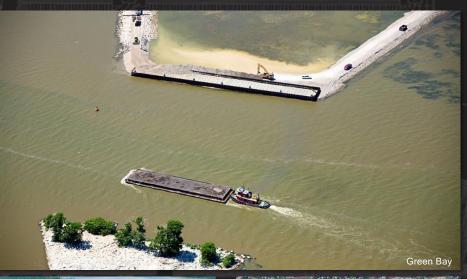
## USACE GREAT LAKES NAVIGATION SYTEM UPDATES

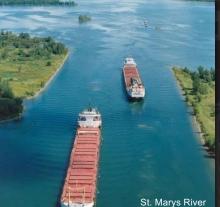
### **GL Navigation Team**

Esther Johnson – Operations Assistant Chief - Detroit Paul Mazzeno – Operations Division Chief – Chicago Adam Hamm – Operations Division Chief – Buffalo

AGLPA – 2023 Annual Conference Chicago, IL 28 July, 2023







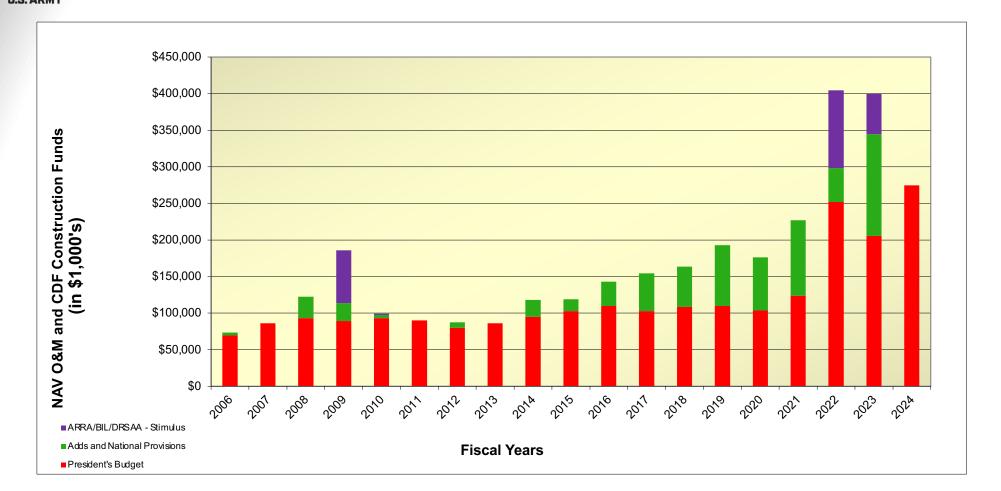




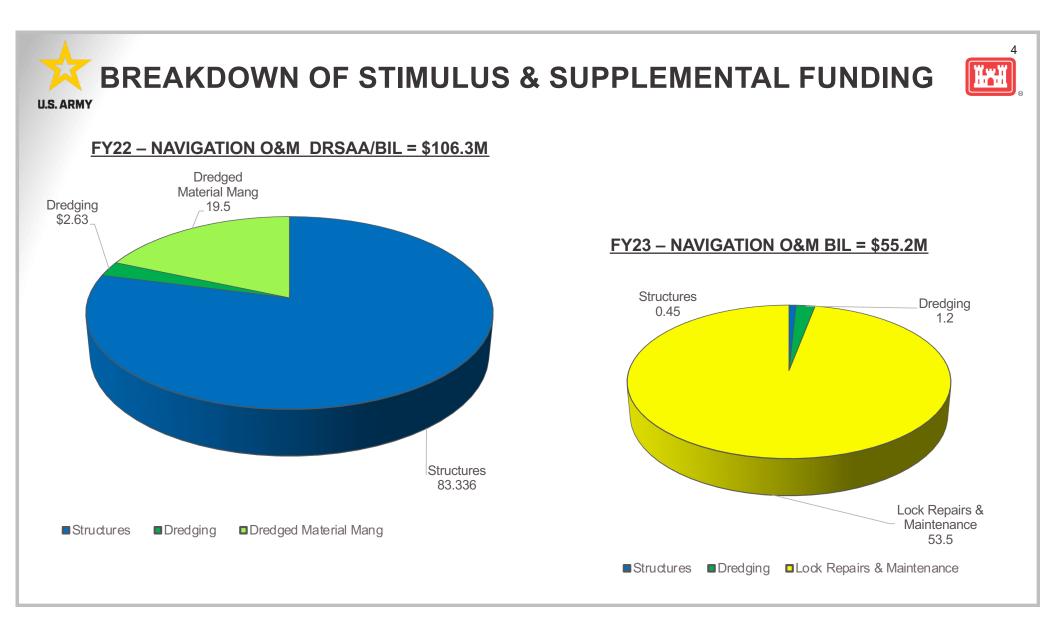


- Great Lakes Navigation System Funding
- Breakout of Funding and Where It's Going
- Dredging Backlog
- Detroit District Project Highlights
- Buffalo District Project Highlights
- Chicago District Project Highlights

