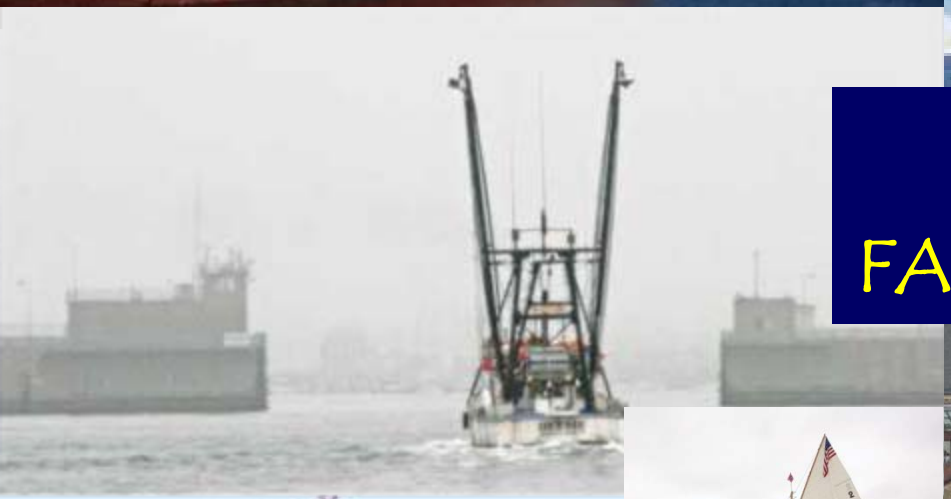




NEW BEDFORD/
FAIRHAVEN HARBOR



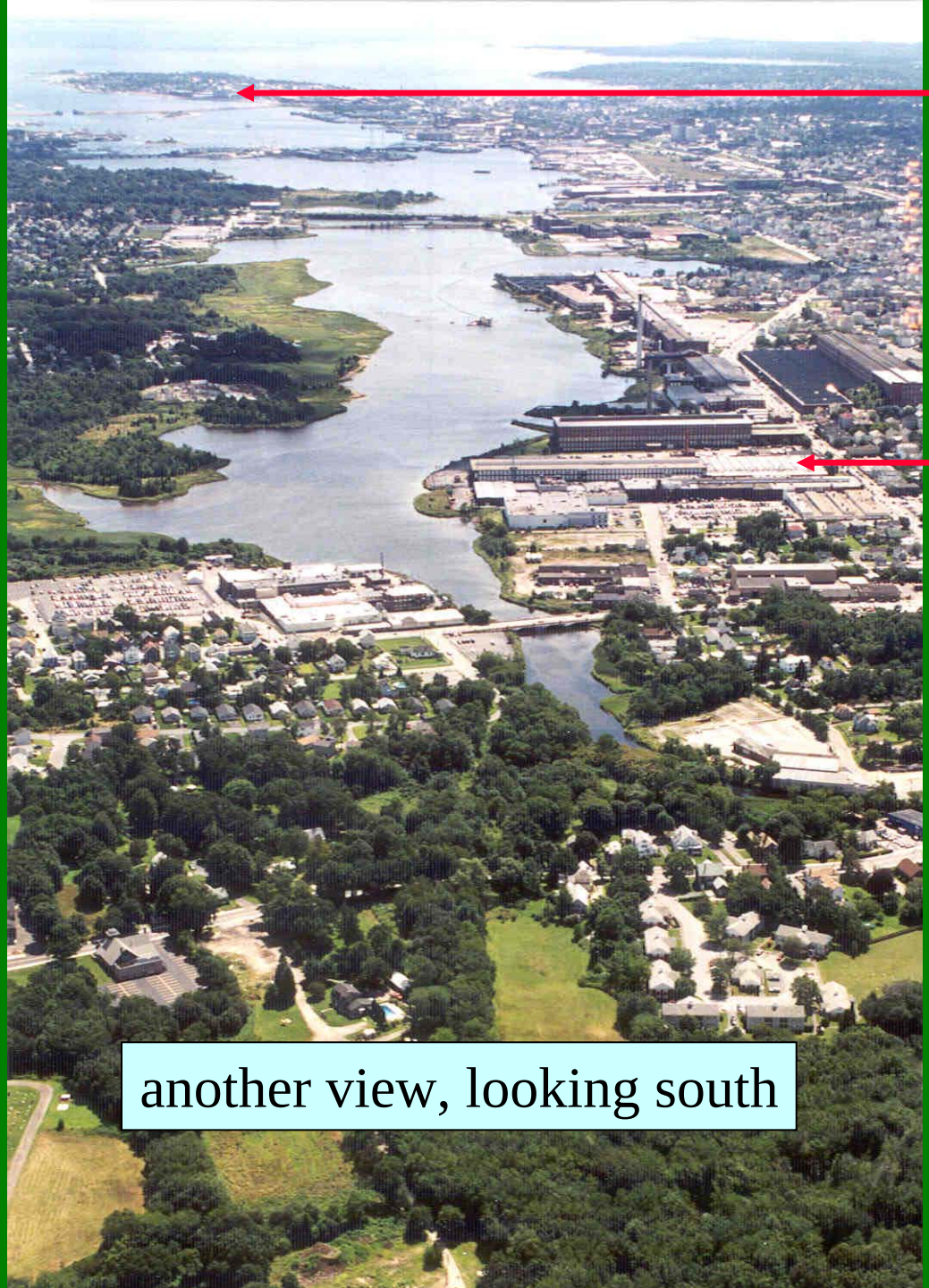
# Maritime Industries

**Over 4,000 Jobs**

| | |
|---|---|
| Commercial Fishing | •$1 Billion Industry<br>•65.5 Million pounds of fish valued at over $280 million; 500 Vessels<br>•35 Seafood Processing Plants and 25 Whole Sale Companies |
| Cruise | •Brings ~1,500 People through the Port; 21 Ports of Call in 2008<br>•5 Year contract with American Cruise Lines with a minimum of 20 ports of call |
| Ferry | • New England Fast Ferry and Cuttyhunk Ferry bring 120,000 people through the port annualy<br>•Both operations are now moving freight |
| Freight | •Maritime Terminal: 6 freighters of Moroccan citrus in 2008<br>•State Pier: Goods & food to Portugal, Africa, Haiti, & Cape Verde<br>•Sprague Terminal: Home Heating Fuel |
| Recreation / Excursion | • 8 Marina's in the New Bedford / Fairhaven Harbor; Moorings<br>•2007: 1 Sailing Tour; 2008: 3 Sailing Tours; Booking now for 2009<br>• 3 Charter Fishing Operations |
| Barge Operations | •4 Operate out of the Port carrying aggregate to the Islands as well as steel and other project cargo |
| Shipyards | •25% Growth Projections<br>•Steamship Authority Project = 40jobs |
| Supporting Services | •Over 75 supporting businesses<br>•Ice; Fuel; Vessel Painting; Welding; Electric; Legal; Insurance; Settlement Houses; Salvage |

Three parts to tonight's presentation:

1. Superfund cleanup:  background/progress to date
2. Navigational dredging progress to date
3. Update on EPA's analyses of potential alternatives



