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ENVIRONMENTAL ASSESSMENT, SIDECAST MAINTENANCE DREDGING, LITTLE--ETC(U)
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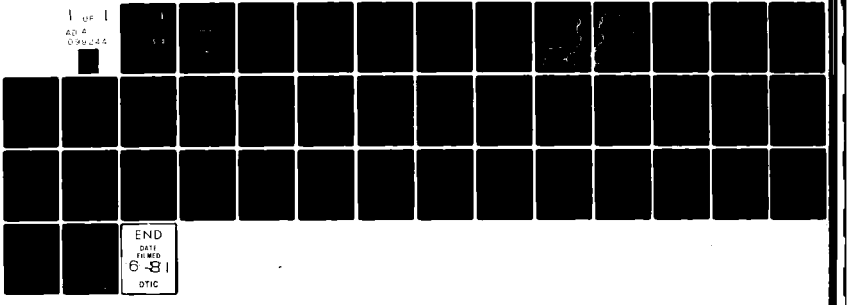

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Corps of Engineers, WALTham, MA
New England Div.

Environmental Assessment Sidecast Maintenance Dredging LITTLE NARRAGANSETT BAY Stonington, Connecticut

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ENVIRONMENTAL ASSESSMENT

SIDECAST MAINTENANCE DREDGING

LITTLE NARRAGANSETT BAY

STONINGTON, CONNECTICUT

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

FEBRUARY 1977

ENVIRONMENTAL ASSESSMENT
MAINTENANCE DREDGING
LITTLE NARRAGANSETT BAY
STONINGTON, CONN.

1. PROJECT DESCRIPTION.

a. Location and General Description. Little Narragansett Bay is a shallow arm of Fishers Island Sound that extends across the Connecticut-Rhode Island border. The bay is rectangularly shaped and is about 2 miles long (north/south) and 1-1/2 miles wide (east/west). It is bounded by Stonington Point (Conn.) and Sandy Point (R.I.) to the west, Napatree Beach (R.I.) on the south, Watch Hill (R.I.) and the Pawcatuck River to the east, and the Barn Island Hunting Grounds (Conn.) to the north.

Two rivers enter Little Narragansett Bay. The Wequetequock is a small tidal stream that drains the swampy area north of the Barn Island Hunting Grounds. It enters the bay east of Stonington. The Pawcatuck is a larger river which has its source in south central Rhode Island at the confluence of the Charles and Wood rivers. It empties into the northeastern end of Little Narragansett Bay at the Rhode Island-Connecticut State line.

b. Project History. The Pawcatuck River project consists of three sections (1) the Pawcatuck River, (2) Little Narragansett Bay, and (3) Watch Hill Cove. The present proposal deals only with the Little Narragansett Bay portion of the existing project. The project provides for a channel 10 feet deep at Mean Low Water and 200 feet wide through Little Narragansett Bay and up the river to Avondale,

thence 100 feet wide to the lower wharves at Westerly and 40 feet wide to the head of navigation at the Main Street Bridge. In addition, a 10-foot deep channel 100 feet wide is provided from the mouth of the Pawcatuck River into the Watch Hill Cove anchorage. The anchorage in Watch Hill Cove is 10 feet deep and about 7 acres in area.

c. Project Authorization. The following is a summation of the project authorization:

ACTS	WORK AUTHORIZED	DOCUMENTS
3 June 1896	Present channel dimensions	H. Doc.62,54th Cong. 1st Sess.
3 March 1905	Removal of obstructions near Watch Hill	Specified in Act
2 March 1945	Channel, anchorage, and jetty at Watch Hill Cove	H.Doc. 839, 76th Cong. 3rd Sess.
14 July 1960	Breakwater 400 feet long at entrance to Watch Hill Cove; extension Watch Hill Cove jetty 100 feet shoreward; enlargement of entire jetty; enlargement of anchorage in Watch Hill Cove by dredging 1.75 acres to a depth of 6 feet.	H. Doc. 396, 86th Cong., 2nd Sess.

