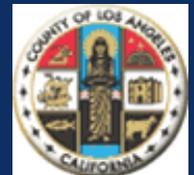




# Los Angeles Regional Dredged Material Management Plan:

## F3 Baseline/Future Without Project Conditions Report – F3 Conference



May 11, 2005

Presented By: Rob Blasberg

# F3 Milestone Goals

- Describe the existing and future conditions in the study area.
- Identify Problems and Opportunities
- Identify Planning Objectives
- Preliminary screening of alternatives
- Decision to proceed:
  - Consensus on the plans that may be considered in the final array of alternatives.

# Background- CSTF

- MOU signed in December 1994 by LA District, CA Coastal Commission, and LA County Beaches and Harbors.
- Marina del Rey Task Force formed to develop a Marina Del Rey dredge material management plan
- Contaminated Sediment Task Force (CSTF) Established in October 1995
- SB 673
  - To unify multi-agency policies regarding disposal management of the LA Basin's contaminated sediments
  - develop a long-term management plan for the dredging and disposal of LA Basin's contaminated dredged sediments.
  - Determine feasible disposal options for contaminated sediments including multi-user disposal facilities and beneficial reuse options
  - Develop plan for reducing contaminants at their source.

# CSTF Participants

- US Environmental Protection Agency
- US Army Corps of Engineers
- California Coastal Commission
- California Regional Water Quality Control Board - Los Angeles Region
- Los Angeles County Department of Beaches and Harbors
- California Department of Fish and Game
- Port of Los Angeles
- Port of Long Beach
- City of Long Beach
- Heal the Bay

\* Also DMMP sponsors

# DMMP Development Process

Management Alternatives for  
Contaminated Sediment from  
CSTF Strategy Report

+

=

Management Alternatives  
for Non-Contaminated  
Dredge Materials

**DMMP  
Feasibility  
Study**

# Background- Reconnaissance Phase

- Reconnaissance Study [905(b) WRDA 1986] Authorized by Congress, 29 September 1999.
- Purpose-
  - To determine if there is a federal interest in participating in a detailed Feasibility Study to develop a Regional Dredged Material Management Plan (DMMP) and to develop alternatives for multi-user disposal site(s) for the purpose of isolation and containment of contaminated dredged material originating from coastal/harbor waters of Los Angeles.
- Initiated March 17, 2000

# Background- Reconnaissance Phase

- District Engineer's Recommendation-
  - “The recommendation resulting from the reconnaissance level investigations is that the Los Angeles District proceed with a cost-shared Feasibility Study of Los Angeles Regional Dredged Material Management Plan.”
- 06 Nov 2000 HQUSACE approved study to proceed to Feasibility Phase.

# DMMP Local Sponsorship

- Port of Los Angeles
- City of Long Beach
- County of Los Angeles, Beaches and Harbors Department

# Estimated Costs (Feasibility study)

- **Total Study Cost \$3.9 Million**
- **Federal Share \$1.95 Million**
- **Non-Federal Share \$1.95 Million**
  - 100% In-Kind
- **Feasibility Cost Sharing Agreement executed 20 Sept 2002**

# Non-Federal In-Kind Services

- **Development of a regional sediment quality database**
- **Evaluation of Regional Sediment Quality Guidelines**
- **Development of a coordinated streamlined regulatory permitting and review process**
- **Assessment of best management practices**

# Feasibility Study

- Feasibility phase Initiated December 2002.
- F2 Public Workshop/NEPA Scoping meeting was held on 26 February 2003.

# DMMP Objective

Develop a plan for managing contaminated and non-contaminated dredged material originating from the ports and harbors of the Los Angeles Region.

# Regional Problem

- Need to dredge 2.5 million cy of contaminated sediments over the next 5 years.
- Lack of suitable disposal sites for contaminated dredged sediments.
- Cumulative impacts from dredging and disposal of contaminated sediments.
- No coordinated approach to dispose contaminated dredged sediments.

