

Bridgeport Harbor Maintenance Dredging Project

Public Meeting

October 25, 2010



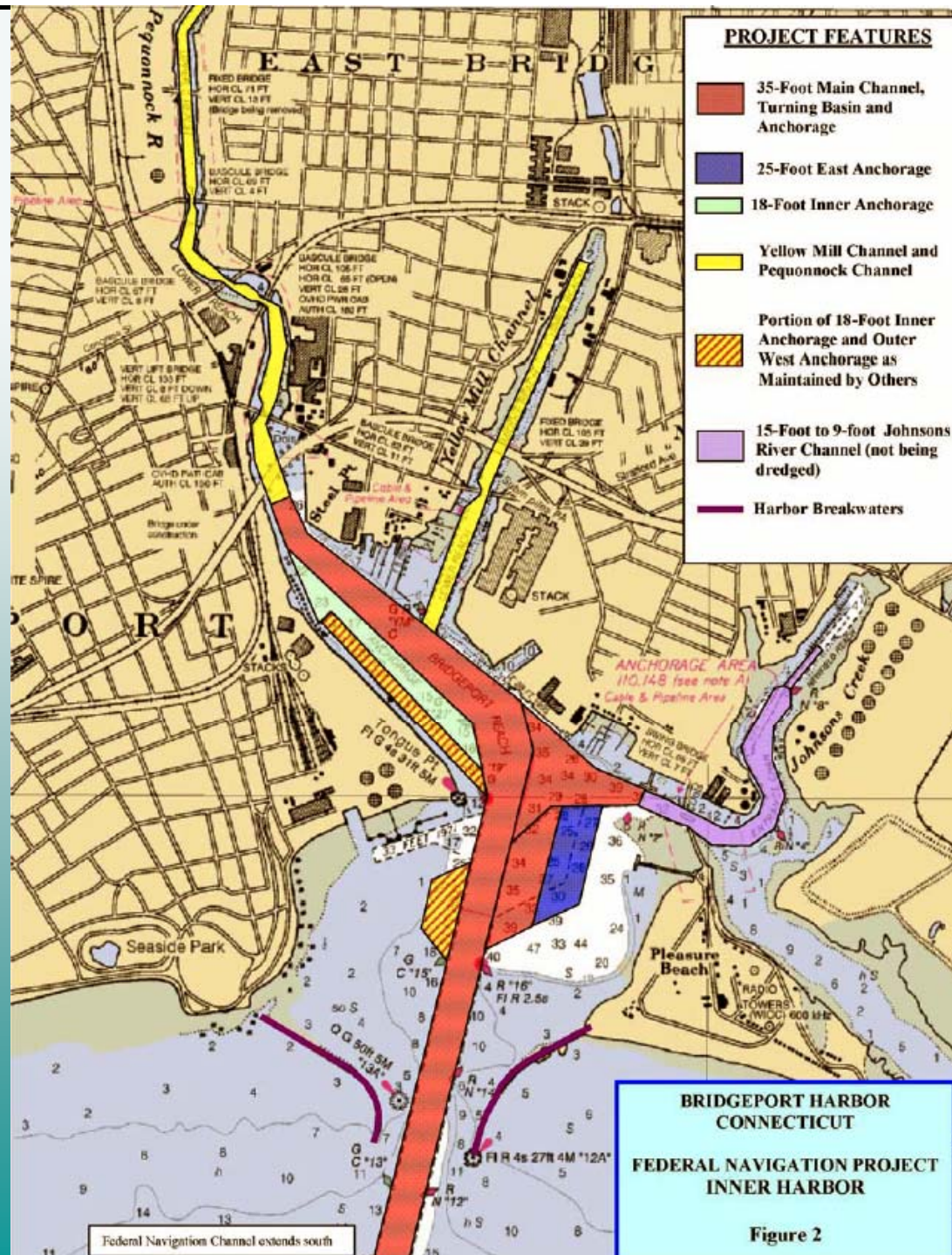
Bridgeport Harbor

Project Depth: 35, 18, ft. MLLW

Last Dredged: 1964

Material Type: Silt-Clay-Sand





Bridgeport Harbor Channels

Controlling Depths

Project Feature	Authorized Depth (Feet)	Current Controlling Depth
Entrance Channel	35	30
Main Channel	35	30
Outer Anchorages	25 & 35	22 & 29
Turning Basin	35	29
Pequonnock	18	11
Yellow Mill	18	13
Johnsons Creek	15	12

Maintenance Dredge Quantities (Cubic Yards)

Project Feature	Suitable Material		Unsuitable Material			
	Required	Overdepth	Required	Overdepth	Total Suitable	Total Unsuitable
Entrance Channel	302,500	363,100			665,600	
Main Channel			399,000	188,000		587,000
35 ' East Anchorage			46,000	26,000		72,000
25' East Anchorage			8,100	18,200		26,300
35' Turning Basin			69,900	50,100		120,000
18' Inner Anchorage			4,700	6,400		11,100
18' West Anchorage			100	100		200
18' Pequonnock			130,300	34,400		164,700
18' Yellow Mill			93,500	33,400		126,900

Dredge Quantity Totals

665,600 1,108,200

Total All = 1,773,800

Dredged Material Management Plan (DMMP)

The overall goal of the DMMP is:

