Boston Harbor

Deep Draft Navigation Improvement Project

Civil Works Review Board

26 April 2013

Final Feasibility Report and
Supplemental Environmental Impact Statement

Colonel Chuck Samaris
Commander and District Engineer
New England District
North Atlantic Division

US Army Corps of Engineers
BUILDING STRONG®

In Partnership with…

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Purpose

Massport's Conley Terminal on the Reserved Channel

- Provide the CWRB an overview of the Boston Harbor Deep Draft Navigation Improvement Feasibility Study
- Obtain CWRB approval to proceed with release of the Final Boston Harbor Deep Draft Navigation Improvement Feasibility Report (FR) /Supplemental Environmental Impact Statement (SEIS)
- Answer questions and address comments

Agenda

- Feasibility Report Overview
  - ✓ Recommended Plan
  - ✓ Study Authority and Sponsor
  - ✓ Project Background
  - ✓ Planning Constraints & Formulation
  - ✓ Recommended Plan
  - ✓ Project Costs / Risk Analysis
- OWPR Review & PGM Compliance
- Agency Technical Reviews
- Independent External Peer Review
- Public Involvement Process
- Public and Agency Comments
- Environmental Operating Principles
- Lessons Learned

BLUF

The Vertical Team considered alternatives from 42 to 50 feet

- **NED and Selected Plan is the 47-foot alternative…**
  - ✓ **Yields $87.5M in total annual net benefits**
  - ✓ **Project First Cost $320M at FY12 price levels**
  - ✓ **Benefit to Cost Ratio of 7.9 to 1**
  - ✓ **Annual O&M costs increase $300k**
  - ✓ **No significant environmental impacts**

Study Authority

Resolution of the Senate Subcommittee on Public Works dated 11 September 1969: requested *review of the report of the Chief of Engineers on Boston Harbor, Massachusetts, published as House Document Numbered 733, Seventy-ninth Congress ...*

Project Sponsor

Massachusetts Port Authority

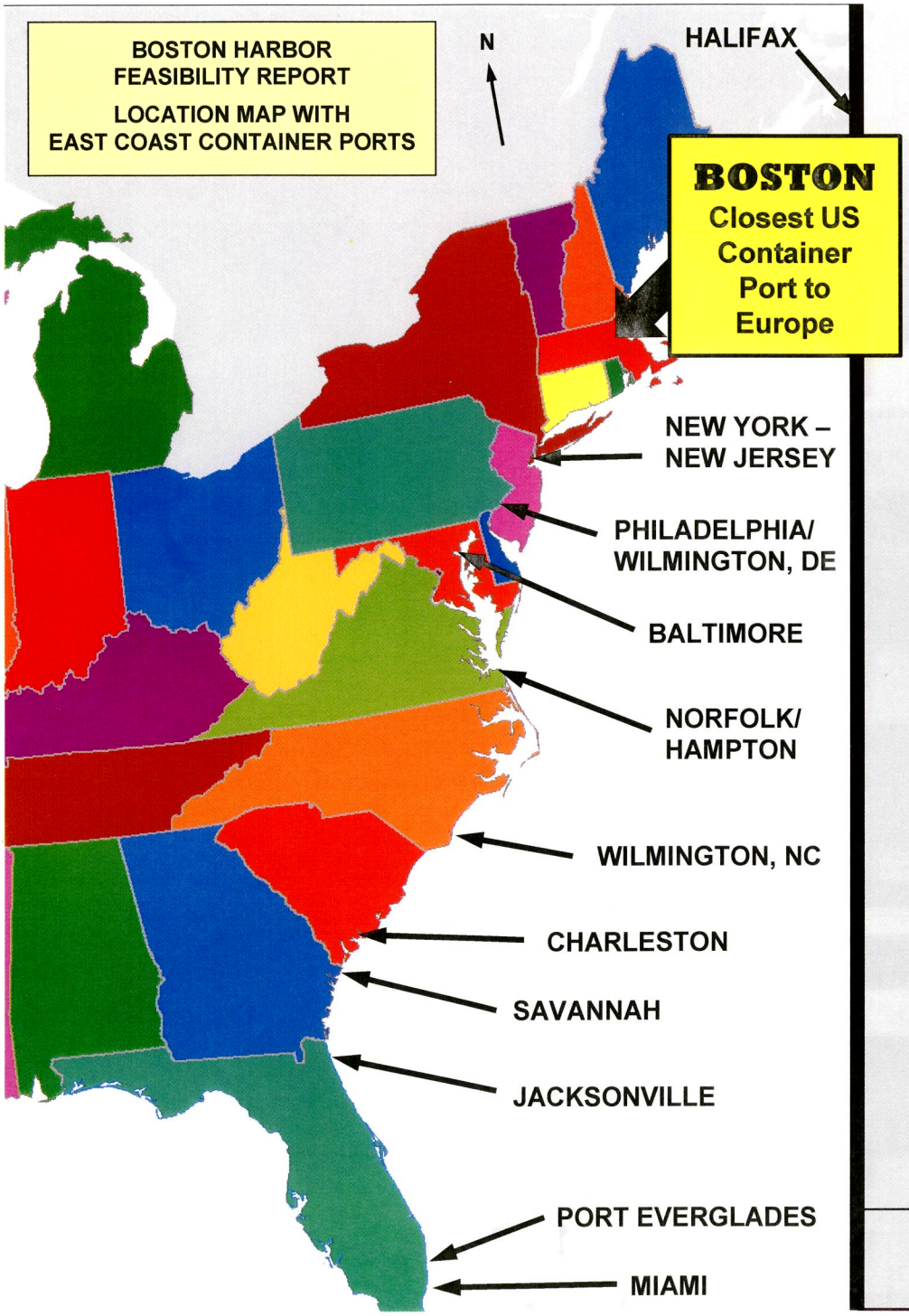
Conley Terminal

massport **strongly supports this project and recommends approval by this Board**

Expanded Project Delivery Team

Key Boston Harbor Technical Working Group Participants

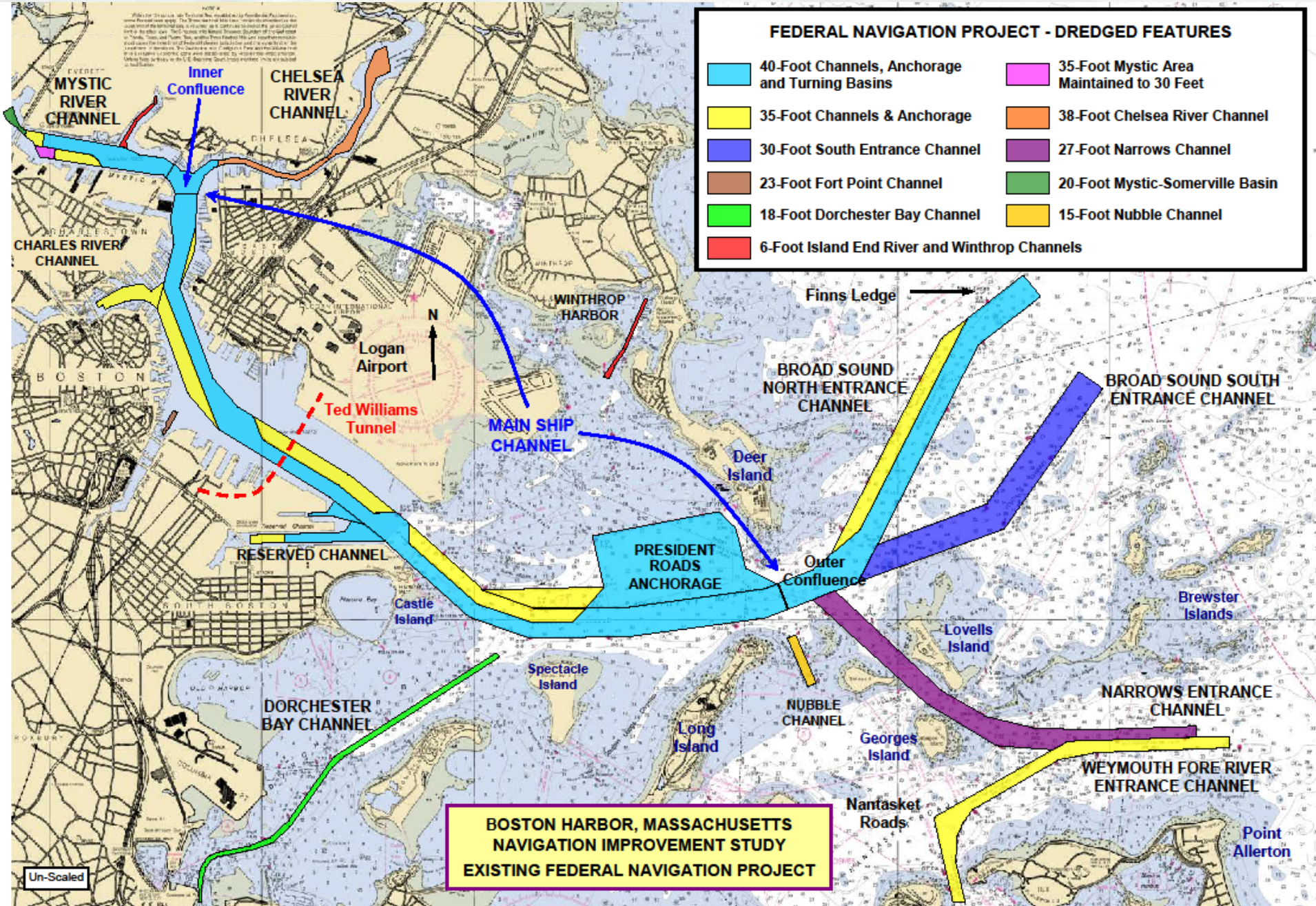
- Massachusetts Port Authority (MASSPORT)
- US Environmental Protection Agency (USEPA), Region 1
- National Marine Fisheries Service (NMFS)
- US Fish and Wildlife Service (USFWS)
- U.S. Coast Guard (Sector Boston and First CG District)
- Massachusetts Dept of Environmental Protection (MDEP)
- Massachusetts Office of Coastal Zone Management (MCZM)
- Massachusetts Division of Marine Fisheries (MDMF)
- City of Boston – Environment Department
- Massachusetts Institute of Technology
- University of Massachusetts at Boston
- Boston Harbor Pilots



Why Improve Boston Harbor?