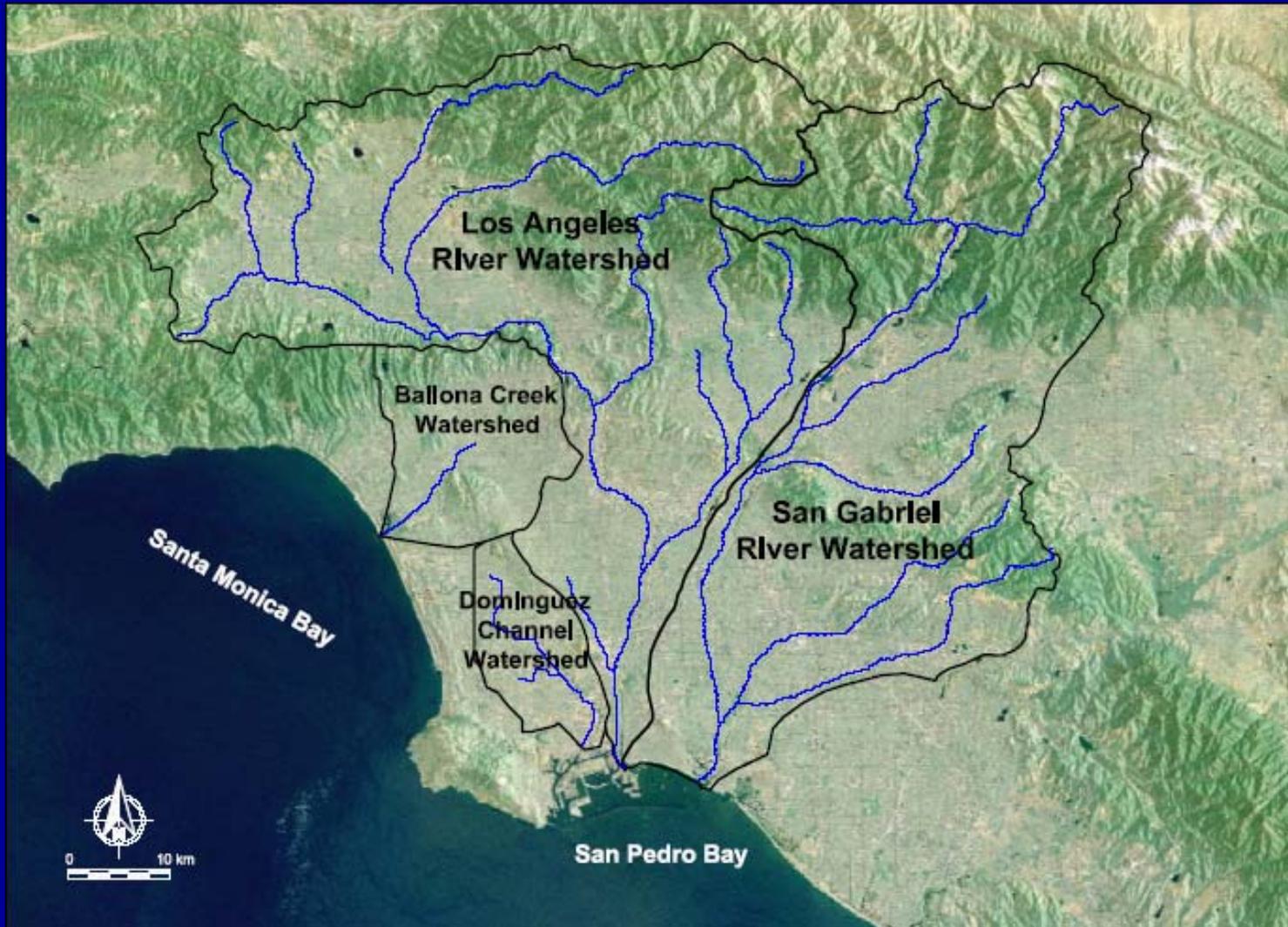
# DMMP Products

1. Recommendation for a regional disposal management plan
2. Identify regional disposal alternatives
3. Tiered approach for site selection for dredged sediment disposal
4. Consolidated plan for regulatory review
5. Chemical trigger levels for sediment testing and disposal site selection
6. Best management practices for dredging and disposal
7. Identify environmental restoration and/or enhancement opportunities
8. Prepare detailed cost estimates for identified disposal alternatives
9. Programmatic EIS

# DMMP Study Area



# LA County Watersheds



# Marina del Rey



# Marina del Rey

- **50,000 to 100,000 cubic meters of dredged material per year.**
- **Physical Characteristics-**
  - **Sands- 51.2 to 97.3%. Average 79.3%**
  - **Silts- 1% to 67%. Average 25.5%**
  - **Clays- <1% to 59.5%. Average 17%**
- **Chemical and Toxicological Characteristics-**
  - **Inorganic compounds**
  - **Semi-volatile organic concentrations**
  - **DDT and PCB's**
- **Approximately 25% of total volume assumed to be contaminated.**

# Future w/out Project Conditions

## Est. Dredging Cost - Marina del Rey

Percent of Contaminated Sediment Disposed Upland <sup>1</sup>	0	20	40	60	80	100
Maintenance Costs <sup>2</sup> If:						
Total Volume = 50,000 m <sup>3</sup>	\$775,000	\$1,100,000	\$1,425,000	\$1,750,000	\$2,075,000	\$2,400,000
Total Volume = 100,000 m <sup>3</sup>	\$1,550,000	\$2,200,000	\$2,850,000	\$3,500,000	\$4,150,000	\$4,800,000
<b>Average Cost Per Year</b>	<b>\$1,162,500</b>	<b>\$1,650,000</b>	<b>\$2,137,500</b>	<b>\$2,625,000</b>	<b>\$3,112,500</b>	<b>\$3,600,000</b>

1. Assume 25% contaminated
2. Based on \$14/m<sup>3</sup> dredge and ocean or beach disposal of clean material, and \$20/m<sup>3</sup> of contaminated material to the NEIBP. Estimate taken from USACE 2003b, Operation and Maintenance, Table 5, and Attachment C, page 1, respectively.

