BOSTON HARBOR DEEPENING PROJECT OVERVIEW

WEDA EASTERN CHAPTER
FALL 2021 CONFERENCE
OCTOBER 13 - 15, 2021 CHARLESTON, SC

Presented By:

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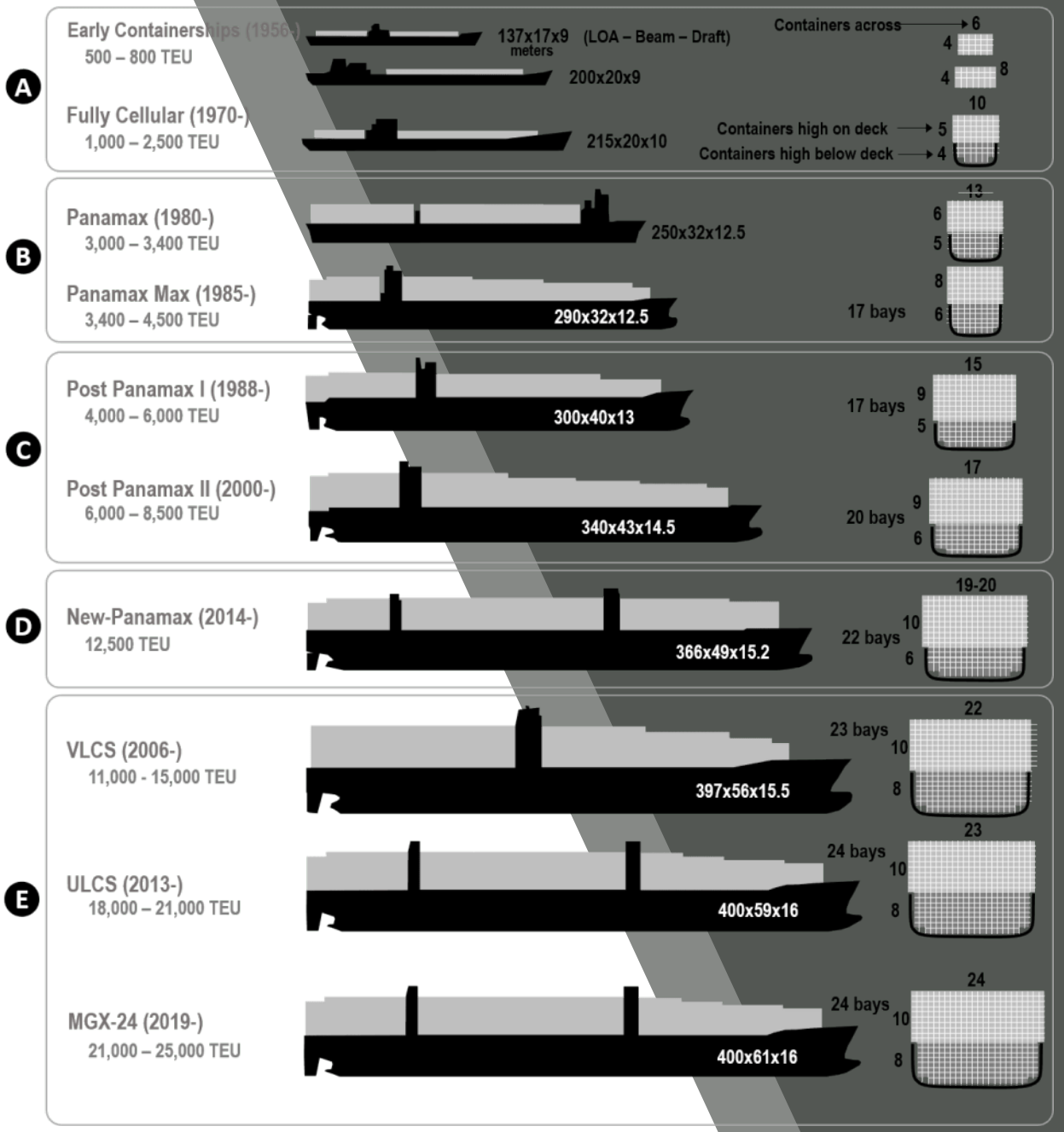
Mr. William Hanson – Sr. VP Great Lakes Dredge & Dock Co., LLC

DISCUSSION POINTS

- History of Boston Harbor
- Rational For Deepening
- Shareholders & Contractors
- Project Design
- Funding
- Summary Statistics
- Execution of Works
- Phase 1 – CAD Cell & Upper Harbor
- Phase 2 – Deepening
- Phase 3 – Fixed Rock
- Challenges & Lessons Learned

