



Leveraging Enhancement of Remedy Provisions to Optimize Environmental Cleanup and Navigation Dredging Benefits at New Bedford Harbor



July, 2023 | Patrick Rezendes, Project Manager



Foth



Fairhaven
Massachusetts



US Army Corps
of Engineers®



Location






NEW BEDFORD HARBOR PCBs

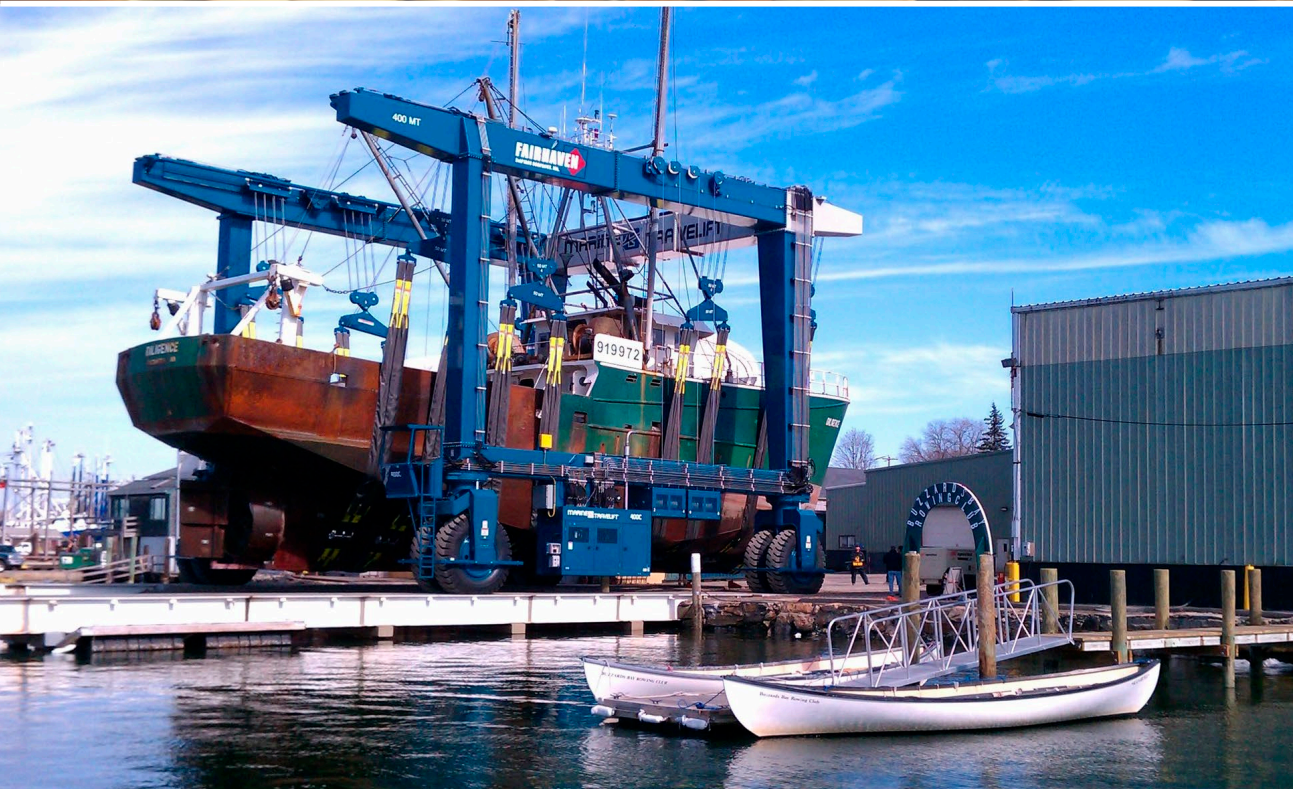
AN END IN SIGHT?



NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES



Sediment Dredging at
SUPERFUND MEGASITES
Assessing the Effectiveness

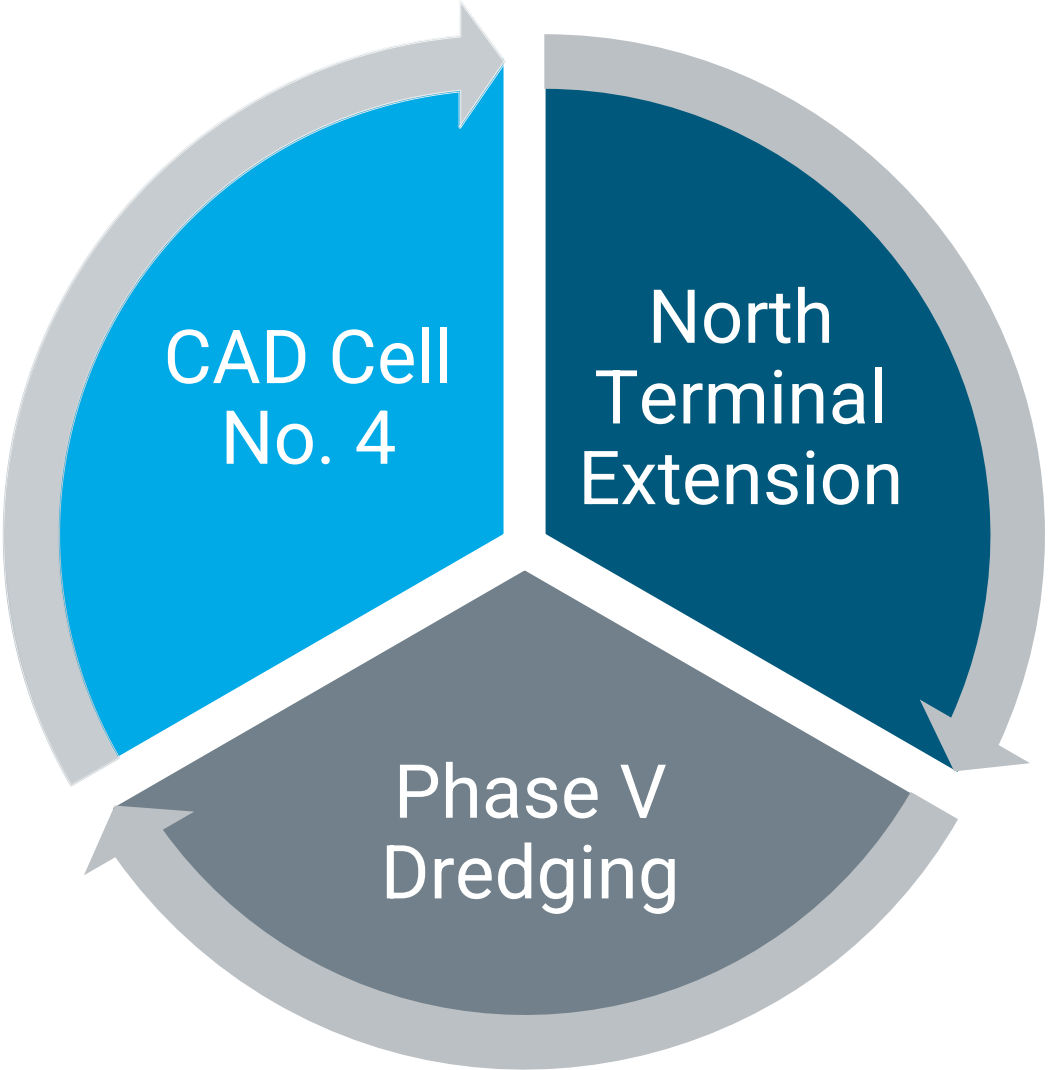


Superfund and State Enhanced Remedy

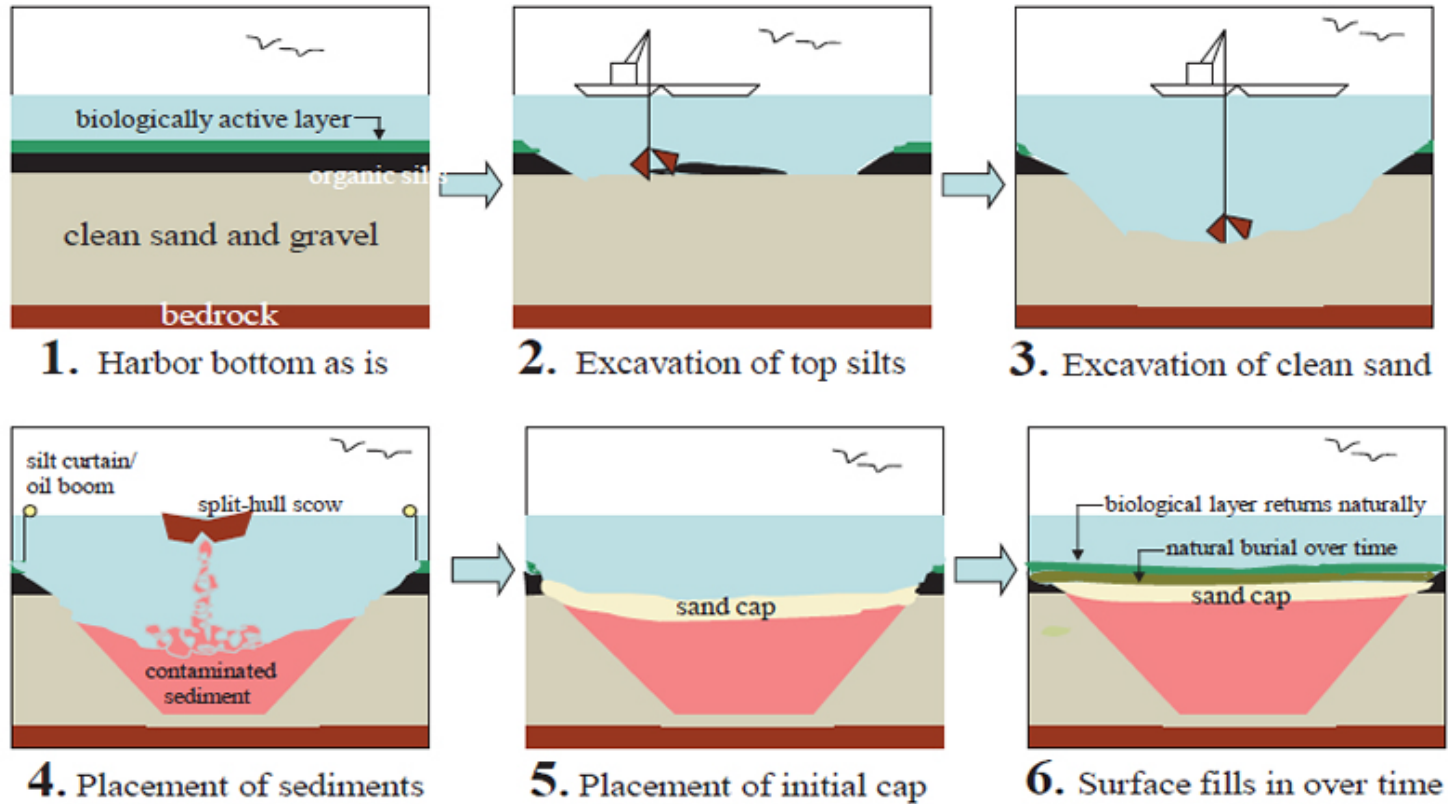
- ◆ 1983: EPA declared more than 18,000 acres of New Bedford Harbor and Buzzards Bay a Superfund site
- ◆ 1988: A Record of Decision (ROD) was issued
- ◆ The ROD contains a provision called Enhancement of Remedy.
- ◆ Allowed Massachusetts to propose extending the scope of a remedy to cover additional remediation not otherwise required by the ROD: State Enhanced Remedy (SER)

