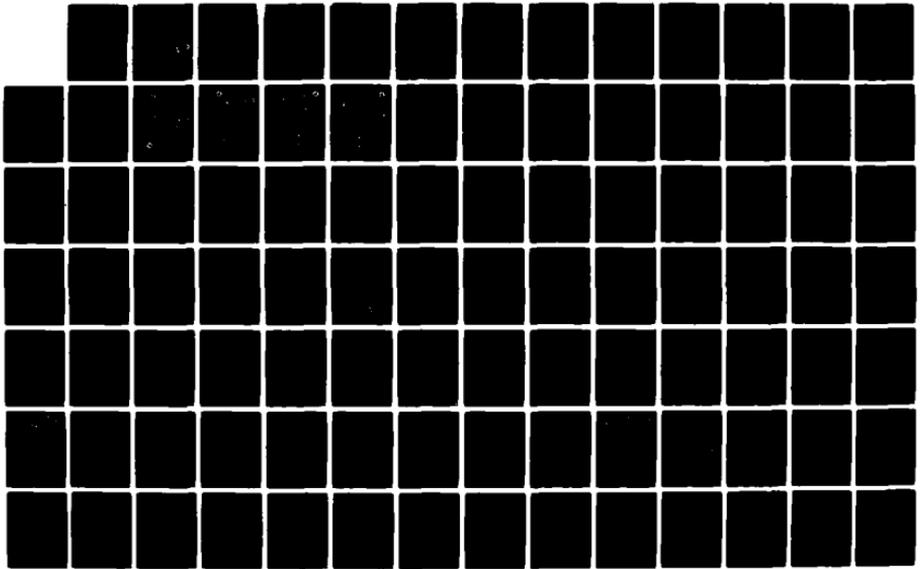
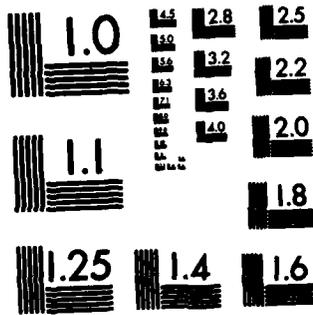


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DREDGED MATERIAL CONTAINMENT IN LONG ISLAND SOUND (WITH 1/2  
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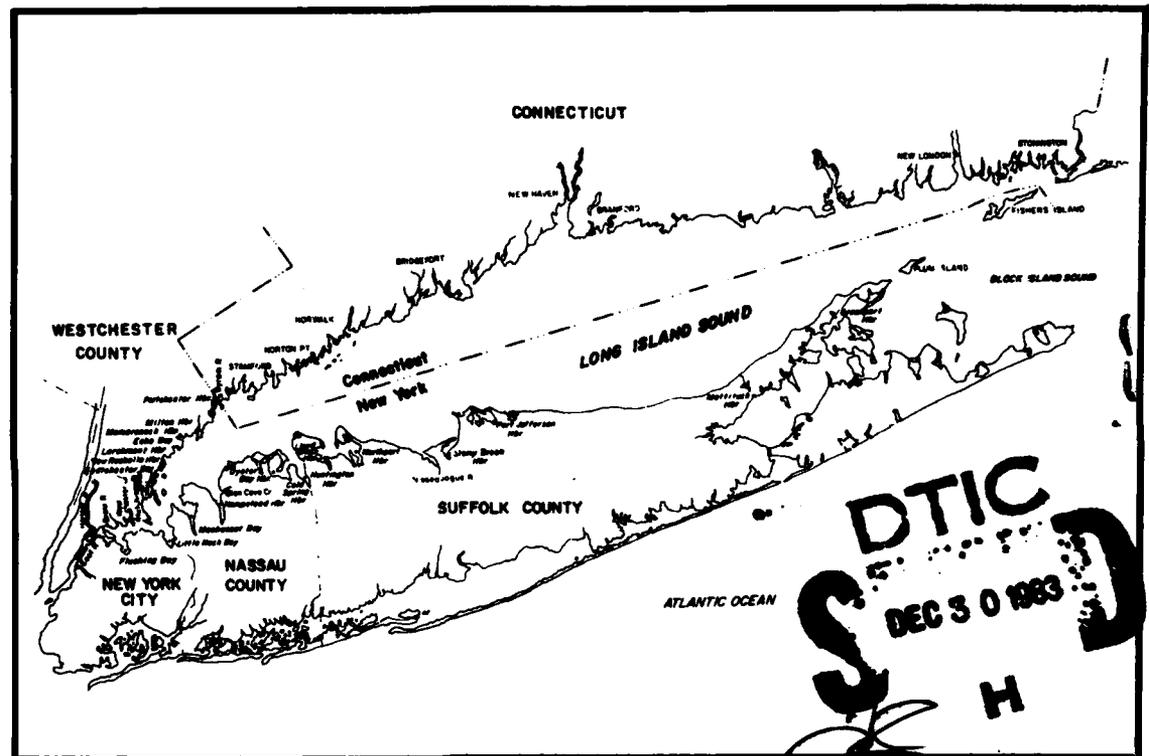
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# Addendum To Interim Report

## Dredged Material Containment in Long Island Sound

(With Special Emphasis on Eastern New York Waters)

AL A 122969



U.S. ARMY CORPS OF ENGINEERS

NEW ENGLAND DIVISION

424 TRAPELO ROAD

WALTHAM, MASSACHUSETTS 02154

MARCH, 1981

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## Preface and Acknowledgements

This is an addendum to the previously completed Interim Report of a Stage 2 study to prepare an overview assessment of the feasibility of containment of material dredged from Connecticut and New York Harbors along Long Island Sound. Specifically, an extension of the preliminary siting analysis has been made to include 121 more shoreline and near shore sites.

The study was performed under contract by Tetra Tech, Inc., Melville, New York. The contract was directed by James Pagenkopf, principal investigator, who was assisted by Gary Bigham, Henry Fong, Steve Giannino, Jack Olsen, James LaMorte, and John Segna.

The study was conducted under the supervision of Dick Quinn, Planning Division/River Basins Branch, New England Division of the Corps of Engineers.

ADDENDUM TO INTERIM REPORT:  
DREDGED MATERIAL CONTAINMENT IN LONG ISLAND SOUND  
EXTENSION OF SITING ANALYSIS

INTRODUCTION

1.01 This is an addendum to the Interim Report previously completed in July, 1980 as part of the New England Division Corps of Engineers' Stage 2 planning efforts to develop a plan of study for dredged material (DM) containment in Long Island Sound (LIS). The Interim Report included an analysis of historical and projected dredging in Connecticut and New York, a review of dredged material characteristics, a discussion of containment engineering and environmental impact concepts, and the description and preliminary application of a siting methodology to assess the feasibility of publicly owned shorefront land for the creation of small-volume containment facilities.

1.02 As presented in the Interim Report, the total projected dredging for Connecticut over the 50-year period 1985 - 2035 is estimated at 58,900 cubic yards, of which 38,800 CY would result from Federal projects and 20,200 CY from non-Federal projects. In comparison, the projected range of dredging for New York over the same period is estimated at 15,300 - 48,300 CY, of which 4,200 - 17,200 would result from Federal projects and 11,100 - 31,000 from non-Federal projects. Of the 15,300 - 48,300 CY projected for New York, over fifty percent of this volume will originate in the New York City area. A complete breakdown and explanation of these figures is given in the Interim Report.

1.03 Available data on the characteristics of DM in Connecticut and New York Harbors bordering LIS are very limited, but indicate high variability in concentrations of heavy metals and organics. On the

average, concentrations of the above constituents tend to be considerably greater in sediments sampled in Connecticut harbors than in those from New York harbors. Data reviewed on physical characteristics of DM indicate that sediments in Connecticut harbors are predominantly fine-grained sands and organic silts. Data collected in harbor sediments along the north shore of Long Island indicate, on the average, a progressive increase in the percentage of coarser material in sediments sampled from western to eastern Long Island. This supports the finding that a significant portion of material historically dredged in Suffolk County has been disposed of as beach nourishment material.

1.04 A total of 133 public shorefront potential containment sites and existing DM disposal sites along the coast of LIS in New York and Connecticut were examined in the Interim Report. These areas consisted mainly of parks, beaches, transportation corridors, and military and institutional sites. Of the 133 initial sites, only 23 survived the initial screening analysis, which included consideration of the proximity of the site to significant ecological areas, public bathing beaches, high wave energy, and land use incompatibility. The remaining 23 sites were examined on the basis of more site-specific criteria and data, and were ranked in relative order of desirability, independently for New York and Connecticut sites. Of these sites, 4 in New York and 3 in Connecticut were dropped due to lack of sufficient surface area for a containment facility. Most of the highest ranking New York sites are located in a tight cluster at the extreme western end of LIS. An additional cluster of three sites is located in Hempstead Harbor in Nassau County. In Connecticut, two of the three remaining sites are located in New Haven Harbor, and a third in New London. Figure 1 shows the locations of the public sites surviving the preliminary screening analysis.

1.05 Overall, shorefront public and existing disposal sites appear to have relatively limited possibilities for shoreline exten-



sion containment sites. Most of these sites are simply not compatible due to land use limitations, surface area availability, and proximity to important ecological areas. Because of these limitations, the Interim Report recommended expansion of the siting analysis to include consideration of privately owned shorefront, especially industrial or water-related commercial areas. In this report, the New England Division, Corps of Engineers requested the analysis of four additional site groupings. These include eighteen Shallow Water Areas, 31 Municipal Waste Water Treatment Facilities, 14 Power Generating Sites, and 21 Corps Navigation Projects with Jetties or Breakwaters. Three additional site groupings were recommended for analysis and include 11 Industrial Wastewater Discharges, 20 Petroleum Facilities, and 4 Sand and Gravel Pits. This addendum to the Interim Report addresses the analysis of the above additional sites.

#### ANALYSIS OF ADDITIONAL SITES

1.06 Recapping from the Interim Report, the siting methodology for assessing shoreline sites consists of the following 4 steps:

- 1) Identify and rank primary screening criteria for selecting alternative sites (site screening maps).
- 2) Apply the criteria to LIS to obtain specific site alternatives.
- 3) Preliminarily rank the alternative sites in relative order of desirability (secondary screening).
- 4) Investigate the use of sites individually or in combinations to determine the potential of using more than one site.

1.07 The purpose of Steps 1 and 2 is to eliminate from further consideration coastal areas of LIS clearly not feasible for containment siting opportunities. Step 3 applies additional, more specific criteria to areas surviving Steps 1 and 2, and categorizes them in preliminary order of desirability. Step 4 takes the alternative sites, having been carefully screened and ranked, and formulates

preliminary designs of projects considering site-specific issues, construction feasibility, operational logistics and other factors. This step constitutes the beginning of conventional project planning and design, and is recommended for inclusion in Stage 2 final planning.

1.08 The remainder of the Addendum Report focuses on the application of the first three siting steps to approximately 121 additional shoreline sites in LIS.

#### Step 1 - Identify and Rank Primary Screening Criteria

1.09 Several primary screening criteria pertaining to the selection of alternative containment sites were identified in the Interim Report, and are restated as follows:

- (1) Bathymetry/Available Containment Volume
- (2) Shoreline Ownership and Existing Disposal Sites
- (3) Significant Ecological Areas
- (4) Major Public Beaches
- (5) Wave Energy
- (6) Land Use Compatibility/Reuse Potential

The above criteria were used to screen the 133 public sites and historical DM disposal sites evaluated in the Interim Report. As stated in the Interim Report, sites that would have failed any of the above criteria can be preserved for further, more detailed analysis under Step 3 (Secondary Screening). This is so because the above criteria are considered again in ranking the sites in order of desirability. For purposes of this Addendum Report, only Criterion #1 (bathymetry) and Criterion #4 (major public beaches) are used to eliminate the additional sites from the secondary screening process. This is to allow an analysis of the sensitivity

of the secondary criteria point ranking system by including sites which have a wide range in acceptability value. This concept will be more fully discussed under the section on weighting factor sensitivity. Sites failing from the standpoint of insufficient surface area or excess depths (Criteria #1), or due to the existence of a major public bathing beach (Criteria #4) are judged to have the least potential for hosting a dredged material containment facility.

1.10 As in the Interim Report, base maps were prepared which locate the sites under consideration. Figure 2 acts as a guide for the orientation of subsequently more detailed maps. Figure 3 shows the locations of the 121 additional sites to be evaluated, consisting of the following categories:

1. Shallow Water Areas (18 sites)
2. Municipal Waste Water Treatment Facilities (31 sites)
3. Power Generating Stations (14 sites)
4. Corps Navigation Projects (23 sites)
5. Industrial Wastewater Discharges (11 sites)
6. Petroleum Facilities (20 sites)
7. Sand and Gravel Pits (4 sites)

Table 1 summarizes information on the above site categories.

#### Step 2 - Primary Screening Analysis

1.11 The purpose of this second step is to systematically eliminate from further consideration potential containment sites clearly not feasible based on the criteria outlined in Step 1. Since only bathymetry/surface area and public beach limitations are considered, the use of map overlays as in the Interim Report was not necessary. Rather, each site was examined specifically to determine the approximate available surface area and containment volume and proximity to public beaches.

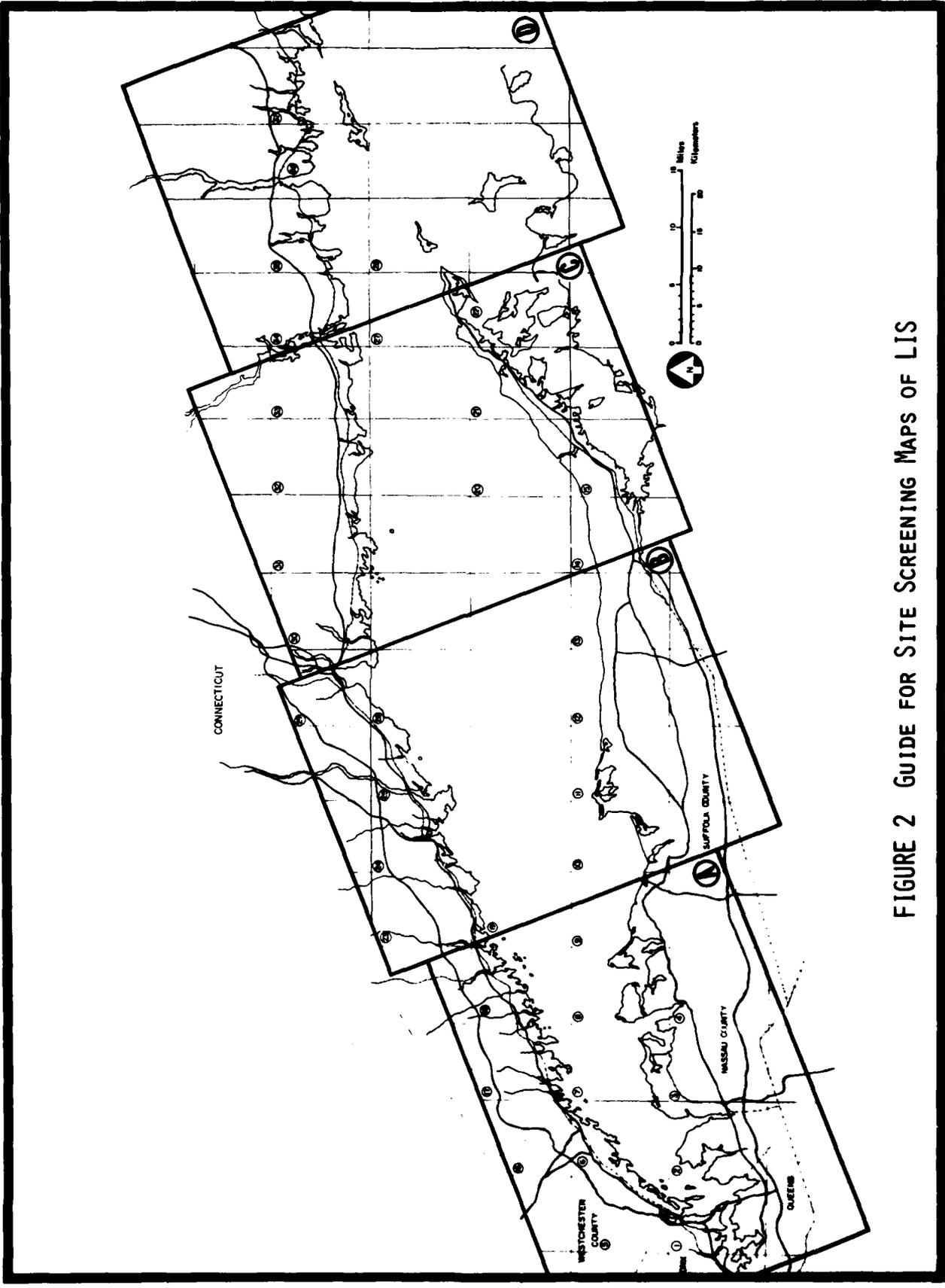


FIGURE 2 GUIDE FOR SITE SCREENING MAPS OF LIS

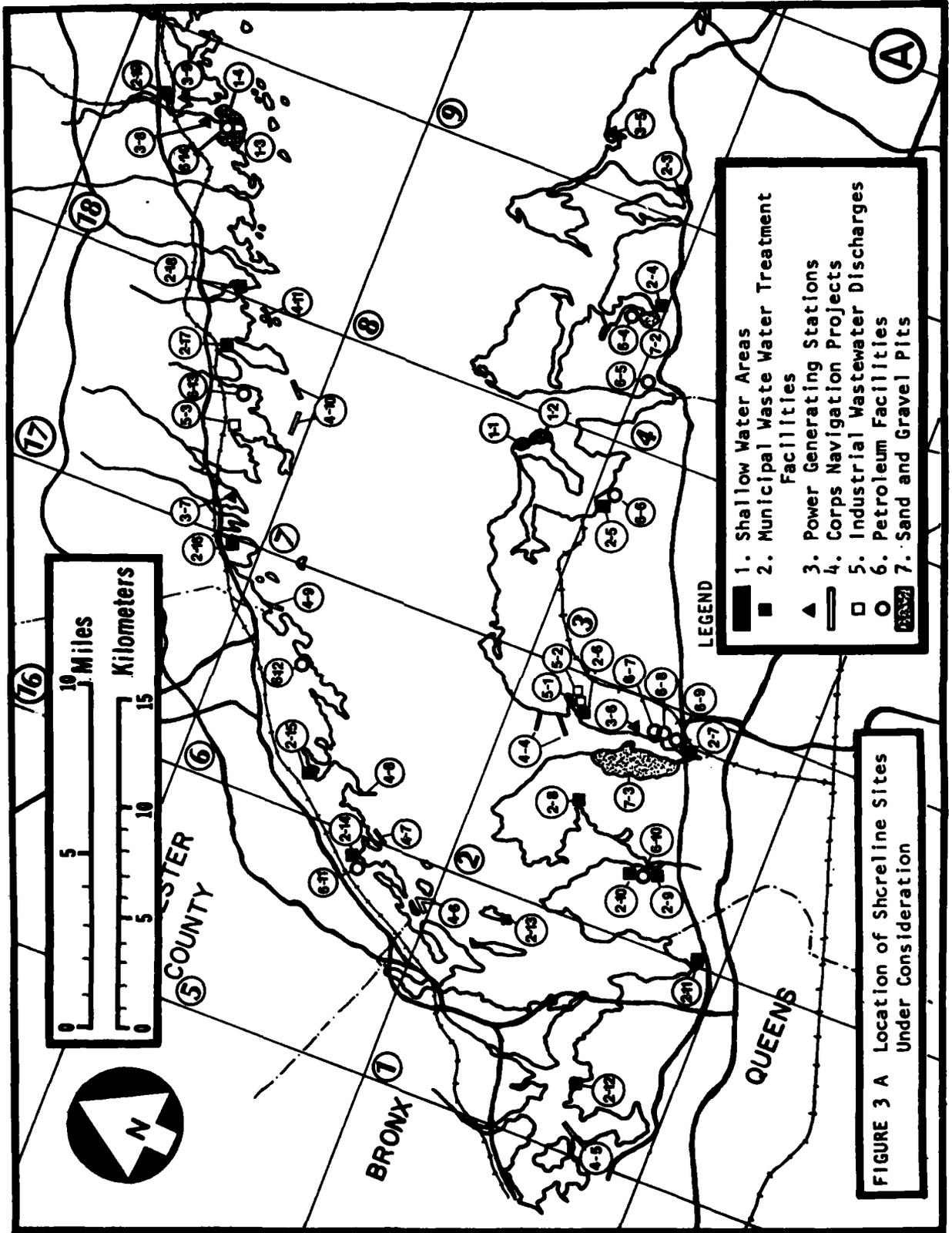
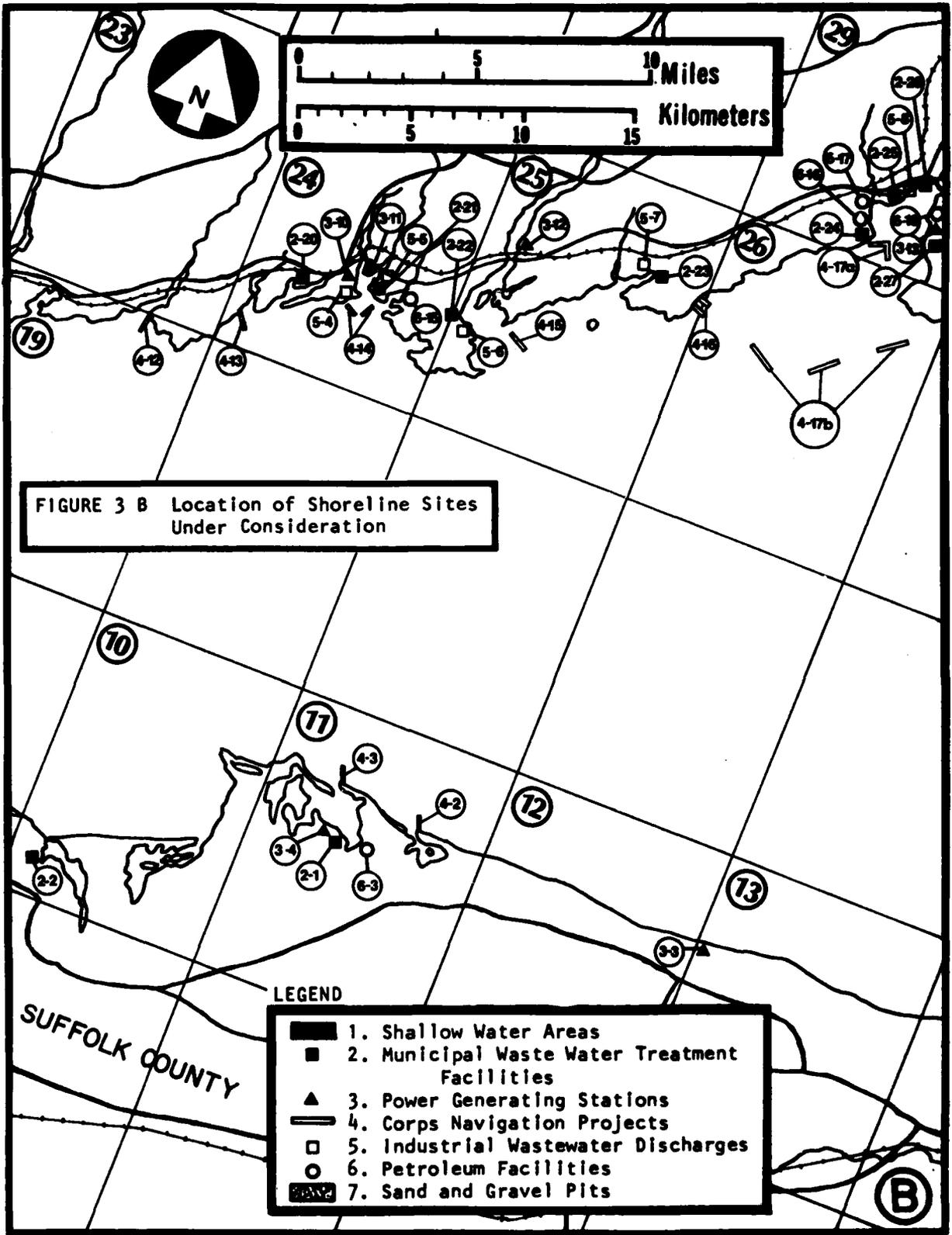
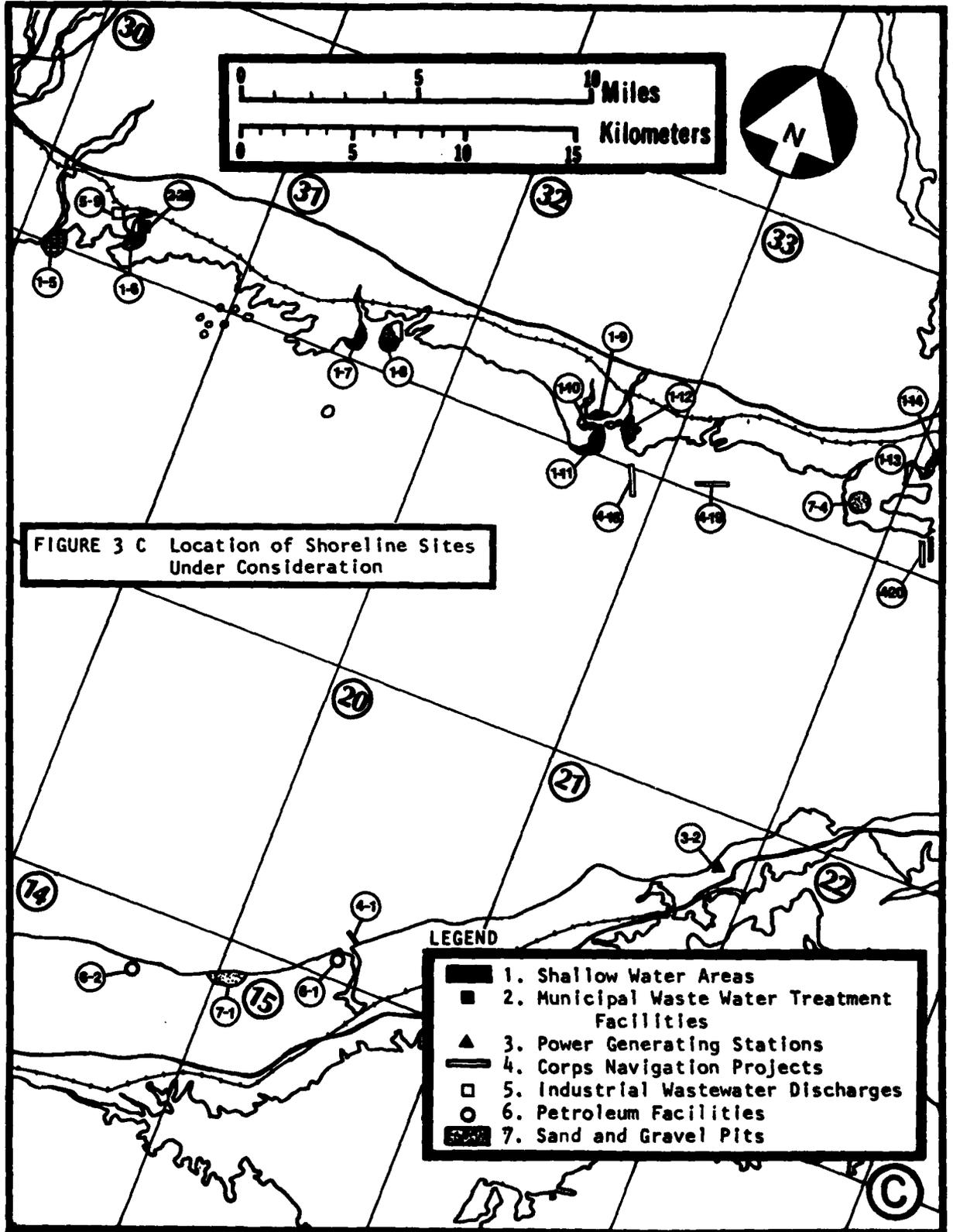


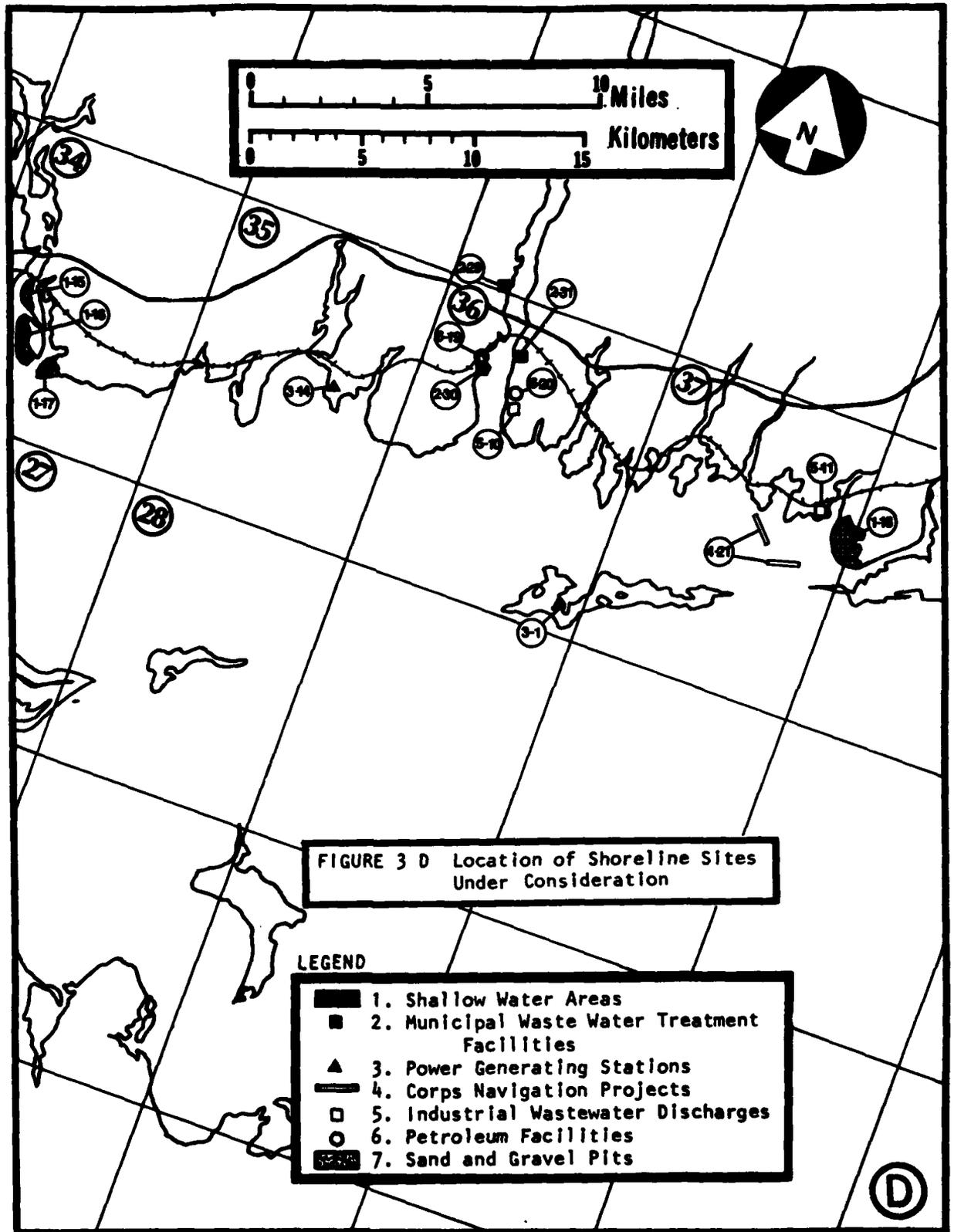
FIGURE 3 A Location of Shoreline Sites Under Consideration