HISTORY OF BOSTON HARBOR & PROJECT BACKGROUND

- Discovered in 1614 and was the primary port of New England until the Mid-19th Century
- Growth of Container Service & Cruise Ships
- Inner Harbor (Ted Williams Tunnel Inshore)
  - Various Dry Bulk Commodities & Commerce (Automotive, Road Salt, Cement, etc.)
  - LNG & Liquid Bulk Terminals
- Outer Harbor (Ted Williams Tunnel Offshore)
  - Conley & Black Falcon Terminals (Container & Cruise Terminals)
  - Shipyards
- $350M Partnership Between Massachusetts Port Authority (MassPort) and the US Army Corps of Engineers (New England District)

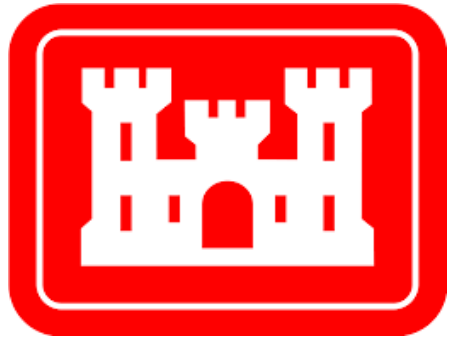


RATIONAL FOR DEEPENING

- Access for larger TEU Containerships w/o Having to Traverse During High Tides
- Increased Percentage of Cargo for New England being Shipped Directly to Boston vs. New York / New Jersey Harbor Then Trucked
- Reduction in Truck Traffic in New England
- Largest Port Serving MA, NH & VT