Dredging of contaminated sediments that would otherwise remain in harbor with PCB concentrations <50 ppm

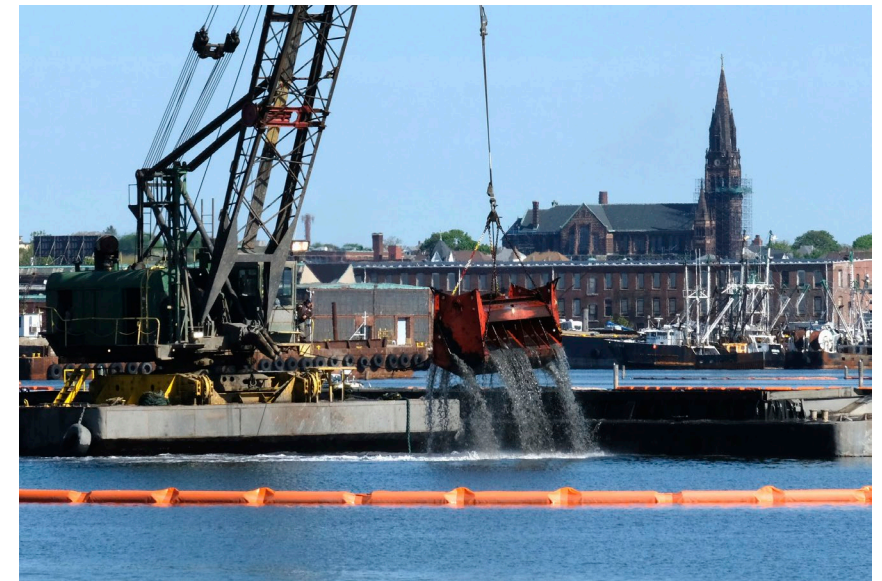
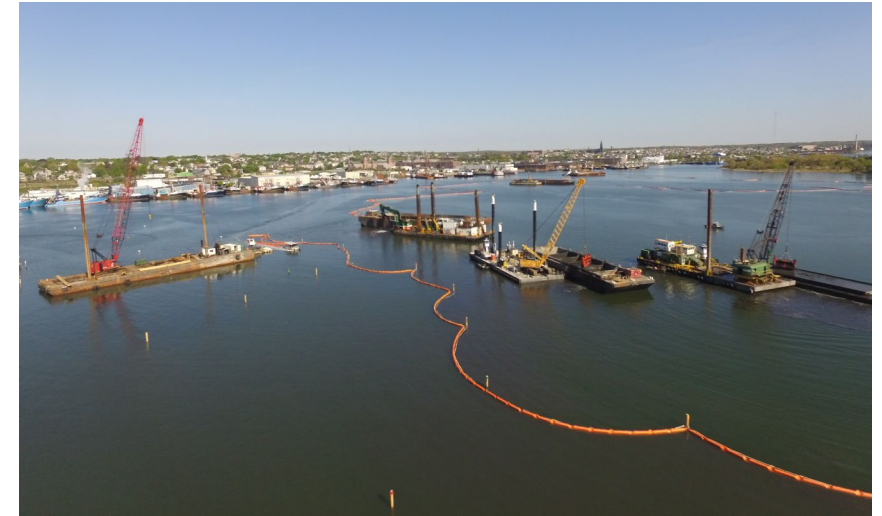
Project Overview: Three Major Components



