

Dredged/Processed Dredged Material and the NY/NJ Harbor



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Federation of New York Solid Waste Associations Convention
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Presentation Overview

- Dredged material defined
- Brief history of dredged material disposal
- Volume of dredged material available
- Control of dredged/processed dredged material
- Example project – Fresh Kills Landfill
- Characteristics of dredged/processed dredged material
- Dredged Material Management at NYCEDC
- Challenges to beneficial reuse

What is Dredged Material?

- Materials excavated from the bottom of any water-body
- Can be:
 - Rock
 - Glacial till (Pleistocene material)
 - Sand and gravel
 - Silt
 - Clay



Brief History:

- Prior to September, 1997 dredged materials were brought to the Mud Dump Site (MDS)
- EPA closed the MDS in 1997 and reopened as the Historic Area Remediation Site (HARS)
 - The HARS site has very specific acceptance criteria to aid in the remediation of the MDS
 - Much of the fine silts in the NY/NJ Harbor do not meet HARS criteria
- Upland Beneficial Use
 - Material is amended with Portland Cement or other suitable stabilizer (Processed Dredged Material – PDM)
 - Portland Cement adds structural and chemical stability

Volume of Dredged Material Available

- New York-New Jersey Harbor Estuary - the third largest deepwater port in the United States
- Army Corps of Engineers - deepening 35 linear miles of major channels to a depth of 50 feet
- Largest deep-draft navigation dredge project in US history
- 42,500,000 cubic yards of dredge material to be removed
- Project about 50% complete

Control of Dredged/Processed Dredged Material

- Beneficial reuse of dredged sediment has increasingly become a challenge, as federal and state regulations restrict disposal of dredged material
- NY – Solid Waste – Beneficial Use Determination (BUD)
- NJ – Regulated Waste – dredged material considered a resource to be used wherever possible - Acceptable Use Determination (AUD)

Example Project – Fresh Kills Landfill

- PDM approved for use as an alternate grading material under BUD by NYSDEC
- November 2005 through November 2008 – nearly 1 million cubic yards placed
- Offloading and placement criteria