**FIGURE 3 B** Location of Shoreline Sites Under Consideration

- LEGEND**
- 1. Shallow Water Areas
  - 2. Municipal Waste Water Treatment Facilities
  - 3. Power Generating Stations
  - 4. Corps Navigation Projects
  - 5. Industrial Wastewater Discharges
  - 6. Petroleum Facilities
  - 7. Sand and Gravel Pits





**TABLE 1**  
**SITE INFORMATION BY CATEGORY**

**I. Shallow Water Areas**

<u>Name of Site</u>	<u>Site No.</u>	<u>Quadrangle Location</u>	<u>Quad. No.</u>
Centre Island (North)	1-1	Bayville, NY-CT	7
Centre Island (East)	1-2	Bayville, NY-CT	7
Hoyt Island	1-3	Norwalk South, CT	18
Harborview	1-4	Norwalk South, CT	18
Kelsey Island	1-5	Bramford, CT	30
Indian Neck	1-6	Bramford, CT	30
Guilford Harbor, West	1-7	Guilford, CT	31
Guilford Harbor, East	1-8	Guilford, CT	31
Hammonasset River Tidal Flats	1-9	Clinton, CT	32
Cedar Island Flats	1-10	Clinton, CT	32
Clinton Harbor, West	1-11	Clinton, CT	32
Clinton Harbor, East	1-12	Clinton, CT	32
Rock Creek, South	1-13	Old Lyme, CT	34
Rock Creek, North	1-14	Old Lyme, CT	34
Lyme Station Tidal Flats	1-15	Old Lyme, CT	34
Great Island	1-16	Old Lyme, CT	34
Griswold Point	1-17	Old Lyme, CT	34
Barn Island Hunting Area	1-18	Mystic, CT & Watch Hill, RI-CT	38

**II. Municipal Waste Water Treatment Facilities**

<u>Name of Facility</u>	<u>Site No.</u>	<u>Quadrangle Location</u>	<u>Quad. No.</u>
Port Jefferson	2-1	Port Jefferson, NY	11
San Remo	2-2	Saint James, NY	10
Northport	2-3	Northport, NY	9
Huntington	2-4	Lloyd Harbor, NY	8
Oyster Bay	2-5	Bayville, NY	7
Glen Cove	2-6	Sea Cliff, NY	2
Roslyn	2-7	Sea Cliff, NY	2
Port Washington	2-8	Sea Cliff, NY	2
Great Neck	2-9	Sea Cliff, NY	2
Great Neck (V)	2-10	Sea Cliff, NY	2
Little Neck	2-11	Sea Cliff, NY	2
Tailman Island	2-12	Flushing, NY	1
City - Hart Island	2-13	Flushing, NY	1
New Rochelle	2-14	Mount Vernon, NY	5
Hamaroneck	2-15	Hamaroneck, NY	6
Greenwich	2-16	Glenville, CT-NY	16
Stamford	2-17	Stamford, CT	17
Darien	2-18	Norwalk South, CT	18
Norwalk	2-19	Norwalk South, CT	18
Bridgeport-West Side	2-20	Bridgeport, CT	24
Bridgeport-East Side	2-21	Bridgeport, CT	24
Stratford	2-22	Bridgeport, CT	24
Milford-Gulf Pond	2-23	Milford, CT	25
West Haven	2-24	New Haven, CT	29
New Haven-Blvd.	2-25	New Haven, CT	29
New Haven-East St.	2-26	New Haven, CT	29
New Haven-East Side	2-27	New Haven, CT	29
Branford	2-28	Branford, CT	30
New London-Riverside Plant	2-29	Uncasville, CT	above 36
New London-Trumbull St.	2-30	New London, CT	36
City of Groton	2-31	New London, CT	36

TABLE 1 (Cont.)  
SITE INFORMATION BY CATEGORY

III. Power Generating Stations

<u>Plant</u>	<u>Ownership</u>	<u>Site No.</u>	<u>Quad. Location</u>	<u>Quad. No.</u>
Fisher Island	Fisher Island El.	3-1	New London, CT	36
Southold	Long Island Lt.	3-2	Southold, NY	21
Shoreham	Long Island Lt.	3-3	Mading River, NY	13
Port Jefferson	Long Island Lt.	3-4	Port Jefferson, NY	11
Northport	Long Island Lt.	3-5	Northport, NY	9
Glenwood	Long Island Lt.	3-6	Sea Cliff, NY	2
Cos Cob	Ct. L & P	3-7	Stamford, CT	17
South Norwalk	South Norwalk Mun.	3-8	Norwalk South, CT	18
Norwalk Harbor	Ct. L & P	3-9	Norwalk South, CT	18
Bridgeport Harbor	United Illum	3-10	Bridgeport, CT	24
Steel Point	United Illum	3-11	Bridgeport, CT	24
Devon	Ct. L & P	3-12	Milford, CT	25
English	United Illum	3-13	New Haven, CT	29
Millstone	Millstone Peint Co.	3-14	Niantic, CT	35

IV. Corps Navigation Projects with Jetties or Breakwaters

<u>Name of Harbor</u>		<u>Site No.</u>	<u>Quad. Location</u>	<u>Quad. No.</u>
Mattituck Harbor	Jetties	4-1	Mattituck Hills, NY	20
Mt. Sinai Harbor	Jetties	4-2	Port Jefferson, NY	11
Port Jefferson Harbor	Jetties	4-3	Port Jefferson, NY	11
Hempstead Harbor	Breakwaters	4-4 a,b	Sea Cliff, NY	2
Flushing Bay & Creek	Dike	4-5	Flushing, NY	1
New Rochelle Harbor	Breakwaters	4-6	Mt. Vernon, NY	5
Echo Bay	Breakwaters	4-7	Mt. Vernon, NY	5
Larchmont Harbor	Breakwaters	4-8	Mamaroneck, NY	6
Port Chester Harbor	Breakwaters	4-9	Mamaroneck, NY	6
Stamford Harbor	Breakwaters	4-10	Stamford, CT	17
Cove Island, Stamford	Jetty	4-11	Stamford, CT	17
Southport Harbor	Breakwaters	4-12	Westport, CT	23
Black Rock Harbor, Bridgeport	Breakwaters	4-13	Bridgeport, CT	24
Bridgeport Harbor	Breakwaters	4-14	Bridgeport, CT	24
Housatonic River, Stratford	Breakwaters	4-15	Milford, CT	25
Woodmont Shore, Milford	Groins	4-16	Woodmont, CT	26
New Haven Harbor	Breakwaters	4-17 a,b	New Haven, CT	26
Clinton Harbor	Breakwaters	4-18	Clinton, CT	32
Duck Island Harbor	Breakwaters	4-19	Essex, CT	33
Conn. River, Saybrook	Jetty	4-20	Old Lyme, CT	34
Stonington Harbor	Breakwaters	4-21	Mystic, CT	37

V. Industrial Wastewater Discharges

<u>Discharger/Industry</u>	<u>Site No.</u>	<u>Quadrangle Location</u>	<u>Quad. No.</u>
Long Island Tungsten - Metal	5-1	Sea Cliff, NY	2
Powers Chemco Inc. - Organic Chemicals	5-2	Sea Cliff, NY	2
Electrolux - Metal Services	5-3	Stamford, CT	17
Remington Electric - Metal Plating	5-4	Bridgeport, CT	24
Carpenter Technology Co. - Steel Mill	5-5	Bridgeport, CT	24
Avco: Lycoming	5-6	Bridgeport/Milford, CT	24/25
Schick Safety Razor - Metal Plating	5-7	Milford, CT	25
Sargent & Co. - Metal Services	5-8	New Haven, CT	29
Atlantic Wire Co. - Steel & Wire	5-9	Branford, CT	30
Pfizer Co. - Chemical	5-10	New London, CT	36
American Velvet Co. - Textiles	5-11	Mystic, CT	37

**TABLE 1 (Cont.)**  
**SITE INFORMATION BY CATEGORY**

**VI. Petroleum Facilities**

<u>Name of Facility</u>	<u>Site No.</u>	<u>Quadrangle Location</u>	<u>Quad. No.</u>
Northville Industries	6-1	Mattituck Hills, NY	20
Swezy Oil Co.	6-2	Riverhead, NY	14
Exxon	6-3	Port Jefferson, NY	11
Consolidated Petroleum Co.			
Mobil Oil Co.	6-4	Lloyd Harbor, NY	8
Northville Industries			
Huntington Utilities	6-5	Huntington, NY	4
Mobil Oil Co.	6-6	Bayville, NY	7
Commander Oil Co.	6-7	Sea Cliff, NY	2
Windsor Oil Co.	6-8	Sea Cliff, NY	2
Phillips Oil Co.	6-9	Sea Cliff, NY	2
Lewis Oil Co.			
Mobil Oil Co.	6-10	Sea Cliff, NY	2
Auto Heat			
Metropolitan Petroleum Co.	6-11	Mt. Vernon, NY	5
Universal Utilities Wharf			
Sinclair Refining Co.	6-12	Mamroneck, NY	6
Wells Fuel Wharf			
Sun Oil Co.	6-13	Stamford, CT	17
Mitchell Oil Co.			
Fleming Rutledge Oil Corp.	6-14	Norwalk South, CT	18
Hoffman Fuel Co.			
Metropolitan Petroleum Corp.	6-15	Bridgeport, CT	24
Penn. Petroleum Co.	6-16	New Haven, CT	29
Sun Oil Co.	6-17	New Haven, CT	29
Connecticut Refining Co.	6-18	New Haven, CT	29
Elm City Plant No. 3			
Atlantic Richfield	6-19	New London, CT	36
Exxon			
Getty Oil Co.	6-20	New London, CT	36
Gulf Oil Corp.			
New Haven Terminal	6-19	New London, CT	36
T.A.D. Jones & Co., Inc.			
City Coal Co.	6-20	New London, CT	36
Central Vermont Railroad			
Hess Oil Co.			

**VII. Sand and Gravel Pits**

<u>Name of Site</u>	<u>Site No.</u>	<u>Quadrangle Location</u>	<u>Quad. No.</u>
Jamesport - LILCO	7-1	Mattituck, NY	15
Huntington Harbor	7-2	Lloyd Harbor, NY	8
Colonial Sand & Stone, Penn Ind.	7-3	Sea Cliff, NY	2
Old Saybrook	7-4	Essex, CT	33

1.12 Table 2 presents results of the primary screening analysis for each site. Although proximity to significant ecological areas is not used to eliminate sites as was done in the Interim Report for public sites, the results of testing for this criterion are shown nevertheless to demonstrate the sensitivity of primary screening to this criterion. Table 3 summarizes the primary screening analysis for each site category. It is observed that almost half of the original 121 sites drop out due to the lack of adequate room for the construction of a containment facility. Most of these sites, especially waste water treatment plants, power plants, industrial waste discharges, and petroleum facilities, are located up inside small, congested harbors where a containment facility would interfere with navigation channels. On the other hand, few sites dropped out due to the presence of major public bathing beaches, which is contrary to that which occurred with the public sites examined in the Interim Report. The number of sites remaining for secondary screening are 62, with 43 in Connecticut, 5 in Westchester County, 4 in New York City, 5 in Nassau County, and 5 in Suffolk County.

### Step 3 - Secondary Screening Analysis

1.13 The purpose of Step 3 is to characterize the desirability of each site that survives Steps 1 and 2 of the screening process and to rank them accordingly. The ranking can include the criteria identified in Step 1 that were not applied because the criteria would have been too restrictive. An example is with ecological considerations, which was demonstrated in Table 3 to be a highly restrictive criterion in the primary screening process. It is of advantage to the planner to be able to evaluate as many potential sites as possible, especially where the complexity of the problem is great due to several opposing or conflicting criteria (e.g. ecological considerations vs. economic need for a disposal site).

TABLE 2

## APPLICATION OF PRIMARY SCREENING ANALYSIS

CATEGORY: I Shallow Water Areas

SITE			PRIMARY SCREENING ANALYSIS			
Name of Site	Sta. No.	Quad/Map	Bathy- metry*	Ecological Areas*	Public Beaches	Pass/Fail
Centre Island (North)	1-1	7 A	P	F	P	P
Centre Island (East)	1-2	7 A	P	F	P	P
Moyt Island	1-3	18 A	P	P	P	P
Harborview	1-4	18 A	P	P	P	P
Kelsey Island	1-5	30 C	P	F	P	P
Indian Neck	1-6	30 C	F	F	P	F
Guilford Harbor, West	1-7	31 C	P	F	P	P
Guilford Harbor, East	1-8	31 C	P	F	P	P
Hammonasset River Tidal Flats	1-9	32 C	P	F	F	F
Cedar Island Flats	1-10	32 C	P	F	F	F
Clinton Harbor, West	1-11	32 C	P	F	P	P
Clinton Harbor, East	1-12	32 C	P	F	P	P
Rock Creek, South	1-13	34 C/D	P	P	P	P
Rock Creek, North	1-14	34 C/D	P	P	P	P
Lyme Station Tidal Flats	1-15	34 C/D	F	F	F	F
Great Island	1-16	34 C/D	P	F	P	P
Griswold Point	1-17	34 C/D	P	F	P	P
Barn Island Hunting Area	1-18	38 D	P	F	P	P

\* Failures due to Lack of Adequate Available Surface Area

\* All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

TABLE 2 (Cont.)

APPLICATION OF PRIMARY SCREENING ANALYSIS

CATEGORY: II. Municipal Waste Water Treatment Facilities

SITE		PRIMARY SCREENING ANALYSIS				
Name of Site	Sta. No.	Quad/Map	Bathy- metry*	Ecological Areas†	Public Beaches	Pass/Fail
Port Jefferson	2-1	11 B	F	P	P	F
San Ramo	2-2	10 B	F		F P	F
Northport	2-3	9 A/B	F	P	P	F
Huntington	2-4	8 A	F	P	P	F
Oyster Bay	2-5	7 A	F		F P	F
Glen Cove	2-6	2 A	F	P	P	F
Roslyn	2-7	2 A	F	P	P	F
Port Washington	2-8	2 A	F		F F	F
Great Neck	2-9	2 A	F		F P	F
Great Neck (V)	2-10	2 A	F		F P	F
Little Neck	2-11	2 A	P		F P	P
Tallman Island	2-12	1 A	P	P	P	P
City - Hart Island	2-13	1 A	P	P	P	P
New Rochelle	2-14	5 A	P	P	P	P
Hamaroneck	2-15	6 A	F	P	P	F
Greenwich	2-16	16 A	P	P	P	P
Stamford	2-17	17 A	F	P	P	F
Darien	2-18	18 A	P	P	P	P
Norwalk	2-19	18 A	F	P	P	F
Bridgeport-West Side	2-20	24 B	P		F P	P
Bridgeport-East Side	2-21	24 B	F	P	P	F
Stratford	2-22	24 B	P		F P	P
Milford-Gulf Pond	2-23	25 B	F		F P	F
West Haven	2-24	29 B/C	P		F P	P
New Haven-Bld.	2-25	29 B/C	P	P	P	P
New Haven-East St.	2-26	29 B/C	P	P	P	P
New Haven-East Side	2-27	29 B/C	P	P	P	P
Branford	2-28	30 C	F		F P	F
New London-Riverside Plant	2-29	above 36 D	P	P	P	P
New London-Trumbull St.	2-30	36 D	P		F P	P
City of Groton	2-31	36 D	F		F P	F

\* Failures due to Lack of Adequate Available Surface Area

† All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

TABLE 2 (Cont.)  
APPLICATION OF PRIMARY SCREENING ANALYSIS

CATEGORY III: Power Generating Stations

SITE			PRIMARY SCREENING ANALYSIS			
Name of Site	Sta. No.	Quad/Map	Bathy- metry*	Ecological Areas †	Public Beaches	Pass/Fail
Fisher Island	3-1	36 D	F	F	P	F
Southold	3-2	21 C	F	P	P	F
Shoreham	3-3	13 B	F	F	P	F
Port Jefferson	3-4	11 B	F	P	P	F
Northport	3-5	9 A/B	F	P	P	F
Glenwood	3-6	2 A	F	P	F	F
Cos Cob	3-7	17 A	P	F	P	P
South Norwalk	3-8	18 A	F	P	P	F
Norwalk Harbor	3-9	18 A	P	P	P	P
Bridgeport Harbor	3-10	24 B	F	F	P	F
Steel Point	3-11	24 B	F	F	P	F
Devon	3-12	25 B	F	F	P	F
English	3-13	29 B/C	P	P	P	P
Millstone	3-14	35 D	P	F	P	P

\* Failures due to Lack of Adequate Available Surface Area

† All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

**TABLE 2 (Cont.)**  
**APPLICATION OF PRIMARY SCREENING ANALYSIS**

**CATEGORY IV: Corps Navigation Projects with Jetties or Breakwaters**

SITE	PRIMARY SCREENING ANALYSIS					
Name of Site	Sta No.	Quad/Map	Bathy- metry*	Ecological Areas *	Public Beaches	Secondary Screening
Mattituck Harbor	4-1	20 C	P	P	F	F
Mt. Sinai Harbor	4-2	11 B	F	P	F	F
Port Jefferson Harbor	4-3	11 B	P	P	P	P
Hempstead Harbor	4-4 a	2 A	P	P	P	P
Hempstead Harbor	4-4 b	2 A	P	P	P	P
Flushing Bay & Creek	4-5	1 A	P	P	P	P
Glen Island	4-6	5 A	P	P	P	P
Echo Bay	4-7	5 A	P	P	P	P
Larchmont Harbor	4-8	6 A	P	P	P	P
Port Chester Harbor	4-9	6 A	P	P	P	P
Stamford Harbor	4-10	17 A	P	P	P	P
Cove Island, Stamford	4-11	17 A	P	F	F	F
Southport Harbor	4-12	23 B	P	F	F	F
Black Rock Harbor, Bridgeport	4-13	24 B	P	P	P	P
Bridgeport Harbor	4-14	24 B	P	P	P	P
Housatonic River, Stratford	4-15	25 B	P	P	P	P
Woodmont Shore, Milford	4-16	26 B	P	P	F	F
New Haven Harbor	4-17 a	29 B	P	F	P	P
New Haven Harbor	4-17 b	26 B	P	P	P	P
Clinton Harbor	4-18	32 C	P	P	P	P
Duck Island Harbor	4-19	33 C	P	P	P	P
Conn. River, Saybrook	4-20	34 D/C	P	P	P	P
Stonington Harbor	4-21	37 D	P	P	P	P

- \* Failures due to Lack of Adequate Available Surface Area
- † All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

TABLE 2 (Cont.)  
APPLICATION OF PRIMARY SCREENING ANALYSIS

CATEGORY V: Industrial Wastewater Discharges

SITE		PRIMARY SCREENING ANALYSIS				
Name of Site	Ste. No.	Quad/Map	Bathymetry*	Ecological Areas †	Public Beaches	Pass/Fail
Long Island Tungsten - Metal	5-1	2 A	F P		P	F
Powers Chemco Inc. - Organic Chemicals	5-2	2 A	F P		P	F
Electrolux - Metal Services	5-3	17 A	F P		P	F
Remington Electric - Metal Plating	5-4	24 B	P		F P	P
Carpenter Technology Co. Steel Mill	5-5	24 B	F P		P	F
Avco: Lycoming	5-6	24/25 B	F		F P	F
Schick Safety Razor Metal Plating	5-7	25 B	F		F P	F
Sargent & Co. - Metal Services	5-8	29 B/C	P	P	P	P
Atlantic Wire Co. - Steel & Wire	5-9	30 C	F P		P	F
Pfizer Co. - Chemical	5-10	36 D	F		F P	F
American Velvet Co. - Textiles	5-11	37 D	P		F	F

\* Failures due to Lack of Adequate Available Surface Area

† All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

**TABLE 2 (Cont.)**  
**APPLICATION OF PRIMARY SCREENING ANALYSIS**

CATEGORY VI: Petroleum Facilities

SITE Name of Site	PRIMARY SCREENING ANALYSIS					
	Site No.	Quad/Map	Bathy- metry*	Ecological Areas+	Public Beaches	Pass/Fail
Unknown	6-1	20 C	F	P	P	F
Northville Industries	6-2	14 C/B	F	P	P	F
Swezy Oil Co.	6-3	11 B	P	P	P	P
Exxon						
Consolidated Petroleum Co.						
Mobil Oil Co.	6-4	8 A	P	P	P	P
Northville Industries						
Huntington Utilities						
Mobil Oil Co.	6-5	4 A	P		F	P
Commander Oil Co.	6-6	7 A	F	P	F	P
Windsor Oil Co.	6-7	2 A	F	P	P	F
Phillips Oil Co.	6-8	2 A	F	P	P	F
Lewis Oil Co.	6-9	2 A	F	P	P	F
Mobil Oil Co.						
Auto Heat						
Metropolitan Petroleum Co.	6-10	2 A	F	P	P	F
Universal Utilities Wharf						
Sinclair Refining Co.						
Wells Fuel Wharf	6-11	5 A	F	P	P	F
Sun Oil Co.						
Mitchell Oil Co.						
Fleming Rutledge Oil Corp.	6-12	6 A	P	P		F
Hoffman Fuel Co.	6-13	17 A	F		F	P
Metropolitan Petroleum Corp.	6-14	18 A	P	P	P	P
Penn. Petroleum Co.						
Sun Oil Co.						
Connecticut Refining Co.	6-15	24 B	P	F	P	F
Elm City Plant No. 3	6-16	29 B/C	P		F	P
Atlantic Richfield	6-17	29 B/C	P		F	P
Exxon	6-18	29 B/C	P	P	P	P
Getty Oil Co.						
Gulf Oil Corp.						
New Haven Terminal	6-19	36 D	F	F	P	F
T.A.D. Jones & Co., Ind.						
City Coal Co.						
Central Vermont Railroad	6-20	36 D	P	F	P	P
Hess Oil Co.						

\* Failures due to Lack of Adequate Available Surface Area

+ All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

**TABLE 2 (Cont.)**  
**APPLICATION OF PRIMARY SCREENING ANALYSIS**

**CATEGORY VII: Sand and Gravel Pits**

SITE	PRIMARY SCREENING ANALYSIS					
Name of Site	Sta. No.	Quad/Map	Bathy- metry*	Ecological Areas†	Public Beaches	Pass/Fail
Jamesport - LILCO	7-1	15 C	P	P	P	P
Huntington Harbor	7-2	8 A	F	P	P	F
Colonial Sand & Stone, Penn Ind.	7-3	2 A	P	P	P	P
Old Saybrook	7-4	33 C	F	P	P	F

\* Failures due to Lack of Adequate Available Surface Area

† All Sites Failing Ecological Primary Screening are Allowed to Pass to Secondary Screening Evaluation

**TABLE 3**  
**SUMMARY OF PRIMARY SCREENING ANALYSIS**

Primary Criteria	Remaining Available Sites							Total
	1	2	3	4	5	6	7	
Total Sites	18	31	14	23	11	20	4	121
Bathymetry/Area	16	14	4	22	3	6	2	67
Ecological Areas	16 (4)	14 (9)	4 (2)	22 (19)	3 (1)	6 (3)	2 (2)	67 (40)
Public Beaches	14	14	4	18	2	5	2	59
Remaining	14	14	4	18	2	5	2	59

( ) Sites Remaining if Criteria for Ecological Areas Applies

1.14 As presented in the Interim Report, the siting criteria used for Step 3 evaluations include:

<u>Site Specific Criterion</u>	<u>Weighting Factor</u>
1. Proximity of Site to Significant Ecological Areas	10
2. Bathymetry of Site/Available Volume	9
3. Exposure Considerations	7
4. Soil/Foundation Characteristics of Site	7
5. Existing and Potential Land Use	6
6. Volume and Type of Dredged Material Available for Containment	4
7. Compatibility with Adjacent Land/Re-use Potential	2
8. Proximity of Site to Cultural Resources	2
9. Use of Site for Existing or Historic Dredged Material Disposal	1

The potential sites receive a thorough evaluation (see Table 4) for each of the factors listed above, and are assigned criteria points according to a sliding scale from 0-10, with 10 representing the most desirable characteristics. Appendix A presents the method for converting site-specific data to numerical values. Since the assumption was made that no dredged material would cross state boundaries, scoring for criterion #6 (Available Dredged Material) is different between Connecticut and New York (see pages A-6 through A-9), and thus New York and Connecticut sites will be ranked separately.

#### Secondary Screening of Connecticut Sites

1.15 According to the secondary siting criteria previously presented (see Appendix A), total points were determined for 43 Connecticut sites and were entered in summary matrix tables, which are subsequently presented.

TABLE 4 - SITE-SPECIFIC SECONDARY SCREENING CRITERIA

Siting Criteria

Name: \_\_\_\_\_ County: \_\_\_\_\_ Map # \_\_\_\_\_ Location: \_\_\_\_\_

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private) \_\_\_\_\_

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: \_\_\_\_\_ miles d. Waterfowl Areas: \_\_\_\_\_ miles

b. Lobster Locations: \_\_\_\_\_ miles e. Wetland Areas: \_\_\_\_\_ miles

c. Finfish Concentrations: \_\_\_\_\_ miles

f. Water Quality Conditions: poor/fair/good \_\_\_\_\_

3. Bathymetry

a. Nearshore Slope: \_\_\_\_\_ ft/mile c. Available Volume Below MSL: \_\_\_\_\_ cu. yards

b. Available Surface Area: \_\_\_\_\_ acres

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low) \_\_\_\_\_

b. Critical Erosion Areas: \_\_\_\_\_

c. Flood Zone Area: \_\_\_\_\_

d. Endangered Structures: (buildings, homes, jetties, etc.) \_\_\_\_\_

e. Cost of Flood Damages: (high/medium/low) \_\_\_\_\_

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: X sand, X clay, X silt

or USCS Classification: \_\_\_\_\_

b. Permeability: \_\_\_\_\_

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: \_\_\_\_\_ X \_\_\_\_\_ X f. Public: \_\_\_\_\_ X \_\_\_\_\_ X

b. Recreational: \_\_\_\_\_ X \_\_\_\_\_ X g. Open Space: \_\_\_\_\_ X \_\_\_\_\_ X

c. Commercial: \_\_\_\_\_ X \_\_\_\_\_ X h. Agricultural: \_\_\_\_\_ X \_\_\_\_\_ X

d. Industrial: \_\_\_\_\_ X \_\_\_\_\_ X

e. Wetlands: \_\_\_\_\_ X \_\_\_\_\_ X

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: X Water (site), X Land (site)

b. Volume of Dredged Material Projected:

Within Quadrangle: \_\_\_\_\_ CY/year

Within Surrounding Quads: \_\_\_\_\_ CY/year

c. General Characteristics of Material (Phys-Chem): \_\_\_\_\_

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space)

b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)

c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petroleum, etc.) \_\_\_\_\_

d. Access by Water: (channels, docking facilities) \_\_\_\_\_

e. Access by Land: (roads/bridges) \_\_\_\_\_

f. Area-wide Plan: (industrial/commercial expansion) \_\_\_\_\_  
(need for recreation) \_\_\_\_\_  
(market for re-use of dredged material) \_\_\_\_\_

9. Proximity to Cultural Resources

a. Cultural: (closest) miles \_\_\_\_\_ (number) \_\_\_\_\_ 10 mile radius

b. Types: (historical, archeological, etc.) \_\_\_\_\_

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: \_\_\_\_\_  
(condition, dimensions) \_\_\_\_\_

b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) \_\_\_\_\_

c. Volume of Material Previously Disposed: \_\_\_\_\_ CY

Tables 5a and 5b more specifically present the results of applying secondary criterion #6 (Volume and Types of Dredged Material Available for Containment) to the alternative sites. Using the modified gravity model concept, the force of attraction ( $V/2D$ ) was calculated for each site based on: (1) the average annual projected dredged material volume ( $V$ ) within each Connecticut quadrangle map, and (2) the approximate distance ( $D$ ) between the shoreline area centroid of each quadrangle map and the site. Thus, for each site in question, points representing the projected annual dredged material volume ( $V$  in CY) divided by distance traveled by barge both to and from the site ( $2D$  in miles), i.e., annual CY per barge mile, are totaled. According to Table 5b, sites scoring the highest under this category tend to be located in or near areas of historically and projected significant dredging activity, such as New Haven Harbor and the Connecticut River. Sites scoring poorly under this criteria tend to be located near the western and eastern extremes of the Connecticut coastal shorefront on LIS.

1.16 Site-specific results of the ranking analysis are presented in matrix form in Table 6. Total points for each alternative site reflect the suitability of that site for locating a small-volume containment facility and provide the basis for site ranking, with the greatest number of points being most suitable, relatively speaking. For comparison purposes, Table 6 also includes the public sites previously screened in the Interim Report (the letter "P" appears before each site). Sites are ranked two ways: (1) within each of the eight categories, and (2) over all 50 Connecticut sites, public and private.