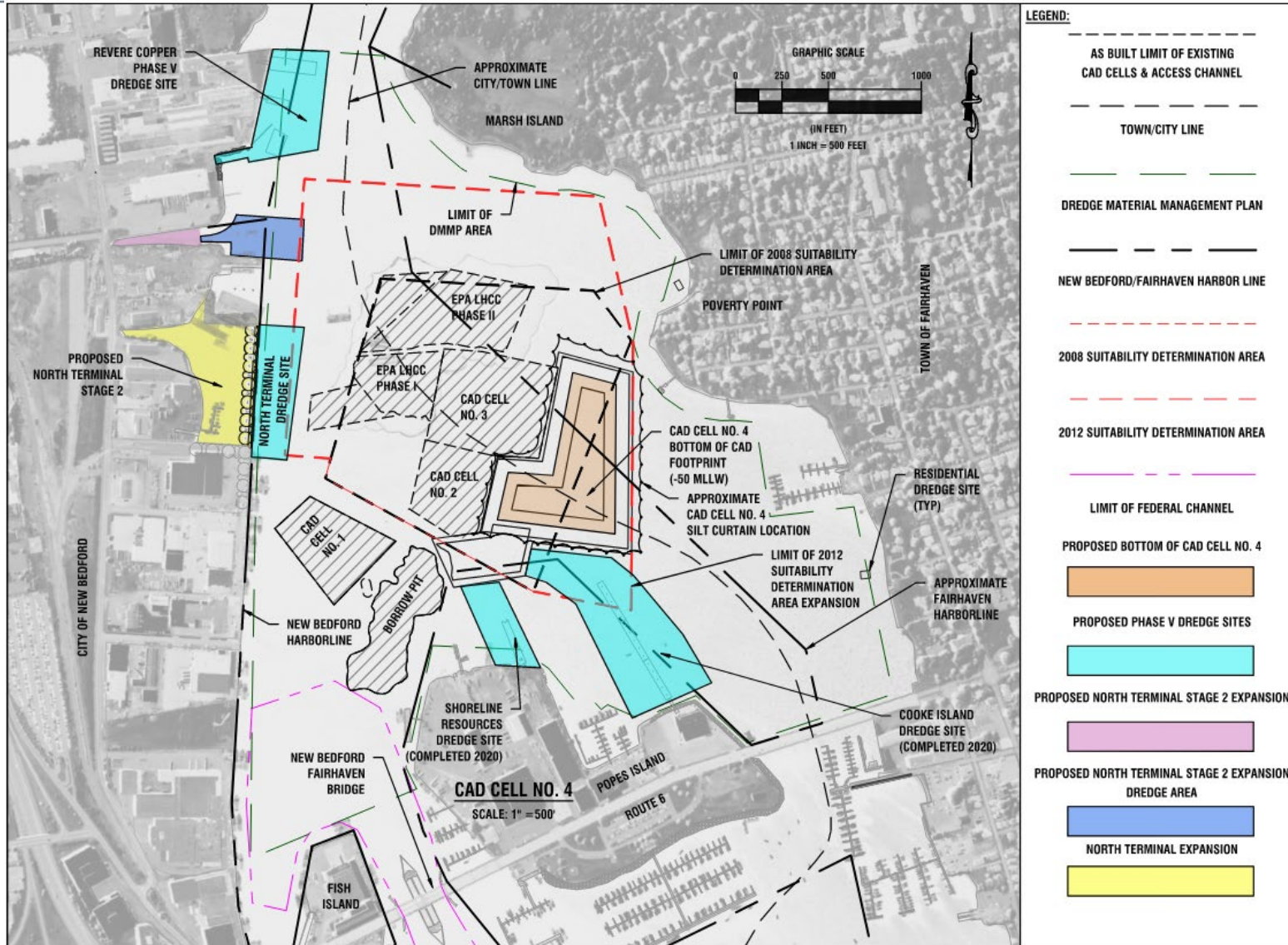
Confined Aquatic Disposal (CAD) Cells



Source: EPA New Bedford Harbor Website
[Lower Harbor Confined Aquatic Disposal \(CAD\) Cell | US EPA](#)