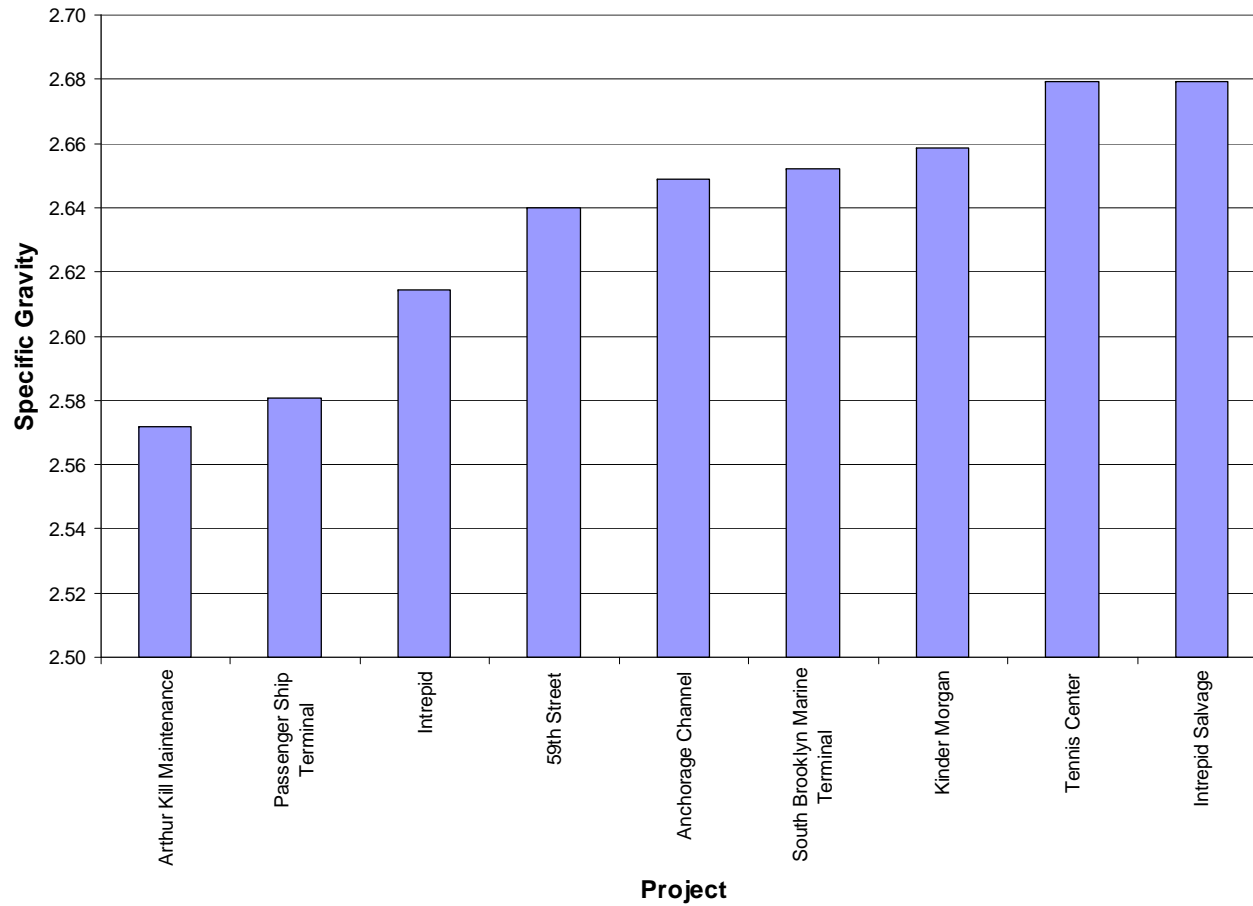


Characteristics of Dredged/Processed Dredged Material (PDM)

