



LONG TERM MANAGEMENT STRATEGY

Sediment Testing Program

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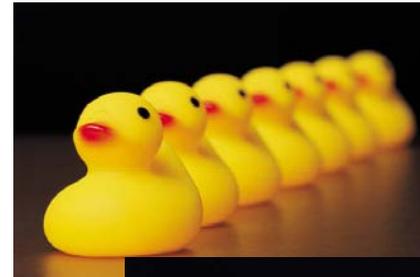
April 30, 2010



What DOES the DMMO Do?

It Reviews...

- ▶ DMMO Applications
- ▶ Tier One Exclusions from Testing
- ▶ Sampling and Analysis Plans
- ▶ Sampling and Testing Reports
- ▶ Master Sampling Plans
- ▶ Pre-Project Review/ Presentations



Guidance Documents

- ▶ www.spn.usace.army.mil/conops/dmimo.htm
- ▶ Agendas
- ▶ Public Notice 00-01 Tier One Guidance
- ▶ Public Notice 99-4 Sampling Plan Guidance
- ▶ Public Notice 93-2 & 01-01 Testing Guidance
- ▶ Small Dredger Programmatic Alternatives Analysis
- ▶ Integrated Alternatives Analysis
- ▶ Other interesting information

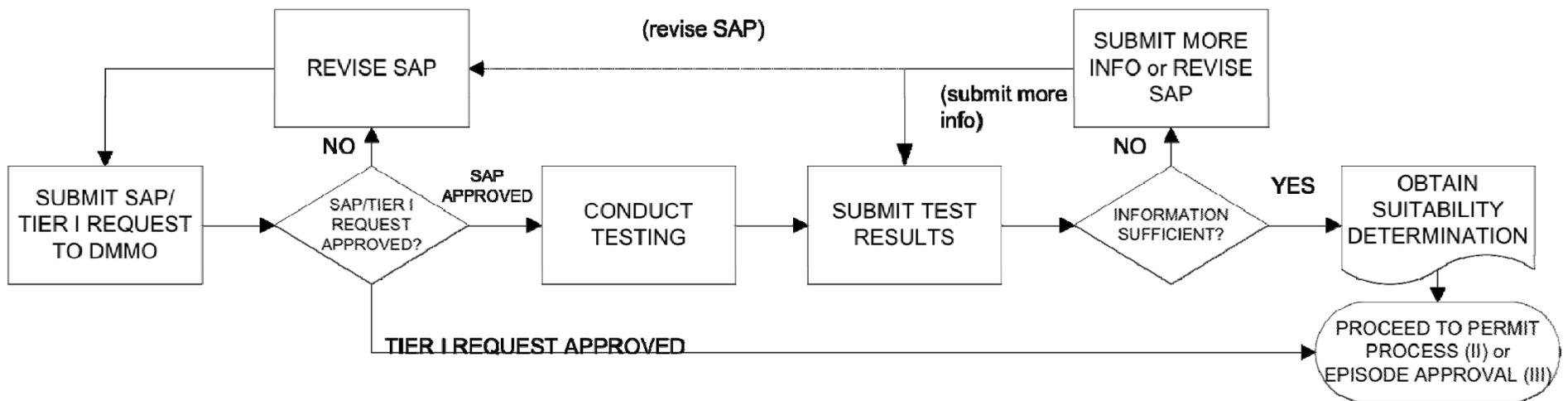


Timelines – 2–6 months



- ▶ Submit Tier One requests, Sampling Plans, Test Results one week before meeting
- ▶ DMMO reviews with sponsor at meeting
- ▶ Not complete or issues? May need to Revisit
- ▶ DMMO (Corps) writes a letter of approval/suitability
- ▶ The results of Tier One/testing is required for BCDC permit, water quality certification and episode approval

The testing Process...



Tier One Exclusion from Testing

- ▶ Consistently clean sediment with sediment testing history
- ▶ Sand (80%)
- ▶ “Small” volume, no anticipated contaminants
- ▶ Adjacent location, knockdowns
- ▶ Confirmatory chemistry
- ▶ Stormdrains are an exception



Sampling Analysis Plan

- ▶ Proposed testing program for episode or project
- ▶ Correct number of samples per volume
- ▶ Map of project footprint defined with bathymetry, sample points and is legible
- ▶ Chemical and biological testing parameters and protocols
- ▶ Disposal site considerations
- ▶ Double sided

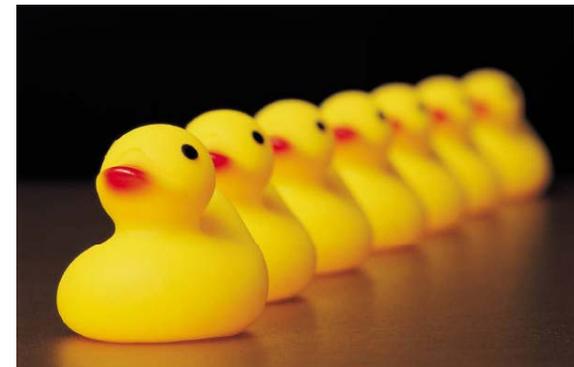
Testing Parameters

- ▶ Project footprint – total project or section
- ▶ To design depth plus over dredge depth
- ▶ Sometimes a “Z” layer is required
- ▶ Good for approximately three years
- ▶ Exceptions:
 - ✓ Environmental Events – oil or chemical spills
 - ✓ History of contaminants
 - ✓ Excessive Sedimentation



Disposal Options

- ▶ Testing for all options is wise
- ▶ In Bay disposal – Alcatraz, San Pablo, Carquinez and Suisun – Tier One, Full ITM
- ▶ The Ocean – SFDODS – Tier III+ Bioaccumulation (Green Book)
- ▶ Beneficial Reuse – Site Specific Requirements
- ▶ Alternatives Analysis

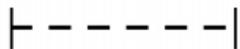


Pre-Dredge Testing Requirements for Disposal and Reuse Alternatives

Pre-Dredge Tests	Dredged Material Disposal and Reuse Alternatives			
	In-Bay	Ocean	Wetland	Upland, Levee, etc.
Sediment Chemistry	-----			
Elutriate Chemistry ¹			-----	
Leachate Chemistry ²			-----	
Benthic Bioassay ³	-----			-----
Elutriate Bioassay ⁴	-----			-----
Benthic Bioaccumulation ⁵	-----			



Required tests are shown with solid lines.



Dashed lines indicate a test may be required under certain conditions. (See footnotes)

¹ Required if project will discharge dredged material decant water

² Required for wetland foundation material

³ May be required for levee or other upland use if material will be in contact with human or ecological receptors

⁴ Required if project will discharge dredged material decant water

⁵ Required for ocean disposal; may be required for in-bay disposal if bioaccumulative compounds at concentrations above bay ambient levels are present

Sampling Analysis Results

- ▶ Tells us about your sediment....where can it go?
- ▶ Should include a comparison to ambient conditions
- ▶ Chemical are elevated – bioaccumulation, TMDL exceedences
- ▶ Biological toxicity – acute
- ▶ Weight of evidence approach
- ▶ Unacceptable sediment goes out of bay or upland
- ▶ Deviations from the Sampling Plan



**PRE-DREDGE
CHEMICAL TESTS**

DISPOSAL & REUSE ALTERNATIVES

**PRE-DREDGE
BIOLOGICAL TESTS**

