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Project Status and Community Involvement for the New Bedford Harbor Massachusetts Superfund Site

WEDA Conference – Eastern Chapter

October 14-16, 2025

Portland, ME

ACKNOWLEDEMENTS

Collaborative Project with Contributions from EPA, USACE, City of New Bedford, Jacobs, Sevenson, & EPA Subcontractors and Consultants

LIST OF PANELISTS

Shane Taylor, PE (Moderator)
Civil/Coastal Engineer
Jacobs Engineering

Marie Esten
Programs/Project Manager
USACE New England District

Michele Paul, LSP
Director of Resilience & Environmental Stewardship
City of New Bedford

Lonnie Fallin, PMP
Program/Project Manager
Jacobs Engineering

Joseph Mahoney
Project Manager
Sevenson Environmental Services, Inc

Panel Overview

1. We will have different perspectives on multiple topics from the City of New Bedford, Jacobs (USACE Contractor), and Sevenson Environmental Services (Jacobs Subcontractor) to discuss the project challenges and successes.
2. Will highlight the different phases of the remediation throughout the lifecycle of the project and integrate the specific benefits to the community.
3. The real driver was continuous improvement with technology changes, flexibility on such a large-scale project, and working together with multiple partners led to a successful project.

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Introductions – Marie Esten

Marie Esten
Programs/Project Manager
USACE New England DIstrict

- Marie Esten has over 30 years of experience in the environmental field.
- She is working for the USACE New England District where she is the Project Manager for multiple HTRW sites, including New Bedford Harbor Superfund Site.
- Her work has encompassed remedial work and scientific studies throughout the United States.
- Marie holds a B.S. in Chemistry from the University of New Hampshire and a M.S. in Environmental Studies from the University of Massachusetts Lowell as well as a 50-ton USCG license.

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Introductions – Michele Paul

Michele Paul, LSP
Director of Resilience & Environmental Stewardship
City of New Bedford, MA

- Michele Paul is New Bedford's Director of Resilience and Environmental Stewardship.
- With a background in Civil Engineering and Brownfields redevelopment, she focuses on community resilience: combining infrastructure, social cohesion, and economic development efforts.
- New Bedford has been the Number 1 Fishing Port in the nation for over 20 years and is the bourgeoning hub of off-shore wind infrastructure assembly and maintenance deployment.
- New Bedford's comprehensive climate adaptation and resilience plan: *NB Resilient*, is guiding future capital and program direction through the lenses of equity and community character.
- Michele is a member of the New England Municipal Sustainability Network where resilience professionals share best practices and lessons learned in this emerging field.
- Michele is a Massachusetts Licensed Site Professional and is a past President of the Licensed Site Professional Association. Michele serves on the Mass Municipal Association's Policy Committee for Energy and the Environment, is a member of MassDevelopment's Brownfields Advisory Group, and represents municipal officials on MassDEP's Waste Site Cleanup Advisory Committee.

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Introductions – Lonnie Fallin

Lonnie Fallin, PMP
Program Manager/ Project Manager

- 38-years in driving excellence across program/project interfaces and managing the environmental remediation space.
- Delivers sediment removal, infrastructure demolition, analytical chemistry, and data management expertise to smoothly execute site closure, remediation, and design, meeting client and project needs.
- Program/Project Manager for the New Bedford Harbor Superfund site, leading successful remedial operations, a limited funding model for sediment remediation, and return of Superfund portions to support client redevelopment goals.
- Comprehensive site characterization experience under state and federal programs (CERCLA, RCRA, and ASTM).
- Holds a B.A. in Chemistry from University of Colorado.

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Introductions – Joseph Mahoney

Joseph Mahoney
Project Manager
Sevenson Environmental Services, Inc.

- Over 30 years of experience managing construction projects.
- Projects include complex USACE HTRW and commercial projects involving all phases of remediation projects from site investigation, pilot studies, and design with work plan development and construction implementation.
- Has been specifically involved as a Project Manager for New Bedford Harbor for over 15 years.
- Holds B.S. and M.S. in Civil Engineering with focus in Project Management from Worcester Polytechnic Institute.