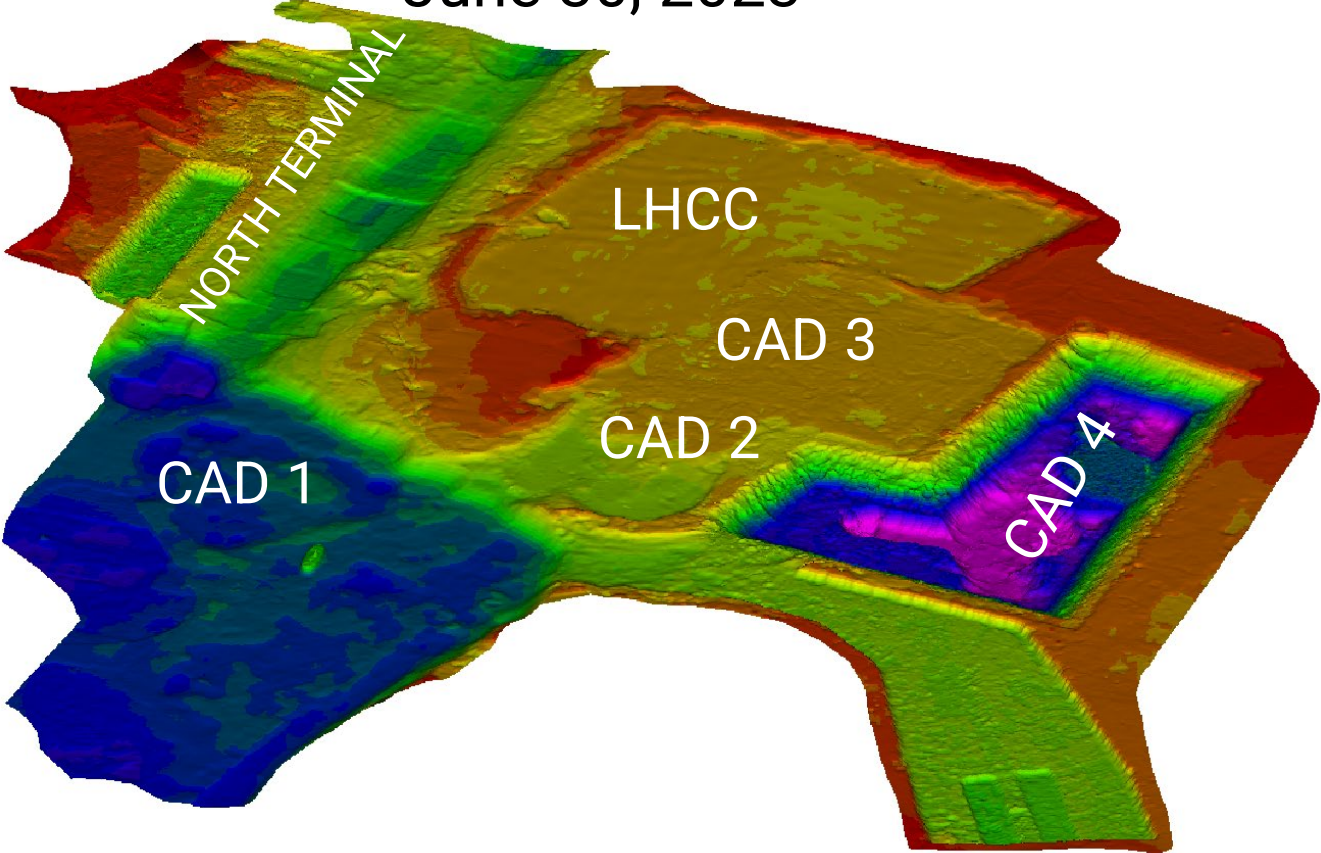
Existing CAD Cells & CAD Cell No. 4



CAD Cell No. 4: 500,000 yd³ Capacity for Dredged Sediments

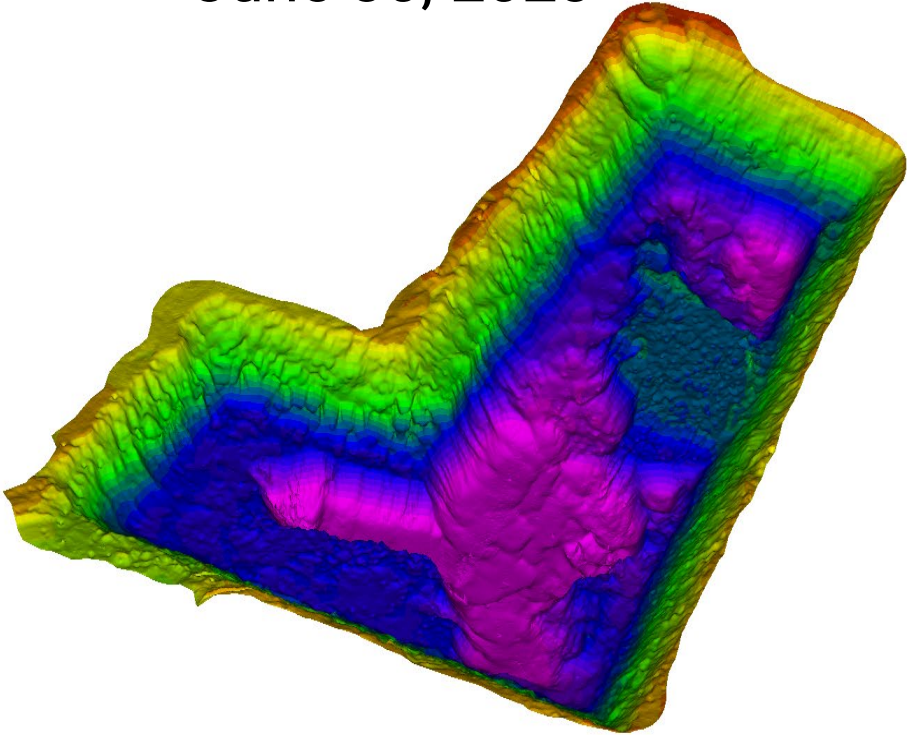
Combined Lower Harbor Survey

June 30, 2023



CAD CELL NO. 4 Progress Survey

June 30, 2023