CASHMAN

massport



GREAT LAKES DREDGE & DOCK COMPANY RIVER & HARBOR IMPROVEMENTS

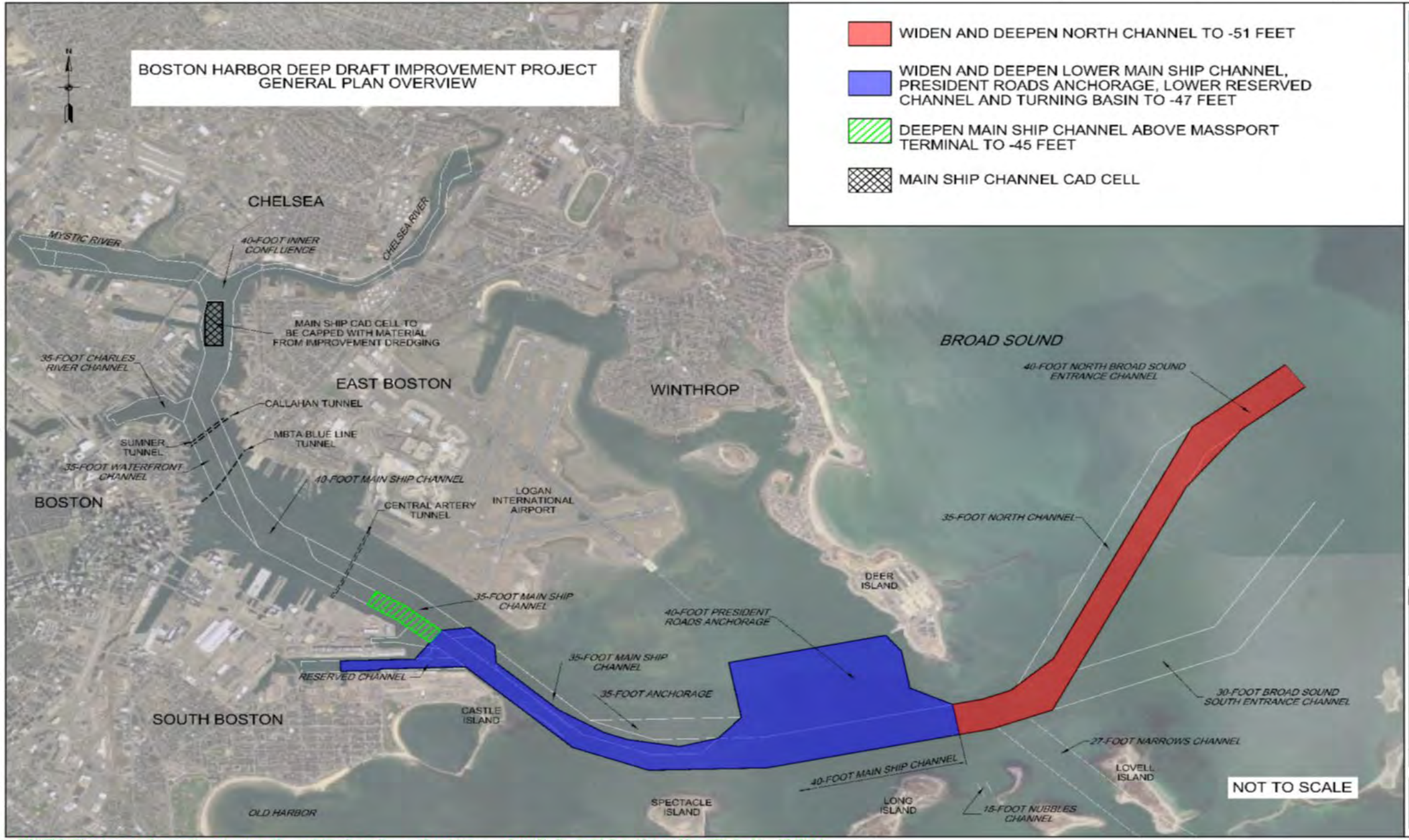
DUTRA

Primary Stakeholders & Contractors

- Massachusetts Port Authority (MassPort)
- US Army Corps of Engineers – New England District

- Phase 1 – Great Lakes Dredge & Dock
- Phase 2 – Cashman / Dutra Joint Venture
- Phase 3 – Great Lakes Dredge & Dock

BOSTON HARBOR DEEP DRAFT IMPROVEMENT PROJECT
GENERAL PLAN OVERVIEW



US Army Corps of Engineers

NO.	DESCRIPTION	DATE

DESIGNED BY: | DATE:
DRAWN BY: | SOLICITATION NO.:
CHECKED BY: | CONTRACT NO.:
SUBMITTED BY: | DRAWING NO.: 805-527
SIZE: | SCALE: | SHEET 1 OF 2