- to develop a comprehensive dredged material management plan that recommends practicable, implementable solutions to manage dredged material in an economically sound and environmentally acceptable manner

(Corps Engineer Regulation 1105-2-100)

Environmental Assessment

- Evaluated No Action Alternative
- Evaluated Alternative Dredging Methods
- Evaluated Alternative Disposal/Management Options
- Evaluated Affected Environment
- Evaluated Environmental Consequences
- Identified Measures to Minimize Environmental Impact

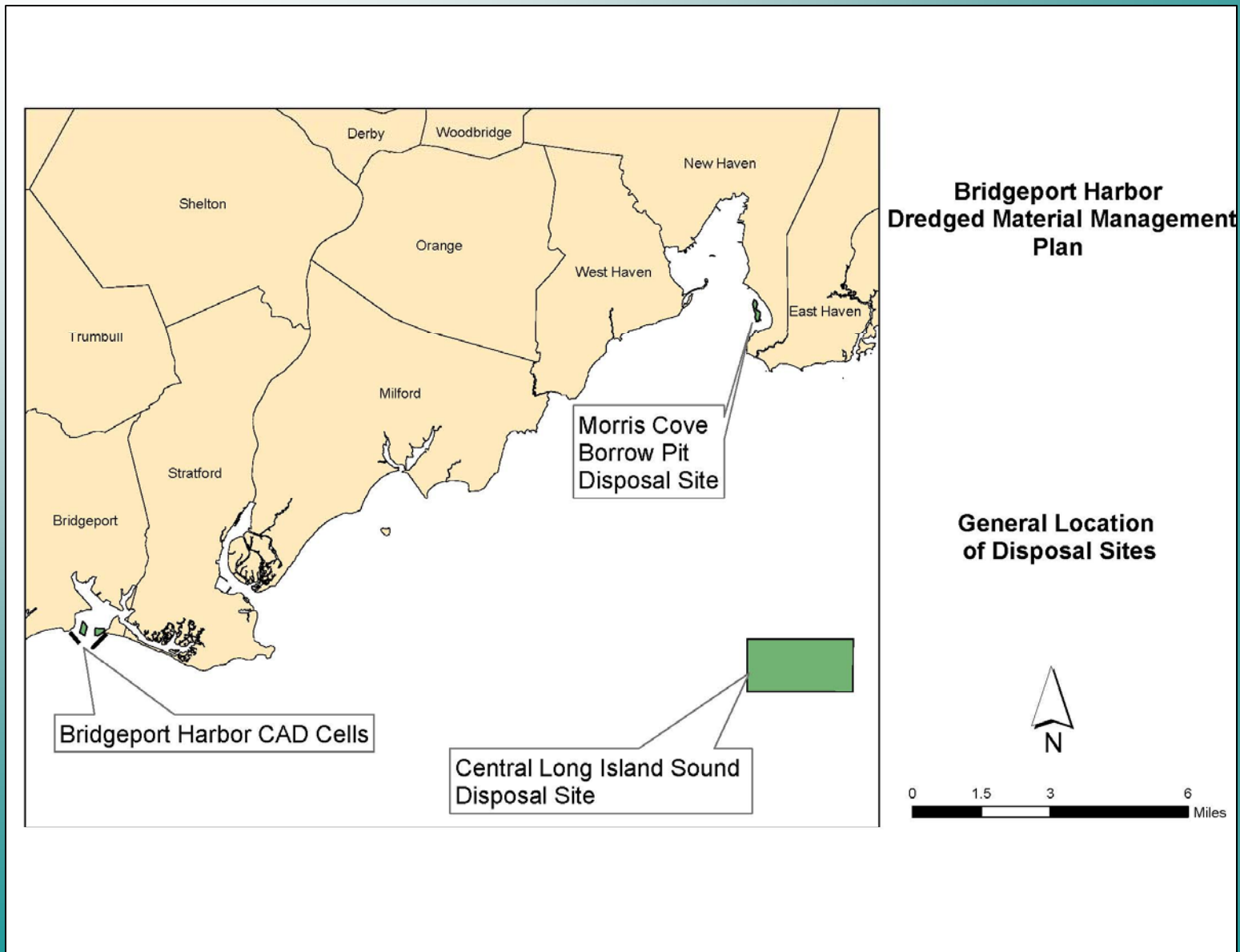
Alternatives Evaluated

- No Action Alternative
- Upland Disposal
 - Landfill
 - Construction/Industrial Development:
 - Stratford Development Company Site
 - Steel Point
- Confined Disposal Facility – Powerhouse Creek
- Riverine Disposal – Housatonic River
- Beneficial Use - Habitat Creation
- Beneficial Use - Beach Nourishment
- Beneficial Use – Morris Cove Borrow Pit
- Confined Aquatic Disposal (CAD) Cell
- Ocean Disposal
- Innovative Technologies

