

An aerial photograph of the New Bedford Harbor Superfund Site. The image shows a large body of water in the foreground, with a city and a highway visible in the background. The sky is clear and blue.

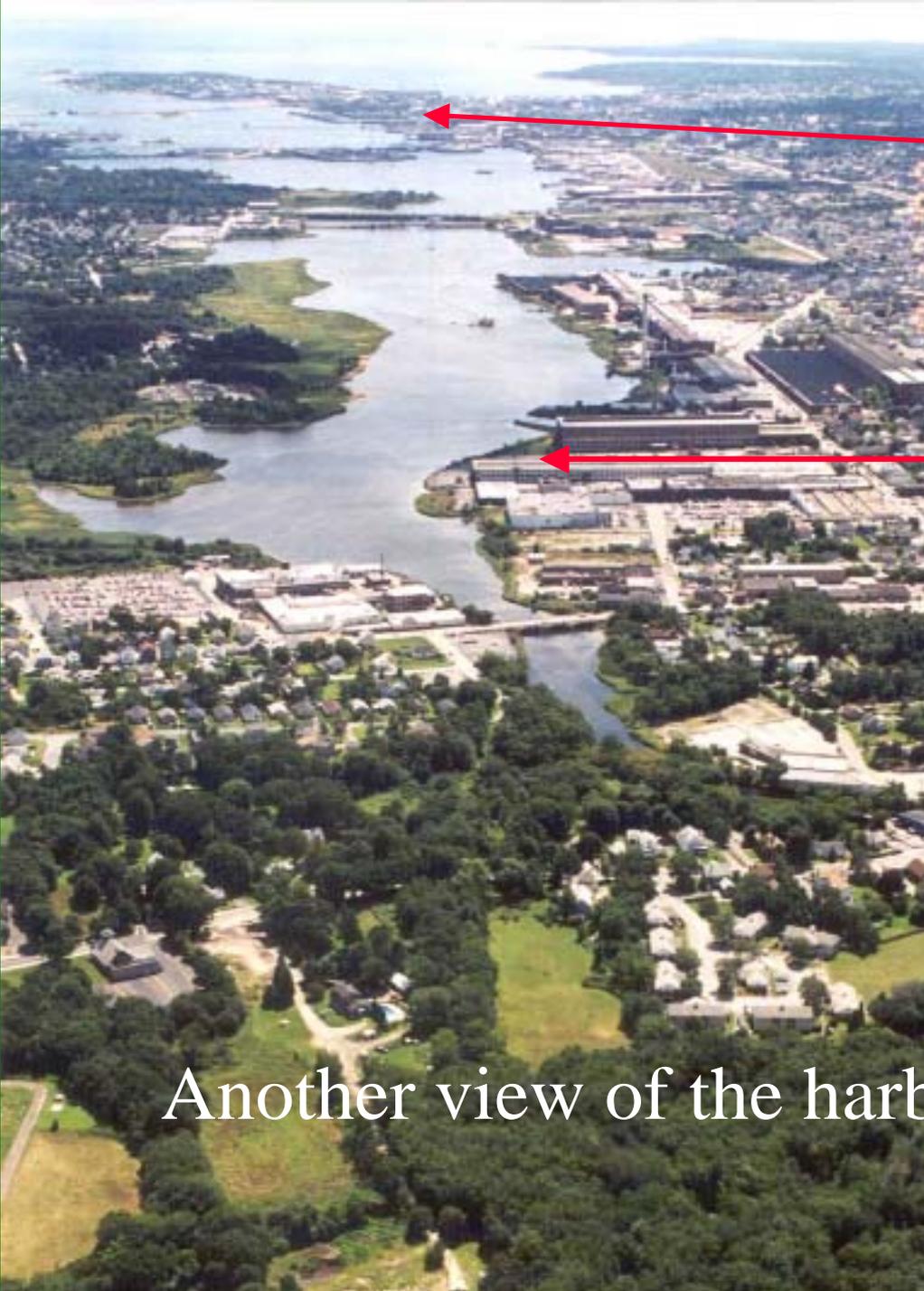
The New Bedford Harbor Superfund Site

I. Background and environmental conditions

II. Description of the remedy

III. Progress to date

IV. Community benefits



You are here

The Aerovox facility

Another view of the harbor

Some key features

Buzzards Bay

hurricane barrier

Rt 6

Dewatering facility

Rt 195

Sawyer Street desanding facility

Aerovox facility



An aerial photograph of an urban harbor area. A large body of water is on the left, with a bridge crossing it. In the center, there are several large industrial buildings. The foreground is filled with green trees and residential houses. Labels with arrows point to specific features: 'Rt 195' at the top, 'Wood St. bridge' on the left, and 'The 10 acre Aerovox site' in the center.