## GREAT LAKES NAVIGATION FUNDING HISTORY



U.S. ARMY

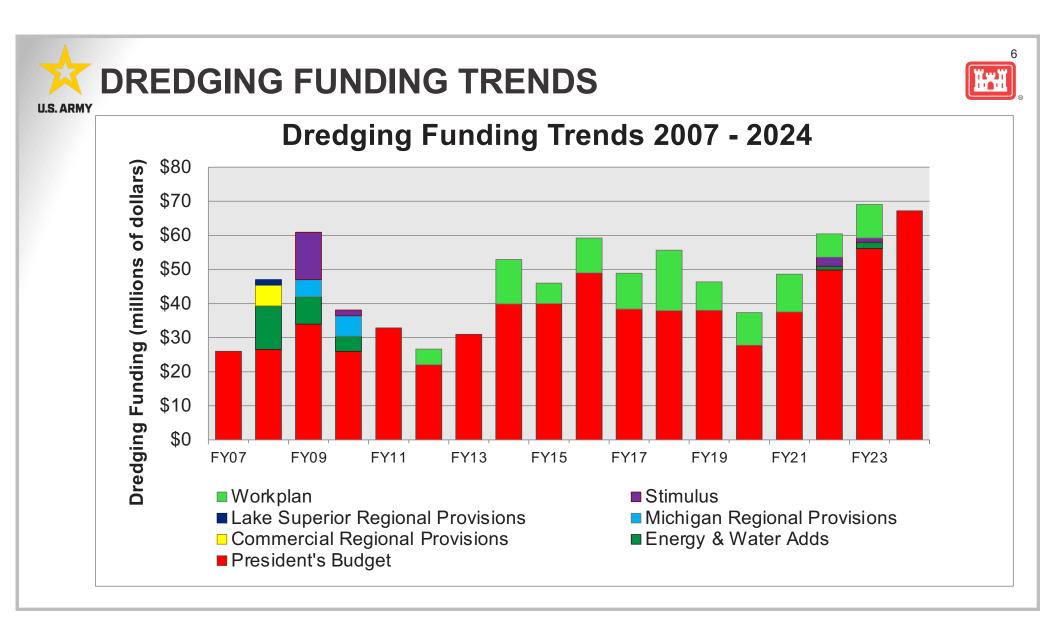


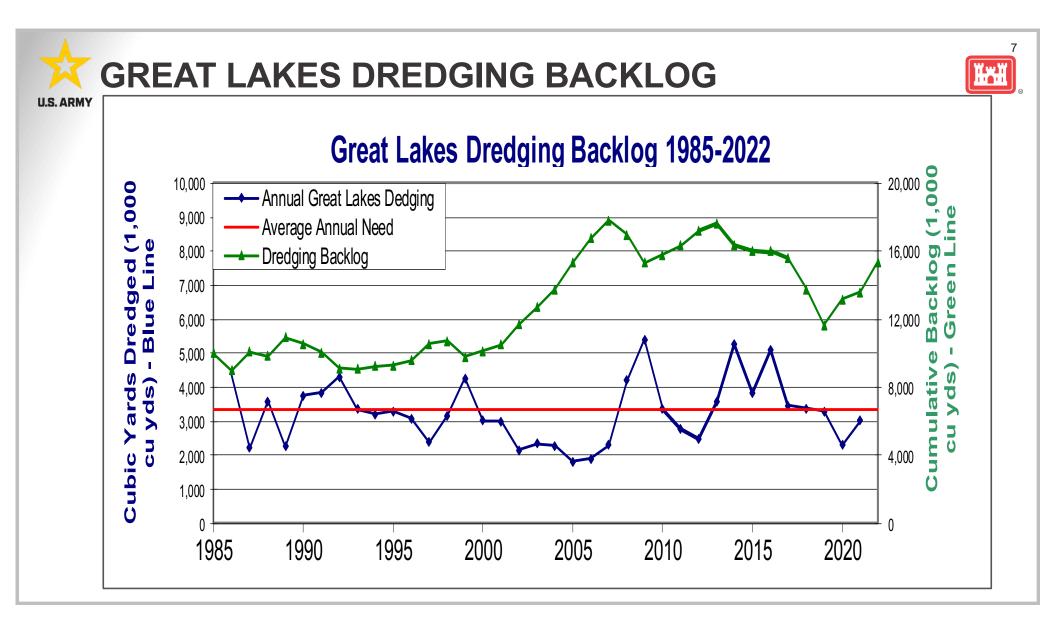


# **GL NAVIGATION STRUCTURE FUNDING HISTORY**



#### 160.0 140.0 Great Lakes Navigation Structure Funding (\$Millions) 120.0 100.0 80.0 Duluth, MN 60.0 40.0 20.0 0.0 1990 2018 19960 199<sup>04</sup> 199° 2002 2010 2014 2022 2006 Cleveland, OH