# Port of Los Angeles



# Port of LA

- **Future Maintenance Dredging**
  - 44,000 – 85,000 cubic meters per year.
- **Future Capital Improvements**
  - 429,000 to 3.4 million cubic meters
- **Physical Characteristics**
  - Sands- 2% to 99%. Average 55%
  - Silts- 0% to 80%. Average 28%
  - Clays- 0% to 47%. Average 2%
- **Chemical and Toxicological Characteristics-**
  - Inorganic compounds
  - Semi-volatile organic concentrations
  - DDT and PCB's
- **Assume 100% maintenance dredging contaminated.**
- **Assume 53% capital improvement dredging contaminated.**

# Future w/out Project Conditions

## Est. Dredging Cost – Port of LA

Percent of Contaminated Sediment Disposed Upland <sup>1</sup>	0	20	40	60	80	100
Maintenance Costs <sup>2</sup> If:						
Total Volume = 44,000 m <sup>3</sup>	\$484,000	\$1,707,200	\$2,930,400	\$4,153,600	\$5,376,800	\$6,600,000
Total Volume = 85,000 m <sup>3</sup>	\$934,100	\$3,294,900	\$5,655,700	\$8,016,400	\$10,377,200	\$12,738,000
<b>Average Cost Per Year</b>	<b>\$709,000</b>	<b>\$2,501,000</b>	<b>\$4,293,000</b>	<b>\$6,085,000</b>	<b>\$7,877,000</b>	<b>\$9,669,000</b>

1. POLA (100% contaminated)
2. Based on \$11/m<sup>3</sup> disposal of contaminated material to a local site of opportunity. Source: USACE Coastal Engineering.

# Port of Long Beach



# Future w/out Project Conditions

## Est. Dredging Cost – Port of LB

Percent of Contaminated Sediment Disposed Upland <sup>1</sup>	0	20	40	60	80	100
Maintenance Costs <sup>2</sup> If:						
Total Volume = 31,000 m <sup>3</sup>	\$341,000	\$1,202,800	\$2,064,600	\$2,926,400	\$3,788,200	\$4,650,000
Total Volume = 71,000 m <sup>3</sup>	\$780,900	\$2,754,400	\$4,727,900	\$6,701,500	\$8,675,000	\$10,648,500
<b>Average Cost Per Year</b>	<b>\$560,900</b>	<b>\$1,978,600</b>	<b>\$3,396,300</b>	<b>\$4,813,900</b>	<b>\$6,231,600</b>	<b>\$7,649,300</b>

1. POLB (100% contaminated)

2. Based on \$11/m<sup>3</sup> disposal of contaminated material to a local site of opportunity. Source: USACE Coastal Engineering.

# Los Angeles River Estuary



# Future w/out Project Conditions

## Est. Dredging Cost – LARE

Percent of Contaminated Sediment Disposed Upland <sup>1</sup>	0	20	40	60	80	100
Maintenance Costs <sup>2</sup> If:						
<b>Total Volume = 86,000 m<sup>3</sup></b>	<b>\$1,032,000</b>	<b>\$1,744,100</b>	<b>\$2,456,200</b>	<b>\$3,168,200</b>	<b>\$3,880,300</b>	<b>\$4,592,400</b>

1. LARE (30% contaminated)

2. Based on \$12/m<sup>3</sup> dredge and disposal of all material to a local site of opportunity. Source: USACE Coastal Engineering.

# Existing/Baseline Conditions

## Historic Dredge Volumes

Location	Period of Available Record	Maintenance Dredging		Capital Improvement Dredging	
		(m <sup>3</sup> )	(m <sup>3</sup> /year)	(m <sup>3</sup> )	(m <sup>3</sup> /year)
Marina del Rey	1969-1999	1,469,000	49,000	-	-
Port of Los Angeles	1978-2002	2,028,000	85,000	57,563,000	3,386,000
Port of Long Beach	1976-2003	1,851,000	71,000	14,170,000	664,000
Los Angeles River Estuary	1979-2001	1,213,000	86,000 <sup>1</sup>	-	-
Alamitos Bay	1994-2002	111,000	14,000	-	-
	<b>Regional Total</b>	<b>6,672,000</b>	<b>305,000</b>	<b>71,733,000</b>	<b>4,050,000</b>