Under the original project authorization local interests were not obligated to provide disposal sites.

d. Previous Maintenance. The Pawcatuck River project was last dredged in 1961 when 9,000 cubic yards of material were removed from the river and Little Narragansett Bay. The material was disposed of at sea in the Stonington Dumping Ground, an area one fourth nautical mile square (sides running true N-S and E-W) from the center of which Latimer Reef Light bears 272° (T) 2,050 yards, and Stonington Outer Breakwater Light bears 009° (T) 1,600 yards. The depths of water in this dump range from 61 to 106 feet at Mean Low Water.

e. Proposed Work and Method. As a result of a hydrographic survey conducted in August of 1974, the New England Division determined that significant shoaling had occurred in the area opposite the outer

tip of Sandy Point. This is a dynamic area characterized by fast moving currents and shifting sands. The controlling depth has been reduced to 2.2 feet at Mean Low Water. The project will be restored to a depth of 10 feet at Mean Low Water to accommodate the present navigational requirements.

Preliminary estimates indicate the need to remove approximately 20,000 cy of material. The area to be dredged is shown in Figure 1. This is approximately 1,600 feet of channel off the tip of Sandy Point. A Government sidecasting dredge will be used to restore that portion of the channel. The dredge hydraulically removes material from the bottom of the channel and pumps it through a sidecasting pipe directly overboard into the water approximately 80 feet off the side of the vessel. The sidecaster is a highly maneuverable craft and was designed to maintain relatively shallow channels in fast shoaling areas. Over the past four years a total of 198,670 cubic yards of material have been excavated by this method. A breakdown of annual operations by project is given in Table 1A.

The dredging is presently scheduled for the month of May 1977, and is estimated to require approximately four weeks of work. Periodic dredging, with a frequency of once every four years or less, may be required in this area in order to retain safe navigation.

2. ENVIRONMENTAL SETTING WITHOUT THE PROJECT.

a. Socioeconomic Conditions. Although the proposed project is nearest to the town of Stonington, Connecticut, it will benefit the entire area. This includes the towns of Pawcatuck and Wequetequock within Stonington, and the township of Westerly, Rhode Island including Watch Hill and Avondale.

The town of Stonington (including Pawcatuck and Wequetequock) has been growing at a relatively slow rate, increasing from 14,000

in 1960 to 16,300 in 1970. This was an increase of only 16%, while the population of Connecticut as a whole increased by 19.6% during the same period. Westerly had a similar gradual rate of increase, growing by only 21% from 14,267 in 1960 to 17,248 in 1970. These growth rates are especially slow when compared to those of other nearby coastal towns. Old Saybrook, Westbrook and Clinton, for example, grew at rates of from more than 50 to almost 150 percent during this time.

Approximately 51% of the labor force in Stonington and 43% of the workers in Westerly are employed by manufacturing concerns. In 1970, most of these workers were employed by the textile and food industries. Approximately 25% of the area labor force was employed in trade activities, while lesser numbers worked at service, agriculture, and fishery related jobs.[1]

The entire Little Narragansett Bay area is predominantly rural, particularly the inland sections. Recreational boating and related commercial enterprises, however, still comprise a very large segment of the local economy. The area population increases significantly in the summer due to the influx of seasonal residents and boaters.

