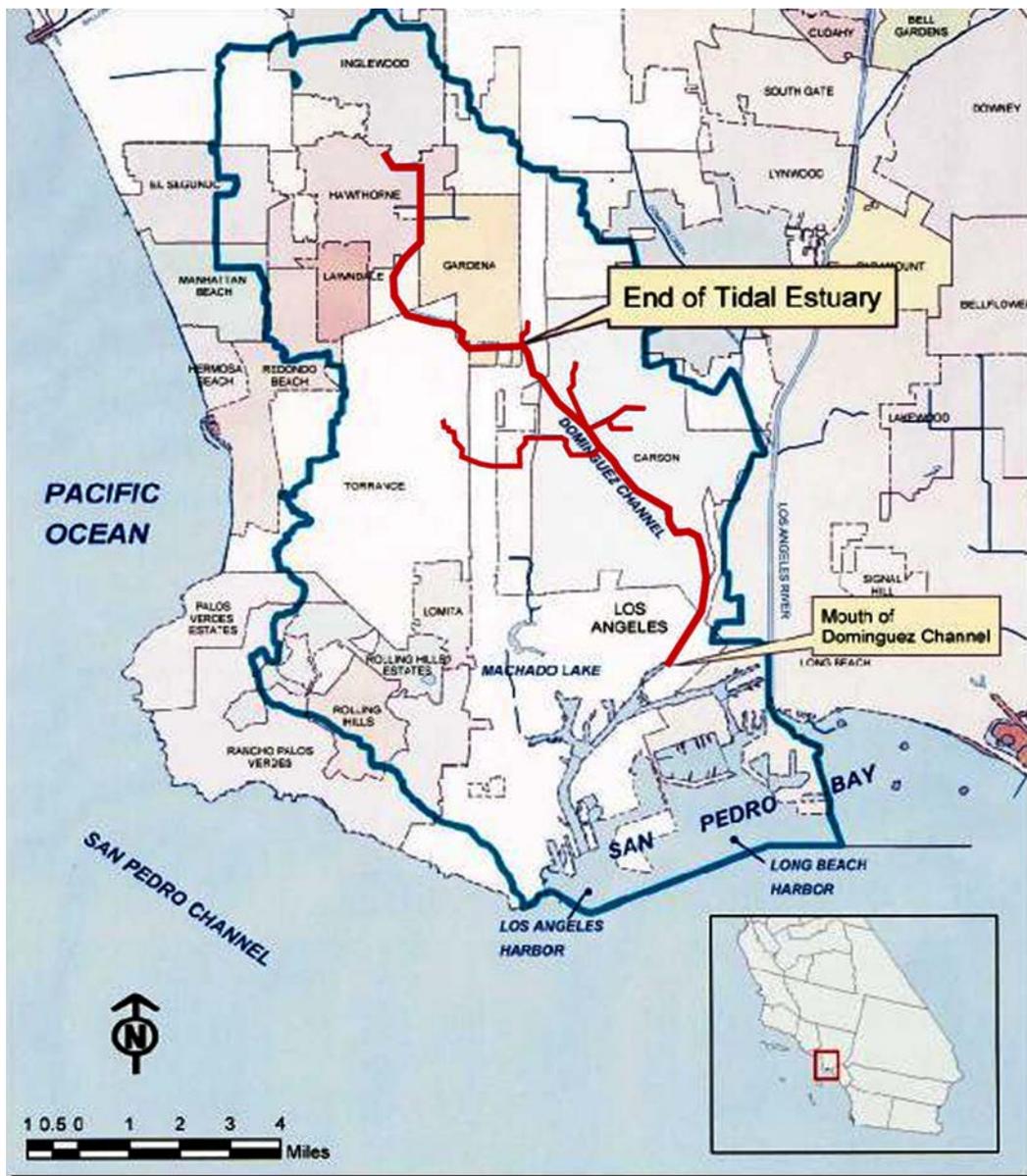


AAPA Dredging and Sediment Management Port of Los Angeles



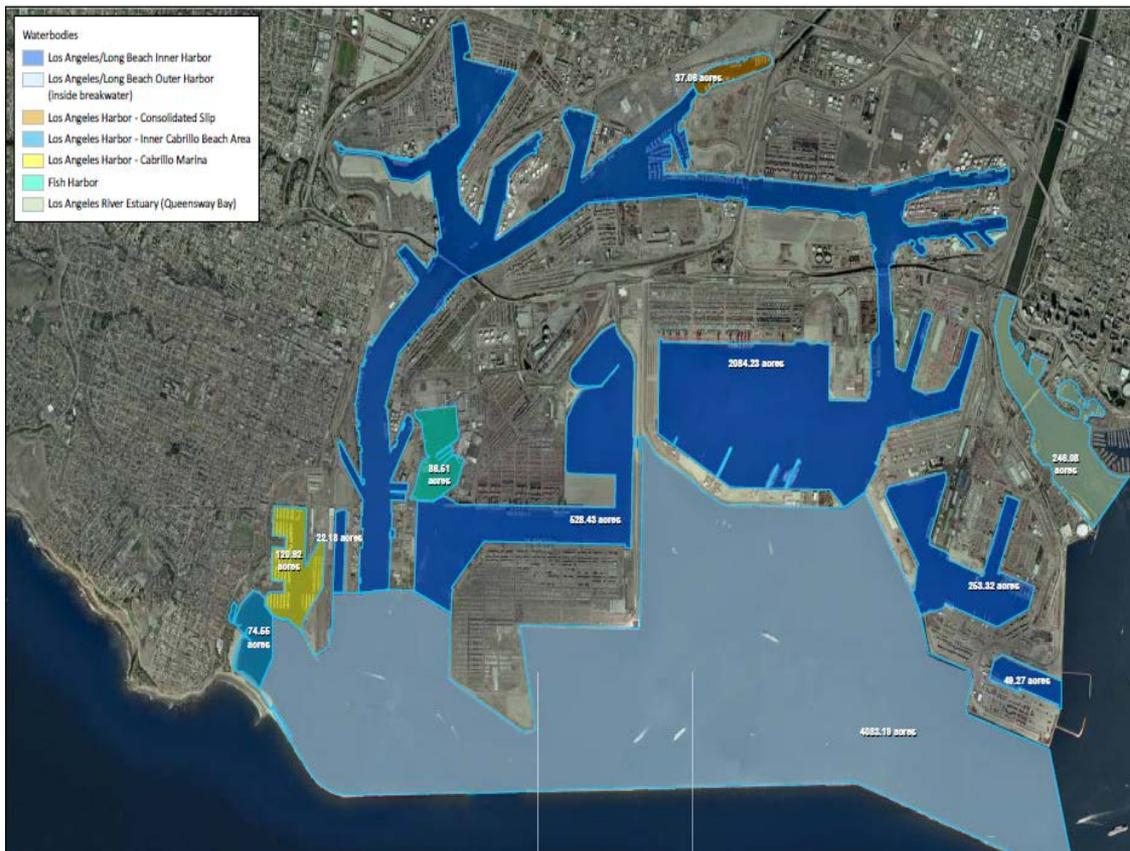
Dominguez Watershed



- 132-sq mile watershed
- Los Angeles/Long Beach Harbors are the receiving waters
- Dominguez Channel is largest stormwater input
- Additional inputs from LA River and San Gabriel River watersheds into eastern San Pedro Bay
- Complex hydrodynamics

Harbor Toxics TMDL

- Encompasses over 50 303(d) listed impairments
 - Metals and organics
 - Sediment and fish tissue-based
 - Multiple water bodies
 - Includes an Implementation Plan
- Unrealistically low numeric targets
- Alternative compliance using Statewide Sediment Quality Objectives (SQO) Part 1 (direct/ecological effects) and Part 2 (indirect/human health effects)



Challenge/Issue

- To meet numeric targets in Harbor Toxics TMDL, Ports would have to dredge entire harbor
 - PCB levels in fish tissue are the ultimate driver
 - TMDL incorrectly assumes a direct linkage between sediment contaminant concentrations and fish tissue concentrations
- Alternative compliance through SQOs is not nailed down at this point
 - SQO Part 2 (Indirect effects) not completed
 - Interpretation of SQO results in terms of TMDL compliance is subjective at this point – no solid guidance developed

Obstacles

- Lack of science to adequately understand nexus between sediments and fish tissue, fish movement (i.e., in and out of harbor complex), sediment transport, etc.
- SQO Part 2 Indirect Effects not completed
- Conflicting standards between TMDL and Superfund site adjacent to harbor complex



Solutions

- Formation of Harbor Toxics Work Group
 - Comprised of two ports, Regional Water Quality Control Board and State Water Resources Control Board
 - Ports funding multiple special studies as well as hydrodynamic/bioaccumulation models to assist agencies in completing SQO Part 2 and to inform the TMDL
 - All special studies/modeling vetted through agencies
 - Opportunity to modify TMDL during reopener in 2018
- Ports will utilize TMDL monitoring data, special studies results, and modeling scenarios to assist in making sediment management decisions
- Intent is to identify hot spots for management action

Potential AAPA Impacts/Involvement

- Share similar experiences/TMDL compliance strategies among ports
- Potential WRRDA/HMT funding for TMDL-driven sediment remediation?
- Need for more consistency on a national level regarding sediment clean up targets/TMDL compliance strategies