1. Rate based on records between 1990 and 2001.

# Existing/Baseline Conditions

## Historic Disposal Methods

Disposal Method	Marina del Rey (m <sup>3</sup> )	Port of Los Angeles (m <sup>3</sup> )	Port of Long Beach (m <sup>3</sup> )	LA River Estuary (m <sup>3</sup> )	Alamitos Bay (m <sup>3</sup> )	Regional Total (m <sup>3</sup> )	Percent of Total
Harbor Infill	438,000	41,133,000	4,650,000	410,000	-	46,631,000	60%
Open Ocean	40,000	3,154,000	5,661,000	297,000	-	9,152,000	12%
Nearshore Open Water	16,000	36,000	4,970,000	395,000	-	5,417,000	7%
Beach Fill	931,000	-	-	-	111,000	1,042,000	1%
Shallow Water Habitat	44,000	2,572,000	-	-	-	2,616,000	3%
Stock Piling	-	245,000	739,000	-	-	984,000	1%
Mixed <sup>1</sup>	-	12,435,000	-	-	-	12,435,000	16%
Unspecified	-	17,000	-	111,000	-	128,000	0%

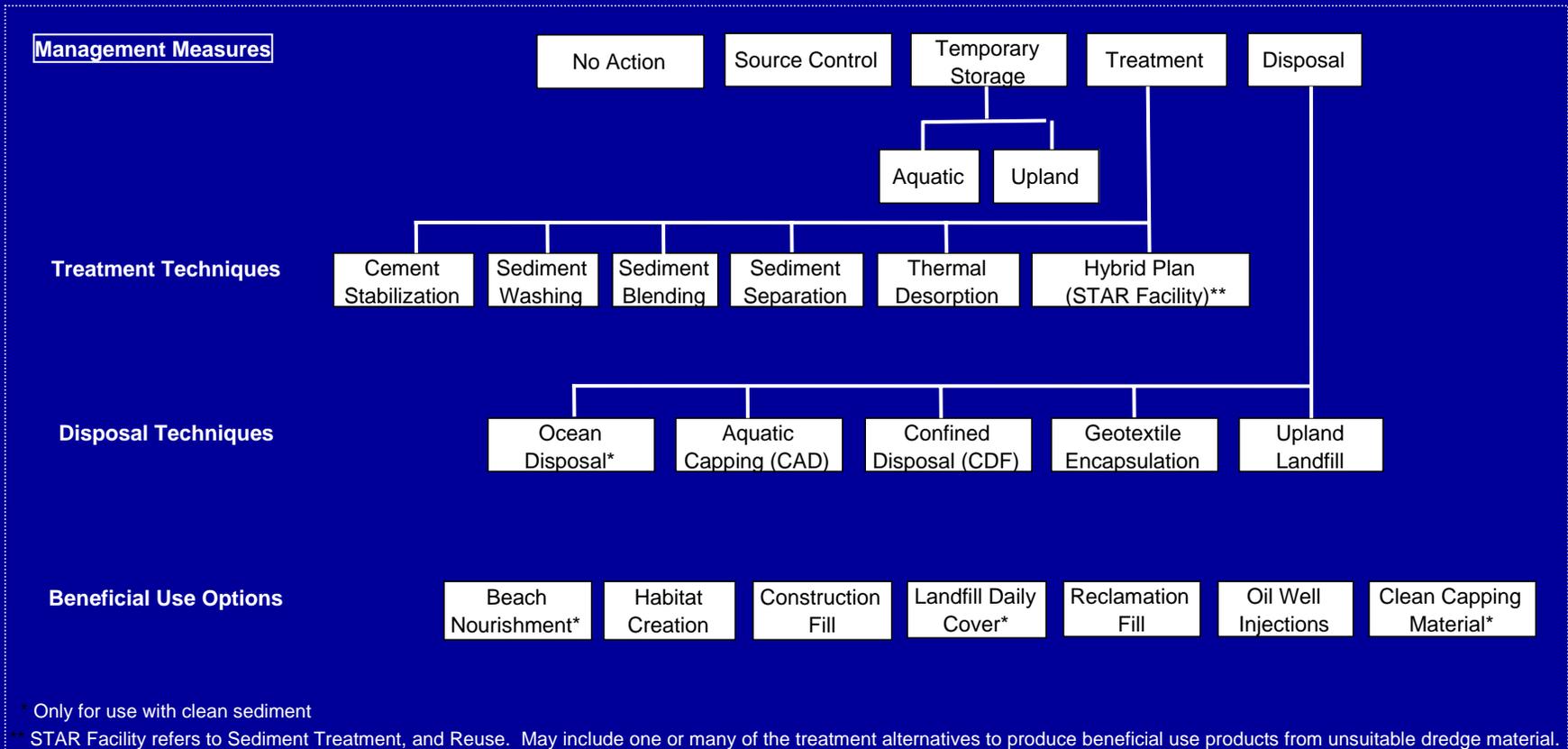
1. Disposal recorded as either harbor infill or shallow water habitat (not differentiated).