another view, looking south

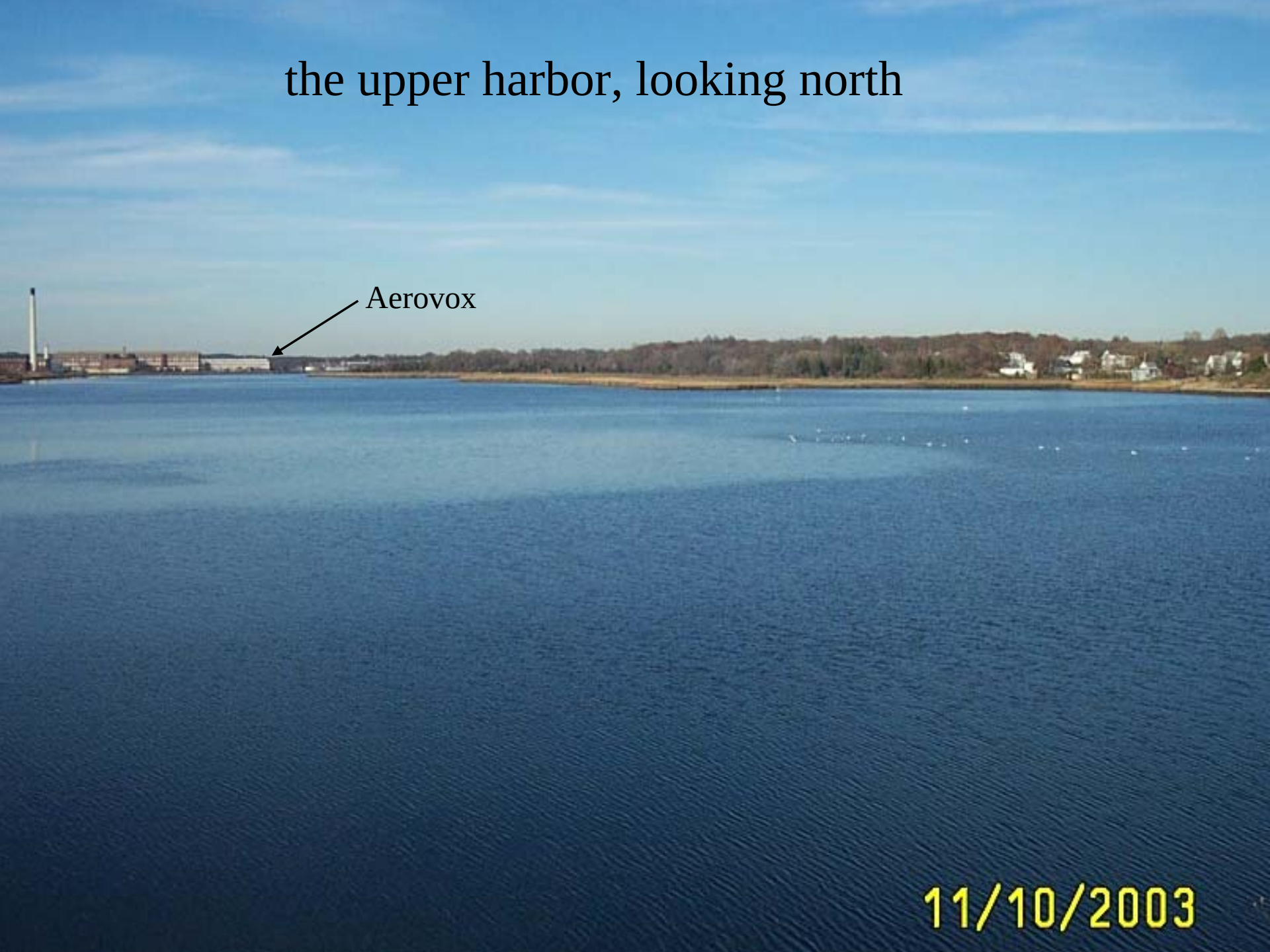
Cornell-Dubilier

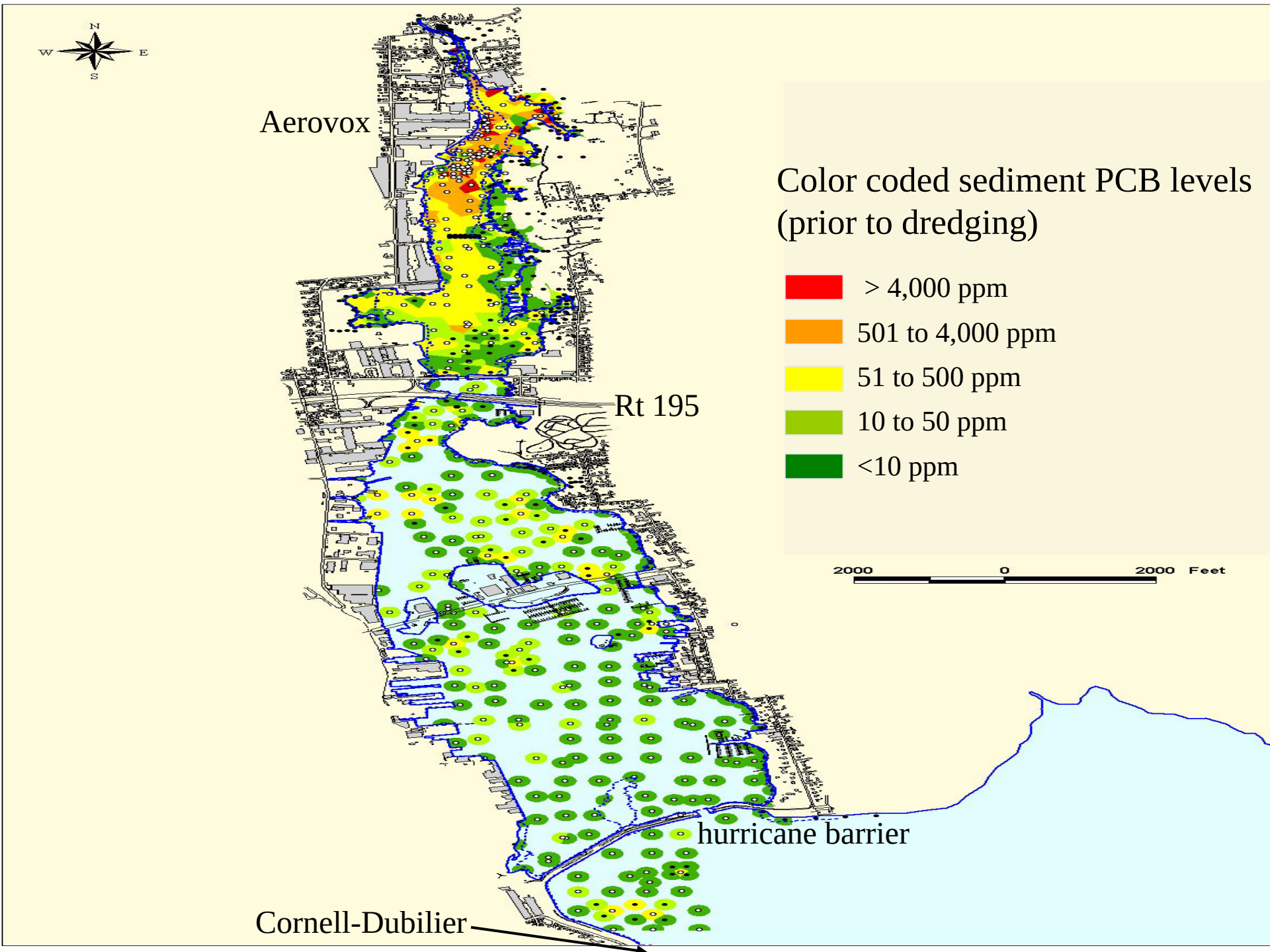
Second capacitor facility in outer harbor

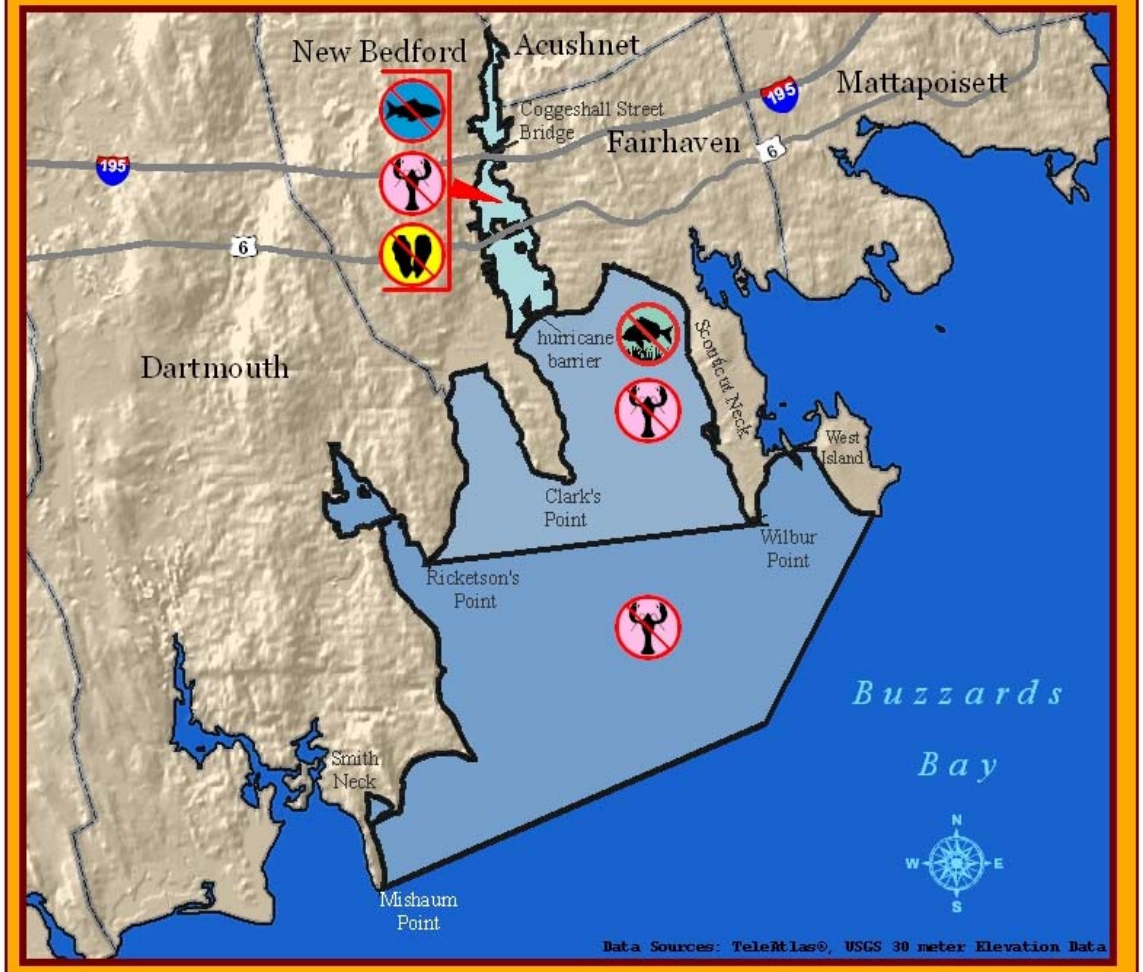
Aerovox

Electronic capacitor facility released an estimated 275 tons of PCBs from the 1940s to the 1970s

# the upper harbor, looking north




N
W
E
S
Aerovox
Rt 195
Color coded sediment PCB levels
(prior to dredging)
> 4,000 ppm
501 to 4,000 ppm
51 to 500 ppm
10 to 50 ppm
<10 ppm
2000
0
2000 Feet
hurricane barrier
Cornell-Dubilier




**Do NOT eat any fish**
No coma pescado
Não coma peixe

**Do NOT eat any lobster**
No coma langosta
Não coma lagosta

**Do NOT eat bottom feeding fish**
No coma pescado de fondo:
Não coma peixe de fundo:

- flounder
- lenguado
- solha
- tautog
- tautoga
- bodião da ostra
- scup
- sargo
- sargo
- eel
- anguila
- anguila

**Do NOT eat any shellfish**
No coma mariscos
Não coma mariscos

The 1979 state fishing ban - due to PCBs

(covers 18,000 acres)


1998 Superfund Cleanup Plan:
Sediments in red require cleanup.
- 880,000 cubic yards
- 270 acres
Aerovox
Desanding facility
Rt 195
rail yard
Dewatering facility
app. one mile
Hurricane barrier
Cornell-Dubilier