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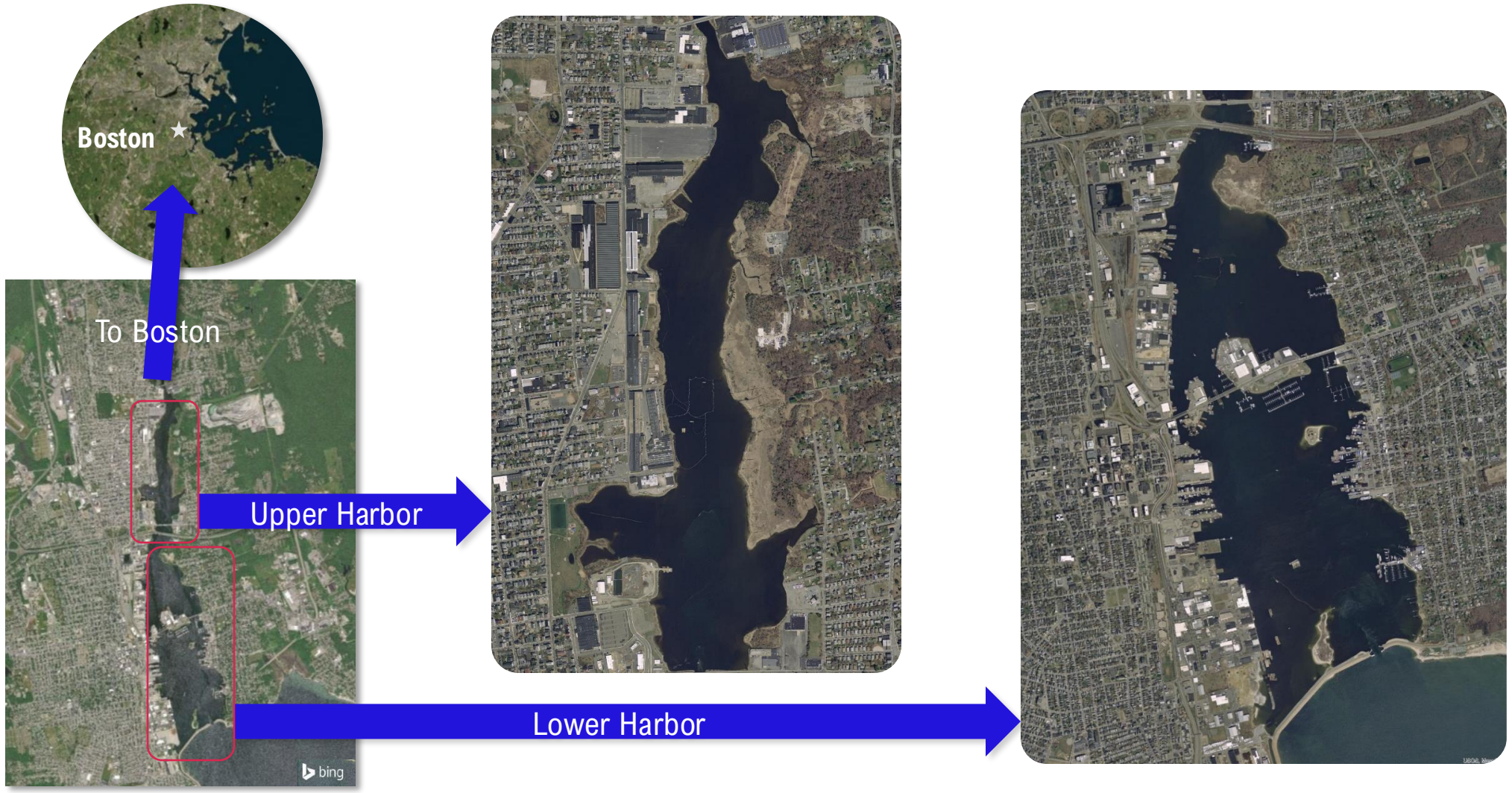
New Bedford Harbor – Site Orientation and Layout



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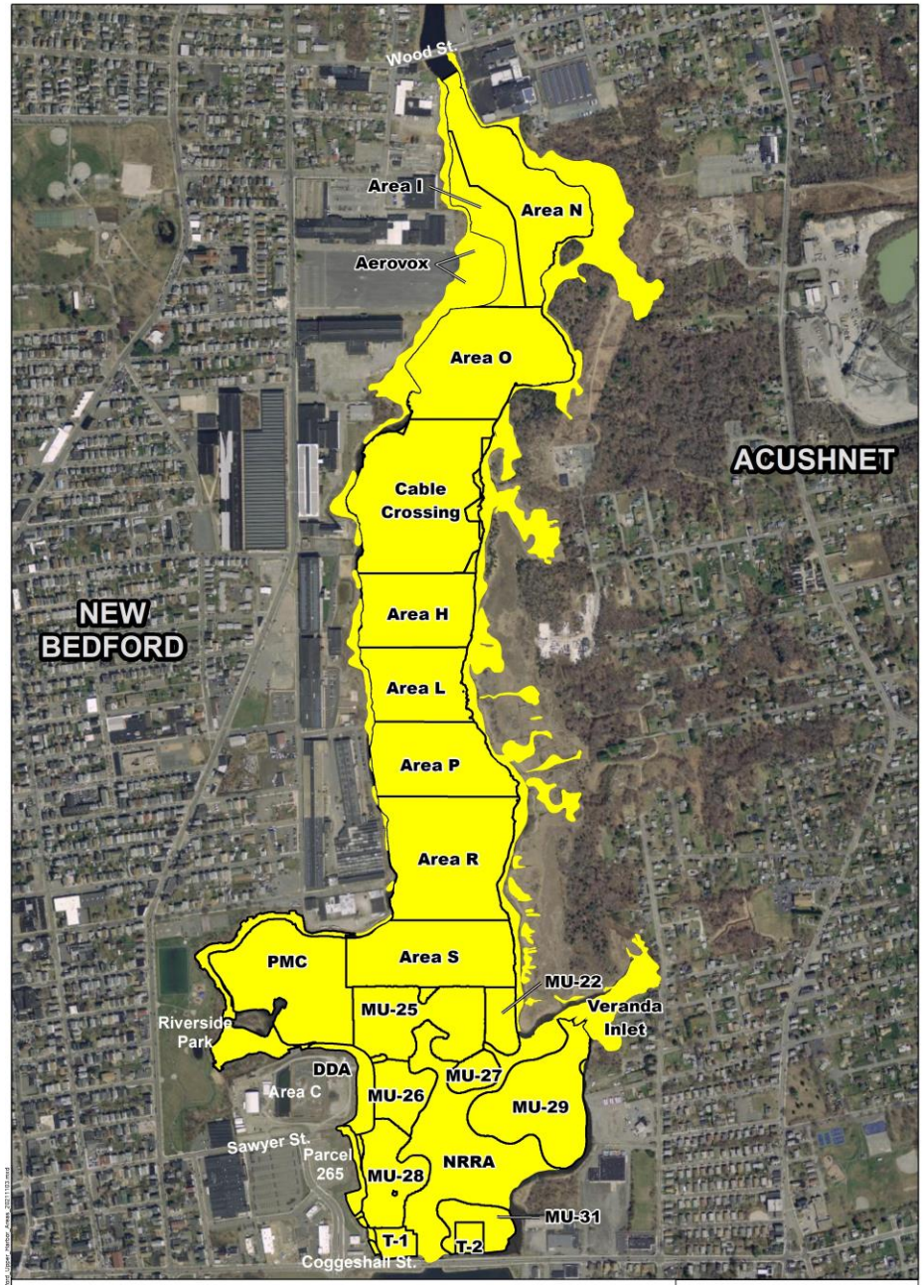
New Bedford Harbor Subtidal Dredge Program