# Future w/out Project Conditions

## 20-Yr Projected Sediment Generation

Location	Projected 20-Year Total Volume (million m <sup>3</sup> )	Projected 20-Year Total Contaminated Volume (million m <sup>3</sup> )
Marina del Rey	1 – 2	0.25 – 0.50
King Harbor	0	0
Port of Los Angeles	9.46 – 51.5	5.5 – 28.5
Port of Long Beach	2.22 – 25.2	1.8 – 18.7
Los Angeles River Estuary	1.7	0.43 – 1.7
Alamitos Bay	0.43	0.04
<b>Regional Total</b>	<b>14.8 – 80.8</b>	<b>8.0 – 49.4</b>

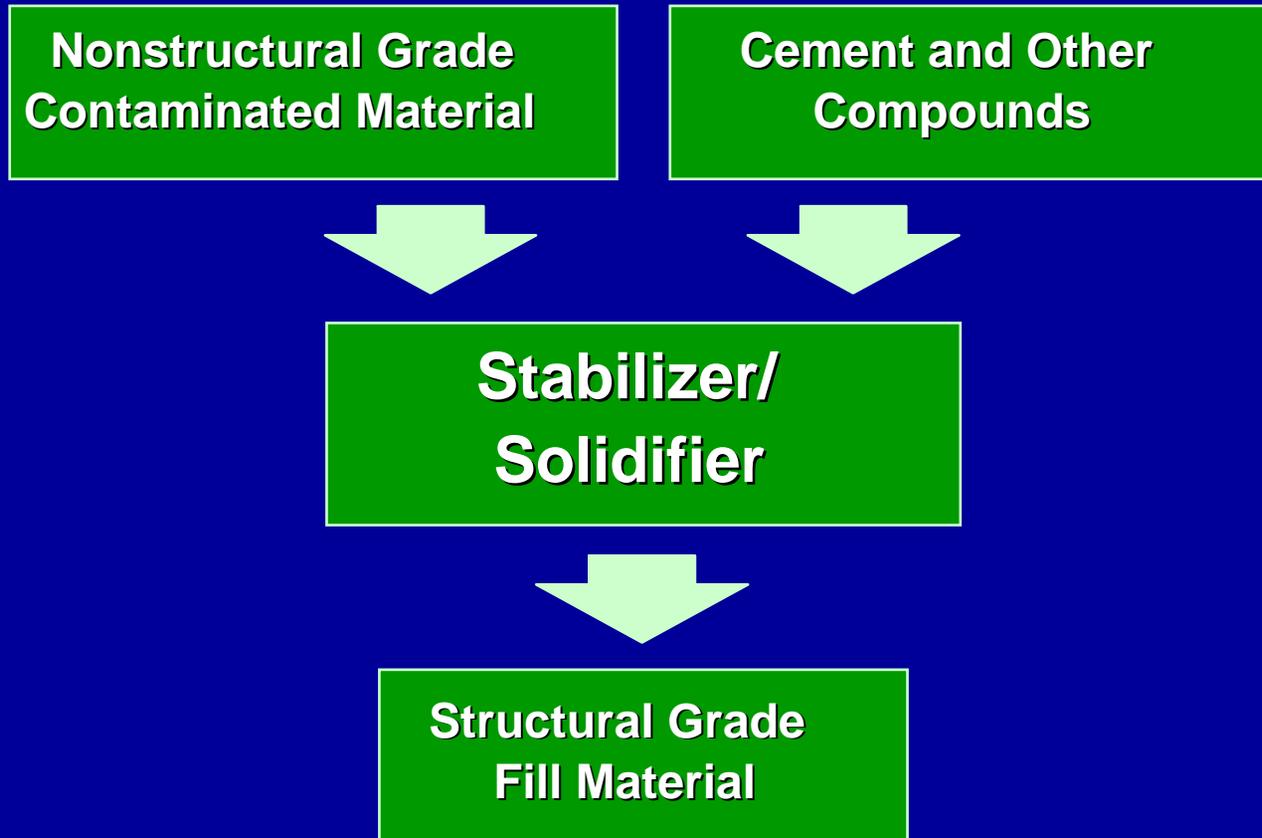
# Preliminarily Identified Management Measures



