New Bedford Harbor – A Model for Harbor Revitalization

Balancing Economy, Environment, and Community Interests

A presentation to: WEDA – East Coast

In Partnership With:

Synchronized Success in the Port of New Bedford: Building a Portfolio of Port Infrastructrue & Dredging Projects

Presented by: Mike Campagnone, P.E.

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New Bedford, MA

New Bedford, MA - History

Chart of the *Spray's* course around the world — April 24, 1895, to July 3, 1898.

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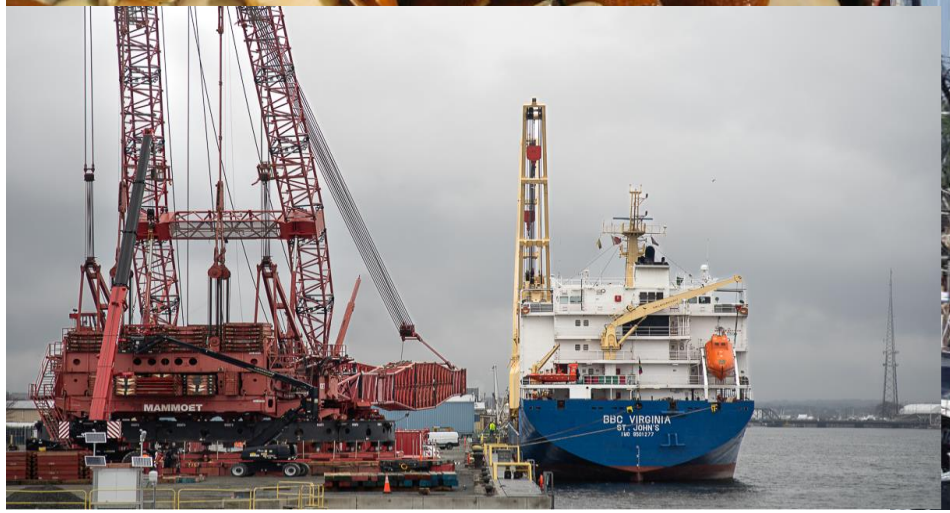
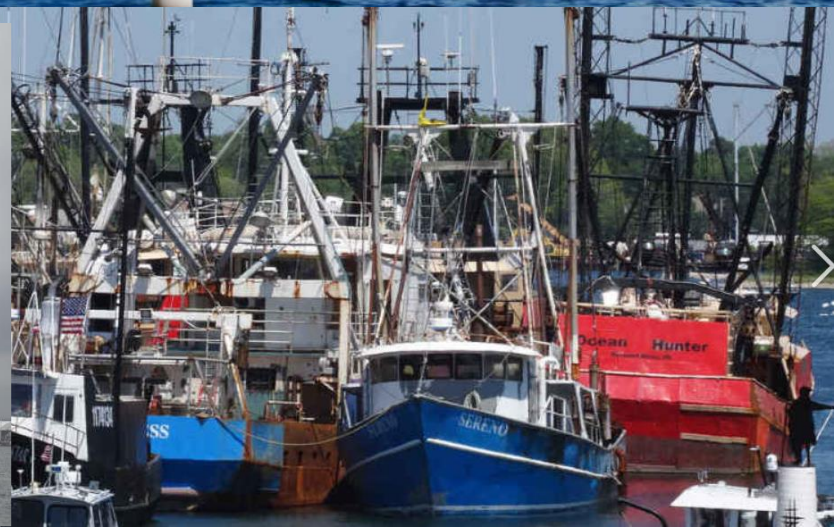
New Bedford, MA - Industries





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New Bedford, MA – State Enhanced Rededy