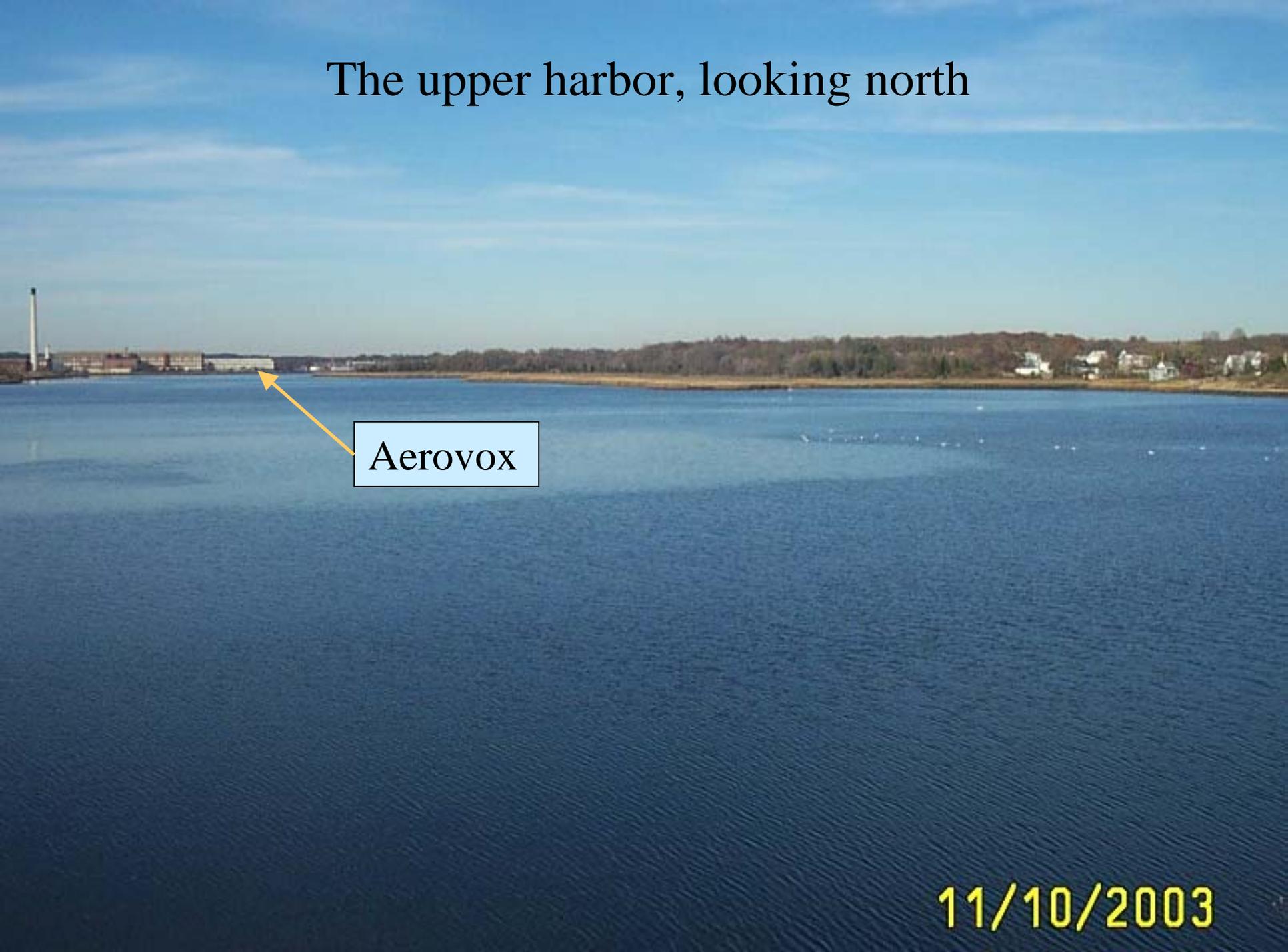
Rt 195

Wood St. bridge

The 10 acre Aerovox site

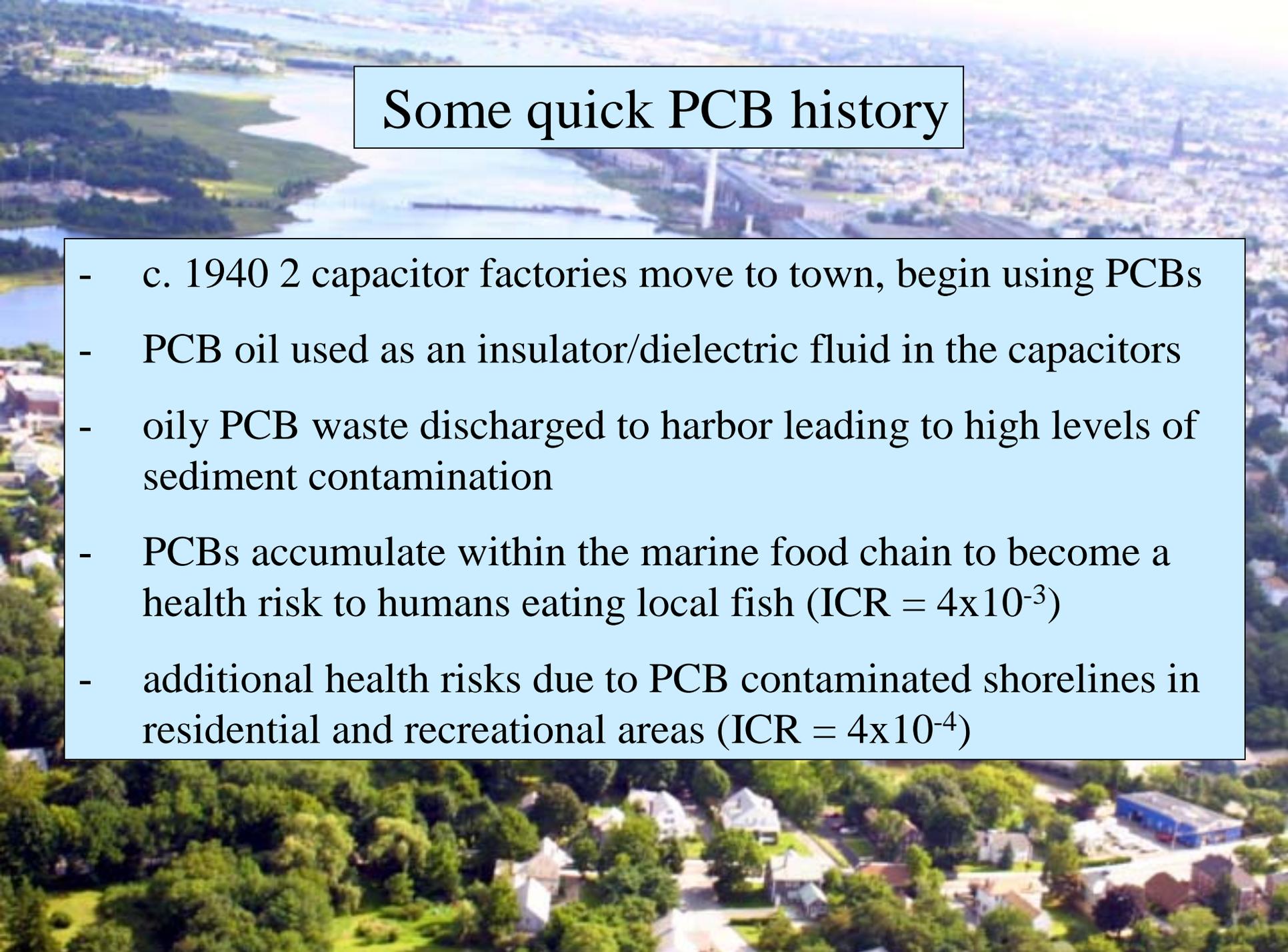
A closer look at the upper harbor, looking south

The upper harbor, looking north



Aerovox

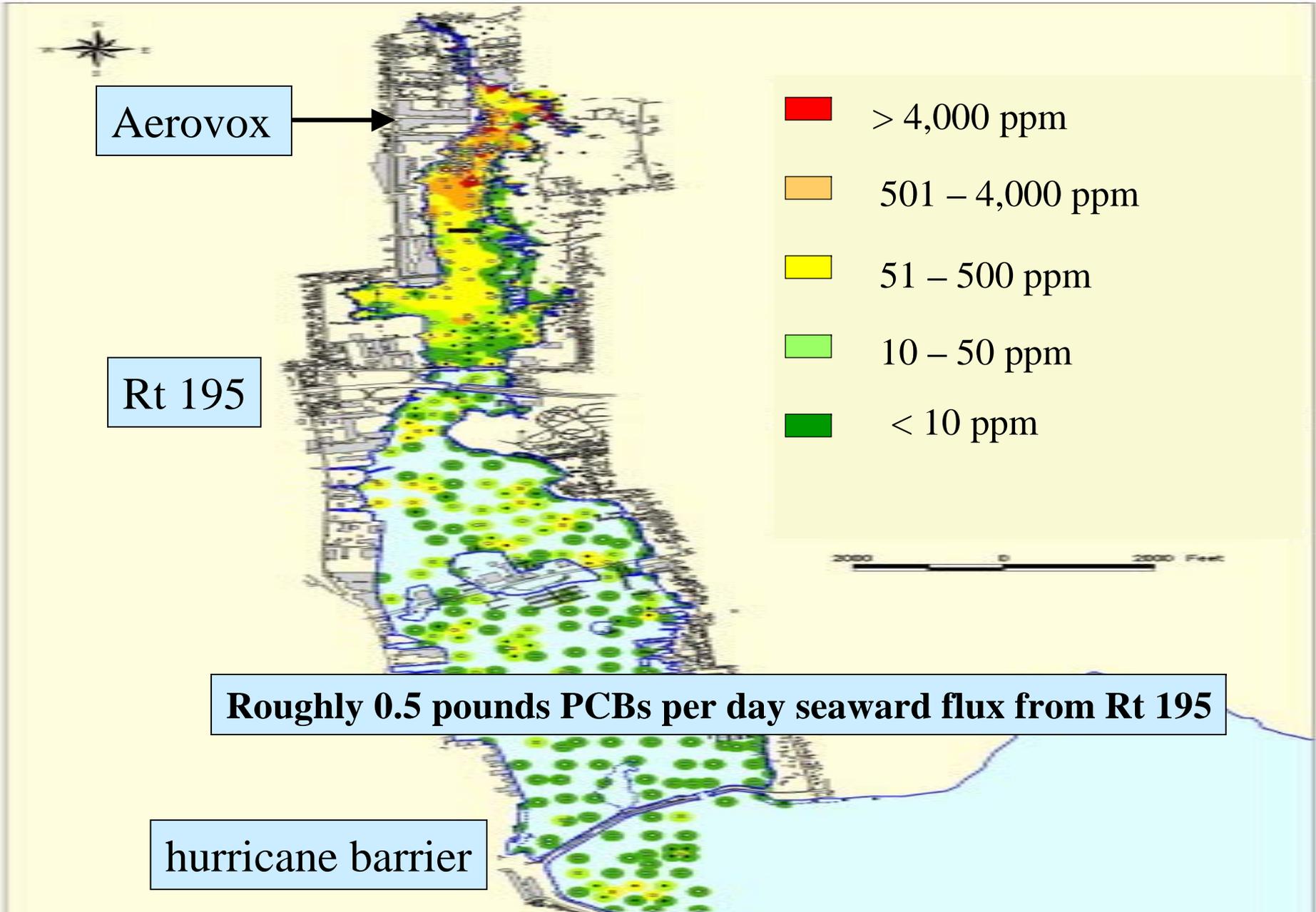
11/10/2003

An aerial photograph of a coastal town. In the foreground, there are green trees and residential houses. In the middle ground, a large industrial building with a tall chimney is situated near a harbor. The background shows a wide expanse of water and more buildings in the distance.