Alternatives Warranting Detailed Evaluation

- No Action Alternative
- Upland Disposal
 - Landfill
 - Construction/Industrial Development:
 - Stratford Development Company Site
 - Steel Point
- Confined Disposal Facility – Powerhouse Creek
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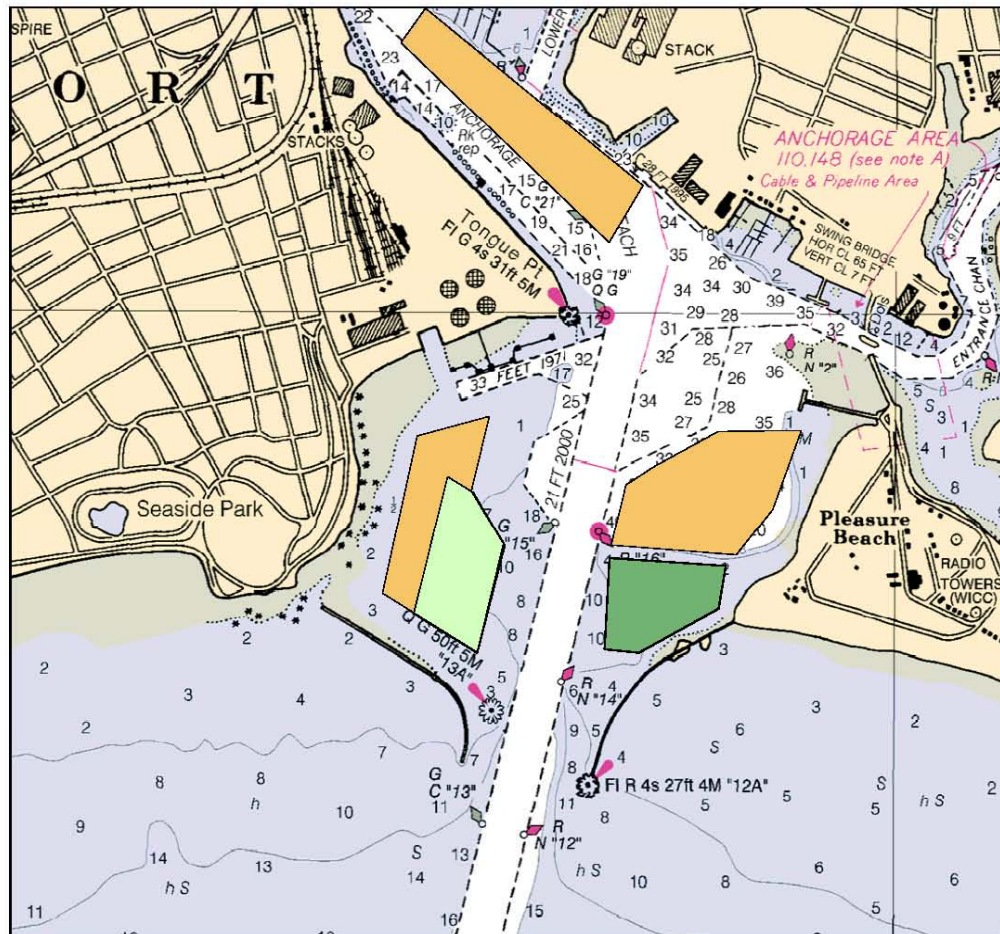
Site Locations



Suitable Material to Open Water Disposal at CLIS

The Central Long Island Sound Disposal Site (CLIS) is one of four regional dredged material disposal sites located in the waters of Long Island Sound. CLIS covers a 3.2 nmi² area. Historically, CLIS has been one of the most active disposal sites in the New England region. Since 1980, 8.3 million cubic yards of dredged material have been disposed of at the site.