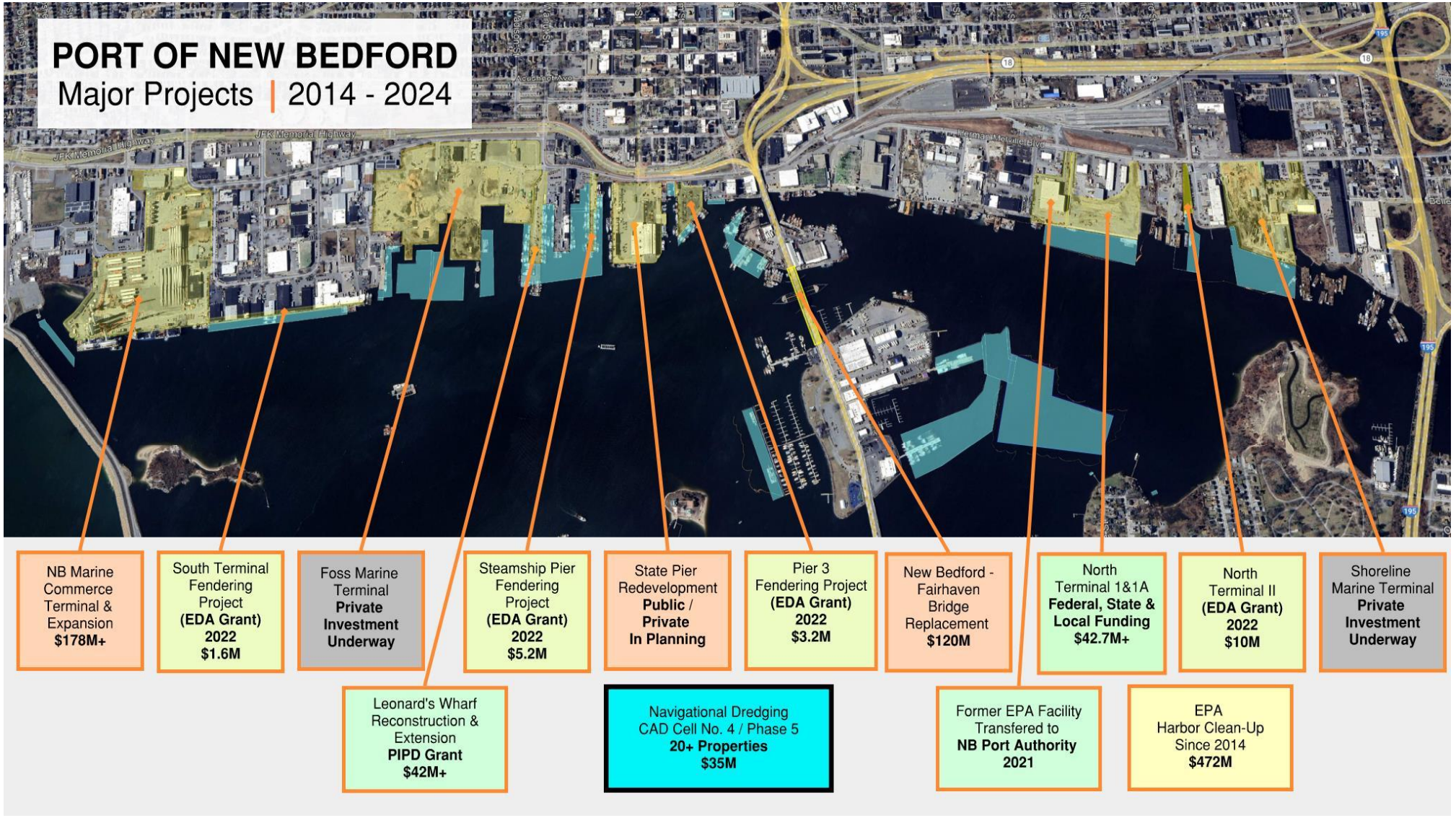
Superfund and State Enhanced Remedy

- 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 National Contingency Plan 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

CAD cells in concert with Waterfront Development Shoreline Facilities (WDSFs)