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

BOSTON HARBOR
DEEP DRAFT IMPROVEMENT PROJECT
GENERAL PLAN OVERVIEW

SHEET ID
G-1

%STATUS%

PROJECT PHASING & CONTRACTING

Original Design Development

Feasibility: 2004 – 2014

Design: 2014 - 2020

Phase 1 – Maintenance Dredging & CAD Cell Creation

Procurement: Summer 2016

Execution: Fall 2016 – Winter 2017/2018

Phase 2 – Deepening & Widening

Procurement: Spring 2018

Execution: Summer 2018 – Fall 2020

Phase 3 – Rock Removal

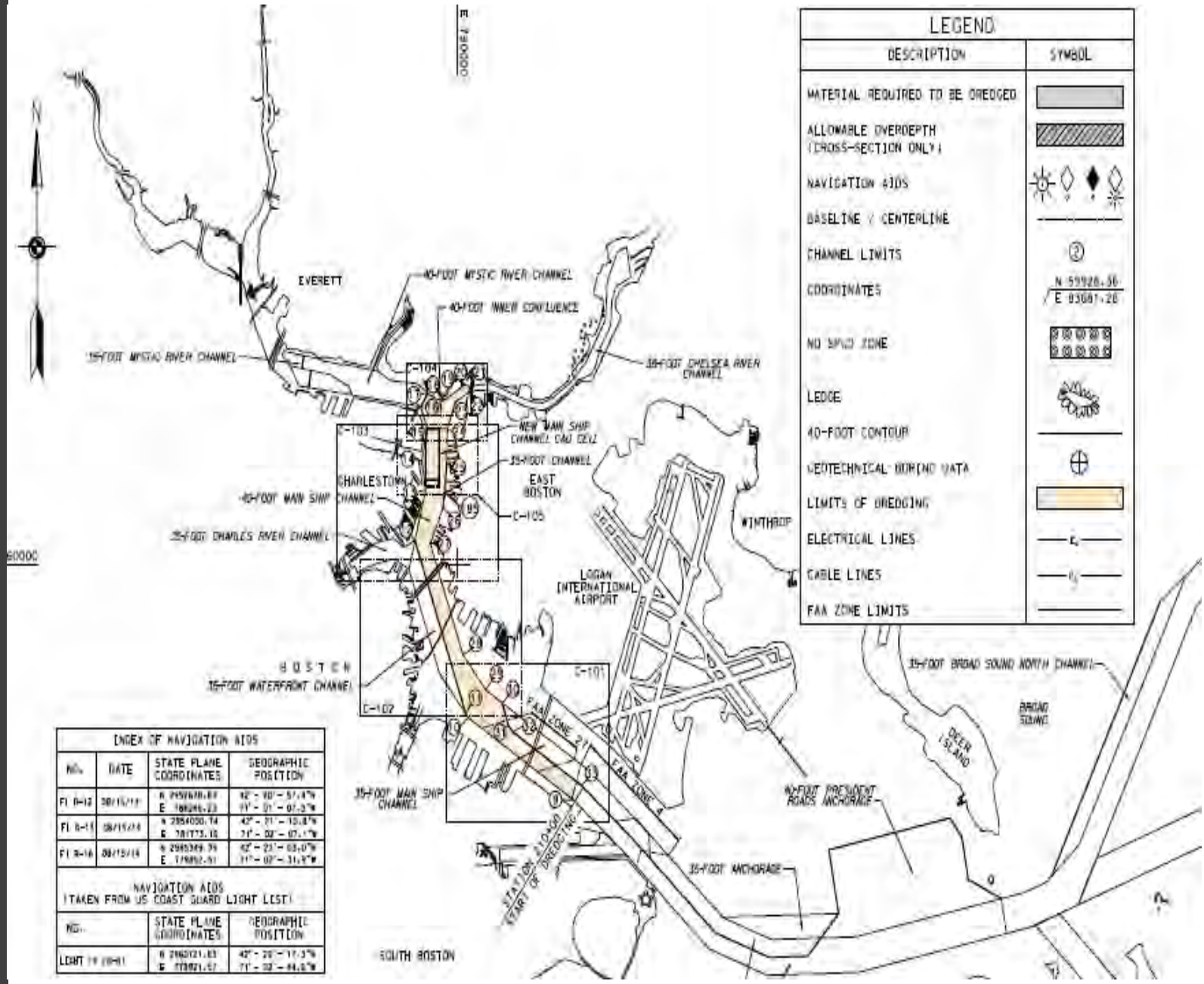
Procurement: Winter 2020/2021

Execution: Spring 2021 - Ongoing

PHASE 1 – CAD CELL & INNER HARBOR

Scope

- Construction of a New Confined Aquatic Disposal Cell (1.0M CYD Capacity)
- Material Excavated from CAD Cell & Disposed of Offshore
- 805K CYDS Maintenance Material from Inner Harbor
- Work Started July 2018 & Completed in November 2020