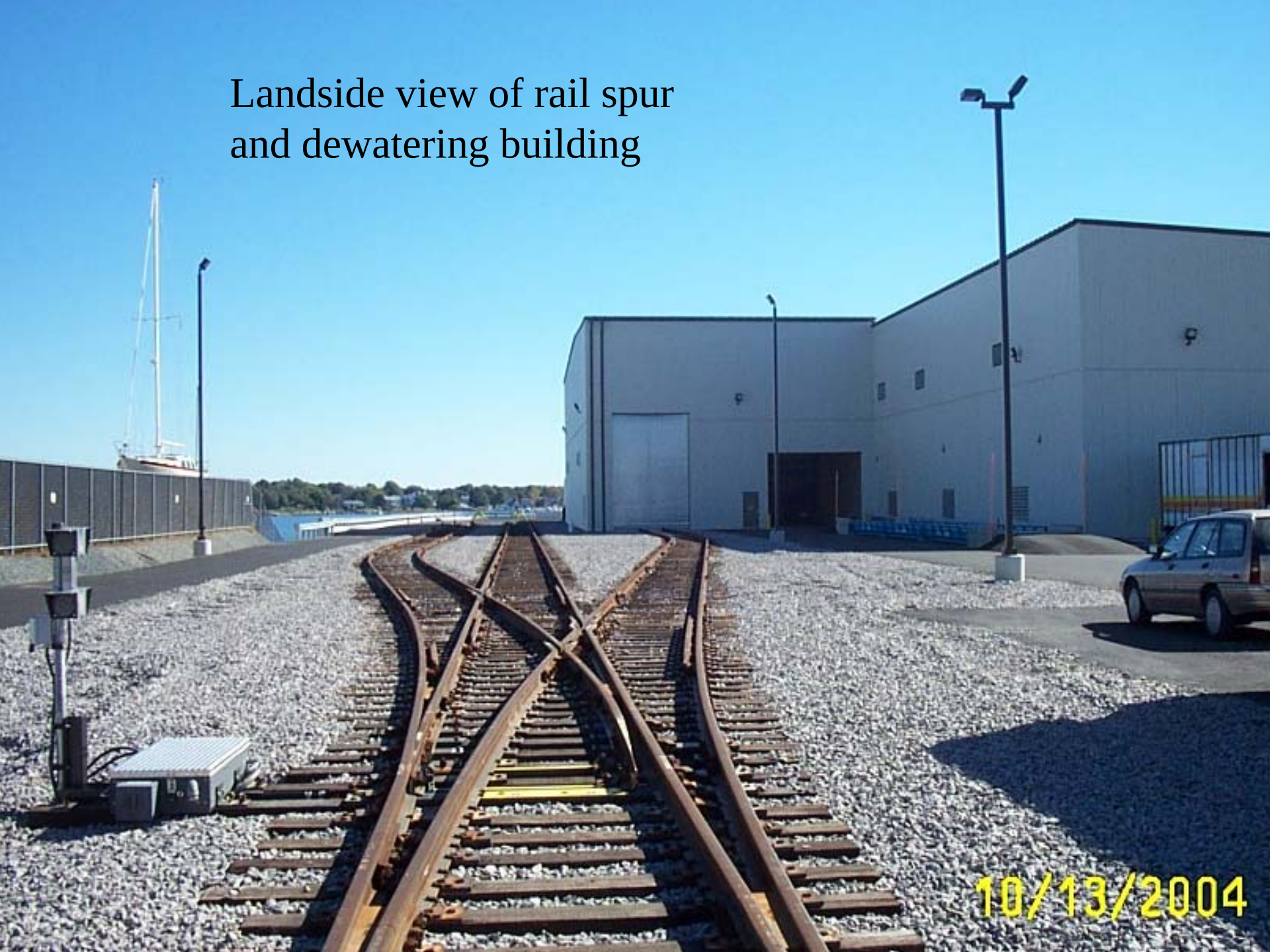

QUICK look at progress to date

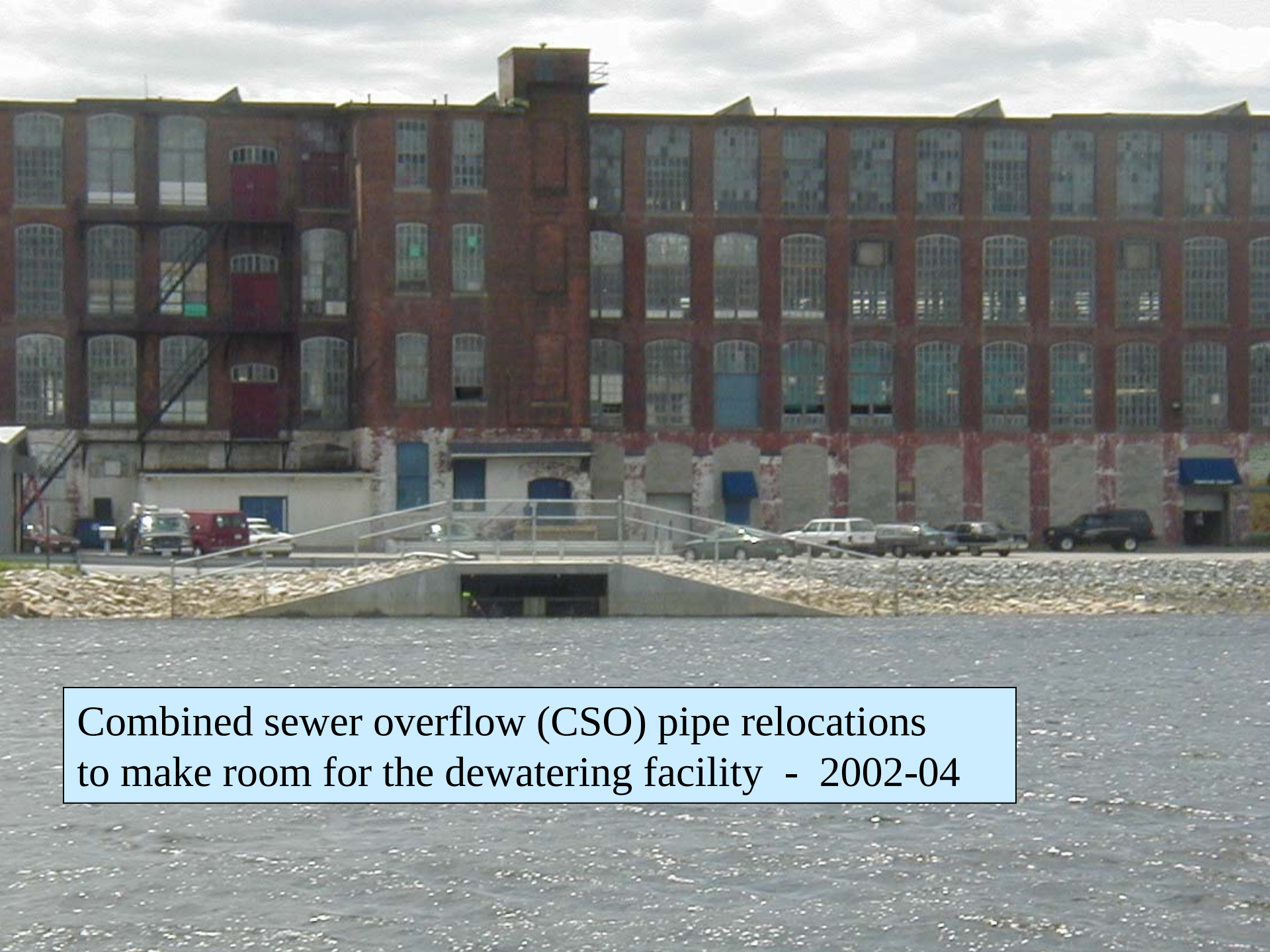
Acushnet shoreline cleanup – 1999-2000

NSTAR Power Cable Relocation – 2001

Dewatering facility bulkhead - 2002/03

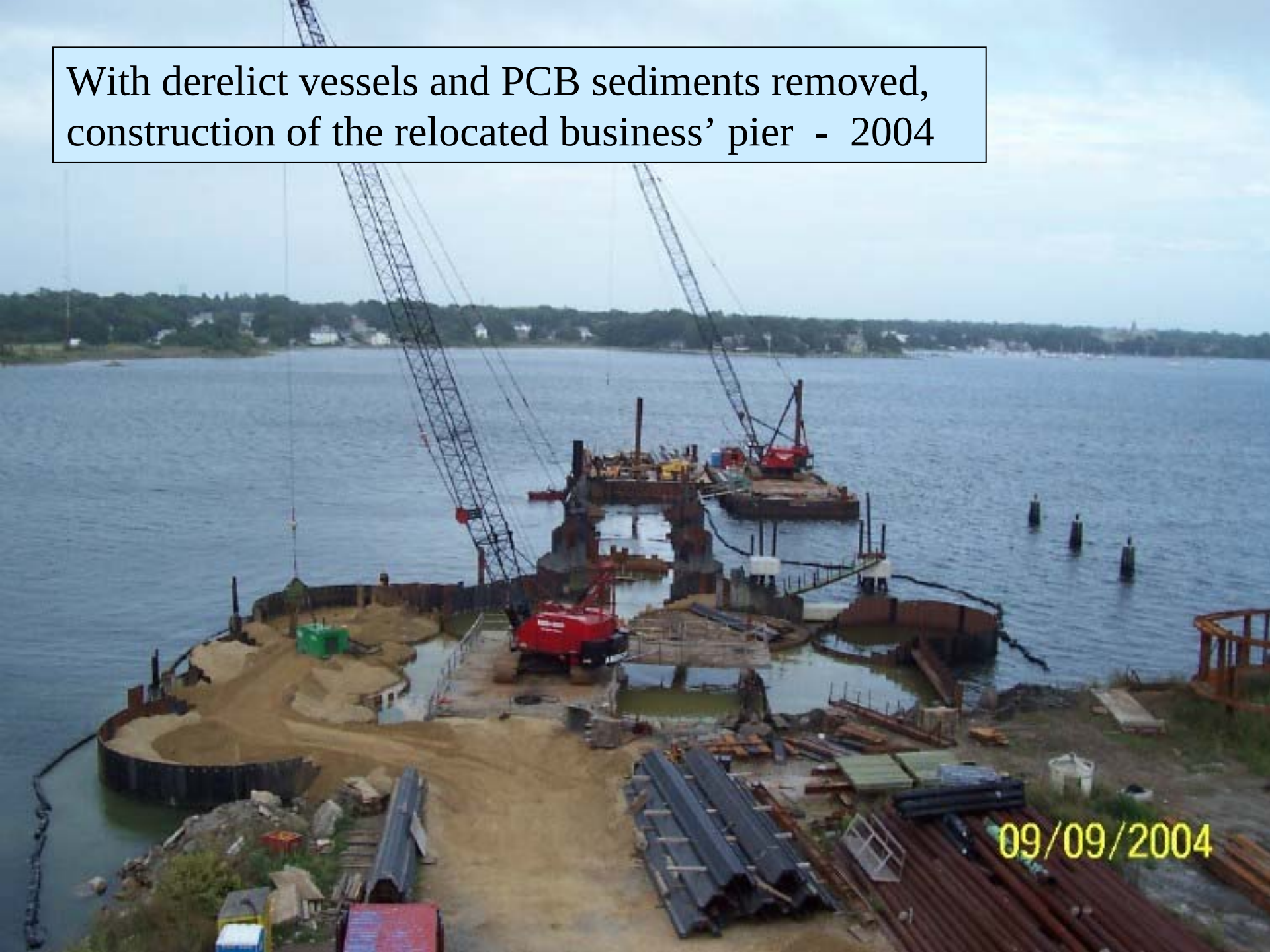
Dewatering facility and rail spur - 2002-04


Landside view of rail spur
and dewatering building
10/13/2004



Combined sewer overflow (CSO) pipe relocations
to make room for the dewatering facility - 2002-04


Demolition and removal of derelict vessels to allow shoreline business relocation - 2002

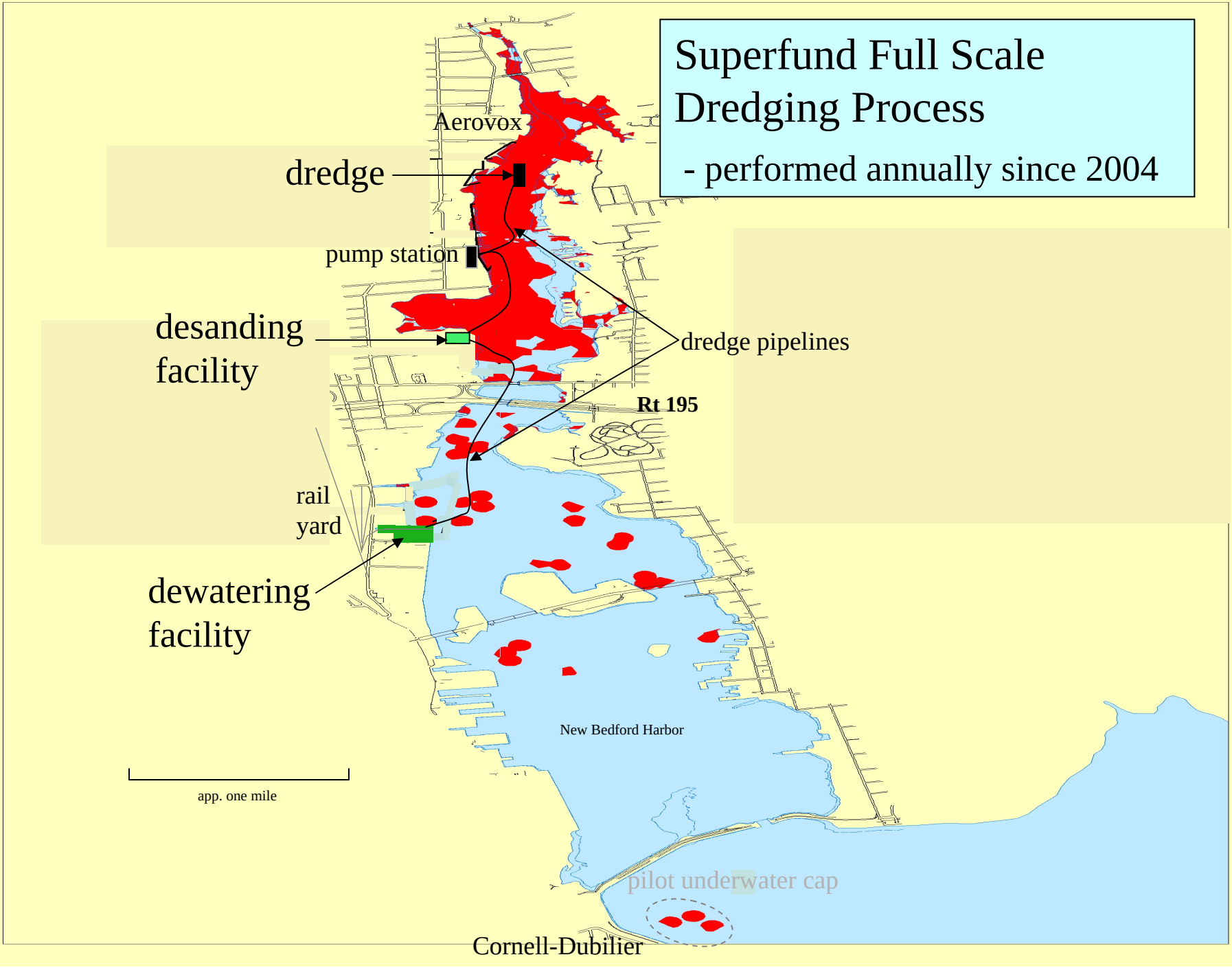



With derelict vessels and PCB sediments removed, construction of the relocated business' pier - 2004