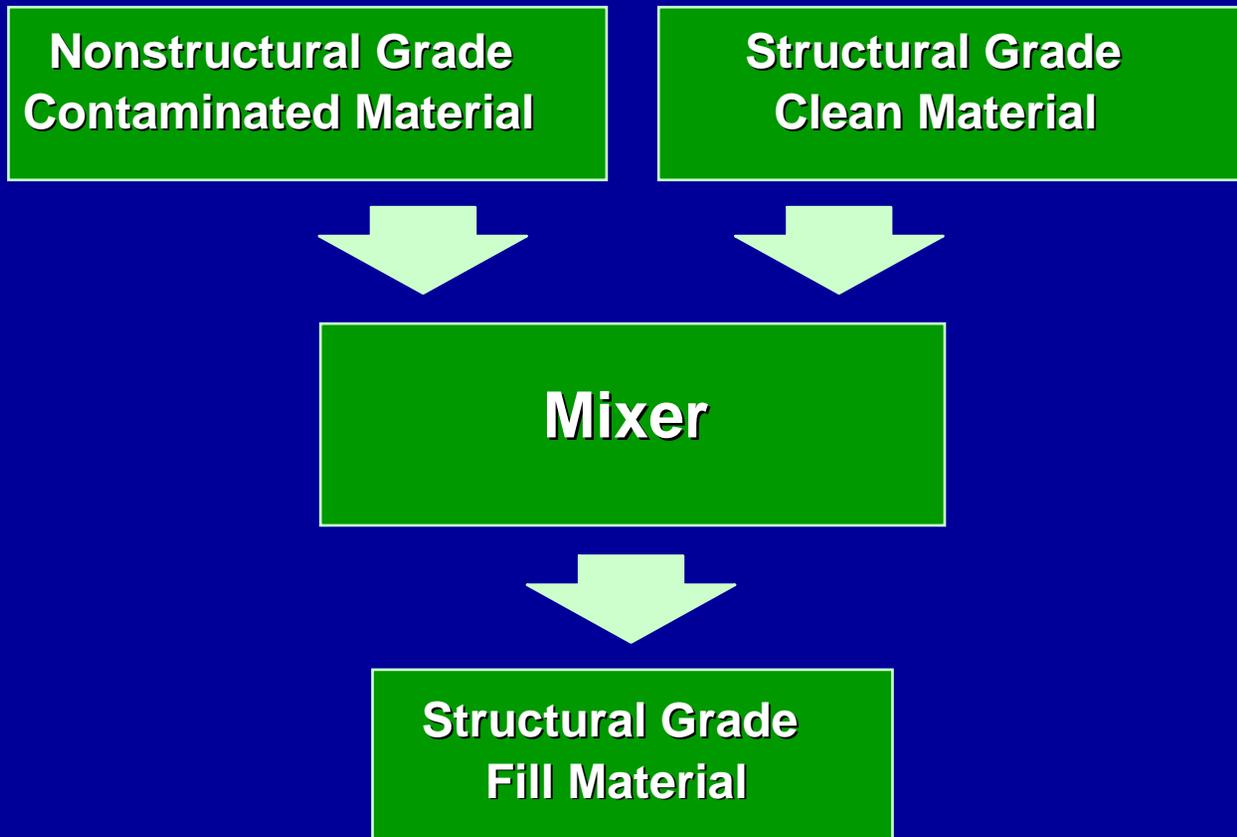
# Preliminarily Identified Management Measures- Treatment

- **Cement Stabilization/Solidification**
- **Sediment Washing**
- **Sediment Blending**
- **Physical Separation**
- **Thermal Desorption**
- **Multi-User Regional Processing Facility**