PHASE 1 – CAD CELL & INNER HARBOR

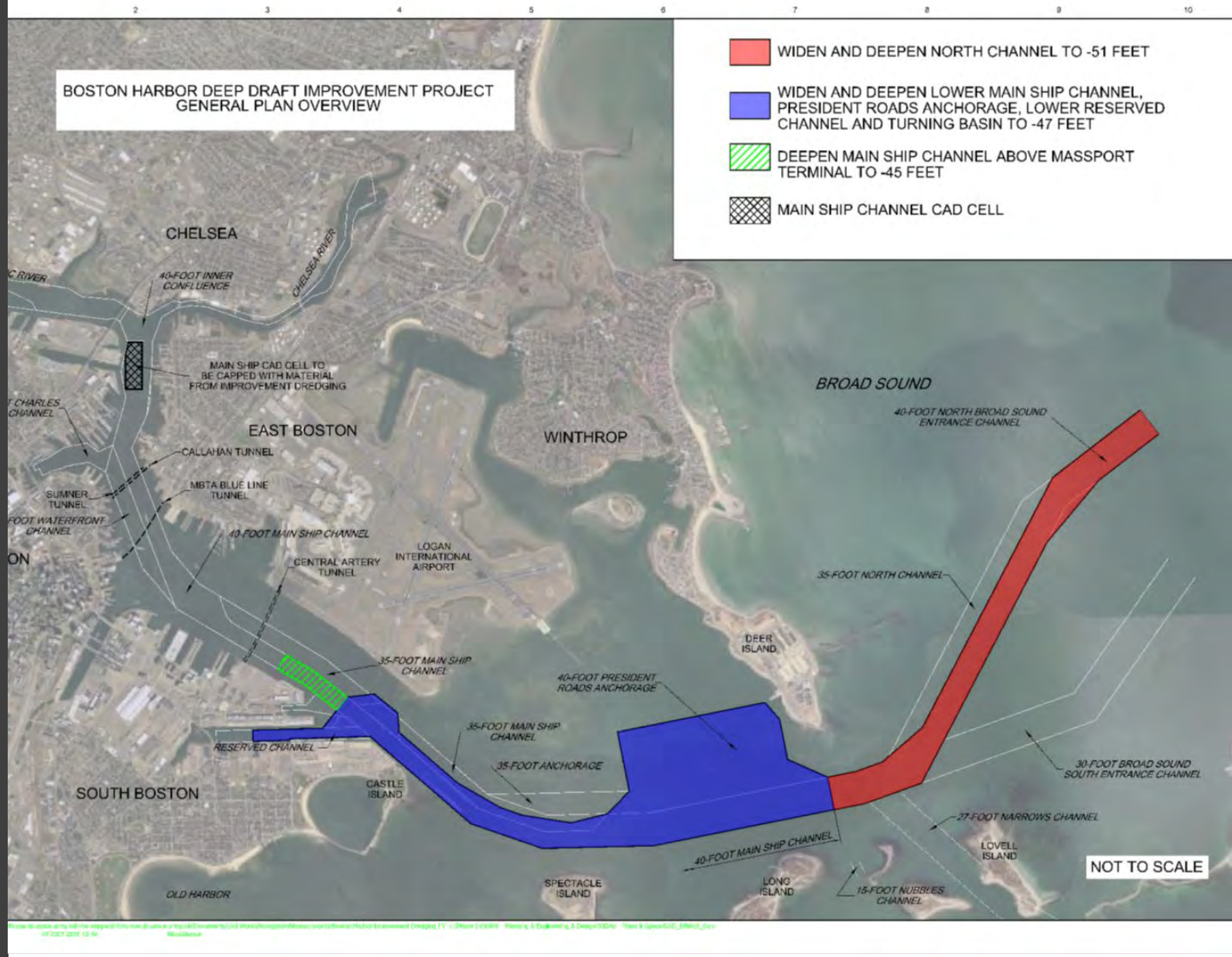
Dredging Assets

- Dredge 54

PHASE 2 – DEEPENING & WIDENING

Scope

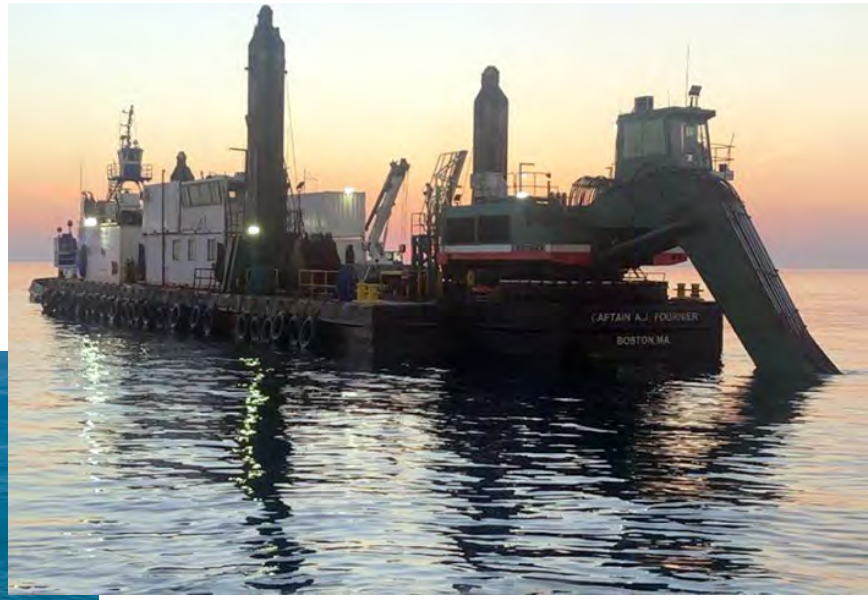
- Approx. 11.5M CYDS Gravel, Slit & Clay
- Approx. 380K CYDS Rock
- Distributed Over 7 Miles of Channel & 52M SQFT
- Disposal at Mass Bay Disposal Site w/ Capping (20+ Mile Haul Distance)
- Work Started July 2018 & Completed in November 2020
- North Channel Widened and Deepend to -51’
- Lower Main Channel, President Roads Anchorage & Lower Reserved Channel & Turning Basin to -47’
- Main Ship Channel Above Massport to -45’