- New Panama Canal to come online in late 2014 – 50-foot drafts and 120-foot beams.
- Ports on Boston service routes are getting deeper…
  - NYNJ to 50 feet in 2015.
  - Norfolk, Baltimore already at 50 feet.
  - Miami authorized to 50 feet.
  - Most EU ports at 56 feet
  - Suez Canal now at 66 feet
- Carriers increasing vessel sizes in trans-oceanic routes to save costs
- Road traffic congestion worsens and with it highway maintenance, safety, and air quality issues
- Global trade volumes are projected to increase

Existing Federal Navigation Project



Final Feasibility Report and SEIS: Investigated 4 Separate Project Segments

1. Main Channels Improvement:

- ✓ For Containership Access to Conley Terminal

2. Main Ship Channel Deepening Extension:

- ✓ For Large Dry Bulk Carrier Access to Marine Terminal

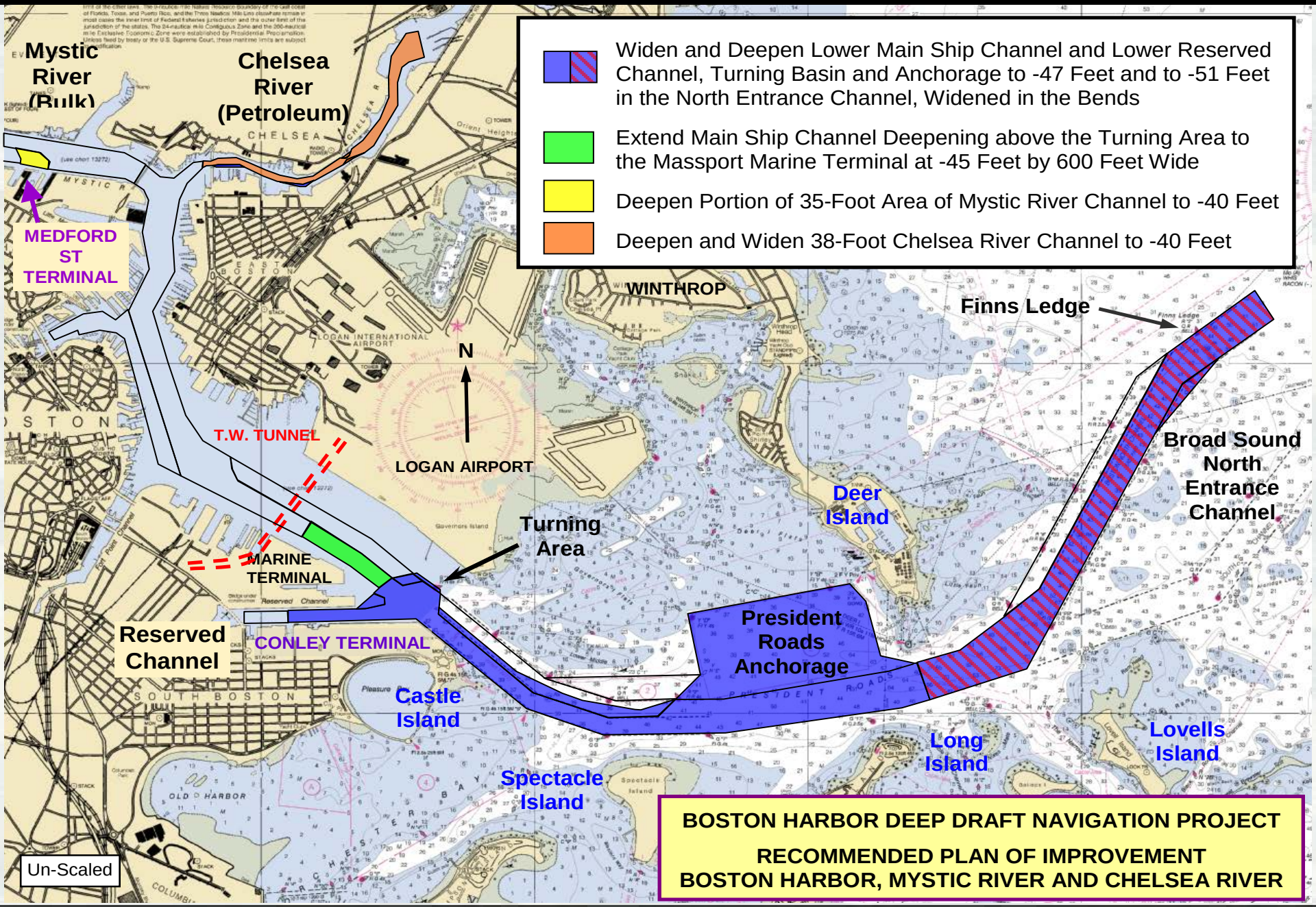
3. Mystic River Channel Deepening:

- ✓ For Smaller Dry Bulk Carrier Access to Medford Street Terminal

4. Chelsea River Channel Deepening:

- ✓ For Liquid Petroleum Carriers

Improvements at Boston Harbor



Need for the Project

Container Cargo Needs – Conley Terminal

- Improving navigation access for larger container ships would allow Boston to retain its 3 existing services as New York and other ports deepen, and allow container cargo currently shipped through New York by truck to shift to direct landing at Boston.

Dry Bulk Cargo Needs (Non-Petroleum)

- Massport and partners planning to redevelop the Marine Terminal on Main Ship Channel, and the Medford Street Terminal on the Mystic River to meet the Port's needs for deeper draft dry bulk carrier access.

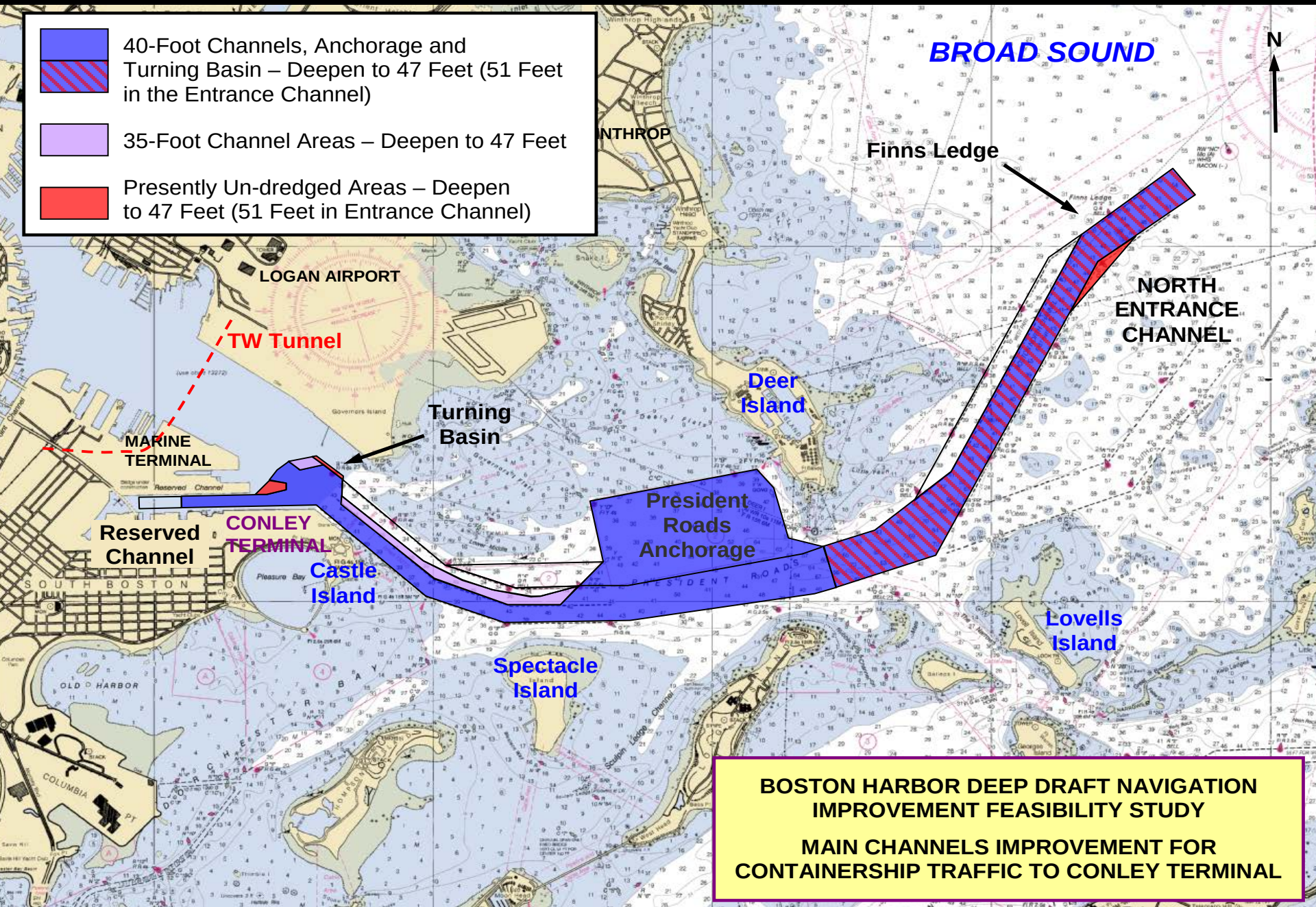
Liquid Bulk Cargo Needs (Petroleum)

- All of Boston's petroleum terminals are located on the Chelsea River (except Exxon on the Mystic).
- Deepening would allow larger tankers to access the terminals and reduce transportation costs.

