



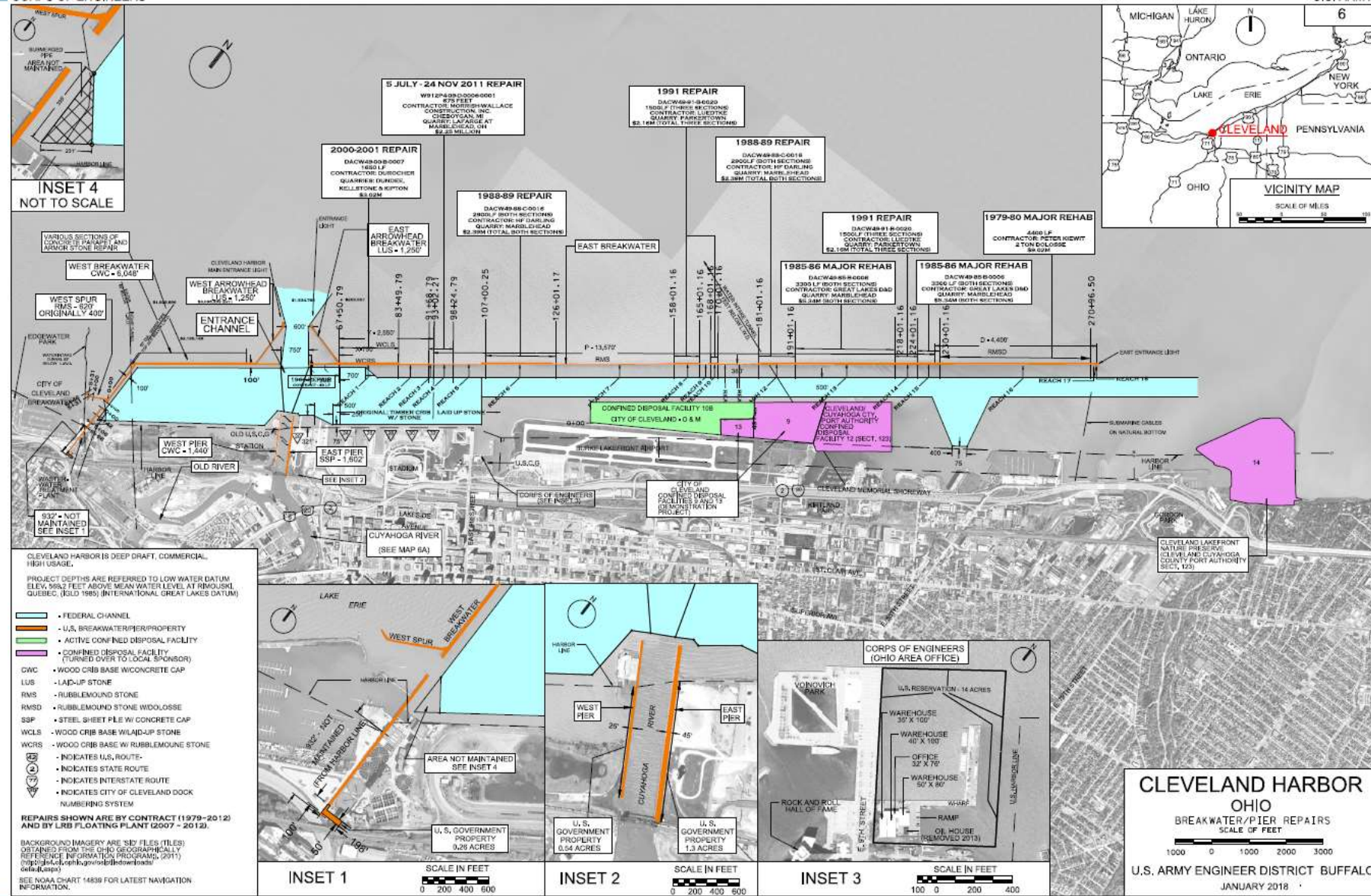
**Global Reach. Local Benefits.  
WEDA Midwest Chapter Meeting 2018**

