

DREDGED MATERIAL PRELIMINARY ASSESSMENT PROCESS: ST. MARYS RIVER CASE STUDY

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2023 GLDT Meeting
Sault Ste Marie, MI
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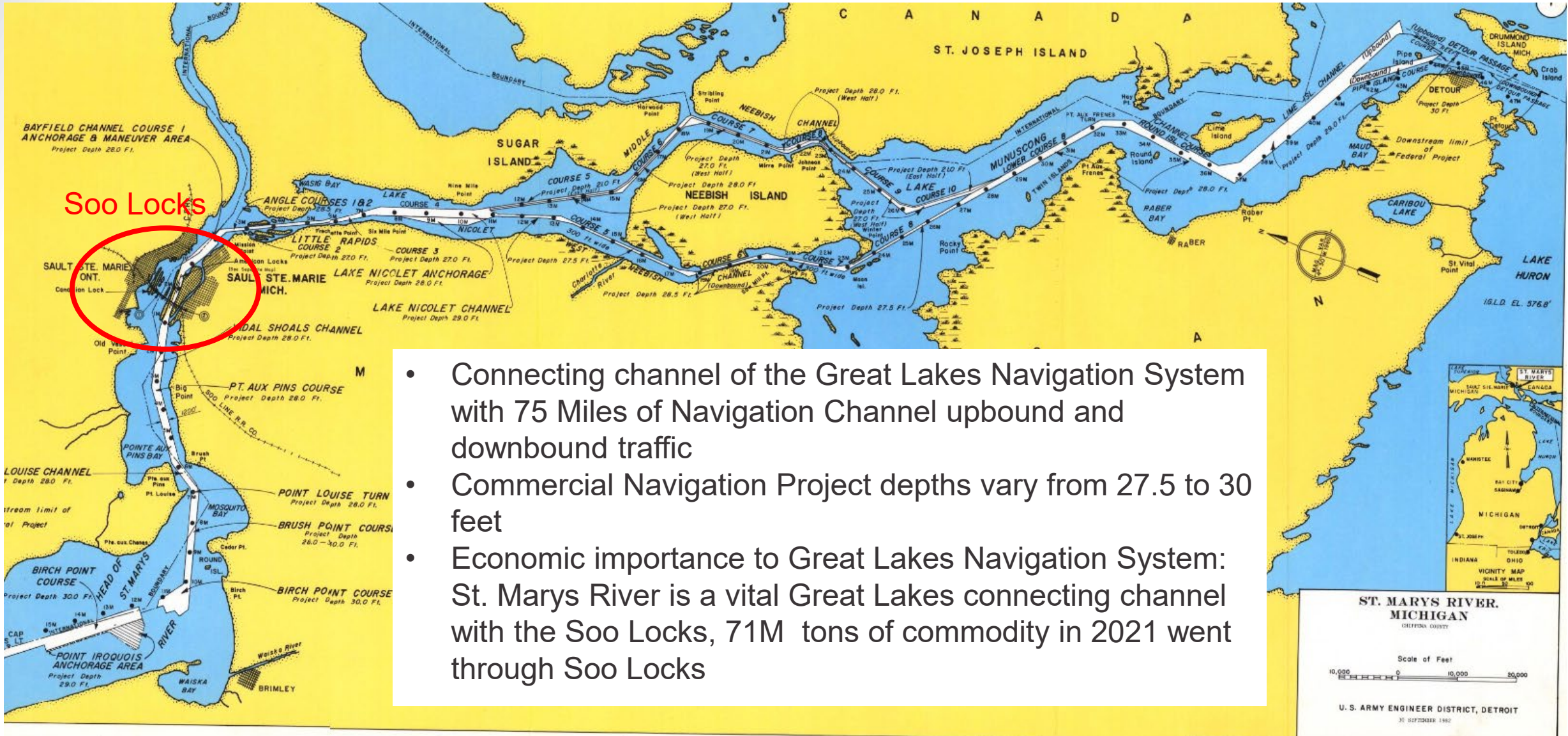
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ST. MARYS RIVER – CONNECTING CHANNEL