1.17 Table 7 summarizes the results of the secondary screening analysis showing the average points and range of points scored in each site category. Sites scoring highest tended to be in category #2 (municipal treatment plants), category #5 (industrial discharges), or category #8 (public sites from Interim Report). Sites scoring the lowest tended to be in category #1 (shallow water areas). In general, each category ex-

TABLE 5a  
 RANKING OF CONNECTICUT SITES BASED ON AVAILABLE DREDGED  
 MATERIAL VOLUME VS. DISTANCE FROM SITE

No.	Quad Map Name	Volume cy/year(10 <sup>3</sup> )	DISTANCE(0) IN MILES TO SITE																							
			1-3	1-4	1-5	1-7	1-8	1-11	1-12	1-13	1-14	1-16	1-17	1-18	2-16	2-18	2-20	2-22	2-24	2-25	2-26					
16	Glennville	4.2	12	13	45	53	54	59	60	68.5	68.5	69	69.5	94	1	8	24.5	28.5	41	42	43					
17	Stanford	35.4	8.5	9.5	40	48.5	49.5	54	55	64	64	64.5	65	89.5	3.7	3.7	20	24	37	37.5	38.5					
18	Norwalk South	42.2	1	1	32	41	42	47.5	48.5	57	57	57.5	58	82.5	11	1	13.5	17.2	27.7	30.5	31.5					
23	Westport	17.7	6	5	26	34.5	35.5	41	42	51.5	51.5	52	52.5	75.5	17.5	10	7	10.5	23	23.5	24.5					
24	Bridgeport	88.1	15	14	18	27	28	34.5	35.5	44	44	44.5	45	68	26	18	1	1	15	16	17					
25	Hillford	48.6	20	19	12	21	22	28	29	38	38	38.5	39	62	31.5	23.5	7.5	3	9	10	11					
29	New Haven	347.9	30	29	5	13	14	20	21	29.5	29.5	30	31.5	55	41	33	18	13	1	1	1					
30	Branford	28.8	33.5	32.5	1	7	8	14	15	23.5	23.5	24	24.5	48	46	38	23	17	7	6.7	5.7					
31	Gullford	26.8	40	39	9	1	1	7.5	8.5	17	17	17.5	18	42	52	44	29	24	13	12.5	11.5					
32	Clinton	47.2	46	45	16	7	6	1	1	10.5	10.5	11	11.5	35	57	49	35	30.5	20	20	19					
33	Essex	51.1	53	52	22	13.5	12.5	6	5	4	4	4.5	5	28.5	64	56	42	37	26	25.7	24.7					
34	Old Lyme	205.7	57	56	27	18	17	11	10	1.5	1	1	1	23.5	68.5	60.5	46	42	31.5	31	30					
35	Niantic	18.0	65	64	34.5	26	25	18	17	8.5	8.5	8	7.5	14	76.5	68.5	53.5	49.5	38	38	37					
36	New London	161.9	72	71	41	31.5	30.5	24	23	14.5	14.5	14	13	10.5	82.5	74.5	59.5	55.5	44	44	43					
37	Mystic	16.4	77	76	47	39	38	31	30	22	22	21.5	20.5	1	89.5	81.5	66	62	52	52	51					
	Watch Hill	7.0	85	84	53.5	44.5	43.5	37	36	27.5	27.5	27	26	3	95.5	88	73	69	57.5	57.5	56.5					

TABLE 5a (Cont.)  
 RANKING OF CONNECTICUT SITES BASED ON AVAILABLE DREDGED  
 MATERIAL VOLUME VS. DISTANCE FROM SITE

No.	Quad Map Name	Volume CJ/year(10 <sup>3</sup> )	DISTANCE(D) IN MILES TO SITE																							
			2-27	2-29	2-30	3-7	3-9	3-13	3-14	4-10	4-13	4-14	4-15	4-17a	4-18	4-19	4-20	4-21	5-4	5-8	6-14	6-16	6-17	6-18	6-20	
16	Glenville	4.2	42.5	81.5	81.5	2	13.5	42	78	5	23	26.5	30.5	41	40	60	62	68.5	91.5	26	42	12.5	40	40.2	42	83.2
17	Stanford	35.4	38.5	71.5	71.5	1	9.5	38	73.5	1	18.5	22	27	37	35	36.5	58	64	87	21.5	38	8.5	35	35	38	79.2
18	Norwalk South	42.2	31.5	71	71	9.5	1	31	66	7	11.5	14.5	19	29.5	28	49	51.5	57	80	14	30.5	1	29	29	32	72
23	Westport	17.7	24.5	64	64	6.25	4.5	24	60	14	4.5	8	12	23	21	42.5	45	51	73	7.5	13.5	6	22	22	25	65
24	Bridgeport	88.1	17	57	57	24	12.2	17	53.2	21.5	1	1	5	15	13	35	38	44	65	1	16.5	13	14.5	14.5	17	58
25	Hillford	48.6	11	51.5	51.5	29.5	17	11	47	27	9	6	1	9	8	29.5	32	38.5	60	4	10	19	9	9	16	52.5
29	New Haven	347.9	1	43	43	39	18.2	1	39	37	19	15	11	1	5	22	24	31	52	15	1	8	1	1	1	44
30	Branford	28.8	4.7	37	37	44	28	5	33	42	23	20	16	6	7	15.5	17.5	24	45	21	6	33.5	7	7	5	38
31	Gullford	26.8	11	37	37	30.5	49.5	32.5	11	27	40.5	30	27	21.5	12.5	13	8.5	11.5	26	40	27	12	40	13.5	13.5	31.5
32	Clinton	47.2	18	25	24	56	38.5	18	20	53	37	34	28.5	19.5	20	1	4.5	11	33.5	33.5	19	46	20	20	18	28
33	Essex	51.1	24	17.5	17.5	62.5	45	26	17	59.7	43.5	40.5	35.0	26.0	26.5	5	1	4.5	27	40	25	51.5	27	26.5	24	18.5
34	Old Lyme	205.7	29	13.5	13	67.5	51.5	29	8.5	65	48.5	45.5	40	31	31.5	10	7.5	1	21.5	44	30.5	57	31.5	31.5	29	14
35	Niantic	18.0	36	6.5	5	75	56	36	1	72	56	53	47.5	37.5	38	17	15	8.5	14.5	51.5	37	64	38	38	36	6
36	New London	161.9	42	1	1	81	69.5	42	5	78	60	57	51.5	42	44	23	21	14.5	7.5	57	43.5	70	44	44	42	1
37	Nystic	16.4	49	9	8.5	86	77	49.5	11.5	85.5	68	64.5	60	50	51	30	27	21.5	1	65	50.5	77.5	51.5	51.5	49.5	7
	Watch Hill	7.0	55	15	14	94	82	55	18	91.5	73.5	70	65	56	56	36	33.5	27	5	71	57	83	57	57	55	13.2

TABLE 5b  
MATRIX FOR V/2D ATTRACTION CONNECTICUT

No.	Quad Map Name	V/2D CONNECTICUT SITES															
		1-3	1-4	1-5	1-7	1-8	1-11	1-12	1-13	1-14	1-16	1-17	1-18	2-16	2-18		
16	Glennville	175	161	46	39	38	36	35	31	31	30	30	22	2,100	262		
17	Stanford	2,082	1,863	442	365	357	328	322	276	276	274	272	198	4,783	4,783		
18	Norwalk South	21,100	21,100	659	515	502	444	435	370	370	366	363	255	1,918	21,108		
23	Westport	1,475	1,770	340	256	249	215	210	171	171	170	168	117	506	885		
24	Bridgeport	2,937	3,146	2,447	1,631	1,573	1,277	1,240	1,001	1,001	990	979	648	1,694	2,447		
25	Hillford	1,215	1,278	2,025	1,157	1,105	868	838	639	639	631	623	391	771	1,034		
29	New Haven	5,798	5,998	34,790	13,381	12,425	8,697	8,283	5,897	5,897	5,798	5,522	3,163	4,243	5,271		
30	Branford	430	443	14,400	2,057	1,800	1,029	960	613	613	600	588	300	313	379		
31	Gullford	335	345	1,489	13,400	13,400	1,787	1,576	788	788	766	744	319	258	305		
32	Clinton	513	524	1,475	3,371	3,933	23,600	23,600	2,248	2,248	2,145	2,052	674	414	482		
33	Essex	482	491	1,161	1,893	2,044	4,258	5,110	6,388	6,388	5,678	5,110	896	399	456		
34	Old Lyme	1,804	1,837	3,809	5,714	6,050	9,350	10,285	102,850	102,850	102,850	102,850	4,377	1,501	1,700		
35	Niantic	138	141	261	346	360	500	529	1,059	1,059	1,125	1,200	643	118	131		
36	New London	1,124	1,140	1,974	2,570	2,654	3,373	3,520	5,583	5,583	5,782	6,227	7,710	981	1,087		
37	Mystic	106	108	174	210	216	265	273	373	373	381	400	8,200	92	101		
	Watch Hill	41	42	65	79	80	95	97	127	127	130	135	1,167	37	40		
	TOTAL	39,755	40,387	65,558	46,984	46,786	56,122	57,333	128,414	128,414	127,716	127,263	29,080	20,078	40,463		
	POINTS	2	2	4	3	3	3	3	8	8	8	8	1	1	2		

TABLE 5b (Cont.)

MATRIX FOR V/2D ATTRACTION CONNECTICUT

No.	Quad Map Name	V/2D CONNECTICUT SITES															
		2-20	2-22	2-24	2-25	2-26	2-27	2-29	2-30	3-7	3-9	3-13	3-14	4-10	4-13		
16	Glenville	86	73	51	50	48	49	26	26	2,100	156	50	27	420	91		
17	Stanford	885	737	478	472	459	459	247	247	8,045	1,863	466	241	17,700	956		
18	Normalk South	1,562	1,226	761	691	669	669	297	297	2,221	21,100	681	320	3,014	1,834		
23	Westport	1,264	843	385	377	361	361	138	138	1,416	1,967	369	148	632	1,966		
24	Bridgeport	44,050	44,050	2,937	2,753	2,591	2,591	773	773	1,835	3,611	2,591	828	2,049	44,050		
25	Hillford	3,240	8,100	2,700	2,430	2,209	2,209	472	472	824	1,429	2,209	517	900	2,700		
29	New Haven	9,664	13,381	173,950	173,950	173,950	173,950	4,045	4,045	4,460	9,558	173,950	4,460	4,701	9,155		
30	Branford	626	847	2,057	2,149	2,526	3,064	389	389	327	514	2,880	436	343	626		
31	Gullford	462	558	1,030	1,072	1,165	1,218	362	362	439	412	1,218	496	331	480		
32	Clinton	674	773	1,180	1,180	1,242	1,311	944	944	983	613	1,311	1,180	445	638		
33	Essex	608	691	983	994	1,034	1,065	1,460	1,460	409	568	983	1,503	428	587		
34	Old Lyme	2,235	2,449	3,265	3,318	3,428	3,547	7,619	7,912	1,524	1,997	3,547	12,100	1,582	2,121		
35	Niantic	168	182	237	237	243	250	1,385	1,800	12	16	25	9,000	125	161		
36	New London	1,361	1,459	1,840	1,840	1,883	1,927	80,950	80,950	999	1,165	1,927	16,190	1,038	1,349		
37	Nystic	124	132	158	158	161	167	911	965	95	106	165	713	96	121		
	Match Hill	48	51	61	61	62	64	233	250	37	43	64	194	38	48		
TOTAL		67,057	75,552	192,073	191,732	192,031	192,901	100,251	101,146	24,996	45,118	192,437	48,353	33,842	66,889		
POINTS		4	5	10	10	10	10	6	6	1	3	10	3	2	4		

TABLE 5b (Cont.)  
MATRIX FOR V/2D ATTRACTION CONNECTICUT

No.	Quad Map Name	V/2D CONNECTICUT SITES														
		4-14	4-15	4-17 <sup>a</sup>	4-17 <sup>b</sup>	4-18	4-19	4-20	4-21	5-4	5-8	6-14	6-16	6-17	6-18	6-20
16	Glenville	79	69	51	52	35	34	31	22	81	50	168	53	52	50	25
17	Stanford	804	655	478	505	484	305	276	203	823	465	2,082	505	505	465	223
18	Norwalk South	1,455	1,110	715	753	430	409	370	264	1,507	692	21,100	727	727	659	293
23	Westport	1,106	738	385	421	208	197	174	121	1,180	655	1,475	402	402	354	136
24	Bridgeport	44,050	8,810	2,937	3,388	1,259	1,159	1,001	678	44,050	2,670	3,388	3,038	3,038	2,591	759
25	Hillford	4,050	24,300	2,700	3,038	824	759	631	405	6,075	2,430	1,278	2,700	2,700	2,209	463
29	New Haven	11,597	15,814	86,975	57,983	7,907	7,248	5,611	3,345	11,597	173,950	21,743	173,950	173,950	173,950	3,953
30	Branford	720	900	2,400	2,057	929	823	600	320	686	2,400	430	2,057	2,057	2,880	379
31	Gullford	533	623	1,072	1,031	1,576	1,165	515	335	496	1,116	335	993	993	1,165	425
32	Clinton	694	828	1,210	1,180	23,600	5,244	2,145	704	704	1,242	513	1,180	1,180	1,311	944
33	Essex	631	730	983	964	5,110	25,550	5,677	946	639	1,022	496	946	964	1,065	1,381
34	Old Lyme	2,260	2,571	3,318	3,265	10,285	13,713	102,850	4,784	2,338	3,372	1,804	3,265	3,265	3,547	7,346
35	Niantic	170	189	240	237	529	600	1,059	621	175	243	141	237	237	250	1,500
36	New London	1,420	1,572	1,927	1,840	3,520	3,855	5,583	10,793	1,420	1,861	1,156	1,840	1,840	1,927	80,950
37	Myst	127	137	164	161	273	304	381	8,200	126	162	106	159	159	166	1,171
	Wethers Hill	50	54	63	63	97	104	130	700	49	61	42	61	61	64	265
	TOTAL	69,746	59,180	192,593	77,538	57,066	61,469	127,034	32,441	71,946	192,391	56,257	192,113	192,130	192,653	100,213
	POINTS	4	3	10	5	3	4	8	2	4	10	3	10	10	10	6





TABLE 6 (Cont.)  
SUMMARY MATRIX FOR SITE-SPECIFIC EVALUATION  
OF POTENTIAL SITES IN CONNECTICUT

CRITERIA	(Weight Factor)	Sub-Criteria	Total Pts. Possible	Connecticut Sites																
				4-20	4-21	5-4	5-8	6-14	6-16	6-18	6-20	P1-9	P1-10	P3-50	P3-58	P3-69	P3-71	P3-72		
Proximity to Sensitive Ecological Areas (SEA's)	(10)	A	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		B	(2)	0	0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		C	(2)	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		D	(2)	0	0	0	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		E	(2)	10	10	20	20	0	0	20	20	20	20	20	20	20	20	20	20	20
		Subtotal	(10)	10	20	50	60	40	40	70	50	70	60	70	60	70	60	60	60	60
Bathymetry of Site	(9)	A	(10)	36	45	36	90	18	27	9	27	9	36	9	9	90	72			
		B	(3)	0	14	21	21	14	21	21	21	21	21	14	14	21	21			
		C	(3)	14	21	21	21	21	21	21	21	21	21	21	14	21	21			
		D	(2)	14	14	0	14	0	0	14	14	14	14	14	0	7	14	14		
		Subtotal	(10)	28	49	56	63	35	49	49	56	63	63	42	35	63	63	56		
Soil/Foundation Characteristics	(7)	A	(9)	21	42	21	21	21	21	21	21	21	21	21	21	21	21			
		B	(1)	7	0	7	0	7	0	7	0	7	0	0	0	0	0			
		C	(1)	28	42	28	21	28	28	21	7	7	0	0	0	0	0			
		Subtotal	(10)	28	42	28	21	28	28	21	7	7	0	0	0	0	0			
Existing and Potential Land Use	(6)	A	(2)	0	0	6	6	6	6	6	6	6	6	6	6	6	6			
		B	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
		C	(2)	0	0	12	6	12	12	12	12	12	12	12	12	12	12			
		D	(2)	0	6	12	6	12	12	12	12	12	12	12	12	12	12			
		E	(2)	12	12	12	6	12	12	12	12	12	12	12	12	12	12			
		Subtotal	(10)	12	18	42	24	30	30	42	42	42	24	30	30	36	24	30		
Volume and Types of Dredged Material Available (see Table 4-7)	(4)	A	(10)	32	8	16	40	12	40	40	40	24	24	24	4	8	40			
		Subtotal	(10)	10	10	20	10	20	20	20	20	20	20	20	20	2	10	20		
Proximity to Cultural Resources	(2)	A	(2)	2	2	4	4	4	4	4	4	4	4	4	2	2	2			
		B	(3)	0	0	4	6	6	6	6	6	6	6	6	6	6	6			
		C	(3)	0	6	6	6	6	6	6	6	6	6	6	6	6	6			
		D	(2)	0	0	2	2	2	2	2	2	2	2	2	2	2	2			
		Subtotal	(10)	2	8	18	16	16	18	14	16	16	16	16	16	8	8	16		
Use of Site for Existing or Historical Spoil Disposal	(1)	A	(7)	0	0	4	4	4	4	4	4	4	4	4	4	4	4			
		B	(3)	0	0	2	0	2	1	0	0	0	0	0	0	0	0			
		Subtotal	(10)	0	0	6	6	6	5	0	0	0	0	0	0	0	0			
Total Points	(490)		158	200	262	334	195	258	270	242	218	255	163	176	334	317				
			8	7	2	1	4	2	1	3	4	3	6	5	1	2				
Ranking (Within Site Group)			35	22	7	1(b)	25	8	5(a)	13	16(a)	10(a)	33	31	1(a)	2(a)				

**TABLE 7**  
**SUMMARY OF SECONDARY SITING ANALYSIS IN CONNECTICUT**

Site Group	No. Sites	Average Pts. Scored		Range of Pts. Scored	Total Pts. Possible
1. Shallow Water Areas	12	170 (215)	35% (36%)	106-270 (148-267)	480 (590)
2. Treatment Plants	10	243 (326)	51% (55%)	160-334 (209-426)	480 (590)
3. Power Plants	4	222 (274)	46% (46%)	203-255 (219-363)	480 (590)
4. Corps Nav. Projects	10	208 (243)	43% (41%)	96-265 (116-345)	480 (590)
5. Industrial Discharges	2	298 (383)	62% (65%)	262-334 (342-423)	480 (590)
6. Petroleum Facilities	5	241 (328)	50% (56%)	195-270 (261-368)	480 (590)
7. Sand & Gravel	0	- ( - )		- ( - )	- ( - )
8. Public Sites*	6	255 (328)	53% (56%)	163-334 (213-423)	480 (590)
Total	49 (49)	221 (281)	46% (48%)	106-334 (116-426)	480 (590)

( ) Criteria Points Scored Under Second Set of Weighting Factors  
 \* Public Sites Previously Analyzed in Interim Report

hibited a wide range in site scores, so it is difficult to derive generalities about the advantages or disadvantages of sites based on the site category alone. Table 8 shows the distribution of site scores indicating the highest score as 70 percent with most sites scoring within the range 30 to 60 percent.

1.18 Table 9 presents the sites, or site groups, that scored within the top ten of all 49 Connecticut sites. As in the Interim Report, the two highest ranking sites, or site groups, are located in New Haven Harbor. In addition, sites ranked #3, 5(a), 6, 8 and 10(b) are also in New Haven Harbor. Two sites (ranked #7 and 9) are located near Bridgeport Harbor, two sites (ranked #4 and 10(a)) in New London on the Thames River, and one site (ranked #5b) near Branford Harbor. Figure 4 shows the approximate locations of these sites or site groups. Further discussion concerning these sites, as well as more detailed maps, are presented in a later section of this report.

#### Secondary Screening of New York Sites

1.19 The 19 New York sites surviving primary screening were similarly evaluated according to the secondary criteria point system in Appendix A. Tables 10a and 10b present the results of applying secondary criterion #6 (Volume and Types of Dredged Material Available for Containment), which corresponds to Tables 5a and 5b for the Connecticut sites. According to Table 10b, sites scoring the highest under this category tend to be located in or near areas of historically and projected major dredging activity, such as in the extreme western end of Long Island Sound and the Upper East River. Sites scoring poorly under this criterion tend to be located in eastern Nassau or Suffolk Counties on Long Island. Again, it is emphasized that no dredged material was assumed to cross from Connecticut to New York, or vice versa. If that were not the case, sites on Long Island would have scored higher under this criterion.

TABLE 8  
DISTRIBUTION OF SITE SCORES FOR CONNECTICUT SITES

Scoring Range (%)	No. of Sites (based on 480 pts.)	No. of Sites (based on 590 pts.)
0 - 10	0	0
10 - 20	1	1
20 - 30	2	1
30 - 40	13	14
40 - 50	13	15
50 - 60	14	7
60 - 70	6	7
70 - 80	0	4
80 - 90	0	0
90 - 100	0	0
TOTAL	49	49

TABLE 9  
TOP TEN RANKING SITES IN CONNECTICUT

Rank	Score %	Site No.	Name of Site	Waterway	Quad Map No.	Map
1(a)	70	P3-69	Bayview Park	New Haven H.	29	B
(b)		5-8	Sargent & Co.	New Haven H.	29	B
(c)		2-25	New Haven Blvd.*	New Haven H.	29	B
2(a)	66	P3-71,	East Shore & Nathan	New Haven H.	29	B
(b)		P3-72 2-27	Hale Parks New Haven-East Side*	New Haven H.	29	B
3	65	2-26	New Haven-East St.*	New Haven H.	29	B
4	58	2-29	Riverside Plant*	New London	36	D
5(a)	56	6-18	Oil Terminals	New Haven H.	29	B
(b)		1-5	Kelsey Island	Branford	30	C
6	55	4-17a	Breakwater	New Haven H.	29	B
7	55	5-4	Remington Electric	Bridgeport H.	24	B
8(a)	54	6-16	Connecticut Refining Co.	New Haven H.	29	B
(b)		6-17	& Elm City Plant No. 3			
9	54	4-14	Breakwaters	Bridgeport H.	24	B
10(a)	53	P1-10	U.S. Coast Guard Academy	New London	36	D
(b)		3-13	United Illuminating-English	New Haven H.	29	B

\* Municipal Wastewater Treatment Plant

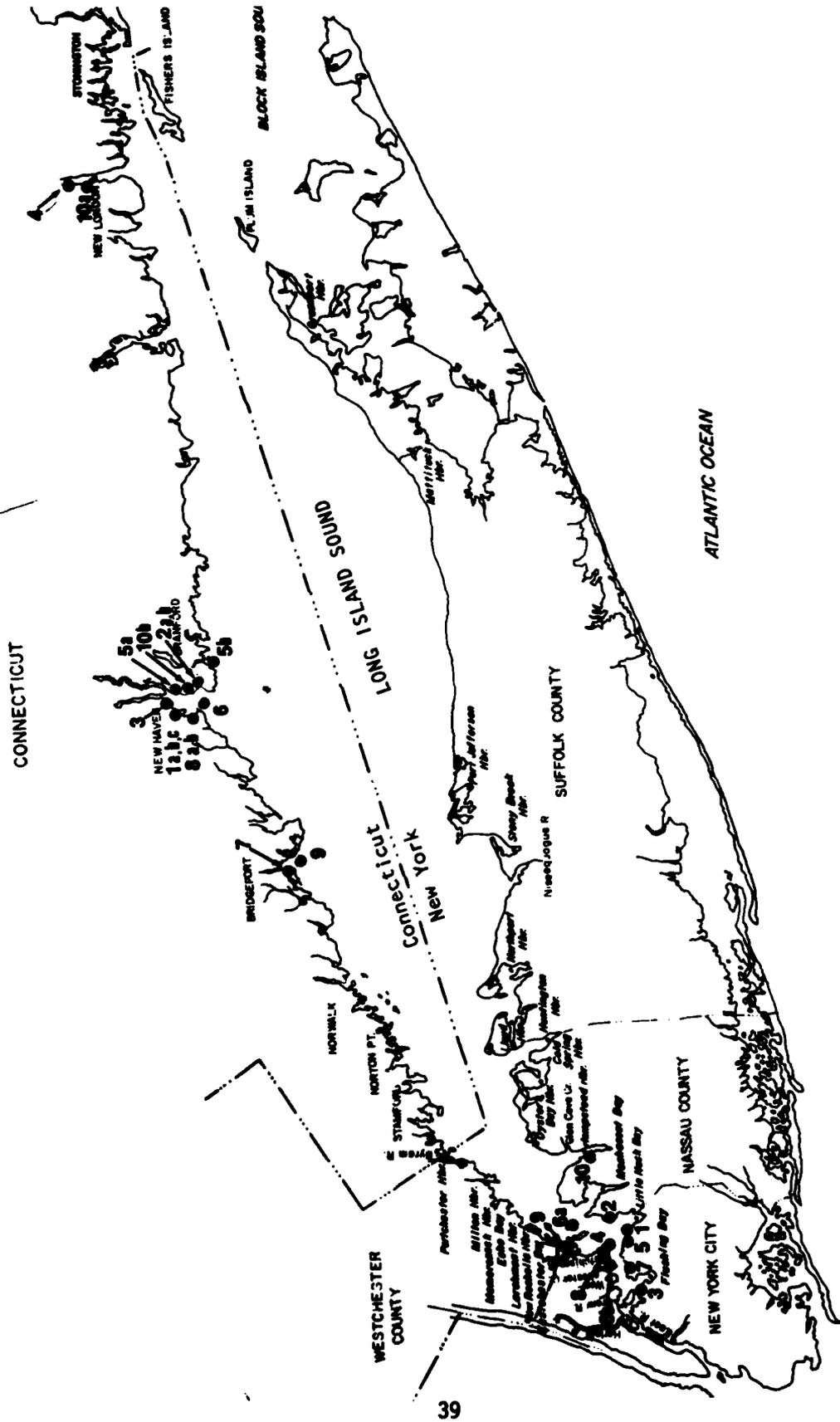


FIGURE 4 LOCATION OF TOP TEN RANKED SITES OR SITE GROUPS IN CONNECTICUT AND NEW YORK

TABLE 10a  
 RANKING OF NEW YORK SITES BASED ON AVAILABLE DREDGED  
 MATERIAL VOLUME VS. DISTANCE FROM SITE

No.	Quad Map Name	Volume c/yr(10 <sup>3</sup> )	NEW YORK SITES DISTANCE(D) IN MILES																	
			1-1	1-2	2-11	2-12	2-13	2-14	4-3	4-4	4-5	4-6	4-7	4-8	4-9	6-3	6-4	6-5	7-1	7-3
21	Southold	0	57.5	59	71.7	75.5	71	69.5	35.2	65	77	70.5	69	61	65	34.2	54	55	12	66
20	Mattituck Hills	0	50	49.2	64.2	68	63.5	62	27.7	57.5	69.5	63	62.5	61.2	57.5	26.7	46.5	47.5	4.5	58.5
13	Hading River	2.9	36	37.5	50.5	54.2	49.7	49	14.5	45	55.5	49	49	47	45	13.2	32.7	34.5	10	45.2
11	Port Jefferson	12.4	23	23	37	41	36	35	1	31.5	43	36.5	35	34	34	1	19	21	24	32
10	Saint James	10.8	17	17	31.5	35	31	31	6.5	25	37	31	30	26.5	27.5	6.5	13	15	30	26
9	Northport	20.1	10	10	25	27.5	24	23	12	17	30	24	22.5	21.5	21	13	6.5	8	37	19
8	Lloyd Harbor	30.7	5	4.5	20	23	18	18	18	13	25	18	17	15	6	19	1	4	39	14
7	Bayville	0.1	1	1	14	16	11	10.5	25	7	8	11.5	10	8.5	6.5	26	7	6	50	8.5
2	Sea Cliff	22.7	10	10.2	6.5	8.5	4	6.5	33	1	10	5	5.5	6	9	33.5	14	12	57	1
1	Flushing	140.0	16.5	16.7	1	1	1	8	39	8	1	5	7	8.5	13	40	20	18.5	63	7.5
5	Mt. Vernon	8.0	13	13	9	8	3.5	1	35.5	6	9	1	1	3	6.5	37	17	16	60	7.5
6	Manhasset Neck	32.7	9.5	10	13	13.2	8.5	5	31	6.5	15	6.5	5.5	1	1	33	14	13	55	9

TABLE 10b  
MATRIX FOR V/2D ATTRACTION NEW YORK

No.	Quad Map Name	Volume cy/year(10 <sup>3</sup> )	V/2D NEW YORK SITES														
			1-1	1-2	2-11	2-12	2-13	2-14	4-3	4-4	4-5	4-6	4-7	4-8	4-9		
21	Southold	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	Mattituck Hills	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	Heding River	2.9	40	38	28	26	29	29	29	99	32	26	29	29	29	30	32
11	Port Jefferson	12.4	269	269	167	151	171	176	176	6192	196	143	169	176	176	183	182
10	Saint James	10.8	316	316	170	153	173	173	173	827	215	145	173	179	179	203	195
9	Northport	20.1	1006	1006	402	365	419	437	838	591	335	419	447	447	468	479	479
8	Lloyd Harbor	30.7	3072	3413	768	667	853	853	853	853	1181	614	353	903	1024	2560	2560
7	Bayville	0.1	50	50	3	3	4	4	4	2	7	6	4	5	5	7	7
2	Sea Cliff	22.7	1132	1110	1742	1332	2832	1742	343	11329	1132	2265	2059	1888	1258	1258	1258
1	Flushing	140.0	4242	4242	70000	70000	70000	8750	1794	8750	70000	14000	10000	8235	5304	5304	5304
5	Mt. Vernon	8.0	309	309	447	503	1150	4025	113	670	447	4025	4025	1341	619	619	619
6	Manhasset Neck	32.7	1778	1632	1255	1236	1920	3265	526	2511	1088	2511	2968	16325	16325	16325	16325
TOTAL			12,154	12,365	74,982	74,436	77,551	19,454	11,587	25,482	89,686	24,448	20,791	29,701	27,041	27,041	27,041
Points			1	1	9	9	10	2	1	3	10	3	2	3	3	3	3

TABLE 10b (Cont.)  
MATRIX FOR V/2D ATTRACTION NEW YORK

No.	Quad Map Name	Volume cu/year(10 <sup>3</sup> )	V/2D NEW YORK SITES						
			6-3	6-4	6-5	7-1	7-3		
21	Southold	0	-	-	-	-	-	-	
20	Mattituck Hills	0	-	-	-	-	-	-	
13	Wading River	2.9	109	44	41	144	31		
11	Port Jefferson	12.4	6192	325	294	257	193		
10	Saint James	10.8	827	413	358	179	206		
9	Northport	20.1	774	1548	1257	271	529		
8	Lloyd Harbor	30.7	808	15360	3840	393	1097		
7	Bayville	0.1	1	7	8	1	5		
2	Sea Cliff	22.7	338	809	944	198	11329		
1	Flushing	140.0	1750	3500	3783	1111	9333		
5	Mt. Vernon	8.0	108	236	251	67	536		
6	Mamaroneck	32.7	494	1166	1255	296	1813		
TOTAL			11,401	23,408	12,031	2,917	25,071		
POINTS			1	3	1	0	3		

1.20 Site-specific results of the ranking analysis for New York sites are presented in matrix form in Table 11. Total points for each alternative site reflect the suitability of that site for locating a small-volume containment facility and provide the basis for site ranking, with the greatest number of points being most suitable, relatively speaking. For comparison purposes, Table 11 also includes the public sites previously screened in the Interim Report (the letter "P" appears before each site). As with Connecticut sites, New York sites are ranked two ways: (1) within each site category, and (2) over all 35 New York sites, public and private.

1.21 Table 12 summarizes the results of the secondary screening analysis showing the average points and range of points scored in each site category. Sites scoring highest tended to be in category #8 (public sites from Interim Report). Sites scoring the lowest tended to be in category #1 (shallow water areas). Table 13 shows the distribution of site scores indicating the highest scores in the range 80 to 90% with most sites scoring within the range 40 to 70%.

1.22 Table 14 presents the sites, or site groups, that scored within the top ten of all 35 New York sites. As in the Interim Report, the two highest ranking sites are located near the Throgs Neck Bridge. In addition, all other sites within these top ten, except for site 7-3 (Colonial Sand & Stone) in Hempstead Harbor, are clustered around the Throgs Neck Bridge vicinity. Figure 4 shows the approximate locations of these sites, or site groups. Further discussion concerning these sites, as well as more detailed maps, are presented in a later section of this report.