North of Wood Street cleanup – 2002/03


The restored river and stream banks (2008)


Aerovox shoreline cleanup - spring/summer 2008


Superfund Full Scale Dredging Process
- performed annually since 2004
Aerovox
dredge
pump station
desanding facility
dredge pipelines
Rt 195
rail yard
dewatering facility
New Bedford Harbor
app. one mile
pilot underwater cap
Cornell-Dubilier

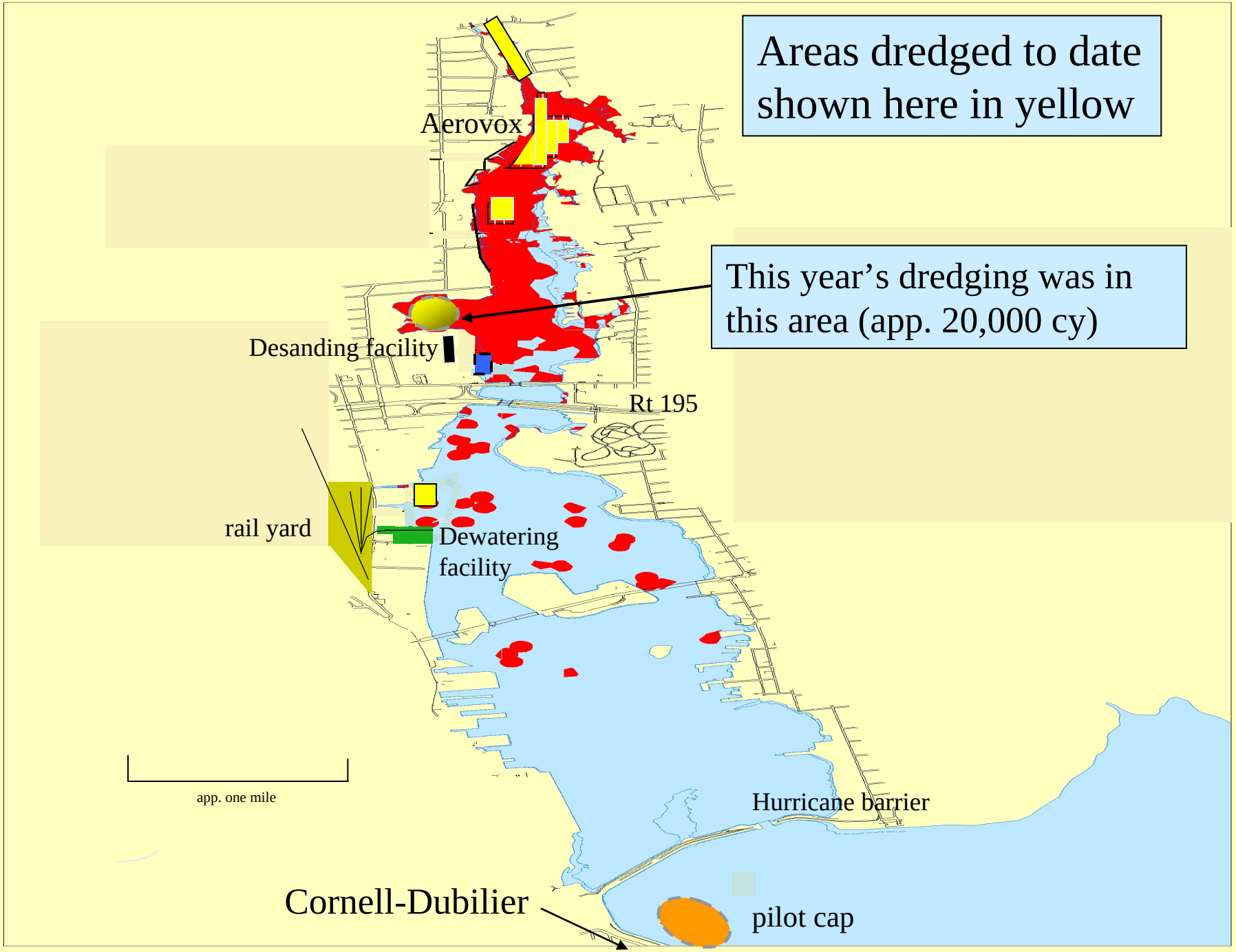
# Superfund dredging and disposal operations

**1.** Dredging in upper harbor

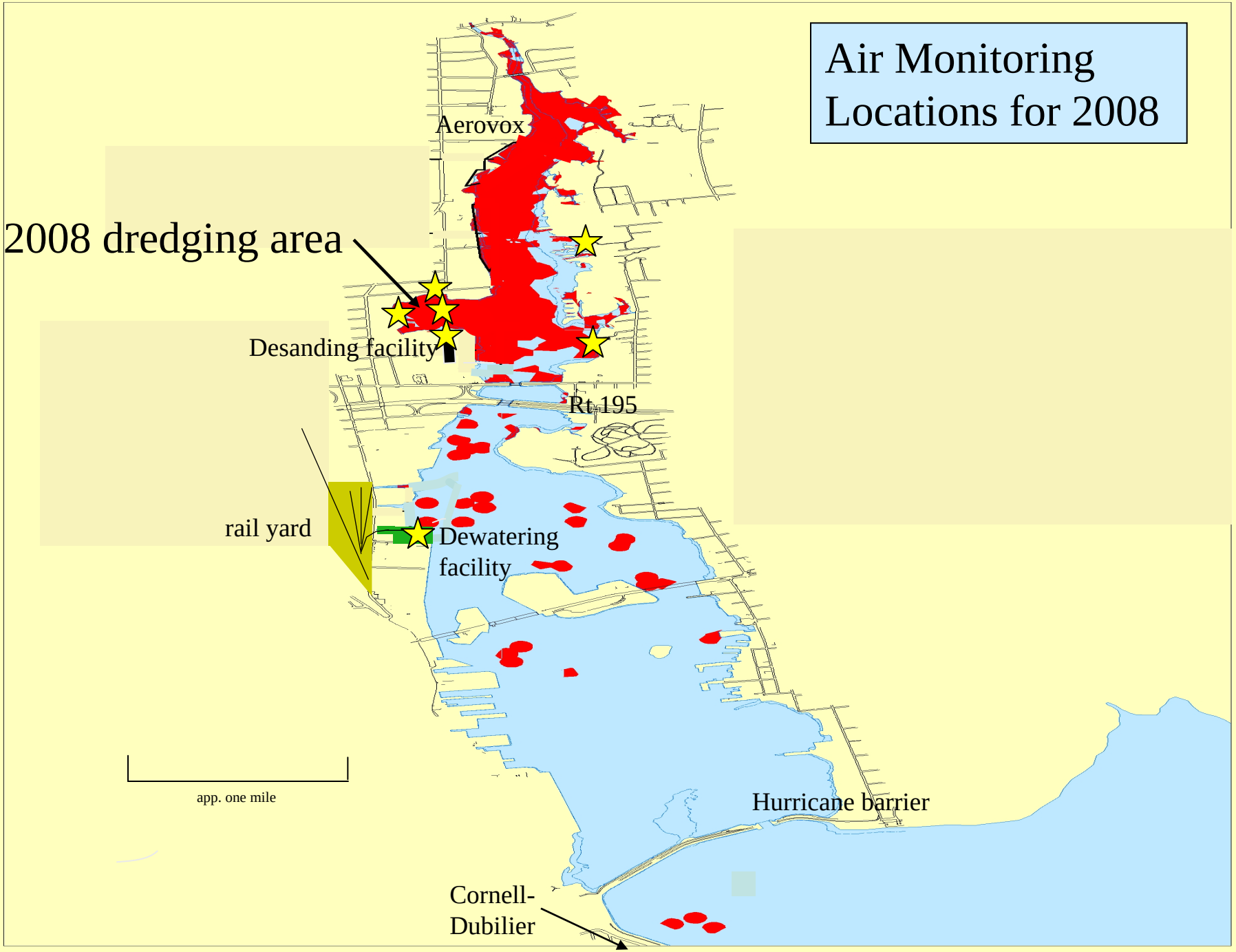
**2.** Desanding

**3.** Dewatering

**4.** Loading to rail for offsite disposal


Areas dredged to date shown here in yellow
Aerovox
This year's dredging was in this area (app. 20,000 cy)
Desanding facility
Rt 195
rail yard
Dewatering facility
app. one mile
Hurricane barrier
Cornell-Dubilier
pilot cap

# Air Monitoring Locations for 2008



# Overview of the New Bedford Harbor PCB Air Management Program

**Ronald J. Marnicio, Ph.D., P.E.**

**TetraTechEC, Inc.**

**133 Federal Street, 6th Floor**

**Boston, MA 02110**

# Key Points of the PCB Air Management Program

- **Developed from a site specific conceptual site model of potential public inhalation exposures**
- **Based on widely accepted technical and risk assessment principles**
- **Ensures proactive and conservative public protection**
- **Key Components:**
  - ➔ Health-based cumulative exposure budgets
  - ➔ Complementary long-term and short-term sampling for verification
  - ➔ Public Exposure Tracking System (PETS) to facilitate data evaluation and site management

# Important Background Information

- **For inhalation of PCBs, the primary public health concern is LONG-TERM (*chronic*) exposure rather than short-term (acute) exposure.**

- **Health-based airborne PCB threshold levels can be calculated to be protective of the MOST SENSITIVE POPULATIONS, considering both emissions from the clean-up activities and background levels.**

- **Occasional short-term exposure above these threshold levels is less of a public health concern provided the long-term average exposure is maintained below them.**

# The Basic Questions for NBH

1. What threshold levels of exposure are sufficiently conservative and protective of the most sensitive members of the public?

2. Where should air monitoring stations be located and how often should they be sampled to best verify actual conditions and resulting exposures?

3. How should public exposures be tracked using this information to proactively manage and minimize exposures to the public?