North Terminal Extension

- ◆ Terminal Extension: +/-650 LF of bulkhead / commercial berth space

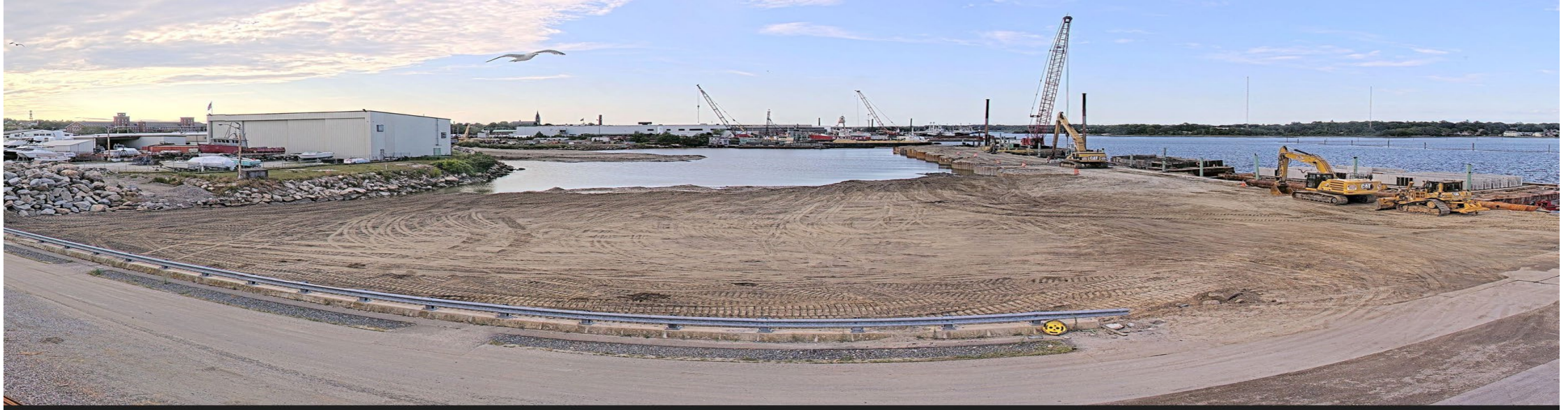
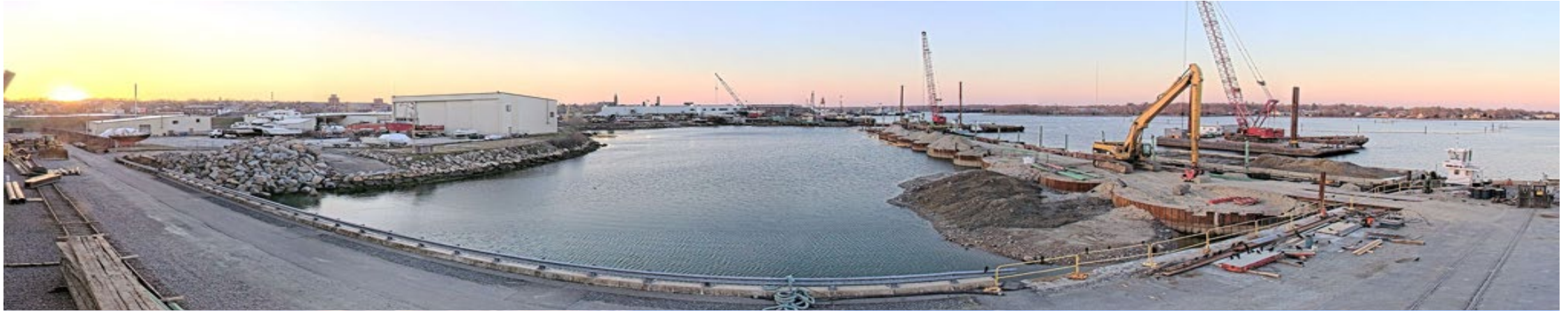
- Removal of 32,000 CY of contaminated sediments
- 7 Cellular cofferdams with pile-supported relieving platform