AAPA Dredging and Sediment Management Port of Baltimore





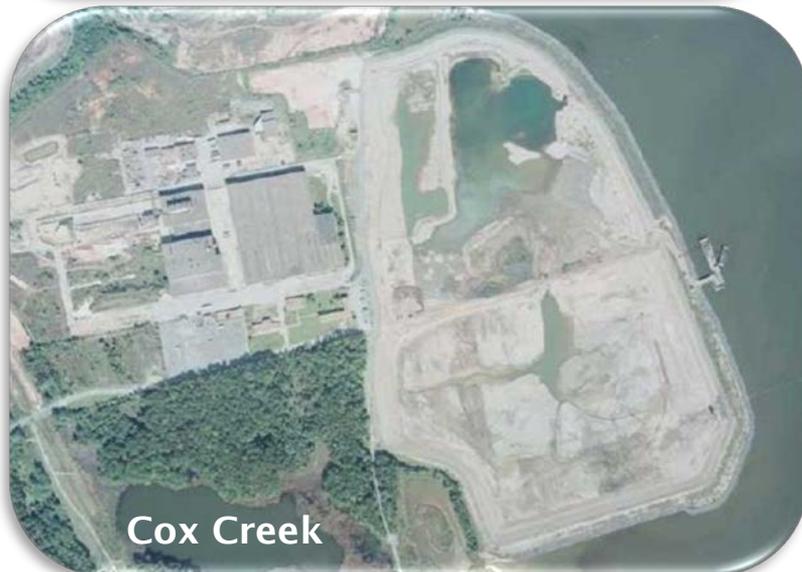
Port Environment

- Baltimore Harbor requires annual maintenance dredging:
 - ~1.5 mcy annually.
 - Legislation requires Baltimore Harbor material to be confined or beneficially/innovatively reused.
- Maintaining a cost-effective, environmentally- sensitive, community supported dredging program is an ongoing challenge:
 - Less expensive options have been exhausted.
 - Existing placement sites have finite capacity.
 - Future placement sites are limited.

Challenge/Issue



- Implementation of a beneficial/innovative reuse program to offset Baltimore Harbor dredged material placement capacity shortfalls:
 - The Port of Baltimore has been working on implementation for over 10 year.
 - Development of an Innovative Reuse Committee.
 - Implemented several demonstration projects.



Obstacles

- Maryland does not have numerical standards for the use of dredged material
 - All Harbor material regardless of contaminate level, is managed as if contaminated
- Maryland encourages beneficial/ innovative reuse as a management strategy for dredged material, but does not have a regulatory framework for implementation.
- Public perception issue surrounding the reuse of Baltimore Harbor dredged material.

Solutions



- Coordination with regulatory and resource agencies to implement numerical standards and a regulatory framework for the use of dredged material.
- Continuing coordination with the Innovative Reuse Committee to gain public support.

Potential AAPA Impacts/Involvement

- Restrictive legislation and regulations create additional challenges and costs associated with maintaining a thriving port.
- There is no continuity with regards to regulating dredge material.

AAPA Dredging and Sediment Management Port of Portland



**PORT OF
PORTLAND**

Possibility. In every direction.®

Port of Portland Marine Environment

Two Rivers in Portland, Oregon

100 miles from Pacific Ocean

Species: Salmon, Smelt, Marine Mammals, Larks, Lamprey

Portland Harbor Superfund Site



Sediment ~~Woes~~ Opportunities in Oregon

Inconsistent/contradictory regulation and management

Department of State Lands calls it an *article of commerce* and charges royalties

DEQ passed legislation for *beneficial reuse*—sued 3 times

Natural Resource agencies want clean sediment returned to the river due to *sediment starvation*

Continual regulatory personnel turn-over and reorganization

Department of Environmental Quality calls it *solid waste* and charges to dispose in a landfill

Natural Resource Agencies cannot reasonably determine what *clean* is—especially in the area of bioaccumulation

County has a *ban* on placement over 5K cy in-water

USACE calls it a *resource* and requires re-use

Anti-degradation policy

Obstacles to Resolution

- Sediment Chemistry, aquatic toxicology, and eco/human risk are tricky—especially related to food consumption, ESA, and cultural heritage
- Background levels are high for some metals and PCBs and legacy pesticides are ubiquitous
- In addition to two federal NR agencies and other agencies, two states and an aggressive city weigh in
- Pristine conditions are believed to be achievable



Steps to Solutions

Long history working on the Sediment-as-Solid Waste-Issue with DEQ—path to the Governor

Pacific Northwest Waterways Ass'n: good partner convening federal agencies

Clarity, education and persistence: Glimmers of Hope with first in-water placement, underwater grading, and terminal permit and master SAP

Project Sediment Evaluation Team: significant improvements implementing Sediment Evaluation Framework

Sediments are getting cleaner

Local Issues Affect All

- ❖ Pressures from ESA, tribes, local interests, states, local jurisdictions result in a maze of changing interests and regulations
- ❖ Certainty and predictability are elusive for dredging and placement
- ❖ Shrinking work windows and impending lawsuits result in fewer contractors when we need them
- ❖ We NEED standard, consistent regulation across the country based on science and peer-reviewed adaptive management
- ❖ We NEED a way to share data on sediment quality, aquatic impacts, mitigation requested, mitigation success, and other metrics to improve our abilities to manage our Ports—and improve human health and the environment, both regionally and nationally

Questions?
Hold until the end of all presentations
THANK YOU!