# The Answers

1. **What threshold levels of exposure are sufficiently conservative and protective of the most sensitive members of the public?**

   ✓ **Health-Based Cumulative Exposure Budget**

2. **Where should air monitoring stations be located and how often should they be sampled to best verify actual conditions and possible exposures?**

   ✓ **Complementary set of long- and short-term monitoring stations placed in relation to the ongoing clean-up activities**

3. **How should public exposures be tracked using this information to proactively manage and minimize exposures to the public?**

   ✓ **Public Exposure Tracking System (PETS)**

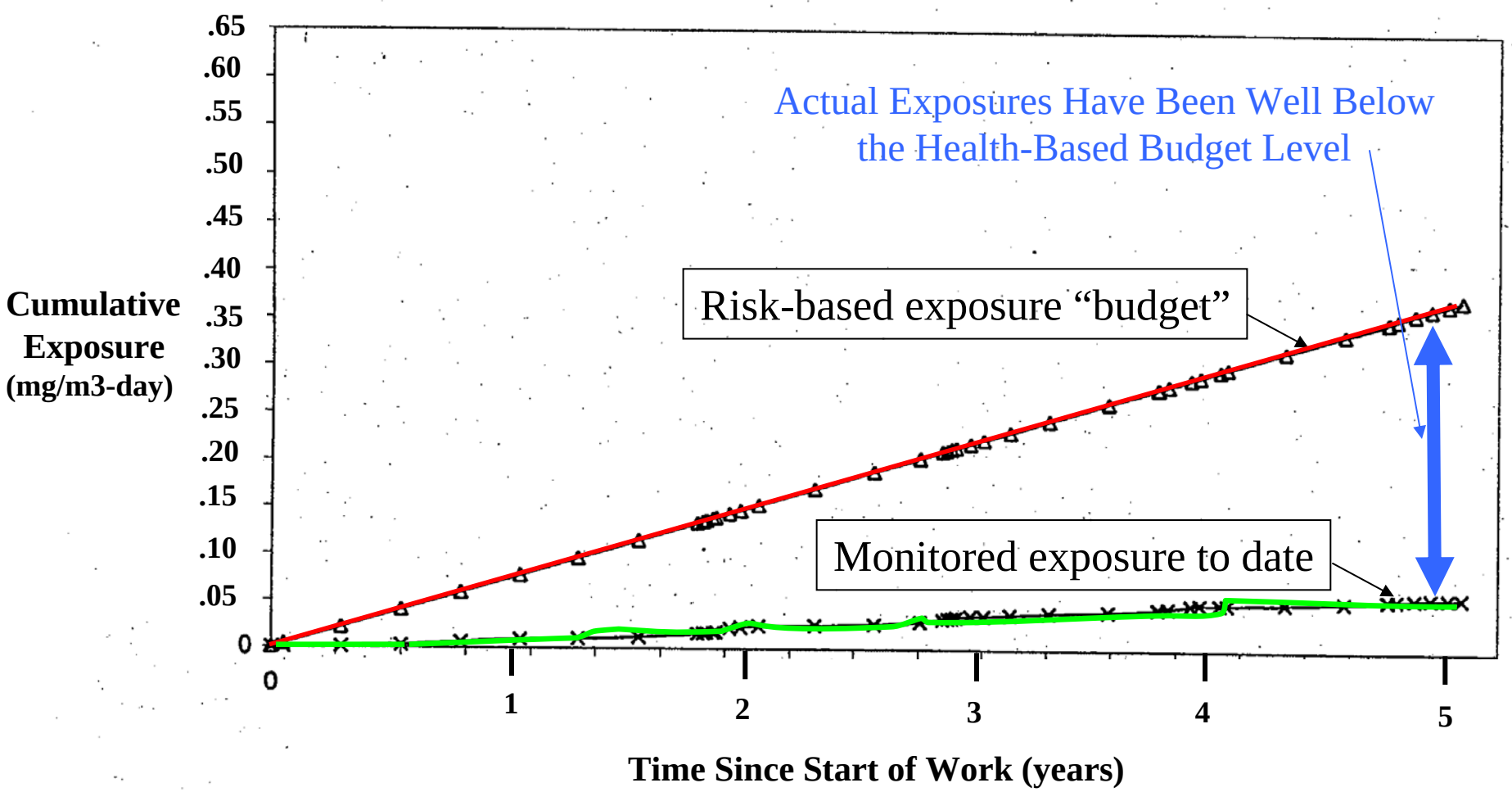
# Health-Based Cumulative Exposure Budget

**A target ambient air concentration trend over time established for a specific monitoring station that:**

- ☑ **Maintains long-term average exposure point concentrations at levels protective of the most susceptible receptors**
- ☑ **Accounts for PCBs in the ambient air from remediation and background (non-remediation) sources**
- ☑ **Uses the actual monitoring data to predict conditions at the most sensitive receptor location using atmospheric dispersion modeling**
- ★ **Provides a basis for exposure tracking, diagnostic analysis, and proactive emissions and exposure management**

# “PETS” chart for Coffin Avenue air monitoring location

Actual airborne PCB levels (green line) are well below acceptable risk-based levels (red line)

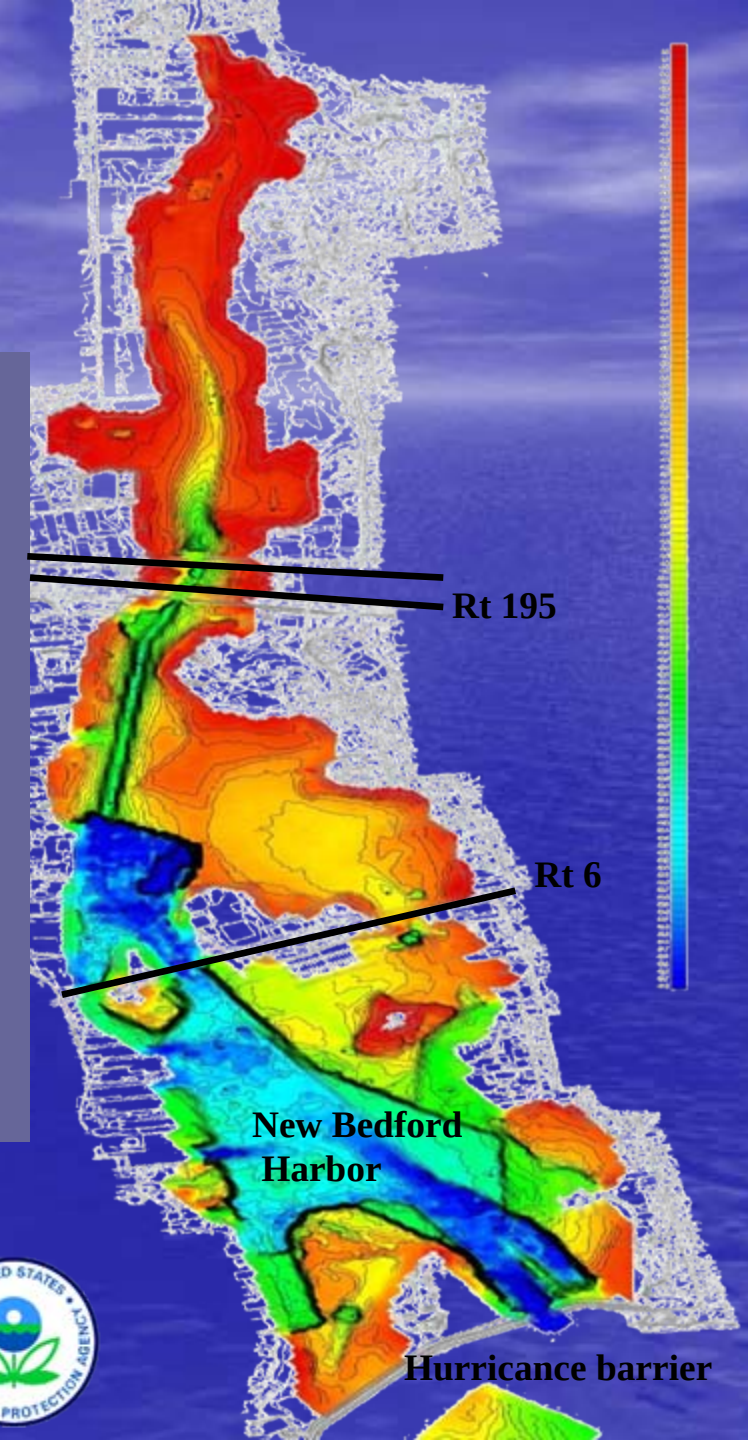


# PART 2: NAVIGATIONAL DREDGING IN NEW BEDFORD/FAIRHAVEN HARBOR

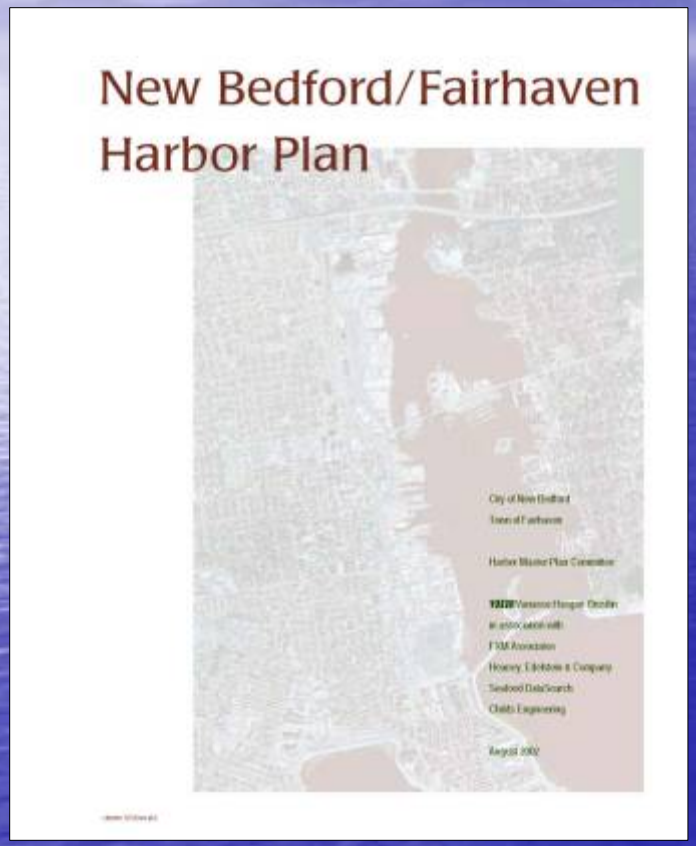
# WHAT IS NAVIGATIONAL DREDGING?

## Why Is It Important?

- #1 Value Fishing Port in Nation
- Economic Growth
- Sustains Existing Maritime Industry
- Trade Expected To Double
- Recent Dredging is first in 50-years
- Siltation has Shallowed the Channels & Slips
- Larger Vessels Are Using The Harbor
- Modern Piloting Rules Dictate Deepening



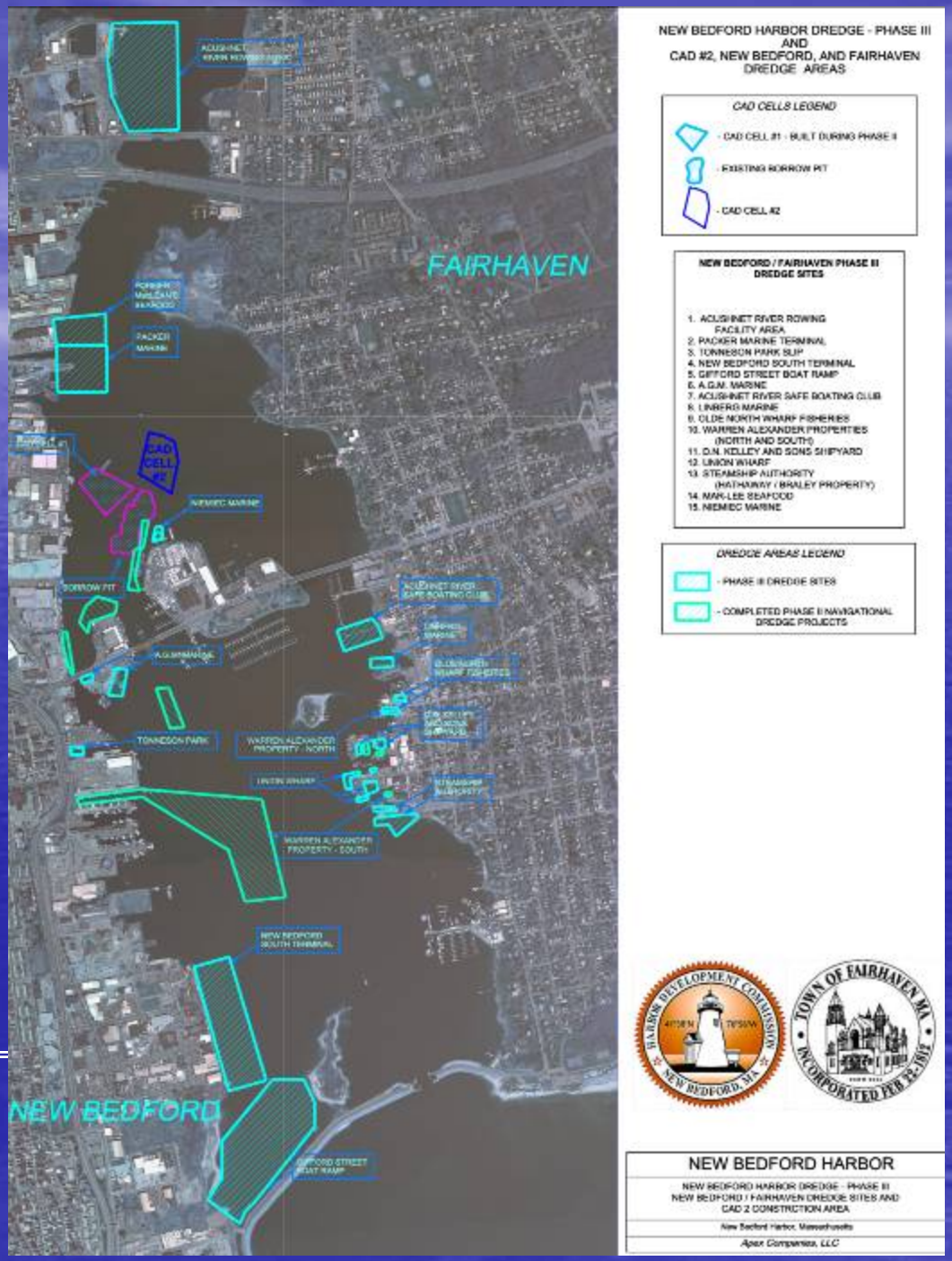
# HOW ARE DECISIONS REGARDING NAVIGATIONAL DREDGING IN NEW BEDFORD/FAIRHAVEN HARBOR MADE?