Bridgeport Harbor CAD Cells



Bridgeport Harbor Dredged Material Management Plan

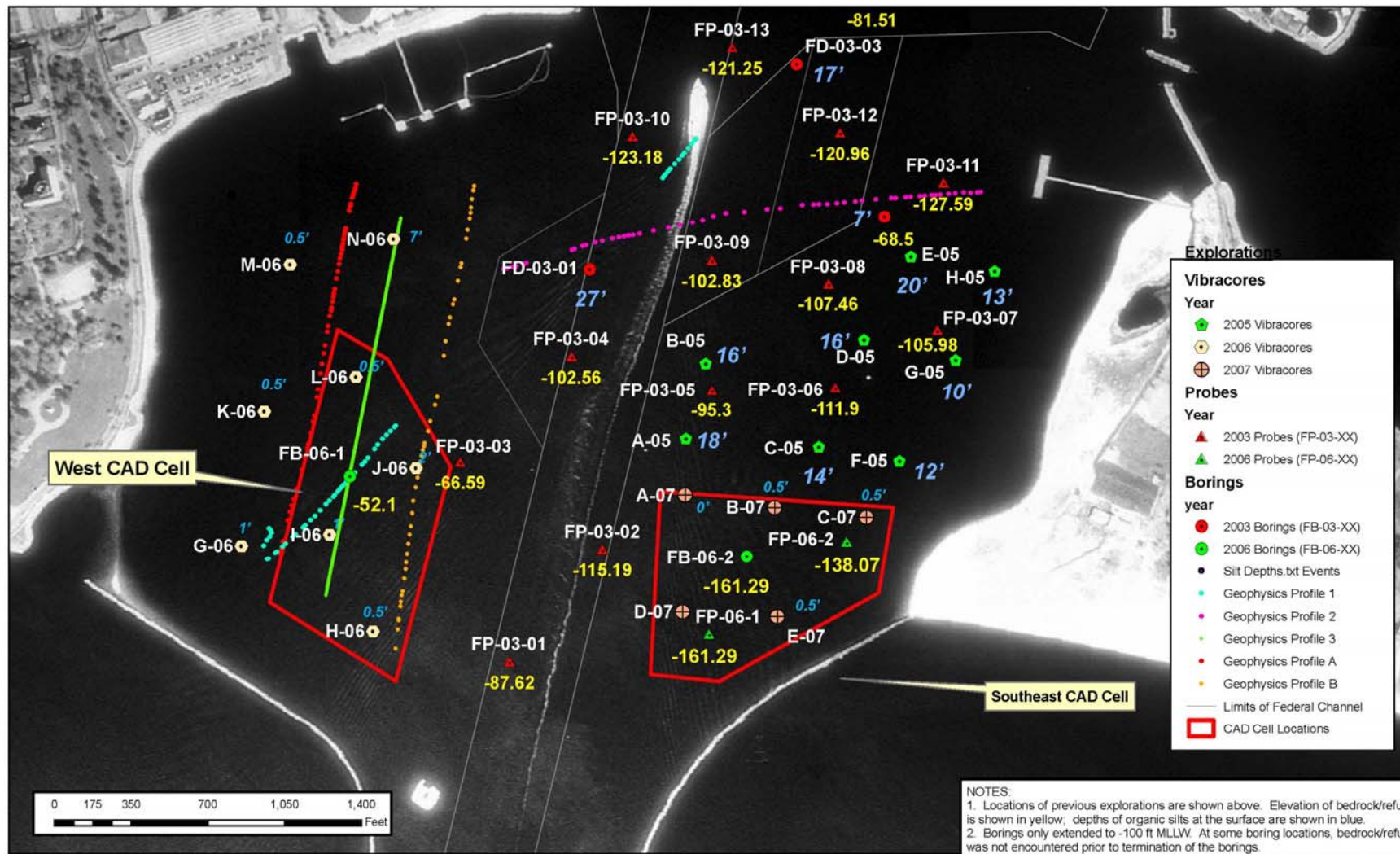
Location of CAD Cells

Legend

- West CAD Cell
- SE CAD Cell