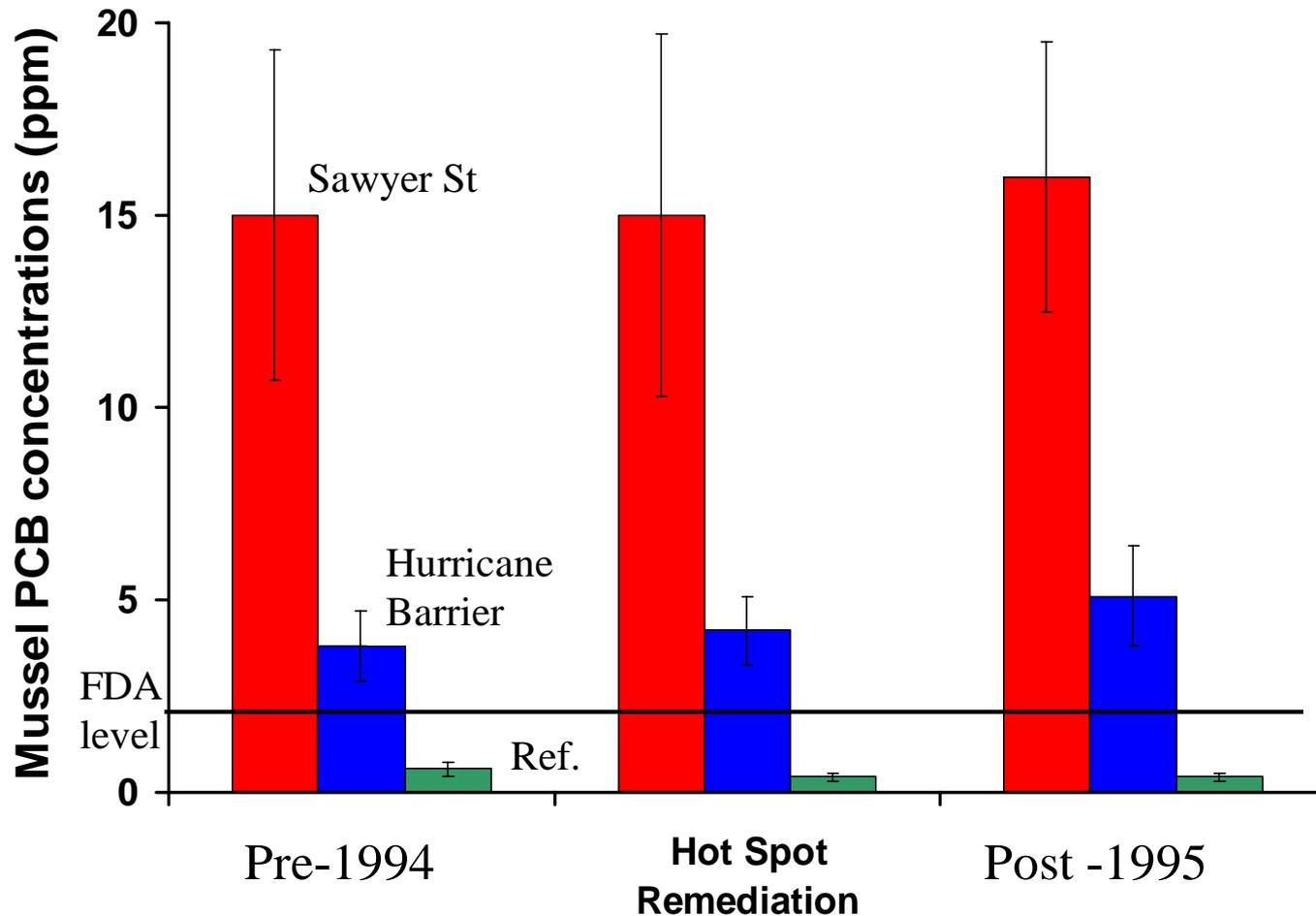
Some quick PCB history

- c. 1940 2 capacitor factories move to town, begin using PCBs
- PCB oil used as an insulator/dielectric fluid in the capacitors
- oily PCB waste discharged to harbor leading to high levels of sediment contamination
- PCBs accumulate within the marine food chain to become a health risk to humans eating local fish (ICR = 4×10^{-3})
- additional health risks due to PCB contaminated shorelines in residential and recreational areas (ICR = 4×10^{-4})