- Harbor Plan Created in 2000 and Currently in the Process of being Updated
- Committee of City and Town Officials, and State and Federal Regulators Meets on a Monthly Basis

# RECENT AND CURRENT NAVIGATIONAL DREDGING IN NEW BEDFORD/ FAIRHAVEN HARBOR

## (Phases I through III)

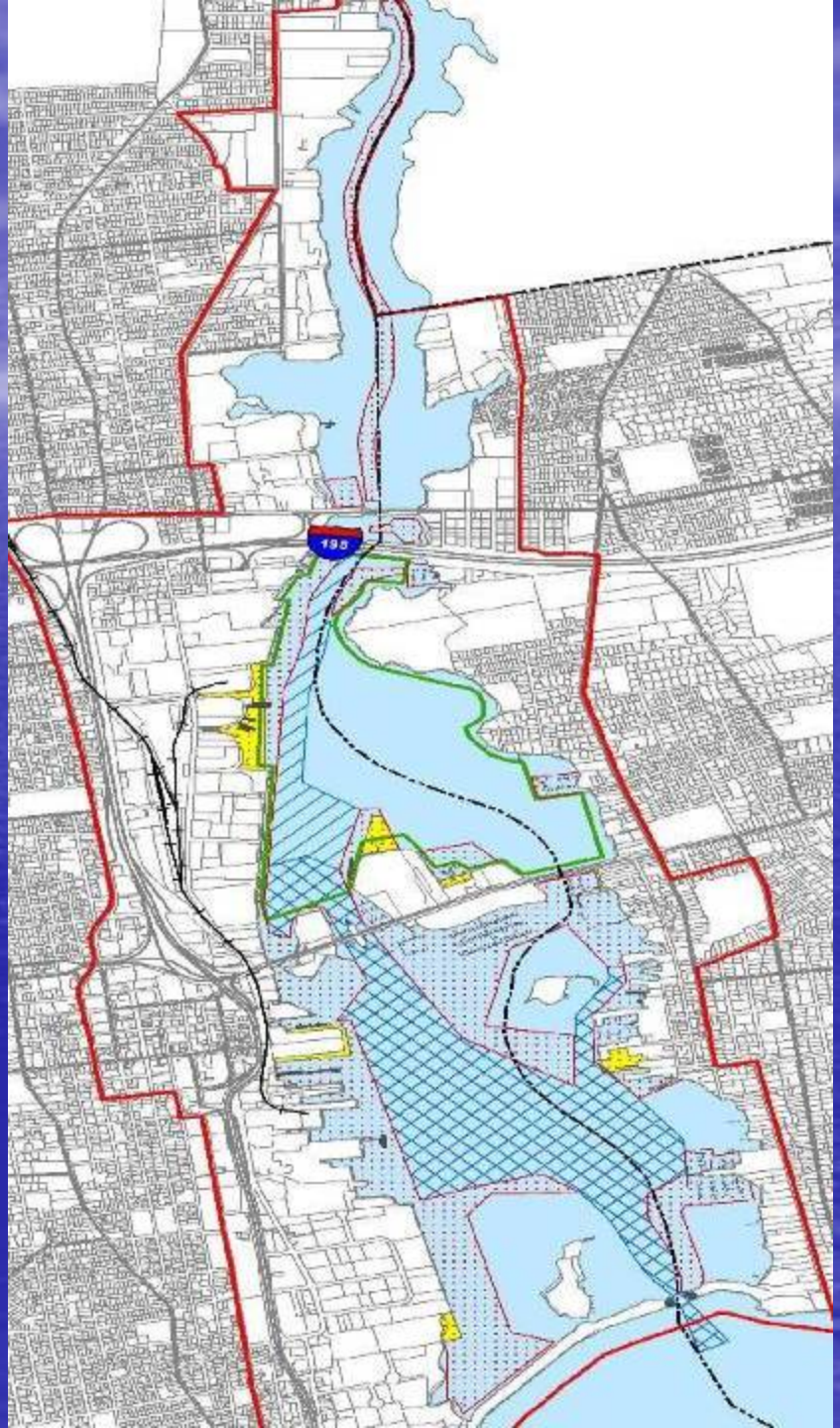


# PHASE III NAVIGATIONAL DREDGING IS UNDER WAY


# Successes to Date:

- To date: 200,000 cubic yards contaminated sediment removed from the Harbor floor.
- Another 57,500 cubic yards planned for later this year.
- By next spring 257,500 cubic yards will have been removed.
- Of that:  125,500 cubic yards have been placed in CAD Cells.
- Including the construction of the CAD Cells, over 460,000 cubic yards of dredging has occurred under the Navigational Dredging Project since 2001.

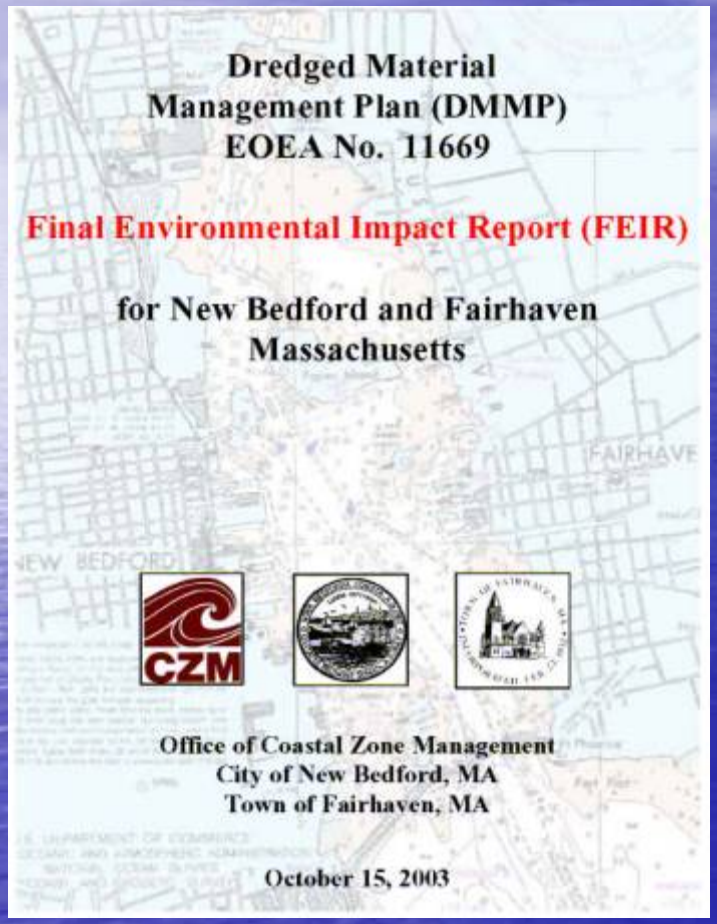
# FUTURE NAVIGATIONAL DREDGING IN NEW BEDFORD/ FAIRHAVEN HARBOR



# Disposal of the Dredged Sediments

- How are the contaminated sediments handled?
- Selection of a Disposal Method.

# WHY CAD CELLS IN NEW BEDFORD HARBOR?




**Disposal Problem for Navigational Dredging:**

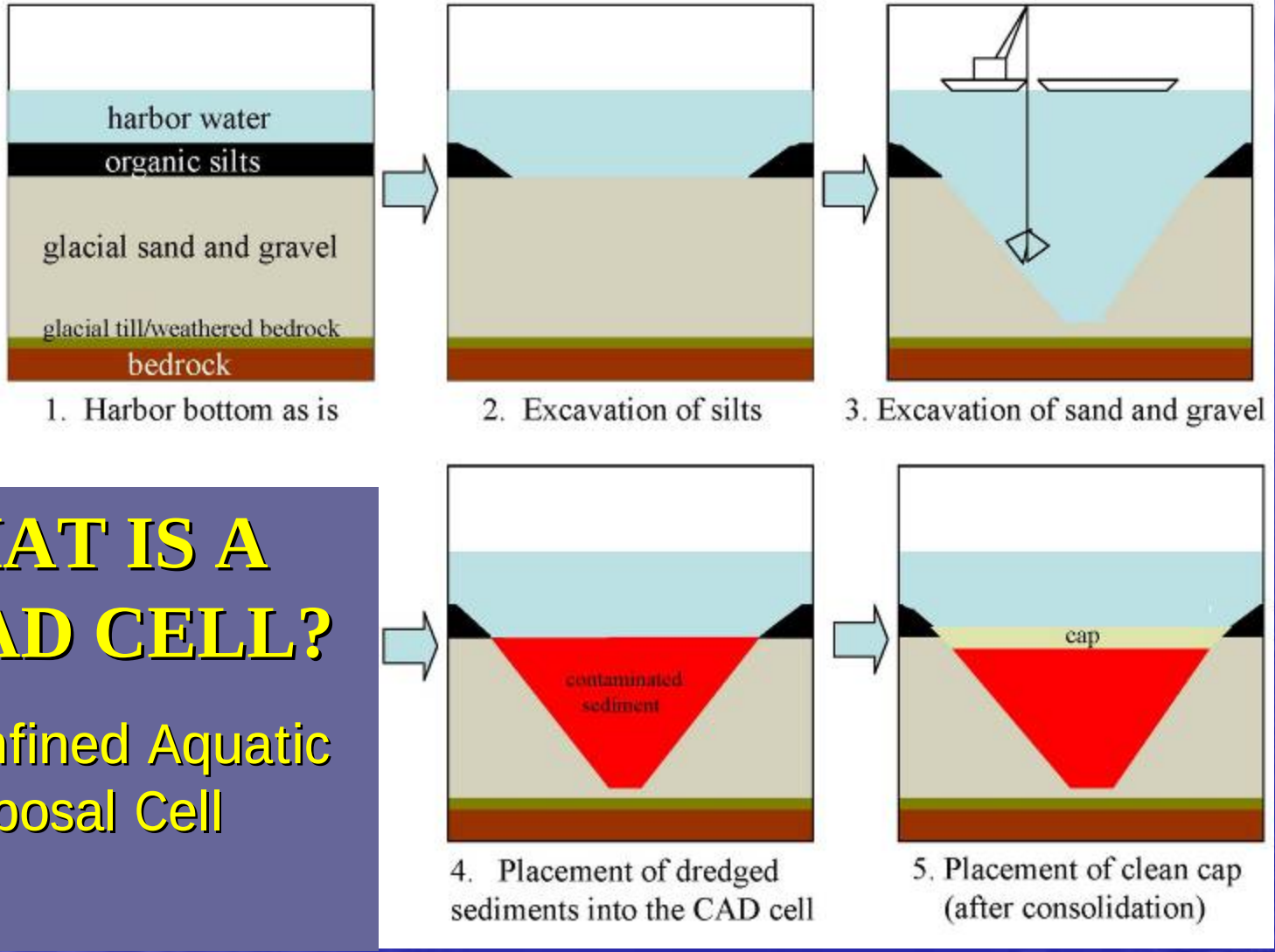
***Sedments Throughout Harbor Contain Some Level of Contamination***