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503.679.9485 (cell)

2014/09/10



PORT NOLA

THE PORT OF NEW ORLEANS

A Global Reach, A Greener Future

Louisiana Coastal Master Plan and Mississippi River Dredging

AAPA Environment and Energy Seminar
September 17, 2014

Amelia Pellegrin, AICP, LEED AP
Environmental Services Manager
Port of New Orleans
pellegrina@portno.com

State Coastal Master Plan (2012)

50-Year, \$50 Billion Plan

Create up to 109,000 Jobs

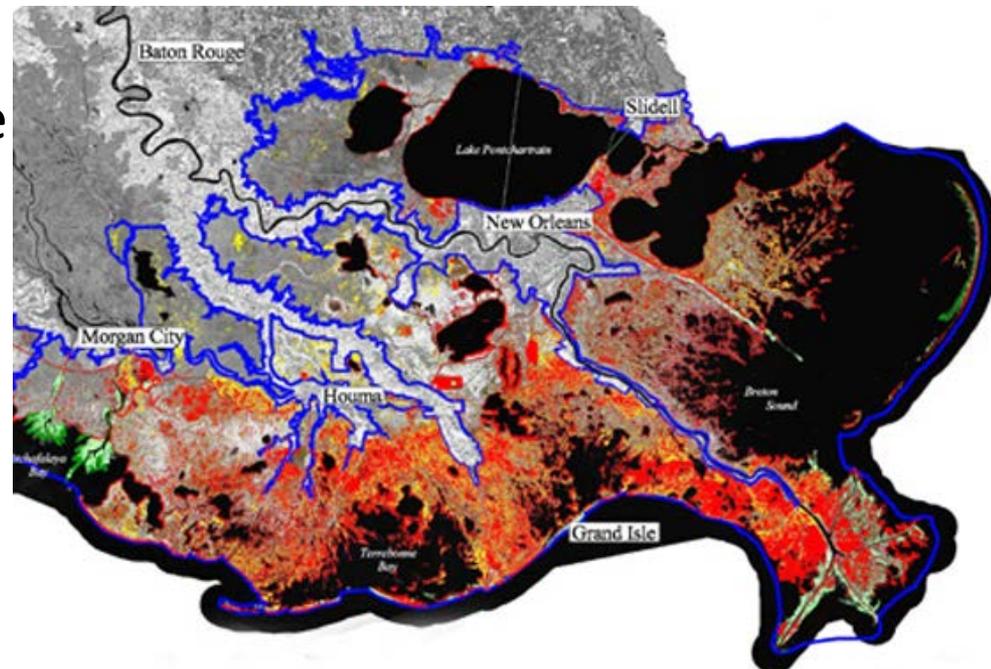
\$757 Million in Annual Revenue

\$13 Billion in Spending

\$3.6 Billion in Earnings



Coastal Protection and
Restoration Authority of Louisiana



*A Global Reach, A **Greener** Future*

WORLD'S LARGEST PORT SYSTEM



- 5 deepwater ports along 290-mile stretch of River.
- More than 12,000 vessel traverses on Lower Mississippi River
- 500 million tons of cargo annually on the LMR
- 60 percent of the nation's grain for export
- 20 percent of the nation's coal and petroleum products.