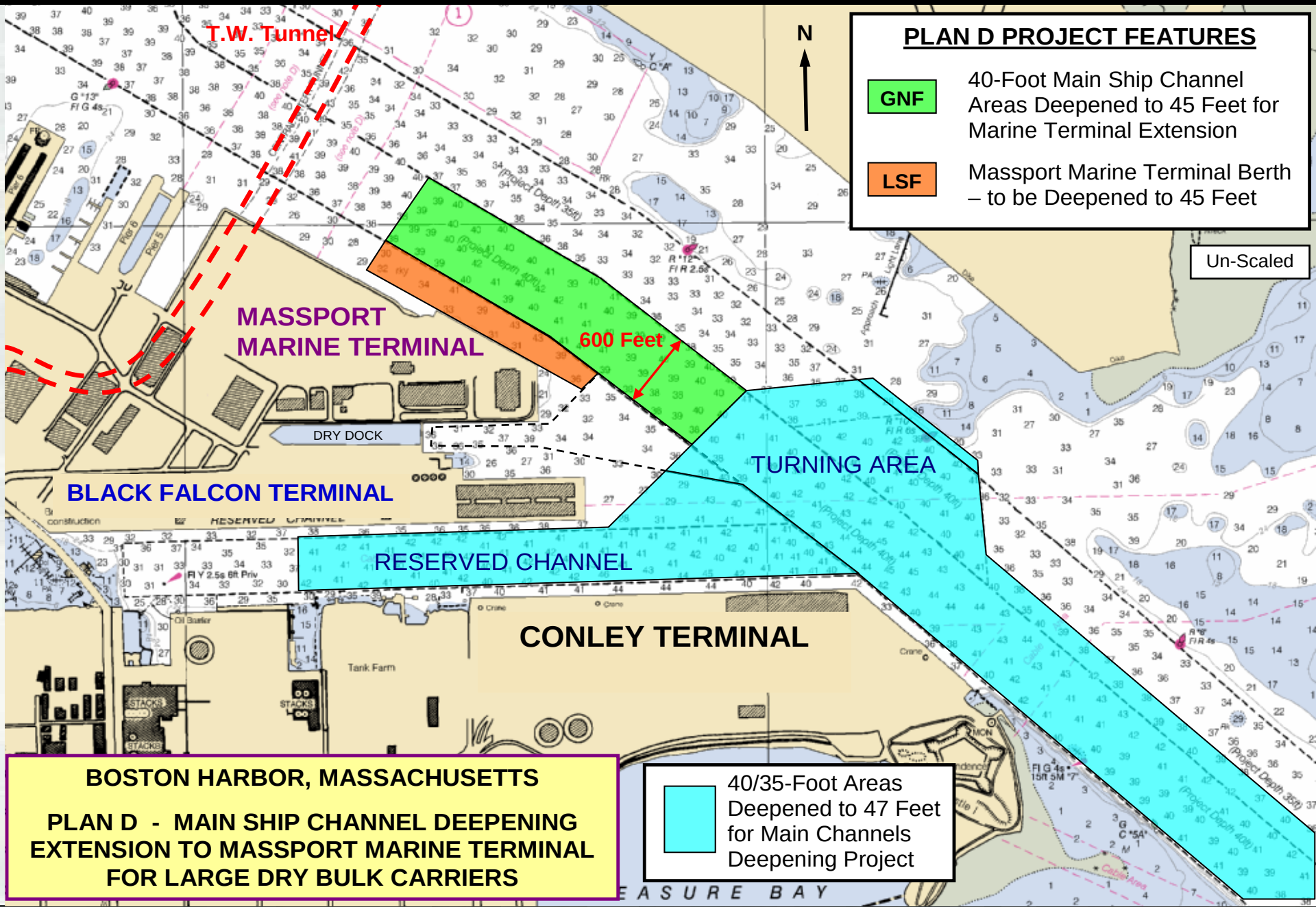
No Action Alternative – Without Project

- Base Economic Condition for Container-Shipping
  - ✓ Existing container lines maintain existing service levels to Boston until New York/New Jersey 50-foot project completed – then Asia services drop Boston from port rotation
  - ✓ Growth in New England container cargo largely handled from PONYNJ overland by truck as at present
- Dry and break bulk cargo needs unmet except by smaller ships and barges or overland transportation
- Efficiency of Chelsea River petroleum operations declines as fleet mix shifts away from shallow draft Chelsea-Max vessels due to 2012 Chelsea Street Bridge replacement