*Cleveland Harbor Beneficial Reuse Update*

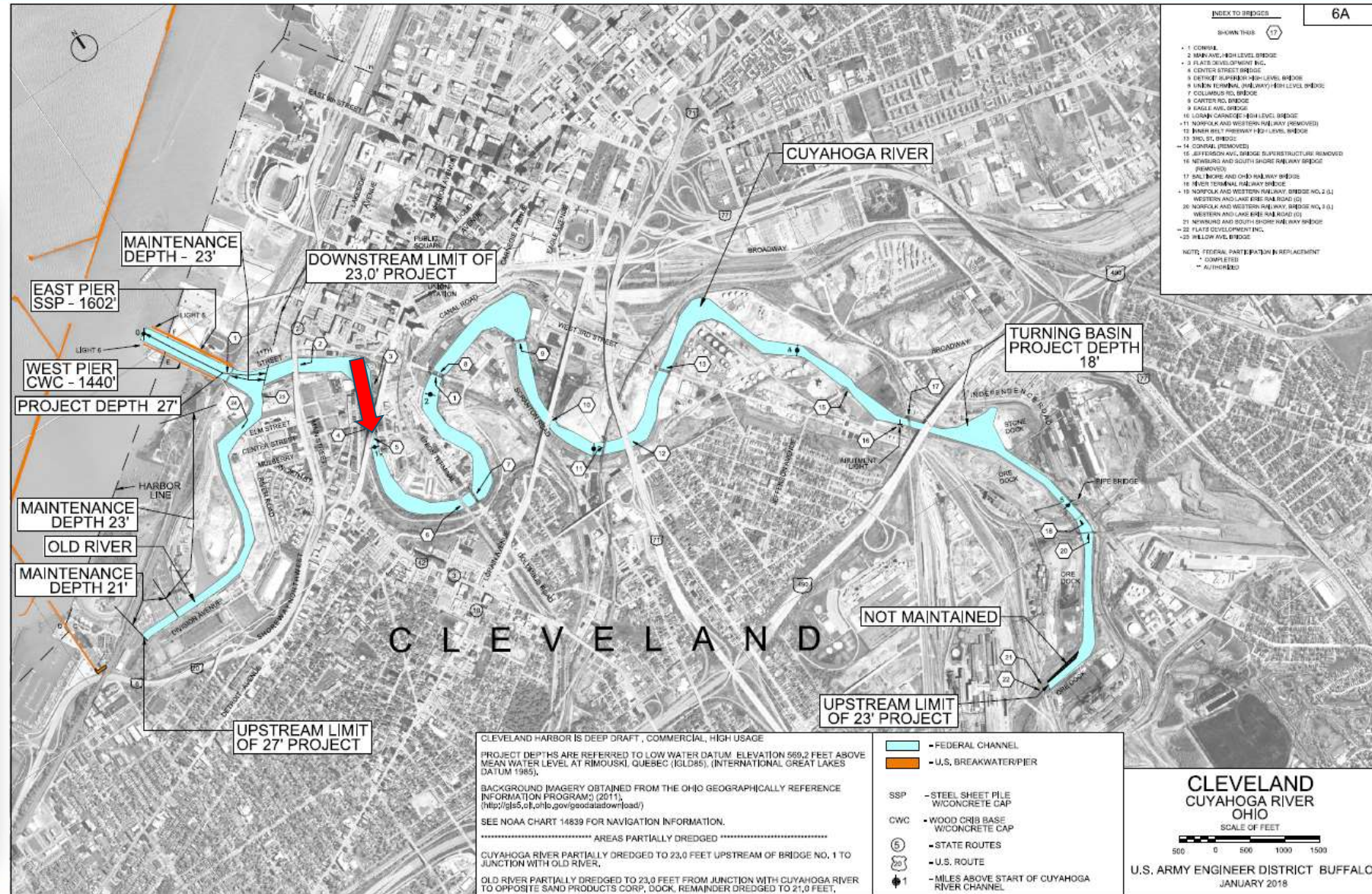
MARCH 14, 2018

# CLEVELAND HARBOR

- 20,000+ Jobs
- \$3.5B Economic Activity
- 13 Million Tons Annually
- 1<sup>st</sup> Major U.S. Port of Call St. Lawrence Seaway System
- 6+ Miles Protected Breakwater
- 5.9 Mile Federally Maintained Navigation Channel