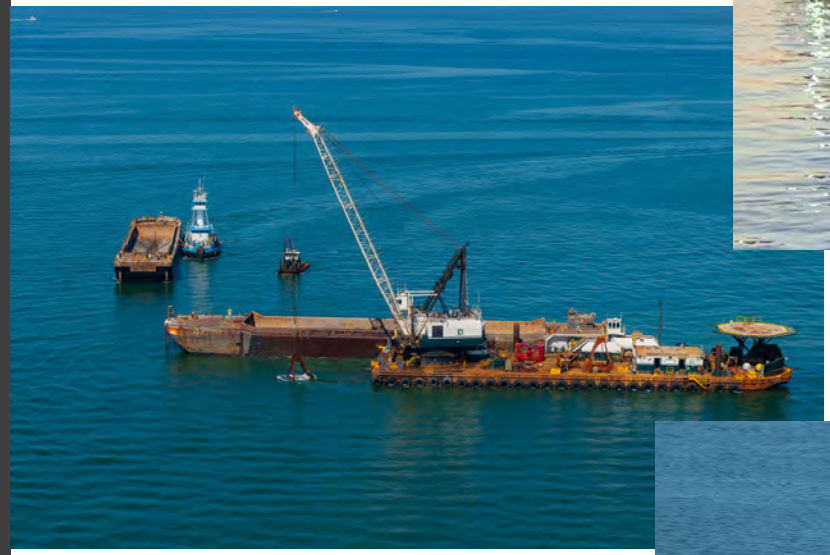


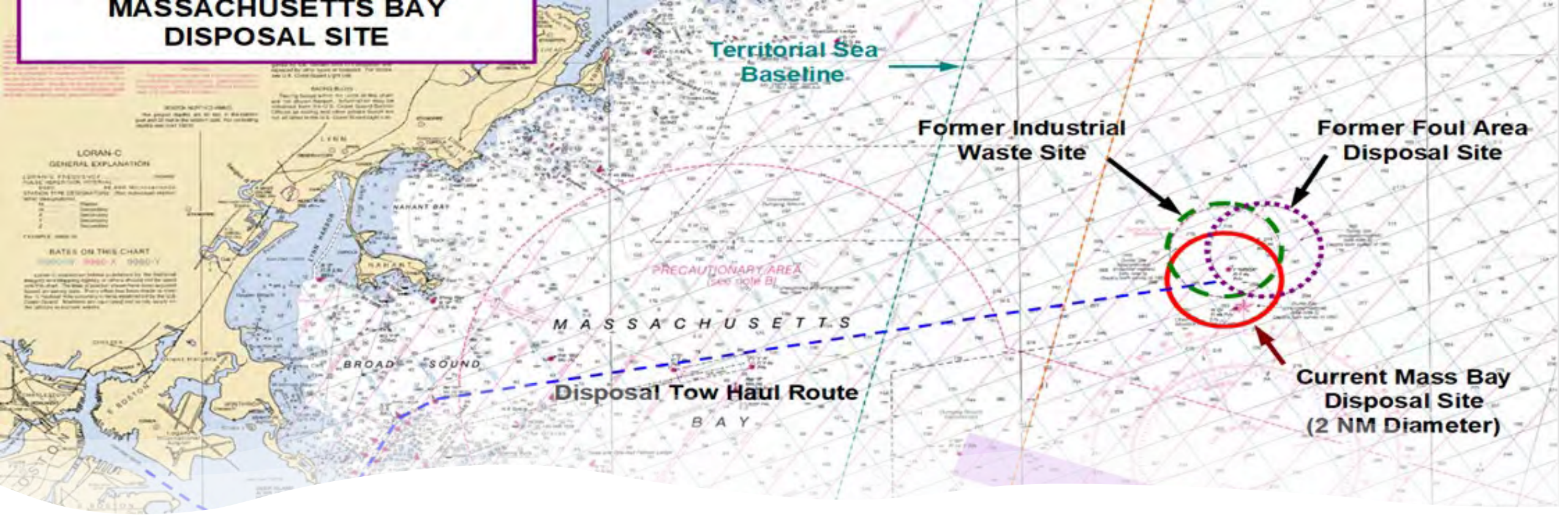
PHASE 2 – DEEPENING & WIDENING

Dredging Assets

- Clamshell Dredge – Dale Pyatt
- Clamshell Dredge – F.J. Belesimo
- Clamshell Dredge – Paula Lee
- Excavator Dredge – Capt. AJ Fournier
- 6 x Split Hull Dump Scows
- 8 x Towing & Tending Tugboats
- 2 x Survey Vessels
- 3 x Crew Boats