- Connecting channel of the Great Lakes Navigation System with 75 Miles of Navigation Channel upbound and downbound traffic
- Commercial Navigation Project depths vary from 27.5 to 30 feet
- Economic importance to Great Lakes Navigation System: St. Marys River is a vital Great Lakes connecting channel with the Soo Locks, 71M tons of commodity in 2021 went through Soo Locks

ST. MARYS RIVER, MICHIGAN
 DELTA COUNTY

Scale of Feet
 0 10,000 20,000

U. S. ARMY ENGINEER DISTRICT, DETROIT
 30 SEPTEMBER 1962



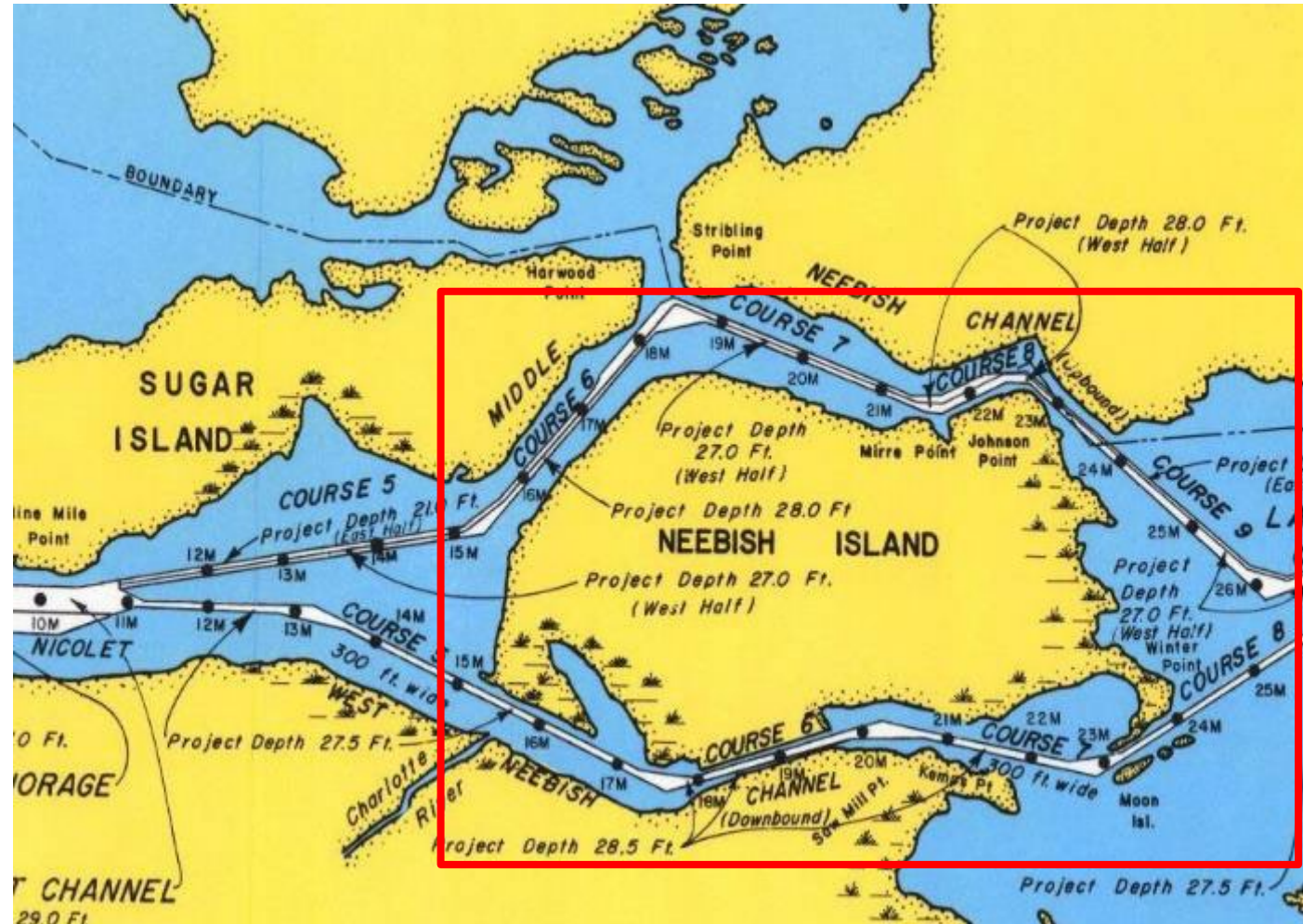
ST. MARYS DREDGING AND PLACEMENT

- Maintenance dredging operations over the next years are expected to concentrate on the courses surrounding Neebish Island:

- Course 6
- Course 7
- Course 8

Last dredging projects

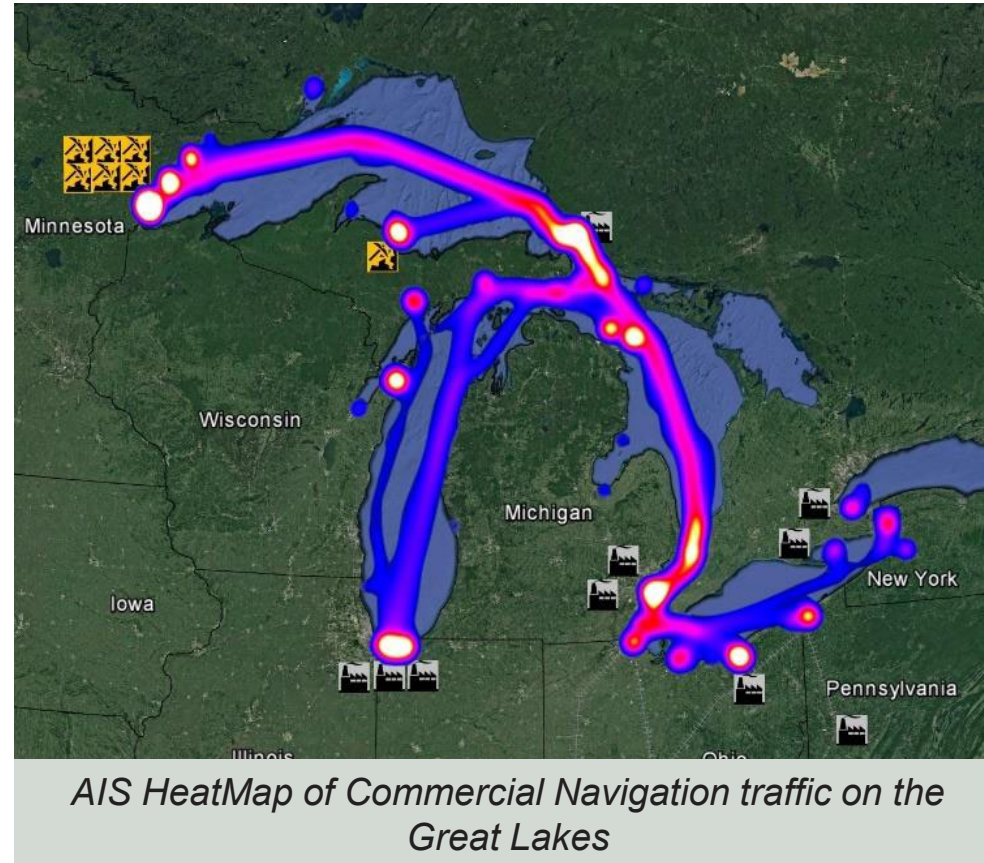
- FY15 St. Marys River: 108,000 cyds with placement at Northeast Pier (Soo Locks facility)
- FY14 St. Marys River: 32,000 cyds with placement at Rock Cut