- NPL 1983
- Hot Spot and Early Action Work 1990-2001
- Upper and Lower Harbor ROD 1998
- Upper Harbor Mass Removal and Offsite Disposal 2004-2016
- Lower Harbor mechanical dredging and CAD Cell Disposal 2016-2018
- Upper Harbor Cleanup Dredging and Offsite Disposal 2017-2020
  - Hybrid: mechanical dredging, hydraulic transport
- Upper Harbor mechanical dredging and CAD Cell Disposal 2019-2020
  - Southern Portion of the Upper Harbor
  - Approximately 68,000 cy and 1.5M SF dredged

Approximately 1M cy and 100 tons PCBs removed



Upper Harbor

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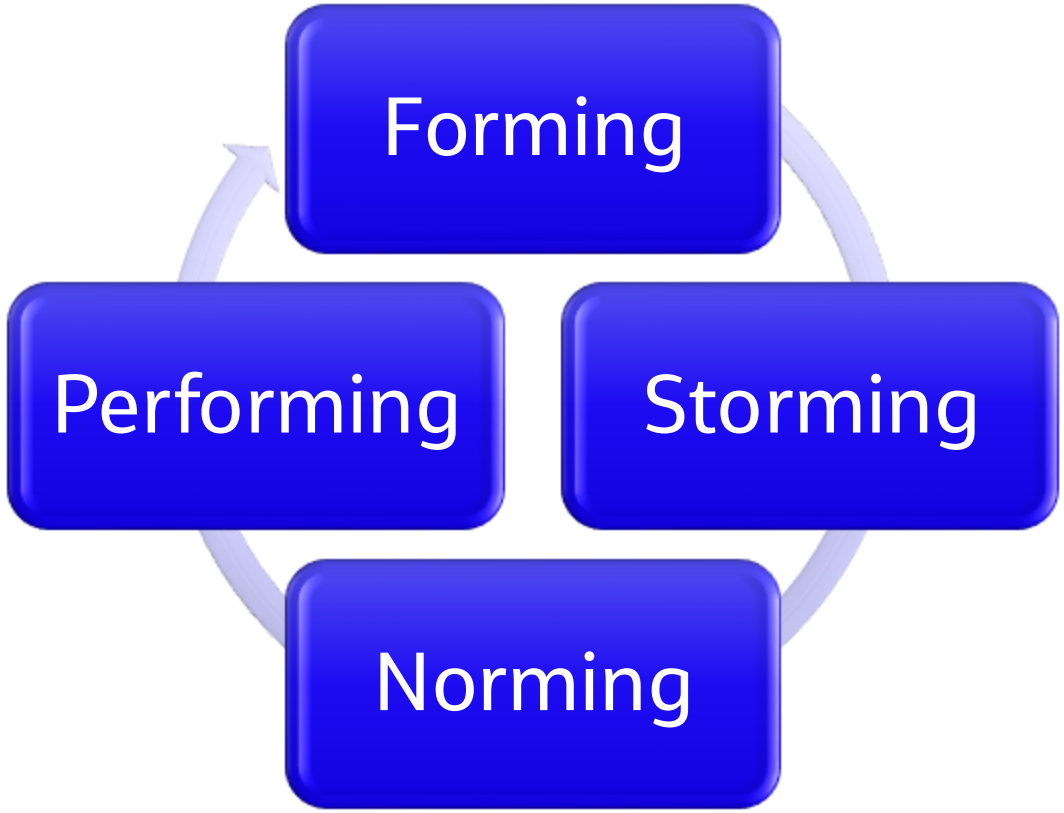
New Bedford Harbor Team Development



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Project Understanding and Scope

Characterization of the Harbor conducted by USACE (pre-2004)

~1,000,000 Cubic yards of impacted sediments

~1,000 acres of impacted estuary

Project components:

- Remedial designs, Work Plans, and After-Action Reports
- Hydraulic and mechanical dredging of contaminated sediments
- Excavation and restoration of contaminated intertidal zones
- Sediment processing (particle size separation and filter presses)
- Water treatment and effluent discharge
- Stabilization of excavated or dredged material; transportation and disposal to TSCA landfill
- Disposal of designated dredge material within constructed CAD cell

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Project Key Constraint

Limited funding framework model

Original Approach:

Limiting budget to approximately $10 - $15 Mil per year

Limiting active remediation to approximately 40 – 50 days per year

= Project completion date estimated to 2030

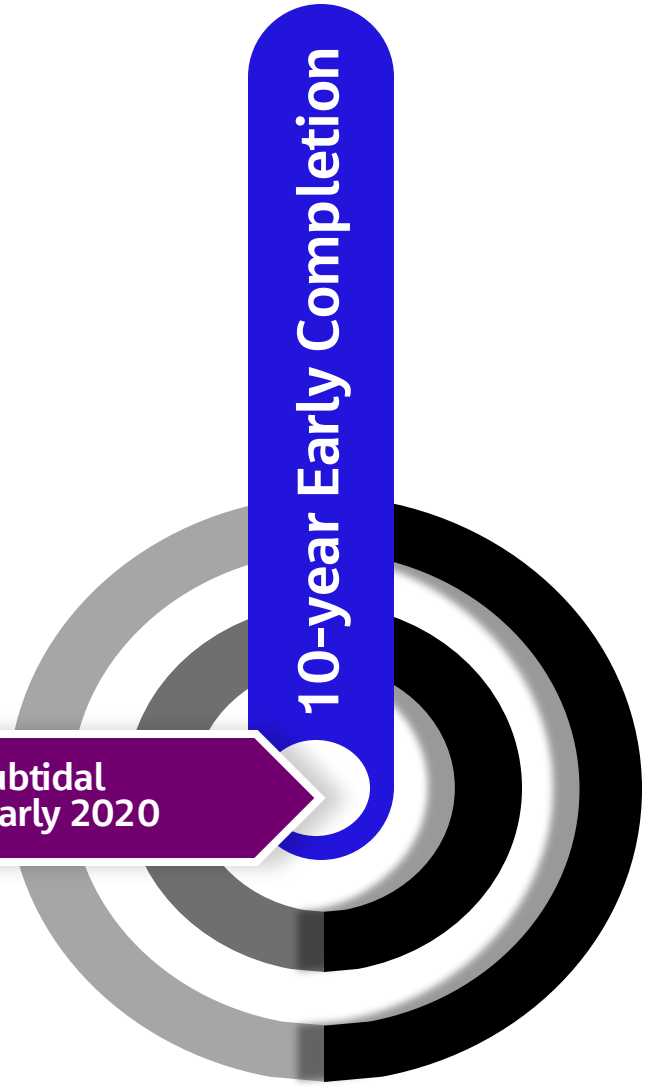
Phase Approach:

- Maximize dredging that occurred in each year, despite the limited funding

Additional funding allowed dredging to occur year round

Presented new challenges which Jacobs effectively managed

Completed subtidal dredging in early 2020



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Commerce Terminal

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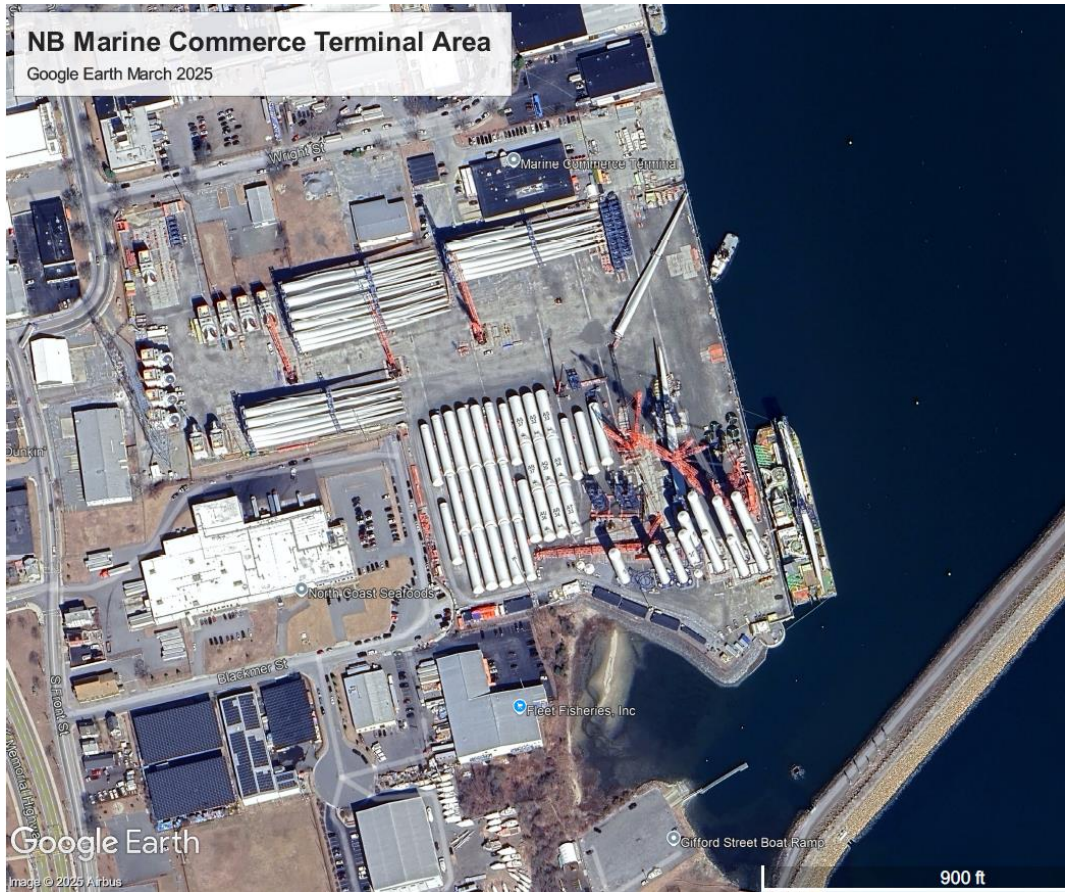
Commerce Terminal