- Other CAD cell sites investigated



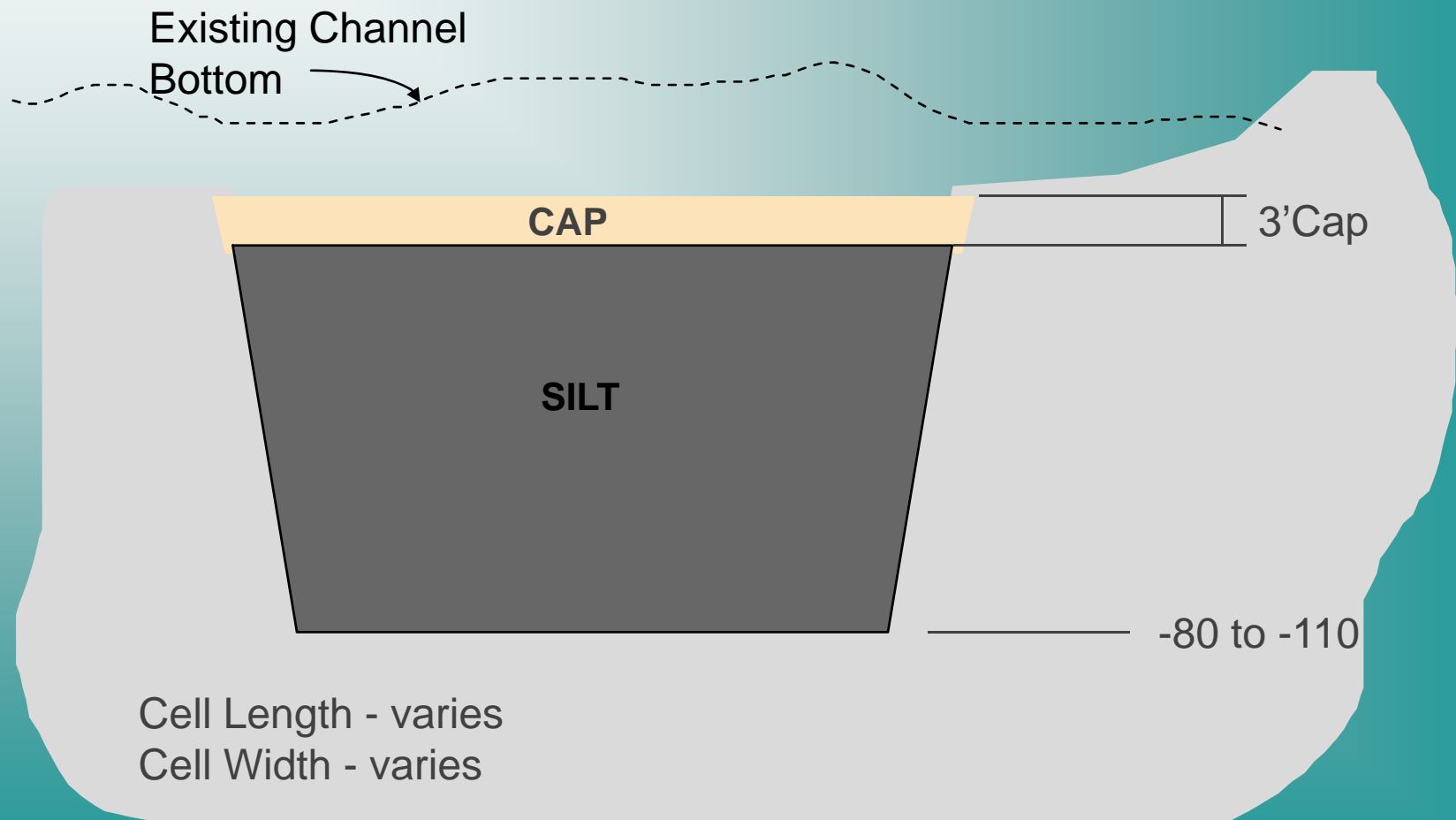
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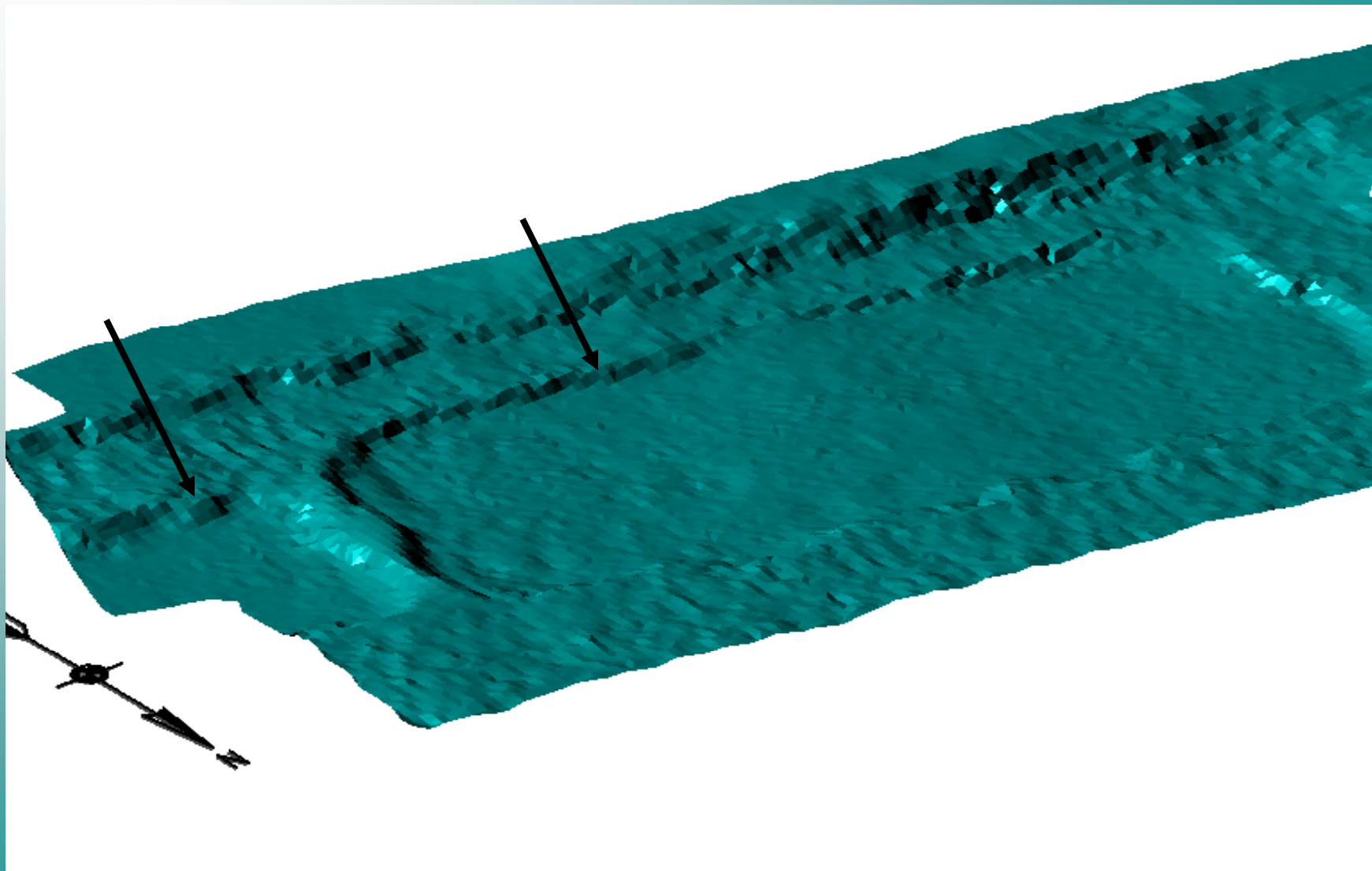


