

The logo for PORT CLEVELAND features the word "PORT" in a large, bold, blue font with a stylized, rounded top. Below it, the word "CLEVELAND" is written in a smaller, blue, sans-serif font. The letters are spaced out and aligned with the "PORT" above.

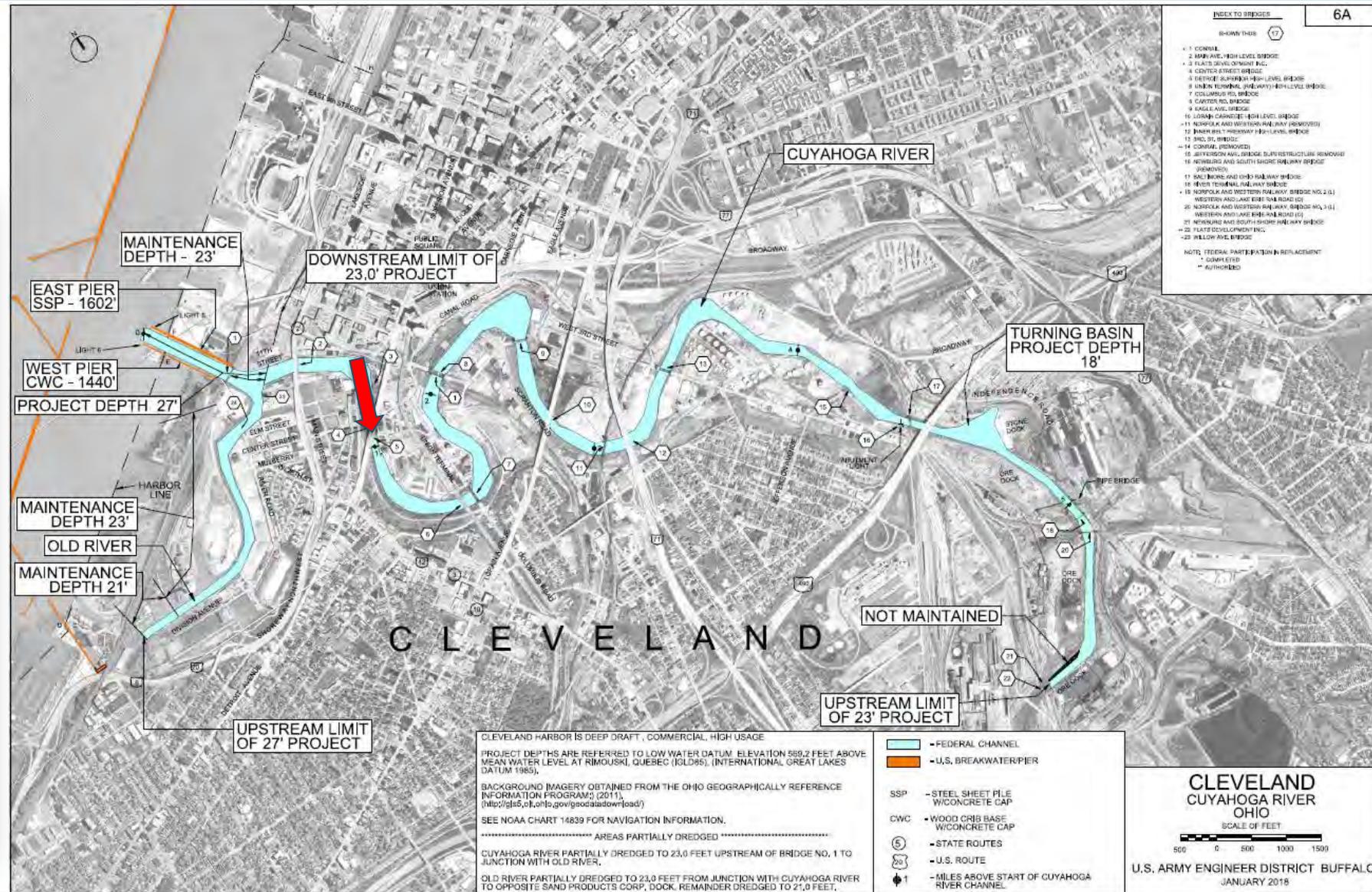
PORT
CLEVELAND

Global Reach. Local Benefits.
WEDA DREDGING SUMMIT & EXPO '19

*Cleveland Harbor's Advancements In
Beneficial Reuse & Sediment Management*

June 6th, 2019

CUYAHOGA RIVER



ANNUAL DREDGING & CDF CAPACITY CONSTRAINTS

- 250,000+ CY Material Dredged From River & Harbor Annually
- Federal Channel Geometry De-energizes River
- Historically 100% of Sediment Deposited Upland In Series of Confined Disposal Facilities (CDFs)
- Conventional Long Term CDF Capacity Exhausted In Cleveland
- Costs Of Constructing New A New CDF Have Been Estimated @ \$175m+