**TABLE 11**  
**SUMMARY MATRIX FOR SITE-SPECIFIC EVALUATION OF POTENTIAL SITES IN NEW YORK**

CRITERIA	(Weight Factor)	Sub-Criteria	Total Pts. Possible	NEW YORK SITES																		
				1-1	1-2	2-11	2-12	2-13	2-14	4-3	4-4(a)	4-4(b)	4-5	4-6	4-7	4-8	4-9					
Proximity to Sensitive Ecological Areas (SEA's) (10)		A	(2)	0	0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
		B	(2)	10	10	20	20	10	0	0	10	0	0	20	10	0	10	0	10	0	10	
		C	(2)	0	0	10	10	0	0	0	0	0	0	20	10	0	10	0	10	0	10	
		D	(2)	0	0	0	10	10	0	0	0	0	0	20	10	0	10	0	10	0	10	
		E	(2)	0	0	0	0	20	20	0	0	0	0	20	0	0	0	0	0	0	0	20
		Subtotal	(10)	10	10	50	80	60	50	40	50	100	40	50	100	40	50	40	50	70		
Bathymetry of Site (9)		A	(10)	9	27	18	81	27	45	36	36	81	90	54	18	27	18					
		Subtotal	(10)	21	21	21	14	21	21	21	21	21	21	21	21	14	14	14				
Exposure Considerations(7)		A	(3)	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21		
		B	(3)	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21	0	21		
		C	(2)	0	0	14	14	0	0	0	14	14	0	0	0	0	0	0	0	0		
		D	(2)	0	0	0	0	14	7	0	0	0	0	0	0	0	0	0	0	0		
		Subtotal	(10)	42	21	56	28	49	42	56	56	49	35	49	42							
Soil/Foundation Characteristics (7)		A	(9)	0	0	42	21	21	0	0	0	0	21	42	21	21	21	0	0			
		B	(1)	7	7	0	7	7	7	7	7	7	7	0	0	0	0	0	0			
		Subtotal	(10)	7	7	42	28	28	7	28	42	28	28	28	28	28	28	7	7			
		Subtotal	(10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Existing and Potential Land Use (6)		A	(2)	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		B	(2)	0	0	6	6	12	6	6	6	6	6	6	6	6	6	6	6	6		
		C	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		D	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		E	(2)	12	6	12	12	6	12	12	12	12	6	12	12	12	6	6	6	6		
		Subtotal	(10)	24	18	18	30	18	24	12	30	36	18	12	30	36	18	12	6	30		
Volume and Types of Dredged Material Available (see Table 4-7) (4)		A	(10)	4	4	36	36	40	8	4	12	12	40	12	8	12	12					
		Subtotal	(10)	10	10	10	2	10	20	2	2	2	2	2	2	10	10	10				
Proximity to Cultural Resources (2)		A	(10)	2	2	0	4	4	2	2	4	4	4	2	2	2	2	2				
		B	(3)	2	2	2	4	0	4	4	4	4	6	4	2	2	2	2				
		C	(3)	0	0	0	6	0	2	0	6	6	2	0	0	0	0	0				
		D	(2)	0	0	0	0	4	0	4	0	4	0	0	0	0	0	0				
		Subtotal	(10)	4	4	2	14	8	8	10	14	16	12	10	4	4	4	6				
Use of Site for Existing or Historical Spoil Disposal (1)		A	(7)	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0				
		B	(3)	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0				
		Subtotal	(10)	0	0	0	0	0	0	8	0	6	0	0	0	0	0	0				
Total Points (480)		110	101	232	335	211	201	210	232	301	370	213	155	161	195							
Ranking (Within Site Group)		2	1	2	1	3	4	5	3	2	1	4	8	7	6							
Ranking (Overall, 35 Sites)		31	32	20(a)	7	22	26	23	20(b)	13	3	21	30	29	27							

TABLE 11 (Cont.)  
SUMMARY MATRIX FOR SITE-SPECIFIC EVALUATION OF POTENTIAL SITES IN NEW YORK

CRITERIA	(Weight Factor)	Sub-Criteria	Total Pts. Possible	NEW YORK SITES															
				6-3	6-4	6-5	7-1	7-3	P1-3	P1-4	P1-5	P1-6	P1-7	P2-6	P3-16	P3-24	P3-25	P3-26	
Proximity to Sensitive Ecological Areas (SEA's)	(10)	A	(2)	20	10	0	20	20	10	20	20	20	20	10	20	20	20	20	
		B	(2)	20	20	20	10	0	10	20	20	20	20	20	20	20	20	20	20
		C	(2)	10	0	0	0	0	10	10	10	10	10	10	10	10	10	10	10
		D	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	(2)	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Subtotal	(10)		70	70	50	70	70	50	60	70	80	80	80	80	80	80	80	80	
Bathymetry of Site	(9)	A	(10)	63	18	9	9	90	45	90	63	90	90	0	27	72	54		
Exposure Considerations	(7)	A	(3)	21	21	21	0	21	21	21	21	21	21	21	21	21	21	21	
		B	(3)	21	21	21	0	21	21	21	21	21	21	21	21	21	21	21	
		C	(2)	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	
		D	(2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		E	(10)	56	56	56	14	56	56	70	56	62	56	63	56	49	63	63	63
Subtotal	(10)		56	56	56	14	56	56	70	56	62	56	63	56	49	63	63		
Soil/Foundation Characteristics	(7)	A	(9)	0	21	0	42	42	63	63	21	42	42	63	42	42	42	42	
		B	(1)	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Subtotal	(10)	7	28	7	42	42	63	70	70	21	42	42	63	42	42	42	
Existing and Potential Land Use	(6)	A	(2)	0	0	0	12	0	6	6	6	6	6	0	6	6	0	6	
		B	(2)	12	0	0	0	0	6	6	6	6	12	6	12	6	12	12	
		C	(2)	12	12	6	12	6	12	6	12	6	12	6	12	6	12	12	
		D	(2)	12	12	12	0	12	0	0	0	0	6	0	6	0	0	0	
		E	(2)	12	12	6	12	6	12	6	12	6	0	6	6	12	0	12	
Subtotal	(10)	48	36	24	36	30	30	24	36	24	30	30	30	42	24	36			
Volume and Types of Divided Material Available (see Table 4-7)	(4)	A	(10)	4	12	4	0	12	12	40	36	36	40	36	8	12	12		
Proximity to Cultural Resources	(2)	A	(10)	20	20	2	20	2	20	20	20	2	20	20	0	0	0		
Land Reuse Potential	(2)	A	(2)	4	4	4	2	4	2	0	2	2	2	0	2	2	2	2	
		B	(3)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
		C	(3)	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
		D	(2)	2	4	4	0	4	2	2	2	2	2	2	2	2	2	2	
		E	(10)	16	10	18	12	18	8	10	10	10	6	8	10	6	6	6	
Subtotal	(10)		16	10	18	12	18	8	10	10	6	8	10	6	6	6			
Use of Site for Existing or Historical Spoil Disposal	(1)	A	(7)	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Subtotal	(10)		0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total Points	(400)		284	250	170	203	320	284	384	368	329	346	369	267	258	305	303		
Ranking (Within Site Group)			1	2	3	2	1	10	2	1	6	5(a)	3	11	12	8	9		
Ranking (Overall, 35 Sites)			14(a)	19	28	25	10	14(b)	2	1	8	6(a)	4	15	16	11	12		

TABLE 11 (Cont.)  
SUMMARY MATRIX FOR SITE-SPECIFIC EVALUATION OF POTENTIAL SITES IN NEW YORK

CRITERIA	(Weight Factor)	Sub-Criteria	Total Pts. Possible	NEW YORK SITES							
				P3-39	P3-43	P4-5	P3-47	P4-4	P3-27	P3-8	
Proximity to Sensitive Ecological Areas (SEA's)	(10)	A	(2)	20	20	20	20	20	20	20	20
		B	(2)	20	20	20	20	20	20	20	20
		C	(2)	10	10	10	10	10	10	10	10
		D	(2)	10	10	10	10	10	10	10	10
		E	(2)	20	20	10	20	20	20	20	20
Subtotal		(10)	80	80	70	70	80	80	80	80	
Bathymetry of Site	(9)	A	(10)	90	81	0	0	0	90		
Exposure Considerations	(7)	A	(3)	21	21	21	21	21	21	21	
		B	(3)	21	21	21	21	21	21		
		C	(2)	14	14	14	14	14	14		
		D	(2)	7	7	7	7	7	7		
		Subtotal	(10)	63	63	56	63	63	56		
Soil/Foundation Characteristics	(7)	A	(9)	21	21	21	0	42	42		
		B	(1)	7	0	7	0	0			
		Subtotal	(10)	28	21	21	7	42	42		
Existing and Potential Land Use	(6)	A	(2)	0	12	6	6	6	6		
		B	(2)	0	0	6	0	0			
		C	(2)	6	12	12	6	6			
		D	(2)	6	12	6	0	6			
		E	(2)	12	12	0	12	6			
Subtotal	(10)	24	36	30	36	24	24				
Volume and Types of Dredged Material Available (see Table 4-7)	(4)	A	(10)	36	36	36	12	12	8		
Proximity to Cultural Resources	(2)	A	(10)	20	10	10	10	20	20		
Land Reuse Potential	(2)	A	(2)	2	4	0	2	0	2		
		B	(3)	6	6	6	4	4			
		C	(3)	2	0	0	0	2			
		D	(2)	4	0	2	0	4			
		Subtotal	(10)	14	10	10	8	10	12		
Use of Site for Existing or Historical Spill Disposal	(1)	A	(7)	0	0	4	6	4	4		
		B	(3)	0	0	3	0	2			
		Subtotal	(10)	0	0	7	0	6	5		
Total Points	(400)		355	346	321	208	257	256			
Ranking (Within Site Group)			4	5(b)	7	15	13	14			
Ranking (Overall, 35 Sites)			5	6(b)	9	24	17	18			

TABLE 12  
SUMMARY OF SECONDARY SITING ANALYSIS  
IN NEW YORK

Site Group	No. Sites	Average Pts. Scored	% Score	Range of Pts. Scored	Total Pts. Possible
1. Shallow Water Sites	2	106 (120)	22% (20%)	101-110 (117-123)	480 (590)
2. Treatment Plants	4	245 (292)	51% (49%)	201-335 (235-409)	480 (590)
3. Power Plants	0	- (-)	- (-)	- ( - )	- ( - )
4. Corps. Nav. Proj.	8	230 (268)	48% (45%)	155-370 (159-470)	480 (590)
5. Ind. Discharges	0	- (-)	- (-)	- ( - )	- ( - )
6. Pet. Facilities	3	235 (279)	49% (47%)	170-284 (220-339)	480 (590)
7. Sand & Gravel	2	262 (288)	55% (49%)	203-320 (210-365)	480 (590)
8. Public Sites*	16	311 (356)	65% (60%)	206-388 (242-429)	480 (590)
Total	35 (35)				480 (590)

( ) Criteria Points Scored Under Second Set of Weighting Factors

\* Public Sites Previously Analyzed in Interim Report

**TABLE 13**  
**DISTRIBUTION OF SITE SCORES FOR NEW YORK SITES**

Scoring Range (%)	No. of Sites (based on 480 pts.)	No. of Sites (based on 590 pts.)
0 - 10	0	0
10 - 10	0	1
20 - 30	2	2
30 - 40	3	5
40 - 50	9	10
50 - 60	7	5
60 - 70	7	5
70 - 80	5	7
80 - 90	2	0
90 - 100	0	0
<b>TOTAL</b>	<b>35</b>	<b>35</b>

TABLE 14  
TOP TEN RANKING SITES IN NEW YORK

Rank	Score %	Site No.	Name of Site	Waterway	Quad Map No.	Map
1	81	P1-5	Fort Totten	Little Neck Bay	1	A
2	80	P1-4	U.S. Merchant Marine Ac.	Little Neck Bay	1	A
3	77	4-5	Dike	Flushing Bay	1	A
4	77	P2-6	New York State Merchant Marine Ac.	East River	1	A
5	74	P3-39	Little Bay Park	East River	1	A
6(a)	72	P1-7	U.S. Military Reservation	Long Is. Sound	1	A
(b)	72	P3-43	Ferry Point Park	East River	1	A
7	70	2-12	Tallman Island*	East River	1	A
8	69	P1-6	U.S. Naval Reservation	East River	1	A
9	67	P4-5 P3-44	Pelham Bay Park Pelham Bay Park	East Chester Bay	1	A
10	67	7-3	Colonial Sand & Stone	Hempstead H.	1	A

\* Municipal Wastewater Treatment Plant

## SENSITIVITY ANALYSIS FOR CRITERIA WEIGHTING FACTORS

1.23 Shown below again are the secondary siting criteria used for Step 3 evaluations:

Site Specific Criterion	Weighting Factors		Change
	(1)	(2)*	
1. Proximity of Site to Significant Ecological Areas	10	10	0
2. Bathymetry of Site/Available Volume	9	10	+1
3. Exposure Considerations	7	7	0
4. Soil/Foundation Characteristics of Site	7	2	-5
5. Existing and Potential Land Use	6	7	+1
6. Volume and Type of Dredged Material Available for Containment	4	9	+5
7. Compatibility with Adjacent Land/ Re-use Potential	2	7	+5
8. Proximity of Site to Cultural Resources	2	2	0
9. Use of Site for Existing or Historic Dredged Material Disposal	1	5	+4

\* An explanation for the second set of weighting factors is given on the following page.

1.24 Step 3 of the siting methodology uses two distinct sets of numerical values and care should be taken not to confuse them. Weighting Factors are assigned to the criteria listed above according to the estimated relative importance of each factor. Criteria Points represent the physical and geographic characteristics of the alternative sites, in relation to optimal conditions. In the summary matrix tables, these two numbers are multiplied for each entry for the respective alternative sites. (Details for the criteria point calculation system are presented in Appendix A.)

1.25 In the application of the siting methodology to public sites in the Interim Report, it became clear that the prioritizing of screening criteria, i.e., the weighting of criteria importance, is a subjective process and should be based on a coordinated effort between the Corps and the various concerned agencies, institutions, environmental groups and general public. Although such involvement was not included in the present contract, the Corps will consider such input in later stages of this investigation. Towards the goal of better understanding the importance of the weighting factors in determining site acceptability, a sensitivity analysis of the criteria weighting factors is presented in this report for all sites examined under the secondary screening process.

1.26 The weighting factors shown above include two sets. The first set is that used in the Interim Report and in evaluating the additional sites in this report. The second set is the result of a re-evaluation of the siting criteria by the planning team based on the results of the secondary siting exercise. In specifying the first set of weighting factors, the heaviest weight was given to ecological impact considerations relative to all other factors. Weights for the remaining eight criteria were spread over the range from 9 to 1, as shown above. For the new set of weighting factors, criteria addressing the engineering/economic (#2,6) and compatibility (#5,7,9) factors were given additional weight relative to the ecological impact criterion. Less weight was given to soil/foundation characteristics (#4) due to lack of adequate and consistent data on submarine soils. Finally, the weighting factors for criteria #1, 3 and 8 were judged to be appropriate relative to the remaining criteria.

1.27 Using the second set of weighting factors (which lend greater emphasis to engineering, economic, and land use compatibility factors relative to environmental impact considerations) new summary matrix tables were prepared for Connecticut and New York sites. Tables 15 and 16 compare the total points scored, the percent of total possible points

TABLE 15  
WEIGHTING FACTOR SENSITIVITY ANALYSIS  
FOR CONNECTICUT SITES

CRITERIA	Weighting Factors		P3-69																	
	(1)	(2)	1-3	1-4	1-5	1-7	1-8	1-11	1-12	1-13	1-14	1-16	1-17	1-18	2-16	2-18	2-20	2-22	2-24	2-25
Ecological	10	10	50	40	60	20	20	0	0	10	20	0	0	0	70	50	60	20	50	60
Bathymetry	9	10	30	30	70	80	40	100	50	40	40	100	40	100	10	30	10	40	30	100
Exposure	7	7	42	42	21	0	0	14	21	35	35	35	42	42	49	42	49	56	21	63
Soils	7	2	2	2	20	2	2	2	2	2	2	2	2	2	2	14	2	2	2	6
Land Use	6	7	42	35	21	28	28	21	21	21	28	28	21	28	28	7	42	42	35	28
Vol. of DR	4	9	18	18	36	27	27	27	27	72	72	72	72	9	9	18	36	45	90	90
Cultural	2	2	10	10	20	10	10	2	2	2	2	2	10	10	10	20	20	10	10	20
Reuse	2	7	28	49	7	28	21	28	35	7	7	28	14	14	63	28	42	49	42	56
Hist. Disp.	1	5	30	30	0	0	0	0	20	20	0	0	0	0	25	0	25	30	0	0
Total (1)	480		194	184	270	153	106	159	119	146	178	198	149	181	196	210	160	187	218	334
Total (2)	590		252	256	255	195	148	202	178	209	206	267	201	205	266	209	286	294	286	423
Percent (1)			40	38	56	32	22	33	25	30	37	41	31	38	41	44	33	39	45	69
of Total(2)			43	43	43	33	25	34	30	35	35	45	34	35	45	35	48	49	48	72
Ranking (1)			26	20	5(b)	37	41	34	40	39	30	23	38	29	24	20	32	27	16(b)	1(c)
Ranking (2)			25	23	24	37	41	35	40	31(a)	33	20	36	34	21(a)	31(b)	16(a)	15	16(b)	2(c)

TABLE 15 (Cont.)  
WEIGHTING FACTOR SENSITIVITY ANALYSIS  
FOR CONNECTICUT SITES

CRITERIA	Weighting Factors		P3-71																	
	(1)	(2)	2-26	2-27	2-29	2-30	3-7	3-9	3-13	3-14	4-10	4-13	4-14	4-15	4-17 <sup>a</sup>	4-17 <sup>b</sup>	4-18	4-19	4-20	4-21
Ecological	10	10	70	60	70	50	30	80	50	20	30	50	30	10	40	30	30	50	10	20
Bathymetry	9	10	40	80	30	10	60	10	20	20	90	70	90	40	100	100	50	100	40	50
Exposure	7	7	49	56	56	56	42	49	42	28	42	14	42	21	21	42	42	21	28	49
Soils	7	2	6	6	8	2	8	2	6	20	12	6	6	2	8	12	2	8	8	12
Land Use	6	7	63	35	42	42	28	21	49	42	28	21	49	7	35	14	7	42	14	21
Vol. of DM	4	9	90	90	54	54	9	27	90	27	18	36	36	27	90	45	27	36	72	18
Cultural	2	2	20	20	20	20	20	10	20	20	10	20	2	2	2	2	10	10	10	10
Reuse	2	7	63	63	49	49	21	42	56	42	14	21	70	7	49	21	14	7	7	28
Hist. Disp.	1	5	25	0	25	25	25	30	30	-	0	30	15	0	0	0	0	0	0	0
Total (1)	480		313	317	280	221	213	203	255	216	241	214	257	96	265	244	156	253	158	208
Total (2)		590	426	410	355	309	243	271	363	219	244	268	340	116	345	266	182	274	189	208
Percent (1)			65	66	58	46	44	42	53	45	50	45	54	20	55	51	33	53	33	42
Percent (2)			72	69	60	52	41	46	62	37	41	45	58	19	58	45	31	46	32	35
Ranking (1)			3	2(b)	4	15	19	21	10(b)	17	14	18	9	42	6	12	36	11	35	22
Ranking (2)			1	3(b)	7	13	27	18	6	28	26	19	10	42	8	21(b)	39	17	38	32

TABLE 15 (Cont.)  
WEIGHTING FACTOR SENSITIVITY ANALYSIS  
FOR CONNECTICUT SITES

CRITERIA	Weighting Factors		P3-69		6-17		6-18		6-20		P1-9		P3-50		P3-58		P3-69		P3-72	
	(1)	(2)	5-4	5-8	6-14	6-16	6-18	6-20	6-20	6-20	P1-9	P1-10	P3-50	P3-58	P3-69	P3-71	P3-72	P3-71	P3-72	
Ecological	10	10	50	60	40	40	70	50	50	60	70	60	70	60	60	60	60	60	60	
Bathymetry	9	10	40	100	20	30	10	30	30	10	40	10	10	100	100	80	80	80	80	
Exposure	7	7	56	63	35	49	49	56	56	63	63	42	35	63	63	56	56	56	56	
Soils	7	2	8	6	8	8	6	2	2	0	0	0	0	0	0	6	6	6	6	
Land Use	6	7	49	28	35	35	49	49	28	28	35	35	42	28	28	35	35	35	35	
Vol. of DM	4	9	36	90	27	90	90	54	54	54	54	9	18	90	90	90	90	90	90	
Cultural	2	2	10	20	10	20	20	20	20	20	20	2	10	20	20	20	20	20	20	
Reuse	2	7	63	56	56	63	49	56	56	63	42	56	28	56	56	63	63	63	63	
Hist. Desp.	1	5	30	0	30	30	25	0	0	0	0	0	0	0	0	0	0	0	0	
Total (1)	480		262	334	195	258	270	242	218	255	163	176	334	317						
Total (2)		590	342	423	261	365	368	317	298	324	214	213	423	410						
Percent (1) of Total			55	69	41	54	56	50	45	53	34	37	69	66						
Percent (2) of Total			58	72	44	62	62	54	51	55	36	36	72	69						
Ranking (1)			7	1(b)	25	8	5(a)	13	16(a)	10(a)	33	31	1(a)	2(e)						
Ranking (2)			9	2(b)	22	5	4	12	14	11	29	30	2(a)	3(a)						

TABLE 16  
WEIGHTING FACTOR SENSITIVITY ANALYSIS FOR NEW YORK SITES

CRITERIA	Weighting Factors		1-1	1-2	2-11	2-12	2-13	2-14	PS-2 4-3	4-4(a)	4-4(b)	4-5	4-6	4-7	4-8	4-9	6-3	6-4	6-5
	(1)	(2)																	
Ecological	10	10	10	10	50	80	60	50	50	40	50	100	40	40	50	70	70	70	90
Bathymetry	9	10	10	30	20	90	30	50	40	40	90	100	60	20	30	20	70	20	10
Exposure	7	7	42	21	56	56	28	49	42	56	56	56	49	35	49	42	56	56	56
Soils	7	2	2	2	12	8	8	2	8	12	12	8	8	8	8	2	2	8	2
Land Use	6	7	28	21	21	35	21	28	14	35	42	42	21	14	7	35	56	42	28
Vol. of DM	4	9	9	9	81	81	90	18	9	27	27	90	27	18	27	9	9	27	9
Cultural	2	2	10	10	10	10	2	10	20	2	2	2	2	10	10	10	20	20	2
Noise	2	7	14	14	7	49	28	28	35	49	56	42	35	14	14	21	56	35	63
Misc. Disp.	1	5	0	0	0	0	0	0	40	0	30	30	0	0	0	0	0	0	0
(1)	480		110	101	232	335	211	201	210	232	301	370	213	155	161	195	284	250	170
Total																			
(2)	590		123	117	257	409	267	235	258	261	335	470	242	159	195	227	339	278	220
Percent (1)			23	21	46	69	44	42	44	48	63	77	44	32	34	41	59	52	35
of Total (2)			21	20	44	69	45	40	44	44	57	79	41	27	33	38	57	47	37
(1)			31	32	20(b)	7	22	26	23	20(b)	13	3	21	30	29	27	14(a)	19	28
Ranking			33	34	25	8	21	27	24	23	15	1	26(b)	32	31	28	14	19	29

TABLE 16 (Cont.)  
WEIGHTING FACTOR SENSITIVITY ANALYSIS FOR NEW YORK SITES

CRITERIA	Weighting Factors		7-1	7-3	P1-3	P1-4	P1-5	P1-6	P1-7	P2-6	P3-18	P3-24	P3-25	P3-26	P-3-39	P3-43	P3-44	P3-47	P4-4	P3-27
	(1)	(2)	70	100	50	60	70	80	80	80	80	80	80	80	80	80	70	70	80	80
Ecological	10	10	70	100	50	100	100	70	100	100	0	30	80	60	100	100	90	0	0	100
Bathymetry	9	10	14	56	56	70	56	63	56	63	56	49	63	63	63	63	56	63	63	56
Exposure	7	7	12	12	18	20	20	6	12	12	12	12	12	12	8	6	6	2	12	12
Soils	7	7	42	35	35	28	42	28	35	35	35	49	28	42	28	42	35	42	28	28
Land Use	6	7	0	27	27	90	81	81	90	81	18	27	27	27	81	81	81	27	27	18
Vol. of DM	4	9	0	20	20	20	20	20	2	20	20	0	0	2	20	10	10	10	20	20
Cultural	2	2	42	63	28	35	35	35	21	28	35	21	21	28	49	35	35	28	35	42
Reuse	2	7	0	0	0	0	0	0	0	0	0	0	6	30	0	0	35	0	30	25
Misc. Disp.	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	30	25
(1)	480		203	320	284	384	388	329	346	369	267	258	305	303	355	346	321	206	257	256
Total	(2)		210	365	284	423	424	383	396	419	262	268	317	344	429	417	418	242	295	381
Percent (1)			42	67	59	80	81	69	72	77	56	54	64	63	74	72	67	43	54	53
of Total (2)			36	62	48	72	72	65	67	71	44	45	54	58	73	71	71	41	50	65
(1)			25	10	14(b)	2	1	8	6(a)	4	15	16	11	12	5	6(b)	9	24	17	18
Ranking	(2)		30	12	18	4	3	10	9	5	22	20	16	13	2	7	6	26(a)	17	11

scored (480 for method (1) and 590 for method (2)), and the overall ranking of each site for the two sets of weighting factors for Connecticut and New York, respectively. In addition to the comparisons shown in Tables 15 and 16, Tables 7, 8, 12 and 13 previously presented allow further observations to be made on the sensitivity of site scoring to changes in the weighting factors.

1.28 On an overall basis, the average percent scores of each site category did not change appreciably, nor did the distribution of site scores based on percent of total. In short, the sensitivity of the secondary screening and ranking process does not appear to be significant, at least based on the two sets of weighting factors tested. Table 17 presents a cross reference of site ranking for the sites originally ranked in the top ten for Connecticut and New York (see Tables 9 and 14). It is observed that, except for sites 1-5, and P1-10 in Connecticut and site 7-3 in New York, the group of sites ranked in the top ten in each state remain the same, although the order of ranking within each group changes.

1.29 Sites that scored lower under the second set of weighting factors, such as 1-5 in Connecticut, and P1-5 and P1-7 in New York, did so primarily due to one or all of the following reasons: (1) these sites originally scored high under the soils/foundation criterion, but the weighting factor for this criterion was substantially reduced; or (2), these sites originally scored low under the criteria for available DM volume needing containment, land reuse potential, or historical DM disposal, and the weighting factors for these criteria were substantially increased. Sites that scored higher under the second set of weighting factors, such as 3-13 in Connecticut and P3-39, P4-5 and P3-44 in New York did so for the opposite of the reasons given above.

1.30 As previously stated, the specification of weighting factors has involved a certain amount of subjective reasoning on the part of the

TABLE 17

SUMMARY OF WEIGHTING FACTOR  
SENSITIVITY ANALYSIS

CONNECTICUT			NEW YORK		
SITE NO.	Ranking		SITE NO.	Ranking	
	(1)	(2)		(1)	(2)
P3-69	1(a)	2(a)	P1-5	1	3
5-8	1(b)	2(b)	P1-4	2	4
2-25	1(c)	2(c)	4-5	3	1
P3-71, P3-72	2(a)	3(a)	P2-6	4	5
2-27	2(b)	3(b)	P3-39	5	2
2-26	3	1	P1-7	6(a)	9
2-29	4	7	P3-43	6(b)	7
6-18	5(a)	4	2-12	7	8
1-5	5(b)	24	P1-6	8	10
4-17(a)	6	8	P4-5, P3-44	9	6
5-4	7	9	7-3	10	12
6-16, 6-17	8	5			
4-14	9	10			
P1-10	10(a)	11			
3-13	10(b)	6			

planning team. Although the sensitivity of the site criteria scores based on the two sets of weighting factors used above was not significant, the order of ranking did change somewhat. The identification of sites worth serious examination for building a containment structure may best be approached by selecting sites that score well under two or more sets of weighting factors, as those sites given in Table 17. Further tests of weighting factor sensitivity should be made based on input from concerned agencies, municipalities, environmental groups, etc.

#### ANALYSIS OF THE TOP TEN RANKED SITE GROUPS IN CONNECTICUT

1.31 The use of the primary screening analysis (Step 2) reduced the number of public (133) and additional (121) sites from a total of 254 to 84 for secondary analysis (49 in Connecticut). The secondary analysis (Step 3) ranked the selected alternatives in the relative order of desirability independently for Connecticut and New York sites. This section presents maps and summarizes the site-specific information for each site or site group which ranked within the top ten for both weighting factor methods previously presented.

1.32 Table 18 presents the top ten site groups in Connecticut. A site group includes at least one site which scored within the top ten under both sets of weighting factors. For each site group, there is an accompanying location map and a brief summary description of the site group. Appendix B presents tables for each site which summarize the site-specific information used to develop the secondary screening analysis.

#### Site Group No. 1 - New Haven Harbor

1.33 Site Group No. 1 consists of a public site (Bayview Park) previously analyzed in the Interim Report, two municipal wastewater

TABLE 18  
TOP TEN SITE GROUPS IN CONNECTICUT

Group No.	Ranking		Site No.	Name of Site	Figure No.
	(1)	(2)			
1	1(a) (b) (c) 3	2(a) (b) (c) 1	P3-69 5-8 2-25 2-26	Bayview Park Sargent & Co. New Haven Blvd.* New Haven-East St.*	5
2	2(a) (b) 10(b)	3(a) (b) 6	P3-71,72 2-27 3-13	East Shore & Nathan Hale Parks New Haven-East Side* English - United Illuminating	5
3	9 7	10 9	4-14 5-4	Breakwaters-Bridgeport H. Remington Electric	6
4	10(a) 4	11 7	P1-10 2-29	U.S. Coast Guard Academy Riverside Plant*	7
5	5(a)	4	6-18	Oil Terminals - Atlantic Richfield Exxon Getty Oil Co. Gulf Oil Corp. New Haven Terminal	5
6	5(b)	24	1-5	Kelsey Island	8
7	6 16(b)	8 16(b)	4-17a 2-24	Breakwater, New Haven H. West Haven*	5
8	8	5	6-16 6-17	Connecticut Refining Co. Elm City Plant No. 3	5

\* Municipal Wastewater Treatment Plant

treatment plants, and an industrial discharge (Sargent & Co.). This area is located away from residential areas, is surrounded by major roadways, and the containment area (shown by the shaded areas in Figure 5) would be near but would not interfere with the major navigational channel and anchorage areas. This area is near waterfowl nesting areas and shellfish beds (closed), but is located away from wetlands. The combined total volume of the site available for containment of dredged material is estimated at almost 7 million cubic yards distributed over a surface area of about 275 acres. (An average maximum height of confined dredged material of 10 feet above Mean Sea Level was assumed.) The site is located in the New Haven Quad #29 which contains the highest projected volume of dredged material for all Connecticut Quads (348,000 cy/year or 3,480,000 cy in ten years). This area is located in a low wave energy and a non-critical erosion zone, and the containment dikes would serve to protect the adjacent roadways and low lying structures. The sediment characteristics of the site consist of a fine sand and silt mixture, and thus the foundation bearing capacity is likely to be poor. The land use within a 1-mile radius of the site consists of 30% residential, 10% recreational, 20% industrial, 10% wetland, and 20% open space. The site is isolated from the residential areas by a major interstate highway, institutional (treatment plants), and open lands. The areawide plan indicates the need for a recreation facility near the proposed containment site. This creates the possibility of integrating a small boat marina and associated recreational facilities with the containment facility.