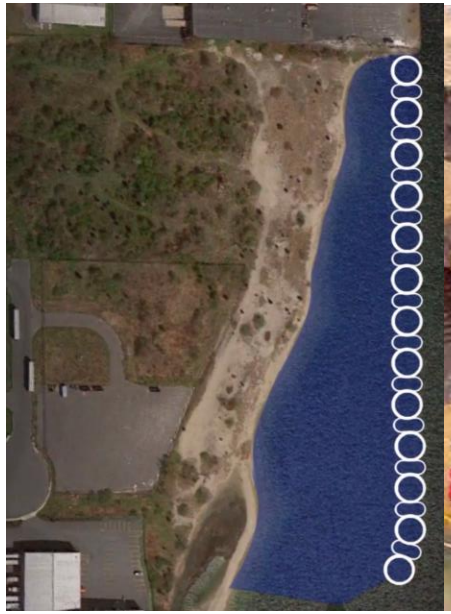
New Bedford, MA – Major Projects



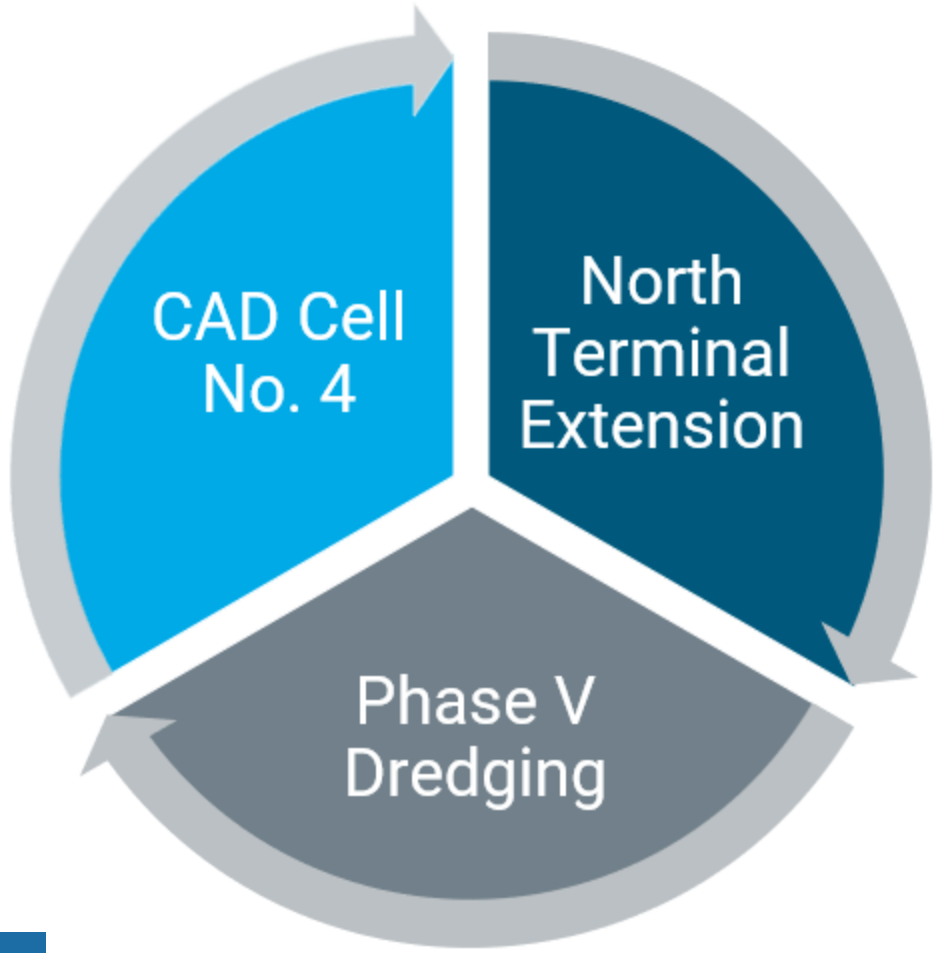
New Bedford, MA – Marine Commerce Terminal

26-acre heavy lift terminal facility completed in January 2015
Serving heavy commercial demands and acting as a transit base for offshore wind construction

- 1,200 feet of bulkhead comprised of 13, 96’ diameter cellular cofferdams
- Socketed pile supported heavily reinforced concrete relieving platform
- Uniform loading of up to 4,100 psf and crane loads up to 20,485 psf
- 280,000 cubic yards of contaminated sediment was dredged
- 30’ depth for Channel Access