Bridgeport Harbor CT
Locations of Explorations

5 May 2008

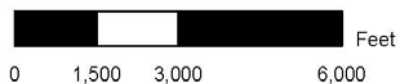
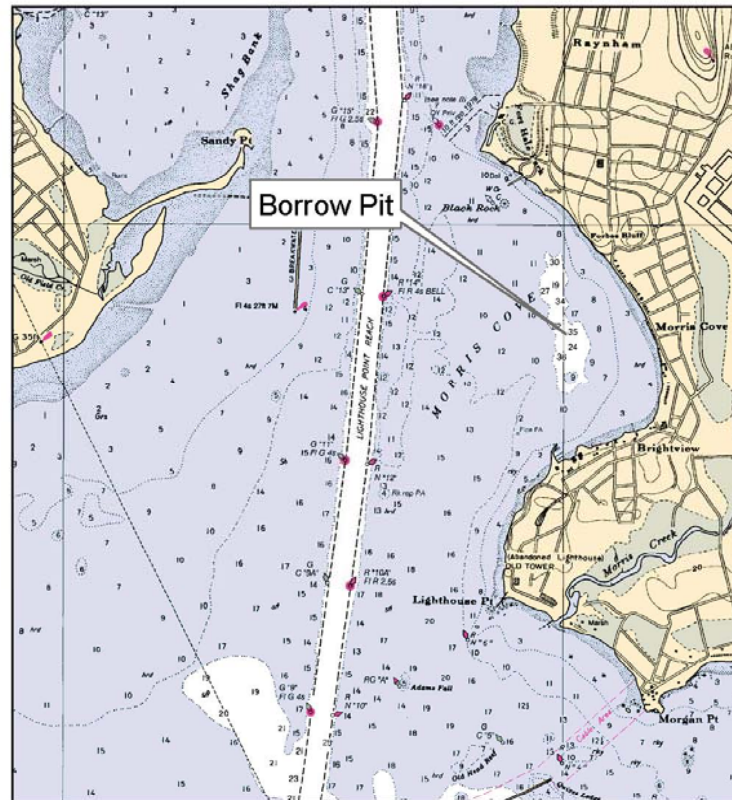
Typical CAD Cell





Morris Cove Borrow Pit

Scows to be
light loaded
and use the
tide to navigate
to placement
site instead of
dredging an
access
channel



Morris Cove Borrow Pit

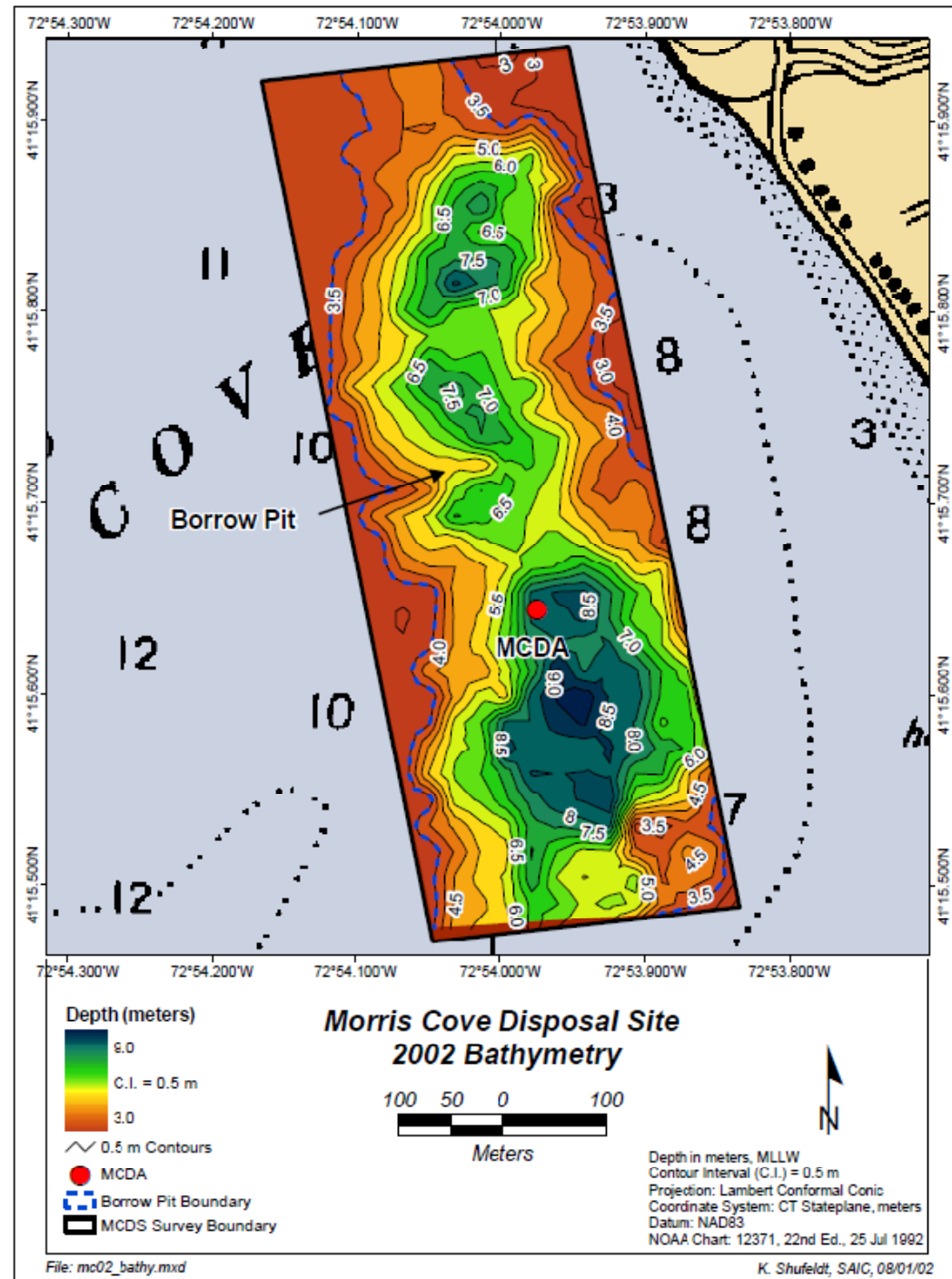
Bridgeport Harbor
Dredged Material Management
Plan