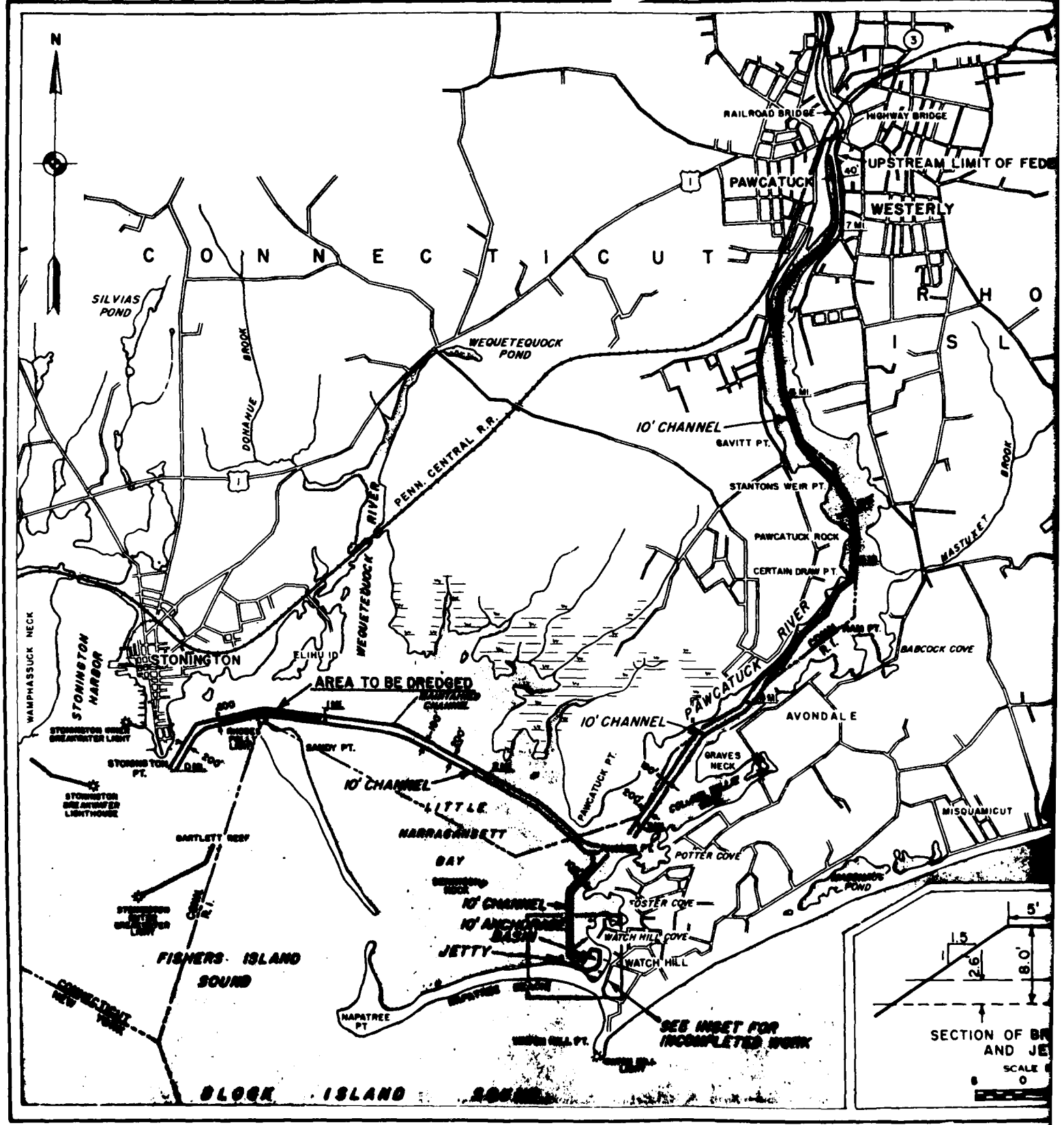
Convenient access to the project area is provided by the well developed system of highways, including Interstate Route 95 and U.S. Route 1 which parallel the coast, and state highways 2, (Conn.),3 and 91 (R.I.) which descend from the north. The Penn Central Railroad passes through the project area while small airports are located in Westerly and nearby Groton, Connecticut.