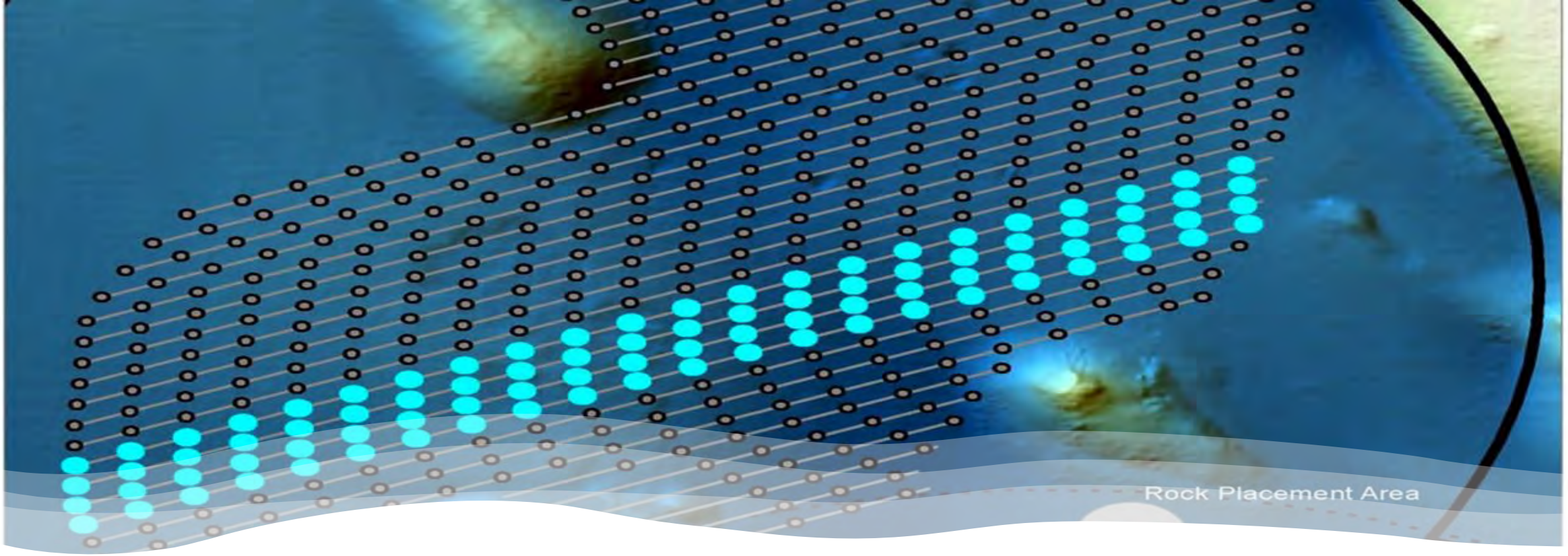






MASS BAY DISPOSAL SITE

- Previously a Medical & Industrial Waste Dumping Site from the 1950's
- 20 Miles Due East of Boston Harbor