#### Site Group No. 2 - New Haven Harbor

1.34 Site Group No. 2 consists of two local public parks (East Shore and Nathan Hale Parks), the New Haven East Side Wastewater treatment plant, and United Illuminating's English power station. These



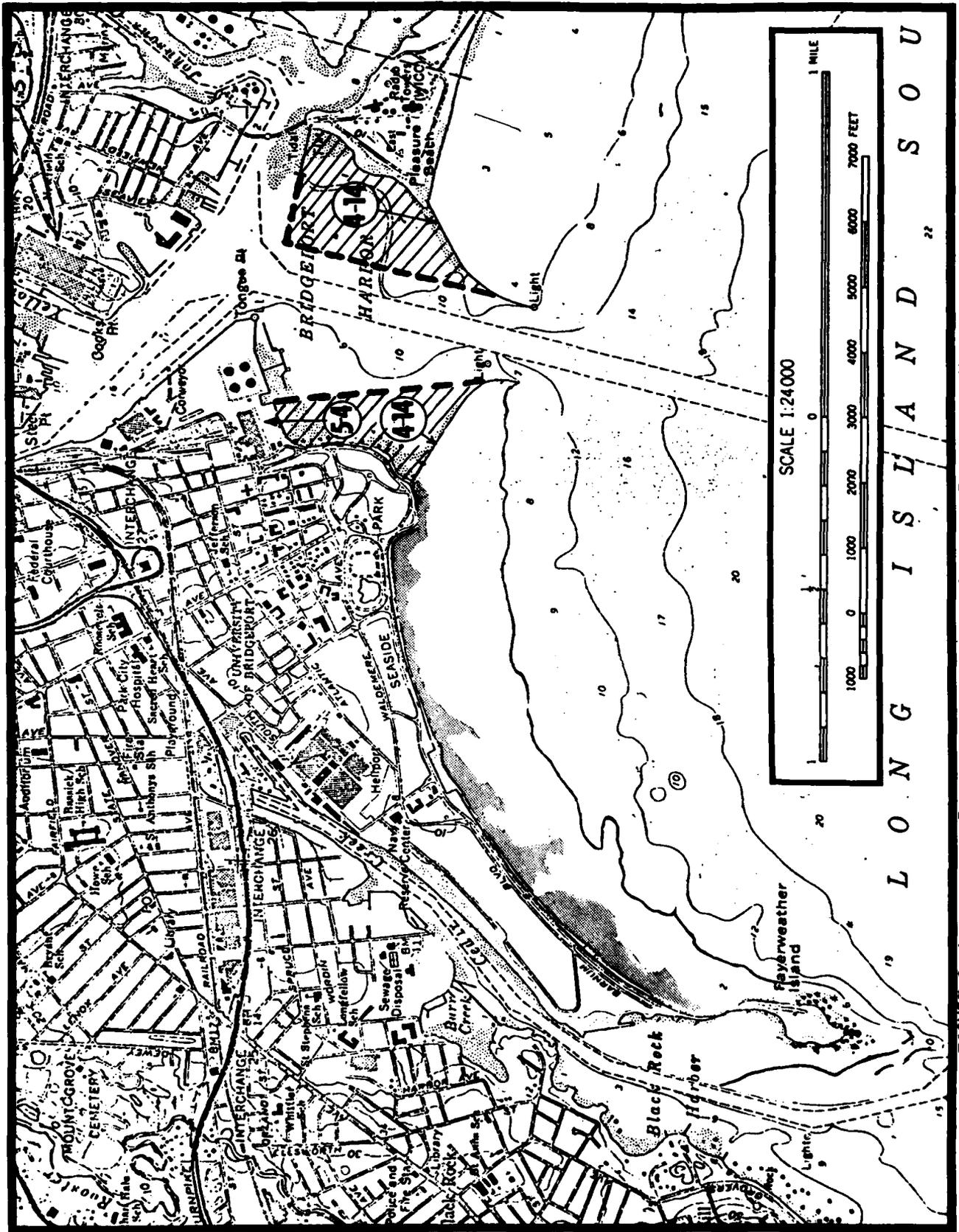


FIGURE 6 LOCATION OF POTENTIAL CONTAINMENT SITES AT BRIDGEPORT HARBOR

port quadrangle is about 90,000 cy/year or 900,000 cy in ten years. Land use surrounding the harbor entrance consists of 16% residential, 16% recreational, 4.5% commercial, 22% industrial, 6.5% wetlands, 15% public, and 20% open space. Access to sites on either side of the harbor entrance is good by both water and land. The area-wide plan calls for expansion of oil storage facilities and development of the Pleasure Beach recreational facilities (marina). Properly designed containment facilities could be made compatible with such uses.

#### Site Group No. 4 - New London

1.36 Site Group No. 4 consists of a public site (U.S. Coast Guard Academy) and the Riverside wastewater treatment plant on the west bank of the Thames River about 5 miles upstream from the entrance to LIS. This area is a mixture of land uses, including about 50% residential, 10% recreational, 10% commercial, 5% industrial, 10% institutional, and 15% open space. Railroad tracks run along the entire length of river short-front on both banks. Shellfish beds (closed?) exist along the riverbank. The combined total volume of areas shown in Figure 7 is about 2.4 million cubic yards over a surface area of about 100 acres. The projected annual dredging within the New London quadrangle is about 160,000 cy/year or 1,600,000 cy in ten years. Sediments are composed primarily of fine sands and silts, and thus offer relatively poor foundation support, as is true of most sites examined in Connecticut. Land created by a containment structure could be used to create riverfront parkland, wildlife areas, or light industrial use.

#### Site Group No. 5 - New Haven Harbor

1.37 Site Group No. 5 is a conglomerate of oil handling and storage facilities on the upper east side of New Haven Harbor. Although this site scored high under most criteria, the existence of deepwater docking facilities along most of the shorefront, as well as the lack of adequate available containment areas, makes this site unacceptable for a containment site.

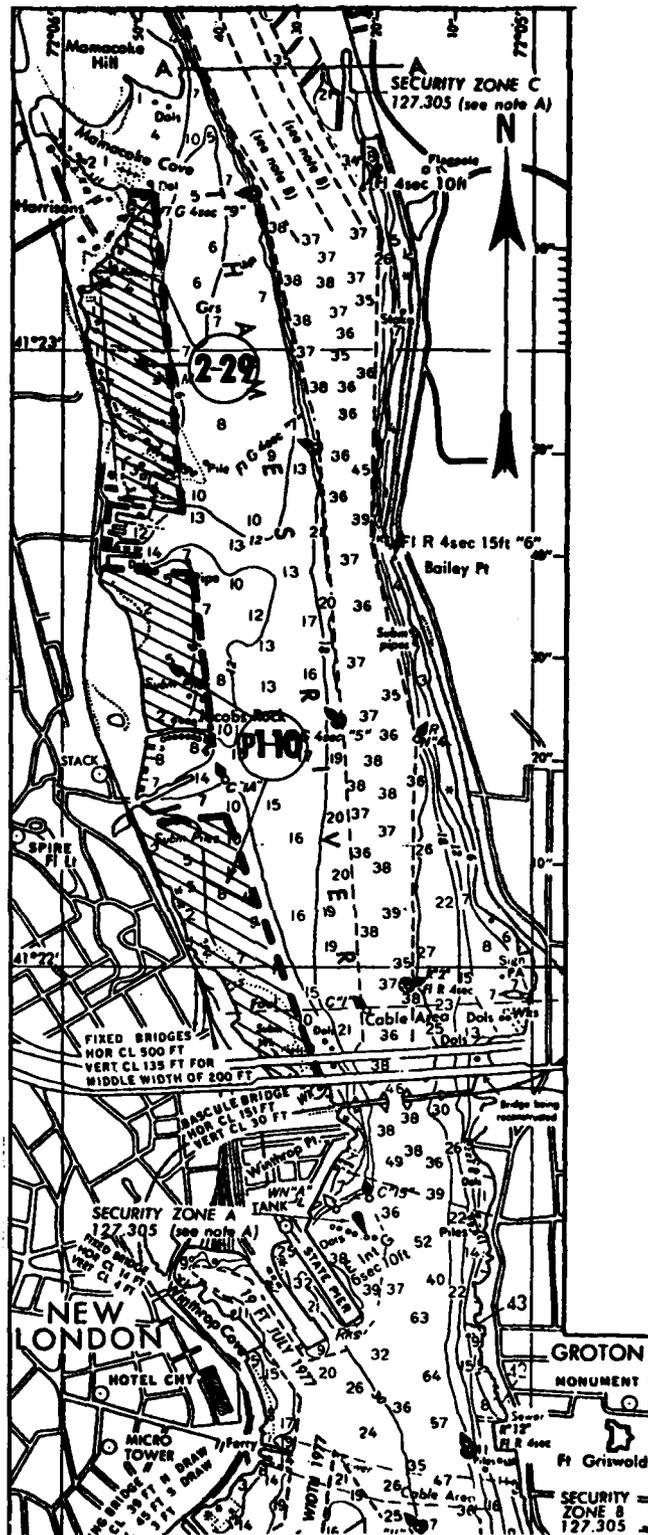


FIGURE 7 LOCATION OF POTENTIAL CONTAINMENT SITES IN NEW LONDON

#### Site Group No. 6 - Branford Harbor

1.38 Site Group No. 6 is actually a single shallow water site (Kelsey Island) near Branford Harbor as shown on Figure 8. According to Table 18 and the previous analysis on weighting factor sensitivity, this site dropped from fifth place under the first set of weighting factors to twenty-fourth place under the second set, which places greater emphasis on economic and re-use factors. In addition, this site scored the highest of all eighteen shallow water areas primarily because of the favorable sediment characteristics (rock) for foundation support, however, the weighting factor for soil characteristics was substantially reduced. The Kelsey Island site is surrounded by residential, recreational, and open space. Shellfish beds are located at the site. The approximate volume of the containment site is 2 million cubic yards over an area of about 62 acres. The projected annual dredging in the Branford quadrangle is about 29,000 cy/year or 290,000 cy in ten years. Potential use of this site would be most probable as open land for wildlife refuge.

#### Site Group No. 7 - New Haven Harbor

1.39 Site Group No. 7 consists of the West Haven wastewater treatment plant and a nearby breakwater on the west side of New Haven Harbor (see Figure 5). It is observed from Table 18 that the treatment plant site (2-24) scored relatively low on the ranking scale (16th) compared to the adjacent breakwater site (4-17a) which ranked 6th and 8th under the two sets of weighting factors. The difference in scoring is primarily due to the greater available volume and surface area of site 4-17a. Together, the volume of these sites is about 4 million cubic yards, over a surface area of about 186 acres. The shoreline along this site is characterized primarily by residential use, recreational land, water related commercial, open space, and the municipal wastewater treatment facility. The shallow area enclosed within the shaded zone shown



FIGURE 3 LOCATION OF POTENTIAL CONTAINMENT SITE NEAR BRANFORD HARBOR

in Figure 5 is coincident with shellfish beds. The site is exposed to moderate wave energy and is in a known critical erosion area. Sediments consists of fine sands and silts. Access to this site by land is limited to secondary, residential roads. There is presently no access channel by water. The areawide plan calls for creation of new public recreational facilities (marina, fishing pier, etc.), which could be integrated with a properly planned containment facility.

#### Site Group No. 8 - New Haven Harbor

1.40 The last site group containing sites which scored within the top ten of all Connecticut sites consists of two oil processing facilities (6-16 and 6-17) located in the northwest corner of New Haven Harbor off City Point. The volume of this site is about one million cubic yards over an area of about 44 acres. The surrounding land use is a mixture of residential, commercial, industrial (oil facilities), and open space adjacent to a highway interchange. There is good access to this site both by land and water. Exposure considerations are minimal. Shellfish beds exist at the site and a wetlands area is located just to the north, but not immediately adjacent to, the site. The re-use potential of this site is very high as either recreational, commercial or industrial space.

#### ANALYSIS OF THE TOP TEN RANKED SITE GROUPS IN NEW YORK

1.41 Table 19 presents the top ten site groups in New York. For each site group, there is an accompanying location map and a brief summary description of the site group. Appendix B presents tables for each site which summarizes the site-specific information used to develop the secondary screening analysis.

#### Site Group No. 1 - Upper East River/Little Neck Bay

1.42 Site Group No. 1 consists of the Fort Totten military base at Willets Point and the adjacent Little Bay Park under the southern approach

**TABLE 19**  
**TOP TEN SITE GROUPS IN NEW YORK**

Group No.	Ranking		Site No.	Name of Site	Figure
	(1)	(2)			
1	1 5	3 2	P1-5 P3-39	Fort Totten Little Bay Park	9
2	2	4	P1-4	U.S. Merchant Marine Ac.	9
3	3	1	4-5	Dike, Flushing Bay	10
4	4 8	5 10	P2-6 P1-6	New York State Merchant Marine Ac. U.S. Naval Reservation	9
5	6(a)	9	P1-7	U.S. Military Reservation	11
6	6(b)	7	P3-43	Ferry Point Park	12
7	7	8	2-12	Tallman Island*	12
8	9	6	P4-5 P3-44	Pelham Bay Park Pelham Bay Park	11
9	10	12	7-3	Colonial Sand & Stone	13

\* Municipal Wastewater Treatment Plant

to the Throgs Neck Bridge (see Figure 9). The surrounding land use is made up of about 50% residential, 20% recreational, 5% industrial, 10% open space, and 15% military. The residential areas are isolated from the shoreline for the most part by the Cross Island Parkway and bridge access ramps. The total volume estimated to be available for containment is about 10 million cubic yards over a combined surface area of 330 acres. This site group is located in the Flushing quadrangle, which has an estimated projected annual dredging volume of 140,000 cy/year or 1,400,000 cy in ten years. Exposure considerations at this site are minimal. Sediment characteristics consist of fine to coarse sands. Access by both water and land is considered excellent. Although there are no significant ecological areas associated with these sites, the location is a major flyway for birds and as such should be considered for reuse as a bird feeding area or wildlife habitat. The reuse potential of these sites is also considered excellent for new recreational, light industrial, or institutional expansion.

#### Site Group No. 2 - Kings Point

1.43 Site Group No. 2 is actually a single site P1-4, the U.S. Merchant Marine Academy at Kings Point near the mouth of Little Neck Bay (see Figure 9). Although this site scored high, the existence of docks along the entire shorefront of the site, as well as surrounding residential lands and the absence of major highways or industrial/commercial uses makes this site appear less suitable for a containment facility after a closer examination.

#### Site Group No. 3 - Flushing Bay

1.44 Site Group No. 3 consists of a single site 4-5 located at La Guardia Airport in Flushing Bay, as shown in Figure 10. There are no known significant ecological areas in proximity to this site (water quality in this area is poor). The volume estimated for this site is about 10 million cubic yards, over an area of about 360 acres. Exposure considerations at this site are minimal. Land use in the surrounding area

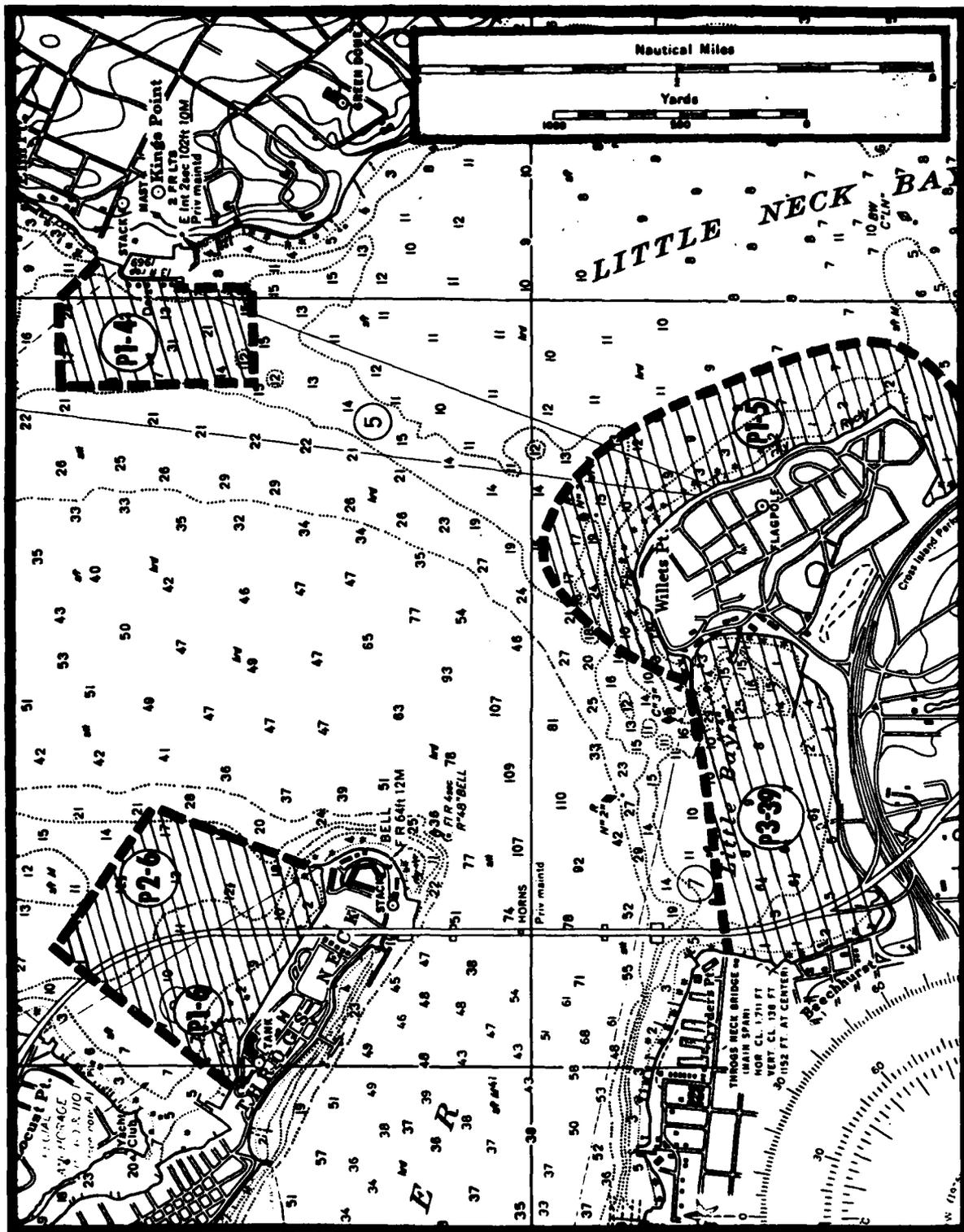


FIGURE 9 LOCATION OF POTENTIAL SITES AT THROGS NECK



consists primarily of commercial (airport), residential (College Point) with some industrial and open space. Access by both water and land is very good. Because of weak foundation conditions, this area could not be used for runway expansion, nor could this area be used as a wildlife sanctuary due to the adjacent airport. Possible uses could include, however, a buffer zone between residences and the airport runway, expansion of airport support facilities, or light industrial or commercial use utilizing the adjacent ship channel.

#### Site Group No. 4 - Throgs Neck

1.45 Site Group No. 4 consists of the New York State Maritime College (P2-6) and the adjacent U.S. Naval Reservation (P1-6) on Throgs Neck (see Figure 9). The site shown is located away from high residential areas, does not obstruct navigation channels, and is located directly under the Throgs Neck Bridge. There are no significant ecological areas associated with this site. The estimated volume available for containment is about 7 million cubic yards over a surface area of about 100 acres. Exposure conditions are judged to be minimal at this location. Soil characteristics consist of a fine and coarse sand mixture. The land use mixture for the adjacent shore area consists of 70% residential, 20% open space, and 10% institutional. The residential area located at Locust Point may play an important opposing role in planning a containment structure at this site. Much of the shoreline area at Locust Point is used for small boat piers and may interfere with the construction of containment in the area. However, compatibility with the Locust Point residents may be realized by constructing additional facilities and piers for boats along the containment dike which would enhance the future value of the surrounding lands. The land reuse potential for New York State Maritime College (2-6) has pro and con aspects. The New York location is characterized by: (1) a lack of adjacent industrial or commercial use in the immediate area, (2) although Route 296 is nearby, immediate site access is by secondary roads through residential areas, and (3) small boat docking facilities are located nearby. The areawide plan for this section of the Bronx (District 10) has identified the need for additional industrial area. The scarcity of industrial lands makes the development of light industry conceivable

for containment area reuse. The potential use of the site for industrial purposes would also help improve employment opportunities in this highly urbanized area.

#### Site Group No. 5 - Hart Island

1.46 Site Group No. 5 is a single public site (P1-7), a U.S. Military Reservation on Hart Island as shown in Figure 11. This site is in close proximity to City Island and Orchard Beach at Pelham Bay Park. Thus, the area is surrounded by residential and recreational shoreline uses. Shellfishing in this area is closed due to consistently poor water quality. Wave exposure is moderate and much of the shoreline is subject to critical erosion. The estimated volume of this site is about 1 million cubic yards over a surface area of about 34 acres. The New York City Coastal Zone Management Plan has identified the need for an artificial island for recreational purposes as well as a barrier for flood protection for City Island and Pelham Bay Park. A containment facility located approximately as shown in Figure 11 could serve these purposes.

#### Site Group No. 6 - Ferry Point Park

1.47 Site Group No. 6 consists of the public site P3-43, Ferry Point Park, located adjacent to the Whitestone Bridge on the north shore of the Upper East River (see Figure 12). As observed, this site is primarily surrounded by open parkland, the land use breakdown being 30% residential, 50% recreational, 10% commercial/industrial, and 10% open space. There are no significant ecological areas at or near this site. Exposure conditions are minimal. The total volume of the site is about 3.3 million cubic yards over an area of about 120 acres. Sediments in this area consist of fine sands and silt. Access by both

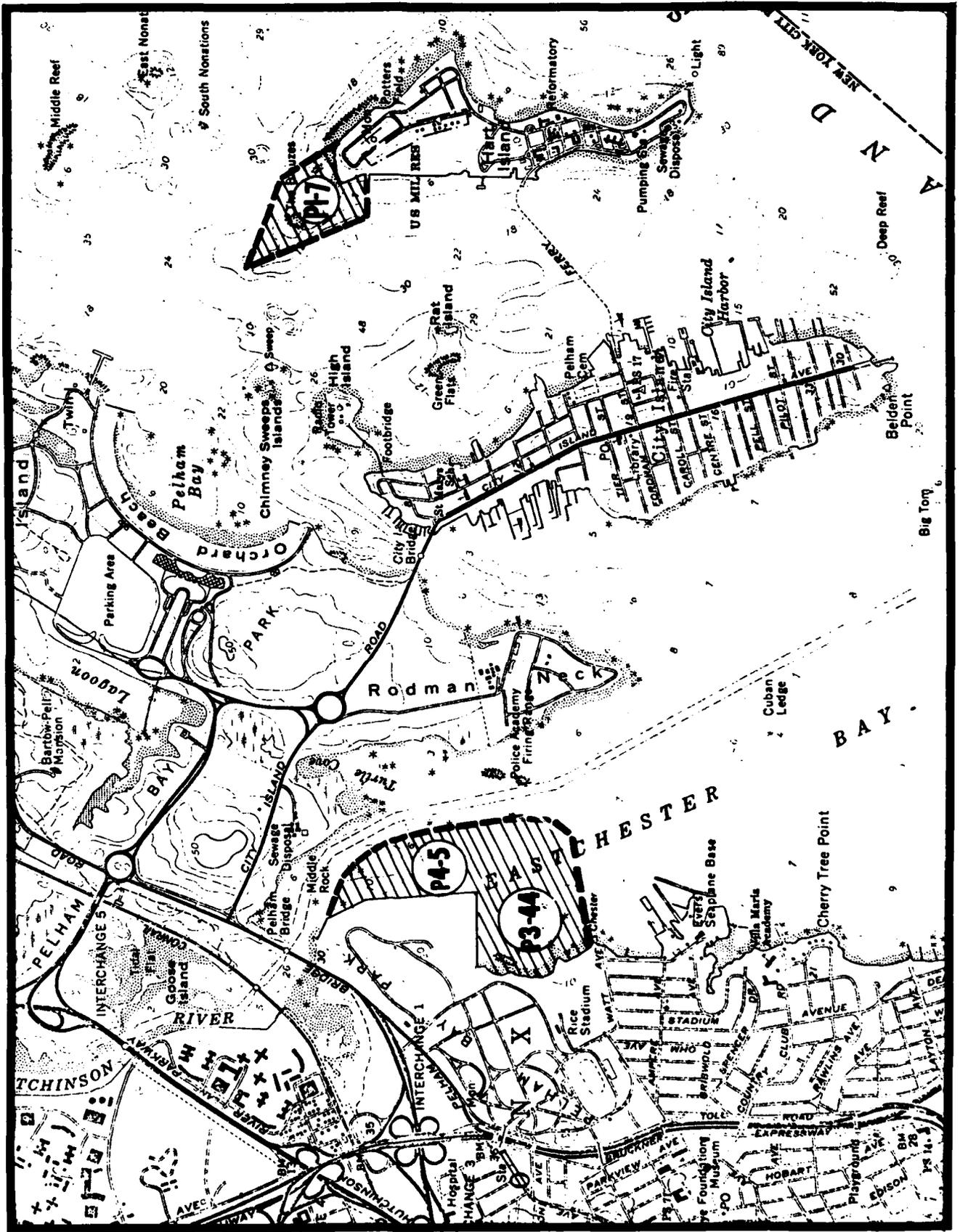


FIGURE 11 LOCATION OF POTENTIAL SITES NEAR PELHAM BAY PARK

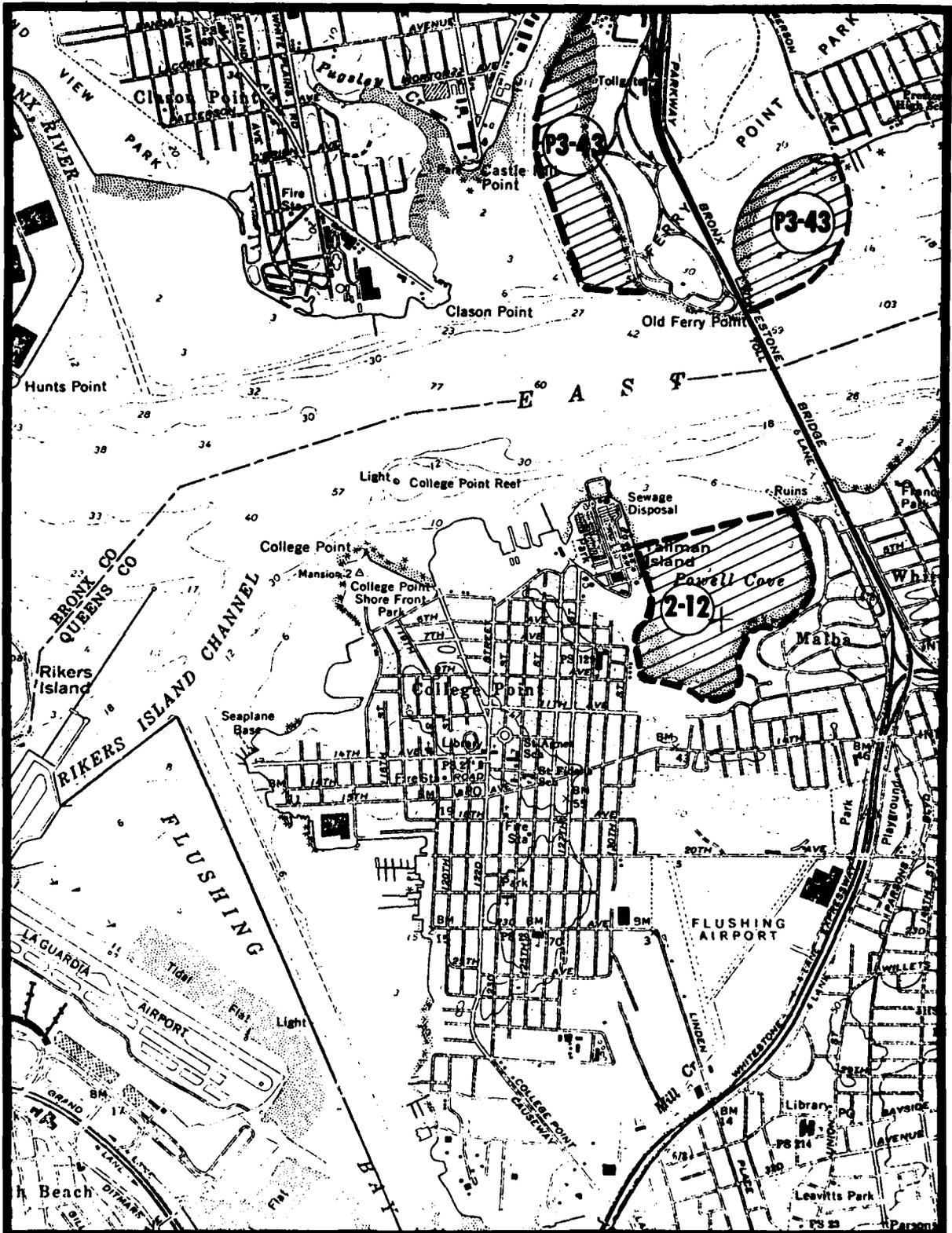


FIGURE 12 LOCATION OF POTENTIAL SITES IN UPPER EAST RIVER

water and land is considered good. In view of the present adjacent public park area, the only reasonable reuse of this site would be expansion of the park areas for recreation or wildlife refuge. Contrary to this, however, the areawide plan calls for additional residential building space in this part of the Bronx.

#### Site Group No. 7 - Tallman Island

1.48 Also shown in Figure 12 is Site Group No. 7 which is the Tallman Island Wastewater Treatment Plant (site 2-12) which is located directly across the East River from Ferry Point Park. Despite the presence of the treatment plant, most of the shoreline around Powell Cove is high density residential with some open space along the shoreline, which is considered to be an incompatibility for a containment facility. This site, therefore, is not recommended for further detailed evaluation.

#### Site Group No. 8 - Pelham Bay Park

1.49 Site Group No. 8 is the Pelham Bay Park in the Bronx along the shoreline of Eastchester Bay. Much of the shoreline of this site was filled in with construction fill and previously disposed dredged material by the Corps of Engineers. The area outlined in Figure 11 has an estimated containment volume of about 3 million cubic yards over an area of about 100 acres. Besides wetlands located across the Hutchinson River channel, there are no significant ecological areas associated with this site. Portions of the shoreline are presently bulkheaded, and there are no severe exposure conditions. Sediments are composed of mud, silt, and fine sands. The land use surrounding this site consists of about 40% residential, 40% recreational, and 20% industrial. Access by land and water appears good. As with the Ferry Point Park site, the reuse of this site would primarily be expansion of recreational land, however, again the area-wide plan calls for increased residential space.