TABLE 1A

SIDECAST MAINTENANCE DREDGING HISTORY,
NEW ENGLAND WATERS

1972	DATES	QUANTITY DREDGED cubic yds.
Andrews River, Mass.	22 Aug 72 Dredge Demonstration. Dredge broke down Insufficient work accomplished to take quantities	
1973		
Hampton Harbor, New Hampshire	April 73	15,000
Chatham Stage Harbor, Mass.	14 May-4 June 73	24,200
Newburyport, Mass.	1-15 May 73	10,000
1974		
Hampton	27 Mar-22 Apr 74	17,430
Chatham Stage	28 Feb-26 March 74	20,630
Wells Harbor, Maine	23 Apr-6 May 74	13,350
Block Island Harbor of Refuge, R.I.	2-12 May 74	5,625
1975		
Hyannis Harbor, Mass.	18 March-8 April 75	8,683
Cuttyhunk Harbor, Mass.	24 May-11 June 75	5,724
Hampton	9 April-5 May 75	21,072
Scarboro River, Maine	6-23 May 75	9,090
1976		
Hampton	6-29 April 76	14,065
Chatham Stage	1-15 July 76	8,550
Andrews River	11-30 June 76	6,746
Clinton Harbor, Conn.	7-20 May 76	8,250
Patchogue River, Conn.	21 May-10 June 76	10,665
1977		
Hampton	5-26 April 77	Est. 14,000
Chatham Stage	6-31 March 77	Est. 10,000
Little Narragansett Bay, R.I.-Conn.	3-31 May 77	Est. 20,000

CORPS OF ENGINEERS



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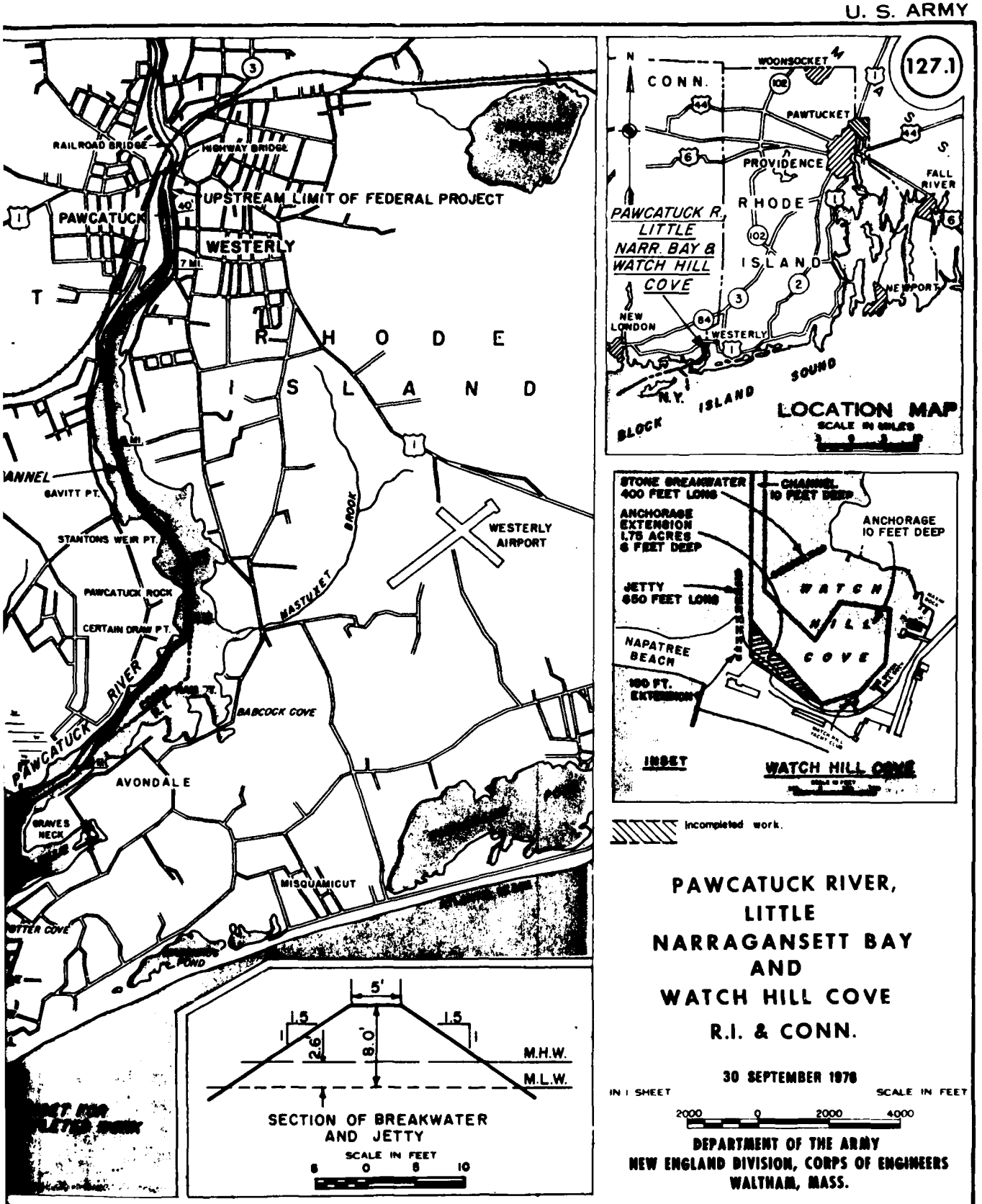