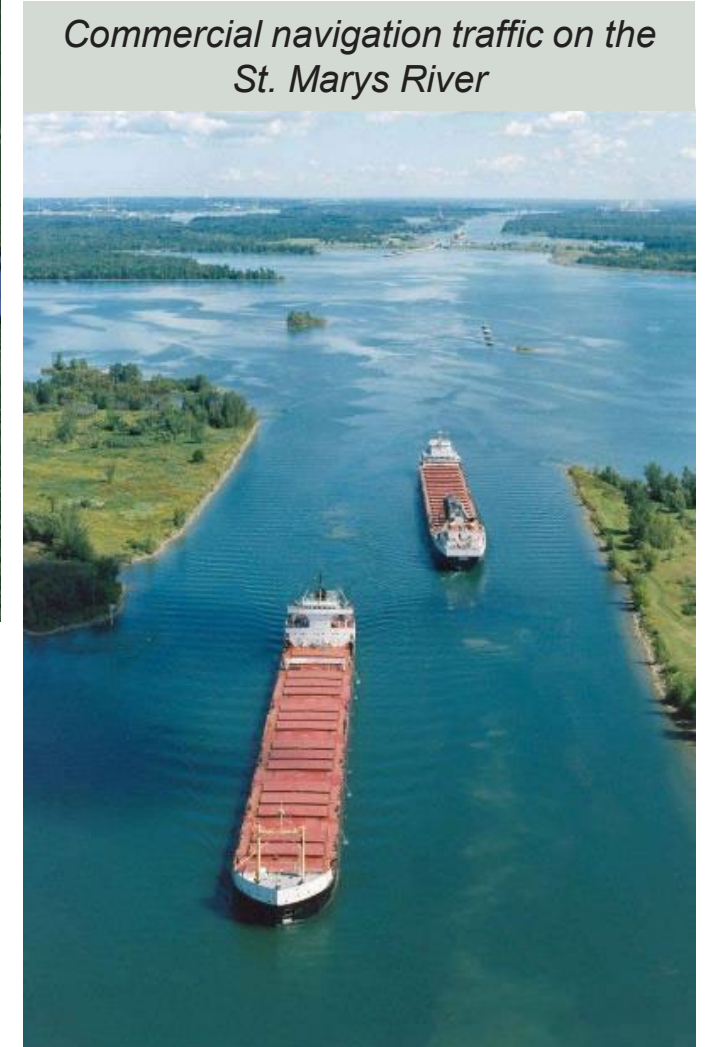


ST. MARYS RIVER & SOO LOCKS - ECONOMICS

- 71M tons of commodity in 2021 went through the Soo Locks – St. Marys River
- Primary Commodities shipped across the GLNS include:
 1. Iron Ore
 2. Western Coal
 3. Grain
 4. Limestone
- Estimated that a 30-day unscheduled closure of the Soo Locks would have an economic impact to industry of \$160 M.



Commercial navigation traffic on the St. Marys River





DREDGED MATERIAL PRELIMINARY ASSESSMENT PROCESS

Preliminary Assessment (PA)

In accordance with Engineering Regulation ER 1105-2-100 (The Planning Guidance Notebook) – establishes that a Preliminary Assessment (PA) is required for all Federally maintained navigation projects, to **document the continued viability of the federal navigation project and the availability of dredged sediment placement capacity to accommodate 20 years of maintenance dredging**. If the preliminary assessment determines that there is not sufficient capacity to accommodate maintenance dredging for the next 20 years, then a dredged material management plan study must be performed.

Purpose of Preliminary Assessment

- Identify and determines **remaining capacity of the project**, relative to the Corps standard of 20 years
- Evaluate the **economics of continued maintenance** of the project (based on indicators such as annual O&M costs per ton of cargo, volume and frequency of traffic)
- Establish and **document the Federal Standard** for the project
- Evaluation of environmental compliance for **alternatives including confined, open-water, and beneficial uses**
- **Determines whether more detailed study is required** to establish a management plan, and, if so, provides information to justify the study and permit its prioritization in the budgetary process.



HISTORIC DREDGED MATERIAL MANAGEMENT & REMAINING CAPACITY

Historic Placement of Material

- Upland placement (Neebish Island Rock Cut, North East Pier at Locks)
- Historic sites have reached capacity