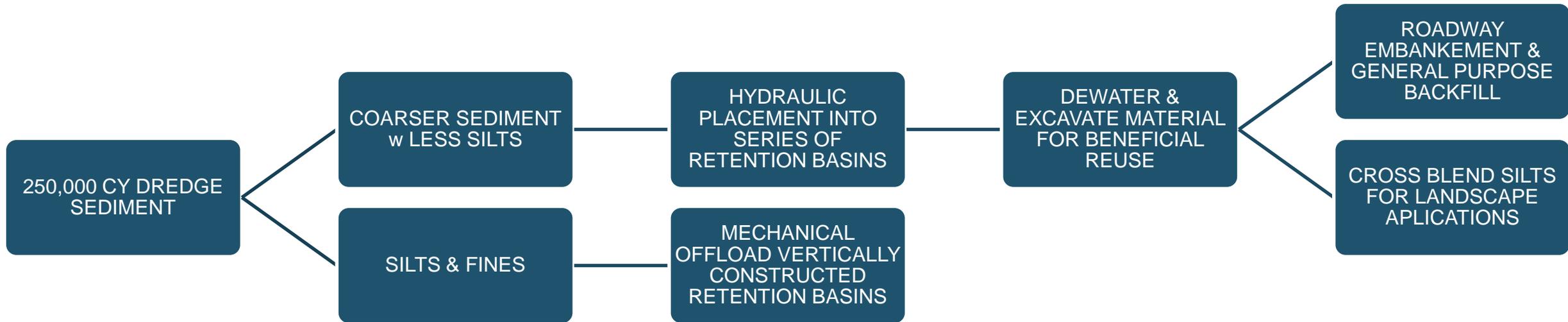
CLEVELAND HARBOR EXISTING CONFINED DISPOSAL FACILITIES



NEW CDF CONSTRUCTION, DREDGING, TRANSPORTATION & DISPOSAL COST: \$54.65/CY

USACE August 2011 Interim Capacity Management & Long Term Planning Study

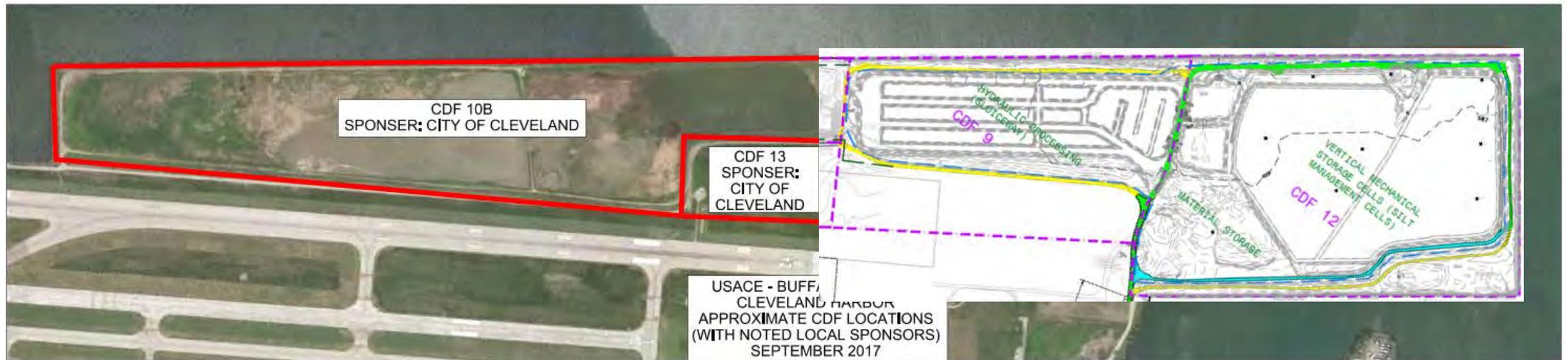
PORT OF CLEVELAND'S SEDIMENT PROCESSING FACILITY & BENEFICIAL REUSE MODEL