Impact of Deepening to 50 Feet



Create \$11.49 Billion U.S. Production

Generate 17,000 New Jobs

\$849 Million Increased Income

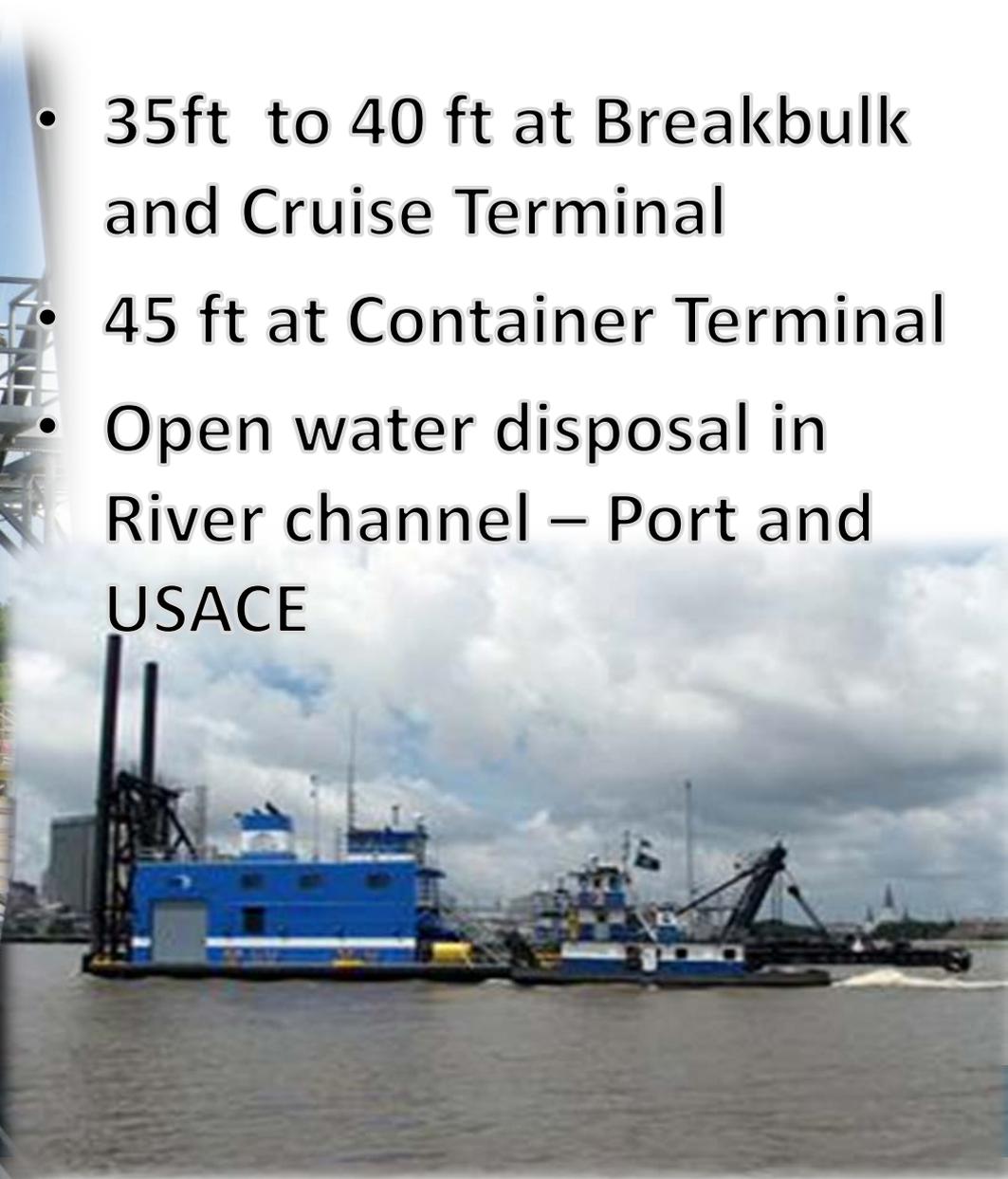
Generate \$89.40 for every \$1 spent

Increase Competitiveness of US Exporters



Maintenance Dredging

- 35ft to 40 ft at Breakbulk and Cruise Terminal
- 45 ft at Container Terminal
- Open water disposal in River channel – Port and USACE



Hydrodynamic and Delta Management Study

- How will locations and combinations of diversions affect:
 - river flow
 - sediment availability
 - flood protection
 - fisheries
 - navigation
- Systems thinking and adaptive management strategies needed



Thank You



PORT NOLA
THE PORT OF NEW ORLEANS
www.portno.com

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Environmental Services Manager
Port of New Orleans
pellegrina@portno.com

Terminal 91 –Berth Maintenance Dredging

Paul Meyer

Manager, Environmental Permitting and
compliance

Port of Seattle

Port 
of Seattle®

Current Site Use



Previous Site Use



Law of Un-intended Consequences



Figure 5-1 20mm Discarded Military Mmunition Item and 20mm Empty Casing Held by Diver Upon Discovery



Former Seattle Naval Supply Depot
Piers 90 and 91 – Port of Seattle
Seattle, WA

Formerly Used Defense Site
#F10WA012501

Remedial Investigation
Draft Final Report

Contract No.: W9128F-10-D-0058
Delivery Order 04

May 2013

Figure 5-2 Condition of 5-Inch Projectile Upon Discovery and After Cleaning Prior to Disposition



Photograph of a 5in Projectile encrusted with growth on the seafloor



Photograph of the item on the surface after removal of sea growth

Back at Ranch

- Simple task
- Permit a maintenance dredge project to remove about 2000 cubic yards of shoaled sediment



No Problem

- Submitted JARPA 7/13
- Arranged to meet with DMMO 8/22/13
- Conventional bucket dredge



DMMO meeting

- Meeting - large cast of characters including RCRA waste spokesperson, lawyers etc
- Uh-oh.