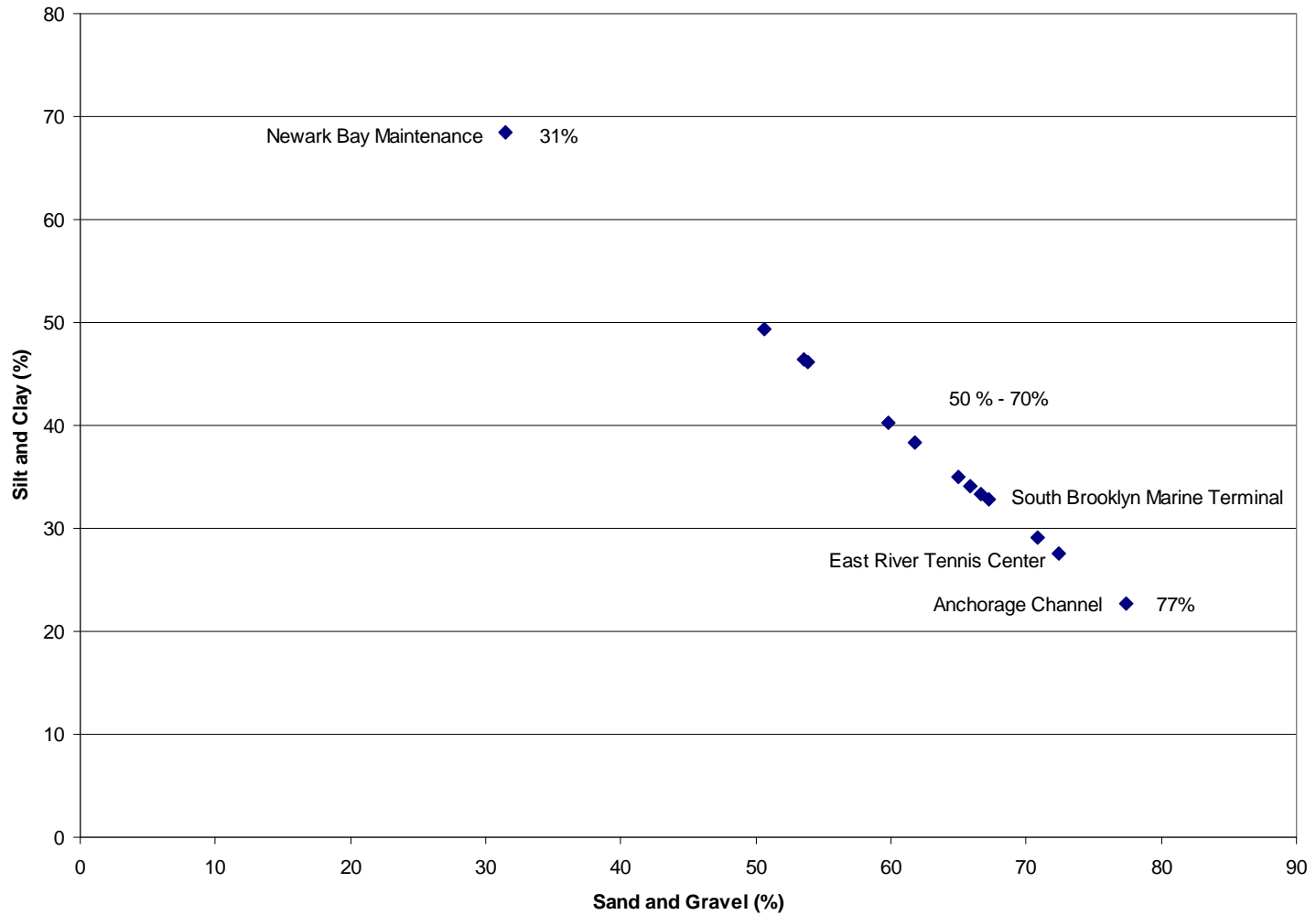
- Geotechnical analyses – approximately 2,000 samples collected and analyzed
- Geotechnical parameters
 - Specific gravity (ASTM D854)
 - Gradation (ASTM D422)
 - Atterberg Limits (ASTM D4318)
 - Moisture-Density Relationship (Standard Proctor ASTM D698)
 - Unconfined Compressive Strength (ASTM D2166)



