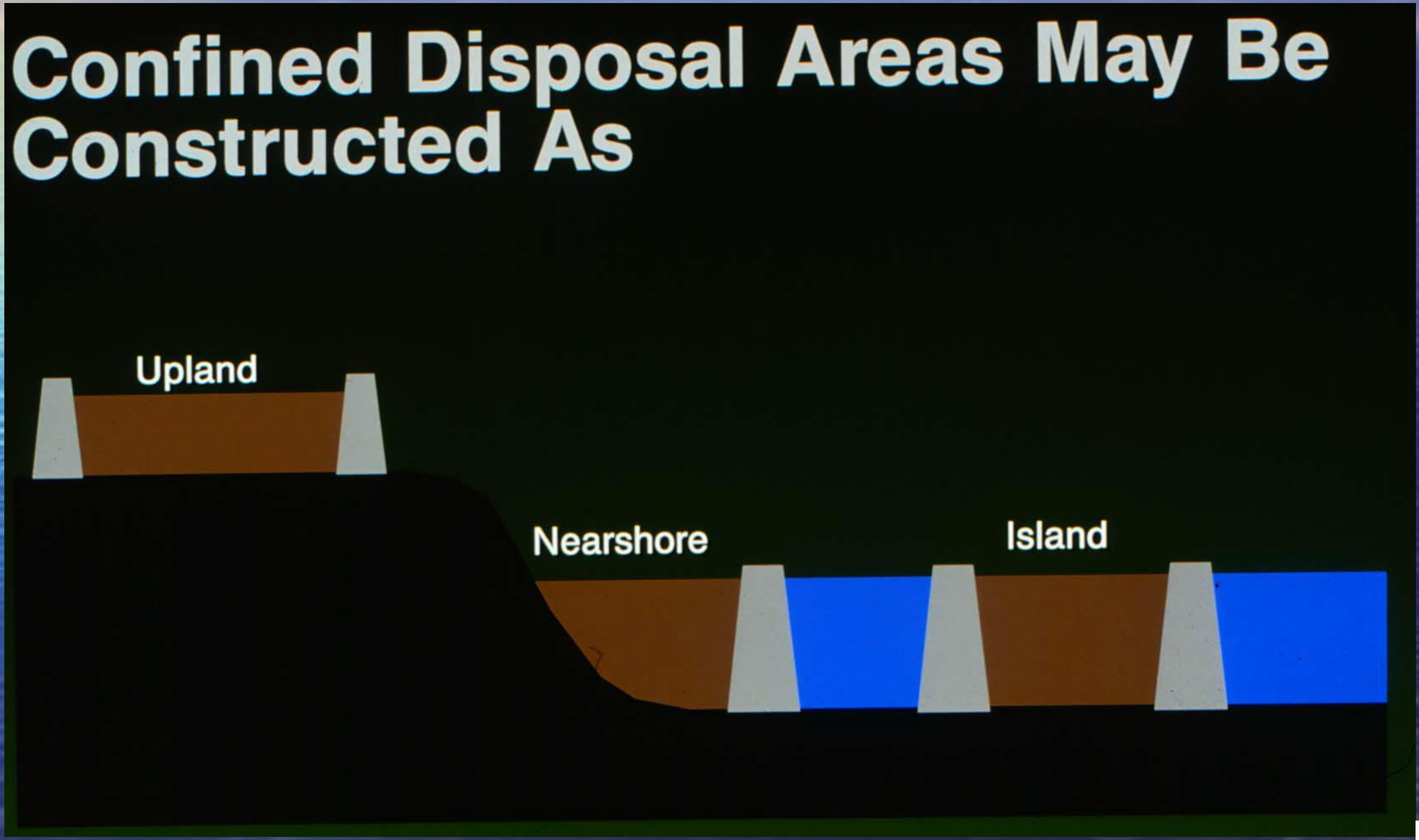
DAMOS

DAMOS (Disposal Area Monitoring System) is a multi-disciplinary environmental program started in 1977 by the New England District of the U.S. Army Corps of Engineers to manage and monitor offshore dredged material disposal sites from Long Island Sound to Maine. Program information is shared with the scientific community and public through media such as technical reports, papers, and brochures.

www:http://www.nae.usace.army.mil/Missions/DisposalAreaMonitoringSystem(DAMOS).aspx

Confined Disposal

Confined Disposal Facility



Confined Disposal Facility

Contained Aquatic Disposal (CAD)

Beneficial Use (BU)

Beneficial Use (BU)

Beneficial use is utilizing dredged sediments as resource materials in productive ways which provide environmental, economic, or social benefit.