### Site Group No. 9 - Hempstead Harbor

1.50 Site Group No. 9 is site 7-3, which is the large Colonial Sand and Stone mining operation on the west shore of Hempstead Harbor (see Figure 13). The surrounding area is a wide mixture of uses, including 30% residential, 18% recreational, 2% commercial, 28% industrial, 5% public, and 17% open space. There are no significant ecological areas associated with this site. Exposure conditions are negligible. There is some concern for the economic and engineering feasibility of transporting dredged material to this site from areas outside of Hempstead Harbor due to the location and shallow, confined nature of lower Hempstead Harbor. However, the shipping channels do allow the transport of petroleum barges to oil facilities in Roslyn at the southern tip of Hempstead Harbor. The area-wide plan calls for the reclamation of the sand pits for recreation space and facilities. This would require upland disposal of dredged material which was not addressed under this study. However, a shorefront containment site could add additional open space for recreational use. The total volume of the site shown in Figure 13 is about 3.5 million cubic yards over a surface area of about 116 acres.

#### SUMMARY

1.51 A total of 254 sites have been examined under both the Interim (133 sites) and Addendum (121 sites) Studies. A summary of the siting analysis is shown in Table 20. Out of the 254 sites examined, 84 passed the primary screening test. The purpose of this primary test is to eliminate those sites which are clearly not acceptable for hosting a containment facility. The remaining 84 sites were examined in greater detail under the secondary screening process. The purpose of this secondary test is to screen a large number of sites having recognized potential using general criteria and macro-scale data. The criteria point evaluation is used

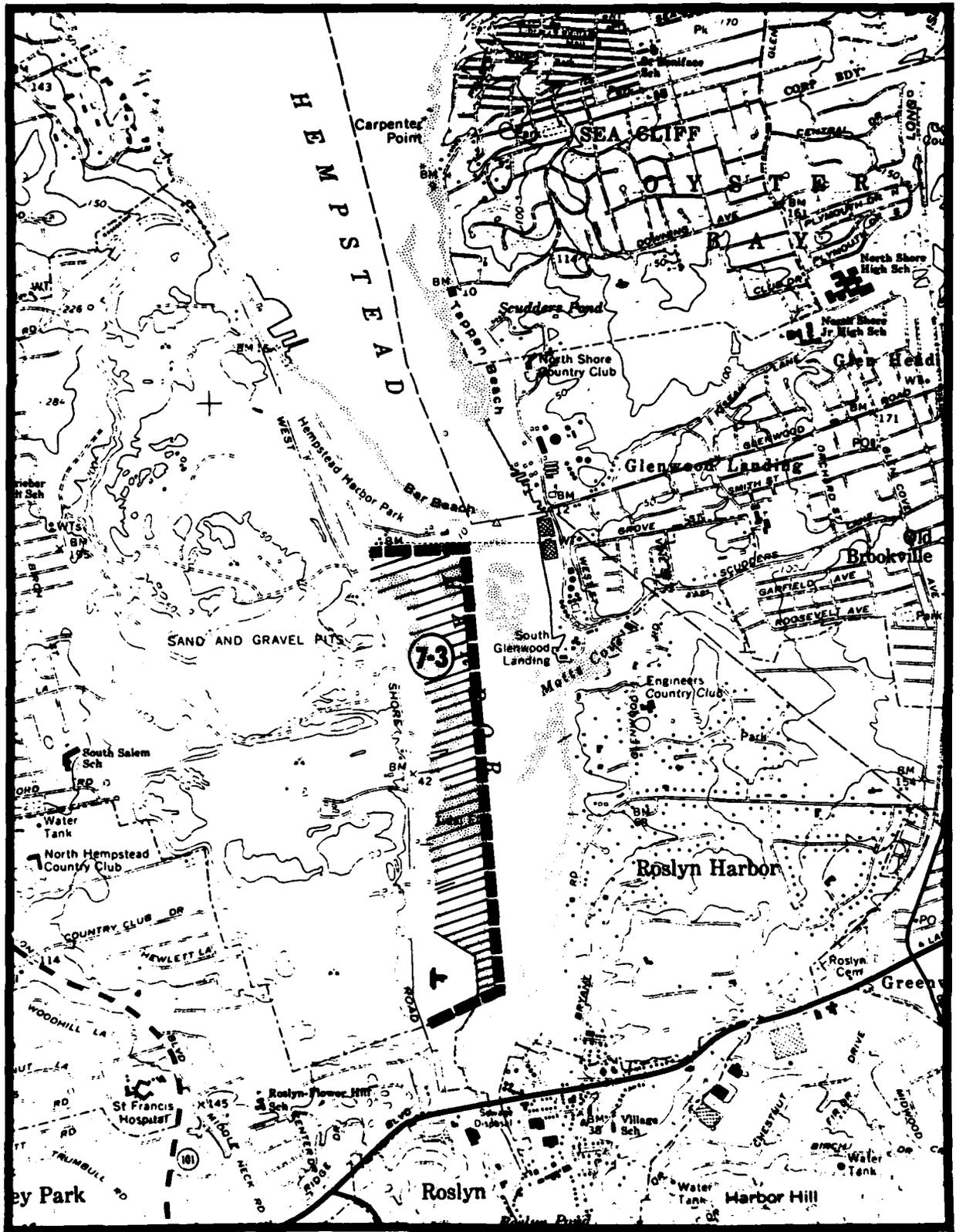


FIGURE 13 LOCATION OF POTENTIAL SITE IN HEMPSTEAD HARBOR

TABLE 20  
SUMMARY OF SITING ANALYSIS

	Connecticut	New York	Totals
Total No. Sites Analyzed	126	128	254
No. Sites Passing Primary Screening	49	35	84
No. Sites Recommended for Further Study	22	16	38
Range of Secondary Screening Scores for Recommended Sites	45%-70%	60%-80%	---
Range of Average Ranking for Recommended Sites	1-19	1-15	---

to rank sites surviving primary screening for relative acceptability, and to aid the planner in judging the relative advantages or disadvantages of one site over another. Sites that rank among the highest should have great enough potential for hosting a containment facility to warrant further consideration. Based on the experience of the planning team in evaluating the 84 sites under secondary screening, it is judged that sites in Connecticut that scored greater than approximately 45% of the total criteria points possible and sites in New York that scored greater than approximately 60% of the total possible warrant further consideration. As shown in Table 20, there are 22 sites in Connecticut that scored greater than 45% and these sites ranked within the range 1-19 out of 126 sites analyzed. Likewise, there are 16 sites in New York that scored greater than 60% and these sites ranked within the range 1-15 out of 128 sites analyzed. Table 21 presents a list of the above sites recommended for further consideration.

1.52 In developing the siting analysis used in this study, the ultimate goal was to identify those sites which came closest to having the characteristics of the ideal containment site. Such a site could be briefly defined by considering the following major considerations in developing a containment facility in LIS.

#### 1. Engineering Feasibility

- Containment Capacity - the ideal site should have a relatively large surface area and capacity for allowing future expansion. The ideal site would have (of the order) 100 acres surface area and 5 million cubic yards capacity.
- Exposure - the ideal site should be located in an area with low exposure to waves and littoral sediment transport in order to minimize dike construction and maintenance problems. Such a site would most likely be located inside

TABLE 21  
SITES RECOMMENDED FOR FURTHER CONSIDERATION

Category	Connecticut	New York
1. Shallow Water Areas	1-5 Kelsey Island	-- -----
	2-24 West Haven 2-25 New Haven-Blvd. 2-26 New Haven-East St. 2-27 New Haven-East Side 2-29 New London-Riverside Plant 2-30 New London-Trumbull St.	2-12 Tallman Island
2. Municipal Waste Water Treatment Facilities		
3. Power Generating Stations	3-13 English, United Illum.	-- -----
	4-13 Black Rock Harbor, Bridgeport 4-14 Bridgeport Harbor 4-17a New Haven Harbor 4-17b New Haven Harbor 4-19 Duck Island Harbor	4-4b Hempstead Harbor 4-5 Flushing Bay & Creek
4. Corps Navigation Projects with Jetties or Breakwaters		
5. Industrial Wastewater Discharges	5-4 Remington Electric - Metal Plating 5-8 Sargent & Co. - Metal Services	-- -----
	6-16 Connecticut Refining Co. 6-17 Elm City Plant No. 3 6-18 Oil Terminals - Exxon, Getty, Gulf 6-20 Hess Oil Co.	6-3 Oil Terminals - Swezy, Exxon, Mobil
6. Petroleum Facilities		
7. Sand and Gravel Pits	---	7-3 Colonial Sand & Stone, Penn Ind.

TABLE 21 (Continued)  
SITES RECOMMENDED FOR FURTHER CONSIDERATION

Category	Connecticut	New York
Public Sites from Interim Report	P1-9 Fort Trumbull U.S.N. Reservation	P1-4 U.S. Merchant Marine Academy
	P1-10 U.S. Coast Guard Academy	P1-5 Fort Totten Military Reservation
	P3-69 Bayview Park	P1-6 U.S. Naval Reservation
	P3-71 East Shore Park	P1-7 U.S. Military Reservation
	P3-72 Nathan Hale Park	P2-6 New York State Merchant Marine Academy
		P3-25 Garvies Point Preserve
		P3-26 Garvies Point Park
		P3-39 Little Bay Park
		P3-43 Ferry Point Park
		P4-5 Pelham Bay Park (Bronx)
		(P3-44)
		P5-8 Tappan Beach (Hempstead H.)
		(P3-27)

a harbor, if possible, or towards western LIS where wave forces are minimal.

- Access - the ideal site should have good access from both water and land in order to allow both barge transport of dredged material to the site, and access from land for construction, operation, and reuse purposes. The ideal site would thus be located near a channel or deep water, and adjacent to a major road or highway.

## 2. Optimization of Net Economic Benefits

- Minimize Construction Costs and Capital Investment - the ideal site should have a large surface area relative to the total length and size of the containment dikes. Thus, a round-shaped containment area is more desirable than a long, narrow containment area. Also, the shoreline at the site should require a minimum of relocation of existing structures, such as docks. In addition, a few large containment facilities at key centralized locations would be much less expensive than several small facilities located near every harbor along the LIS shoreline.
- Minimize Operation and Maintenance Costs - in addition to the above characteristics, the ideal site should be located in low exposure areas to minimize maintenance problems, it should have ready access from land and water, and should be located such that the distance from the site to the areas of major dredging is minimized.
- Maximize Re-use Potential - the ideal site should be located such that the indirect economic benefits from future site re-use can be maximized. Thus, the site should be located

adjacent to industrial or commercial areas where expansion is possible, or where the area-wide plan calls for expansion of recreation, commercial or industrial space.

### 3. Protect Environment

- Physical Environment - the ideal site should not be located in areas of critical shoreline erosion, it should not obstruct navigation, and should not alter the circulation or flushing of an estuary which might increase water quality problems.
- Biological Environment - the ideal site should be located in an area where there would be minimal encroachment on important areas for finfish spawning, shellfish, lobsters, etc.
- Chemical Environment - the ideal site should be located such that the dewatering effluent does not discharge to an area of poor flushing, nor in proximity to public bathing beaches or open shellfish beds.

### 4. Protect Overall Public Interest

- Public Health and Welfare - the ideal site should be located away from residential areas where nuisance factors (odors, noise, indirect disturbances, etc.) would not encroach on nearby residents. The site should also not cause direct or indirect exposure of contaminants to humans through either bathing or consumption of fish or shellfish.
- Social Acceptability - the ideal site should not adversely impact private property values, cultural resources or employment levels.

## 5. Legal/Regulatory

- Ownership - to alleviate land acquisition and easement problems, the ideal site should be adjacent to publicly owned property, unless there is a site on private land which is compatible with private interests.
- Land Use - the ideal site should be in an area that is or can be zoned for the appropriate future use of the site.

1.53 Identification of a site which meets all of the above requirements at once is difficult in LIS because of the extensive mixture of land uses along the Sound, the existence of important ecological areas especially in shallow water areas near the shoreline, and the fact that most of the truly compatible areas (industrial, commercial, etc.) are usually located inside congested harbors where there is simply no room for a containment facility. These factors have made the identification of acceptable containment sites an issue in itself, and has required the development and application of a comprehensive, systematic siting methodology which can address the several competing factors and identify areas worth serious consideration. It is believed that certain of the top ranked sites identified in this siting analysis come close to the requirements of an ideal site. However, it is stressed that the final selection of a site or suite of sites for hosting a containment facility (ies) will require much more detailed, site-specific analysis of the engineering, economic, environmental, legal and social-acceptability factors, as well as extensive input from appropriate local, state, city and public agencies or groups.

## REFERENCES

U.S. Corps of Engineers. "Interim Report Dredged Material Containment in Long Island Sound (with Special Emphasis on Eastern New York Waters) dated July, 1980.

## APPENDIX A

### CALCULATION OF SECONDARY CRITERIA POINTS

A.01 The planning process includes a detailed look at each of the preliminary sites to determine suitability based on specific locational data. Step 3 of the siting method attempts to rank selected alternatives in order of desirability. The following factors were incorporated in determining criteria points for each alternative site.

#### 1. PROXIMITY OF SITE TO SIGNIFICANT ECOLOGICAL AREAS

A.02 Distances between potential shoreline extension containment sites and ecological areas are important from two standpoints: (1) potential adverse impacts from construction activities, and 2) impacts from potential leachate and dewatering effluent from the facility. While distances in this case indicate downdrift directions, points should be allotted regardless of dominant local currents, to approximate worst case conditions. Points are assigned based on the following categories:

##### A. Shellfish Beds (distance in miles)

0 to 1 mile (radius)	:	0 points
1 to 3 miles	:	1 "
Greater than 3 miles	:	2 "

##### B. Lobster Locations (distance in miles)

0 to 1 mile (radius)	:	0 points
1 to 3 miles	:	1 "
Greater than 3 miles	:	2 "

C. Finfish Concentrations (distance in miles)

0 to 2 miles	:	0 points
2 to 5 miles	:	1 "
Greater than 5 miles	:	2 "

D. Waterfowl Areas (distance in miles)

0 to 2 miles	:	0 points
2 to 5 miles	:	1 "
Greater than 5 miles	:	2 "

E. Wetland Areas (distance in miles)

0 to 1/2 mile	:	0 points
1/2 to 1 mile	:	1 "
Greater than 1 mile	:	2 "

Total points for categories A through E for each alternative site and record (maximum of 10 points available).

2. BATHYMETRY OF SITE/AVAILABLE VOLUME

A.03 Average water depth, bottom slope, and available surface area together determine the total estimated capacity of a containment facility, including room for future expansion. The limits of available surface area of a potential site are defined by: (1) navigation channels, (2) adjacent shoreline/harbor shapes, (3) shorefront width of the public site, and (4) other restrictions due to non-compatibility with adjacent land use or ecological habitats. For purposes of ranking alternative sites, the 20 ft. MLW depth contour is defined as the offshore limit of the containment area. Points are assigned based on the following categories:

AD-A122 969

DREDGED MATERIAL CONTAINMENT IN LONG ISLAND SOUND (WITH  
SPECIAL EMPHASIS ON EASTERN NEW YORK WATERS) ADDENDUM  
(U) TETRA TECH INC MELVILLE NY J PAGENKOPF MAR 81

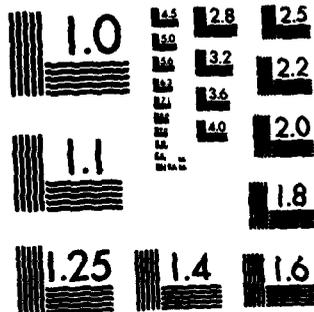
2/2

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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

**A. Available Containment Volume (cu. yards)**

(assuming an average height of dewatered material at 10 feet above MSL)

Less than 500,000	:	0	points
500,001 - 1,000,000	:	1	"
1,000,001 - 1,500,000	:	2	"
1,500,001 - 2,000,000	:	3	"
2,000,001 - 2,500,000	:	4	"
2,500,001 - 3,000,000	:	5	"
3,000,001 - 3,500,000	:	6	"
3,500,001 - 4,000,000	:	7	"
4,000,001 - 4,500,000	:	8	"
4,500,001 - 5,000,000	:	9	"
More than 5,000,000	:	10	"

Total points for Category A and record (maximum of 10 points available).

**3. EXPOSURE CONSIDERATIONS**

A.04 Exposure considerations include wave energy, shoreline erosion potential, flooding potential, and existence of endangered structures. As previously discussed, high wave energy will significantly increase the cost of construction and maintenance of the containment facility. Construction of a shoreline extension facility in a region of critical shoreline erosion potential (mainly open beaches) is also undesirable because of the potential creation of severe downdrift erosion, and undermining of the dikes. The size and cost of containment structures in areas of severe flooding potential will increase substantially if the site is to be designed as safe for structures or other uses. The existence of endangered structures of historically high flood loss indicates the potential for a containment facility to serve as a buffer zone. Based on the following sub-criteria, the site is ranked on a scale of 0 to 10 accord-

ing to conditions within one mile on either side of the site:

A. Wave Energy

low	:	3	points
moderate	:	2	"
high	:	0	"

B. Critical Erosion Area (percent of shoreline)

0 to 10%	:	3	points
10% to 25%	:	2	"
Over 25%	:	0	"

C. Flooding Potential

Not in flood plain	:	2	points
In flood plain	:	0	"

D. Endangered Structures (combined present value)

\$0 to \$ 10,000	:	0	points
\$10,000 to \$100,000	:	1	"
Over \$100,000	:	2	"

Total points for categories A through D and record (maximum of 10 points available).

4. SOIL/FOUNDATION CHARACTERISTICS OF SITE

A.05 As previously discussed in Section 3, the sediment characteristics at a given location may have a significant effect on: (1) design

and cost of containment dikes, (2) structural stability of containment areas for reuse as a foundation for buildings, and (3) leachate potential into groundwater. (Also of concern is the characteristics of dredged sediment to be contained, which is included under criteria #6). The following categories are included:

A. Soil/Sediment Physical Characteristics (USCS classification)

PT, OH, CH, MH, OL, CL, ML	:	0 points
SM, SC	:	3 "
SP, SW, GC	:	6 "
GM, GP, GW	:	9 "

B. Permeability (relative diffusivity)

High	:	0 points
Low	:	1 "

Total points for categories A and B and record (maximum of 10 points available).

5. EXISTING AND POTENTIAL LAND USE

A.06 Land use adjacent to the alternative site and within a one mile radius of the site is used to determine compatibility and potential adverse impact. Points are assigned based on the following categories:

A. Residential Use (presence of)

No residential use in area	:	2 points
Residential use inland only	:	1 "
Residential use on shoreline within radius	:	0 "

**B. Recreational Use (presence of)**

No recreational use in area : 2 points  
Recreational use inland only : 1 "  
Recreational use on shoreline  
within radius : 0 "

**C. Commercial Use (presence of)**

Water-related commercial use : 2 points  
Commercial use inland only : 1 "  
Non-water-related commercial  
use on shoreline within  
radius : 0 "

**D. Industrial Use (presence of)**

Industrial use adjacent to site : 2 points  
Industrial use within area : 1 "  
No industrial use in area : 0 "

**E. Open Space (presence of)**

Open space adjacent to site : 2 points  
Open space in area : 1 "  
No open space within radius : 0 "

Total points for categories A through E and record for each alternative  
(maximum of 10 points available).

**6. VOLUME AND TYPES OF DREDGED MATERIAL AVAILABLE FOR CONTAINMENT**

**A.07 Proximity of the containment site to areas where major dredging**

is projected to occur, as well as consideration of the volumes of dredged material suitable for containment (or for other purposes), can significantly influence site desirability. Criteria Points are assigned to alternative sites based on: (1) barge distance from site to major dredging locations, and (2) volume of material at major dredge sites suitable or desirable for containment. For the preliminary siting analysis, an estimate of the percentage of projected dredged material expected to be used for beach nourishment was made based on historic information (Appendices A and B). The remaining projected volume of dredged material was assumed to be desirable for containment. This criterion could be modified to consider in more detail the reuse potential of dredged material in a rehandling facility. However, much more detailed data on material characteristics and a Market User's Survey would be required before such criteria could be established.

A.08 A modified gravity model is used to determine the relative attractiveness or importance of the dredge site/disposal combinations. The importance factor also relates to transport costs on the basis of cubic yards of material per mile. The gravity model states:

$$F = \frac{K I_d I_c}{D^2}$$

where:

F = force of attraction

K = a constant

I = importance value for dredging (d) and containment (c) sites

D = distance between the two

A.09 For this study, the gravity model is modified to reflect specific conditions. First, the importance value for containment sites ( $I_c$ )

are considered to be constant in all cases, assuming only one site will be used for all dredge spoil containment. The term  $I_c$ , therefore, assumes a role as a constant, K. The distance factor in this case is represented by miles travelled by a barge and is linear; the squared term is removed from the denominator and D is doubled to reflect barge travel in two directions. Because the exercise seeks only relative values and the constant K will remain the same in all cases, it is removed from the right-hand term. The result is an equation which represents the number of cubic yards of material per mile expected to travel between two given points:

$$F = \frac{V}{2D}$$

where:

V = average annual volume of material requiring containment disposal  
 F and D = as before

A matrix table is constructed which indicates, for each alternative site, the corresponding distances to major dredging locations and available volumes for containment. The table headings appear as below:

Dredging Locations	Volume (V) for Containment	Distances(D) to Sites	Attraction V/2D for Sites
-----------------------	-------------------------------	--------------------------	------------------------------

To determine the criteria point spread for the alternative sites, an examination of the range of points scored for attraction (V/2D) is made (see Tables 4-7 and 4-8) and a table is constructed which reflects the observed ranges, as shown below. Since the assumption was made that no dredged material would cross state boundaries, separate scoring ranges are required for New York and Connecticut sites.

<u>NEW YORK</u> <u>V/2D</u>	<u>Criteria</u> <u>Points</u>	<u>CONNECTICUT</u> <u>V/2D</u>	<u>Criteria</u> <u>Points</u>
Less than 7,500	0	Less than 15,000	0
7,501 - 15,000	1	15,001 - 30,000	1
15,001 - 22,500	2	30,001 - 45,000	2
22,501 - 30,000	3	45,001 - 60,000	3
30,001 - 37,500	4	60,001 - 75,000	4
37,501 - 45,000	5	75,001 - 90,000	5
45,001 - 52,500	6	90,001 - 105,000	6
52,501 - 60,000	7	105,001 - 120,000	7
60,001 - 67,500	8	120,001 - 135,000	8
67,501 - 75,000	9	135,000 - 150,000	9
More than 75,000	10	More than 150,000	10

Record the allotted points (maximum of 10 points available).

**7. COMPATIBILITY WITH ADJACENT LAND/REUSE POTENTIAL**

A.10 Conversion of a newly-constructed shoreline extension site to a secondary use (industrial/commercial/recreational) would enhance the economic benefits of the plan. The potential for reuse of the containment facility, or parts thereof, is considered here in four categories.

**A. Docking Facilities (presence of)**

Existing industrial docking facilities : 2 points  
 Existing small boat facilities : 1 "  
 No access by water : 0 "

**B. Access by Land (presence of)**

Existing major roadway : 3 points  
 Existing secondary roadway : 2 "  
 Easements only, no structure : 1 "  
 No access by land : 0 "

C. Types of Industrial/Commercial Uses (presence of)

Existing water-related use	:	3 points
Non-water related indust/comm. use	:	1 "
No indust/comm. use in area	:	0 "

D. Area-Wide Plan (provision for industrial/commercial/recreational use)

Adjacent to site	:	2 points
Within area of alternative site	:	1 "
Not provided	:	0 "

Total points for categories A through D for each alternative and record (maximum of 10 points available).

8. PROXIMITY OF SITE TO CULTURAL RESOURCES

A.11 Cultural resources should be avoided in siting the containment facility to minimize potential construction damage and noise or related operation impacts on a resource that is used by the public. An exception would be a cultural site currently threatened by erosion which might benefit from shoreline protection. Points are allotted as follows:

A. Cultural Resources (distance in miles)

Submerged within area	:	0 points
On adjacent shoreline	:	1 "
Within 2-mile radius	:	5 "
Greater than 2-mile radius	:	10 "

Total points for each alternative and record (maximum of 10 points available).

## 9. USE OF SITE FOR EXISTING OR HISTORIC DREDGED MATERIAL DISPOSAL

Locating a dredged material containment facility at a site that has already been used for spoil disposal may have certain advantages. There may already be structures in the vicinity which have disturbed the natural setting. Using such an area would avoid impacting an otherwise undisturbed shoreline. In addition, the precedence set by earlier disposal may ameliorate future containment structures and disposal. Points are allotted within two categories:

### A. Use of Material Previously Disposed

Containment of contaminated material	:	7 points
Material Rehandling Facility	:	6 "
Construction fill	:	4 "
Primarily beach nourishment	:	0 "

### B. Volume of Material Previously Disposed (maximum in cu. yards)

More than 500,000	:	3 points
200,000 to 500,000	:	2 "
50,000 to 200,000	:	1 "
Less than 50,000	:	0 "

Total points for categories A and B for each alternative and record (maximum of 10 points available).

A.12 The results of this exercise should be recorded in the columns of a summary matrix table (see Tables 4-9 and 4-10). Calculations within that table may then proceed for determining the ranking of alternative sites.

**APPENDIX B**

**SITE SPECIFIC DATA FOR SCREENING  
ALTERNATIVE SITES**

# Shallow Water Area

SA 3 good  
SB fair  
SC poor  
SD poor

## Siting Criteria

Name: HOYT ISLAND County: Map 1 BA Location: 1-3

### 1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

### 2. Proximity of Site to Significant Ecological Areas

- a. Shellfish Beds: 0.7 miles
  - b. Lobster Locations: > 3 miles
  - c. Finfish Concentrations: 2 miles
  - d. Water Quality Conditions: poor/fair/good SB
  - d. Waterford Area: > 25 miles
  - e. Wetland Area: 6 miles
- regulated tidal wetland

### 3. Bathymetry

- a. Nearshore Slope: flats 1/2 mile
- b. Available Surface Area: 39.7 acres
- c. Available Volume Below MSL: 3.5 x 10<sup>5</sup> cu. yards
- d. Total Volume: to 110 9.9 x 10<sup>5</sup> yds
- e. Exposure Considerations (within 1 mile either side of site):
- a. Wave Energy: (high/moderate/low) moderate
- b. Critical Erosion Areas: 0
- c. Flood Zone Area: 100 s IN flood hazard area
- d. Endangered Structures: (buildings, homes, facilities, etc.) 7 in small developed area
- e. Cost of Flood Damages: (high/medium/low)

### 5. Soil/Foundation Characteristics

- a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt
- or USCS Classification: OSM saltmarsh deposits, peat
- b. Permeability: 2-6 in/hr low

### 6. Existing and Projected Land Use (within 1 mile radius of site)

- a. Residential: 47 s
- b. Recreational: 2 s
- c. Commercial: 15 s
- d. Industrial: 11 s
- e. Wetlands: 23 s
- f. Public: 9.5 s
- g. Open Space: 7 s
- h. Agricultural: 0 s

### 7. Volume and Type of Dredged Material Available for Containment

- a. Present Disposal Method: 3 Water (size), 3 Land (size)
- b. Volume of Dredged Material Projected:
  - Within Quadrangle:      CY/year
  - Within Surrounding Quads:      CY/year
- c. General Characteristics of Material (Phys-chem):

### 8. Compatibility with Adjacent Land/Re-use Potential

- a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space)
  - b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)
  - c. Type of Industrial/Commercial Uses: (port, sand/gravel, petroleum, etc.)
  - d. Access by Water: (channels) docking facilities)
  - e. Access by Land: (road/bridges)
  - f. Area-wide Plans: (industrial/commercial expansion)
- critical nature resource
- need for recreation maneuver historical, nature area
- (market for re-use of dredged material)

### 9. Proximity to Cultural Resources

- a. Cultural: (closest) miles      (number) 3 10 mile radius
- b. Types: (historical, archaeological, etc.) cultural/recreation

### 10. Existing and Historical Spoil Disposal Location

- a. Existence of Containment Structures, Dikes and Weir:
  - b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.)
  - c. Volume of Material Previously Disposed:      50000 cu. yds or      artificially
- bulldozers & dikes

# Shallow Water Area

## Siting Criteria

Name: Harborview County: Map 1 9/A Location: 1-4

### 1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: Federal, State, County, Town, Private

### 2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 1 miles d. Waterfowl Areas: 4 1/2 miles  
 b. Lobster Locations: 3 miles e. Wetland Areas: 1/2 miles  
 c. Finfish Concentrations: 2 1/2 miles

f. Water Quality Conditions: poor/fair/good SC

### 3. Bathymetry

a. Nearshore Slope: 2 ft/1000 ft/depth c. Available Volume Below MSL: 3.8 x 10<sup>5</sup> cu. yds  
 b. Available Surface Area: 51.9 acres d. Total Vol: 1.2 x 10<sup>6</sup> yds<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)  
 a. Wave Energy: (high/moderate/low) low  
 b. Critical Erosion Areas: 0%  
 c. Flood Zone Area: 100%  
 d. Endangered Structures: (buildings, homes, jetties, etc.)  
 e. Cost of Flood Damages: (high/medium/low)

### 5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 3 sand, 3 silt, 3 silt  
 or USCS Classifications: organic silt & mud  
 b. Permeability: low  
 6. Existing and Protected Land Use (within 1 mile radius of site)  
 a. Residential: 26 3 f. Public: 11 3  
 b. Recreational: 13 3 g. Open Space: 4 3  
 c. Commercial: 2 3 h. Agricultural: 0 3  
 d. Industrial: 13 3

### 7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle:      CY/year  
 Within Surrounding Quads:      CY/year  
 c. General Characteristics of Material (Phys-chem):     

### 8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Rec/Comm/Ind/Wetland/Open Space)       
 b. Adjacent Land use: (Res/Rec/Comm/Ind/Wetland/Open Space)       
 c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petrol, etc.)       
 d. Access by Water: (channels, docking facilities)       
 e. Access by Land: (road/bridges)       
 f. Area-wide Plan: (Industrial/commercial expansion)       
 (need for recreation) WATER  
 (market for re-use of dredged material)

### 9. Proximity to Cultural Resources

a. Cultural: (closest) miles      (number) 2 10 mile radius  
 b. Types: (historical, archaeological, etc.) Cultural/recreative

### 10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:       
 (condition, dimensions) bulkheads, dikes  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.)       
 c. Volume of Material Previously Disposed: ? < 500,000 yds

major ecological area possible flooding hazard if built

Rock Creek Siting Criteria  
Name: SOUTH County: Map 24/6 location: 1-13

- 1. Shorefront Ownership and Shorefront Disposal Sites
  - a. Site Ownership: (Federal, State, County, Town, Private)
- 2. Proximity of Site to Significant Ecological Areas
  - a. Shellfish Beds: 2-3 miles
  - b. Lobster Locations: 2-3 miles
  - c. Finfish Concentrations: 2 miles
  - d. Waterford Area: 0 miles
  - e. Wetland Areas: 0 miles
  - f. Water Quality Conditions: poor/fair/good SBC

- 3. Bathymetry
  - a. Nearshore Slope: 6 1/4/100 ft/mile
  - b. Available Surface Area: 553 acres
  - c. Available Volume Below USL: 4,24 x 10<sup>5</sup> cu. yards
  - d. total volume: 1.32 x 10<sup>6</sup> yd<sup>3</sup>
- 4. Exposure Considerations (within 1 mile either side of site)
  - a. Wave Energy: (high/moderate/low)
  - b. Critical Erosion Areas: 0
  - c. Flood Zone Area: 100
  - d. Endangered Structures: (buildings, homes, jetties, etc.) NONE
  - e. Cost of Flood Damages: (high/medium/low) Flooded wetlands protect against flooding

