

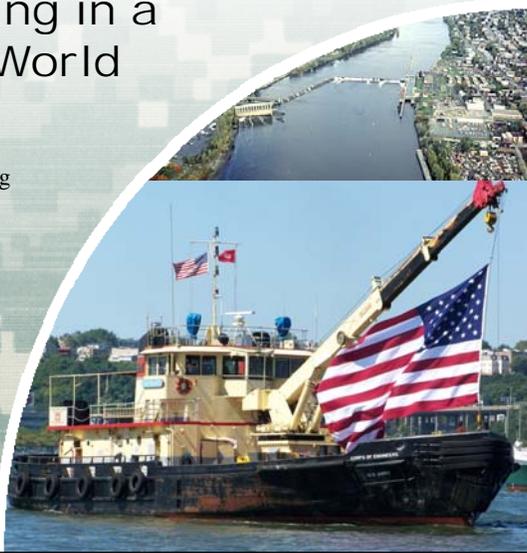
New York & New Jersey Harbor: Managing Dredging in a Post-Deepening World

WEDA Eastern Chapter Annual Meeting
12 October 2011

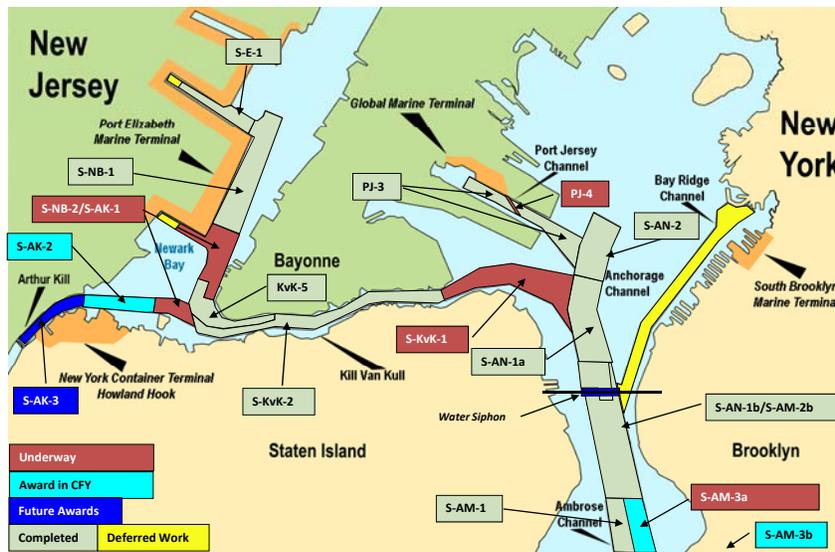
John F. Tavoraro
USACE New York District



US Army Corps of Engineers
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NY & NJ Harbor Deepening Contract Areas



20-Oct-11

NY & NJ Harbor Deepening Facts

Types of Dredged Material:

- Rock ----- 7.5 MCY (15%)
- Clay ----- 5.2 MCY (11%)
- Glacial Till ----- 7.2 MCY (14%)
- Sand ----- 16.5 MCY (34%)
- Clean Mud ----- 2.4 MCY (5%)
- Contaminated Mud – 10.3 MCY (21%)

Total – 49.1 MCY

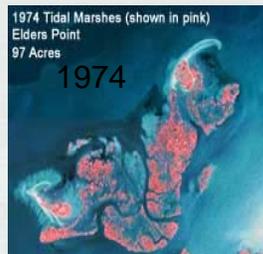


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NY & NJ Harbor Deepening Facts

Where has the Dredged Material Gone?

- HARS (Ocean Placement) -- \$8-18/CY
- Artificial Fishing Reefs -- \$50-70/CY
- Remediation of Landfills and Brownfields (Processed DM) -- \$60-100/CY
- Newark Bay CDF -- \$35-45/CY
- Creation of Marsh Islands in Jamaica Bay -- \$30-35/CY



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DM Management in the Port of NY & NJ: The Current Paradigm

Large Quantities of Clean Dredged Material Suitable for Multiple Beneficial Uses:

- Wetland Creation
- Artificial Fishing Reefs
- HARS Placement

Smaller Quantities of Contaminated Dredged Material Suitable for Beneficial Use (Landfill / Brownfield Remediation) If Processed

Very Small Quantity of Dredged Material That Can Only be Disposed in the Newark Bay CDF



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NY & NJ Harbor Maintenance Dredging: Current Facts

Average Annual Quantity Dredged ----- 550,000 CY

Average Annual Budget for Dredging ----- \$14 Million

Where Has This Material Gone?

- | | |
|----------------------|-----|
| • HARS | 53% |
| • Upland / Processed | 31% |
| • Beach Nourishment | 12% |
| • Newark Bay CDF | 4% |

Average Cost/CY ----- \$25/CY



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NY & NJ Harbor Maintenance Dredging: Future Projections

Projected Annual Maintenance Needs for Deepened Channels --- 984,000 CY
(Ground Truth – Historic Annual Quantities from These Channels ---- 1,370,000 CY)

Total Annual Maintenance Needs (With Non-deepened Channels) --- 1,534,000 CY

If NOTHING CHANGES, Where Will This Material Go?

- HARS 46%
- Upland / Processed 45%
- Beach Nourishment 9%
- Newark Bay CDF 0%

If NOTHING CHANGES, What Annual funding is needed to meet the need?

\$70-80 Million (\$46-52/CY)



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The New Reality:

Nearly Three Times as Much Dredged Material to Manage

Larger Percentage of Contaminated Dredged Material Suitable for Beneficial Use (Landfill / Brownfield Remediation) If Processed

Smaller Percentage Suitable for HARS Placement (Mud) and Beach Placement (Sand Only)

No Place for Dredged Material That is Not Suitable for Beneficial Use

**Conclusion: The Existing Dredged Material Management Paradigm NO LONGER SERVES US –
New Paradigm Needed**



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What Are We Doing About This Problem?

Engaged Our Partners:

- NY State (Co-Lead)
- NJ State (Co-Lead)
- Other Federal / State Agencies, Port Authority and NY City
- NGOs – Environmental and Port

Formed NY & NJ Harbor Dredged Material Strategic Planning Group

- Consensus Based
- “30,000 Ft. View”
- Review Possible DM Management Options
- Will Make Recommendations by the End of This Year



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However, There is One Inescapable Fact:

Existing Funding Levels Will be Inadequate
to Maintain What We Built

1,534,000 CY / \$14 Million = \$9/CY
(HARS is *Already* \$8-18/CY)



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Questions?



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