Beneficial use is the preferred management management option.

Beneficial Use

- Case by case basis.
- Needs and opportunities.
- Generally requires a local sponsor.
- Logistical and cost constraints.
- Additional regulatory requirements
- Material suitability limitations (physical and chemical)

Potential Beneficial Uses Aquatic

- Remediation of contaminated open water sites
- Emergent habitat creation/enhancement/ restoration
  - Coastal or freshwater marsh
  - Bird habitat (e.g. islands, dunes)
- In–water habitat creation/enhancement/restoration
  - Shellfish beds
  - Artificial reefs
- Bathymetric recontouring of degraded aquatic areas
- Beach fill/nourishment
- Shoreline stabilization

Potential Beneficial Uses Land

- Remediation of Brownfields sites
- Grading material/Aggregate
- Landfill cover (final and daily)
- Mine reclamation

Beneficial Use (BU)

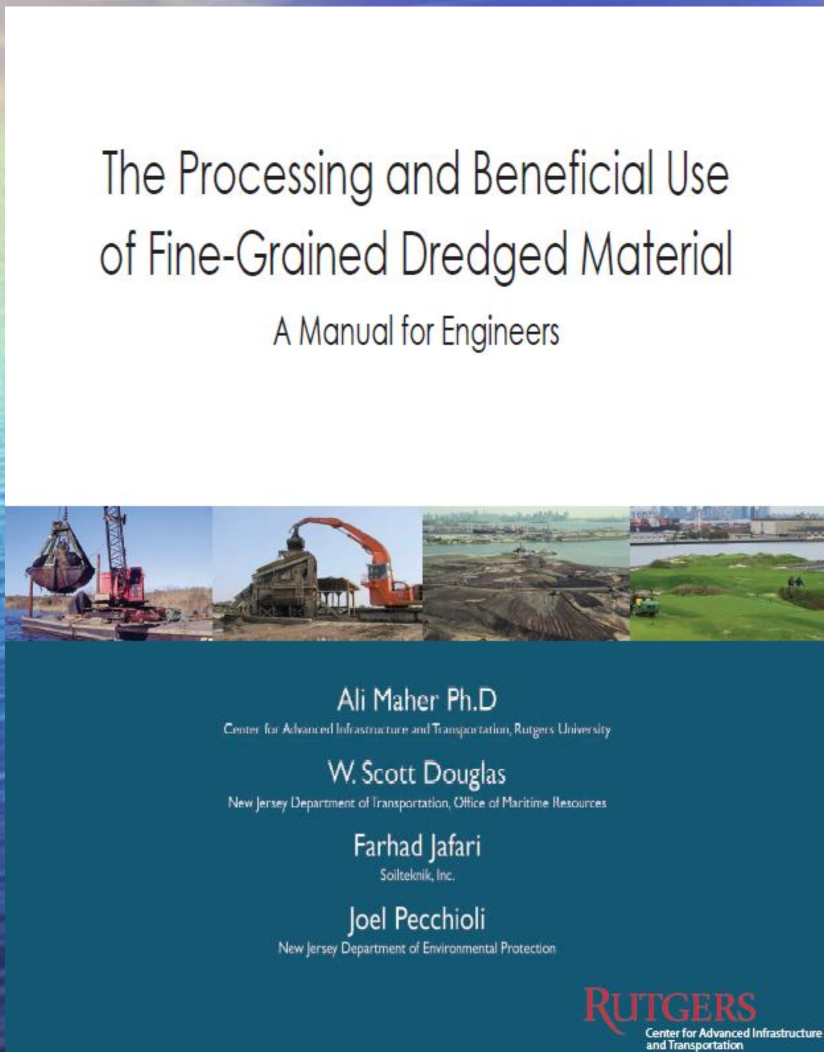
	Dredged Material Sediment Type				
Examples of Beneficial Use Activities	Rock	Gravel & Sand	Consolidated Clay	Silt/Soft Clay	Mixture
Engineered Uses					
Land creation	x	x	x	x	x
Land improvement	x	x	x	x	x
Berm creation	x	x	x		x
Shore protection	x	x	x		
Replacement fill	x	x			x
Beach nourishment		x			
Capping		x	x		x
Construction materials	x	x	x	x	x
Aquaculture			x	x	x
Topsoil				x	x
Wildlife habitats	x	x	x	x	x
Fisheries improvement	x	x	x	x	x
Wetland restoration			x	x	x