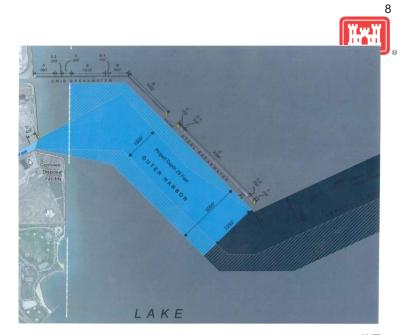


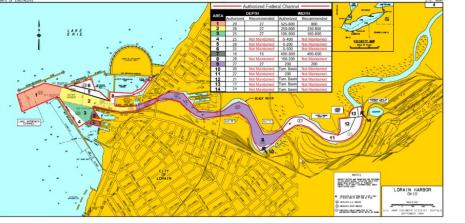


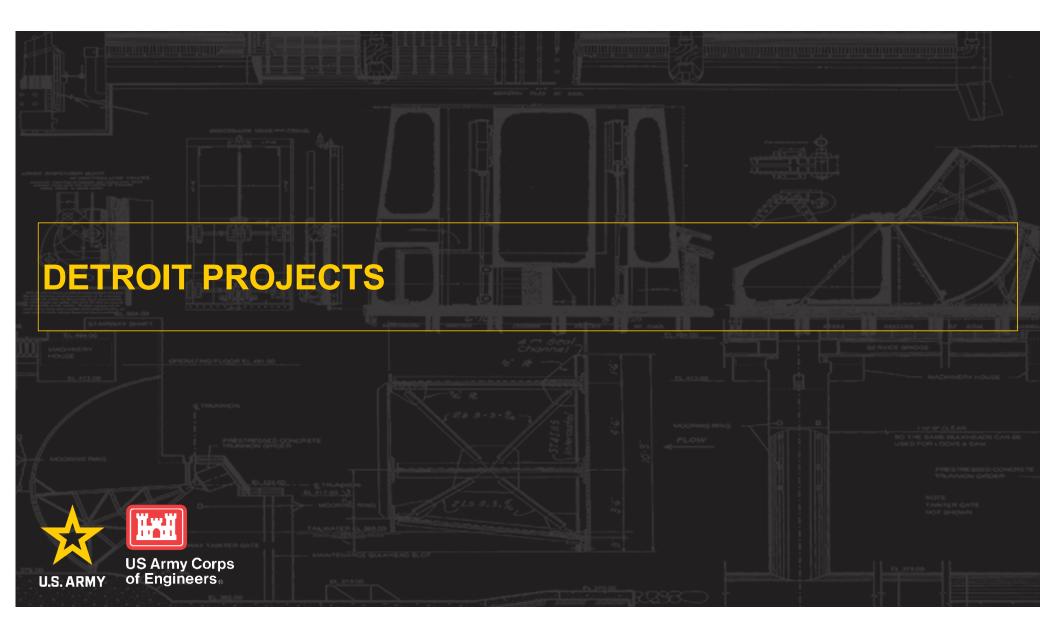


### **FUNCTIONAL VS AUTHORIZED U.S. ARMY**

- Fully Functional dimensions are defined as the minimum dimensions required to fully support active commercial navigation.
- Established in 2007 in coordination with Great Lakes Navigation stakeholders.
- Defines areas within the authorized project as functional to focus limited funding to support the entire system.
- Functional limits are unique for each harbor and are ٠ flexible and adjustable based on input from users.

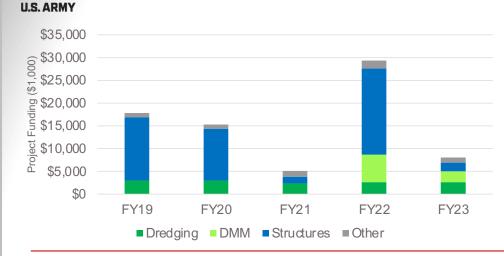








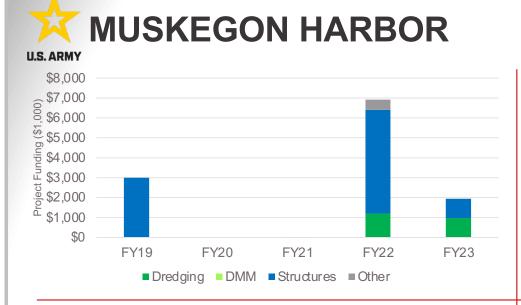
COLUTH-SUPERIOR HARBOR



#### Recent Success & Ongoing Projects

- Maintenance Dredging (FY21, FY22 & FY23)
- · Sediment sampling and analysis
- Coastal navigation structure maintenance
- Dredged material management and beneficial use (FY22, FY23)
- Duluth Ship Canal Shoreline Protection Construction (FY22)
- Government Vessel Yard South Pier Repairs (FY22)

- Harbor-wide sediment sampling and analysis characterization
- Continued Maintenance Dredging
- Erie Pier Confined Disposal Facility continued maintenance and fill management
- Construction of Government Vessel Yard repairs North Pier
- Duluth-Superior Structure Maintenance



