Global Reach. Local Benefits.
AAPA 2018 CAPITAL PROJECTS SEMINAR

Cleveland Harbor Beneficial Reuse & Bedload Interceptor

MAY 9, 2018
CLEVELAND HARBOR

- 20,000+ Jobs
- $3.5B Economic Activity
- 13 Million Tons Annually
- 1st Major U.S. Port of Call St. Lawrence Seaway System
- 6+ Miles Protected Breakwater
- 5.9 Mile Federally Maintained Navigation Channel
PORT OF CLEVELAND: MARITIME BUSINESS

GENERAL CARGO

BULK CARGO

DREDGE SEDIMENT MANAGEMENT
CUYAHOGA RIVER
ANNUAL DREDGING & CDF CAPACITY CONSTRAINTS

• 250,000+ CY MATERIAL DREDGED FROM RIVER & HARBOR ANNUALLY
• FEDERAL CHANNEL GEOMETRY DE-ENERGIZES RIVER
• HISTORICALLY MATERIAL DEPOSITED UPLAND IN SERIES OF CONFINED DISPOSAL FACILITIES (CDFs)
• LONG TERM CDF CAPACITY EXHAUSTED IN CLEVELAND HARBOR
• COSTS OF CONSTRUCTING NEW A NEW CDF HAVE BEEN ESTIMATED @ $175M+
CLEVELAND HARBOR CONFINED DISPOSAL FACILITIES
1. 2 sluiceways settle coarse material
2. Silts settle in secondary basin
3. Water clarifies in 3rd basin
4. Recycling basin for water for scows
5. Areas for (a)stockpiles and (b) compost
PORT OF CLEVELAND’S SEDIMENT PROCESSING FACILITY & BENEFICIAL REUSE MODEL

- 250,000 CY DREDGE SEDIMENT PER YEAR
  - Coarser Sediment w Minor Silts
    - Silts & Fines
  - Hydraulic Placement into Series of Retention Basins
  - Mechanical Offload Vertically Constructed Retention Basins
  - Dewater & Excavate Material for Beneficial Reuse
     - Roadway Embankment & General Purpose Backfill
     - Cross Blend Silts for Landscape Applications
PORT OF CLEVELAND’S SEDIMENT PROCESSING FACILITY: MARITIME STAKEHOLDER BENEFITS

• 20+ YEAR DISPOSAL SOLUTION
• PRIVATE MARITIME STAKEHOLDER DREDGE DISPOSAL
• PORT AUTHORITY DREDGE SEDIMENT DISPOSAL
• CERTAINTY CHANNEL TO BE FULLY DREDGED ON AN ANNUAL BASIS
• COSTS SAVINGS 25%+ PER CY TO FEDERAL GOVERNMENT
• LIMITS COSTS TO LOCAL GOVERNMENT SPONSOR
• ENVIRONMENTALLY RESPONSIBLE
• MAXIMIZES HISTORIC INVESTMENT IN EXISTING CDFs
SEDIMENT PROCESSING & MANAGEMENT FACILITY

SPMF PERFORMANCE

- HYDRAULIC (BENEFICIAL REUSE)
- MECHANICAL

Year: 2015, 2016, 2017, 2018*
PORT OF CLEVELAND’S SEDIMENT PROCESSING FACILITY 2018 EXPANSION

EXISTING

250,000 CY DREDGE SEDIMENT

- COARSER SEDIMENT w/ LESS SILTS
- SILTS & FINES

120,000 CY

- HYDRAULIC PLACEMENT INTO SERIES OF AT GRADE RETENTION BASINS
- MECHANICAL OFFLOAD VERTICALLY CONSTRUCTED RETENTION BASINS

130,000 CY

PROPOSED

250,000 CY DREDGE SEDIMENT

- COARSER SEDIMENT w/ LESS SILTS
- SILTS & FINES

160,000 CY+

- HYDRAULIC PLACEMENT INTO SERIES OF AT GRADE RETENTION BASINS
- MECHANICAL OFFLOAD VERTICALLY CONSTRUCTED RETENTION BASINS

90,000 CY

REDUCE AVAILABLE AIR SPACE CONSUMPTION BY 30%, TURNS A 20 YEAR FACILITY INTO A 26 YEAR FACILITY!
SEDIMENT PROCESSING & MANAGEMENT: BED LOAD INTERCEPTOR

CONCEPT: INTERCEPT SEDIMENT IN PASSIVE MANNER PRIOR TO IT REACHING FEDERAL NAVIGATION CHANNEL

- LESS COSTLY
- SEDIMENT LESS RISK OF BEING CONTAMINATED
- HARNESS FORCE OF MOTHER NATURE
  - HIGH QUALITY SEDIMENT
PORT OF CLEVELAND SEDIMENT PROCESSING & MANAGEMENT: PARTNERS & FUTURE GOALS

PARTNERS:
• OHIO DIVISION OF NATURAL RESOURCES OFFICE OF COASTAL MANAGEMENT
• OHIO ENVIRONMENTAL PROTECTION AGENCY
• UNITED STATES ARMY CORP. OF ENGINEERS, BUFFALO DISTRICT
• KURTZ BROS. INC. (SPMF SITE OPERATOR)
• HULL & ASSOCIATES (ENGINEER OF RECORD)
• STREAMSIDE SYSTEMS (BEDLOAD INTERCEPTOR)

FUTURE GOALS:
• EXPAND BED LOAD INTERCEPTOR CONCEPT & IMPROVE EFFICIENCY
• EXPAND BENEFICIAL REUSE MARKET & CONSUMPTION OF MATERIAL
• REDUCE NEED FOR LONG TERM STORAGE OF DREDGE SEDIMENT
• PROVIDE CLEVELAND MARITIME COMMUNITY LONG TERM DREDGE SEDIMENT SOLUTION IN A COST EFFECTIVE & ENVIRONMENTALLY RESPONSIBLE MANNER

THANK YOU!