Incompleted work.

PAWCATUCK RIVER, LITTLE NARRAGANSETT BAY AND WATCH HILL COVE R.I. & CONN.

30 SEPTEMBER 1976

IN 1 SHEET

SCALE IN FEET

2000 0 2000 4000

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

FIGURE 1

A secondary sewage treatment plant has recently been constructed in Stonington. This plant is to receive many of the discharges which have been going directly into the Pawcatuck River and Little Narragansett Bay. This plant may help to alleviate the occasionally excessive coliform bacteria counts recorded in waters of the bay. If this happens, in the future Little Narragansett Bay may be open again to the harvesting of shellfish.

b. Marine Facilities. Extensive recreational use is made of Little Narragansett Bay and the Pawcatuck River. During 1974, 13,789 vessel trips were reported with drafts of up to six feet. To support the heavy recreational use depicted here, boat oriented facilities on the project include: the Westerly Yacht Club, Greenhaven Dock, town of Westerly Dock, and five boat yards. There are six marine railways on the Pawcatuck River and inside storage is available for an additional 500 boats. The Westerly Yacht Club has a fleet of approximately 150 boats in the Pawcatuck River. Watch Hill Cove has one private wharf and three public landings owned by the Watch Hill Fire District. In Little Narragansett Bay there are no public piers but many private piers at residences along the shore.

c. Cultural and Archaeological Resources. Five sites around Little Narragansett Bay are listed in the National Register of Historic Places. Four of these places are in Westerly while one is in Stonington. None of these sites will be affected by the project.

In Westerly, the Babcock-Smith House on Granite Street, the former Immaculate Conception Church on High Street, the U.S. Post Office on the corner of High and Broad Streets, and the Wilcox Park Historic District, roughly bounded by Broad, Granite and High streets and running along Elm Street are all registered historic places. In Stonington, the Stonington Harbor Lighthouse on Water Street was recently placed on the National Register.

It is unlikely that artifacts of potential archaeological significance reside in the channel since it has been dredged to the same dimensions in the past. However, a copy of this assessment is being furnished the State Archaeologist for his review.

d. Physical Characterization. The site to be dredged is located just off Sandy Point (See Figs. 1 & 2). Sandy Point is a low, uninhabited, ephemeral sand island which separates Little Narragansett Bay from Fishers Island Sound. Sand is being worn away from the southeastern end of Sandy Point and being deposited along the northwestern tip. The net result is that the island is migrating slowly toward Connecticut. When the tide is running, strong currents are known to exist off this northweastern tip.

The mean tide range in Little Narragansett Bay is approximately 2.7 feet. Tidal information for Stonington, Connecticut, is summarized below.