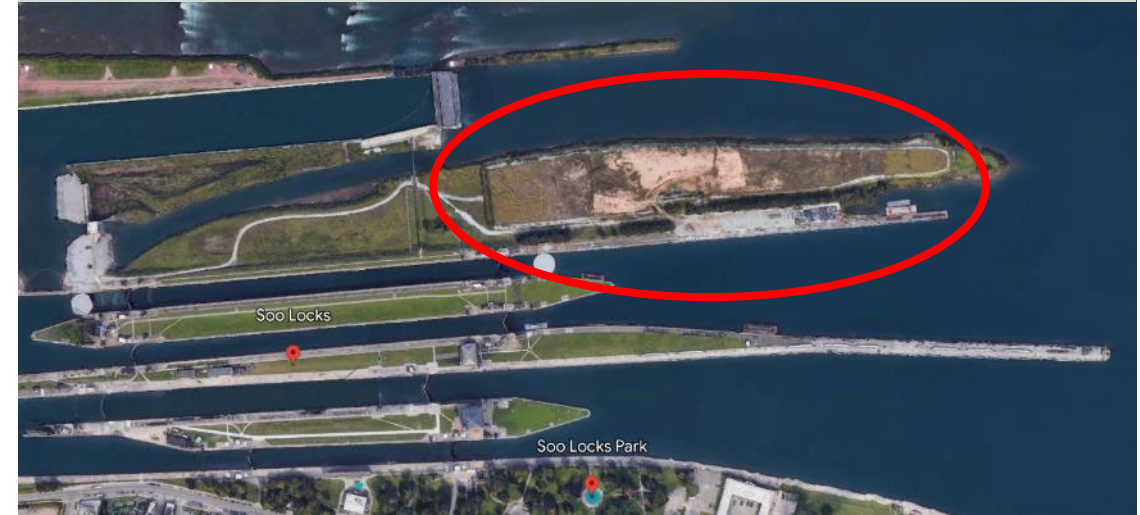
FY23 & FY24 Maintenance Dredging (150,000 – 180,000 cyds)

- Fall 2022 O&M maintenance at Rock Cut placement site to create additional capacity for 1-2 dredging cycles
- Very limited capacity available to support future dredging beyond FY24
- Need to identify and coordinate future placement sites for dredged material for long term viability of navigation

Needs for O&M on St. Marys River

Operation and maintenance dredging requirement is approximately 85,000 cyds of material every 4 to 6 years, thus a long term 20-yr placement solution is needed to provide between 250,000 to 450,000 cyds of capacity.

Historic Placement: North East Pier at Locks



Historic Placement: Neebish Island – Rock Cut



ST. MARYS RIVER SEDIMENT SAMPLING – 2019

(LOWER RIVER)