Main Channels Improvement



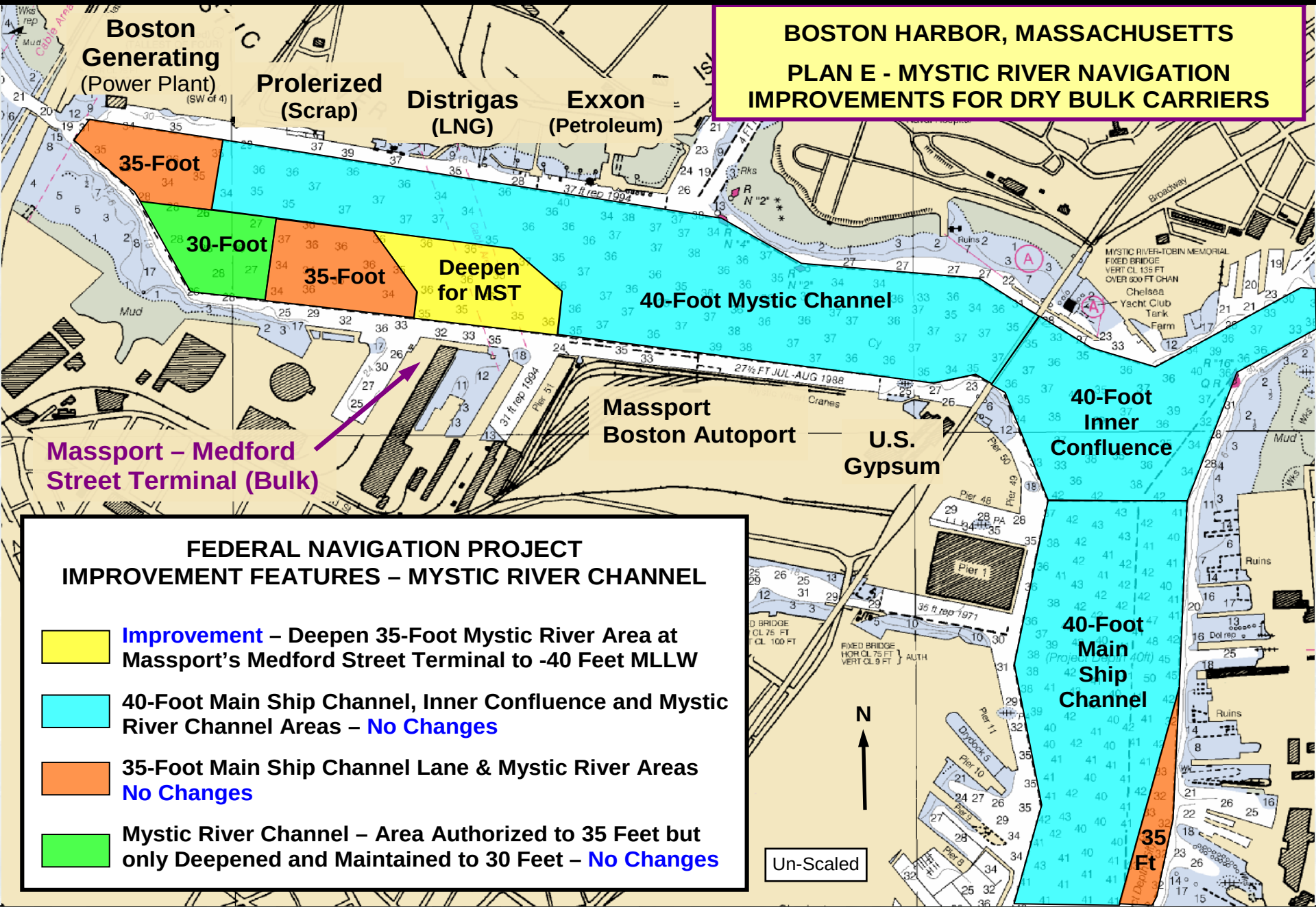
Main Channel Extension



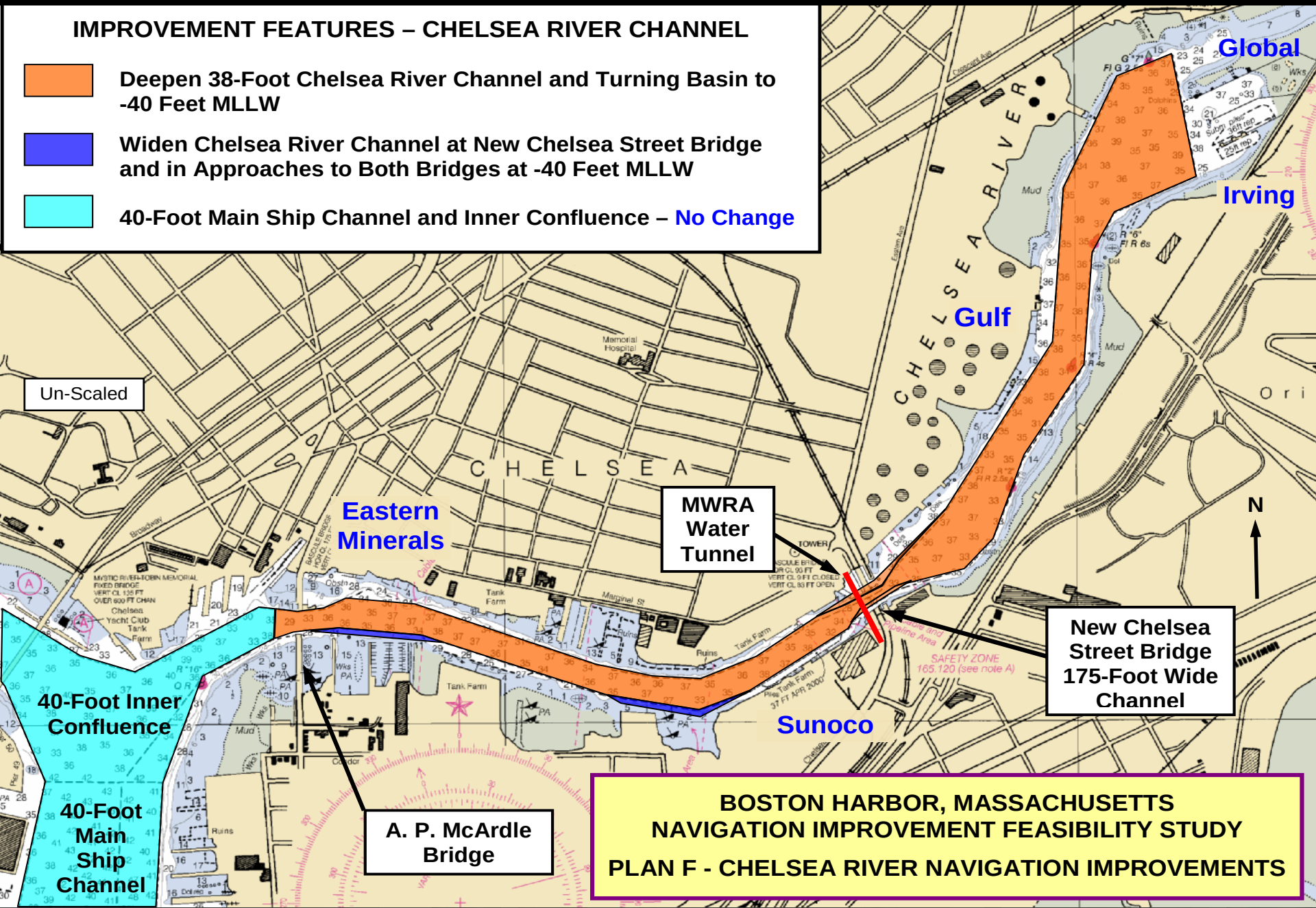
BOSTON HARBOR, MASSACHUSETTS

PLAN D - MAIN SHIP CHANNEL DEEPENING EXTENSION TO MASSPORT MARINE TERMINAL FOR LARGE DRY BULK CARRIERS

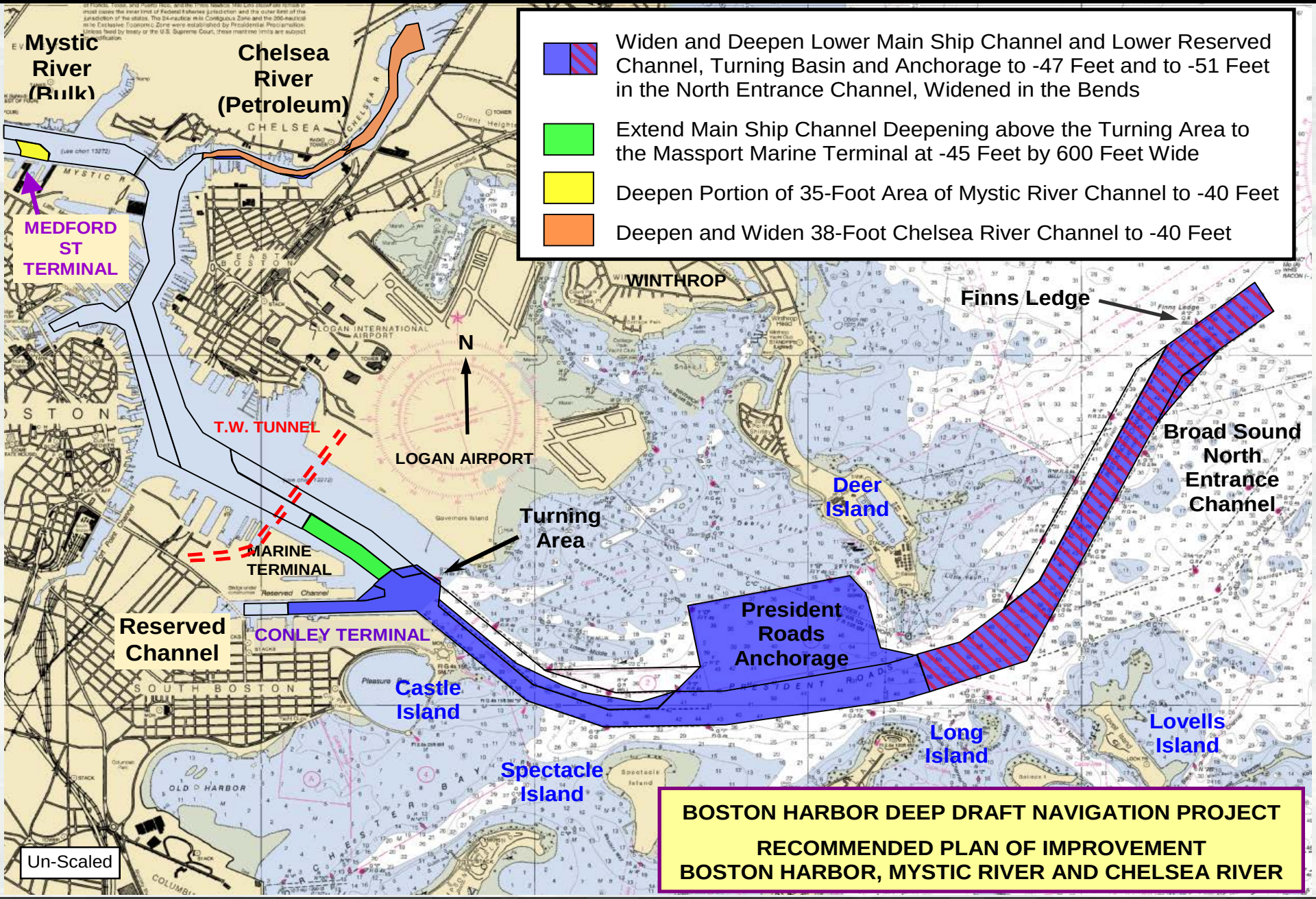
Mystic River Improvement



Chelsea River Improvement



Recommended Plan

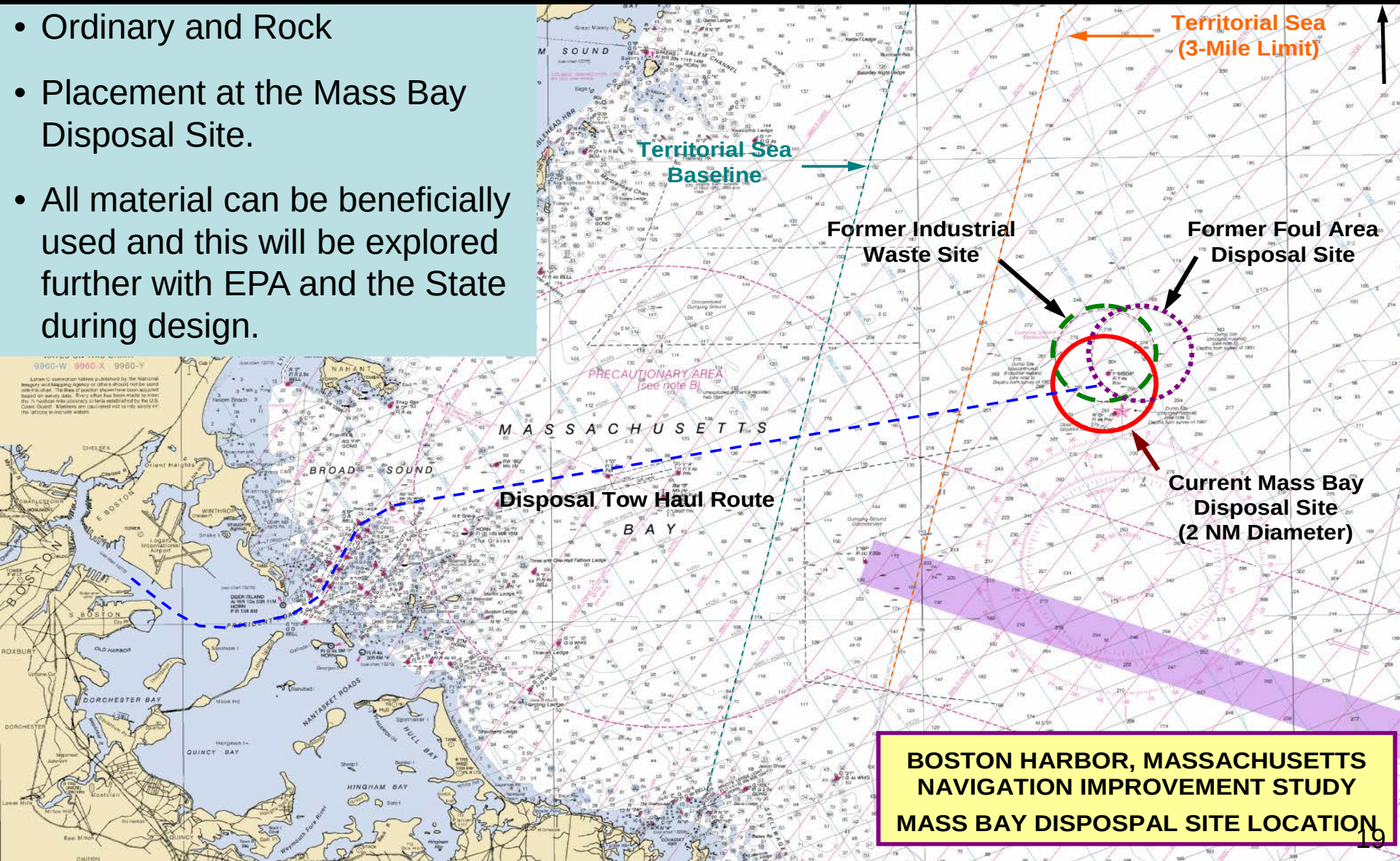


Dredging Quantity Estimates (1000s of CY)

Project Segment	CY Ordinary Material	CY Rock	Acres of Subtidal Impact
Main Channels Improvement to 47 Feet for Conley Terminal - Entrance Channel to 51 Feet	10,221	993	1,083
Extend Deepening of MSC to Marine Terminal at 45 Feet	246	78	37
Deepen Portion of 35-Foot Mystic Channel to 40 Feet	67	0	9
Deepen 38-Foot Chelsea River Channel to 40 Feet	343	1	53
TOTAL PROJECT (2013)	10,877	1,072	1,182

Dredge Material Disposal Base Plan

- Ordinary and Rock
- Placement at the Mass Bay Disposal Site.
- All material can be beneficially used and this will be explored further with EPA and the State during design.



Regional Sediment Management

- Limited opportunities for regional sediment management of Boston Harbor dredged materials.
- Long Maintenance Frequency - 16 to 41 years for various project segments due to significant glaciation, lack of major rivers, dams located at the head of navigation on the Mystic, Charles and Neponset Rivers, and adjacent coastlines of rock and till, and the material is fine-grained.
- Improvement-related O&M costs estimated to increase by less than $300,000 annually due to the lack of sediment sources and long maintenance frequency.
- While the improvement material from this project has all been proposed for beneficial use, maintenance material has historically been predominantly silty material suitable only for ocean placement.
- This silty shoal material is unsuitable for structural fill, beach nourishment, or other upland uses.

Sea Level Rise

- Sea level rise was investigated during project design.
- Three sea level rise scenarios were developed for Boston Harbor and compared to baseline levels over the 50-year project life of 2016 to 2066.
- The increased changes were 0.9, 1.6 and 2.3 feet for the low, medium and high increases, respectively.
- Compared to the terminal elevations of +10.5 to +12.0 feet MSL the terminals would remain operable under even the high level increase.
- With respect to navigability, increased seas would mean greater available depth for navigation, allowing vessels to load more deeply or permitting a longer maintenance dredging cycle while the additional depth shoals.

Economic Justification
Main Channels Improvement

FOOT- BY- FOOT DEPTH OPTIMIZATION FIRST COSTS, ANNUAL COSTS AND BENEFIT- COST ANALYSIS (July 2011 Costs Escalated to Oct 2012 in $1,000s at 3.75% Rate)				
Inner Channel Depth Entrance Channel Depth	45 Feet 49 Feet	46 Feet 50 Feet	47 Feet 51 Feet	48 Feet 52 Feet
First Cost	$200,710	$245,015	$263,648	$297,717
Investment Cost	$209,411	$258,042	$277,707	$315,091
ANNUAL COST	$9,571	$11,651	$12,641	$14,316
BENEFITS AND BENEFIT-COST ANALYSIS – BASE ECONOMIC CASE				
ANNUAL BENEFIT	$91,222	$96,306	$100,176	$102,555
BCR	9.53	8.27	7.92	7.16
Net Annual Benefit	$81,651	$84,655	$87,535	$88,239

Economic Justification
Plans D, E, and F

BOSTON HARBOR DEEP DRAFT NAVIGATION IMPROVEMENT STUDY BENEFIT- COST ANALYSIS PLANS D, E AND F – BULK CARGO TERMINALS			