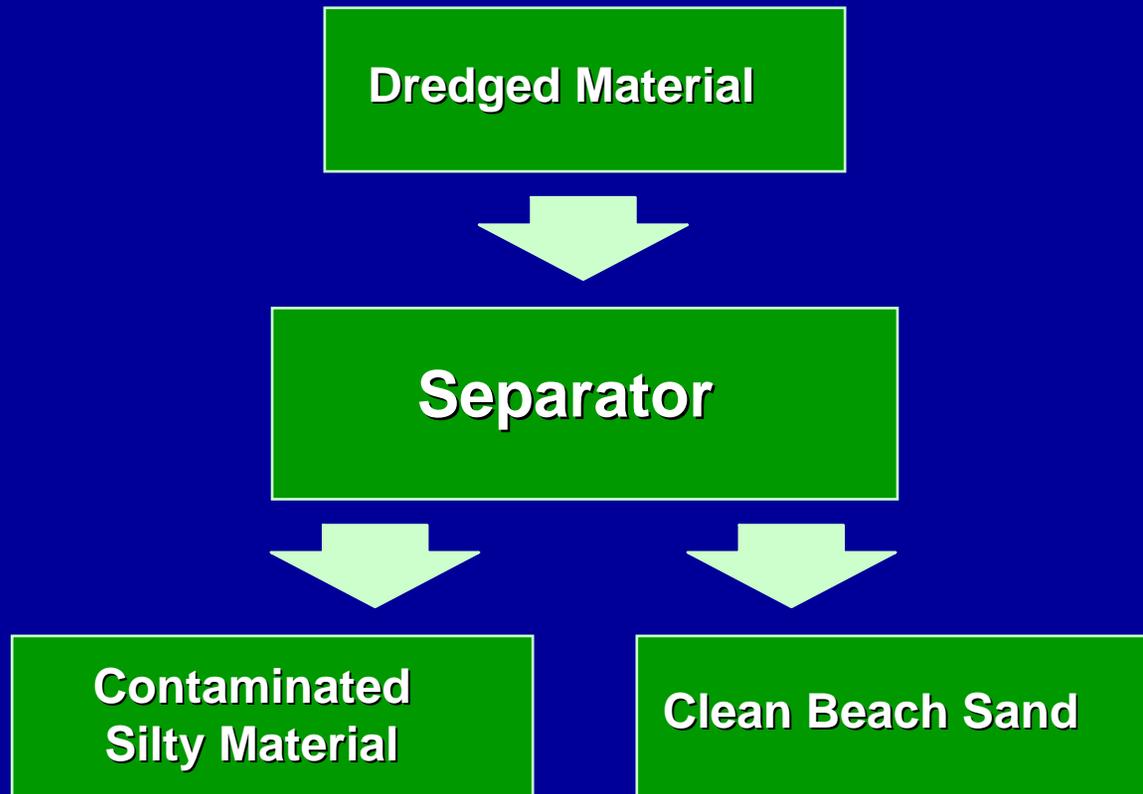
## Concrete Stabilization/Solidification



## Sediment Blending



## Physical Separation



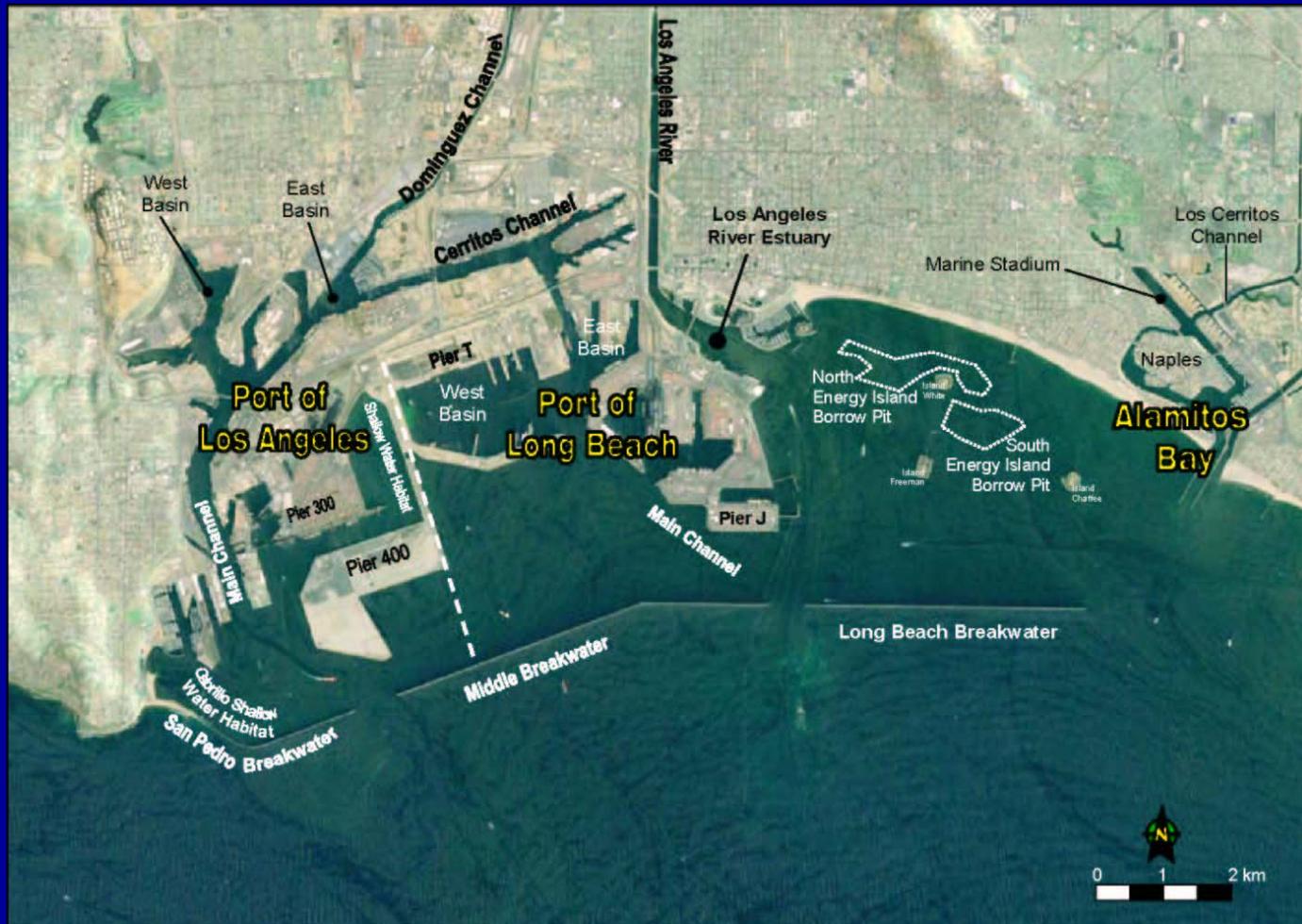
# Multi-User Regional Processing Facility