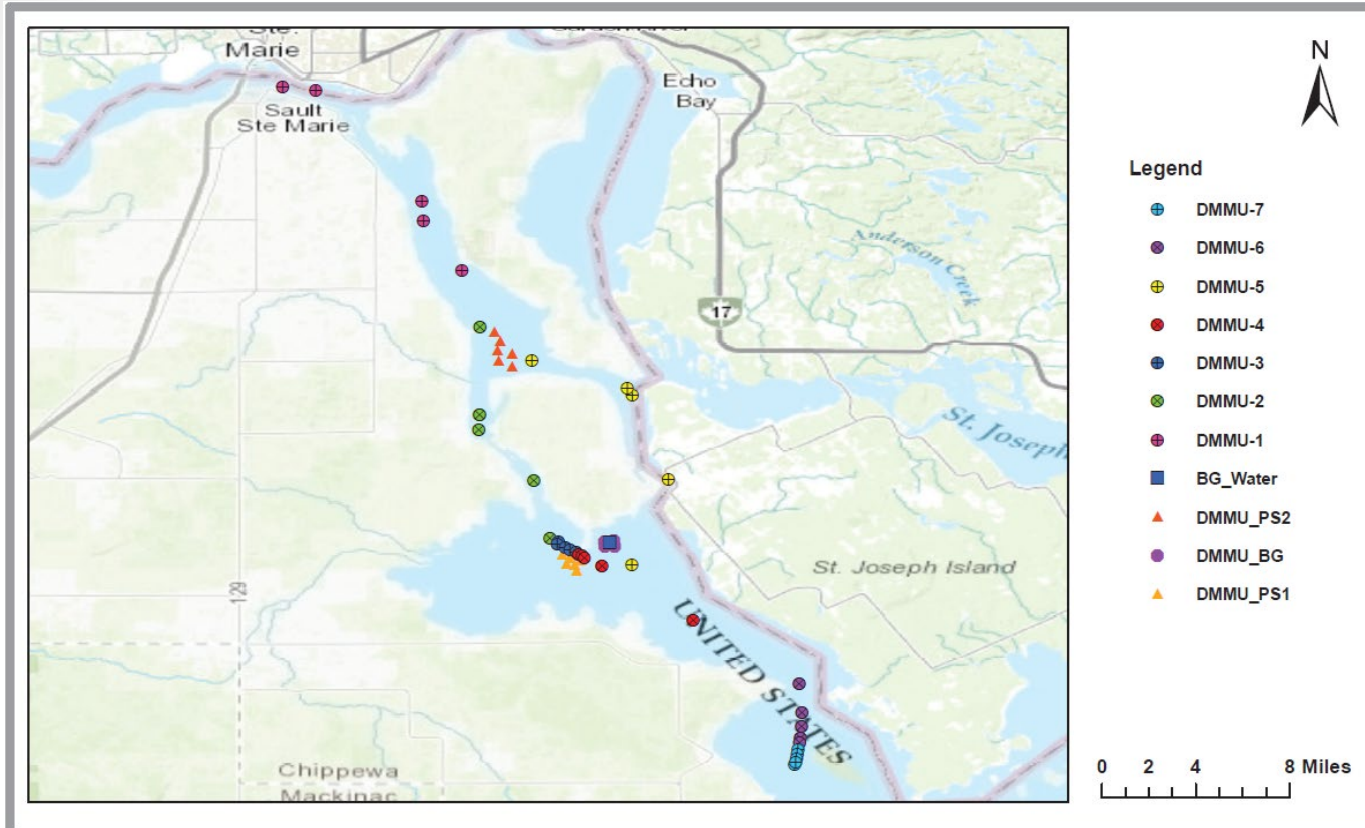


Figure 2
St. Mary's River Sediment Sampling Locations

Client
USACE - Detroit District

Date
Aug. 8, 2019

Drawn by
M.H.

Location
St. Mary's River, Sault Ste. Marie, Michigan

Project no.
F19734



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- Bottom sediments taken from the river comprised of **40% sands, 30% silts, and 30% clays**.
- Contaminant concentrations of the analyzed sediments contained organic and inorganic constituents mostly at levels comparable to background. OrganoChloride Pesticides, PCBs, and PAHs were typically non-detect or detected at very low levels.
- Biological analyses performed indicated that there were not significant biological effects caused by river sediments when compared to background.
- **Sediment suitability indicates that the material could be used for habitat creation and/or other beneficial reuses, in-water placement without capping, or for unrestricted upland placement/use.**