Sediment sampling results

- Core sample Contained 47 ppm PCB



Alternatives

1. Open-water Disposal
2. Upland Disposal
3. On-Site Repositioning



Alternative 1: Open-Water Disposal

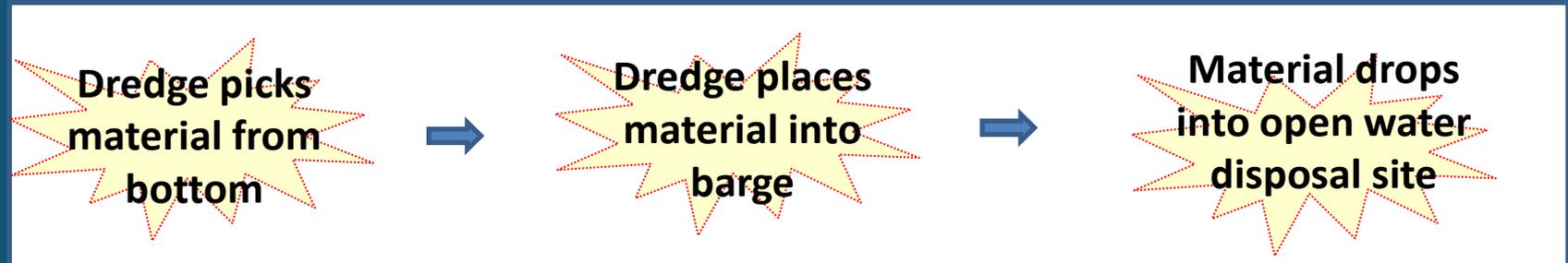
- Sequence: Dredge, place in bottom dump barge, transport to Elliott Bay Disposal Site and release.
- Assumes: Material is suitable based on chemical analysis and DMM accepted by DNR for disposal.



Pro: Limits contact with material

Con: DMM moved out of RI/FS area

Open-Water (Elliott Bay) Disposal Potential DMM Encounters



Alternative 2: Upland Disposal

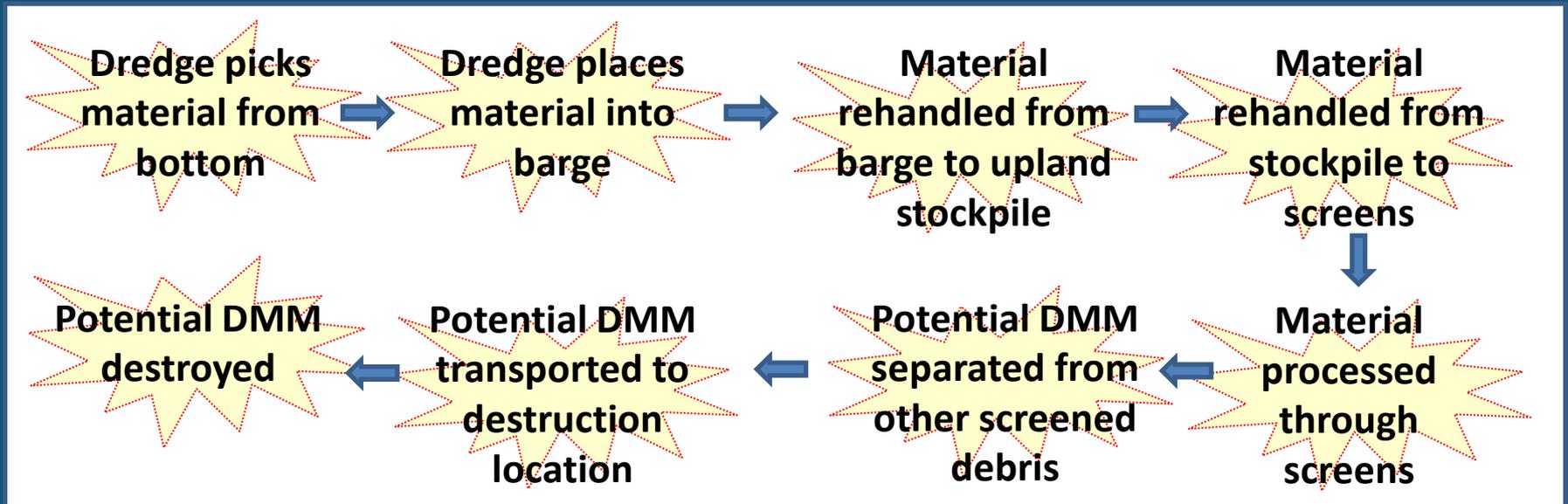
- Sequence: dredge, place in barge, haul to offload site, offload, remove non-sediment items, remove DMM, transport DMM to destruction site, transport debris to landfill, process/dispose sediment & water.
- Assumes: Material unsuitable or not accepted by DNR for Elliott Bay site



- Pro: Permanent removal of DMM/debris/rock/sediment from berth.
- Con: Complex processing/sorting; significant above water contact with DMM; specialized/costly disposal; multi-waste streams; DMM moved out of RI/FS area.