- 5. Soil/Foundation Characteristics
  - a. Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt
  - b. or USCS Classification: NESTBROOK MUCKY PEAT
  - c. Permeability: LOW
- 6. Existing and Projected Land Use (within 1 mile radius of site)
 

a. Residential:	<u>18.5</u>	<u>3</u>	f. Public:	<u>55</u>	<u>3</u>
b. Recreational:	<u>1</u>	<u>3</u>	g. Open Space:	<u>13</u>	<u>3</u>
c. Commercial:	<u>1.5</u>	<u>3</u>	h. Agricultural:	<u>0</u>	<u>3</u>
d. Industrial:	<u>2</u>	<u>3</u>			
e. Wetlands:	<u>58.5</u>	<u>3</u>			

- 7. Volume and Types of Dredged Material Available for Containment
  - a. Present Disposal Method: 3 Water (site), 3 Land (site)
  - b. Volume of Dredged Material Projected:
    - Within Quadrangle: CV/year
    - Within Surrounding Quads: CV/year
  - c. General Characteristics of Material (Phys-chem): \_\_\_\_\_
- 8. Compatibility with Adjacent Land/Re-use Potential
  - a. Site Land use: (Res/Bus/Comm/Ind/Wetland/Open Space)
  - b. Adjacent Land Use: (Res/Bus/Comm/Ind/Wetland/Open Space)
  - c. Types of Industrial/Commercial Uses: (Port, steel/gravel, petroleum, etc.) hardly any St. Swabs shops
  - d. Access by Water: (channel, docking facilities) Ship channel
  - e. Access by Land: (roads/bridges) NONE
  - f. Area-wide Plan: (Industrial/commercial expansion)  
(need for recreation ferry, marina)  
(market for re-use of dredged material)
- 9. Proximity to Cultural Resources
  - a. Cultural: (closest) miles (number) 2 10 mile radius
  - b. Types: (historical/archaeological, etc.) Cultural

- 10. Existing and Historical Spoil Disposal Location
  - a. Existence of Containment Structures, Dikes and Weirs: \_\_\_\_\_
  - b. Use of Material Previously Disposed: (Construction fill)  
(condition, dimensions) harbor entrance structure  
(beach nourishment, etc.)
  - c. Volume of Material Previously Disposed: Small CV

major ecological area possible flooding hazard if built

ROCK CREEK  
Name: NORTH County: Map 134C Location: 1-14  
Siting Criteria

1. Shorefront Ownership and Shorefront Disposal Sites  
a. Site Ownership: (Federal, State, County, Town, Private)  
2. Proximity of Site to Significant Ecological Areas  
a. Shellfish Beds: 0 miles d. Waterfowl Areas: 0 miles  
b. Lobster Locations: 4.3 miles e. Wetland Areas: 0 miles  
c. Finfish Concentrations: 5.3 miles Regulated Tidal Wetland  
f. Water Quality Conditions: poor/fair/good SBC

3. Bathymetry  
a. Nearshore Slope: 19/100 ft/depth c. Available Volume Below MSL: 5,230.5 cu. yards  
b. Available Surface Area: 56.5 acres d. total volume: 1,431,000 yds<sup>3</sup>  
4. Embayment Considerations (within 1 mile either side of site)  
a. Wave Energy: (high, moderate, low)  
b. Critical Erosion Areas: 0  
c. Flood Zone Area: 100  
d. Endangered Structures: (buildings, homes, jetties, etc.) none  
e. Cost of Flood Damages: (high/medium/low) wetlands protected against flooding

5. Soil/Foundation Characteristics  
a. Soil/Foundation Physical Characteristics: 3 sand, 3 clay, 3 silt  
or USCS Classification: WESTBROOK MUCKY PEAT  
b. Permeability: low  
6. Existing and Projected Land Use (within 1 mile radius of site)  
a. Residential: 9.5  
b. Recreational: 2  
c. Commercial: 5  
d. Industrial: 0  
e. Wetlands: 50.5  
f. Public: 6.5  
g. Open Space: 24.5  
h. Agricultural: 0.1

7. Volume and Types of Dredged Material Available for Containment  
a. Present Disposal Methods: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle: 0 CY/year  
Within Surrounding Quads: 0 CY/year  
c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential  
a. Site Land use: (Res/Res/Comm/Ind/Wetland/Open Space)  
b. Adjacent Land Use: (Res/Res/Comm/Ind/Wetland/Open Space)  
c. Types of Industrial/Commercial Uses: (Petrol, auto/repair, petroleum, etc.) hardly any ST = small shops  
d. Access by Water: (channel, docking facilities) ship channel  
e. Access by Land: (roads/bridges) none (rail ok)  
f. Area-wide Plans: (Industrial/commercial expansion) (used for recreation) ferry, public marina  
critical water related land (market for re-use of dredged material)

9. Proximity to Cultural Resources scenic townscape Saybrook Point  
a. Cultural: (closest) miles (number) 2 10 mile radius  
b. Types: (historical/archaeological, etc.) Cultural  
10. Existing and Historical Spoil Disposal Location  
a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) NONE  
b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none  
c. Volume of Material Previously Disposed: 0 CY

Site Criteria

Name: GREENWICH County: WV Location: 2-16

1. Shoreline Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Probability of Site to Significant Ecological Areas

- a. Shellfish Beds: 1 miles
- b. Lobster Locations: 1/2 miles
- c. Finfish Concentrations: 2 miles
- d. Waterfowl Areas: 25 miles
- e. Wetland Areas: 2 miles
- f. Water Quality Conditions: poor/fair/good SB

3. Bathymetry

- a. Nearshore Slope: 0.4 ft 1/4 mile
- b. Available Surface Area: 13.8 acres
- c. Available Volume Below MSL: 3,0 X 10<sup>5</sup> cu. yards
- d. Total Vol: 53 X 10<sup>5</sup> yds

CP 1-6

4. Exposure Considerations (within 1 mile either side of site)

- a. Wave Energy: (high, moderate, low) 0
- b. Critical Erosion Areas: 0
- c. Flood Zone Area: 100
- d. Endangered Structures: (buildings, homes, jetties, etc.) sewage treatment facility
- e. Cost of Flood Damages: (high/moderate/low)

5. Soil/Foundation Characteristics

- a. Soil/Sediment Physical Characteristics: (sand, silt, clay, silt) 3 silt
- b. USCS Classification: Typic Underthents cut & fill (adjacent to site)
- c. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

- a. Residential: 62
- b. Recreation: 45
- c. Commercial: 135
- d. Industrial: 1
- e. Wetlands: 3
- f. Public: 9
- g. Open Space: 7
- h. Agricultural: 0

7. Volume and Types of Dredged Material Available for Containment

- a. Present Disposal Method: (Water, Land, etc.) Water (Site), Land (Site)
- b. Volume of Dredged Material Projected: \_\_\_\_\_ Within Quadrangle: \_\_\_\_\_ CY/year
- c. General Characteristics of Material (Phys-chem): \_\_\_\_\_ Within Surrounding Quads: \_\_\_\_\_ CY/year

8. Compatibility with Adjacent Land/Re-use Potential

- a. Site Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space) Public Sewage Treatment Plant, Highway
- b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space) \_\_\_\_\_
- c. Types of Industrial/Commercial Users: (Petroleum, etc.) \_\_\_\_\_
- d. Access by Water: (Channels, Docking facilities) existing
- e. Access by Land: (Roads/Bridges) \_\_\_\_\_
- f. Area-wide Plan: (Industrial/commercial expansion) Primarily develop (land for recreation) private marinas (market for re-use of dredged material)

9. Proximity to Cultural Resources

- a. Cultural: (oldest) miles \_\_\_\_\_ (number) 4 10 mile radius
- b. Types: (historical, archaeological, etc.) Cultural

10. Existing and Historical Spoil Disposal Location

- a. Existence of Containment Structures, Dikes and Weirs: \_\_\_\_\_
- b. Use of Material Previously Disposed: (Construction, etc.) Construction, beach nourishment, etc.
- c. Volume of Material Previously Disposed: low

Siting Criteria

Name: DARIEN County: Map 18/A Location: 2-18  
MWWTP

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 500 ft d. Waterfowl Areas: 2.5 miles  
b. Lobster Locations: 1/2 miles e. Wetland Areas: 1 1/2 miles  
c. Finfish Concentrations: 1 1/2 miles  
f. Water Quality Conditions: poor/fair/good SB

3. Bathymetry

a. Nearshore Slope: 1/100 ft/ft c. Available Volume Below MSL: 6,981,000 cu. yards  
b. Available Surface Area: 32.7 acres d. total vol: 1,328,100 yds

CP-7

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low) 0  
b. Critical Erosion Areas: 0  
c. Flood Zone Area: 100  
d. Endangered Structures: (buildings, homes, jetties, etc.)  
e. Cost of Flood Damages: (high, medium, low)

5. Soil/Sediment Characteristics

a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
or USCS Classification: BEACHES & UNDERMENTS  
b. Permeability: LOW

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 68 3 f. Public: 3 3  
b. Recreational: 14 3 g. Open Space: 7 3  
c. Commercial: 0.5 3 h. Agricultural: 0.6 3  
d. Industrial: 0 3  
e. Wetlands: 7 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Ag/Comm/Ind/Wetland/Open Space)  
b. Adjacent Land Use: (Res/Ag/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Petrol, semi/gravel, etc.) NONE  
d. Access by Water: Channel existing facilitating deep channel  
e. Access by Land: (roads/bridges) medium/industry  
f. Area-wide Plan: (Industrial/commercial expansion)  
(used for recreation) Stable  
(market for re-use of dredged material)

9. Proximity to Cultural Resources

a. Cultural: (sites) miles (number) 4 10 mile radius  
b. Types: (historical, archaeological, etc.) Cultural

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) none  
b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none  
c. Volume of Material Previously Disposed: 0 0

**Siting Criteria**  
**NEW HAVEN**  
**EAST STREET** County: Map 1, 21B, Location 2-26

1. **Shorefront Ownership and Shorefront Disposal Sites**  
 a. Site Ownership: Federal, State, County, Town, Private

2. **Proximity of Site to Significant Ecological Areas**  
 a. Shellfish Beds: 1 miles  
 d. Waterfowl Areas: 2 1/2 miles  
 b. Lobster Locations: 2 1/2 miles  
 e. Wetland Areas: 1 1/2 miles  
 c. Finfish Concentrations: 26 (1978)  
 f. Water Quality Conditions: poor/fair/ood **SD**

3. **Bathymetry**  
 a. Nearshore Slope: 3 1/2 / 200 ft/mile  
 c. Available Volume Below MSL: 7.6 x 10<sup>5</sup> cu. yards  
 b. Available Surface Area: 4688 acres  
 d. total volume = 1.5 x 10<sup>6</sup> yd<sup>3</sup>

4. **Exposure Considerations** (within 1 mile either side of site)  
 a. Wave Energy: (high, moderate, low) low  
 b. Critical Erosion Areas: 0  
 c. Flood Zone Areas: 100  
 d. Endangered Structures: (buildings, homes, jetties, etc.)  
 e. Cost of Flood Damages: (high/med/low)

5. **Soil/Sediment Characteristics**  
 a. Soil/Sediment Physical Characteristics: 1 sand, 3 clay, 3 silt  
 or USCS Classification: artificial fill/alluvium **SM or SP**  
 b. Permeability: high 26 w/yr

6. **Existing and Protected Land Use** (within 1 mile radius of site)  
 a. Residential: 13 3 3 3 3 3 3 3 3 3  
 f. Public: 38 3 3 3 3 3 3 3 3 3  
 b. Recreational: 15 3 3 3 3 3 3 3 3 3  
 g. Open Space: 1 3 3 3 3 3 3 3 3 3  
 c. Commercial: 7 3 3 3 3 3 3 3 3 3  
 h. Agricultural: 0 3 3 3 3 3 3 3 3 3  
 d. Industrial: 335 3 3 3 3 3 3 3 3 3  
 e. Wetlands: 0 3 3 3 3 3 3 3 3 3

7. **Volume and Types of Dredged Material Available for Containment**  
 a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle: 0 CY/year  
 Within Surrounding Quads: 0 CY/year  
 c. General Characteristics of Material (Phys-chem):

8. **Compatibility with Adjacent Land/Re-use Potential**  
 a. Site Land use: (Res/Rec/Com/Ind/Wetlands/Open Space)  
 b. Adjacent Land use: (Res/Rec/Com/Ind/Wetlands/Open Space)  
 c. Types of Industrial/Commercial Uses: (port, sand/gravel, sewage treatment, petrochem, etc.) tail yards, major highway  
 d. Access by Water: (channels, docking facilities)  
 e. Access by Land: (roads/bridges) road  
 f. Area-wide Plan: (Industrial/commercial expansion) fishery pier & artificial market for re-use of dredged material warehousing all proposed

9. **Proximity to Cultural Resources**  
 a. Cultural: (closest) miles (number) 2 10 mile radius  
 b. Types: (historical, archaeological, etc.) Cultural

10. **Existing and Historical Spoil Disposal Location**  
 a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) bulkheads, upland fills  
 b. Use of Material Previously Disposed: (containment fill, beach nourishment, etc.)  
 c. Volume of Material Previously Disposed: 58000 cu (1977) Among otherston land sources

Siting Criteria

Name: NORWALK HARBOR County: HARVARD Map: 18/A Location: 3-9  
SEAVIEW PARK

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: Federal, State, County, Town, Private

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 2 miles d. Waterfowl Areas: < 5 miles

b. Lobster Locations: 4 1/2 miles e. Wetland Areas: 2 miles

c. Finfish Concentrations: 4 miles

f. Water Quality Conditions: poor/fair/good SC

3. Bathymetry

a. Nearshore Slope: 0 ft/mile c. Available Volume Below MSL:

b. Available Surface Area: 275 acres 1.58 x 10<sup>5</sup> cu. yds  
Depth = 6.0 x 10<sup>5</sup>

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: high, moderate low

b. Critical Erosion Areas: 0 %

c. Flood Zone Area: 100 %

d. Endangered Structures: Buildings, homes, utilities, etc. Industrial

e. Cost of Flood Damages: high/medium/low Assumed

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 1 sand, 2 clay, 3 silt  
or USCS Classification: Estuarine Deposits (mud) adjacent to  
artificial fill

b. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 473 3 f. Public: 6 3

b. Recreational: 17 3 g. Open Space: 35 3

c. Commercial: 8 3 h. Agricultural: 0 3

d. Industrial: 11 3

e. Wetlands: 55 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)

b. Volume of Dredged Material Projected:

Within Quadrangle: 5 CY/year

Within Surrounding Quads:      CY/year

c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Reg. Use/Comm/Ind/Wetlands/Open Space)

b. Adjacent Land Use: (Reg. Use/Comm/Ind/Wetlands/Open Space)

c. Types of Industrial/Commercial Uses: (Petrol., sand/gravel, petrochemical, etc.) Inland mostly

d. Access by Water: (Channels, docks, facilities)

e. Access by Land: (Roads/bridges) Secondary

f. Area-wide Plan: (Industrial/commercial expansion)

(Need for recreation) Marina

adjacent park could be expanded.

g. Proximity to Cultural Resources

a. Cultural: 1 (closest) miles      (number) 3 10 mile radius

b. Types: (Historic, archaeological, etc.) Cultural

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:

(Condition, dimensions) bulkheads

b. Use of Material Previously Disposed: (Construction fill)

(Batch, nourishment, etc.)

c. Volume of Material Previously Disposed:      22,000 cu yd

ENGLISH Siting Criteria

Name: POWER STATION County: Map 1, 28B Locations: 3-13

1. Shorefront Ownership and Shorefront Disposal Sites

- a. Site Ownership: (Federal, State, County, Town, Private)
- b. Shellfish Beds: 4 miles
- c. Lobster Locations: 9 miles
- d. Finfish Concentrations: 3 miles
- e. Water Quality Conditions: poor/fair/good SD
- f. Water Quality Conditions: poor/fair/good SD
- d. Waterfowl Areas: 1/2 miles
- e. Wetland Areas: 2 miles

2. Proximity of Site to Significant Ecological Areas

- a. Nearshore Slope: 2/800 ft/meter
- b. Available Surface Area: 3916 acres
- c. Available Volume Below MSL: 2.6 x 10<sup>5</sup> cu. yards
- d. Total Volume: 8.8 x 10<sup>5</sup> yds

3. Bathymetry

- a. Wave Energy: high, moderate, low
- b. Critical Erosion Areas: 0
- c. Flood Zone Area: 75%
- d. Endangered Structures: (buildings, homes, jetties, etc.) bluffs
- e. Oil Storage Tanks: oil storage tanks
- f. Cost of Flood Damages: (high/medium/low)

4. Soil/Foundation Characteristics

- a. Soil/Sediment Physical Characteristics: 1 sand, 1 silt, 1 clay, 1 silt
- b. USCS Classification: TYPE FLATS SM or SC?
- c. Permeability: high > 6.0 in/hr.

5. Existing and Projected Land Use (within 1 mile radius of site)

- a. Residential: 31.5
- b. Recreational: 14
- c. Commercial: 4
- d. Industrial: 23.5
- e. Wetlands: 0
- f. Public: 20
- g. Open Space: 7
- h. Agricultural: 0

7. Volume and Types of Dredged Material Available for Containment

- a. Present Disposal Method: 3 Water (site), 3 Land (site)
- b. Volume of Dredged Material Projected:
  - Within Quadrangle: 0 CY/year
  - Within Surrounding Quads: 0 CY/year
- c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential

- a. Site Land Use: PUBLIC POWER PLANT & DOCKS
- b. Adjacent Land Use: (Res/Res/Comm/Ind/Wetlands/Open Space) PET TERMIN
- c. Types of Industrial/Commercial Uses: (Petrol, Farm/Gravel, Petroleum, etc.)
- d. Access by Water: Channel, Docking facilities deep water
- e. Access by Land: (road/bridges) road
- f. Area-wide Plans: (Industrial/commercial expansion) land for recreation MORWA fishing pier, arthi port for re-use of dredged material artificial fill

9. Proximity to Cultural Resources

- a. Cultural: 2 (closest) miles (number) 2 10 mile radius
- b. Types: (Historical) archaeological, etc.

10. Existing and Historical Spoil Disposal Location

- a. Existence of Containment Structures, Dikes and Weirs: (Condition, dimensions) bulkheads upland fills
- b. Use of Material Previously Disposed: (Construction fill, beach nourishment, etc.)
- c. Volume of Material Previously Disposed: Indefinite land or other sources.

Siting Criteria  
**STAMFORD HARBOR**  
 Name: NAVIGATION WORKS County: Map 17/A Location: 4-10

1. Shorefront Ownership and Shorefront Disposal Sites  
 a. Site Ownership: (Federal, State, County, Town, Private)
2. Proximity of Site to Significant Ecological Areas  
 a. Shellfish Beds: 5/2 miles d. Waterfowl Areas: 3 miles  
 b. Lobster Locations: 1/2 miles e. Wetland Areas: 2 miles  
 c. Finfish Concentrations: 1 miles

f. Water Quality Conditions: poor/fair SB/SA

3. Bathymetry  
 a. Nearshore Slope: 3/500 ft/ft c. Available Volume Below MSL: 1.8X10<sup>6</sup> cu. yds  
 b. Available Surface Area: 10.7 acres d. total vol 2.9X10<sup>6</sup> yds<sup>3</sup>
4. Seizure Considerations (within 1 mile either side of site)  
 a. Wave Energy: (high, moderate, low)  
 b. Critical Erosion Areas: 2-25 protected by navigation works  
 c. Flood Zone Area: 0  
 d. Endangered Structures: (buildings, homes, jetties, etc.) breakwater depending on design  
 e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics  
 a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: COARSE SAND  
 b. Permeability: high

6. Existing and Projected Land Use (within 1 mile radius of site)  
 a. Residential: 79 f. Public: 0  
 b. Recreation: 2 g. Open Space: 1  
 c. Commercial: 0 h. Agricultural: 0  
 d. Industrial: 0  
 e. Wetlands: 2

7. Volume and Types of Dredged Material Available for Containment  
 a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle: 0 CY/year  
 Within Surrounding Quads: 0 CY/year  
 c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential  
 a. Site Land use: (Res/Bus/Comm/Ind/Wetlands/Deep Seas) Navigation/lor  
 b. Adjacent Land Use: (Res/Bus/Comm/Ind/Wetlands/Deep Seas)  
 c. Types of Industrial/Commercial Uses: (Port, sand/crusher, petroleum, etc.) NONE  
 d. Access by Water: (channels, docking facilities) NONE  
 e. Access by Land: (roads/bridges) NONE  
 f. Area-wide Plan: (Industrial/commercial expansion) Need for recreation proposed marina (market for re-use of dredged material)

9. Proximity to Cultural Resources  
 a. Cultural: (GISIST) miles 5 (number) 30 mile radius  
 b. Types: (historical, archaeological, etc.)

10. Existing and Historical Spoil Disposal Location  
 a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) breakwater forms one side  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) NONE  
 c. Volume of Material Previously Disposed: NONE CY

Siting Criteria

BLACK ROCK  
Name: BARBOUR County: Map 1 24/B Location: 4-13

Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: Federal, State, County, Town, Private

Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 0 miles Site d. Waterfowl Areas: 2 1/2 miles  
b. Lobster Locations: 3 miles e. Wetland Areas: 1/2 miles  
c. Finfish Concentrations: 3 miles  
f. Water Quality Conditions: no/air/road SC

Utilities

a. Nearshore Slope: 1/100 ft/ft b. Available Volume Below MSL: 101 X 10<sup>6</sup> cu. yds  
c. Available Surface Area: 73.9 acres d. Total Volume: 2.2 X 10<sup>6</sup> yds<sup>3</sup>  
e. Exposure Considerations (within 1 mile either side of site)  
i. Wave Energy: high (medium, low)  
ii. Critical Erosion Areas: 50%  
iii. Flood Zone Area: 100%  
d. Endangered Structures: (buildings, etc.) sewage disposal plant  
e. Cost of Flood Damages: (high/medium/low)

Soil/Foundation Characteristics

a. Soil/Bedrock Physical Characteristics: 1 sand, 1 clay, 1 silt  
or USCS Classification: Gravelly sandy loam, SM  
b. Permeability: high

Salinity and Protected Land Use (within 1 mile radius of site)

a. Non-tidal: 58 i. Public: 7 j. i  
b. Recreational: 20 k. Open Space: 5 l. i  
c. Commercial: 3 m. Agricultural: 0 n. i  
d. Industrial: 0 o. i  
e. Wetlands: 7 p. i

Volume and Types of Dredged Material Available for Containment

a. Present Disposal Methods: Water (site), Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

Sensitability with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Bus/Comm/Ind/Wetlands/Open Space)  
b. Adjacent Land Use: (Res/Bus/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Pet. sand/cravel, etc.) NONE  
d. Access by Water: (Channels, docking facilities) NO  
e. Access by Land: (roads/bridges) secondary  
f. Area-wide Plans: (Industrial/commercial expansion)  
(need for recreation) all in Bridgeport Harbor  
(need for re-use of dredged material)

Proximity to Cultural Resources

a. Cultural: (historic) sites (number) 3 10 mile radius  
b. Types: (historic, archaeological, etc.) none/air/road

Existence and Historical Soil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) bulkheads, seawalls  
b. Use of Material Previously Disposed: (contaminant, etc.) and fill  
(need for re-use, etc.)  
c. Volume of Material Previously Disposed: large or

BRIDGEPORT HARBOR County Map 1 24/B Location 4-14  
Siting Criteria

1. Shorefront Ownership and Shorefront Disposal Sites
  - a. Site Ownership: (Federal), State, County, Town, Private
2. Proximity of Site to Significant Ecological Areas
  - a. Shellfish Beds: 0 miles Site d. Waterfront Area: < 1/2 miles
  - b. Lobster Locations: 4 miles e. Wetland Area: 1/2 miles
  - c. Finfish Concentrations: 24 miles major
7. Water Quality Conditions: poor/fair/good SC

3. Bedrock
  - a. Nearshore Slope: 100% 700 ft width c. Available Volume Below MSL: 15X10<sup>6</sup> cu. yards
  - b. Available Surface Area: 76.4 acres d. total vol 2.8X10<sup>6</sup> yds
4. Engineering Considerations (within 1 mile either side of site)
  - a. Wave Energy: (high, moderate, low)
  - b. Critical Erosion Areas: 10-25%
  - c. Flood Zone Area: 100% factories, petroleum
  - d. Endangered Structures: (Buildings, homes, jetties, etc.) storage
  - e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics
  - a. Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt  
or USCS Classification: Silty sands/beach deposits
  - b. Permeability: high
6. Existing and Proposed Land Use (within 1 mile radius of site)
  - a. Residential: 16 1 f. Public: 15 1
  - b. Recreational: 16 1 g. Open Space: 20 1
  - c. Commercial: 4.5 1 h. Agricultural: 0 1
  - d. Industrial: 22 1
  - e. Wetlands: 6.5 1

7. Volume and Types of Dredged Material Available for Containment
  - a. Present Disposal Methods: 5 Water (site), 3 Land (site)
  - b. Volume of Dredged Material Projected:
    - Within Quadrangle:      CY/year
    - Within Surrounding Quads:      CY/year
  - c. General Characteristics of Material (Phys-chem):
8. Compatibility with Adjacent Land/Re-use Potential
  - a. Site Land use: (Res/Res/Com/Ind/Wetlands/Open Space)
  - b. Adjacent Land Use: (Res/Res/Com/Ind/Wetlands/Open Space)
  - c. Types of Industrial/Commercial Uses: (port, sand/cravel, petrochemical, etc.) power plants, waste disposal plants
  - d. Access by Water: (Channels, Locking facilities)
  - e. Access by Land: (Road/Bridges)
  - f. Area-wide Plan: (Industrial/Commercial expansion) expand oil storage  
(need for recreation) development of pleasure boe  
market for re-use of dredged material fishing, reef  
beach nourishment marina
9. Proximity to Cultural Resources
  - a. Cultural: (closest) miles 1/2 (number) 3 10 mile radius
  - b. Types: (Historical, archaeological, etc.) recreational
10. Existing and Historical Spoil Disposal Location
  - a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) jetties
  - b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) ground jetty
  - c. Volume of Material Previously Disposed: water



NEW HAVEN HARBOR COUNTY Map 126B Locations 4-17b  
EAST GREATER WATER

Siting Criteria

- Shorefront Ownership and Shorefront Disposal Sites
  - Site Ownership: (Federal, State, County, Town, Private)
- Proximity of Site to Significant Ecological Areas
  - Shellfish Beds: 0 on site miles
  - Waterfowl Areas: 1/2-1 miles
  - Leobster Locations: 5 miles
  - Wetland Areas: 1/2-1 miles
  - Fluffish Concentrations: 1 miles
  - Water Quality Conditions: poor/fair/good SB

- Substrate
  - Marsh/Slope: 1/400 (r/mile)
  - Available Volume Below MSL: 3.5 X 10<sup>6</sup> cu. yards
  - Available Surface Area: 104 acres
  - total vol 5.2 X 10<sup>6</sup> yds
- Riparian Considerations (within 1 mile either side of site)
  - Wave Energy: (high, moderate, low)
  - Critical Erosion Areas: 2-20 %
  - Flood Zone Area: 0% offshore
  - Endangered Structures: (buildings, dams, jetties, etc.)
  - Cost of Flood Damages: (high/medium/low)

- Soil/Foundation Characteristics
  - Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt
  - or UCS Classification: COARSE SAND
  - Permeability: high
- Existing and Proposed Land Use (within 1 mile radius of site)
  - Residential: 37 %
  - Public: 0 %
  - Recreational: 37 %
  - Open Space: 5 %
  - Commercial: 0 %
  - Agricultural: 0 %
  - Industrial: 0 %
  - Wetlands: 2 %

- Volume and Types of Dredged Material Available for Containment
  - Present Disposal Method: 3 Water (size), 3 Land (size)
  - Volume of Dredged Material Projected:
    - Within Quadrangle: 5 CU/YEAR
    - Within Surrounding Quads: 5 CU/YEAR
  - General Characteristics of Material (Phys-chem): \_\_\_\_\_

- Compatibility with Adjacent Land/Re-use Potential
  - Site Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space) NAVIGATION WORKS
  - Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)
  - Types of Industrial/Commercial Uses: (petroleum, etc.) NONE
  - Access by Water: (Channel, Docking Facilities)
  - Access by Land: (roads/bridges) NONE
  - Area-wide Plan: (Industrial/Commercial expansion) offshore oil tanker berth  
(used for recreation) artificial reef  
(market for re-use of dredged material)

- Proximity to Cultural Resources
  - Cultural: (Historic) sites (number) 3 10 mile radius
  - Types: (Historical, archaeological, etc.) cultural, recreational, waterfront park
- Existing and Historical Soil Disposal Location
  - Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) breakwater for on side of dike
  - Use of Material Previously Disposed: (Construction fill, beach nourishment, etc.) NONE
  - Volume of Material Previously Disposed: NONE 5

Siting Criteria

Name: CLINTON HARBOR County: Map 1, S2C Location 4-18

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 1 1/2 miles  
b. Lobster Locations: 1 miles  
c. Finfish Concentrations: 1/4 miles  
d. Waterford Areas: 1-1 1/2 miles major watershed  
e. Wetland Areas: 2 1/2 miles area  
f. Water Quality Conditions: poor/fair/good SA

3. Bathymetry

a. Nearshore Slope: 1/100 ft/ft  
b. Available Surface Area: 45.6 acres  
c. Available Volume Below HSL: 1.06 X 10<sup>6</sup> cu. yds  
d. Total Vol: 1.8 X 10<sup>6</sup> yds<sup>3</sup>

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4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low)  
b. Critical Erosion Areas: 210%  
c. Flood Zone Area: 0 offshore  
d. Endangered Structures: (buildings, homes, settles, etc.) few  
e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 1 sand, 3 clay, 3 silt  
or USCS Classification: Silt  
b. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 57 f. Public: 0  
b. Recreational: 4.5 g. Open Space: 4.5  
c. Commercial: 0 h. Agricultural: 0  
d. Industrial: 0  
e. Wetlands: 34

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle: 0 CY/year  
Within Surrounding Quads: 0 CY/year  
c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Man/Comm/Ind/Wetlands/Open Space) navigation work  
b. Adjacent Land Use: (Res/Res/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petroleum, etc.) NONE  
d. Access by Water: (channels, docking facilities) deep water access  
e. Access by Land: (roads/bridges) NONE  
f. Area-wide Plan: (Industrial/commercial expansion) (need for recreation) State Park, private marina (market for re-use of dredged material)

9. Proximity to Cultural Resources

a. Cultural: (checkbox) 1 miles (number) 10 mile radius  
b. Types: (historical, archaeological, etc.) cultural scenic tomocopes Clinton Center

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) breakwater makes 1 side of dike b  
b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none (Clinton Harbor upland in deep water site)  
c. Volume of Material Previously Disposed: none 0