**DEP and CZM Study = DMMP**

***Study found CAD Cells to be the best solution for Navigational Dredging***

# WHAT IS A CAD CELL?

- Confined Aquatic Disposal Cell



# CAD CELLS ARE A PROVEN TECHNOLOGY

**US Army Corps CAD Cells: Boston Harbor and Providence River**


US Army Corps of Engineers®

# PUBLISHED REPORTS OF CAD CELL USAGE

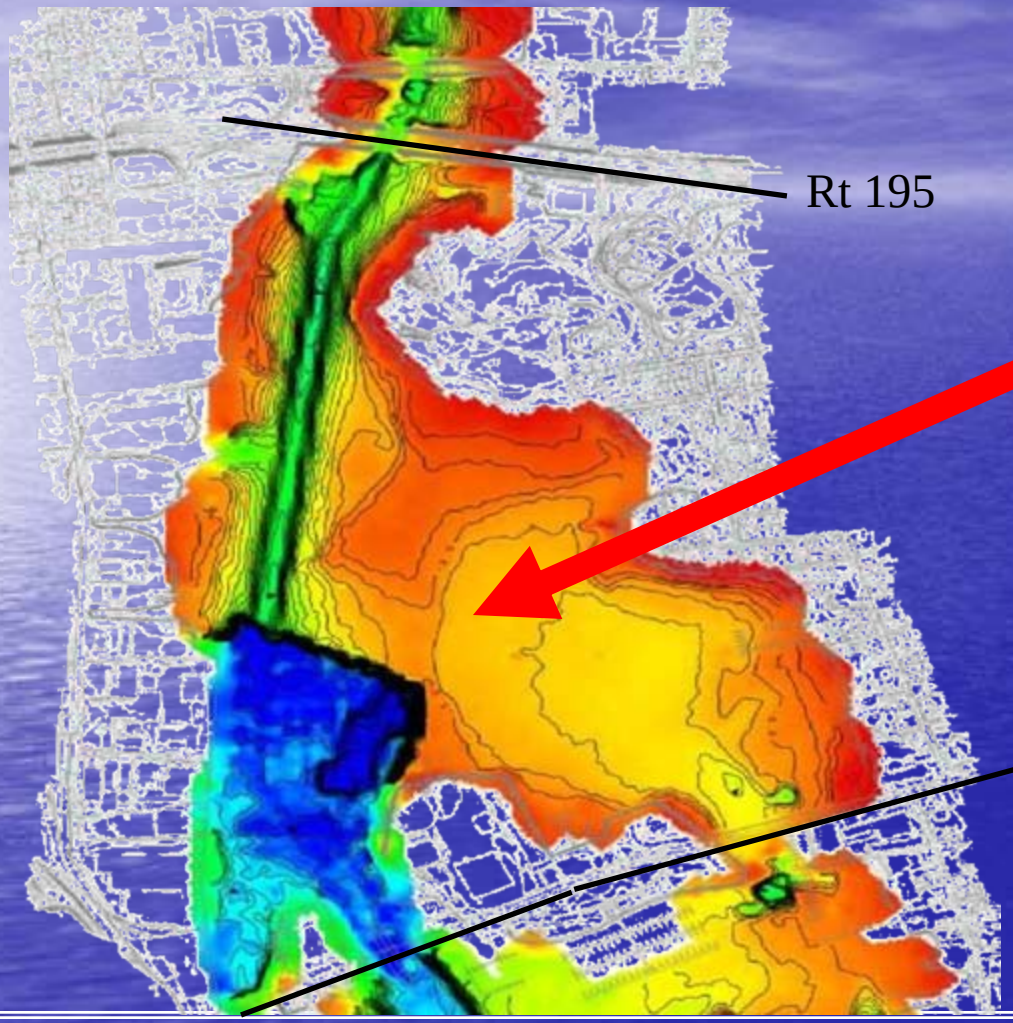
**"Environmental and human health risk assessment of the CAD cell alternative has shown that it can provide one of the lowest risk options compared with other alternatives (Kane-Driscoll et al, 2002)."**

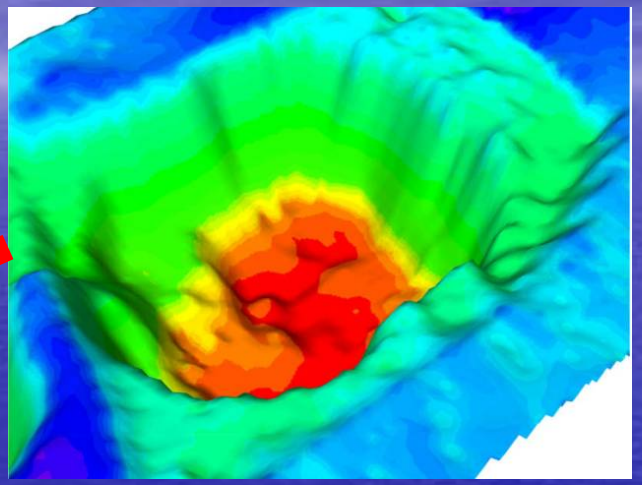
*From Paper Presented at 2005 3rd International Conference on Remediation of Contaminated Sediment, by Thomas J. Fredette, US Army Corps of Engineers – New England District*

# CONSTRUCTION OF CAD CELLS IN NEW BEDFORD/FAIRHAVEN HARBOR

# STATUS OF CAD CELLS IN NEW BEDFORD/FAIRHAVEN HARBOR

# RECENTLY COMPLETED CAD CELL #2



# QUESTIONS?

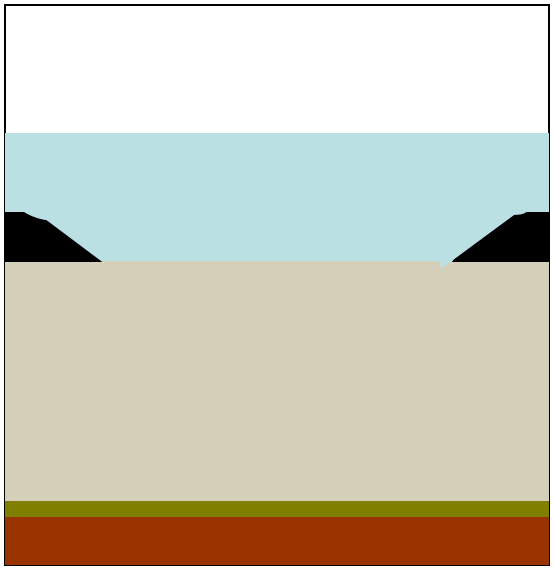
# Section 3
# Update on EPA's Evaluation of Potential Alternatives

## Cost and Schedule Estimate for Current Approach

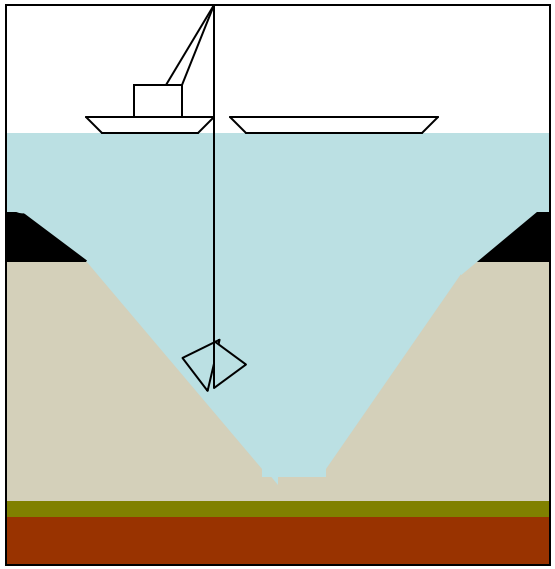
3.5% annual inflation assumed

| Annual funding level | Years to complete | Costs to complete |
|---|---|---|
| $80 million | 4 to 5 | $341 million |
| $30 million | 18 | $540 million |
| $15 million* | 38 | $1,056 million |