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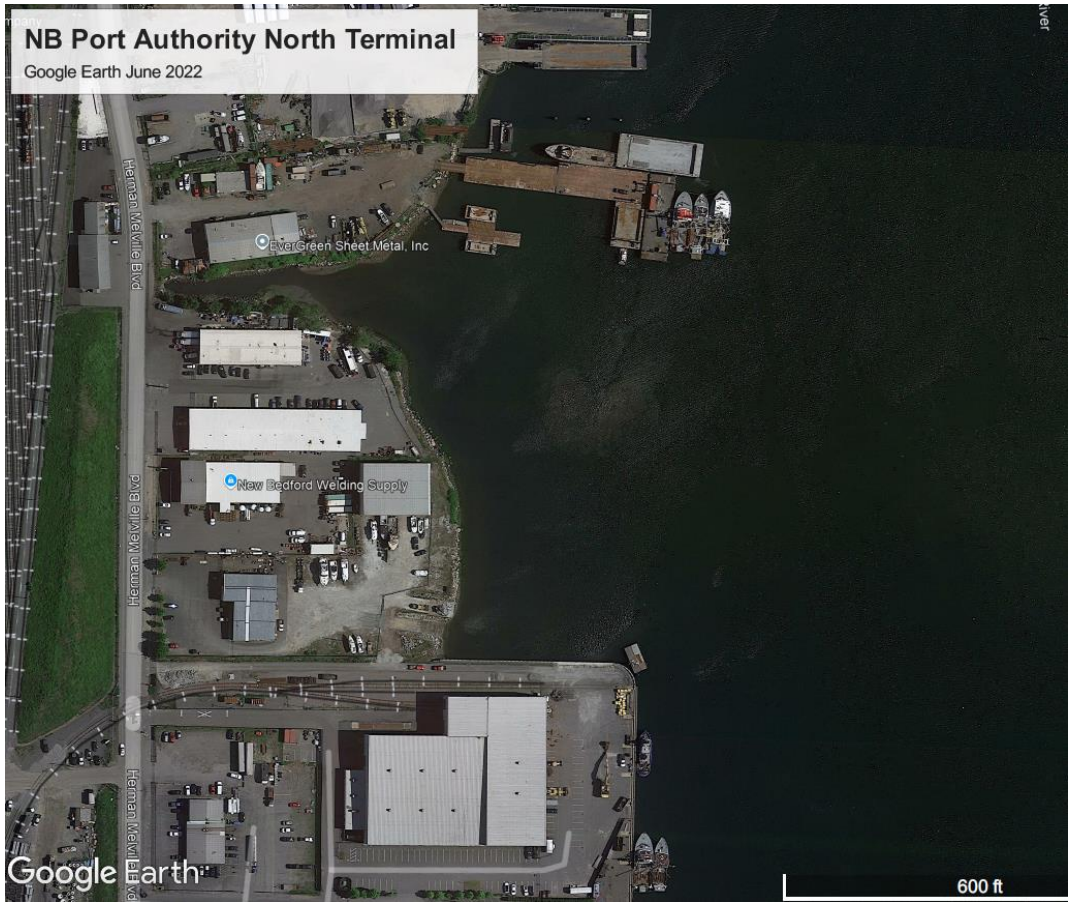
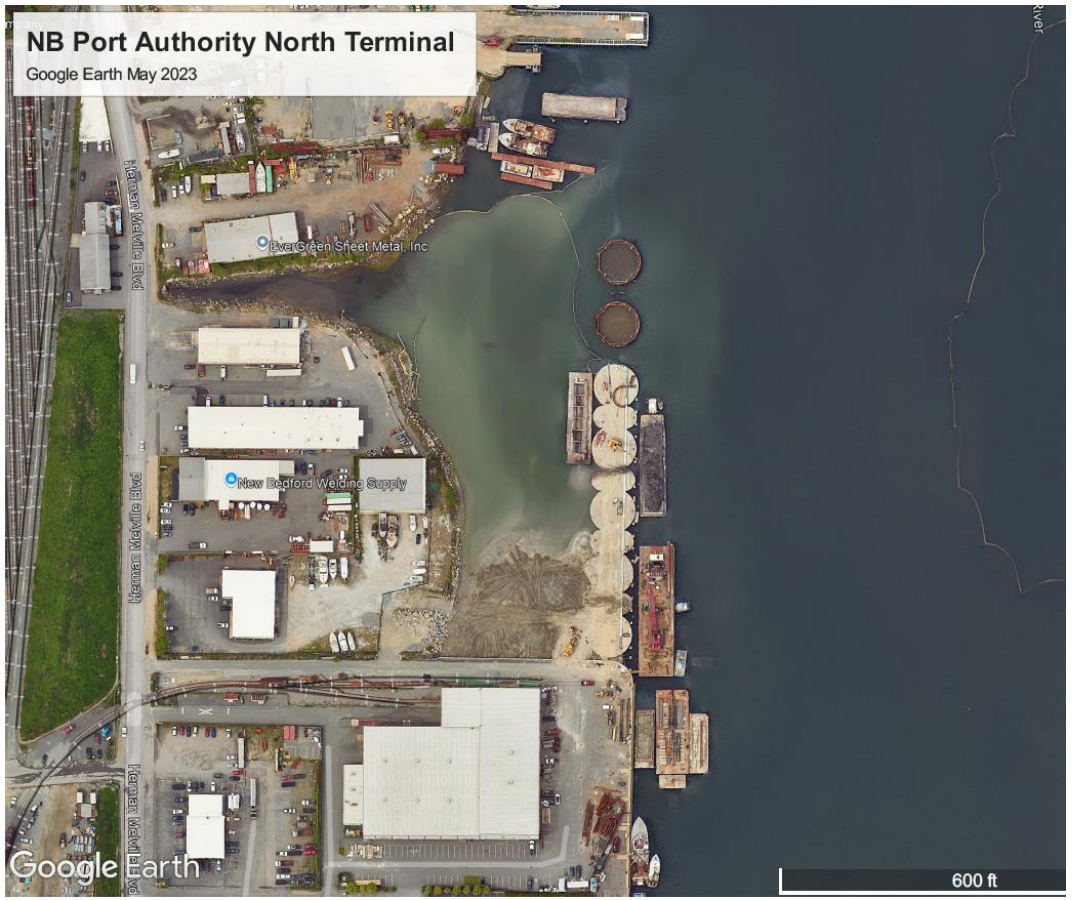
North Terminal