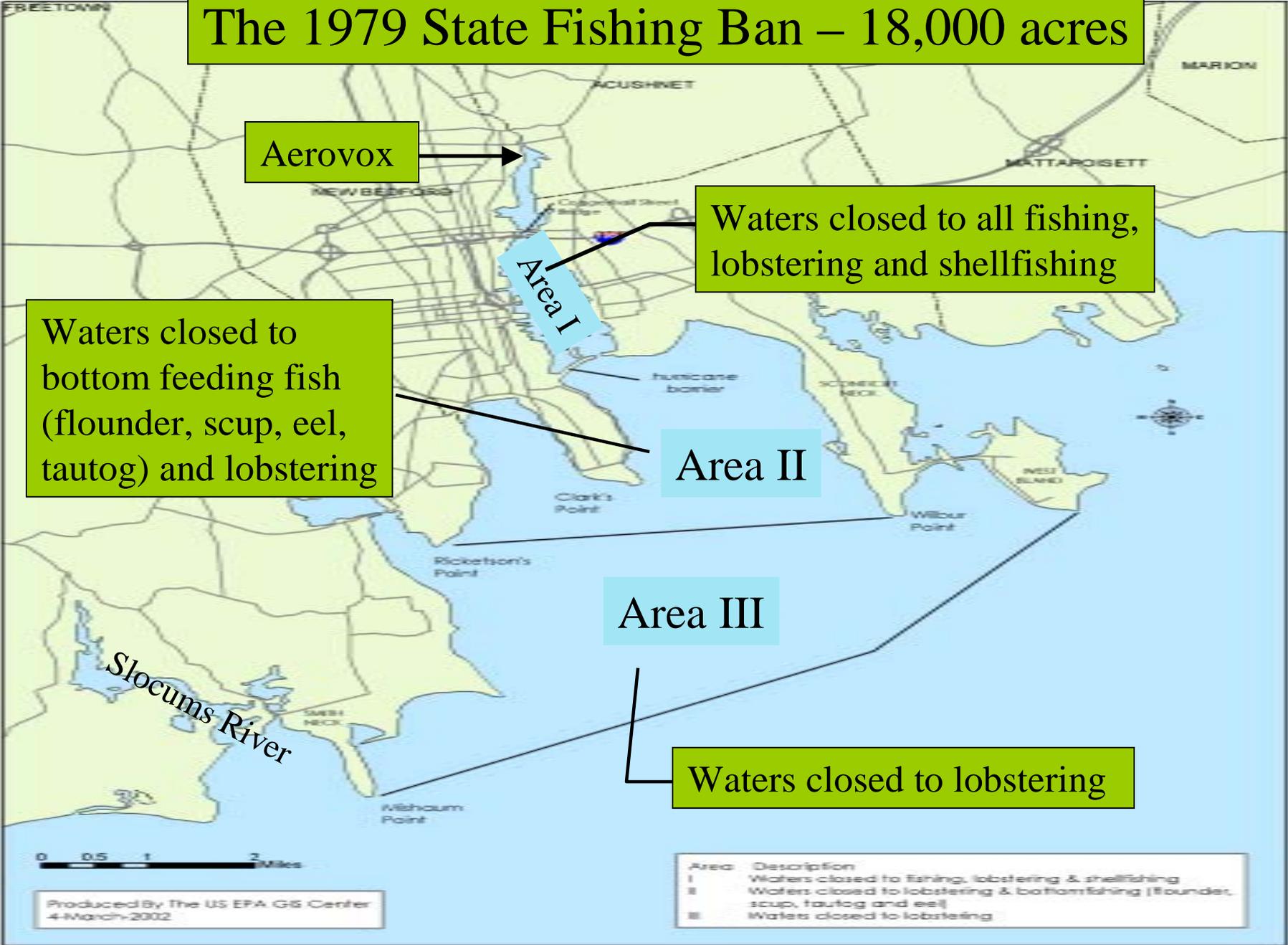
PCBs in sediment – top foot



Some Blue Mussel Data - Above FDA



The 1979 State Fishing Ban – 18,000 acres

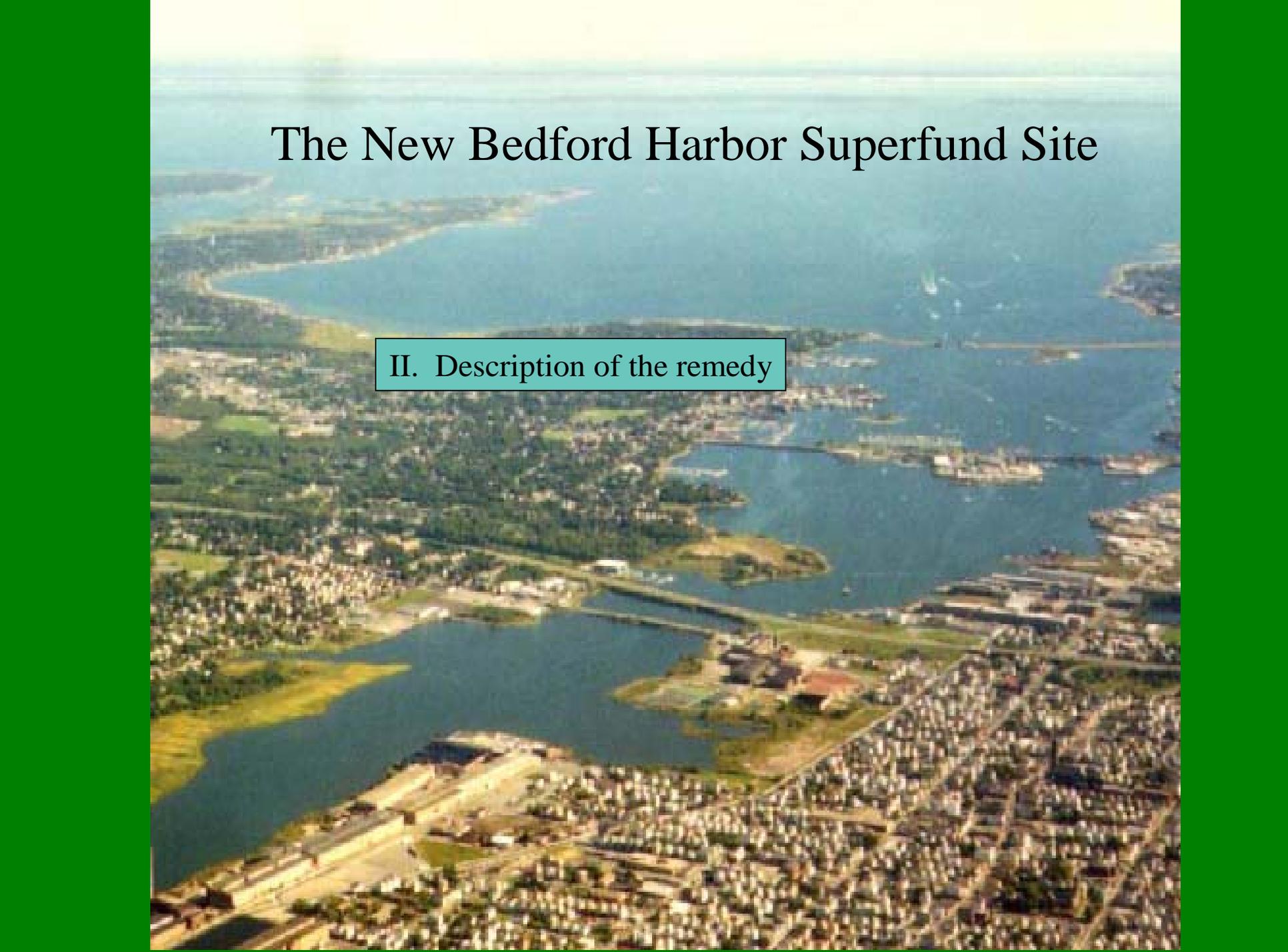


Ecological risks

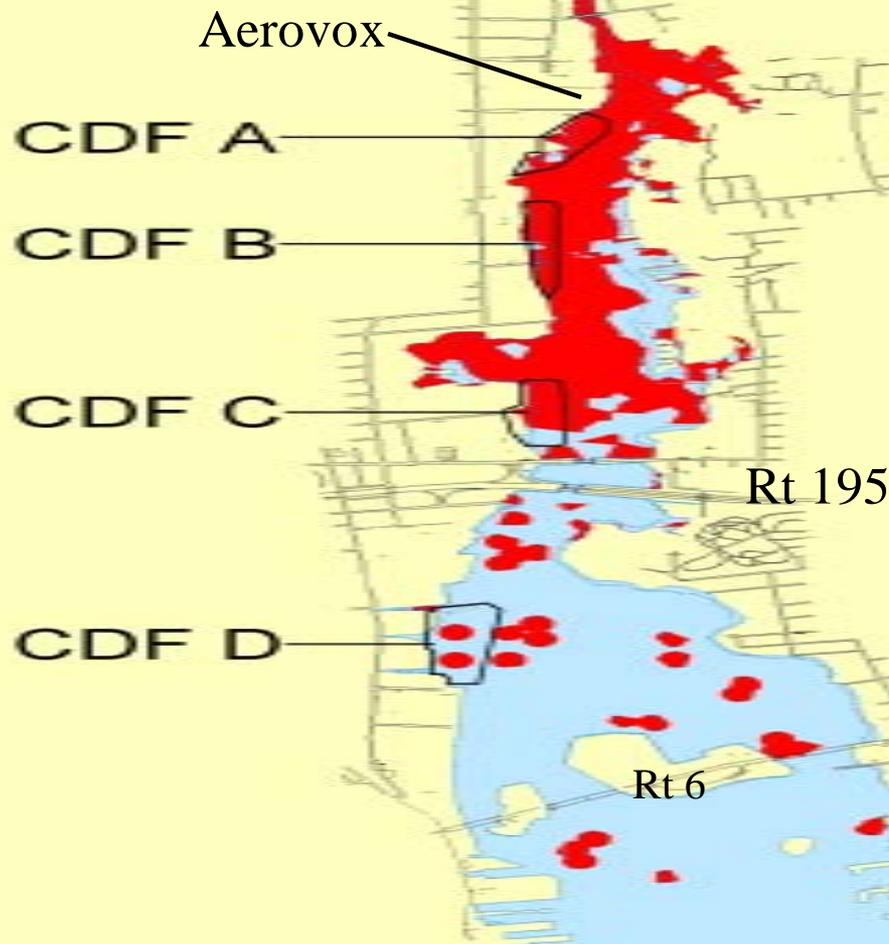
Average water column PCB levels are **10 times higher** than EPA criteria (0.3 ppb v. 0.03 ppb).

Maximum sediment PCB levels are currently **10,000 times higher** than ecologically safe levels (10,000 ppm v. 1 ppm - the highest levels we're aware of in the country)

The New Bedford Harbor Superfund Site

An aerial photograph of the New Bedford Harbor Superfund Site. The image shows a large body of water, likely the harbor, with a city built on the surrounding land. A bridge is visible crossing the water. The sky is clear and blue.