**1.** Harbor bottom as is

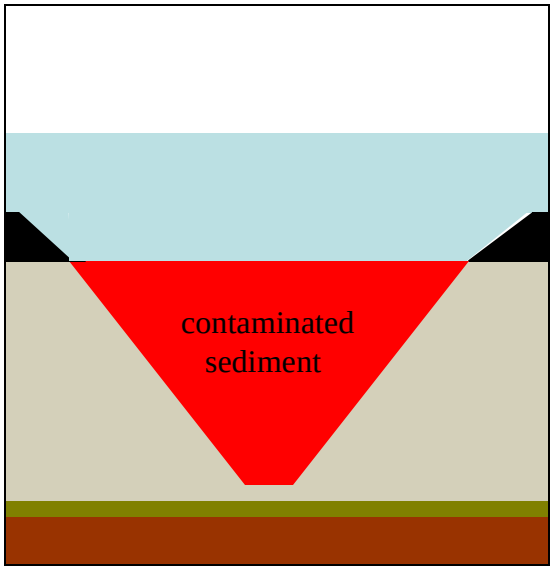


**2.** Excavation of silts

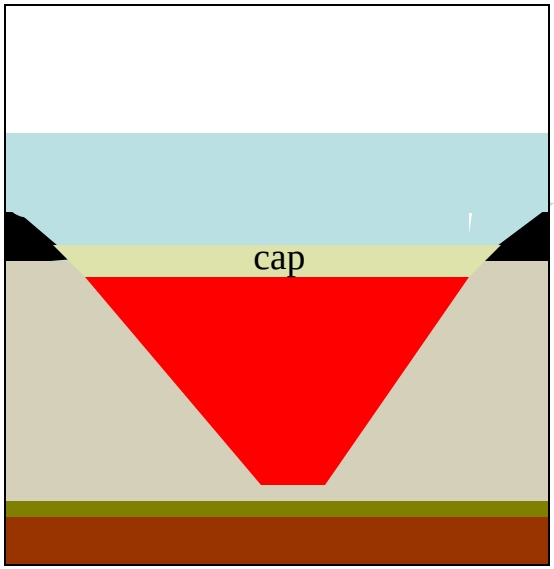


**3.** Excavation of sand and gravel

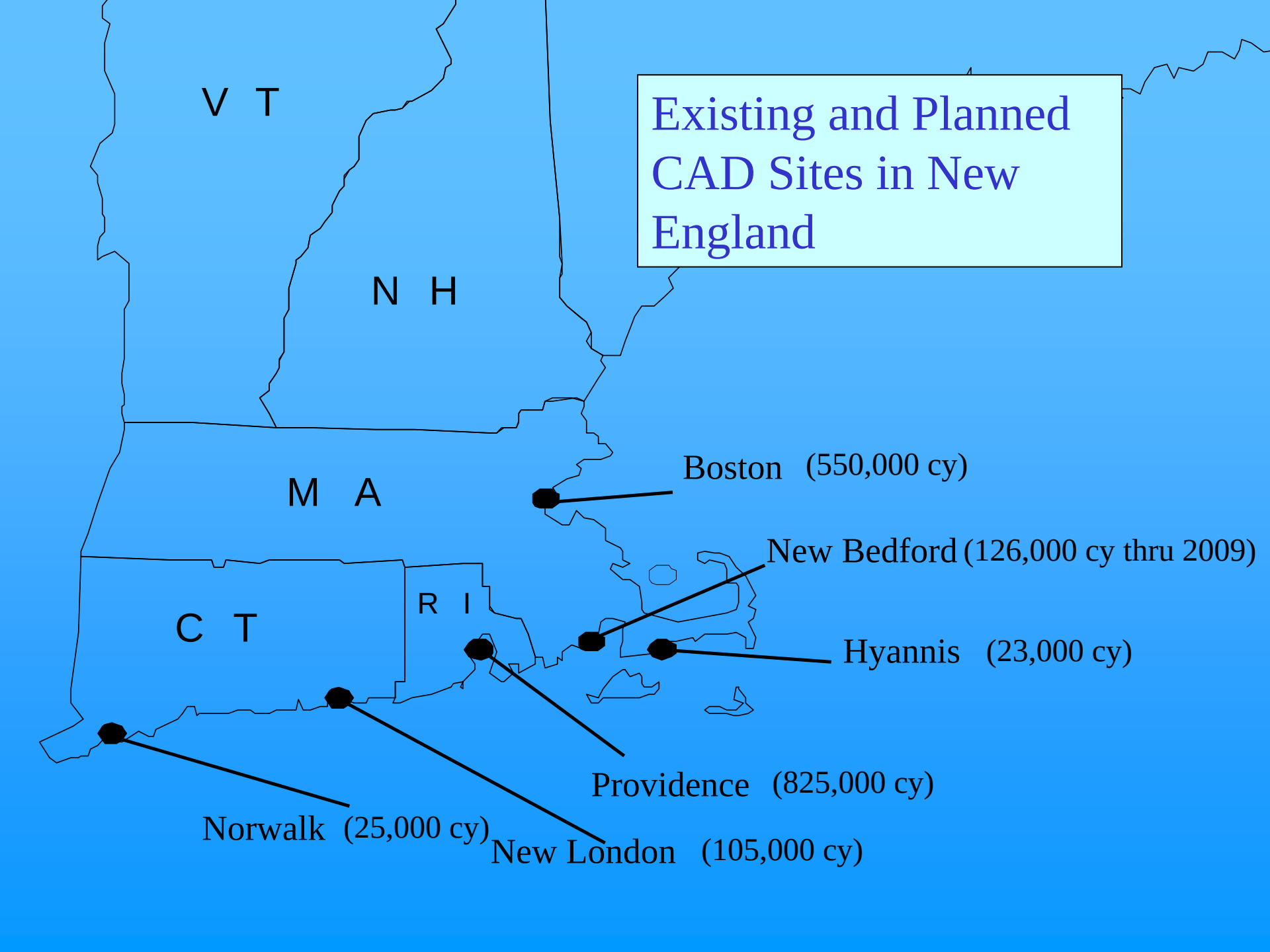
One Alternative: Use CAD Cells




**4.** Placement of dredged sediments into the CAD cell

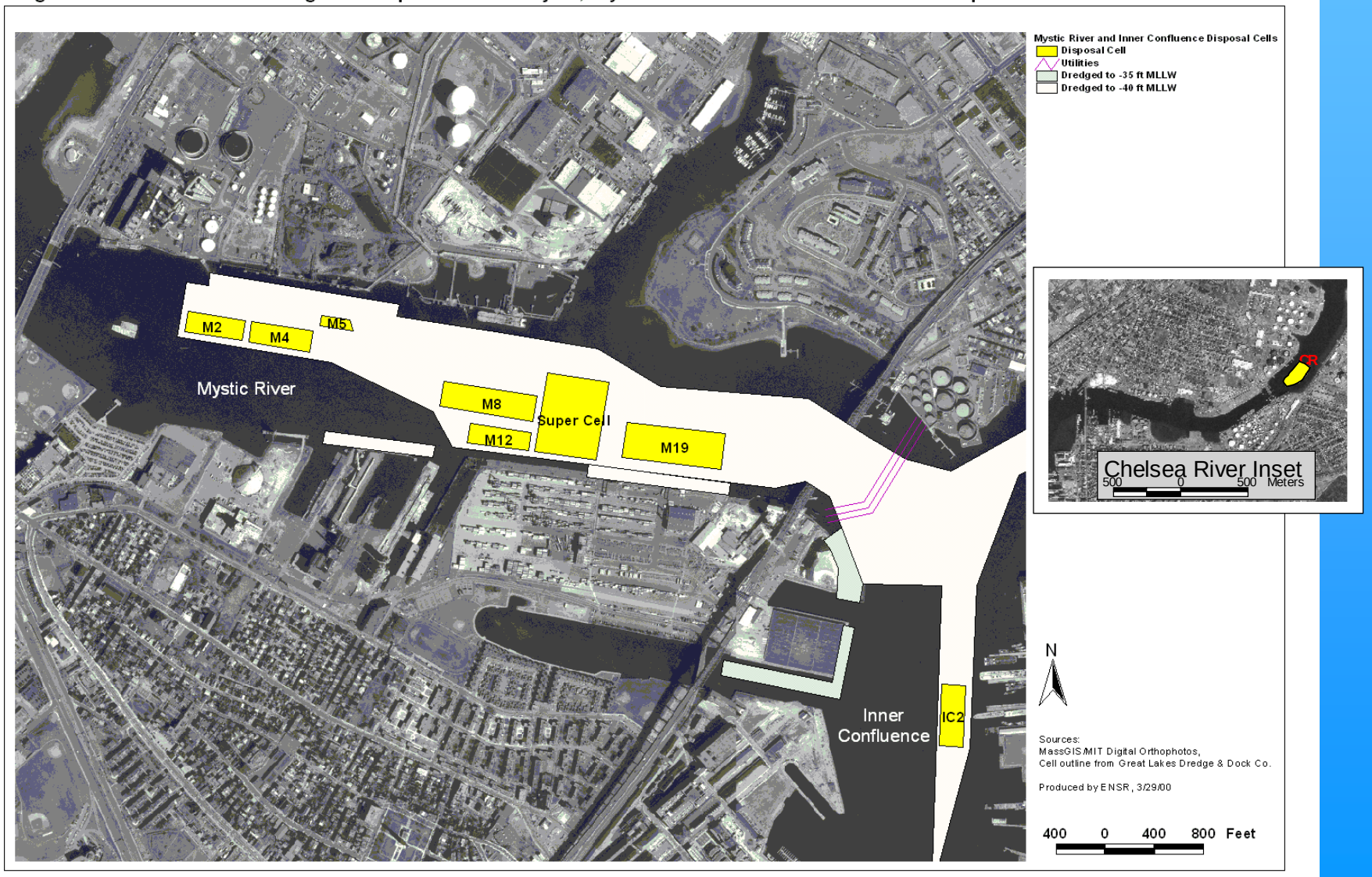



**5.** Placement of clean cap (after consolidation)


Existing and Planned CAD Sites in New England
V T
N H
M A
C T
R I
Boston (550,000 cy)
New Bedford (126,000 cy thru 2009)
Hyannis (23,000 cy)
Providence (825,000 cy)
Norwalk (25,000 cy)
New London (105,000 cy)

# Boston Harbor CAD Cells

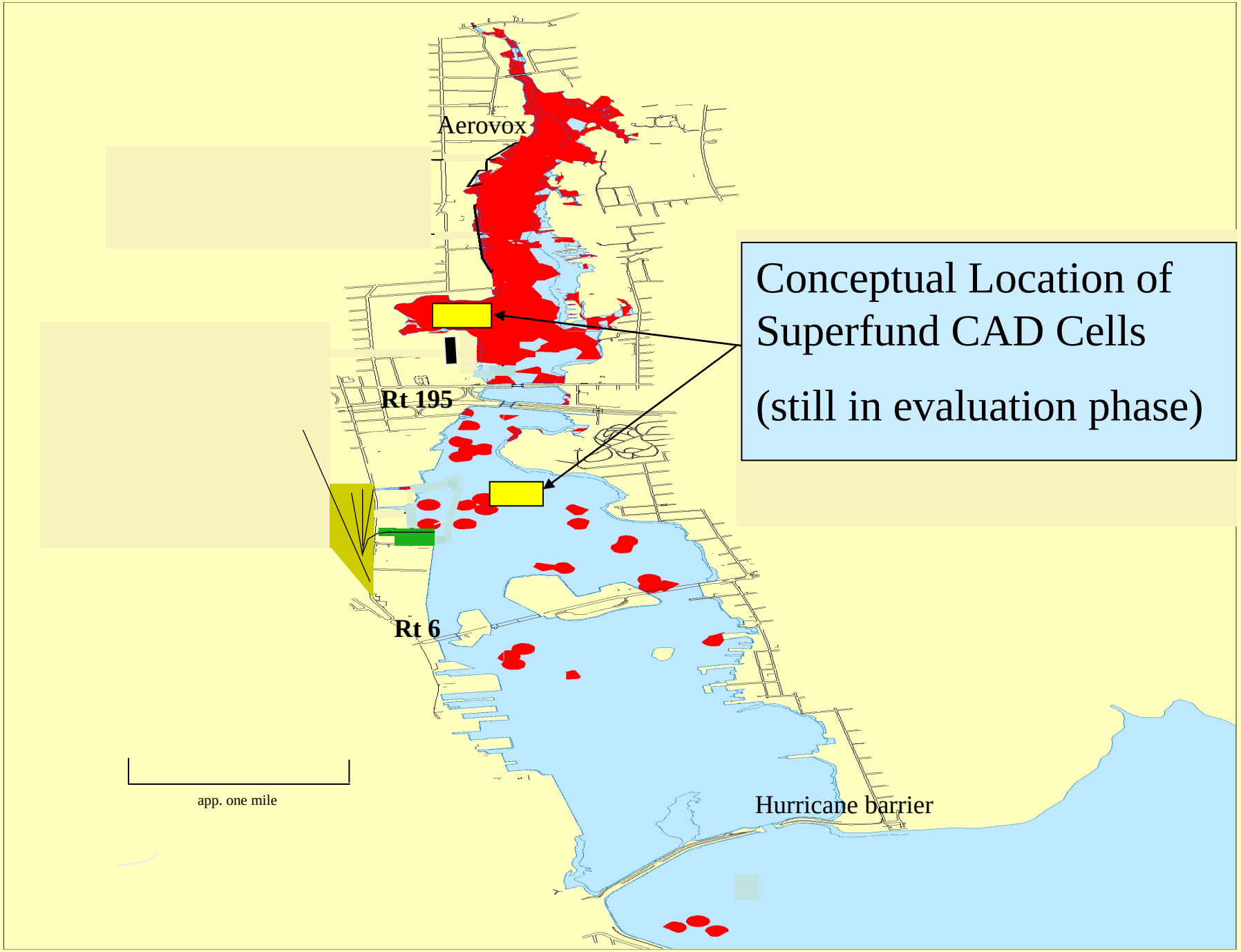
**Figure 2: Boston Harbor Navigation Improvement Project, Mystic River and Inner Confluence Disposal Cells**



# Providence In-Channel CAD Locations


New Bedford’s CAD cell “#1” being excavated in 2005
(for navigational dredging)

A view of the clean sand and gravel removed from New Bedford's CAD cell #1




Conceptual Location of Superfund CAD Cells

(still in evaluation phase)

# On-going CAD cell evaluation: draft results to date

- Significant savings in time to complete
- Significant savings in cost to complete
- Other urban harbors have successfully used CAD cells to dispose contaminated sediments
- Computer modeling will be performed to further estimate potential impacts and protectiveness

## Anticipated schedule for public comment and decision documents for any changes to the harbor cleanup

- Fall 2009 for potential LOWER HARBOR CAD cell
- Fall 2010 for potential UPPER HARBOR CAD cell

# Again, still in the evaluation phase!


Questions?