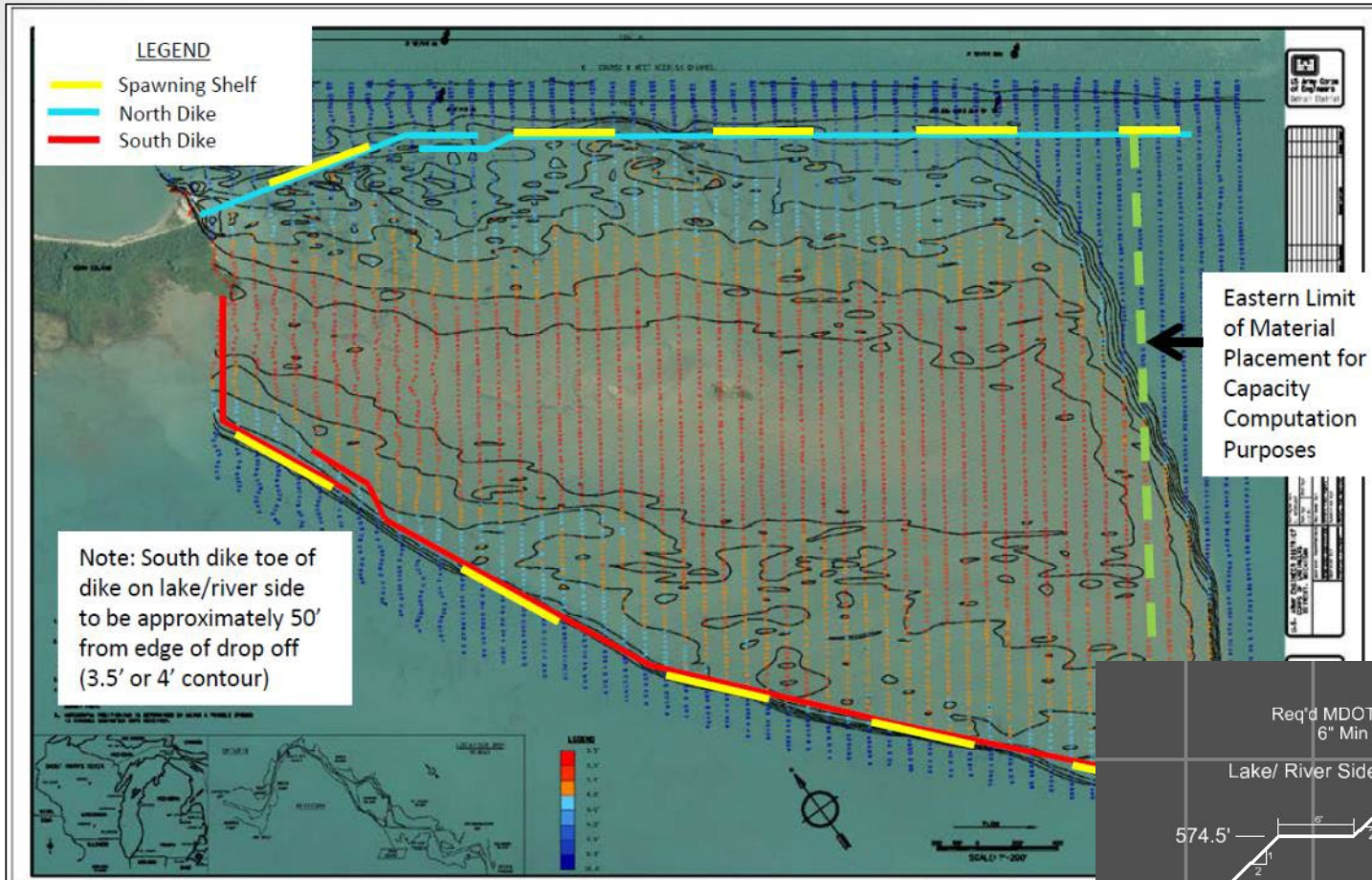
PRELIMINARY ST. MARYS RIVER DMPA ALTERNATIVES (2019)