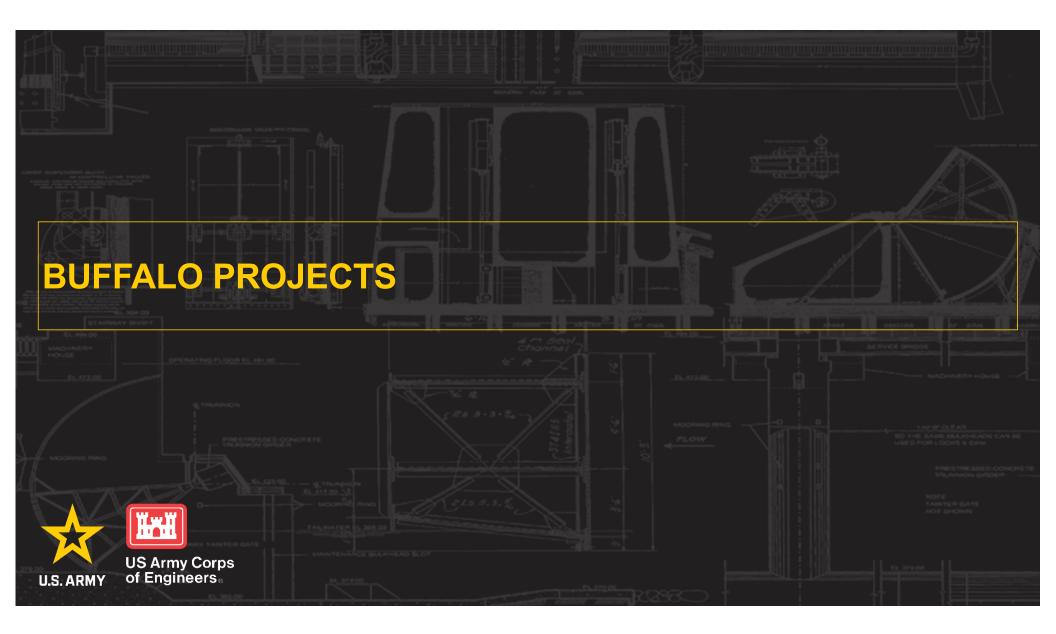
### Recent Success & Ongoing Projects

- Maintenance dredging & Emergency Dredging (FY22, FY23)
- Section 111 Beach Nourishment
- North revetment repairs Engineering & Design and Construction (FY22)
- South revetment sinkhole repairs (FY23)

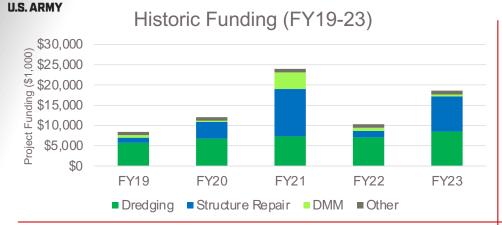


- Maintenance Dredging of the Federal Navigation Channel
- Engineering and design for repairs to South Breakwater
- Reassessing dredging frequency needs based on last two years of shoaling patterns and rates





# 



### Recent Success & Ongoing Projects

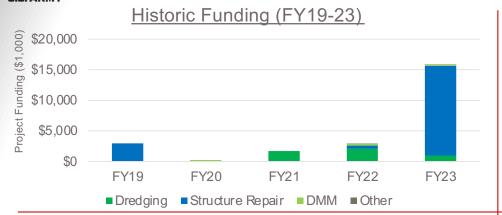
- CDF 10B Fill Management (FY21)
- West Breakwater Repair (FY21-22)
- Maintenance Dredging (FY20-22)
- Maintenance Dredging (FY23)
- West Pier Repair
- Dredged Material Management Plan