TABLE 1

Tide Data, Stonington, Connecticut
(In Feet)

Mean Tide Range	2.7
Mean Spring Tide Range	3.2
Mean High Water (above MLW)	2.8
Mean Sea Level (above MLW)	1.3
Mean Low Water	0.0

e. Bottom Sediments. Sediment samples were taken from Little Narragansett Bay by the New England Division, U.S. Army Corps of Engineers in August of 1975. One of the seven samples (GE-1) is in the center of the area to be dredged and consists of gravelly coarse to medium sand. Sample GE-2, silty medium to fine sands, was about 600 yards beyond the area to be dredged while the rest were along the Corps maintained channel but progressively farther from the project site. Sediment sample locations are shown in Figure 2 and chemical analysis summarized in Table 4.

f. Water Quality. Little Narragansett Bay out to Sandy Point and the Pawcatuck river up to Avondale have been classified by the State of Connecticut, Department of Environmental Protection, as Class SB waters. Outside of Sandy Point, the water is classified as SA, while the tidewaters of the Pawcatuck between Avondale and Westerly are SC. North of Westerly where tidal waters do not reach, the river is classified as C, becoming B waters a few more miles upstream.

Class SA waters are suitable for all sea water uses including shellfish harvesting for direct human consumption (approved shellfish areas), bathing, and other water contact sports; may be subject to absolute restrictions on the discharge of pollutants, authorization of new discharges other than cooling as clean water may require revision of the waters to Class SB which would be considered concurrently with the issuance of a permit at a public hearing. Waters classified SB are lower in quality than those designated SA. Restrictions on turbidity, sludge, odor and other parameters are relaxed. The water is still suitable for bathing, other recreational purposes, industrial cooling and shellfish harvesting for human consumption after depuration; is excellent fish and wildlife habitat and has good esthetic

value. Class SC is of lower quality but is suitable for fish, shellfish and wildlife habitat; suitable for recreational boating and industrial cooling, and has good esthetic value. The upper tidal waters of the Pawcatuck are classified SC because of their coliform count. A summary of Connecticut Water Quality Standards is available from the Connecticut Department of Environmental Protection.

g. Biological Resources. Sandy Point is the site of a large gull colony. Both Herring (Larus argentatus) and Greater Black-backed Gulls (Larus marinus) nest on the island. Common terns (Sterna hirundo) have been observed to occasionally nest on the island, but due to the gulls and the frequent visits by boaters, attempts by terns to nest on this island are likely to be brief and unsuccessful.[2]

Several biological studies have been conducted in Little Narragansett Bay. In 1972-1974, the biological communities associated with old automobile tire reef formations was investigated by D. Alfieri of Eastern Connecticut State College[4]. Two artificial "reefs" were installed off the west coast of Napatree Point. The bottom in this area is hard and sandy.

Common benthic life identified included Polysiphonia, Ceramium, Cladophera, Laminaria and other alga, Schizoporella and Bugula Bryzoans, blue mussels (Mytilus edulis) and jungle shells (Anomia sp.), slipper limpets (Crepidula sp.), rock shells (Eupleura caudata) oyster drills (Urosalphinx cinerea), and several different species of sea worms (Polychaeta). Crustaceans seen in the area include blue crabs (Callinectes sapidus), rock crabs (Cancer borealis), spider crabs (Libinia Emerginata) and lobster (Homarus americanus). Also found were common starfish (Asteria forbesi), sea squirts (Botryllus sp.) and various barnacles (Balanus sp.).

Shellfish known to exist in Little Narragansett Bay include the blue edible mussel mentioned previously, surf clams (Spisula (Mactra) solidissima), hard clams (Mercenaria mercenaria) and, up the Pawcatuck River, oysters (Ostrea virginica).

Little Narragansett Bay and the Pawcatuck have been closed to shellfishing for some time, however, due to excessive coliform bacteria counts. The Connecticut closure line extending southeasterly along the breakwater off Wamphassuck Point, thence in a straight line to the Connecticut-Rhode Island state boundary, and then along the state boundary through Little Narragansett Bay and the Pawcatuck River. The closure area includes Stonington Harbor, the shore between Stonington Harbor and Wequetequock Cove, Wequetequock Cove, the tidal waters of the Pawcatuck River and Little Narragansett Bay.[3] Rhode Island has similarly closed off its portion of the bay.

Bay scallops (Pecten irradians) have been experimentally transplanted into Little Narragansett Bay by the State of Connecticut and have apparently thrived.[5] There are probably some scallops in the eel grass north and west of Sandy Point within a few hundred yards or less of the project site.