Siting Criteria  
 Name: DUCK ISLAND HARBOR County: Map 133C Locations: 4-19

1. Shorefront Ownership and Shorefront Disposal Sites  
 a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas  
 a. Shellfish Beds: 1 miles d. Waterfowl Areas: 4 1/2 miles  
 b. Lobster Locations: 1 miles e. Wetland Areas: > 1 miles  
 c. Finfish Concentrations: 5 miles  
 f. Water Quality Conditions: poor/fair/good SA

3. Bathymetry  
 a. Nearshore Slope: flat ft/mile c. Available Volume Below MSL: 2.5 x 10<sup>6</sup> cu. yards  
 b. Available Surface Area: 811 acres d. total vol: 3.8 x 10<sup>6</sup> yds<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)  
 a. Wave Energy: (high, moderate, low)  
 b. Critical Erosion Areas: 75%  
 c. Flood Zone Area: offshore  
 d. Endangered Structures: (buildings, homes, jetties, etc.)  
 e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics  
 a. Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt  
 or UCS Classification: FINE SAND  
 b. Permeability: LOW

6. Existing and Proposed Land Use (within 1 mile radius of site)  
 a. Residential: 1 f. Public: 1  
 b. Recreational: 1 g. Open Space: 1  
 c. Commercial: 1 h. Agricultural: 1  
 d. Industrial: 1  
 e. Wetlands: 1  
*does not intersect with land*

7. Volume and Types of Dredged Material Available for Containment  
 a. Present Disposal Methods: 1 Water (site), 1 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle:      CY/year  
 Within Surrounding Quads:      CY/year  
 c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential  
 a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space) navigation w/OT  
 b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)  
 c. Types of Industrial/Commercial Uses: (Petrol, sand/gravel, petroleum, etc.) NONE  
 d. Access by Water: (channels, docking facilities) deep water  
 e. Access by Land: (roads/bridges) NONE  
 f. Area-wide Plan: (Industrial/commercial expansion) at Westbrook Harbor  
(need for recreation) otherwise  
(market for re-use of dredged material) NONE

9. Proximity to Cultural Resources  
 a. Cultural: (closest) miles 1 (number) 3 10 mile radius  
 b. Types: (historical, archaeological, etc.) Long Island Sound Heritage - Menunketesuck Island

10. Existing and Historical Spoil Disposal Location  
 a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) breakwater forms one side center of  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) NONE at site but  
 c. Volume of Material Previously Disposed: 19,000 cu on adjacent Patchogue River for wetland fill

Siting Criteria

Name: CONN. RIVER County: Map 134D Location: 4-20  
SAYBROOK JETTY

Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 0 miles SA d. Waterfowl Areas: 1 miles major  
b. Lobster Locations: 1 miles e. Wetland Areas: 1/2-1 miles major  
c. Flatfish Concentrations: 1 miles

f. Water Quality Conditions: poor/fairly good SA

Bathymetry

a. Nearshore Slope: 1/100 f. re/mb c. Available Volume Below HSL: 6.0 X 10<sup>5</sup> cu. yards  
b. Available Surface Area: 53.7 acres d. Total Vol: 1.46 X 10<sup>6</sup> yd<sup>3</sup>

Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high) moderate, low  
b. Critical Erosion Areas: 20%  
c. Flood Zone Area: 50%  
d. Endangered Structures: (buildings, homes, utilities, etc.)  
e. Cost of Flood Damages: (high/medium/low)

Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt  
or USCS Classification: fine sand/silt  
b. Permeability: low

Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 31 1 1 f. Public: 0 1 1  
b. Recreational: 22 1 1 g. Open Space: 25 1 1  
c. Commercial: 0 1 1 h. Agricultural: 0 1 1  
d. Industrial: 0 1 1  
e. Wetlands: 22 1 1  
hardly touches

Volume and Types of Dredged Material Available for Containment

a. Present Disposal Methods: 1 Water (site), 1 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle: 1 CY/year  
Within Surrounding Quads: 1 CY/year  
c. General Characteristics of Material (Phys-chem):

Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Res/Comm/Ind/Wetlands/Open Space) Navigation loop  
b. Adjacent Land Use: (Res/Res/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial uses: (Port, sand/gravel, petroleum, etc.) none  
d. Access by Water: (channel, docking facilities)  
e. Access by Land: (roads/bridges) none  
f. Area-wide Plan: (Industrial/commercial expansion)  
Spaced for recreation just west near site  
(market for re-use of dredged material) marina @ Old Saybrook

Proximity to Cultural Resources

a. Cultural: (closest) miles 4 (number) 10 mile radius  
b. Types: (historical, archaeological, etc.) cultural  
seamie townscape at Old Saybrook Pt

Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:  
(condition, dimensions) breakwater forms part of  
b. Use of Material Previously Disposed: (construction fill)  
beach nourishment, etc.) none at site  
c. Volume of Material Previously Disposed: 2400000 on Conn. River  
for bank fill

**STONINGTON** Siting Criteria  
 Name: HARBOR County: Map 1 37/12 Location: 4-21

1. Shorefront Ownership and Shorefront Disposal Sites
- a. Site Ownership: (Federal, State, County, Town, Private)
2. Proximity of Site to Significant Ecological Areas
- a. Shellfish Beds: 1/2 miles d. Waterfowl Areas: 1 1/2 miles  
 b. Lobster Locations: 1/2 miles e. Wetland Areas: 1 1/2 miles  
 c. Finfish Concentrations: 3/4 miles  
 f. Water Quality Conditions: poor/fair/good SA

3. Bathymetry
- a. Nearshore Slope: 1/300 ft/ft c. Available Volume Below MSL: 8,000 cu. yards  
 b. Available Surface Area: 47.7 acres d. Total Volume (10 ft) 16x106 yd<sup>3</sup>
4. Exposure Considerations (within 1 mile either side of site)
- a. Wave Energy: (high, moderate, low)  
 b. Critical Erosion Areas: 10%  
 c. Flood Zone Area: 0% offshore site  
 d. Endangered Structures: (buildings, towers, jetties, etc.)  
 e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics
- a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: Coarse sand  
 b. Permeability: high
6. Existing and Projected Land Use (within 1 mile radius of site)
- a. Residential: 60 f. Public: 0  
 b. Recreational: 20 g. Open Space: 0  
 c. Commercial: 0 h. Agricultural: 0  
 d. Industrial: 20  
 e. Wetlands: 0 laxly trucks land

7. Volume and Types of Dredged Material Available for Containment
- a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle:      CY/year  
 Within Surrounding Quads:      CY/year  
 c. General Characteristics of Material (Phys-Chem):

8. Compatibility with Adjacent Land/Re-use Potential
- a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space) navigation way  
 b. Adjacent Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space)  
 c. Types of Industrial/Commercial Uses: (Petroleum, etc.)  
 d. Access by Water: (channels, docking facilities) 12 ft draft @ MW  
 e. Access by Land: (roads/bridges) none  
 f. Area-wide Plan: (Industrial/commercial expansion)  
(need for recreation) . preserve special shore  
(market for re-use of dredged materials) SCAMING ZONE

9. Proximity to Cultural Resources
- a. Cultural: (collected) miles (number) 3 10 mile radius  
 b. Types: (historical, archaeological, etc.)  
special SCAMING ZONE Stonington Borough &  
var. the Stonington
10. Existing and Historical Spoil Disposal Location
- a. Existence of Containment Structures, Dikes and Weirs: part of  
(condition, dimensions) breakwater to form containment  
 b. Use of Material Previously Disposed: (construction fill,  
batch nourishment, etc.) none  
 c. Volume of Material Previously Disposed: none or  
this site is 1 mile from previous COE Stonington  
disposal site.

Siting Criteria

PENN PETROLEUM CO. Name: Map 18A Location: 6-14

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 1/2 miles d. Waterfowl Areas: 3-5 miles  
b. Lobster Locations: 3 miles e. Wetland Areas: < 1/2 miles  
c. Finfish Concentrations: 2 miles

f. Water Quality Conditions: poor/fair/good SB

3. Bathymetry

a. Nearshore Slope: flat 1/2 mile c. Available Volume Below MSL: 29 x 10<sup>5</sup> cu. yards  
b. Available Surface Area: 24 acres d. Total Volume (10 ft): 6.8 x 10<sup>5</sup> yd<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low)  
b. Critical Erosion Areas: 0%  
c. Flood Zone Area: 100%  
d. Endangered Structures: (buildings, homes, jetties, etc.) oil terminal  
e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
or USCS Classification: fine sand  
b. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 29 3 3 f. Public: 9.5 3  
b. Recreational: 3 3 3 g. Open Space: 9.5 3  
c. Commercial: 0 3 3 h. Agricultural: 0 3  
d. Industrial: 4 3 3  
e. Wetlands: 35 3 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle: 5 CY/year  
Within Surrounding Quads: 5 CY/year  
c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space) petroleum terminal power plant  
b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Port) sand/gravel, petroleum, etc.) power plant  
d. Access by Water: (channels, docking facilities)  
e. Access by Land: (roads/bridges) needs extension  
f. Area-wide Plan: (Industrial/commercial expansion) Chimney + Shefford Is. L.I.S. Heritage  
(need for recreation) Marine Corps Boat Ramp  
(market for re-use of dredged material) Shea Is. Classroom by Seaw

9. Proximity to Cultural Resources

a. Cultural: (closest) miles (number) 5.10 mile radius  
b. Types: (historical, archaeological, etc.) Cultural recreational

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:  
(condition, dimensions) bulkheads  
b. Use of Material Previously Disposed: (Substitution fill)  
Beach nourishment, etc.)  
c. Volume of Material Previously Disposed: Moderate

Siting Criteria

1. ATLANTIC RICHFIELD Name: EXXON County: Map # 29/B Location: 6-18  
ETC.

2. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

3. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: > 1 miles d. Waterfowl Areas: 2 1/2 miles  
b. Lobster Locations: > 5 miles e. Wetland Areas: 1 1/2 miles  
c. Finfish Concentrations: 3 1/2 miles  
f. Water Quality Conditions: poor/fair/good SD

3. Bathymetry

a. Marsh Shore Slope: varies ft/mile c. Available Volume Below MSL: 4.1 X 10<sup>5</sup> cu. yards  
b. Available Surface Area: 14.0 acres d. Total Volume (10 ft) 6.3 X 10<sup>5</sup> yd<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low)  
b. Critical Erosion Areas: 0  
c. Flood Zone Area: 100  
d. Endangered Structures: (buildings, homes, jetties, etc.) Industrial -  
e. Cost of Flood Damages: (high/medium/low) oil storage tanks

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: S sand, S clay, S silt  
or USCS Classification: SM or SP  
b. Permeability: high

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 18 S S f. Public: 25 S S  
b. Recreational: 5 S S g. Open Space: 9 S S  
c. Commercial: 10 S S h. Agricultural: 0 S S  
d. Industrial: 33 S S  
e. Wetlands: 0 S S

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: S Water (site), S Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Res/Comm (adj. Wetlands/Open Space))  
b. Adjacent Land Use: (Res/Res/Comm (adj. Wetlands/Open Space))  
c. Types of Industrial/Commercial Uses: (Petrol, etc.) Storage  
d. Access by Water: (Channels, Docking facilities)  
e. Access by Land: (Road/Bridges)  
f. Area-wide Plans: (Industrial/commercial expansion) filling pier artificial  
(need for recreation) parking artificial  
market for re-use of dredged material fill parties  
relocate oil storage tanks (negative)

9. Proximity to Cultural Resources

a. Cultural: (oldest) miles (number) 2 10 mile radius  
b. Type: (Historical, archaeological, etc.)

10. Existing and Historical Small Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:  
(condition, dimensions) bulkheads, dikes  
b. Use of Material Previously Disposed: (containment fill, beach nourishment, etc.)  
c. Volume of Material Previously Disposed: 57

**Siting Criteria**  
 Name: TALLMAN ISLAND County: Map 1/A Location: 2-12

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: > 5 miles d. Waterfowl Areas: 3 1/2 miles  
 b. Lobster Locations: > 5 miles e. Wetland Areas: > 3 miles  
 c. Finfish Concentrations: 36 fishes

f. Water Quality Conditions: poor/fair/good

3. Bathymetry

a. Nearshore Slope: flat ft/mile c. Available Volume Below MSL: 1,128,106 cu. yards  
 b. Available Surface Area: 106 acres d. Total Volume (±10%) 2,831,066 yd<sup>3</sup>  
 e. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: high, moderate, low  
 b. Critical Erosion Areas: 0%  
 c. Flood Zone Area: 0%  
 d. Endangered Structures: (buildings, homes, jetties, etc.)  
 e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: fine sand ??  
 b. Permeability: low  
 c. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 3 f. Public: 3  
 b. Recreational: 3 g. Open Space: 3  
 c. Commercial: 3 h. Agricultural: 3  
 d. Industrial: 3  
 e. Wetlands: 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle:      CY/year  
 Within Surrounding Quads:      CY/year  
 c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space) Sewage Treatment Plant  
 b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)  
 c. Types of Industrial/Commercial Uses: (port, sand/gravel, petroleum, etc.)  
 d. Access by Water: (Channels, docking facilities) at adjacent plant  
 e. Access by Land: (road/bridges)  
 f. Area-wide Plan: (Industrial/commercial expansion)  
(need for recreation)  
(market for re-use of dredged material)

9. Proximity to Cultural Resources

a. Cultural: (closest) miles (number) 5 10 mile radius  
 b. Types: (historical, archaeological, etc.) 3

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) none  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.)  
 c. Volume of Material Previously Disposed:      CI

**Siting Criteria**  
 Name: CITY/HART ISLAND County: Map 1 VA Location: 2-13

1. **Shorefront Ownership and Shorefront Disposal Sites**  
 a. Site Ownership: (Federal, State, County, Town, Private)

2. **Proximity of Site to Significant Ecological Areas**  
 a. Shellfish Beds: 3 1/2 miles d. Waterfowl Areas: 2 miles  
 b. Lobster Locations: 2 1/2 miles e. Wetland Areas: 1 miles  
 c. Finfish Concentrations: 5 miles  
 f. Water Quality Conditions: poor/fair/good  
closed to shellfishing

3. **Bathymetry**  
 a. Nearshore Slope: ft/mile c. Available Volume Below MSL: 6,4810 cu. yards  
 b. Available Surface Area: 34 acres d. Total Volume (10ft) 12316 yd<sup>3</sup>

4. **Exposure Considerations (within 1 mile either side of site)**  
 a. Wave Energy: (high, moderate, low) 50  
 b. Critical Erosion Areas: 150  
 c. Flood Zone Area: 150  
 d. Endangered Structures: (buildings, homes, jetties, etc.) boatyards  
 e. Cost of Flood Damages: (high/medium/low)

5. **Soil/Foundation Characteristics**  
 a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: fine sand ??  
 b. Permeability: low

6. **Existing and Projected Land Use (within 1 mile radius of site)**  
 a. Residential: 3 f. Public: 3  
 b. Recreation: 3 g. Open Space: 3  
 c. Commercial: 3 h. Agricultural: 3  
 d. Industrial: 3  
 e. Wetlands: 3

7. **Volume and Types of Dredged Material Available for Containment**  
 a. Present Disposal Method: 5 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle: 5 CY/year  
 Within Surrounding Quads: 5 CY/year  
 c. General Characteristics of Material (phys-chem):

8. **Compatibility with Adjacent Land/Re-use Potential**  
 a. Site Land use: (Res/Rec/Com/Ind/Wetlands/Open Space) Public: Potters Field  
 b. Adjacent Land Use: (Res/Rec/Com/Ind/Wetlands/Open Space) Reformado  
 c. Types of Industrial/Commercial Uses: (Petroleum, etc.) Sewage Disposal  
 d. Access by Water: (channel, docking facilities)  
 e. Access by Land: (roads/bridges) none  
 f. Area-wide Plans: (Industrial/commercial expansion)  
(need for recreation)  
(market for re-use of dredged material)

9. **Proximity to Cultural Resources**  
 a. Cultural: (Clubs) Potters Field (number) 11 10 mile radius  
 b. Types: (Historic, archaeological, etc.) Pettaham Bay Park

10. **Existing and Historical Spoil Disposal Location**  
 a. Existence of Containment Structures, Dikes and Weirs:  
(condition, dimensions) bulkheads, offshore rocks  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none  
 c. Volume of Material Previously Disposed: none

Siting Criteria

Name: NEW ROCHELLE County: Map 15/A Locations: 2-14

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 25 miles d. Waterfowl Areas: 5 miles  
b. Lobster Locations: 2 miles e. Wetland Areas: 1/2 miles  
c. Pinfish Concentrations: 1/2 miles

f. Water Quality Conditions: good/fair/good SB

3. Bathymetry

a. Nearshore Slope: tidal flats/mile c. Available Volume Below MSL: 54 x 10<sup>5</sup> cu. yards  
b. Available Surface Area: 60 acres d. Total Volume (410A) 1.5 x 10<sup>6</sup> yd<sup>3</sup>

B-24

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: high, moderate, low  
b. Critical Erosion Areas: no ?  
c. Flood Zone Area: yes ?  
d. Endangered Structures: building, home, jetties, etc.  
e. Cost of Flood Damages: high/medium/low

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: sand, s clay, s silt  
or USCS Classification: MUW  
b. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 3 f. Public: 3  
b. Recreational: 3 g. Open Space: 3  
c. Commercial: 3 h. Agricultural: 3  
d. Industrial: 3  
e. Wetlands: 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: s Water (site), s Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Rec/Comm/Ind/Wetlands/Open Space) Public Utility  
b. Adjacent Land Use: (Res/Rec/Comm/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petroleum, etc.) Inland  
d. Access by Water: (Channels, docking facilities)  
e. Access by Land: (Roads/Bridges)  
f. Area-wide Plan: (Industrial/commercial expansion) None at sure  
(Need for recreation)  
(Market for re-use of dredged material)

9. Proximity to Cultural Resources

a. Cultural: (Closest) miles (number) 10 mile radius DAVIDS ISLAND  
b. Types: (Historical, archaeological, etc.)

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) bulkheads  
b. Use of Material Previously Disposed: (Construction fill, beach nourishment, etc.) None for sewage treatment plant  
c. Volume of Material Previously Disposed: None CY

PORT Siting Criteria  
 Name: JEFFERSON County: Map 11/B Location 4-3

1. Shorefront Ownership and Shorefront Disposal Sites
  - a. Site Ownership: Federal, State, County, Town, Private.
2. Proximity of Site to Significant Ecological Areas
  - a. Shellfish Beds: 73 miles
  - b. Lobster Locations: 3 miles
  - c. Finfish Concentrations: 2 miles
  - d. Waterfowl Areas: 1/2 miles
  - e. Wetland Areas: on site miles
3. Bathymetry
  - a. Nearshore Slope: flat 1/2 mile
  - b. Available Surface Area: 65 acres
  - c. Available Volume Below MSL: 3,4105 cu. yards
  - d. Total Volume (10 ft): 11,4106 yd<sup>3</sup>
4. Exposure Considerations (within 1 mile either side of site)
  - a. Wave Energy: (low, moderate)
  - b. Critical Erosion Areas: 0%
  - c. Flood Zone Area: 50 %
  - d. Endangered Structures: (buildings, homes, jetties, etc.) beaches & wetlands
  - e. Cost of Flood Damages: (high/moderate/low)

Water Quality Conditions: poor/fair/good  
pollution susceptibility 150  
not closed to shellfishing

5. Soil/Foundation Characteristics
  - a. Soil/Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: principally fine sand sand  
and coarse sand
  - b. Permeability: low
6. Existing and Projected Land Use (within 1 mile radius of site)
  - a. Residential: 53
  - b. Recreational: 5
  - c. Commercial: 0
  - d. Industrial: 0
  - e. Wetlands: 5
  - f. Public: 2
  - g. Open Space: 35
  - h. Agricultural: 0

7. Volume and Types of Dredged Material Available for Containment
  - a. Present Disposal Method: 3 Water (site), 3 Land (site)
  - b. Volume of Dredged Material Projected:
    - i. Within Quadrantal: 0 CY/year
    - ii. Within Surrounding Quads: 0 CY/year
  - c. General Characteristics of Material (Phys-chem):
8. Compatibility with Adjacent Land/Re-use Potential
  - a. Site Land use: (Res/Rec/Comm/Ind/Utilities/Open Space)
  - b. Adjacent Land Use: (Res/Rec/Comm/Ind/Utilities/Open Space)
  - c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petroleum, etc.) none
  - d. Access by Water: (channel, docking facilities) deep access no dock
  - e. Access by Land: (roads/bridges) noed water duty
  - f. Area-wide Plans: (Industrial/commercial expansion) recreational for fish reef  
(need for recreation) markets  
(market for re-use of dredged material) offshore/termi
9. Proximity to Cultural Resources
  - a. Cultural: (closest) miles 1 (number) 10 mile radius
  - b. Types: (historical, archaeological, etc.)
10. Existing and Historical Spoil Disposal Location
  - a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) none
  - b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) spill disposal
  - c. Volume of Material Previously Disposed: ?? 0

SOUTH

Siting Criteria

Name: HEMPSTEAD HARBOR County: Pop. 1.2/A Location: 4-4

Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: > 5 miles d. Waterfowl Areas: 0 miles on site  
b. Lobster Locations: 1/2 miles e. Wetland Areas: 3 miles  
c. Finfish Concentrations: 1/2 miles

f. Water Quality Conditions: poor/fair/good  
closed to shellfishing susceptibility 40-120

Bathymetry

a. Nearshore Slope: 2.6/100 ft/cent  
c. Available Volume Below NSL: 1.6 X 10<sup>6</sup> cu. yards  
b. Available Surface Area: 84.8 acres d. Total Volume (±10ft): 2.0 X 10<sup>6</sup> yd<sup>3</sup>

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Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: high, moderate, low  
b. Critical Erosion Areas: 0 %  
c. Flood Zone Area: 10 %  
d. Endangered Structures: buildings, homes, facilities, etc. (little)  
e. Cost of Flood Damages: high/medium/low

Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: clay, silt, sand, silt  
or USCS Classification: coarse sand bottom habited  
b. Permeability: high

Existing and Proposed Land Use (within 1 mile radius of site)

a. Residential: 60 %  
b. Recreational: 15 %  
c. Commercial: 3 %  
d. Industrial: 8 %  
e. Wetlands: 0 %  
f. Public: 3 %  
g. Open Space: 1 %  
h. Agricultural: 0 %

Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res./Agr./Comm./Ind./Wetlands/Open Space)  
b. Adjacent Land Use: (Res./Rec./Comm./Ind./Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Port, sand/gravel, petroleum, etc.)  
d. Access by Water: (channel) (diking facilities)  
e. Access by Land: (roads/bridges)  
f. Area-wide Plans: (Industrial/commercial expansion) harbor debris cleanup marina dock phase out petroleum distribution barrels  
(market for re-use of dredged material)

Proximity to Cultural Resources

a. Cultural: (sites) miles (number) 9 10 mile radius  
b. Types: (historical, archaeological, etc.) MUSEUM ON S

Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) private wetland & system fill  
b. Use of Material Previously Disposed: (construction fill) beach nourishment, etc.  
c. Volume of Material Previously Disposed: 250,000 cu. yd.

Siting Criteria

Name: SWEZEY OIL County: Map 1, 11/2 Sections: 6-3  
ET AL.

1. State/Front Ownership and Shorfront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 23 miles      d. Waterfowl Areas: 1 miles  
b. Lobster Locations: 3 1/2 miles      e. Wetland Areas: 1 1/2 miles  
c. Finfish Concentrations: 3 1/2 miles

f. Water Quality Conditions: poor/fair/good

pollution susceptible 1000  
closed to shellfishing

3. Bathymetry

a. Nearshore Slope: 1/100 ft/mile      c. Available Volume Below MSL: 1.4 x 10<sup>6</sup> cu. yards  
b. Available Surface Area: 63 acres      d. Total Volume (10ft) 2.4 x 10<sup>6</sup> yd<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low) low  
b. Critical Erosion Areas: 0      c. Flood Zone Area: 0  
d. Endangered Structures: (buildings, homes, jetties, etc.)  
e. Cost of Flood Damages: (high/moderate/low)

5. Soil/Foundation Characteristics

a. Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt  
or USCS Classification: 25-31 M MWO  
b. Permeability: low

6. Existing and Projected Land Use (within 1 mile radius of site)

a. Residential: 59      f. Public: 15  
b. Recreational: 3      g. Open Space: 21  
c. Commercial: 2      h. Agricultural: 0  
d. Industrial: 2  
e. Wetlands: 0

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
b. Volume of Dredged Material Projected:  
Within Quadrangle:      CY/year  
Within Surrounding Quads:      CY/year  
c. General Characteristics of Material (Phys-chem):     

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land use: (Res/Res/Com/Ind/Wetlands/Open Space)  
b. Adjacent Land Use: (Res/Res/Com/Ind/Wetlands/Open Space)  
c. Types of Industrial/Commercial Uses: (Port, Land/Travel, etc.)  
d. Access by Water: (channels, docking facilities)  
e. Access by Land: (roads, bridges)  
f. Area-wide Plan: (Industrial/commercial) offshore island  
(used for recreation) proposed public marina  
(market for re-use of dredged material) artificial reefs

9. Proximity to Cultural Resources

a. Cultural: (closest) miles 9 (number) 1 10 mile radius  
b. Types: (historical, archaeological, etc.) none in immediate vicinity

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) none  
b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none  
c. Volume of Material Previously Disposed: none CY

HUNTINGTON  
 Name: WILLIAMS County: Map 1 3/A Location: 6-4

Siting Criteria

- Shorefront Ownership and Shorefront Disposal Sites
  - Site Ownership: (Federal, State, County, Town, Private)
- Proximity of Site to Significant Ecological Areas
  - Shellfish Beds: 2 miles
  - Waterfowl Areas: 1 1/2-2 miles
  - Lobster Locations: 4 1/2 miles
  - Wetland Areas: 2 miles
  - Finfish Concentrations: 25 miles

- Bathymetry
  - Water Quality Conditions: poor/fair/good  
closed to shellfishing  
poor in seaward side > 1000
  - Nearshore Slope: variable/mile
  - Available Volume Below MSL: 4,7X10<sup>5</sup> cu. yards
  - Available Surface Area: 21.3 acres
  - Total Volume (±10%) 8.3X10<sup>5</sup> yd<sup>3</sup>
- Exposure Considerations (within 1 mile either side of site)
  - Wave Energy: high, moderate/low
  - Critical Erosion Areas: 0%
  - Flood Zone Area: 0%
  - Endangered Structures: (buildings, homes, jetties, etc.)
  - Cost of Flood Damages: (high/medium/low)

- Soil/Foundation Characteristics
  - Soil/Sediment Physical Characteristics: 1 sand, 1 clay, 1 silt  
 or USCS Classification: BB W Fine Sand
  - Permeability: low

- Existing and Proposed Land Use (within 1 mile radius of site)
    - Residential: 1
    - Recreational: 1
    - Commercial: 1
    - Industrial: 1
    - Wetlands: 1
    - Public: 1
    - Open Space: 1
    - Agricultural: 1
- not compiled due to low containment value

- Volume and Types of Dredged Material Available for Containment
  - Present Disposal Method: 1 Water (site), 1 Land (site)
  - Volume of Dredged Material Projected:
    - Within Quadrangle:      CY/year
    - Within Surrounding Quads:      CY/year
  - General Characteristics of Material (Phys-chem):
- Compatibility with Adjacent Land/Re-use Potential
  - Site Land uses: (Res/Rec/Com/Ind/Wetlands/Open Space)
  - Adjacent Land Use: (Res/Rec/Com/Ind/Wetlands/Open Space)
  - Types of Industrial/Commercial Uses: (port, sand/gravel, petroleum, etc.)
  - Access by Water: (channel, docking facilities)
  - Access by Land: (roads/bridges)
  - Area-wide Plan: (Industrial/commercial expansion) phase out port transfer funds  
(used for recreation)  
(market for re-use of dredged material)

- Proximity to Cultural Resources
  - Cultural: (closest) miles (number) 10 mile radius
  - Types: (historical, archeological, etc.) Cold Springs Harbor
- Existing and Historical Spoil Disposal Location
  - Existence of Containment Structures, Dikes and Weirs: (condition, dimensions) none
  - Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) none
  - Volume of Material Previously Disposed: unknown

Colonial Siting Criteria  
 Name: Sand & Stone County: Map 1, 2/A Location: 7-3

1. Shorefront Ownership and Shorefront Disposal Sites

a. Site Ownership: (Federal, State, County, Town, Private)

2. Proximity of Site to Significant Ecological Areas

a. Shellfish Beds: 25 miles d. Waterfowl Areas: < 1/2 miles  
 b. Lobster Locations: 4 miles e. Wetland Areas: 74 miles  
 c. Finfish Concentrations: 4 miles

f. Water Quality Conditions: poor/fair/good  
closed to shellfish harvesting  
pollution susceptibility 500 - 1000

3. Substrate

a. Nearshore Slope: variable ft/mile c. Available Volume below MSL: 1.6 x 10<sup>6</sup> cu. yards  
 b. Available Surface Area: 116 acres d. Total Volume (10 ft): 35 x 10<sup>6</sup> yd<sup>3</sup>

4. Exposure Considerations (within 1 mile either side of site)

a. Wave Energy: (high, moderate, low)  
 b. Critical Erosion Areas: 0%  
 c. Flood Zone Area: 10%  
 d. Endangered Structures: (buildings, horse, jetties, etc.)  
 e. Cost of Flood Damages: (high/medium/low)

5. Soil/Foundation Characteristics

a. Soil Sediment Physical Characteristics: 3 sand, 3 clay, 3 silt  
 or USCS Classification: coarse sand  
 b. Permeability: high

6. Existing and Proposed Land Use (within 1 mile radius of site)

a. Residential: 20 3 3 f. Public: 5 1 1  
 b. Recreational: 18 3 3 g. Open Space: 17 3 3  
 c. Commercial: 24 3 3 h. Agricultural: 0 3 3  
 d. Industrial: 28 3 3  
 e. Wetlands: 0 3 3

7. Volume and Types of Dredged Material Available for Containment

a. Present Disposal Method: 3 Water (site), 3 Land (site)  
 b. Volume of Dredged Material Projected:  
 Within Quadrangle: 0 CY/year  
 Within Surrounding Quads: 0 CY/year  
 c. General Characteristics of Material (Phys-chem):

8. Compatibility with Adjacent Land/Re-use Potential

a. Site Land Use: (Res/Res/Comm/Ind) Wetlands/Open Space sand pit  
 b. Adjacent Land Use: (Res/Res/Comm/Ind) Wetlands/Open Space  
 c. Types of Industrial/Commercial Uses: (Petrol. Sand/Gravel, petroleum, etc.)  
 d. Access by Water: (Channels, Docking Facilities)  
 e. Access by Land: (Road/Bridges) Construction  
 f. Area-wide Plans: (Industrial/Commercial Development)  
(need for recreation market for re-use of dredged material)

redemption of sand pits for recreation activity

9. Proximity to Cultural Resources

a. Cultural: (Closest) miles (number) 10 mile radius  
 b. Types: (Historical, archaeological, etc.) LIS heritage  
Town of Eschign

10. Existing and Historical Spoil Disposal Location

a. Existence of Containment Structures, Dikes and Weirs:  
(condition, dimensions) none  
 b. Use of Material Previously Disposed: (construction fill, beach nourishment, etc.) adjacent beaches  
 c. Volume of Material Previously Disposed: none CY