PRELIMINARY ALTERNATIVE – MOON ISLAND

BENEFICIAL USE

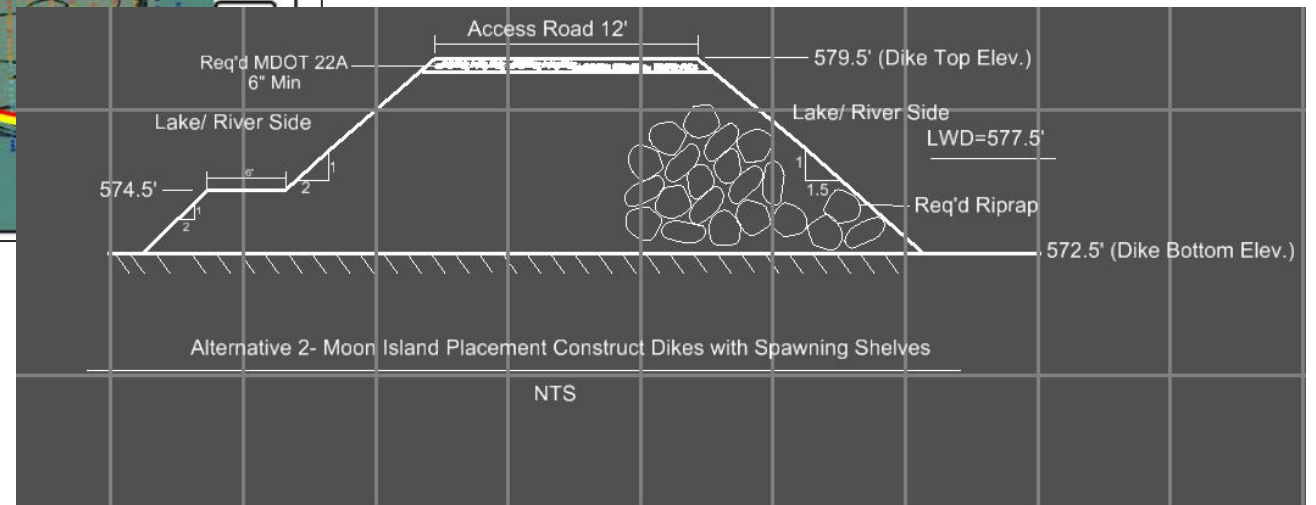


Proposed Design Alternative in preliminary 2019 DMPA

Moon Island placement location consists of constructing non-continuous perimeter stone dike around 231 acre open water site just southwest of Neebish Island

Potential Habitat features:

- Spawning reef/shelf in dikes
- Emergent wetland
- Piping plover nesting or foraging habitat





BENEFICIAL USE OPPORTUNITIES FOR ST. MARYS RIVER DREDGED MATERIAL

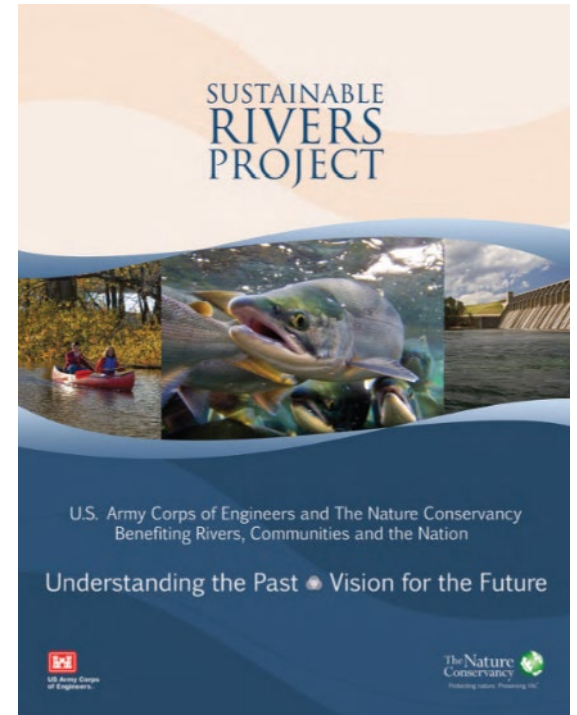
- Complete full sediment analysis of the St. Marys River to determine and document Federal Standard
- Further evaluate placement sites that can provide 20 year capacity, with focus and emphasis on beneficial use
- With the limitations of no non-federal sponsor for St. Marys River, continue to build support from various stakeholders and potential partners for long term success of dredge material management on the St. Marys River

USACE Sustainable River Program (partnership with Nature Conservancy) – Works USACE projects and stakeholders to formulate alternative management strategies for rivers and ecosystems associated with USACE infrastructure.

FY24 SRP Proposal for St. Marys River (locks & dams)

The goal is to identify beneficial use opportunities for dredged material placement in the St. Marys River, while lowering dredging costs by utilizing in-water placement as an alternative to more costly upland placement options.

- Complete a habitat assessment study
- Outreach with stakeholders in the region, including Tribes, the Michigan Department of Natural Resources, Michigan Environment Great Lakes and Energy, Fish and Wildlife Service, and interested local partners.





ST. MARYS RIVER DMPA – CONTINUED STEPS

- Complete dredge material management plan process
 - Preliminary Assessment (Phase 1)
 - determination Federal Standard, taking into consideration beneficial use
 - document the continued viability of the federal navigation project and the availability of dredged sediment placement capacity to accommodate 20 years of maintenance dredging
- Communicate challenges of connecting channels with no local sponsor, opportunity for projects to be 100% federal responsibility and funded
- Continue coordination with stakeholders and partners to push forward on sites that provide sustainable, cost-effective dredge material placement sites leveraging existing programs and funding opportunities
 - Work closely with MiDNR, EGLE, FWS on viable placement options in the St. Marys River
 - Strong USACE-HQ support to further identify future placement sites, pursuing available funding sources; Sustainable Rivers Program (SRP), National Regional Sediment Management program (RSM)



QUESTIONS