Borrow Pit

Gravel Mining for I-95
created Pit

Coast Guard
deposited dredged
material in pit in Jan
& May 2000 (18,600
cubic yards)



Plan A and B

Plan A

- Place Dredged Material in Morris Cove Pit
- Place Dredged Material in Southeast CAD Cell
- Place Material at Central Long Island Disposal Site

Plan B

- Place Dredged Material in West CAD Cell
- Place Dredged Material in Southeast CAD Cell
- Place Material at Central Long Island Disposal Site

Plan A - Dredging and Disposal	Cubic Yards
General Navigation Features >20-Foot Design Depth - Suitable	
Suitable Material from Outer Entrance Channel for CAP of SE CAD	73,200
Suitable Material from Outer Entrance Channel for CAP Morris Cove	150,000
Suitable Material from Outer Entrance Channel to CLIS	442,400
General Navigation Features >20-Foot Design Depth - Unsuitable	
Unsuitable Material from Inner 35-Foot Main Channel to Morris Cove	196,200
Unsuitable Material from Inner 35-Foot Main Channel to SE CAD Cell	390,800
Unsuitable Material from 35-Foot Turning Basin to SE CAD Cell	120,000
Unsuitable Material from 35-Foot East Anchorage to SE CAD Cell	72,000
Unsuitable Material from 25-Foot Anchorage to SE CAD Cell	26,300
General Navigation Features ≤20-Foot Design Depth - Unsuitable	
Unsuitable Material from 18-Foot Yellow Mill Creek to SE CAD Cell	126,900
Unsuitable Material from 18-Foot Pequonnock River to SE CAD Cell	164,700
Unsuitable Material from 18-Foot Barge Anchorage to SE CAD Cell	11,100
Unsuitable Material from 18-Foot West Anchorage to SE CAD Cell	200
Subtotal - General Navigation Features	1,773,800
Disposal Features	
Strip Unsuitable Material (top 2') from SE CAD cell to Morris Cove	53,800
Suitable Sand Material from Southeast CAD Cell to CLIS	400,000
Suitable Non-Sand Material from Southeast CAD Cell to CLIS	751,300
Subtotal - Disposal Features (cy does not include 1200 cy boulders/debris)	1,205,100
Total- GNF Plus Disposal Features	2,978,900

Plan B - Dredging and Disposal	Cubic Yards
General Navigation Features >20-Foot Design Depth - Suitable	
Suitable Material from Outer Entrance Channel for 3-Foot Cap of SE CAD	73,200
Suitable Material from Outer Entrance Channel for 3-Foot Cap of West CAD	94,800
Suitable Material from Outer Entrance Channel to CLIS	497,600
General Navigation Features >20-Foot Design Depth - Unsuitable	
Unsuitable Material from Inner 35-Foot Main Channel to SE CAD Cell	587,000
Unsuitable Material from 35-Foot Turning Basin to SE CAD Cell	120,000
Unsuitable Material from 35-Foot East Anchorage to SE CAD Cell	72,000
Unsuitable Material from 25-Foot Anchorage to SE CAD Cell	26,300
General Navigation Features ≤20-Foot Design Depth - Unsuitable	
Unsuitable Material from 18-Foot Yellow Mill Creek to West CAD Cell	126,900
Unsuitable Material from 18-Foot Pequonnock River to West CAD Cell	164,700
Unsuitable Material from 18-Foot Barge Anchorage to West CAD Cell	11,100
Unsuitable Material from 18-Foot West Anchorage to West CAD Cell	200
Subtotal - General Navigation Features	1,773,800
Disposal Features	
Strip Unsuitable Material (top 2') from West CAD Starter Cell to Scows	22,000
Suitable Material from West CAD Starter Cell to CLIS	131,800
Strip Unsuitable Material (top 2') from SE CAD to West CAD Starter Cell	53,800
Suitable Sand Material from Southeast CAD Cell to CLIS	400,000
Suitable Non-Sand Material from Southeast CAD Cell to CLIS	751,300
Strip Unsuitable Material (top 2') from Southern West CAD Cell to SE CAD	45,500
Suitable Material from Southern West CAD Starter Cell to CLIS	401,600
Subtotal - Disposal Features	1,806,000
Total - GNF Plus Disposal Features	3,579,800

Project Cost Sharing

- Maintenance Dredging of Channel
 - 100% Federal Cost
- Development of CAD Cells – Cost Shared
 - 75% Federal Cost
 - 25% non-Federal Cost
- Additional non-Federal contribution equal to 10% Cost of CAD Cells

Plan A Cost (SE CAD Cell, Morris Cove & CLIS)