3-3/4% Rate	Main Ship Channel Extension to MMT Plan D	Mystic River Channel Deepening Plan E	Chelsea River Channel Deepening Plan F
Recommended Depth	45 Feet	40 Feet	40 Feet
First Cost GNF	$18,078,000	$2,337,000	$12,873,000
Investment Cost (w/IDC)	$18,157,000	$2,337,000	$12,944,000
Annual Cost of GNF and NF Berths	$831,000	$115,000	$718,000
Annual Benefits	$1,163,000	$221,000	$1,936,000
Benefit Cost Ratio	1.40	1.92	2.70
Net Benefits	$332,000	$106,000	$1,218,000

Boston Harbor Project Costs

($1000s – Escalated To Fully Funded Price Levels)

	MAIN CHANNELS	MSC EXTENSION	MYSTIC RIVER	CHELSEA RIVER	TOTAL COST
Terminal	Conley	Marine Terminal	Medford Street	4 Petroleum 1 Minerals	
Federal GNF Share	$194,983	$13,768	$1,846	$8,954	$219,551
Massport UF GNF Share	87,847	4,589	615	2,984	96,035
LERR	135	17	4	19	175
LSF - Berths	473	1,479	0	1,573	3,525
ATON (Buoys)	206	26	0	51	283
Total Cost	$283,644	$19,879	$2,465	$13,581	$319,569
Percent of Total Project	89%	6%	1%	4%	100%

Cost/Schedule Risk Analysis

Risk-Based Planning

Contingency Risk Analysis conducted by NAE and reviewed by Cost DX (NWW), and certified 14 February 2013. Significant factors including the following:

- Principal risks with dredging and marine construction involve quantities, fuel/labor costs, and weather.
- Quantities – Rock quantities/costs developed based on worst case.
- Contingencies - Factors covering a range of fuel and labor costs, were developed separately for each project segment and construction activity (dredging, D&B and removal of blasted rock).
- Air Emissions Mitigation – Options include a 6-month shutdown in construction or purchase of credits or offsets. Further, EPA is expected to lessen non-attainment levels in later 2013.

Agency Technical Review

- Agency Technical Review (ATR) Conducted under direction of Deep Draft Navigation PCX (SAM) for:
  - ✓ 2008 Draft,
  - ✓ 2009-2012 Reanalysis Framework Products,
  - ✓ 2013 Revised Final Feasibility Report and FSEIS
- Cost Risk Analysis Review and Cost Estimate Certification performed by Cost DX (NWW). Cost Certification Issued 14 February 2013
- ATR Comments Addressed, Back-checked and Resolution Incorporated into the Final Feasibility Report and Final SEIS
- All comments have been closed and ATR Certified as Completed 21 February 201

IEPR /OWPR Comments

- IEPR conducted on 2008 draft report resulted in highly significant comments:
- IEPR and OWPR comments on container shipping improvements were centered on three basic themes:

  1) Actual Origin/Destination of Containers difficult to determine from PIERS data
  2) Sizes of vessels likely to call at Boston without or with deepening
  3) Vessel loading with respect to tidal navigation

- CWRB directed that additional economic analysis be conducted to optimize recommended channel depth.
- Vertical Team developed Framework for additional studies to answer these questions.

Scope of Framework for Additional Economic Analysis

1. Landside Analysis

- ✓ Where are the containers going to or coming from and why?
- ✓ Who are the shippers and end users?
- ✓ What amount of NYNJ shipped New England containers might shift to shipment through Boston Harbor by water?
- ✓ What landside distances are involved?
- ✓ What landside (trucking) costs might be saved?
- ✓ What services might leave Boston without deepening as NYNJ is deepened and the Panama Canal expansion completed?