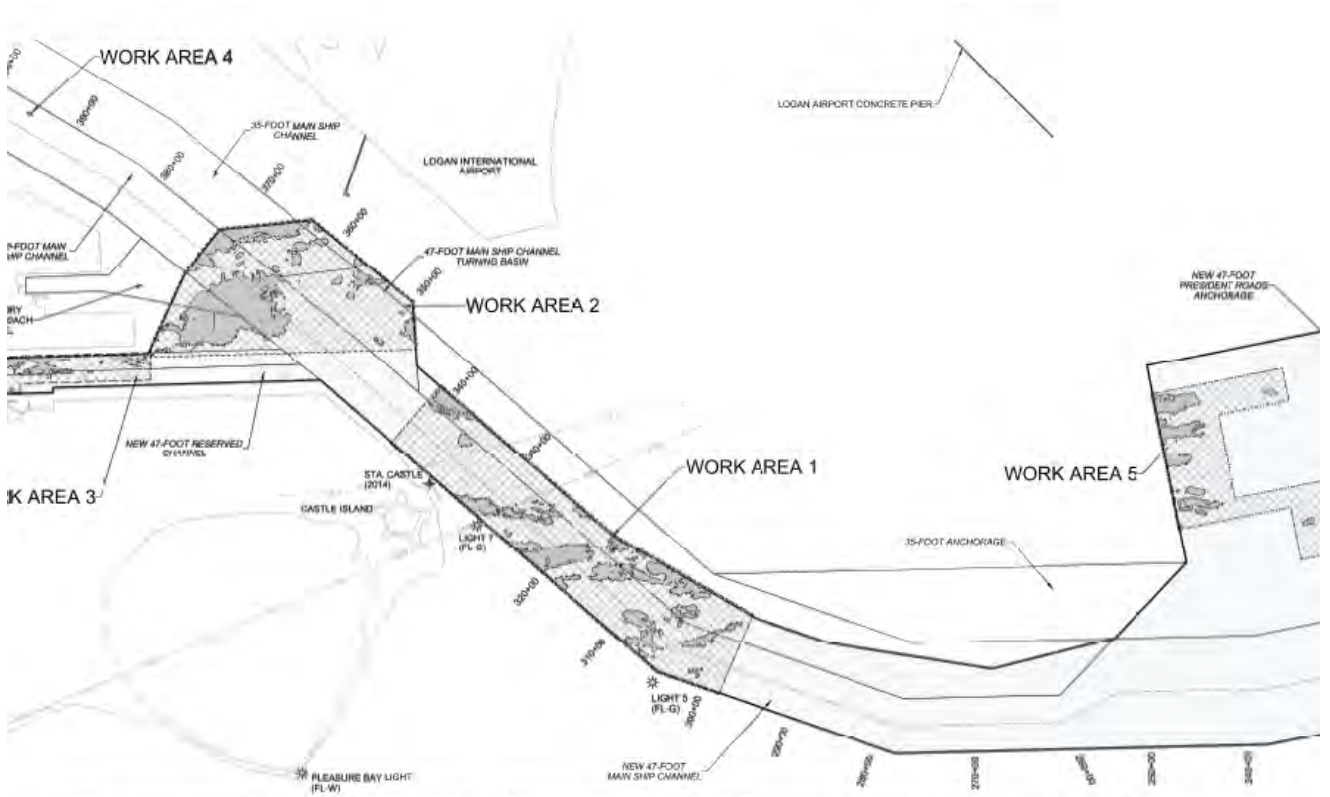
MASS BAY DISPOSAL SITE

- Utilizing Suitable Dredged Material to Encapsulate the Area via an Engineered Dumping Pattern
- Step #1 – Dike Around the Area
- Step #2 – Cover the Area within the Dike
- Development & Implementation of Scow Geofence System (SGS) to Prevent Mis-Dumps and Improve Quality Control
- Continual Bathymetric Survey to Confirm Correct Placement Location and Adjust Dumping Locations

PHASE 3 – FIXED ROCK

Scope

- Approximately 500K CYDS of Fixed Rock
- Drill, Blast & Mechanically Dredge
- Distributed Over 2 Miles of Channel
- Disposal at Mass Bay Disposal Site w/ Capping (20+ Mile Haul Distance)
- Work Started May 2021



WORK AREA 1	
EASTING	NORTHING
788236.37	2949513.46
788779.96	2950142.46
790552.76	2948521.04
791300.91	2946778.56
791124.89	2947011.96

WORK AREA 2	
EASTING	NORTHING
788522.41	2950538.19
788487.14	2951064.16
787382.97	2951868.61
786358.20	2951868.72
785972.70	2951377.19
785615.93	2950605.04
785609.01	2950456.64

WORK AREA 3	
EASTING	NORTHING
785883.75	2950605.63
783687.23	2950451.96
783687.23	2950047.75
784195.87	2950061.96
784195.86	2950157.06
785883.75	2950196.47

WORK AREA 4	
EASTING	NORTHING
784273.40	2953120.49
784273.40	2953079.42
784325.73	2953079.42
784325.73	2953120.49

WORK AREA 5	
EASTING	NORTHING
798832.02	2948377.96
798676.12	2949159.68
797432.54	2948911.68
797250.98	2949822.15
798014.83	2949974.48
797944.52	2950327.03
796520.46	2950043.02
796813.55	2948573.33
796035.17	2948813.81
796147.70	2948242.08

PHASE 3 – FIXED ROCK

Dredging Assets

- Dredge # New York
- Dredge # 131
- Drill Boat Apache

CHALLENGES & LESSONS LEARNED

- Working in Close Proximity to Logan International Airport (FAA Restrictions)
- Existing Utilities and Historical Harbor Elements
- Weather
- Vessel Traffic
- Coordination w/ Other Contractors / Contracts
- Hard Material / Fixed Rock – Quantification and Variance Between Theoretical and Actual

THANK YOU FOR YOUR TIME!

QUESTIONS & ANSWERS