- Dredging costs are rapidly increasing and may exceed budgeted capability (Finalizing interim DMMPs is key so we can get 217 agreements)
- Long term (5, 10, 20 year) dredged material management





### Recent Success & Ongoing Projects

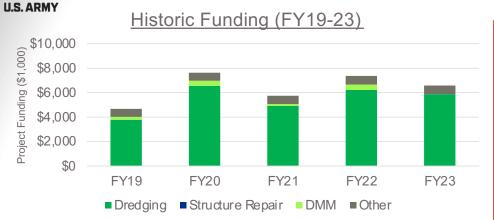
- Outer Breakwater Repairs
- Maintenance Dredging (FY21, FY22 & FY23)
- West Breakwater Repairs





- Dredging costs are rapidly increasing, outpacing benefits in smaller harbors and may exceed budgeted capability
- Long term (5, 10, 20 year) dredged material management

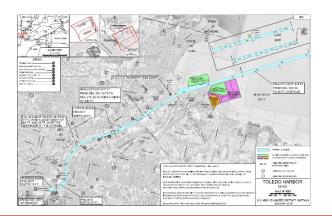
# **TOLEDO HARBOR**



### Recent Success & Ongoing Projects

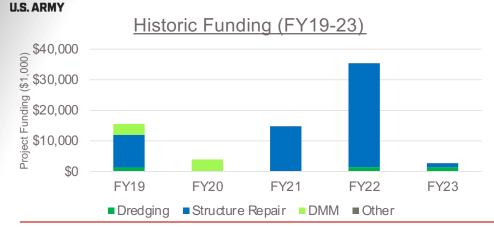
- Maintenance Dredging (FY20-22)
- Maintenance Dredging (FY23)
- CDF Fill Management
- Dredged Material Management Plan