2. Waterside Analysis

- ✓ What means might be used to ship additional container volume to Boston…
- ✓ …Larger ships, smaller ships, barges?

3. Loading Factors

- ✓ How will new Boston ships load?
- ✓ What is the impact of Boston's tidal advantage?
- ✓ What is the affect of Boston's first-in last-out position in service rotations?

Summary of Framework Results

- The surveys and interviews conducted during the reanalysis determine the origin and destination for New England boxes shipped through the PONYNJ and Boston Harbor, and the population of boxes eligible and likely to shift.
- Carrier interviews and surveys of trucking firms served to determine the means and costs for transporting boxes shifted from PONYNJ to Boston.
- The analysis also re-examine vessel loading and sailing drafts for containerships calling at both Boston and New York.

Completion of Framework Re-analysis

- Revised Container Cargo Benefits Sub-Appendix Completed and reviewed by ATR and OWPR.
- District prepared revised feasibility report with 47-foot recommendation with a 51-foot entrance channel depth.
- Revised Final Feasibility Report and FSEIS underwent ATR and review certified 21 February 2013. Costs DX review certified 14 Feb 2013.
- Revised Final Feasibility Report and FSEIS now submitted for CWRB reconsideration.

Independent External Peer Review

IEPR conducted on 2008 draft report - Highly Significant IEPR Comments:

Containership Economics Comments:

- Incremental truck costs savings not analytically supported.
- International Longshoreman Association fee savings should not be included.
- The risk of losing current business (i.e. two lines and three services) at Boston Harbor with or without the project has not been adequately considered.

Other Comments:

- The NSTAR Power Cable is of concern.
- The benefits to the cement industry are entirely speculative and pending contractual commitments.

Public Outreach and Involvement

- Public Scoping Meeting – September 2002
- Public Information Meeting on DFR/DSEIS – 20 May 2008
- Boston Harbor Dredging Technical Working Group Meetings - 2 to 4 Times Annually
- New England Regional Dredging Team Meetings - Twice Annually
- Massachusetts State Dredging Team Meetings - Every Other Month
- Separate Meetings with Individual Agencies and Groups
  - U.S. Coast Guard on Anchorage and Port Security Needs
  - Boston Harbor Lobstermen
  - Massachusetts Harbormasters Association
  - US EPA on IWS Capping Proposal and Design Demo
  - FAA on Airport Operations Needs and Adjustment
  - Mass CZM on Other Beneficial Uses for Rock
  - Boston Harbor Pilots on Design Criteria

Agency and Public Comments / Issues

Comments were Focused on the Following Issues:

- Appropriate placing, size and design of beneficial use rock reef habitat sites
- Development of blasting plan to minimize fisheries impacts
- Development of construction sequencing plan to minimize fisheries impacts
- Investigation of alternative air quality mitigation measures besides shutdowns
- Avoidance of blasting impacts on marine mammals (shock & noise)
- Investigate other beneficial uses of rock
- Continuation of the interagency Technical Working Group in PED and construction
- Developing resource monitoring plans of post-dredging recovery

NEPA Compliance

- Draft Feasibility Study/DSEIS was released in April 2008
- Final recommendation (47/51 feet) coordinated in December 2012
- Base Plan (except for blasting) received highest rating (lack of objections) from US Environmental Protection Agency as did IWS capping option
- Section 7 Endangered Species Act (ESA) consultation complete
  - ✓ US Fish and Wildlife Service: No effect
  - ✓ National Marine Fisheries Service: No effect. Assessed Atlantic Sturgeon and blasting noise impacts for North Entrance Channel
- Section 106 consultation with State Historic Preservation Office (SHPO) is complete, except for Chelsea River widening areas (will survey in design)
- Coastal Zone Consistency Determination received November 2012.
- State WQC processes to be completed at end of Design Phase once final rock quantities known and beneficial uses defined
- Project is in compliance with all other applicable Federal and State regulations and pertinent Executive Orders

PED Phase Commitments to Resource Agencies

- ✓ Additional channel area resource assessments to measure recovery since maintenance dredging completed in 2012
- ✓ Develop rock removal plan to include adaptive management and lessons learned in 2012 blasting to minimize resource impacts
- ✓ Include invasive species inspection of contractor equipment
- ✓ Develop construction sequencing plan to minimize resource impacts while enabling dredging to progress year-round
- ✓ Further pursue on-shore beneficial use of rock with State
- ✓ Develop post-construction recovery monitoring plan with TWG for channels and any rock reef creation areas
- ✓ Further investigate potential savings from Air Quality credits and offsets as an alternative to construction period shut-downs
- ✓ EPA to modify disposal site boundary to permit capping of adjacent IWS

Environmental Operating Principles

"Strive to achieve environmental sustainability"

- *Focus on improvements to existing project features/existing terminals minimizes the impacts of construction.*
- *Use of existing channels capitalizes on low sustainable maintenance frequency of 16 to 41 years.*

"Proactively consider environmental consequences"

- *Recognize the interdependence of life and the physical environment.*
- *Environmental consequences investigated and documented in the FSEIS/EIR.*

"Economic and environmental solutions that support and reinforce one another"

- *Saves millions of regional truck-miles annually, and improves air quality and highway safety.*
- *Beneficial use opportunities represent balance between port development and the environment.*

"Accept responsibility and accountability for our activities that impact human health and welfare and viability of natural systems"

- *Ensure the project complies with all Federal and State laws and regulations most notably in the areas of economic justification, environmental impacts, and agency and external peer review.*

"Seek ways to assess and mitigate cumulative impacts to the environment"

- *Specifically examined during design phase.*
- *Suggested beneficial use of dredged material as cap for former EPA designated Industrial Waste Site and rock for near shore lobster habitat or shore protection.*

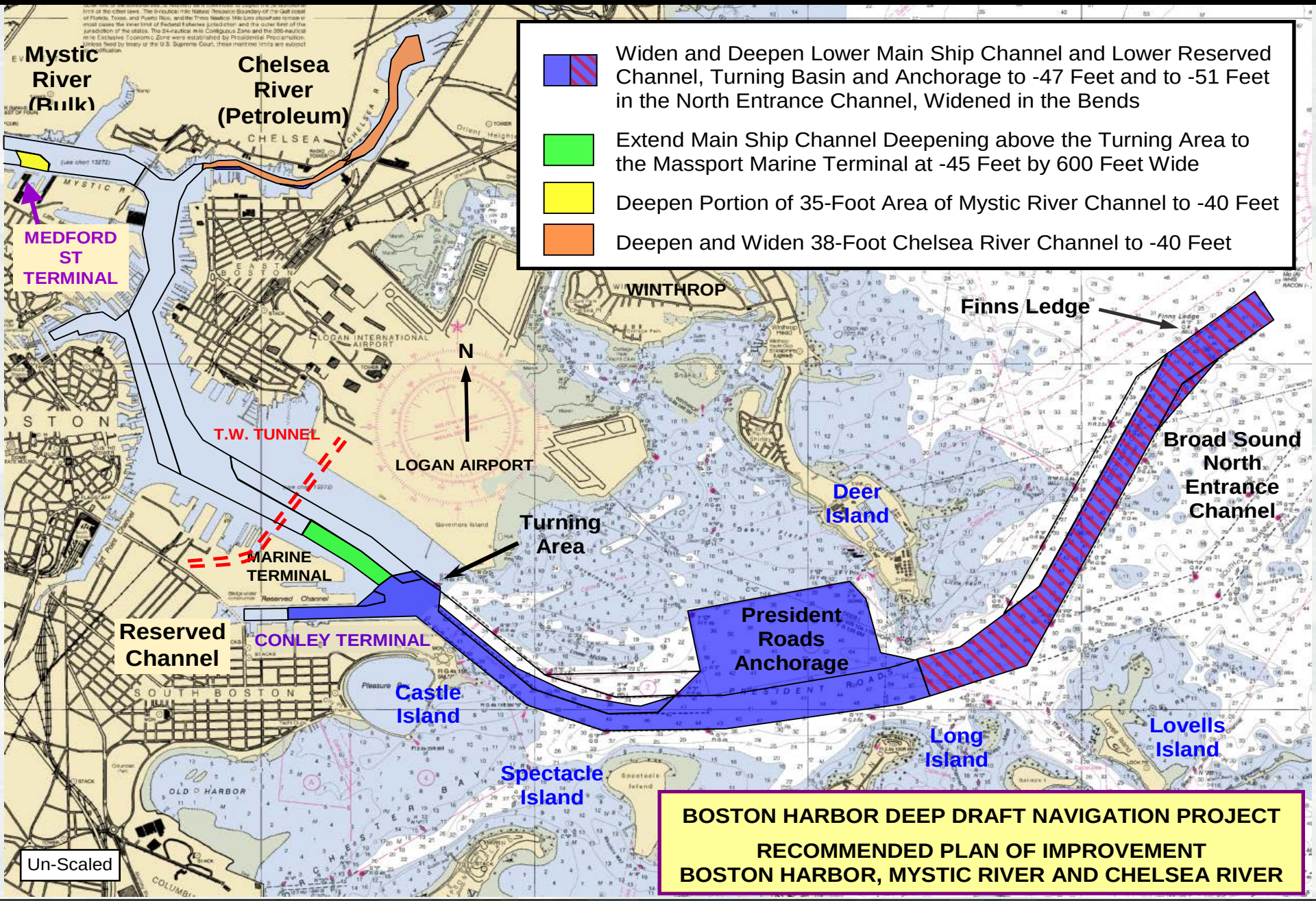
"Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work"

- *Close coordination with Federal, State and City agencies and public interests through the Technical Working Group*

"Respect the views of individuals and groups"

- *Fully coordinated, and adapted as practicable, through close collaboration with the TWG.*

Recommended Plan



Project Schedule

Action	Date	Status
Draft Feasibility Report to Agencies, State, Public	11 April 2008	✓
Public Hearing for Draft SEIS	20 May 2008	✓
Comment Period Closes	2 June 2008	✓
Civil Works Review Board #1	21 August 2008	✓
Civil Works Review Board #2	18 September 2008	✓
Civil Works Review Board #3	26 April 2013	✓
State and Agency Review	May 2013	
Chief's Report	August 2013	
Authorization	TBD	
Design Phase (PED)	FY 2013 to 2014	
Construction	FY 2015 to 2017	

Boston Harbor

Deep Draft Navigation Improvement Project

Civil Works Review Board

Supplem

Questions or Comments??