- Place where dredge materials can be stored and treated for upland beneficial uses
- Dilute capital development costs over multiple years to reduce treatment costs per project
- Located near dredging activities
- Goal to separate clean sand from contaminated silts.
- Sand reused for beach nourishment, fines mixed with cement for nearshore fill.

# Preliminarily Identified Management Measures- Disposal

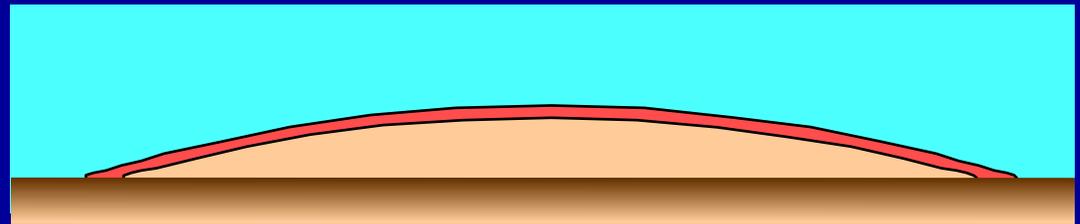
- Ocean Disposal
- Aquatic Disposal and Capping
- Confined Disposal Facility
- Upland Landfill

# Aquatic Disposal & Capping



# Aquatic Disposal & Capping

Level Bottom Capping



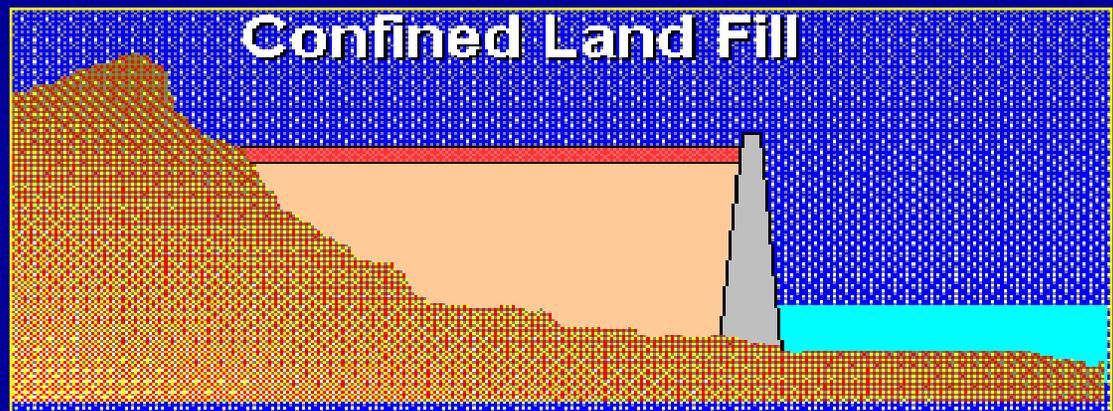
Contained Aquatic Disposal



-  Dredged Material
-  Cap Material

# Confined Disposal Facilities

- Dredged Material
- Cap Material
- Dike Material
- Revetment



# Upland Landfill Sites



# Upland Landfill Sites



**ARIZONA/NEVADA  
LANDFILLS**

# DMMP Study Next Steps

- **FY 2005**
  - Site Plan for STAR Facility
  - Bench Scale Sand Separation Studies
  - Detailed Plan Formulation
  - Initiate Programmatic EIS
- **FY 2006**
  - Pilot study for STAR Facility
  - Complete Plan Formulation
- **Final DMMP document expected end of FY 2006.**



**TRUST**



**SPI**

**QUALITY**

**TEAMWORK**