II. Description of the remedy



The 1998 cleanup plan

Key

- -- PCB sediments to be dredged
- CDF – confined disposal facility

2002 modification eliminates CDF D in favor of offsite disposal

hurricane barrier

Cleanup levels in the 1998 ROD

Dependent on land use and habitat type:

1 ppm - intertidal zone: residential

25 ppm - intertidal zone: public access (non-residential)

10 ppm - subtidal and mudflats, upper harbor

50 ppm - subtidal and mudflats, lower harbor

50 ppm - saltmarsh, upper & lower harbor
(with no public access)

NEW BEDFORD HARBOR

CLEANUP PROCESS

The full scale cleanup process:



Dredge(s) - location varies

Desanding facility at Sawyer St

Submerged dredge pipeline

Dewatering, water treatment and transfer facility

Railyard brownfield being redeveloped, rail spur to dewatering facility

Full Scale Dredging

Full scale dredging started 9/04

Aerovox



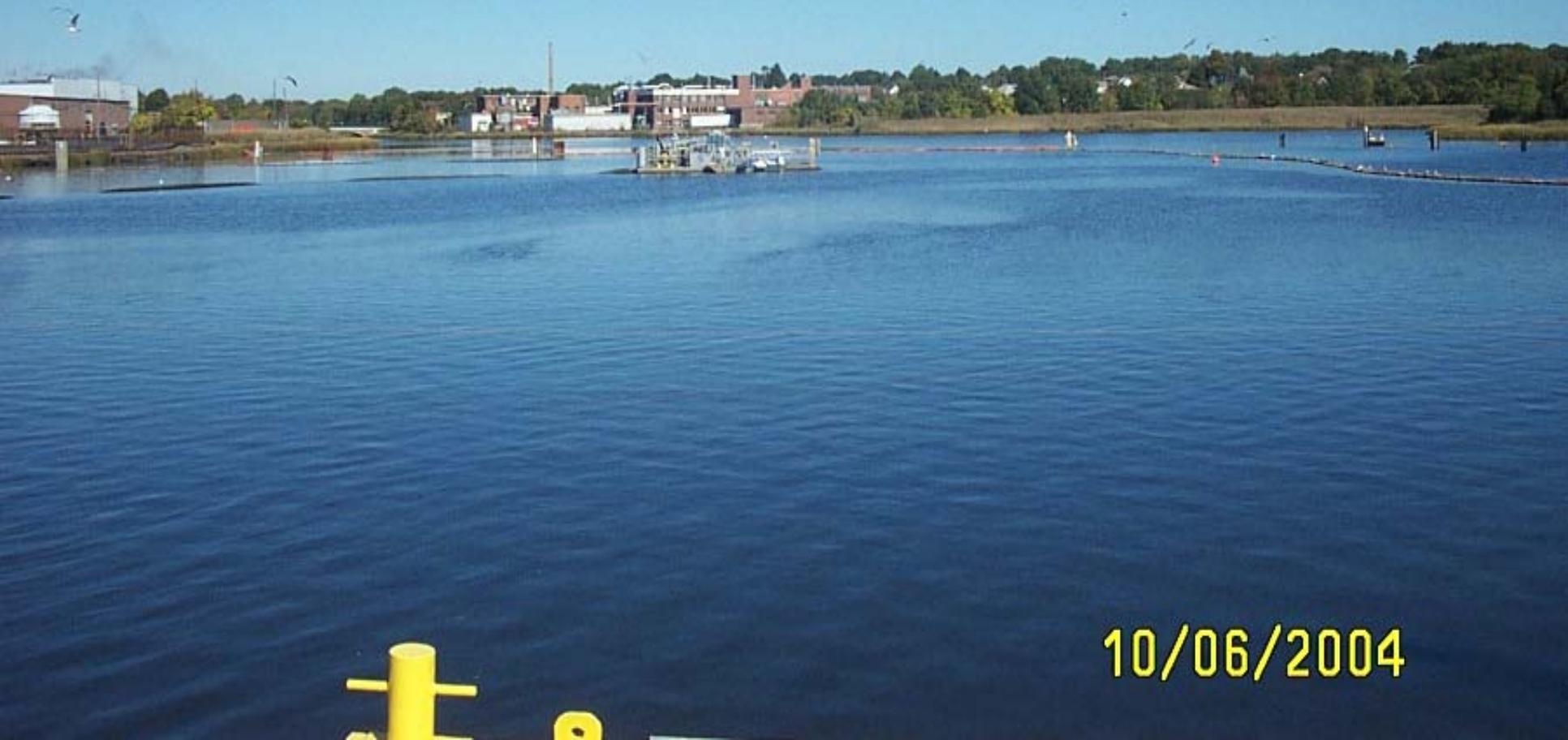
10/06/2004



Horizontal Auger Dredge

07/19/2004

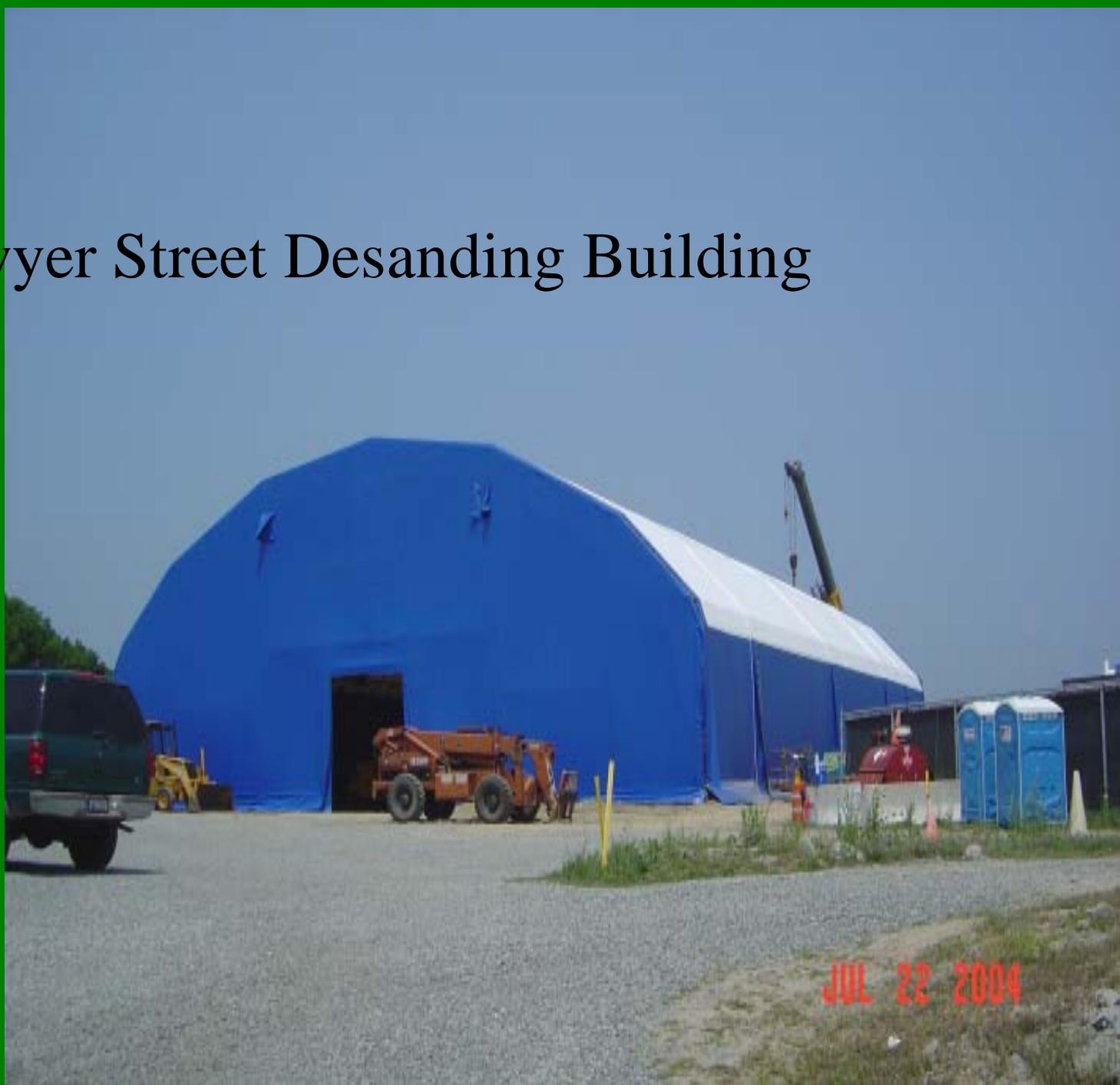
Another view of 2004 dredge area



10/06/2004

Desanding Facility

Sawyer Street Desanding Building



JUL 22 2004

Shaker Screen & Hydrocyclone Units



Dewatering, Water Treatment & Transfer Facility

5 Acre Dewatering, Water Treatment & Transfer Facility





Filter Presses

AUG 5 2004



Filter Cake Stockpile Area

Measures of Project Success

Short Term:

- Confirmatory Sediment Sampling
- Air Monitoring
- Water Quality Monitoring

Long Term:

- Benthic Monitoring (physical, chemical, biological)
- Local Seafood Monitoring
- Water Quality Monitoring

Relationship Between Schedule,
Annual Funding & Costs To
Complete

Cleanup time frame depends on future funding rates

(fy04 onward, 880,000 cy, actual funding basis)

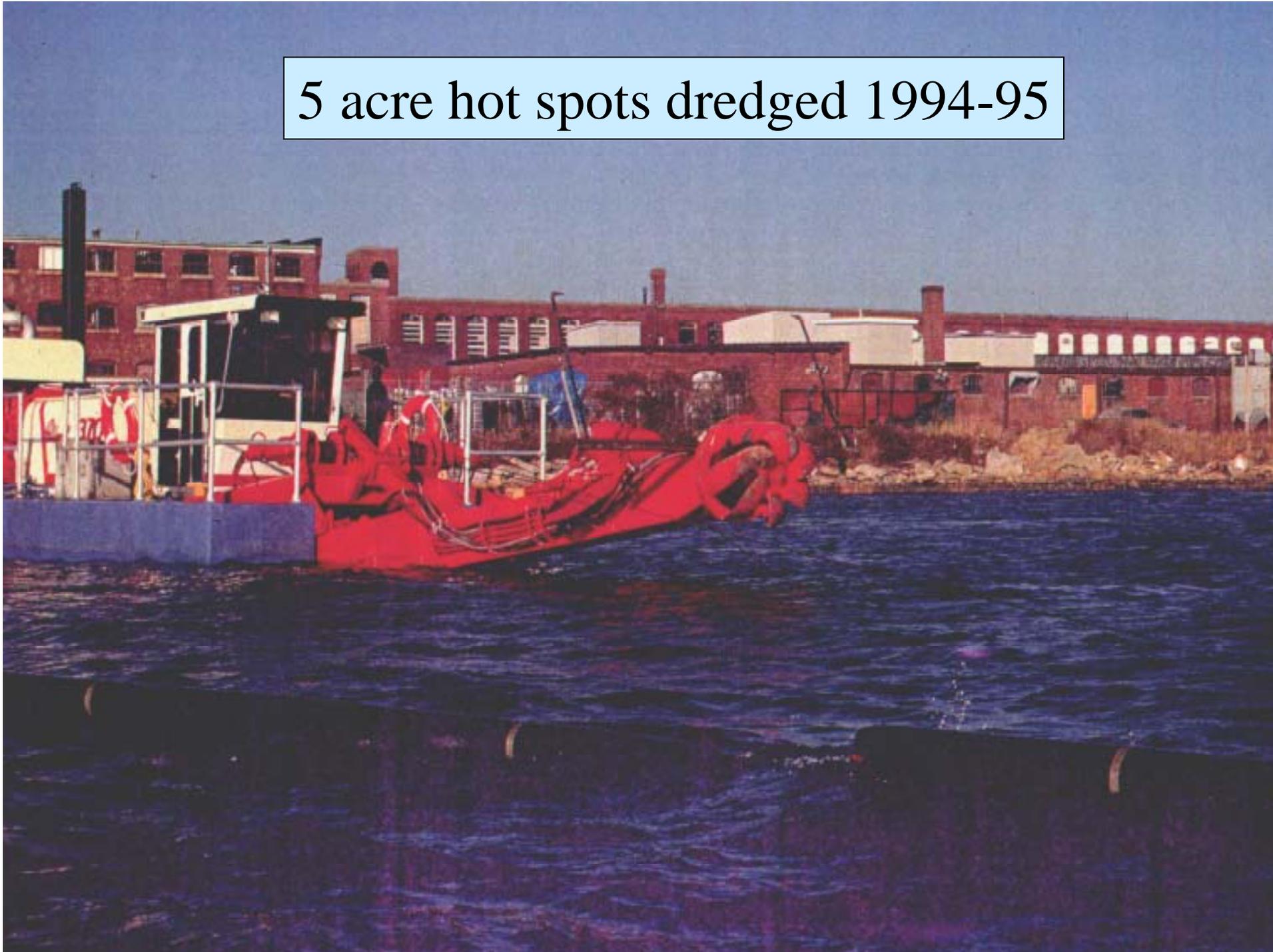
<u>Annual funding level</u>	<u>Years to complete</u>	<u>Costs to complete</u>
\$80 million	4	\$290 million
\$30 million	11	\$330 million
\$20 million	18	\$360 million
\$15 million	26	\$390 million

The New Bedford Harbor Superfund Site

An aerial photograph of the New Bedford Harbor Superfund Site. The image shows a large body of water (the harbor) with several smaller ponds and channels. The surrounding area is densely populated with residential buildings and some industrial structures. The water is a deep blue color, and the land is a mix of green (trees) and brown (buildings and roads). The sky is clear and blue.

III. Progress to date

5 acre hot spots dredged 1994-95



Hot Spot ROD Amendment Pilot Scale Treatability Studies

- Thermal Desorption and Gas Phase Reduction
- Solvent Extraction and Solid Phase Dechlorination
- Vitrification
- Solidification/Stabilization (bench scale)