# CUYAHOGA RIVER



# ANNUAL DREDGING & CDF CAPACITY CONSTRAINTS

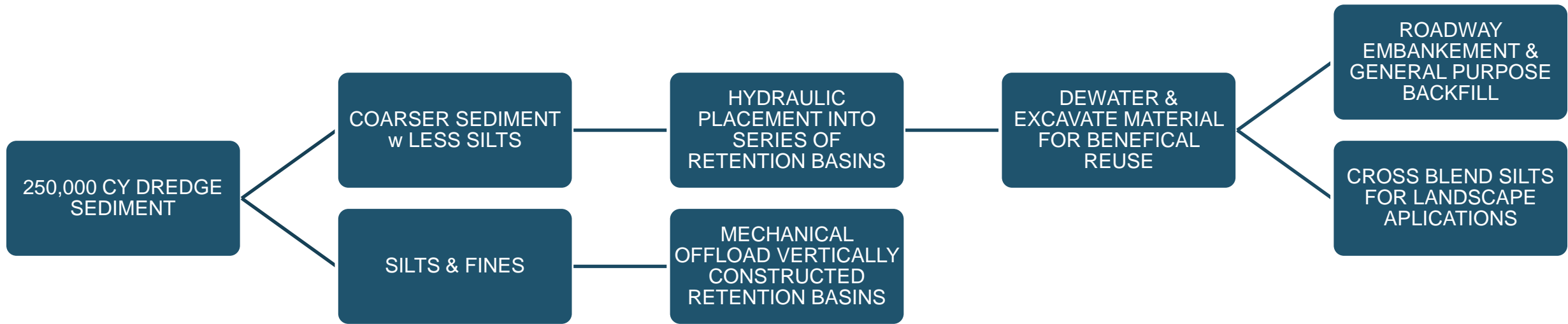
- 250,000+ CY MATERIAL DREDGED FROM RIVER & HARBOR ANNUALLY
- FEDERAL CHANNEL GEOMETRY DE-ENERGIZES RIVER
- HISTORICALLY MATERIAL DEPOSITED UPLAND IN SERIES OF CONFINED DISPOSAL FACILITIES (CDFs)
- LONG TERM CDF CAPACITY EXHAUSTED IN CLEVELAND HARBOR
- COSTS OF CONSTRUCTING NEW A NEW CDF HAVE BEEN ESTIMATED @ \$175M