Saltmarsh Restoration Jamaica Bay

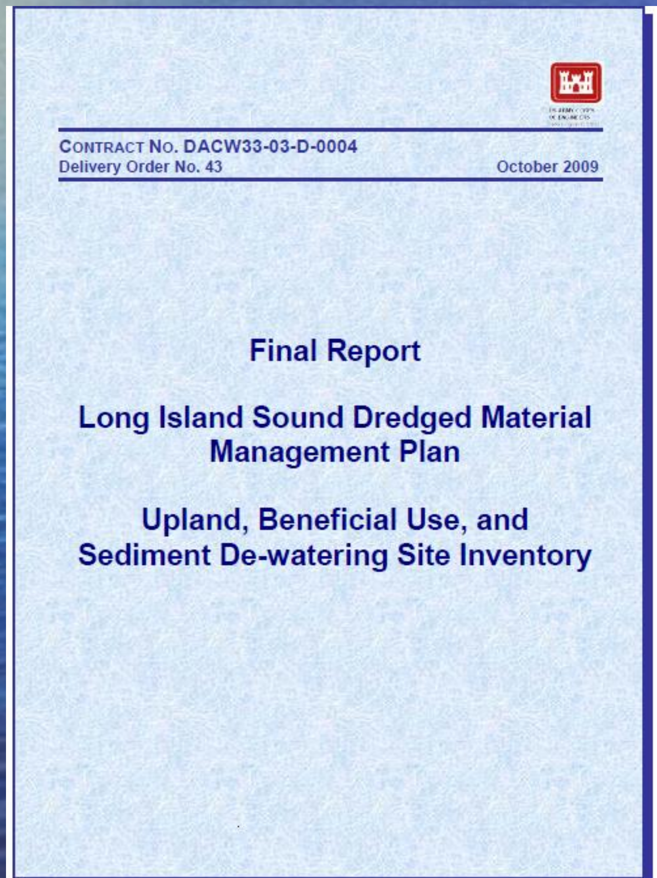
Saltmarsh Enhancement Thin-Layer Spray Application Pepper Creek, Delaware

Habitat Restoration
Poplar Island

Land Remediation



LIS DMMP Upland, Beneficial Use and Sediment Dewatering Site Inventory - Final Report

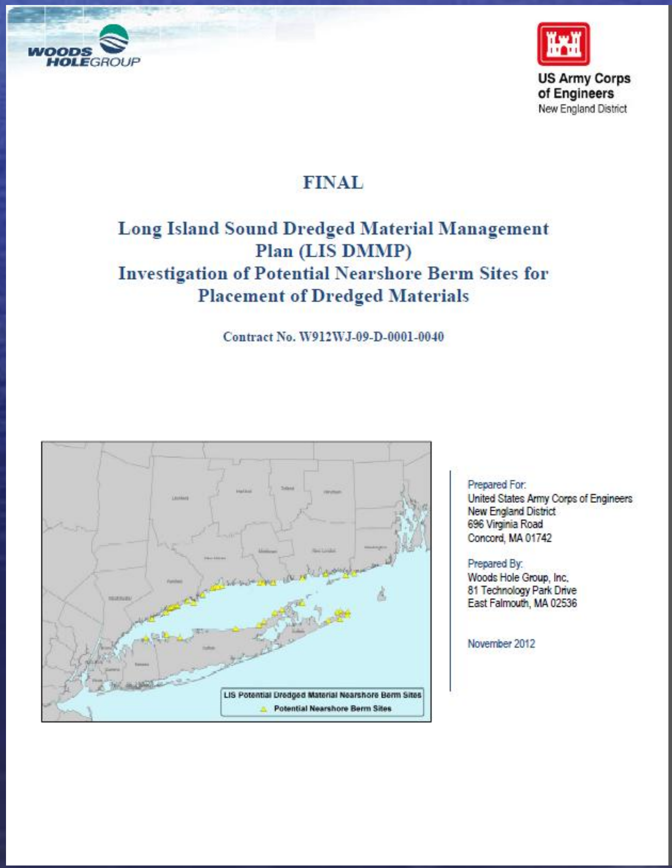


CONTRACT NO. DACW33-03-D-0004
Delivery Order No. 43 October 2009

Final Report

Long Island Sound Dredged Material Management Plan

Upland, Beneficial Use, and Sediment De-watering Site Inventory



WOODS HOLE GROUP

US Army Corps of Engineers
New England District

FINAL

Long Island Sound Dredged Material Management Plan (LIS DMMP)
Investigation of Potential Nearshore Berm Sites for Placement of Dredged Materials

Contract No. W912WJ-09-D-0001-0040

Prepared For:
United States Army Corps of Engineers
New England District
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November 2012

Questions?

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