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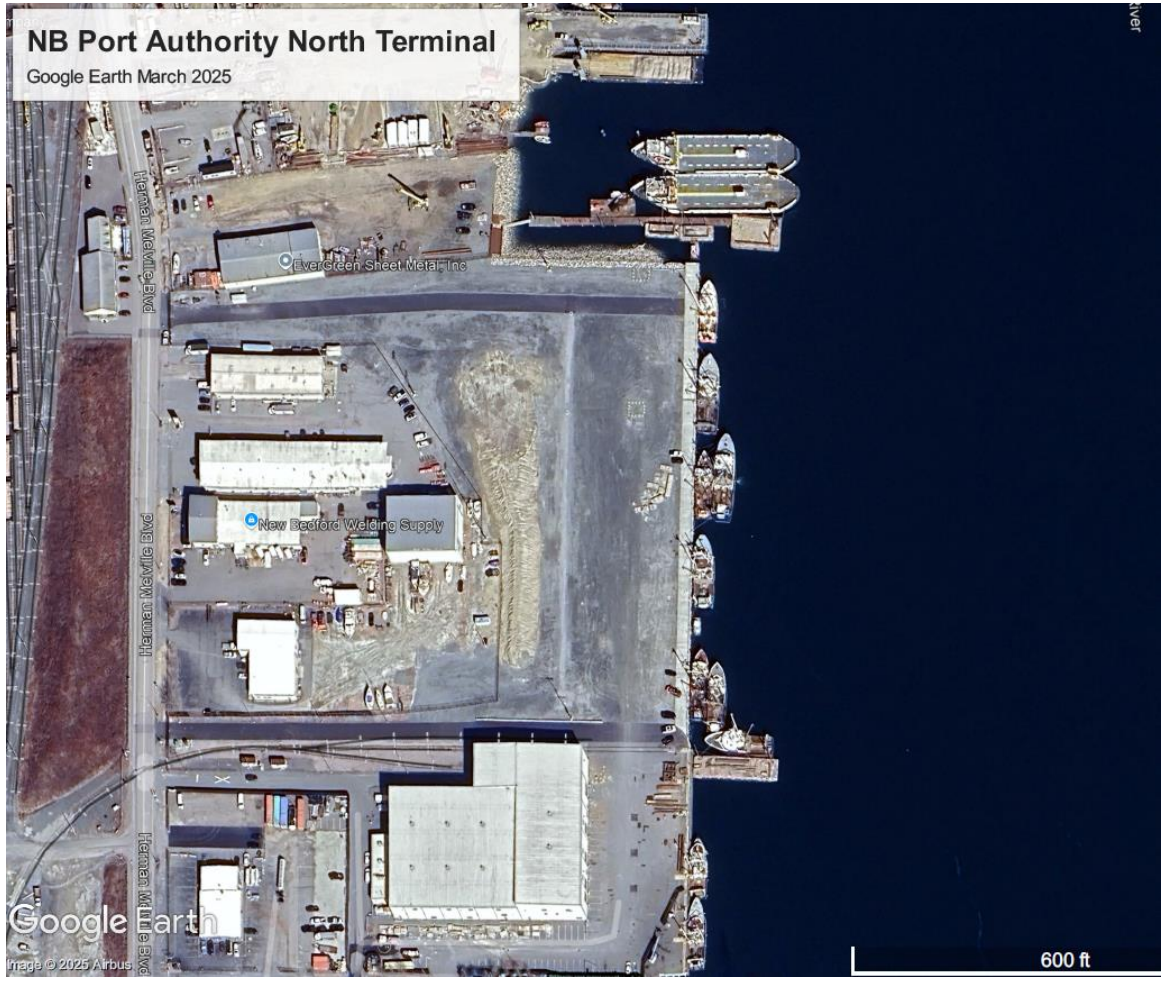
North Terminal



- Grant through Maritime Admin Port Infrastructure Dev Program, and MassWorks and MassCEC state funding is being completed in two phases.
- The initial phase added 650 linear feet of bulkhead over 5 ½ acres. About 76,000 cy was dredged to prep the cofferdam and berth areas and was disposed in nearby CAD cells. 110,000 cy of material displaced to create the CAD cells was used to backfill the bulkhead.
- Phase 2, completed by the Port Authority through a USEDA grant, added another 100 linear feet and just over 50,000 sf of bulkhead.

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Other Rehab Projects

- Leonard's Warf was built in the 1800s to launch and land whaling ships at the time when New Bedford became known as the City that Lit the World. The Port Authority secured grant funding to rehab and extend Leonard's Wharf.
- Maritime Admin Port Infrastructure Dev Program grant of $24+M, State Grant $18+M, City investment $1.5M
- Benefits Include:
  - increase resilience by raising the wharf elevation for SLR and installing a modern fendering system and topside utility improvement
  - Dredge to increase berth depth, remove additional contamination, and create beneficial reuse as backfill.
- Dewatering Facility
  - Part of EPA's dredging and cleanup operations required dewatering the most contaminated sediment prior to sending out of state by rail for disposal. EPA constructed one of the only heavy-duty, rail-accessible port facilities in New England on a 5-acre parcel abutting what is now North Terminal. Around 2020, EPA no longer needed the dewatering facility and turned the keys over to the City and Port of Bew Bedford. The NBPA recently issued an RFI to identify the highest and best use of the property for waterfront industrial purposes and continued and evolving economic development.