- ◆ Terminal Area: 6 acres capping existing sediments



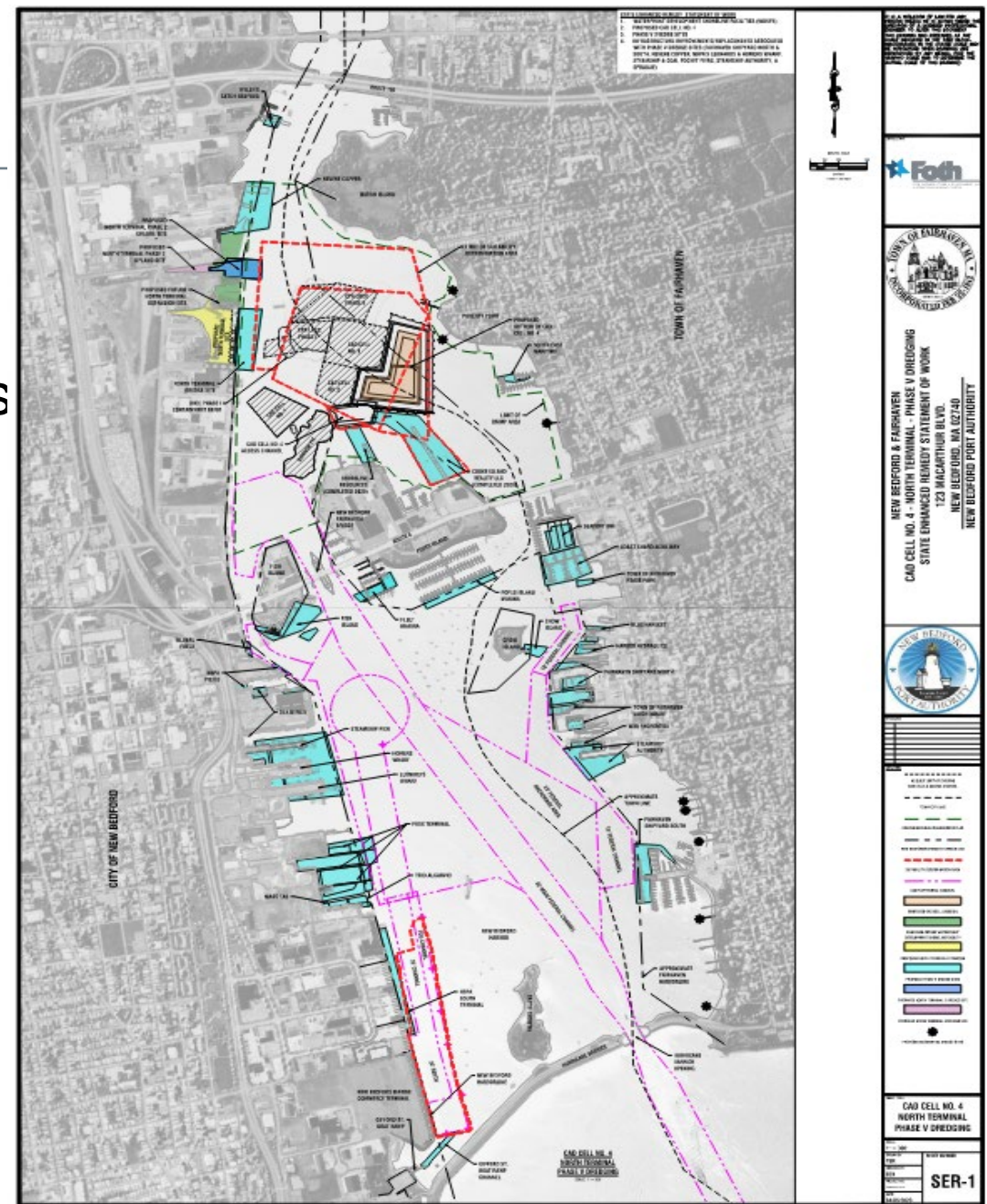
North Terminal Extension

- ◆ Beneficial re-use of +/-100,000 yd³ from Bottom of CAD Cell No. 4



Phase V Dredging

- ◆ Public and private partnership
- ◆ 34 residential & commercial dredging sites
- ◆ Removal of 500,000 yd³ of contaminated sediments from harbor surface
- ◆ Maintenance and activation of shoreline infrastructure
- ◆ Dredging to commence in Fall 2023