# CLEVELAND HARBOR CONFINED DISPOSAL FACILITIES



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



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

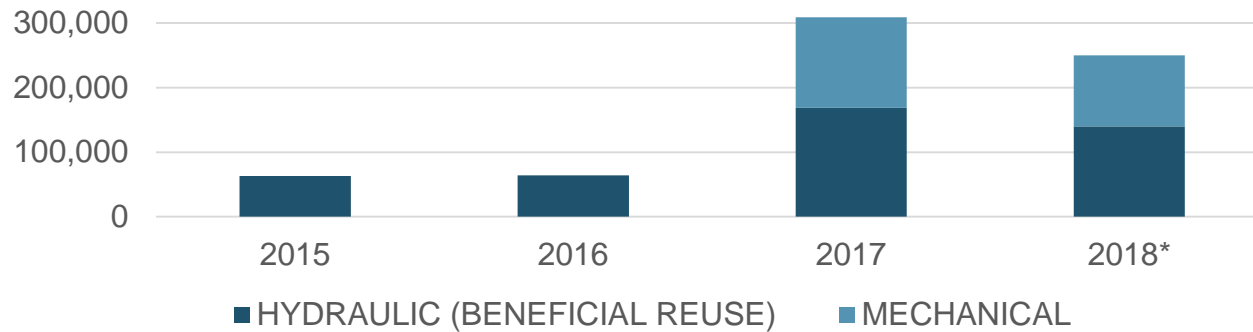


## KEYS TO SUCCESS

- KNOW YOUR SEDIMENT & WHERE IT COMES FROM IN THE RIVER
- CLOSE COORDINATION w/ DREDGER & SITE OPERATOR
  - DESIGN FACILITY FOR FLEXIBILITY
  - BUILD OFF OF LESSONS LEARNED
- WORK WITH PARTNER THAT HAS MULTIPLE OUTLETS FOR MATERIAL
- UNDERSTAND HYDRAULICS OF PROCESSING FACILITY