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Next Steps – Homer's Wharf

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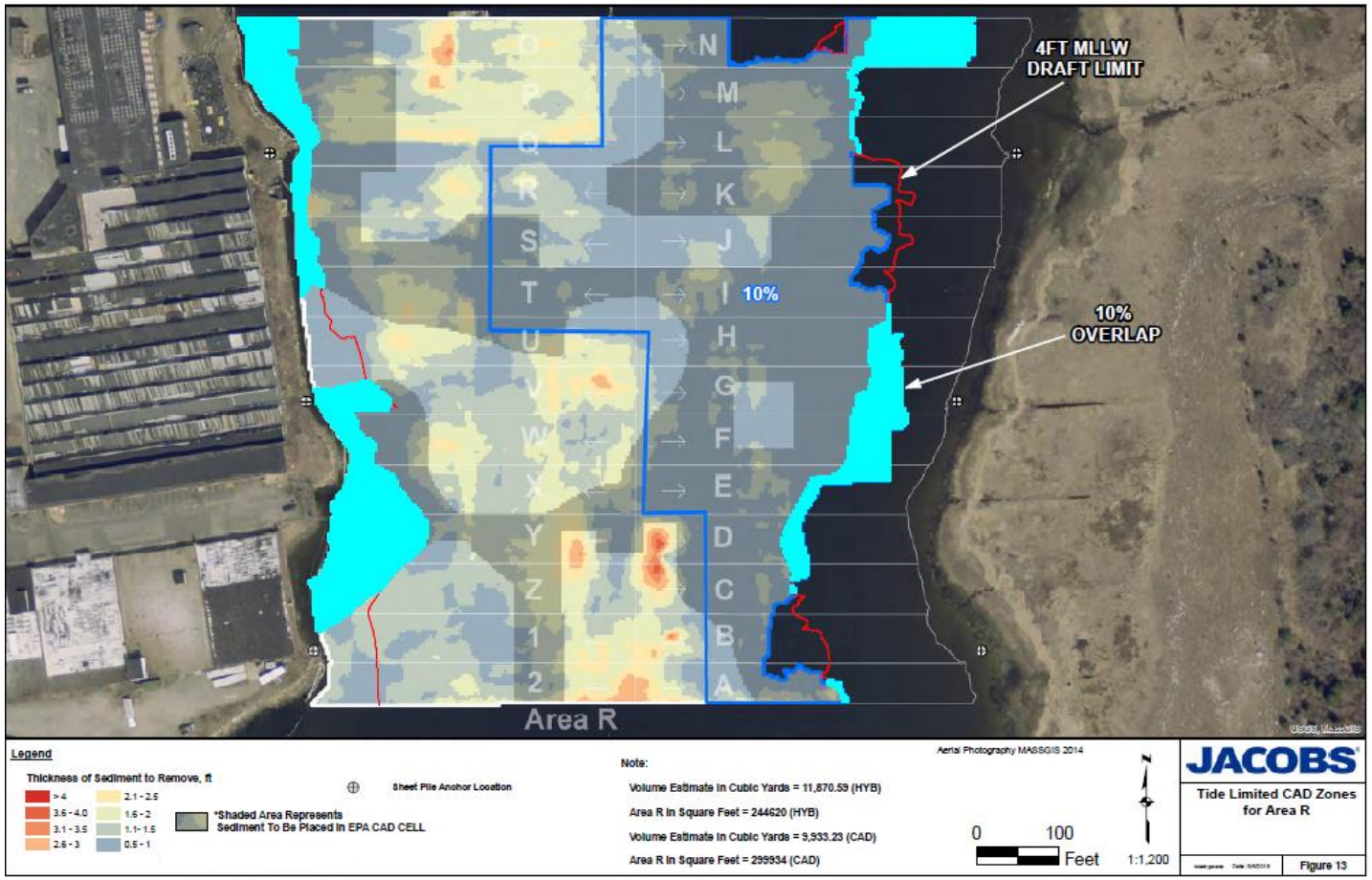
Dredge Prism Design for CAD Cell



- Total volume estimate designated for LHCC disposal was approximately 65,000 cy, which maximized the CAD Cell capacity
  - This included 2" over-dredge volume as well as re-dig volume
- Developed a PCB distribution model to identify dredged material suitable for CAD cell disposal
- Conducted sediment geotechnical characterization to optimize placement location in CAD cell
  - Range from organic silt (OL), more consolidated silty clay (CL), sand and some shoreline debris
- Shallower cut depths compared to hybrid operations
- Most shoreline areas were designated for CAD cell so tide sequencing was critical for maintaining production rates
- Bucket overlap extended 5 ft into previously dredged hybrid area to manage residuals and potential sloughing