- Dredging costs are rapidly increasing and may exceed budgeted capability
- Long term (5, 10, 20 year) dredged material management

# **BUFFALO HARBOR**



### Recent Success & Ongoing Projects

- CDF #4 Exterior Berm Repair (FY19 & FY20)
- South Breakwater Repair
- Maintenance Dredging (FY22 & FY23)
- North Breakwater Repair
- CDF #4 Interior Berm Repair

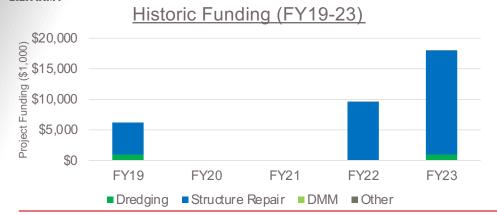
### Future Work & Challenges

 Aging infrastructure and increasing storm frequency/intensity has resulted in failures in recent years



16

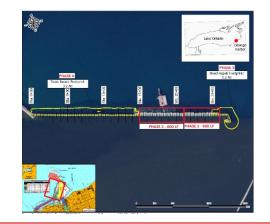




### Recent Success & Ongoing Projects

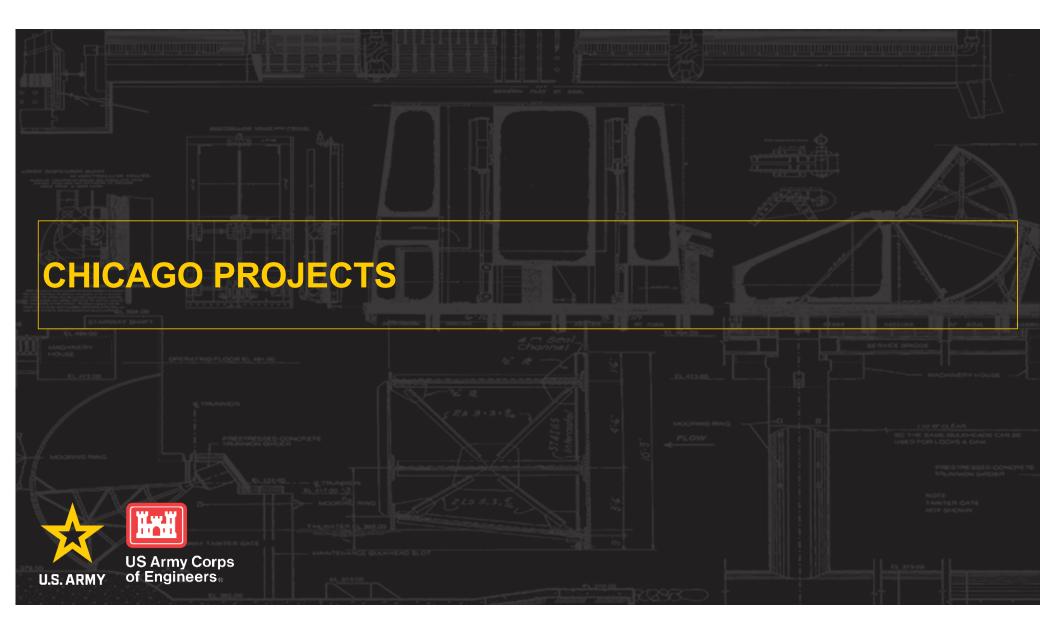
- West Arrowhead Phase 1 Repair (FY17)
- West Arrowhead Phase 2 Repair (FY19)
- West Arrowhead Phase 3 & 4 Repair (FY23-24)
- Outer West Breakwater Repair (FY23-24)
- East Arrowhead Repair E&D (FY23)
- CAP 107 Deepening Study



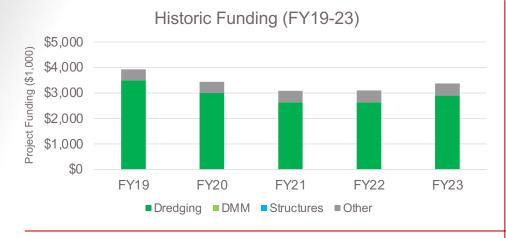


### Future Work & Challenges

• Stone supply issues are impacting construction schedules and will extend construction windows