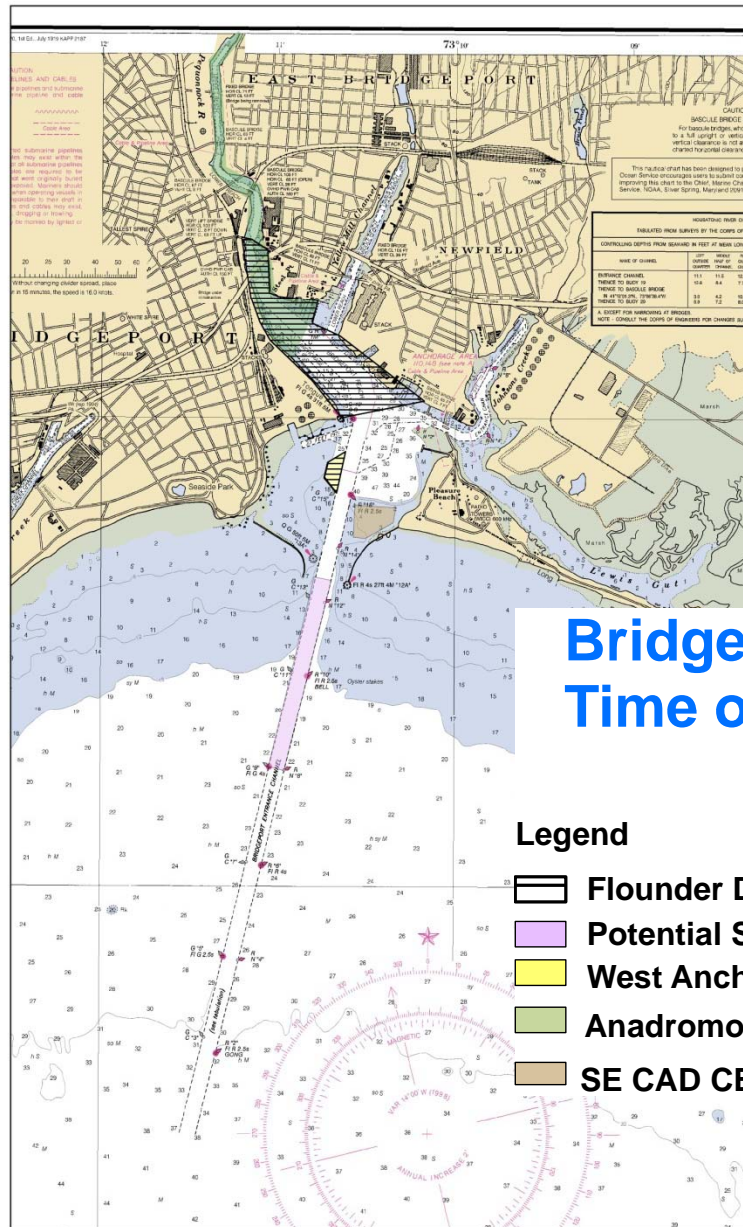
<u>Plan A</u>	<u>Cost (\$)</u>	<u>NF Cost (\$)</u>	<u>Fed Cost(\$)</u>
Mob and Demob	806,000	74,000	732,000
Channel Dredging	18,971,000	0	18,971,000
CAD Cells	13,995,000	3,040,000	10,955,000
Subtotal	33,772,000	3,114,000	30,658,000
Contingencies	6,754,000	623,000	6,131,000
Subtotal with Contingencies	40,526,000	3,737,000	36,789,000
PED	659,000	29,000	630,000
Construction S&A	865,000	38,000	827,000
Subtotal	42,050,000	3,804,000	38,246,000
Post-Construction NFCost	1,785,000	1,785,000	
Total	43,835,000	5,589,000	38,246,000

Plan B Cost (West CAD Cell, SE CAD Cell & CLIS)

<u>Plan B</u>	<u>Cost (\$)</u>	<u>NF Cost (\$)</u>	<u>Fed Cost(\$)</u>
Mob and Demob	806,000	94,000	712,000
Channel Dredging	16,891,000	0	16,891,000
CAD Cells	22,206,000	4,579,000	17,627,000
Subtotal	39,903,000	4,673,000	35,230,000
Contingencies	7,981,000	935,000	7,046,000
Subtotal with Contingencies	47,884,000	5,608,000	42,276,000
PED	844,000	59,000	785,000
Construction S&A	943,000	66,000	877,000
Subtotal	49,671,000	5,733,000	43,938,000
Post-Construction NFCost	2,821,000	2,821,000	
Total	52,492,000	8,554,000	43,938,000

Measures to Minimize Env. Impacts

- Dredging windows have been incorporated
- Closed environmental bucket will be used to minimize turbidity
- No overflow from the scows will be allowed during the dredging of the unsuitable material
- Material placed in the CAD cell(s) and Morris Cove borrow pit will be capped with suitable material



Bridgeport Harbor Time of Year Dredging Restriction Areas

Recommended Plan

The recommended plan consists of:

- development of and placement of material in a Southeast CAD cell in Bridgeport Harbor
- the placement of material in the Morris Cove borrow pit
- the placement of material at the EPA designated CLIS disposal site

In making this recommendation consideration has been given to environmental acceptability, economic justification, and engineering feasibility

The recommended plan manages both suitable and unsuitable materials in the least costly, environmentally acceptable manner

The plan also recommends that during the design phase additional explorations be conducted to determine if gravel/sand excavated from portions of the Southeast CAD cell can be used in a beneficial manner such as shore protection