PORT AUTHORITY OPERATION MODEL 20 YEAR AVERAGE DREDGING COSTS/CY FORECAST: \$25-\$35/CY

2018-2019 AWARDED DREDGING CONTRACT: \$20.21/CY

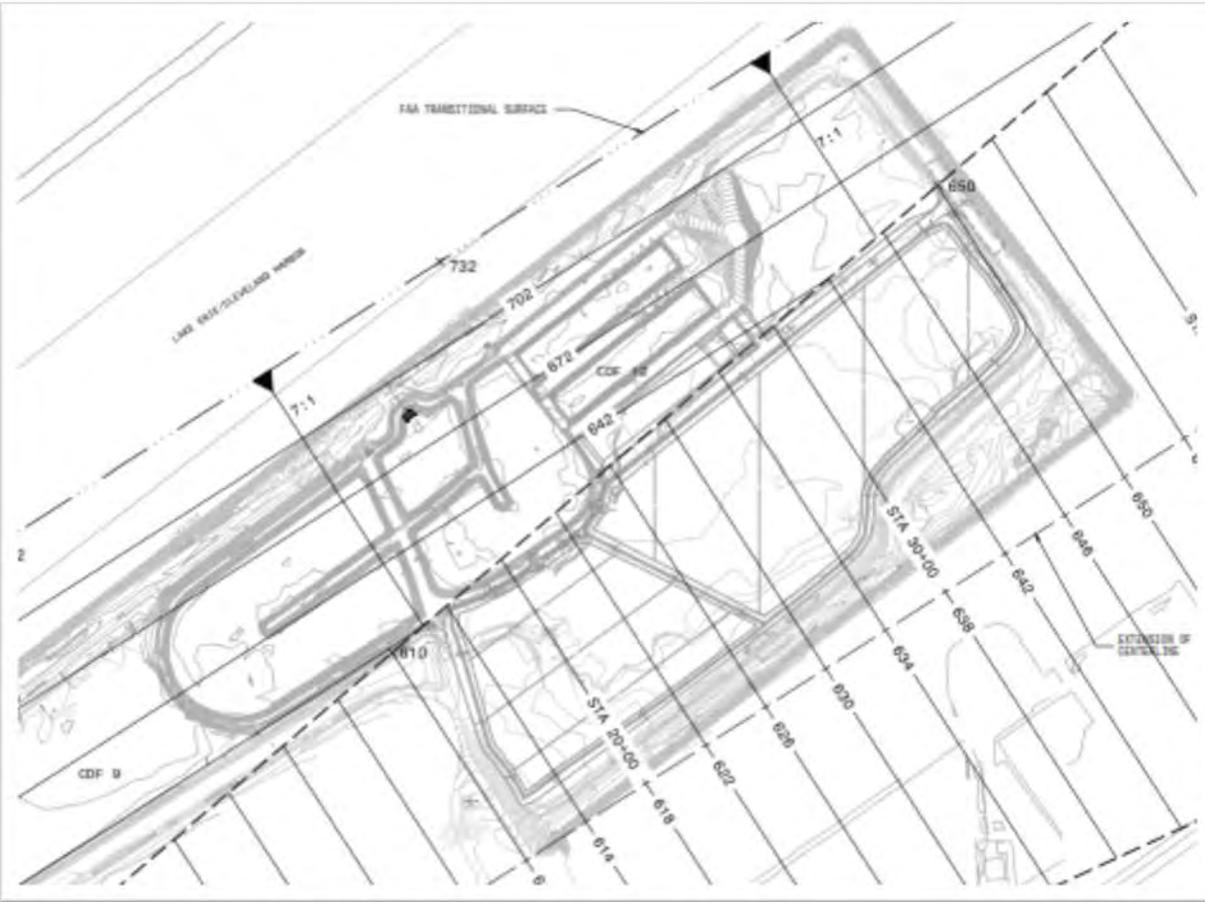
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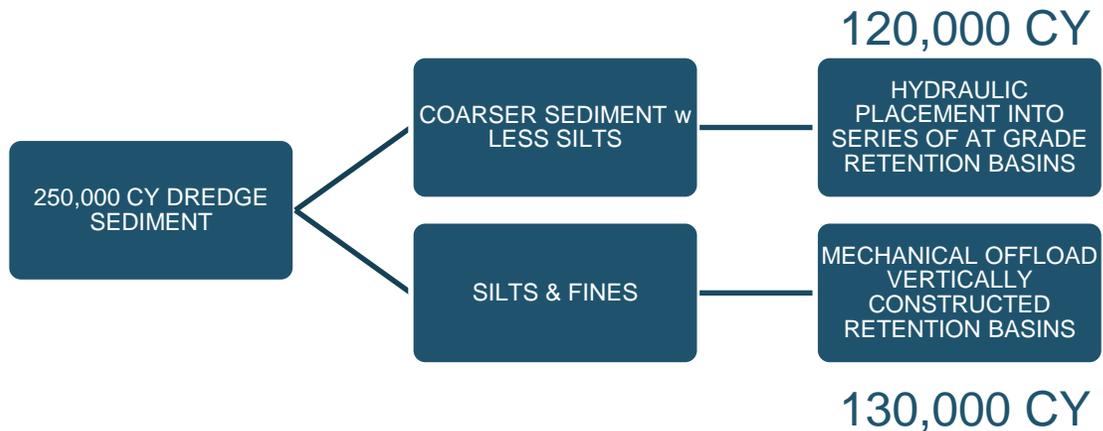
SEDIMENT PROCESSING & MANAGEMENT 2018 EXPANSION & RECONFIGURATION