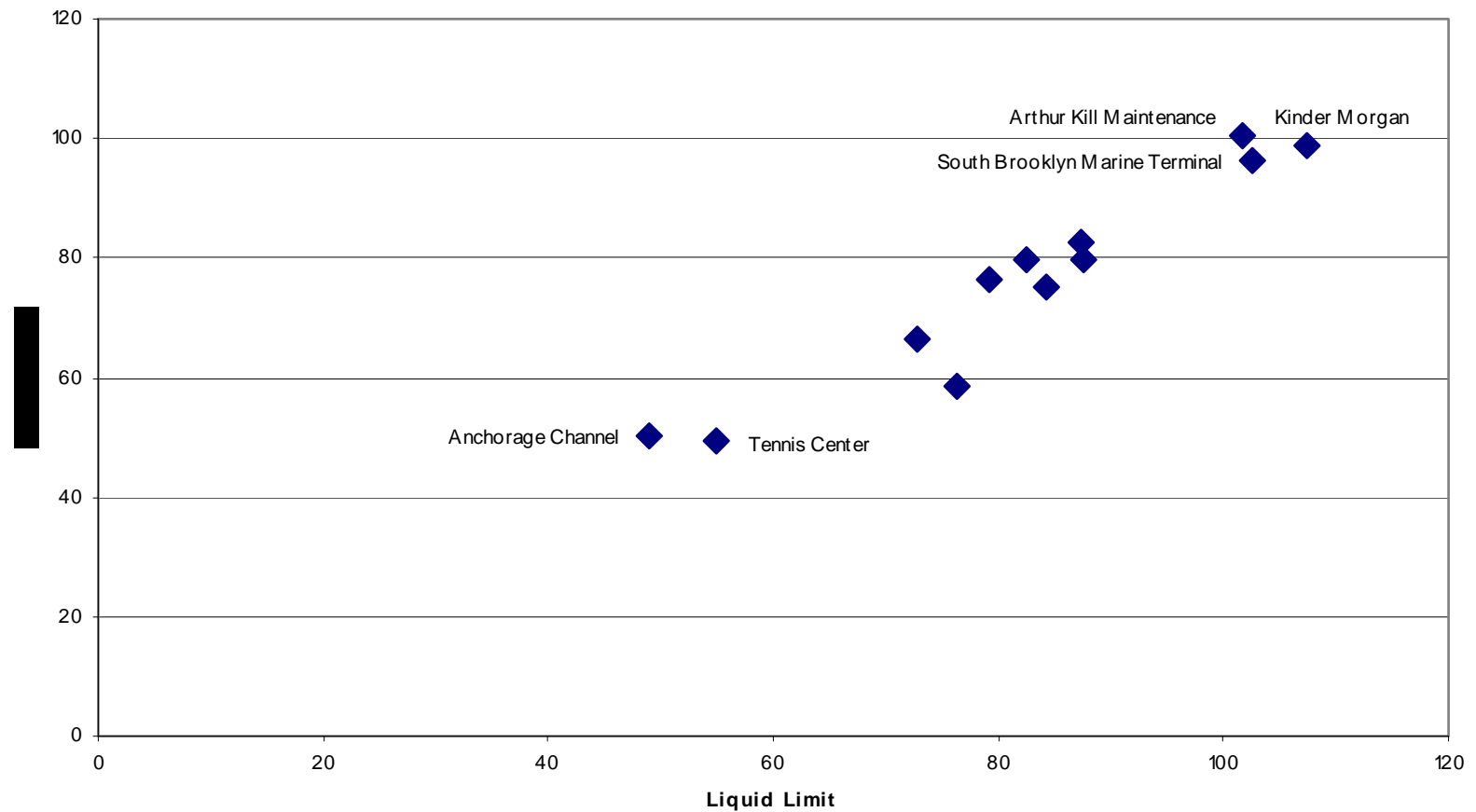
Specific Gravity



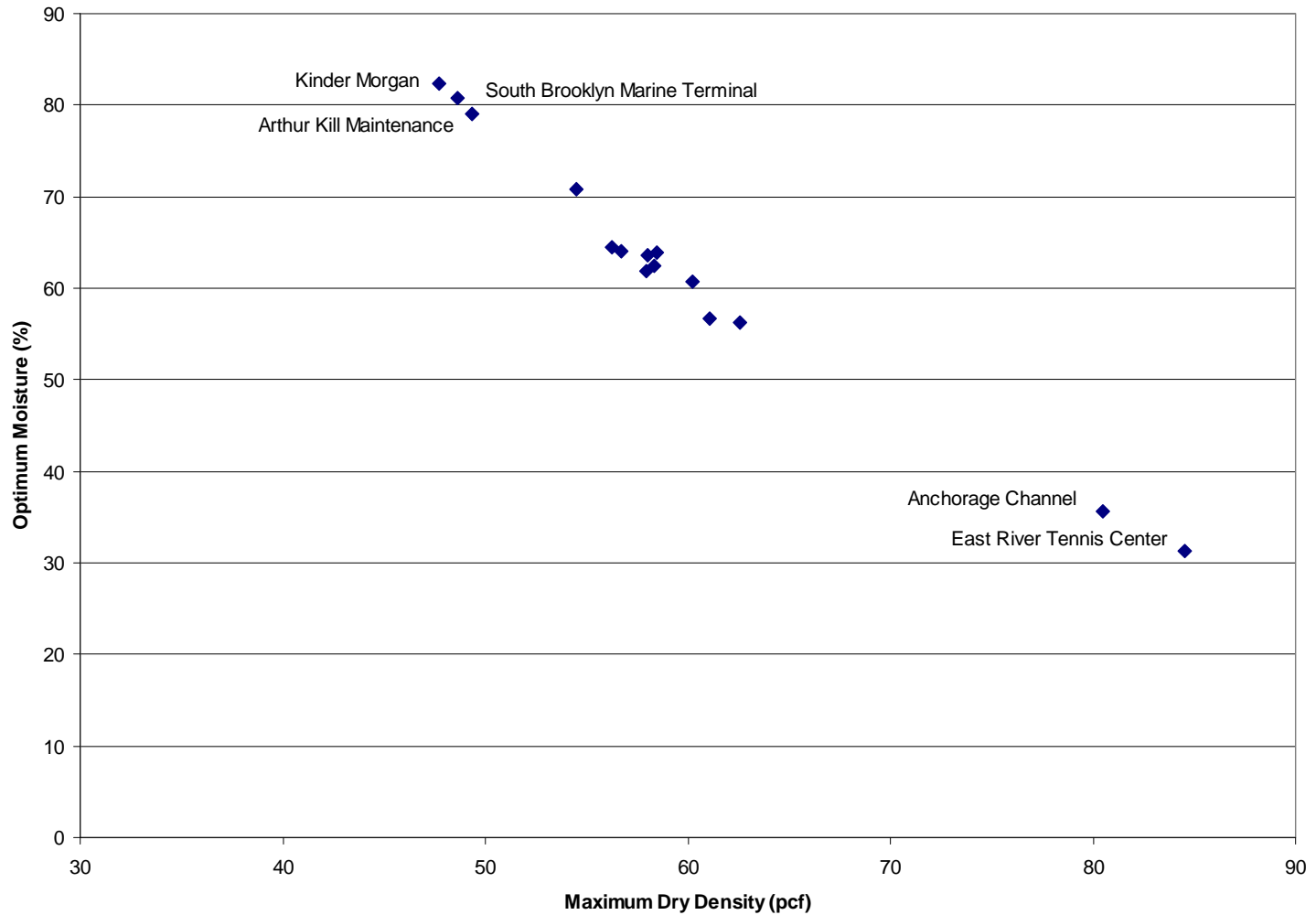
PDM Gradation



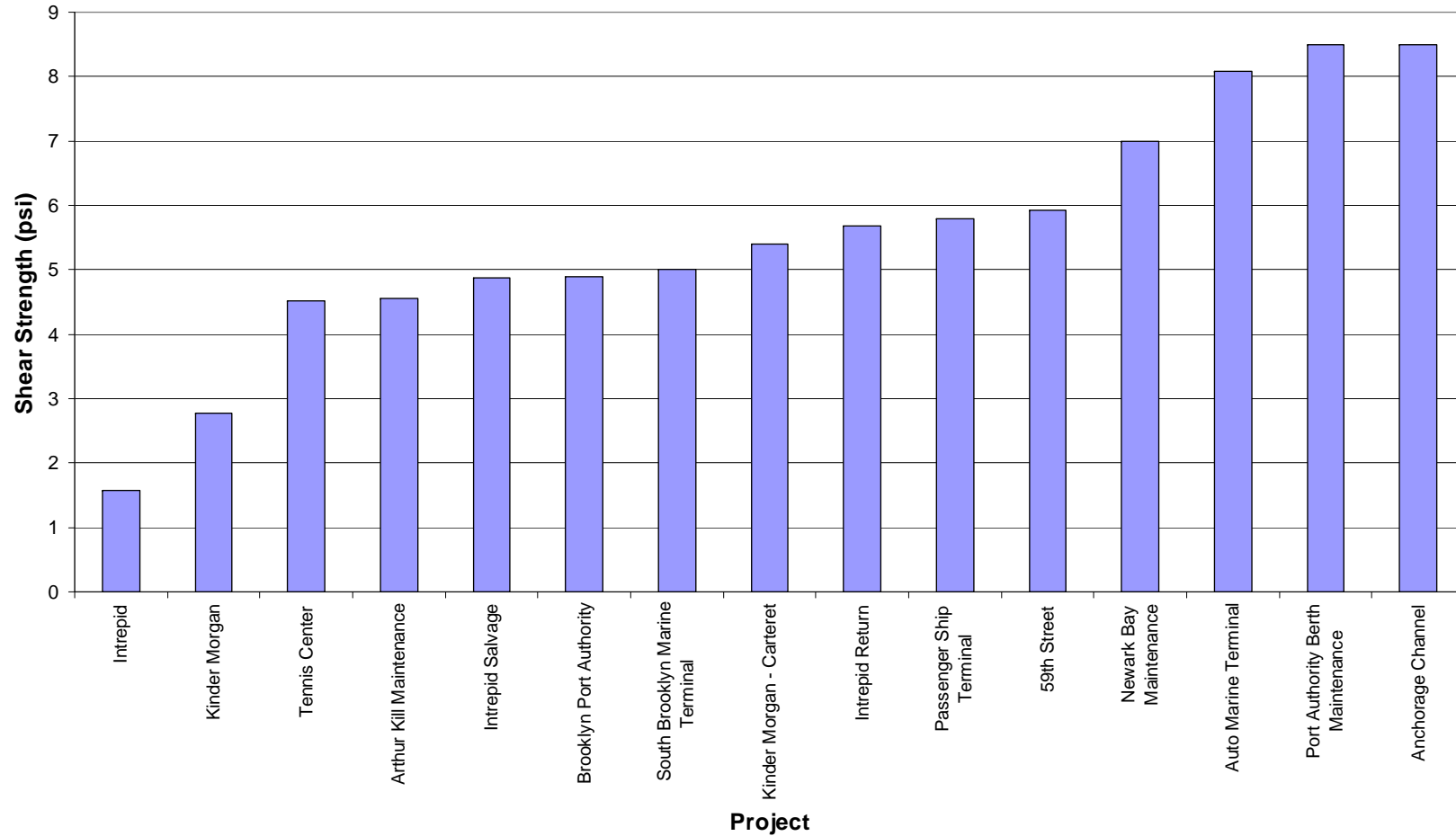
Atterberg Limits



Moisture-Density Relationship (Standard Proctor)



Unconfined Compressive Strength



NYCEDC Dredged Material Management Program

- Match dredged material generators/existing material with those who need dredged material (fill)
- Track and document available chemical and geotechnical characteristics of available material
- Locate and advance opportunities for the beneficial use of dredged material
- Evaluate economic benefit of beneficial reuse of dredged material for each project
