Evaluation of Dredging Projects for Disposal in New England Waters

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Dredging and Disposal in New England Waters

- Disposal Evaluation
  - Disposal Monitoring and Compliance
  - Disposal Area Management
Evaluation of Dredging Projects in Waters of the US

- Gage environmental impact of disposal
- Interagency review process
- Formal analytical process

Evaluation based on two laws
- Clean Water Act (CWA)
- Marine Protection, Research, and Sanctuaries Act (MPRSA)

Interagency review
- State DEP
- EPA
- NMFS, USFWS (courtesy)
Active open water disposal sites
Project Review Flowchart

CWA vs. MPRSA Project Review
For benthic evaluation

Proposed dredging project

CWA Section 404 Review
For 404 disposal sites:
  e.g., Rockland DS

- Meets exclusion? [YES/NO]
  - YES: Send to 404 disposal site
  - NO: Disposal management

- Chemical testing
  - Results similar to reference site controls?
    - YES: Send to 404 disposal site
    - NO: Biological testing

Biological Testing

- YES
  - Send to 404 disposal area
- NO
  - Not suitable for unconfined open water disposal

Discretion of agencies

MPRSA Section 103 Review
For 102/103 disposal sites:
  Cape Arundel DS
  Portland DS

- Meets exclusion? [YES/NO]
  - YES: Send to 103 disposal site
  - NO: Biological testing

Biological testing

- YES
  - Bioassay
- NO
  - Bioaccumulation
    - YES: Send to 103 disposal area
    - NO: Not suitable for open water disposal

Risk models

Discretion of agencies
Sequence for Sampling Plan
CWA and MPRSA Dredging Projects

- **Request for Review**
  - Starts evaluation by MAS

- **Information Review**
  - Sources include: old project files, adjacent projects, consultation w/ agencies

- **Draft Sampling Plan (dSAP)**

- **Interagency review**

- **Final Sampling Plan (SAP)**
  - MAS reviews any agency comments, finalizes plan

- **SAP sent to PM and applicant**
Sequence for Suitability determinations

1. Grain size data from applicant
   Evaluation/Compositing by MAS

2. Devise compositing plan,
   send back to applicant

3. Analytical data submitted
   MAS review
   Does it meet specs, is more data needed?

4. Draft SD written (dSD)
   Sent to agencies for review

5. Interagency review

6. 1O BUSINESS DAY DEADLINE

7. Final Suitability Determination (SD)
   MAS reviews any agency comments,
   finalizes Determination

8. SD sent to PM and applicant
Testing requirements
Sec 404 CWA vs Sec 103 MPRSA
Disposal Sites

Sec 404 Disposal Sites

Chemical testing
- Metals - cadmium, mercury, others
- PAH – carcinogens, others
- PCBs
- Pesticides

Sec 103 Disposal Sites

Biological Testing
- 10-day acute toxicity
- Suspended phase elutriate testing –
- 28-day bioaccumulation
Testing requirements, continued

**Sec 404 Disposal Sites**
- Physical testing (grain size, moisture)
- Compositing (if needed)
- Chemical testing

**Sec 103 Disposal Sites**
- Physical
- Compositing (if needed)
- 10-day acute toxicity tests
- If 10 day toxicity is good:
  - Suspended phase elutriate testing – risk model run depending on LC$_{50}$
- 28-day bioaccumulation
- Risk assessment model – run on bio accumulation
Open Water Disposal Sites
(designated by USACE and EPA)

Connecticut
- Central Long Island Sound (CLDS)
- Cornfield Shoals (CSDS)
- New London (NLDS)
- Western Long Island Sound (WLDS)

Maine
- Cape Arundel (CADS)
- Portland (PDS)
- Rockland (RDS)

Massachusetts
- Cape Cod Bay (CCBDS)
- Massachusetts Bay (MBDS)

Rhode Island
- Rhode Island Sound (RISDS)

Section 404 CWA Sites
- Connecticut (under 25,000 cu yds, non-federal projects)
- RDS, CCBDS

Section 103 MPRSA Sites
- CADS
- PDS
- MBDS
- RISDS
- Connecticut DS –
  - Ambro Amendment
    (>25,000 cu yds, all federal projects)
Disposal Monitoring

- Coordinated disposal of dredged material
- Ensures compliance with permit conditions, CWA, MPRSA
- National Dredging Quality Management Program (DQM)
- DQM software - track disposal trips
- Enforcement phase
Dredging Plants - Mechanical

Split hull scow

Pocket scow
Dredging Plants - Hydraulic

Hopper Dredge – Currituck
Dredging Plants - Hydraulic

Pipeline Dredge
Dredging Plants - Hydraulic

Cutterhead dredge
Disposal Compliance and Enforcement

DQM
National Dredging Quality Management Program

- National program – Mobile, AL office
- Maintain database and software
- Certifies disposal scows
- Provides technical support
Disposal Area Management

Disposal Area Monitoring System (DAMOS)
- Applied research and surveying
- Manages disposal sites
- Disposal management techniques
Any questions.