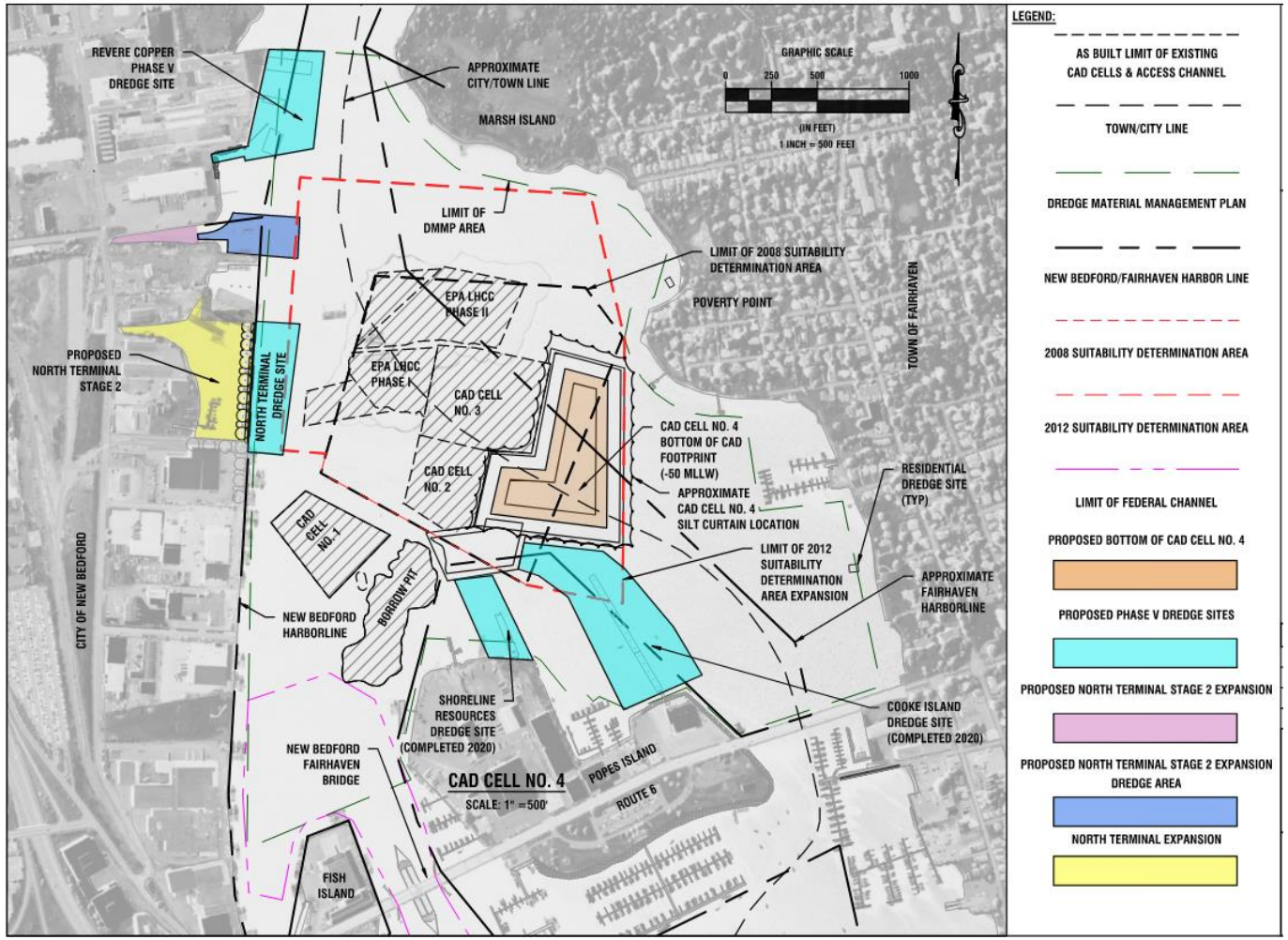


CAD Cell #4, North Terminal, Phase V Dredging



CAD Cell #4

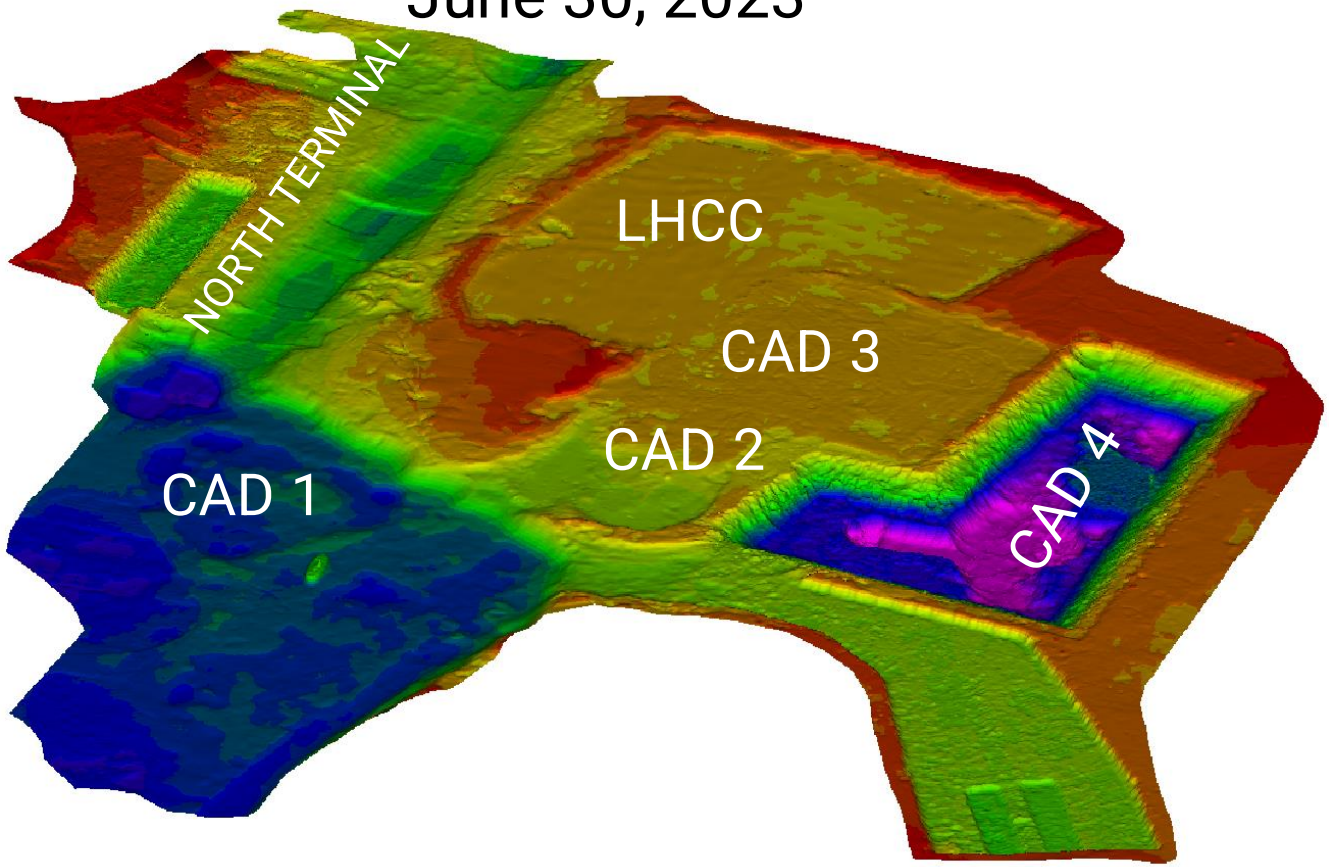
- Disposal of 100,000 yd3 of material in existing CAD cells
- Disposal of 400,000 yd3 of dredged materials offshore at Rhode Island Sound Disposal Site
- Beneficial Reuse of 100,000 yd3 geotechnically suitable clean materials in North Terminal Extension
- Methods to maximize capacity of CAD cells:
  - Bed Leveling
  - Berm Construction