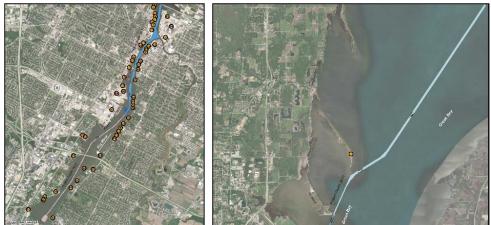






Recent Successes & Ongoing Projects

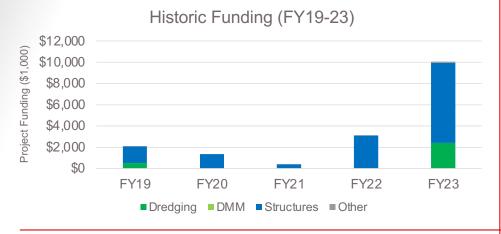
• Maintenance Dredging - 150K CY (FY23)



- Sediment Sampling and Analysis (FY24)
- Maintenance Dredging (FY24/25/26)
- Operation & Maintenance (O&M) of Dredged Material Disposal Facility (DMDF) (FY24/25)



### **MILWAUKEE HARBOR**



Recent Successes & Ongoing Projects

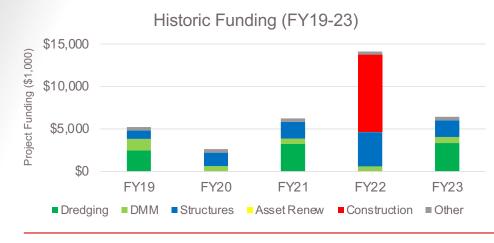
- Maintenance Dredging ~45K CY (FY23) •
- Navigation Structure Engineering & Design (FY23)
- Navigation Structure Maintenance North • Detached Breakwaters (USACE Fleet) (FY23)



- Navigation Structure Maintenance South • Detached Breakwater (USACE Fleet) (FY24)
- Navigation Structure Maintenance South Detached • Breakwater (Contract) (FY24)
- Sediment Sampling and Analysis (FY25) •
- Maintenance Dredging (FY26) •
- MMSD DMMF expansion next to USACE CDF • (2024)

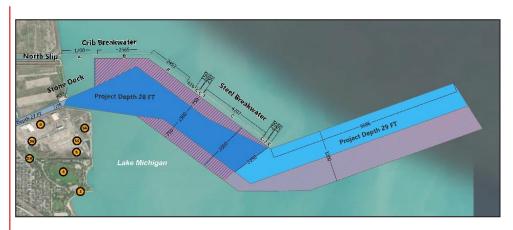


## **CALUMET HARBOR**



**Recent Successes & Ongoing Projects** 

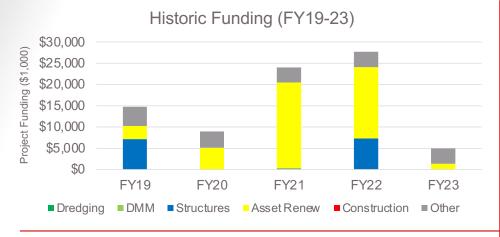
- Navigation Structure Maintenance (USACE Fleet) -• North Breakwater (FY23)
- Maintenance Dredging (FY23) -- delayed •
- Operation & Maintenance (O&M) of Dredged • Material Disposal Facility (DMDF) (FY23) -- delayed
- Planned DMDF vertical expansion project on hold • pending court case and State of Illinois permitting



- Maintenance Dredging (FY24) -- delayed •
- O&M of DMDF (FY24) -- delayed •
- Navigation Structure Maintenance North • Breakwater (USACE Fleet) (FY24)
- Maintenance Dredging (FY26) -- pending expansion •
- O&M of DMDF (FY 25/26/27) -- pending expansion •
- Nav Structure Maintenance (USACE Fleet) • (FY25/26/27)