Colonel
Command
New England District
North Atlantic Division

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Boston Harbor Deep Draft Navigation Improvement Project

Presentation to Civil Works Review Board

Deborah Hadden, Acting Port Director
Massachusetts Port Authority

April 26, 2013

Overview of **Massachusetts Port Authority**

- Independent State Authority
- Governor-appointed Board
- Self-financing
- Primary Massport facilities:
  - Boston Logan International Airport
  - Conley Terminal
  - Other key port facilities
  - Major waterfront land holdings

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Overview of the Port of Boston

- New England's only full service port:
  - Handles 22M tons of cargo worth >$9B/yr
  - Provides infrastructure and value-added services to enhance competitiveness of New England trade-dependent firms
  - Economic benefit → 34,000 jobs and $2.4B annual benefit
  - Environmental benefit → fewer trucks on roads and reduced emissions
- Key port cargos (14M tons/year):
  - Containerized cargo
  - Petroleum products/LNG
  - Seafood, beer & wine
  - Dry Bulk - autos, cement, road salt, gypsum and scrap metal
  - Footwear, clothing and furniture
  - Cruise passengers (380K in 2012)

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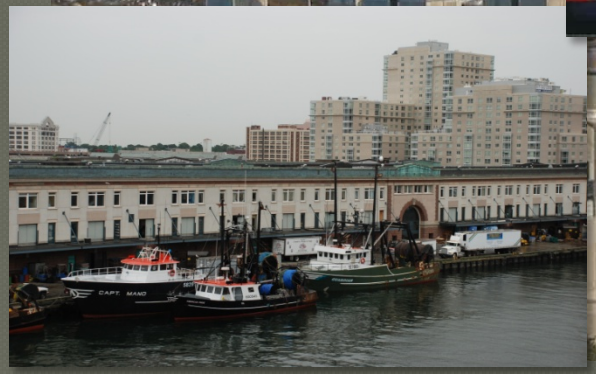
Massport's Maritime Facilities

Conley Container Terminal

Black Falcon Cruise Terminal

Boston Autoport



Boston Fish Pier

Massport Marine Terminal

MASSPORT'S MARITIME VISION

- ***Increase the amount of foreign and domestic water-borne commerce*** (primarily containers) through the Port of Boston
  - Convert greater % of NE trade to all water services
  - Increase container volumes on Northern Europe, Mediterranean and Asian trade lanes
  - Pursue services on new trade lanes e.g. Indian sub continent and South America
- Develop facilities and related landside access infrastructure to support growth in ***container, cruise and bulk cargo*** business lines
- Develop other Maritime properties to support core businesses and ***provide financial return to make capital investments*** in port facilities
- Operate in a ***fiscally, environmentally and socially sustainable manner***

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Massport's Commitment

- Massport supports the four key BHDDNIP recommendations in the Final Feasibility Report, and is committed to working with the Corps of Engineers to bring this project to fruition.
- Massport is committed to pursue development (by private entities) of the Massport Marine Terminal and Medford Street Terminal as bulk cargo facilities
- Deepening of the federal navigation channels to Conley Container Terminal is of particular importance….
  - Conley Terminal Container volumes expected to more than double by 2025
  - Over $100 million invested over past 20 years
    - Berth dredging and reconstruction
    - Purchased 30-acre expansion site
    - Acquired two additional cranes
    - Planning/design for $35M Dedicated Freight Corridor and Buffer

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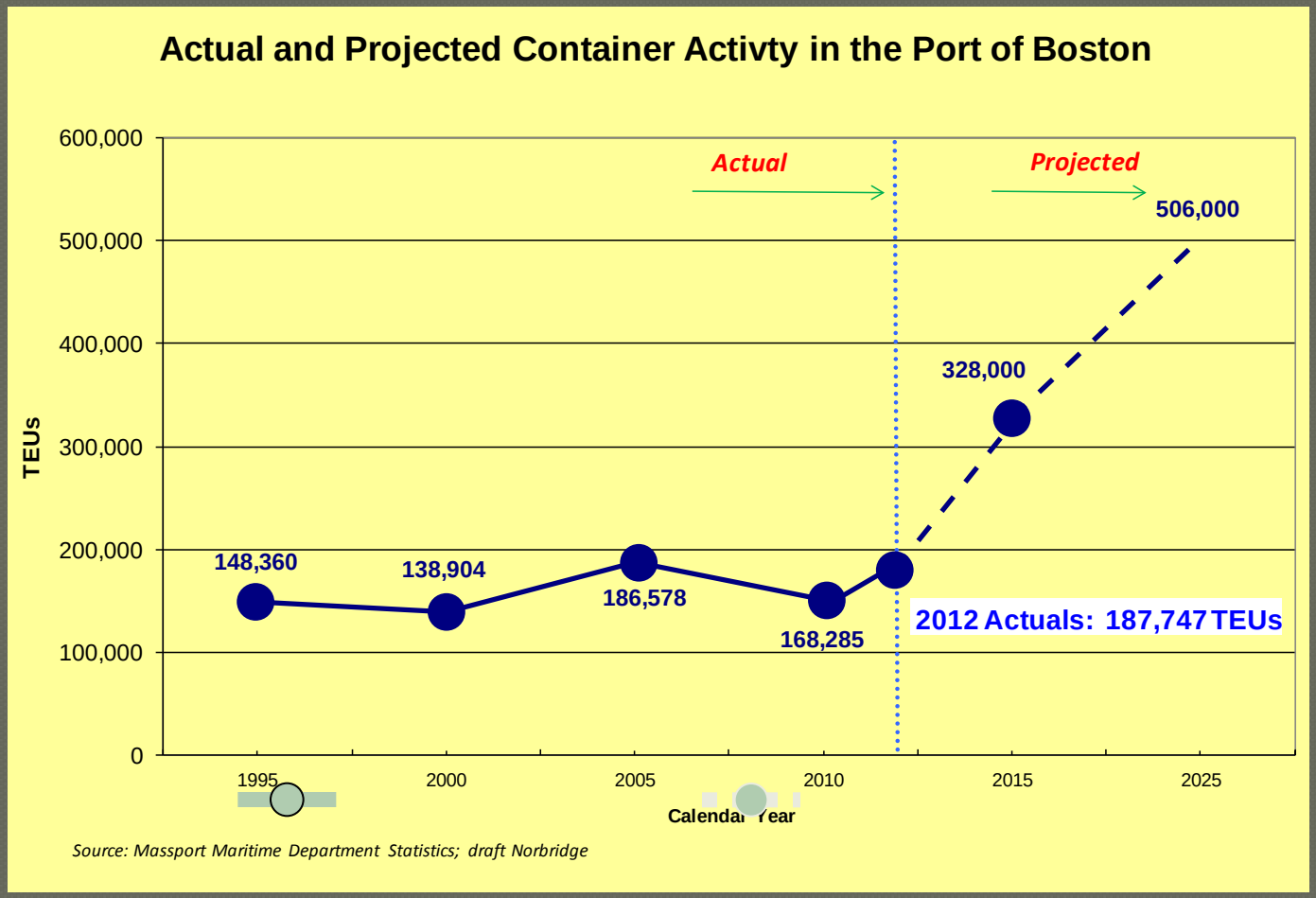
Container Volumes at Conley Terminal Projected to Grow



Deeper Channels to Conley are *Urgently* Needed!

- Containerized and other cargo imported by water to Boston and region continues to increase
- Shipping lines *are already* bringing larger ships onto East Coast services
  - Trans-Atlantic services including services through the Suez Canal are not restricted by vessel draft
  - Panama Canal expansion will result in larger vessels calling East Coast ports
- ***If Boston cannot accommodate the larger ships, shipping lines will not call Boston***
  - More cargo will come to region by truck → increased road congestion, increased air emissions and increased highway and bridge maintenance
  - Higher transportation costs → higher costs to consumers; New England companies less competitive in global marketplace; loss of jobs; economic impact

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What is Massport doing to accommodate growth?