# SEDIMENT PROCESSING & MANGEMENT FACILITY

SPMF PERFORMANCE

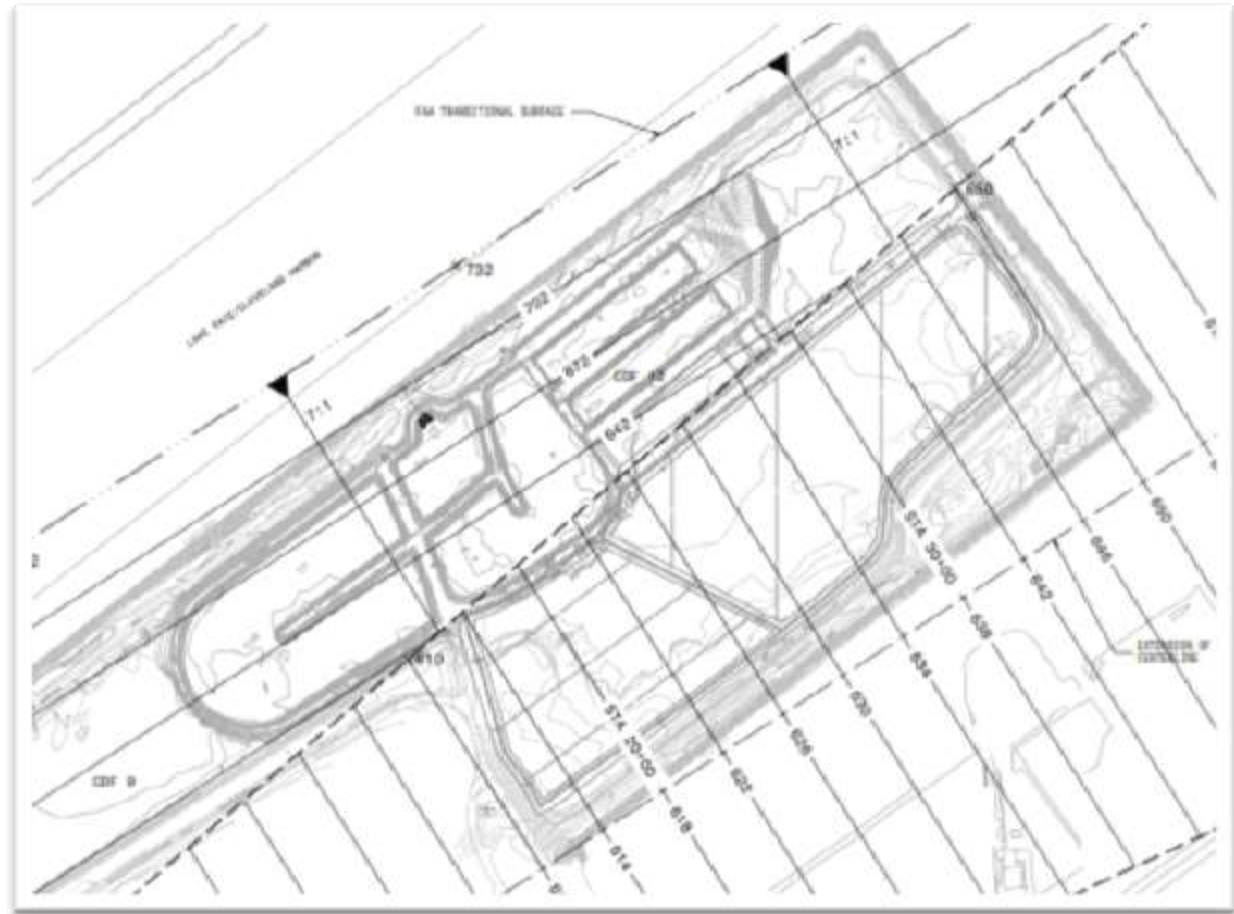




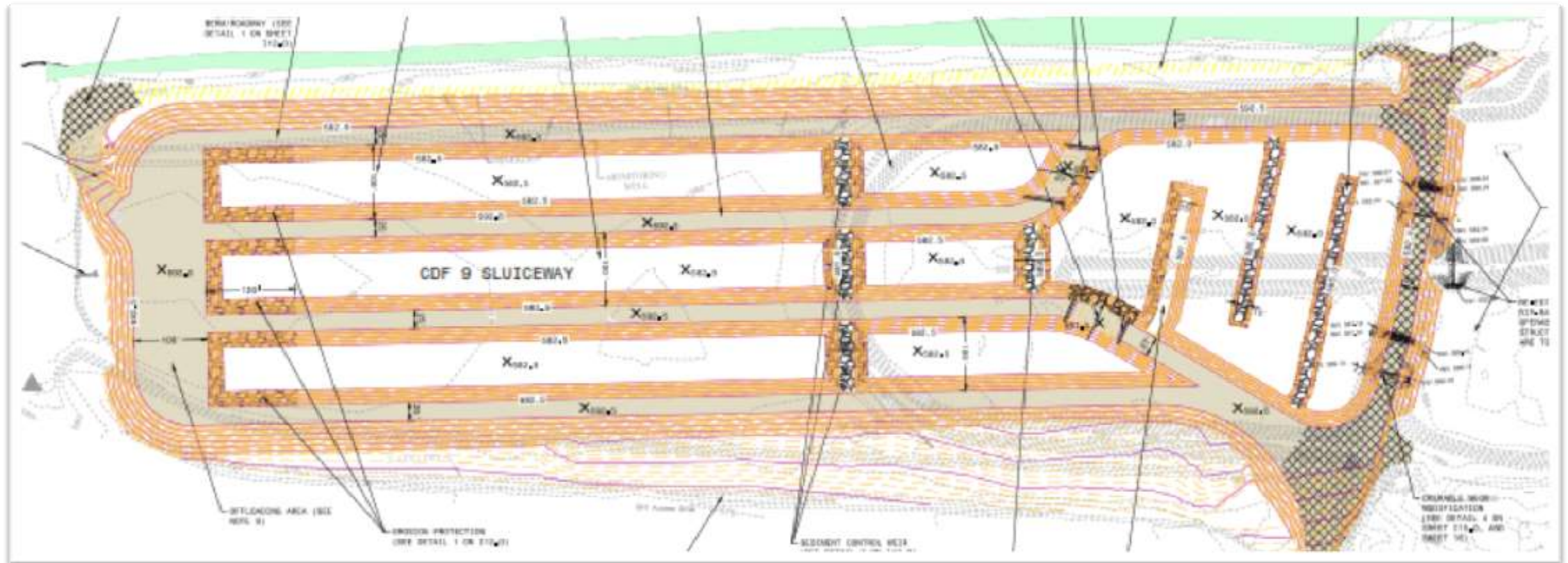
# SEDIMENT PROCESSING & MANGEMENT FACILITY 2018 EXPANSION

## EXISTING FACILITY LESSONS LEARNED

- HYDRAULIC SLUICEWAY CAPACITY LIMITED TO 45,000 CY
- HYDRAULIC PROCESSING LIMITS VERTICAL PLACEMENT ON CDF 12
- SETTLING POND GEOMETRY & OTHER SLUICEWAY GEOMETRY
  - HAUL ROAD DURABILITY
  - POND SIZE & HYDRAULICS