## **CHICAGO HARBOR**



Recent Successes & Ongoing Projects

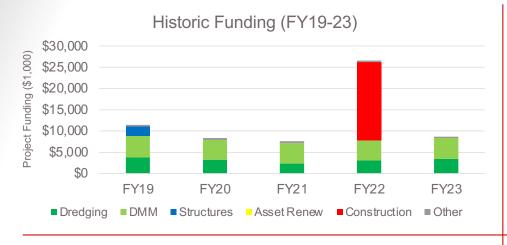
Navigation Structure Engineering & Design (FY23) •



### Future Work & Challenges

Navigation Structure Maintenance – (Contract) • (FY24)





Recent Successes & Ongoing Projects

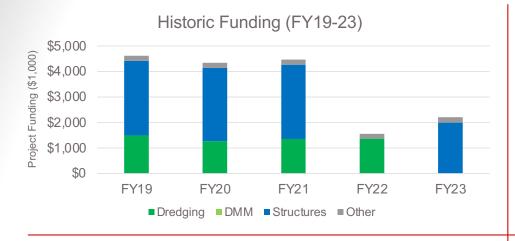
- O&M of DMDF (FY23)
- Maintenance Dredging (FY23) -- delayed by construction; current backlog 78,000 cubic yards
- CDF vertical expansion will add 25-40 yrs and 3.1M cubic yards of capacity (+180%)



- Maintenance Dredging (FY24) potential delay by construction
- Operation & Maintenance of DMDF (FY24)
- Maintenance Dredging (FY26)



## **BURNS WATERWAY HARBOR**

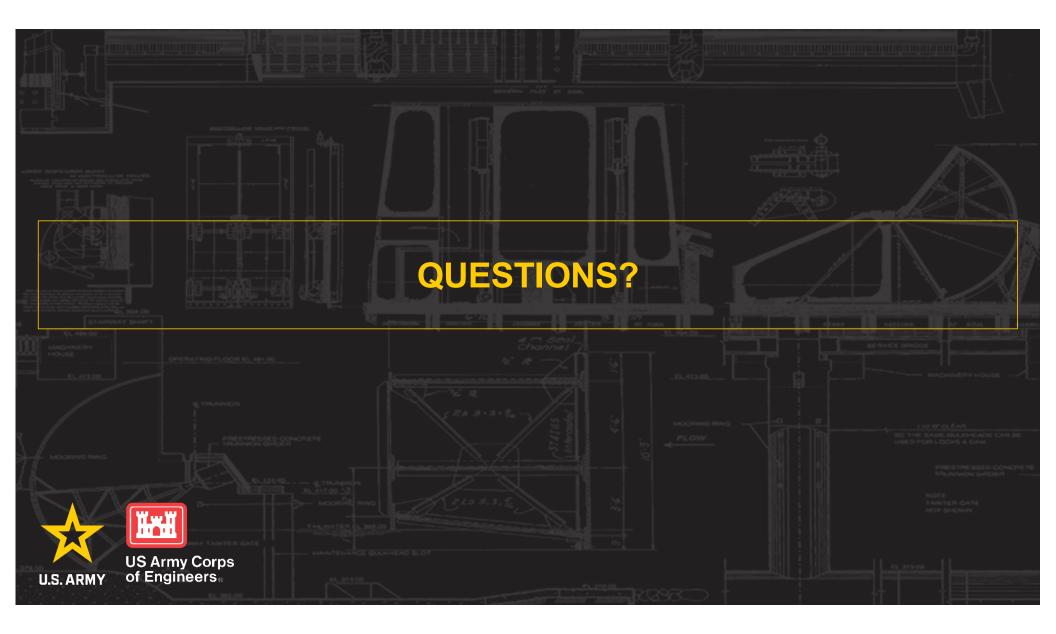


Recent Successes & Ongoing Projects

Scour Hole Repairs - East Harbor Arm (USACE • Fleet)



- Maintenance Dredging (FY24) •
- Maintenance Dredging (FY26) •



## GREAT LAKES DISTRICTS CONTACTS

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