Massport has :

- Completed $25M repaving and equipment purchasing project to increase terminal capacity by 50%
- Increase productivity and efficiency and lower cost/lift by:
  - Purchasing yard equipment and 2 additional dockside cranes
  - Implementing terminal productivity improvement program
  - Implementing upgraded terminal operating system
- Purchased abutting former oil terminal for future expansion of container operations and construction of a third berth capable of handling larger Post-Panamax vessels and cranes.
- Design underway on a $35M ¾-mile dedicated haul road to improve truck access to Conley

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In Conclusion…

- Massport supports the four key Boston Harbor Deep Draft Navigation Improvements recommended in the Final Feasibility Report, and is committed to working with the Corps of Engineers to bring this project to fruition.
- Massport intends to serve as the non-federal sponsor for the design & construction of these improvements, contingent on approval by our Board and appropriation of adequate funds
- Massport is committed to continued growth in the container business in Boston and to making the necessary improvements to accommodate this growth
- Massport is committed to pursuing development (by private entities) of the Massport Marine Terminal and Medford Street Terminal as bulk cargo facilities

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Boston Harbor Navigation Improvement Project

KENT D. SAVRE
Brigadier General, USA
Commanding

26 April 2013

US Army Corps of Engineers
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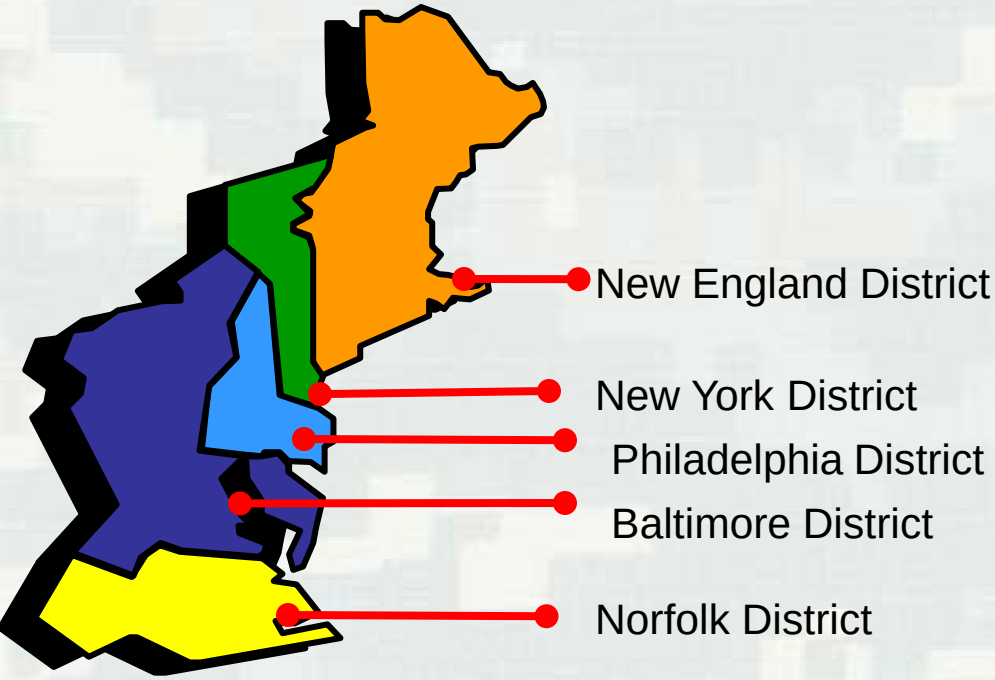
Navigation in North Atlantic Division

Districts in North Atlantic Division with Navigation Mission



Regional Navigation Infrastructure:

- 155 deep draft projects (36% of nat'l)
- 410 shallow draft projects (51% of nat'l)
- 2685 miles of channel (14% of nat'l)
- 85 miles of breakwaters (8% of nat'l)
- 134 dredged material placement areas
- 4 navigation locks
- 3 strategic defense ports
- 8 high-level bridges (73% of nat'l)

Nearly 8.2 Million TEU's in 2011

Boston Harbor Navigation Improvement Project

Importance of Boston Harbor to the Region

Volume of Commerce

Approximately 20 million tons of cargo worth over $9B

Key Imports and Exports

- Containerized cargo
- Petroleum products/LNG
- Seafood, beer & wine
- Dry Bulk - autos, cement, road salt, gypsum and scrap metal
- Footwear, clothing, and furniture
- Cruise passengers (380K in 2012)

North Atlantic Division Rationale for Supporting Recommendation

- Study Accomplished through Multiple Agency Involvement
- Transparent Process
- NED Plan provides positive economic and environmental benefits
- NED Plan supported by sponsor and other agencies
- Using Construction Best Management Practices
- No Off-Site Mitigation Requirements.
- Report complies with HQ policy guidance and requirements

NAD Quality Assurance

Ensuring a quality product, including extensive coordination with the vertical team on…

- **Engineering**
- **Environmental**
- **Economics**

Support for Recommendation

- Final document sufficiently addresses IEPR concerns
- Completed DQC, ATR Review (PCX involvement), Division QA
- Completed NAD review for Legal and Policy Compliance

USACE Campaign Plan

The goals and objectives included in the Campaign Plan of the Corps have been fully integrated into the Boston Harbor study process, specifically:

Objective 2a - Deliver integrated, sustainable, water resources solutions.

Objective 2b - Implement collaborative approaches to effectively solve water resource problems.

Objective 4b - Communicate strategically and transparently.

Boston Harbor Navigation Improvement Project

North Atlantic Division Recommendation

- Concur with findings and recommendations of the New England District Commander
- Confirm that the report complies with all applicable policy and laws in place at this stage of project development
- Request that report be released for State and Agency Review

Deep Draft Navigation Planning Center of Expertise

Mr. Terry Stratton

Senior Economist

South Atlantic Division

Deep Draft PCX – Review Verifications

- ☑ District Quality Control
- ☑ Agency Technical Review – 21 Feb 2013
- ☑ Independent External Peer Review – 31 Jul 08
- ☑ Model Review, approved for use - 12 Apr 2012

Recommend Report Release

Agency Technical Review

Ms. Candida Bronson

ATR Lead

Jacksonville District

Agency Technical Review

- Agency Technical Review (ATR) conducted under direction of Deep Draft Navigation PCX (DDNPCX) for 2008 Draft, 2009-2012 Reanalysis Framework Products, and 2013 Revised Final Feasibility Report and FSEIS
- Cost Risk Analysis Review and Cost Estimate Certification performed by Cost DX (NWW). Cost Certification Issued 14 February 2013
- DDNPCX coordinated review of Economic Models, HQ approved 12 April 2012
- ATR Certification 21 February 2013, all issues resolved
- Highlights of ATR Comments from the 2013 Final Documents included:
  - Clarifying the status of the base plan & alternative disposal sites
  - Supply further documentation of Pilots use of tidal navigation
  - Correcting project schedule references in the Risk Analysis Report
  - Reference specific commitment between District and HQ on need for Limited Re-evaluation Reports for the two dry bulk segments
  - Including clearer statements on entrance channel design calculations

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Massachusetts
Deep Draft Navigation Improvement

Policy Review Concerns

Thomas Hughes
Office of Water Project Review
Planning and Policy Compliance Division
Washington, DC – April, 2013

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Areas of Policy Concern:

- Vessel Loading
- Container Demand

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Vessel Loading

Comment: Channel depth optimization is dependent upon how vessels will be loaded. Several variables impact how a vessel is loaded to include cargo weights, trade balances, vessel route and how the tide is being used.

Reason: The distribution of sailing draft may effect channel optimization.

Resolution: Utilize a sailing draft distribution similar to that used on Savannah Harbor along with sensitivity analysis to determine the impact of vessel loading on channel depth optimization.

Resolution Impact: Comment Resolved.

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Container Demand

Concern: A significant portion of benefits are a result of goods shifting from one port to another. In order to understand these shifts as the channel is incrementally deepened it is critical to understand the variables that may impact this demand.

Reason: The report needs to determine what movements are sensitive to depth constraints and what movements are not. This analysis will identify the volume of movements that are sensitive to draft constraints as well as the destination of these movements. Both the demand for waterborne movements as well as the value of transportation savings for these movements will be more clearly defined. Project optimization could be impacted by the results of this information.

Proposed Resolution: Additional data acquisition and surveys were conducted to provide additional support to assumptions made about the quantity of containers to be shipped through the Port of Boston in the without and with project conditions. Analysis was completed to assess the sensitivity of these assumptions to channel optimization.

Resolution Impact: Comment Resolved

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HQUSACE Policy Compliance Review Team
RECOMMENDATION

Release the report and FEIS for S&A Review

District Lessons Learned

- It was helpful to incorporate information and lessons from prior and ongoing dredging actions in Boston Harbor – the 1998-2001 Improvement work, the 2004-2009 major Maintenance operations, and the 2012 pinnacle blasting operation, and to consider the results of other recent field-truthed subsurface surveys in determining the likely risk impact of rock removal quantities and methods
- The technical working group (TWG) process is effective in soliciting input from key agencies and other stakeholders and in reaching consensus on project issues
- Engaging Agency Technical Review team early and throughout the economic re-analysis and the entrance channel reanalysis helped focus the effort and ensure a supportable recommendation.

NAD Lessons Learned

- A more tightly integrated Vertical Team combined with future integration of Civil Works Transformation will improve the study process.
- Better documentation of assumptions and risks will enable the Vertical Team to quickly identify issues and elevate for resolution.
- A more defined issue resolution process could aid in ensuring timely resolution of issues within the Vertical Team.