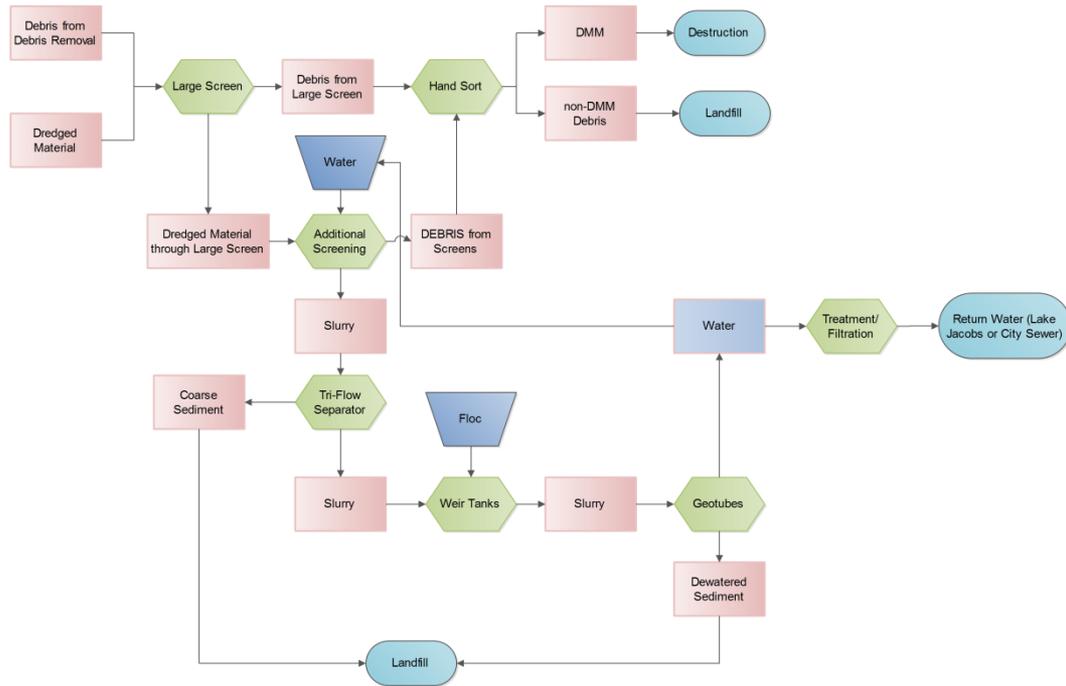
Upland Disposal

Potential DMM Encounters



NOT Cheap

Terminal 91E Conceptual Dredging & Processing Plan
10/1/13



Alternative 3: On-Site Repositioning

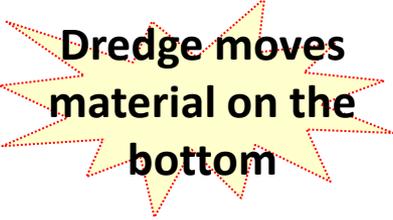
- Sequence: stage equipment (barge, long-arm excavator or grading beam), controlled repositioning of high spots to adjacent low area, place sand cover if necessary.
- Assumes: suitability and/or clean sand cover; sediment/DMM left in place is addressed through other processes (RI/FS).



- Pro: No above water contact with DMM; DMM remains in RI/FS area; precise env. control; pilot study opportunity; FUDS preferred.
- Con: Not typical practice in Puget Sound – may require higher level of water quality monitoring and controls.