Offsite disposal of hot spot
sediments - 1999/2000





Pilot Test of Mechanical/Hydraulic Dredge - 2000



Close-Up of Pilot Dredge

8 18'00



NSTAR cable relocation – 2001

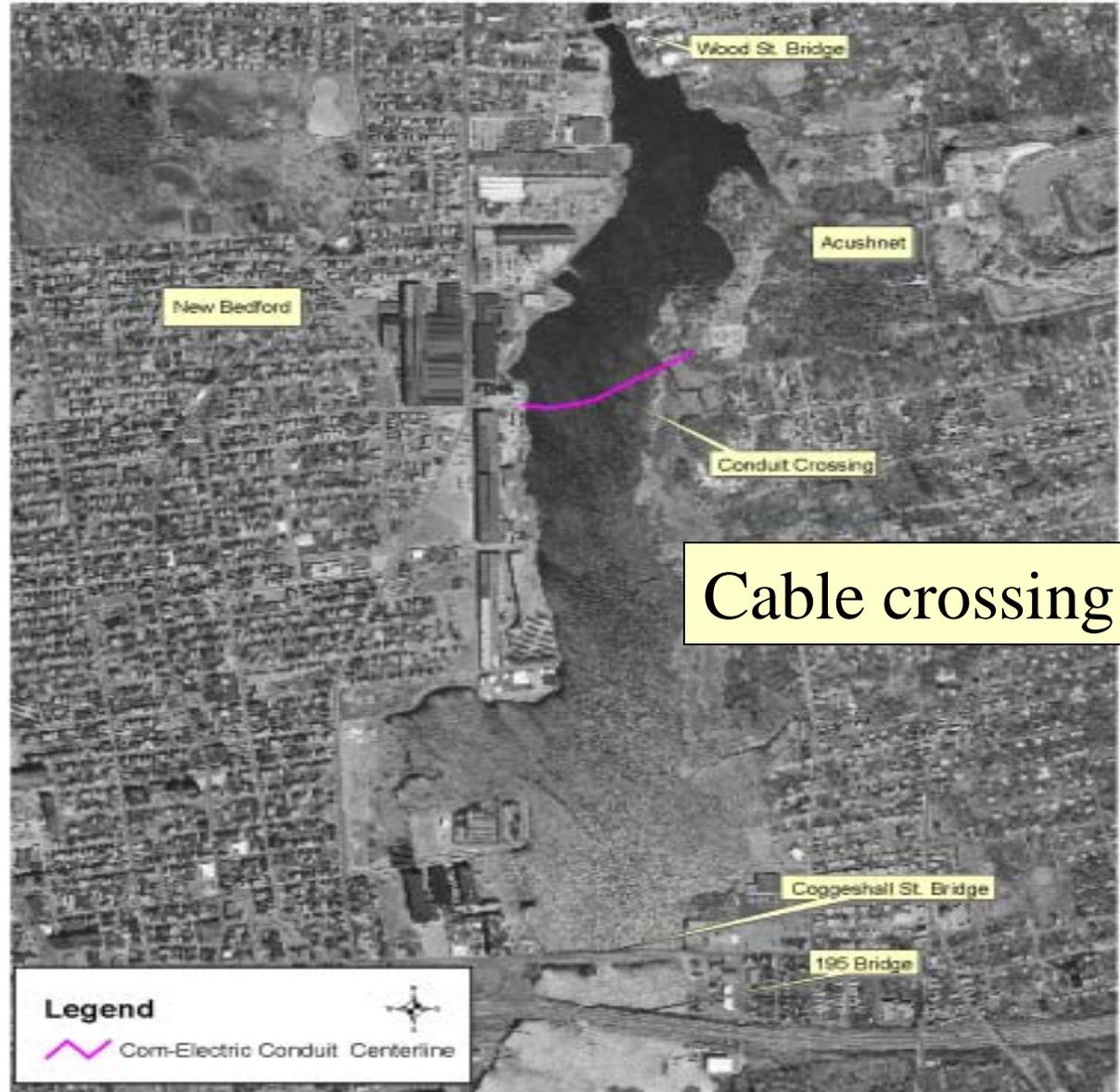


Figure 2 Upper Harbor

1,000 0 1,000 2,000 Feet



NSTAR Power Cable Relocation 2001



“Early Action” shoreline cleanup - 2001

The dewatering facility bulkhead under construction - 2002/2003





Derelict vessel removal to make way
for the Packer barge pier relocation - 2002

Another view...



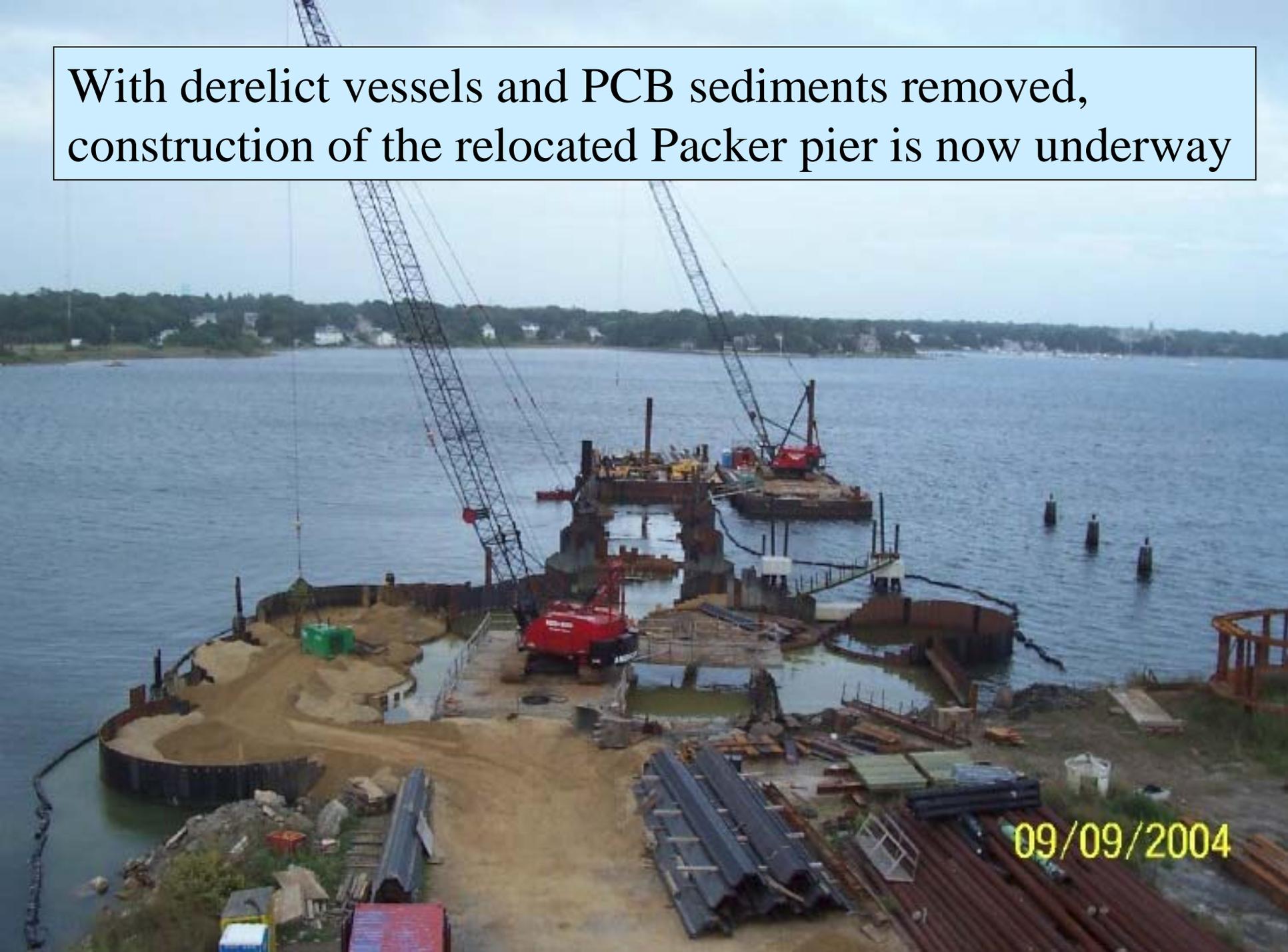
Demolition and removal of the derelict vessels



With the derelict vessels removed, dredging of the underlying PCB sediments could begin



With derelict vessels and PCB sediments removed, construction of the relocated Packer pier is now underway



The North of Wood St Cleanup 2003

46,000 ppm

5,000 ppm

30,000 ppm

2,300 ppm

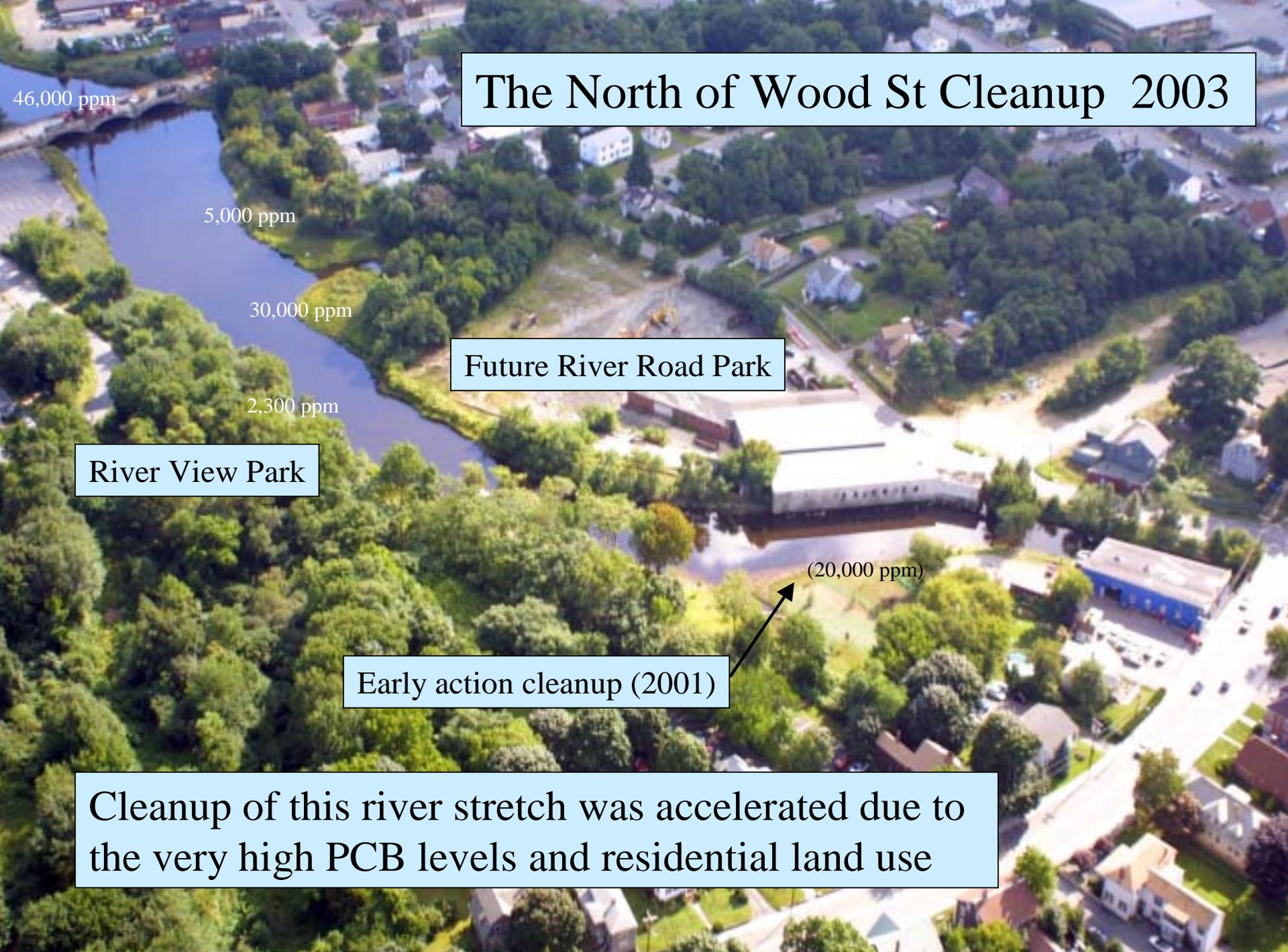
River View Park

Future River Road Park

(20,000 ppm)