RESULTS & LESSONS LEARNED

- ◆ The Enhancement of Remedy provisions of the ROD allowed for:
 - An efficient regulatory process
 - Flexibility to optimize environmental benefits through a combined approach
- ◆ Partnerships between private entities, municipal, state and federal agencies proved very effective for advancing the projects
- ◆ Early stakeholder engagement and adaptability
- ◆ CAD cell siting and evaluation criteria drove optimization for capacity in consideration of constructability and harbor impacts

RESULTS & LESSONS LEARNED

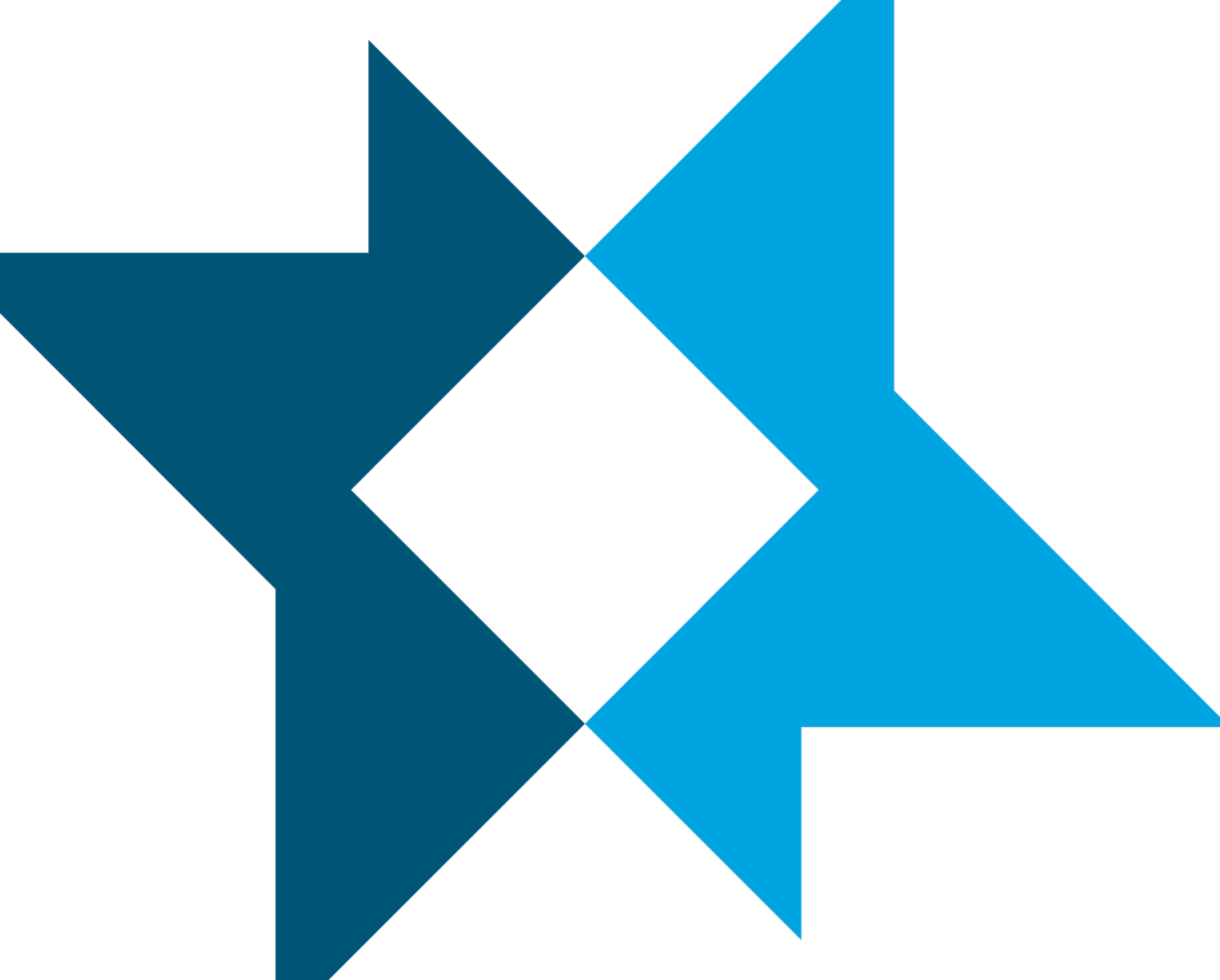
- ◆ Frequent multibeam bathymetric surveys provided critical data to allow for adjustments in material placement in CAD cells
- ◆ Consolidation, engineered berms, bed leveling were effective to maximize use of available CAD capacity
- ◆ Surveys indicate a 15-20% increase in sediment volume placed in CAD cells compared to in situ volumes
- ◆ Vibrocompaction is effective in achieving required compaction of reused dredged materials within the cellular cofferdams
- ◆ Use of drone photograph & construction cameras has optimized Foth's construction services allowing for instant access to the site via a webcam

The synergistic approach for developing and constructing three major projects in the Port of New Bedford has proven critical to the success of each individual project and enhancement of the cumulative positive impacts for the harbor



Q&A





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