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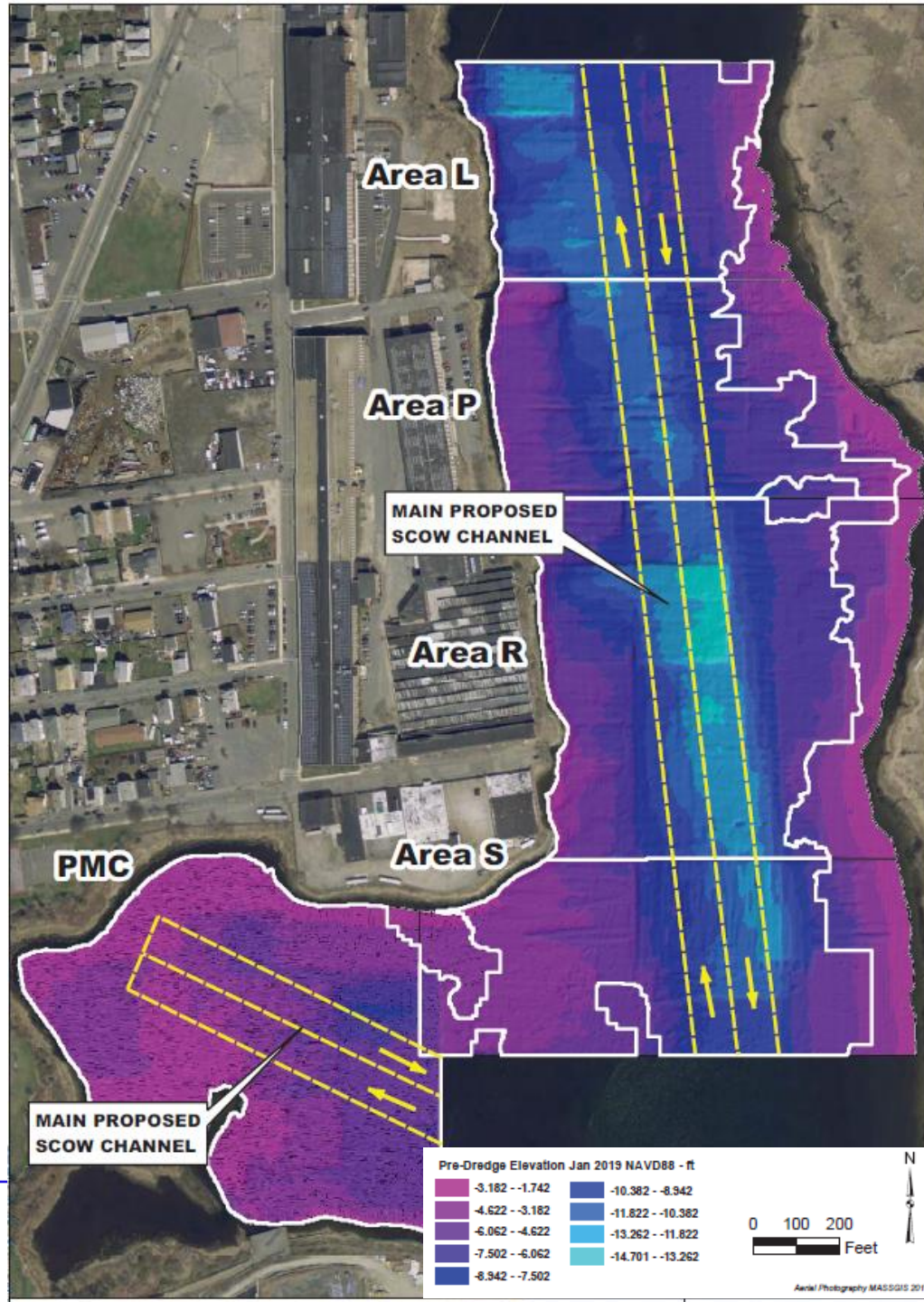
Dredge Operations Management

- Completed after hybrid operations so the more elevated PCB levels were already removed
- Prop wash analysis was conducted to ensure push boat operations did not move material in previously dredged hybrid area – scows loaded to approximately 75% to minimize draft material spillage
- Eight 100-cy hopper scows in rotation - approximate 1.5-mile ferry from dredge area to LHCC transload location
- Tide management important as push boats were slightly limited by peak high tides from bridge clearance
- CAD Cell Operations Average Production Rate – 702 cy/day
  - Main delay attributed to waiting for scows within rotation
  - Removed front two spuds to allow scow placement on either side of barge platform
- Hybrid Operations Average Production Rate – 565 cy/day
  - Includes re-dig operations
  - Delay time associated with clearing the grizzly screen and sediment processing



Dredge Equipment

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Dredge Equipment

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Dredge Equipment for Cleanup Dredging – Process Overview

- Dredge Plant
  - Environmental bucket
  - Grizzly
  - Debris Scow
- Pipeline with booster pumps and chemical injection
- Desanding
- Dewatering
- Rail T&D

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Treatment System Construction and Operation

Task

- Treatment plant construction
- Disposal transportation logistics

Developed creative solution to securely harness laborers to prevent injury from falls.

Challenge

- Constructability review noted 1.5-miles of excess piping and footprint limitations
- Management of railcars for shipment

Solution

- Design modification to allow reduction in piping and placement of water treatment system within Area D identifying $4-Mil in savings
- Developed contingency plan for trucking options and strategically managed dredge operations

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Subaqueous Cap Construction

Task

- Capping of non-conducive dredge zones

Challenge

- Inability to address areas from shore
- Disturbance of material imposed imminent danger to off gassing

Solution

- Engineered design to allow mechanical access to reduce exposure and migration of impacts
- Use of activated carbon capping and armoring material to address upwelling and guard against cap erosion

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Pierce Mill Cove – Dry Excavation

Task

- Removal of deep cove material

Challenge

- Impacts inaccessible from shore
- Ongoing Riverwalk development
- Public park access with exposure concerns

Solution

- Engineered sheet pile encapsulation for dry excavation
- Implement engineering and institutional controls
- Conduct air monitoring and required procedural actions

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Intertidal Wetland Restoration

Task

- Remove impacted mudflat and restore riparian zone

Challenge

- Delineation and integrity of material for removal
- Limited footprint and ingress/egress of area

Solution

- Engineered design to stabilize material in place for easy of removal and transportation
- Negotiated access minimizing impacts to local community, and limiting intrusive actions to surrounding wetlands

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Thank You

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