Early action cleanup (2001)

Cleanup of this river stretch was accelerated due to the very high PCB levels and residential land use



An aerial photograph of a city, likely Lowell, Massachusetts, showing a large river (the Merrimack River) winding through the urban landscape. The river is bordered by green parks and industrial areas. Several large, multi-story brick buildings are visible, particularly along the riverbank. A road, identified as Wood/Slocum St, runs parallel to the river. The city extends into the background with a dense residential area. Labels with arrows point to specific locations: 'Aerovox' points to a large industrial building on the riverbank; 'Wood/Slocum St' points to a street intersection; and 'Main St' points to a street in the lower right. A text box at the bottom explains that a street cleanup was done 'in the dry' due to the river setting.

Another view

Aerovox →

Wood/Slocum St

Due to its river setting, this Wood Street cleanup was done “in the dry”

Main St



Excavation “in the dry”

Installing erosion control and new shoreline



Shoreline reconstructed; river bypass still in place



Flow restored and fringe saltmarsh planted (low tide)



Community Benefits

Maximize use of local labor

Maximize use of local business

Consistency with the Harbor Master Plan

I-195



Dewatering facility designed with future reuse in mind

New intermodal freight facility once cleanup is complete:

- 350' deep water pier
- 55,000 sq ft warehouse
- rail spur to new rail yard

Rail-yard
Brown
field

New rail
spur

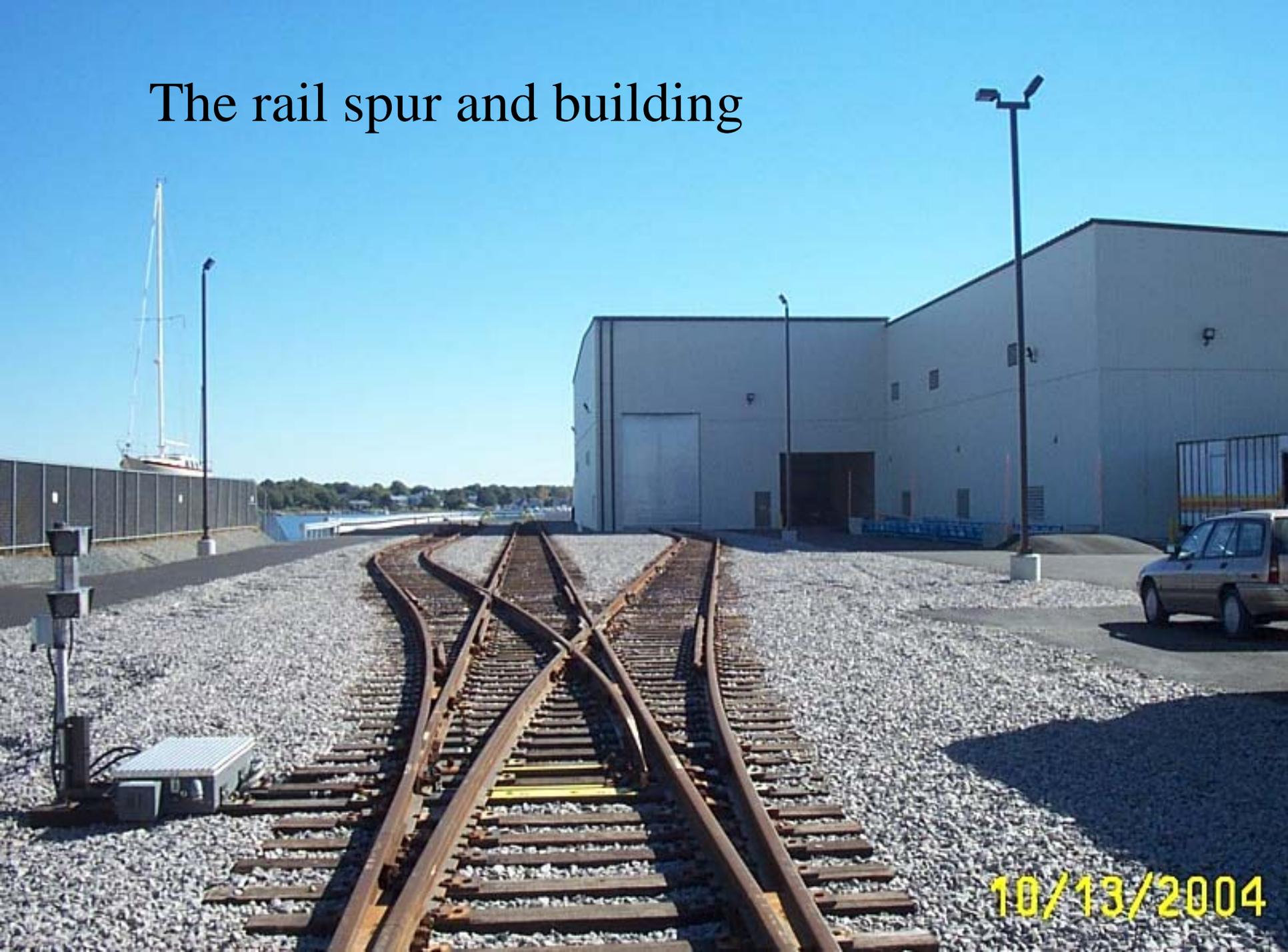
dewatering and
transfer facility



The deep water bulkhead
(shared use during cleanup)



The rail spur and building



10/13/2004



Three CSO outfalls that had to be relocated (to make room for the dewatering building and CDF C) were done in a way that advanced the City's CSO Master Plan.

The Wood Street cleanup restored the shoreline area of a future City park



The cleanup is being coordinated to meet the needs of new land use

In 2005, the city is planning to construct a new 10 acre shoreline park where a mill once stood. We are thus planning to focus next year's cleanup on this area.



We are collaborating with the City and other agencies to remediate and redevelop the former Aerovox facility, with public access to the shoreline (2006).



An aerial photograph of a city, likely Portland, Maine, showing a river winding through the urban landscape. The image is overlaid with several text boxes highlighting various development and land use projects. The text boxes are light blue with black borders and black text. The background shows a mix of residential houses, commercial buildings, and green spaces, with the river and its tributaries providing a natural setting for the city.

New land
trust properties

Mill slated for
artist lofts

New Riverside park

Coalition for
Buzzards Bay
new HQ

Mill renovated for
assisted living housing

Lastly, slow but sure changes in shoreline land use...

River View Park

Future park at
former lumberyard

An aerial photograph of a city, likely New Bedford, Massachusetts, showing a large river or harbor. The foreground is dominated by lush green trees and residential houses. In the middle ground, there are several large industrial buildings, including a prominent one with a tall white chimney. The background shows a dense urban area extending to the horizon. A white box with a black border is overlaid on the image, containing the URL www.epa.gov/ne/nbh in red text.

www.epa.gov/ne/nbh

An aerial photograph of a coastal town and harbor. The town is densely packed with buildings and greenery, situated along the water's edge. The harbor is filled with boats and surrounded by land. The water is a deep blue, and the sky is clear. The word "Questions?" is overlaid in a black serif font in the upper center of the image.

Questions?