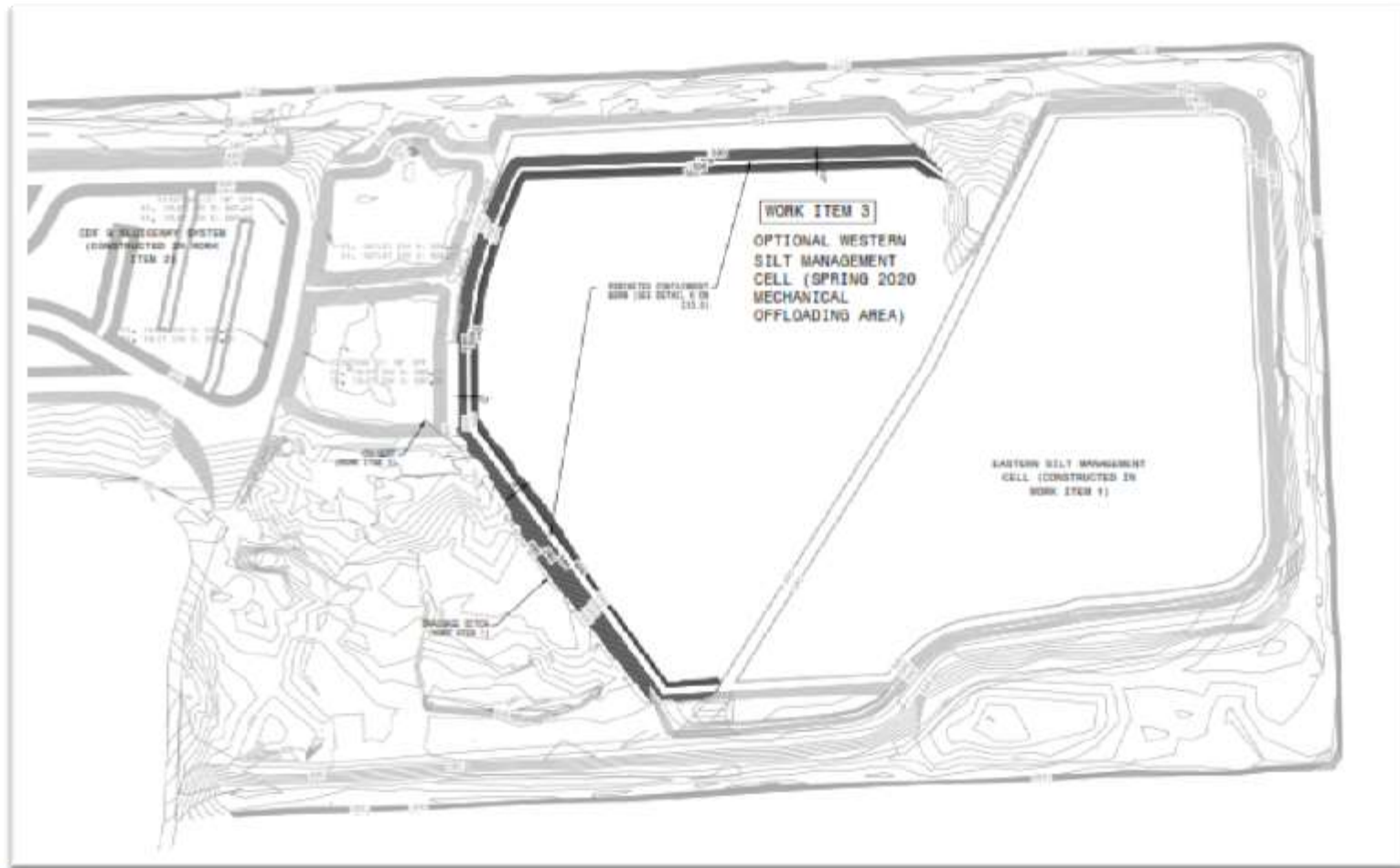
# SEDIMENT PROCESSING & MANGEMENT FACILITY 2018 EXPANSION



**INCREASE SLUICEWAY CAPACITY FROM 45,000 CY TO 80,000 CY**

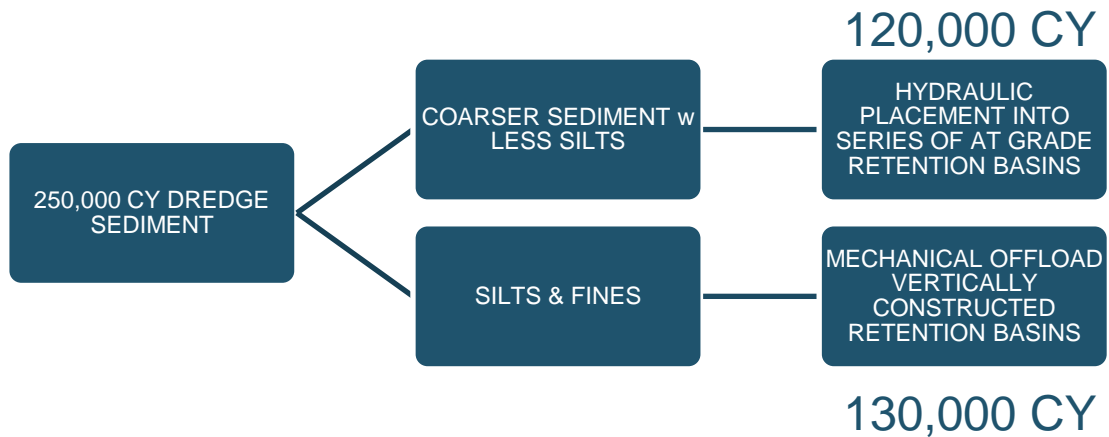
# SEDIMENT PROCESSING & MANGEMENT FACILITY 2018 EXPANSION

DEDICATES CDF 12  
TO VERTICAL  
EXPANSION VIA  
MECHANICAL  
OFFLOADING &  
PLACEMENT