- Assist City agencies and maritime Businesses with logical and cost-efficient dredged material management decision-making

Dredged Material Management Plan

Beneficial Reuse of Dredged Material					
Projected Cost Savings FY 2008 - FY 2010					
Project Name	Fill Required (cy)		Date Needed	Cost	
	Volume (cys)	Type		Conventional Fill	Dredged Material
Bronx Terminal Market Waterfront Park	15,000	PDM	Spring 2008	\$ 825,000	\$ -
White Island (sand delivery only)	150,000	Sand	Spring 2009	\$ 6,825,000	\$ 2,662,500
Bush Piers Redevelopment	10,000	Sand	Fall 2009	\$ 550,000	\$ 177,500
Yankee Stadium Heritage Field	220,000	PDM	Fall 2009	\$ 12,100,000	\$ -
Flushing Airport Wetlands Restoration	150,000	Silty Sand	Fall/Winter 2009	\$ 8,250,000	\$ -
Flushing Airport Upland Area	200,000 100,000	PDM Sand	Fall/Winter 2009	\$ 11,000,000 \$ 5,500,000	\$ - \$ 1,775,000
Brooklyn Bridge Park	200,000	PDM	Summer 2010	\$ 11,000,000	\$ -
PROJECTED COSTS				\$ 56,050,000	\$ 4,615,000

Challenges to Beneficial Reuse

- Project Timing
 - Dredging Schedule
 - Redevelopment Schedule
 - Stockpiling
- Material Specifications
 - Classification pursuant to NYS Part 375 Soil Clean-up Objectives
 - Grain Size (Sand, Silt, Clay, etc.)
- Classification of Dredged Material as a Solid Waste
- Misconception of nature of PDM

Questions

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