CAD Cell No. 4: 500,000 yd^3 Capacity for Dredged Sediments

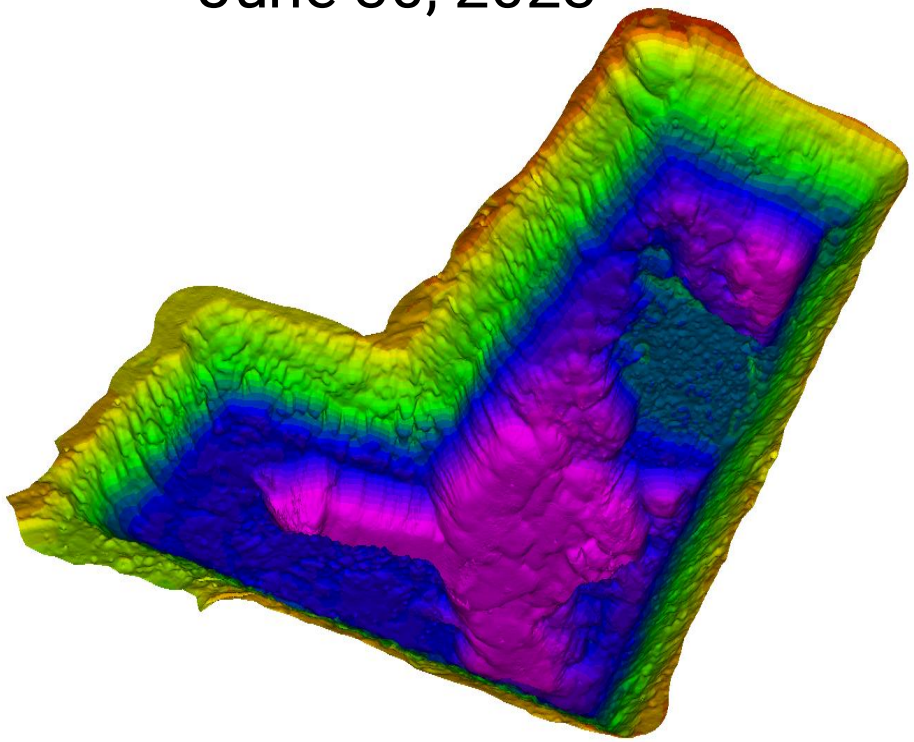
Combined Lower Harbor Survey

June 30, 2023



CAD CELL NO. 4 Progress Survey

June 30, 2023



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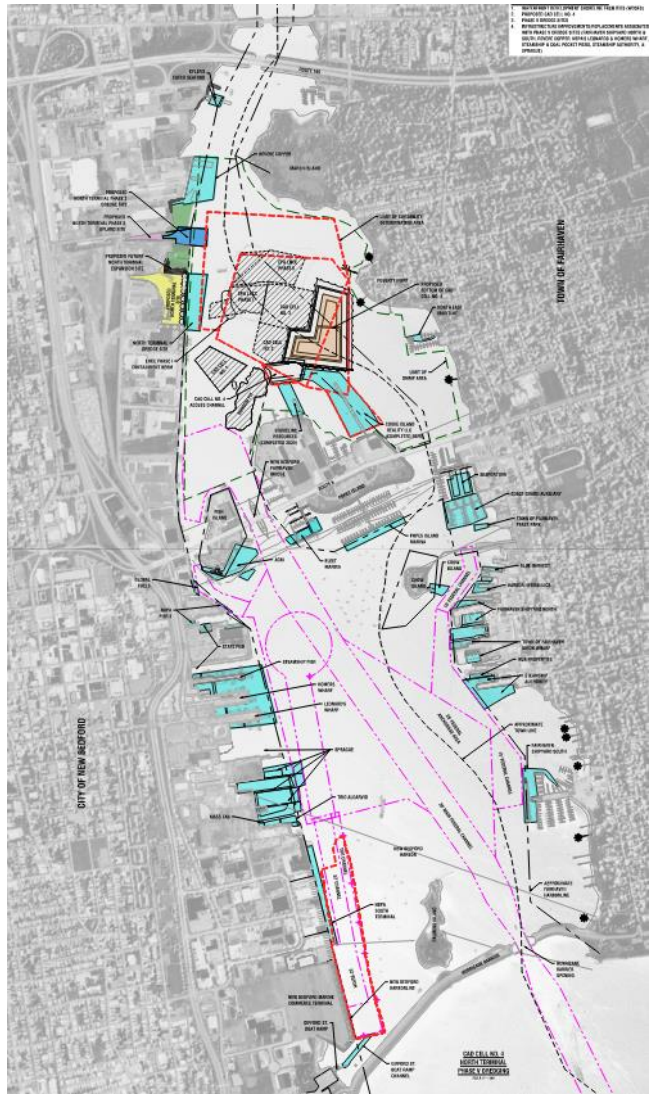
North terminal Extension

- Terminal Extension = 650 feet of bulkhead / commercial berth space
- Terminal Area = 5.5 acres capping existing contaminated sediments
- Beneficial re-use of +/-100,000 yd^3 from bottom of CAD Cell No. 4
- BUILD Grant for $15.4 M, Massachusetts MassWorks Infrastructure Program Grant for $11M, and Massachusetts Offshore Wind Industry Ports Investment Challenge Grant (MACEC) for $16M

North terminal Expansion

Phase V Dredging

- Restored navigable depths and/or reactivated 34 sites in harbor
- +-/ 480,000 CY Contaminated Sediment Removal
- +/- 252 Tons of Debris Removal from 14 dredge sites
- Numerous Navigational Hazards Removed



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
- 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 constructions 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

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Q&A

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