On-Site Repositioning

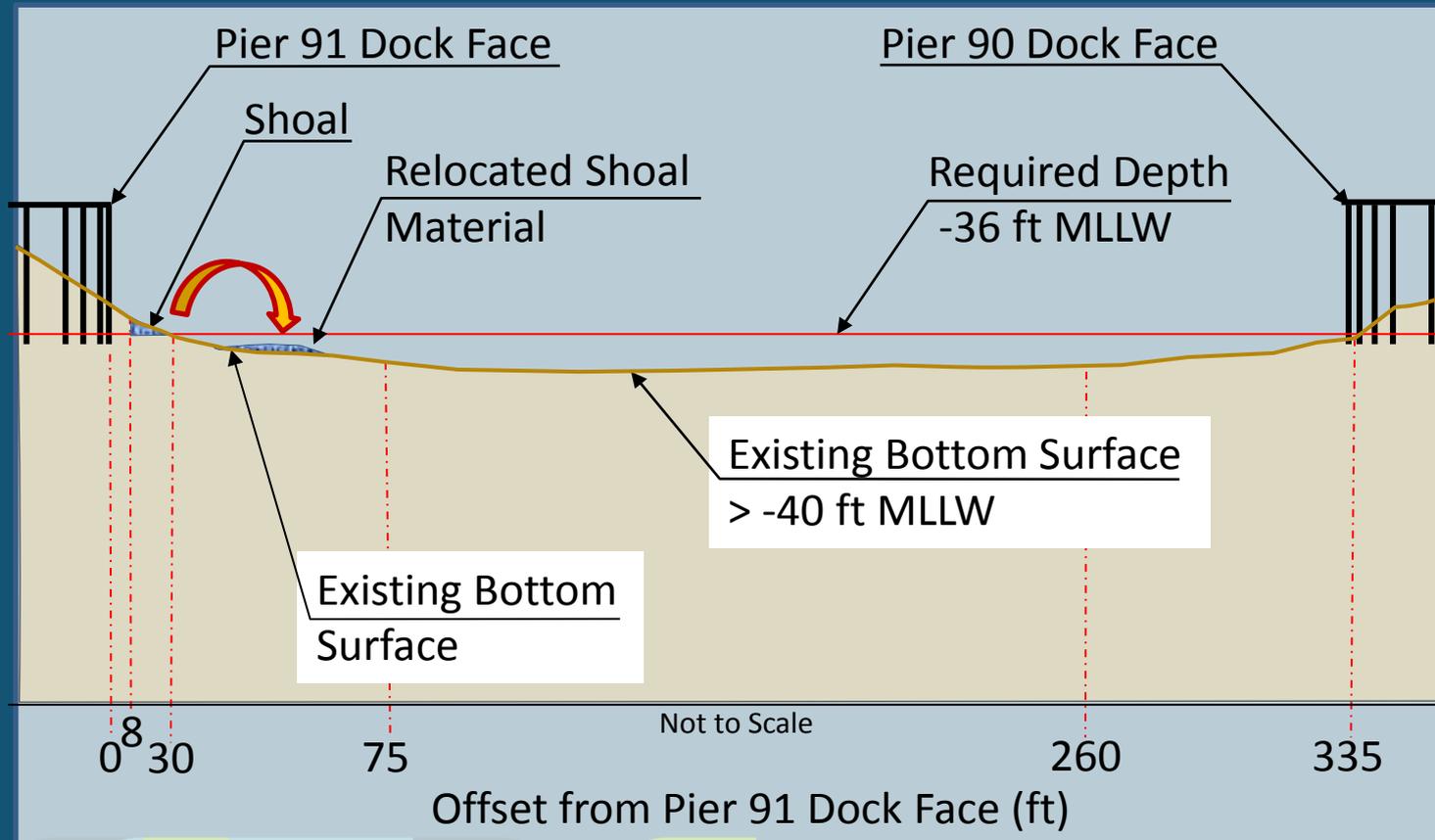
Potential DMM Encounters



**Dredge moves
material on the
bottom**

- No out of water encounters significantly reduces risk, provides greatest safety to workers and public
- On-site relocation of potential DMM is proposed as an interim action until the USACE completes their process

On-Site Repositioning: Cross Section



Why do we think we can do this

- 1992 Guidance letter from EPA- Area of Contamination concept
 - Contaminated soils removed from an excavation could be temporarily moved within the area of contamination before being returned to excavation
 - Removal of soil from the excavation does not produce hazardous waste nor does it subject the soil to hazardous waste regulation since movement does not constitute treatment, storage or disposal
 - Proposed to grade the sediments in-place without removing, storing , treating or disposing of them



Forward

- Proper application of this concept supports appropriate remedies and expedite cleanup
- Time is critical
- Support of member ports for concept
- Useful to standardize nomenclature
- Programmatic applications
- Inconsistent application of standards and regulations on federal level (EPA)



AAPA Dredging and Sediment Management

Regional Solutions to Overcome Regulatory Challenges





Common challenges

- Disconnect between (and sometimes within) various regulatory agencies
 - Characterization methods
 - Disposal alternatives
 - Chemical screening criteria
 - Beach nourishment criteria
- Analytical capabilities vs. emerging numerical criteria
- Watershed based compliance requirements

Steps for Developing Regional Solutions

- 1: Create regional stakeholder working group
- Step 2: Outline scope of authority
- Step 3: Develop management plan
- Step 4: Adopt consensus based policies
- Step 5: Hold routine meetings
- Step 6: Review and update management plan as technologies emerge and regulations change

Los Angeles Regional
Contaminated Sediments
Task Force:
Long-Term Management Strategy



California Coastal Commission
Los Angeles Regional Water Quality Control Board
U.S. Environmental Protection Agency, Region 9
U.S. Army Corps of Engineers, Los Angeles District
Los Angeles County Department of Beaches and Harbors
Southern California Coastal Water Research Project
California Department of Fish & Game
NOAA Fisheries
Port of Los Angeles
Port of Long Beach
City of Long Beach
Heal the Bay



Delta Dredged Sediment Long-Term Management Strategy (LTMS)

Home
News and Events
Project History
Organization/Membership
Technical Work Groups
Meeting Calendar
Meeting Handouts
Sediment Quality Database
LTMS Study Documents
Maps
Other Delta Studies
Links
Contact Us

LTMS Study Documents
1-2008



Dredged Material Evaluation and Disposal Procedures

USER MANUAL

July 2013

Dredged Material Management Program

Corps of Engineers, Seattle District
Environmental Protection Agency, Region 10
Washington State Department of Natural Resources
Washington State Department of Ecology

Prepared by:
Dredged Material Management Office
US Army Corps of Engineers
Seattle District



**LONG-TERM
MANAGEMENT STRATEGY
FOR THE PLACEMENT
OF DREDGED MATERIAL IN
THE SAN FRANCISCO BAY REGION**

Management Plan 2001

Prepared by
U.S. Army Corps of Engineers (USACE)
U.S. Environmental Protection Agency (USEPA)
San Francisco Bay Conservation and Development Commission (BCDC)
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)

Example Initiatives

- Sediment TMDLs
- Fish tissue testing
- Z layer confirmation
- Ultra-Low detection limits
- Ocean disposal
- Beneficial reuse options
- Landfill disposal