PORT OF CLEVELAND'S SEDIMENT PROCESSING FACILITY & BENEFICIAL REUSE MODEL

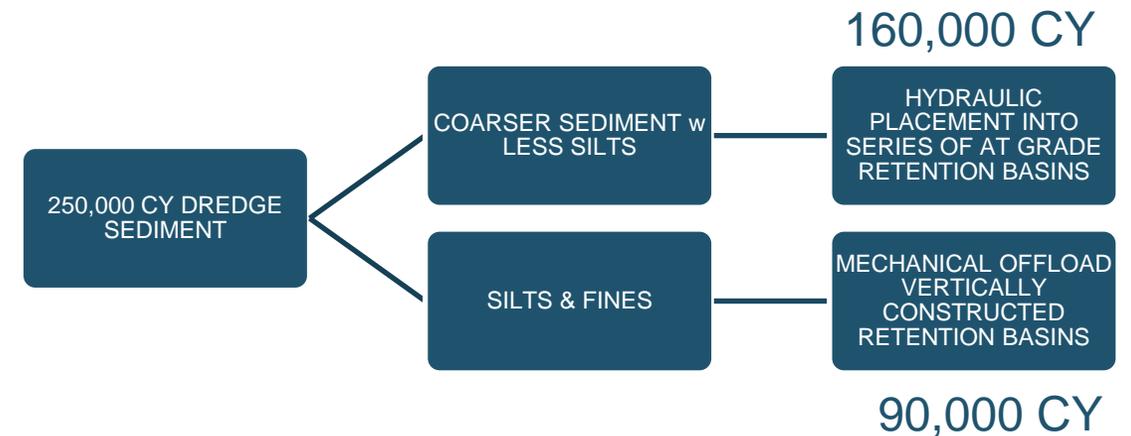
PHASE 1 & 2

2015-2017



PHASE 3

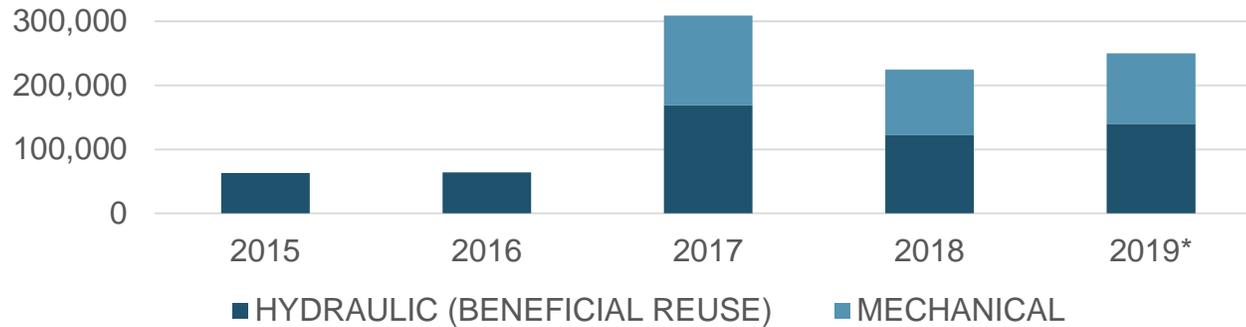
2018+



**REDUCES CRITICAL AIR SPACE CONSUMPTION BY 30%,
TURNS A 20 YEAR FACILITY INTO A 26 YEAR FACILITY!**

SEDIMENT PROCESSING & MANAGEMENT FACILITY

SPMF PERFORMANCE



PORT OF CLEVELAND'S SEDIMENT PROCESSING FACILITY: KEYS TO SUCCESS



KEYS TO SUCCESS

- Know Your Sediment
- Close Coordination w/ Dredger, Site Operator, & USACE
- Design Facility For Flexibility
- Continued Facility Refinement
- Diversified Beneficial Reuse Avenues
 - Water Management

PORT OF CLEVELAND'S SEDIMENT PROCESSING & MANAGEMENT FUTURE GOALS

- Study & Expand In River Sediment Interception Coarse Sediments
- Reduce Sediment Reaching Federal Navigation Channel
- Extend Life Existing CDFs Beyond Existing 20 Year Projections
- Explore Cleveland Harbor Habitat & Wetland Creation Opportunities
- Expand Beneficial Reuse From Current 40%-60% Consumption Rate
- Assist Other Port's w/ Beneficial Reuse Alternatives



THANK YOU

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