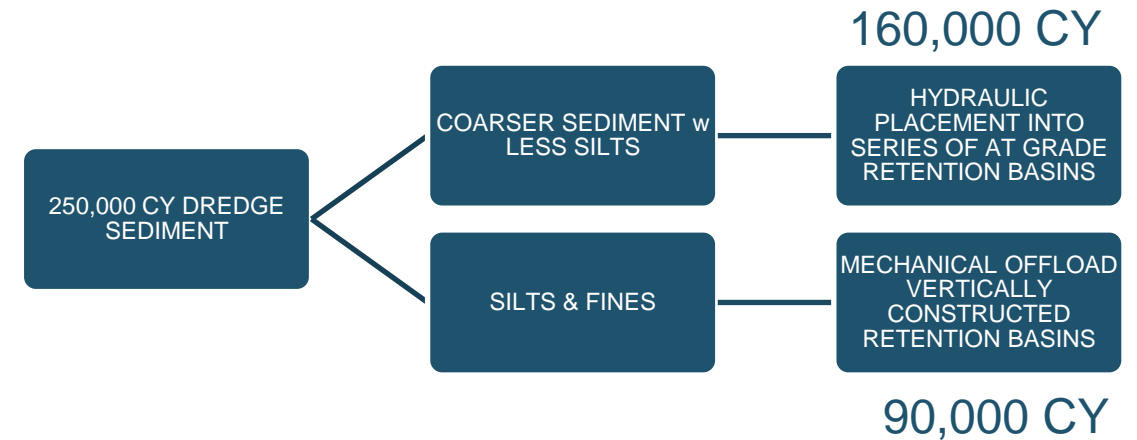


# PORT OF CLEVELAND'S SEDIMENT PROCESSING FACILITY & BENEFICIAL REUSE MODEL

## EXISTING



## PROPOSED



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

# PORT OF CLEVELAND SEDIMENT PROCESSING & MANAGEMENT FACILITY 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. (SITE OPERATOR)
- HULL & ASSOCIATES (ENGINEER OF RECORD)

**THANK YOU!**