Lobsters are known to inhabit the breakwater structures located off Wamphautuck Point and Stonington Point. But fishing for this species occurs on a seasonal basis (Dr. L. Stewart, per comm.). It was indicated also that surf clam Spisula beds exist to the south and southeast of Sandy Point Island from the ten or twelve foot depth contours and deeper. This clam species holds potential market value as a food item and constitutes a major fishery along the Mid-Atlantic States.

Fish common to Little Narragansett Bay and the surrounding area include; winter flounder (Pseudoppleuronectes americanus), cunner (Tautogolabrus adspersus), sculpin (Hemitripterus americanus), blackfish (Tautoga onitis), mummichog (Fundulus heteroclitus) and stickleback (both 3 spined, Gasterosteus aculeatus and 4 spined Apeltes quadracus). Also found are eels, (Anguilla rostrata), grubbies (Myoxocephalus aeneus) and other small fish such as rock gunnel (Pholis gunnellus) and pipefish (Syngnathus fuscus). (Pearcy and Richards, 1962).[6]

Out in Fishers Island Sound, striped bass (Morone saxitalis), bluefish (Pomatomus saltatric), and other sport fish are found. Around Little Narragansett Bay, winter flounder and the American eel provide some sport value.

3. RELATIONSHIP OF THE PROPOSED ACTION TO LAND USE PLANS.

Sandy Point, the land nearest the project site, is privately owned although the northern end is leased to the town of Stonington. This portion of the island receives extensive recreational use.

Stonington's planning board is currently preparing a land use plan for the town. Previously, the Southeastern Connecticut Regional Planning Agency (SCRPA) prepared development plans for southeastern Connecticut. With respect to Stonington, the plan proposes continued concentration of the major portion of the town's population in the Mystic Valley, Stonington Village, and Pawcatuck areas, the establishment of several major commercial centers at highway interchanges, expressway and bridge construction, preservation of historic, wetlands

and watershed areas; renewal, and the provision of both water and sewer service to all high and very high density residential and industrial areas.

The Barn Island area is preserved for hunting and much of the other shoreline surrounding the project has also been dedicated to water related activities, although in the other areas the activities are primarily those of recreational boating. Maintenance dredging will serve to enhance the present activities on the waterway and surrounding land areas. Because of the present land development and the expected continued trend in this direction, maintenance dredging will not interfere with any proposed land use plans.

4. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION.

There will be no immediate change in the project area environment if the channel is not maintained. Shoaling would most likely continue and decrease the navigational safety of the channel, possibly resulting in an increased frequency of groundings. This might necessitate tidal delays for vessels using the channel which would mean more boats navigating the channel at one time, compounding safety problems.

Specific ecological impacts associated with sidecast dredging have been identified by Chase (1975). From investigations completed to date it is apparent that some benthic life will be damaged or destroyed, turbidity increased, and possibly elevations in trace metal levels. A positive effect is the increase in dissolved oxygen concentrations due to the agitation that the sediment in the water receives in transport through the dredged pumping system.

Transmissometer studies made in conjunction with sidecast operations conducted May 1976 at Clinton Harbor showed that the material discharged settled to the bottom forming a turbid (0-25%) bottom layer which disperses in the direction of prevailing currents. Similar turbid zones or "organic fluff" layers were observed to occur at Hyannis and Cuttyhunk sidecast maintenance. In addition a residual component remains in the surface of mid-depth waters.

The dredge discharge was oftentimes colored black and emitting a (H_2S) hydrogen sulfide odor. This was especially true for the outer reaches of the channel marked by the #5 black can navigation buoy and #3 light buoy off Wheeler Rock where the bottom was rippled and consisted of clay-silt mud and flocculent silty-sand; dead plant debris and detached algae was also observed by scuba divers from the Corps and National Marine Fisheries Service.

Such conditions may not exist at Little Narragansett Bay but until onsite inspections and actual maintaining of the dredge are performed the impact prediction, especially that of the turbidity layer, are purely speculative.

Water samples taken during dredge operations at Clinton Harbor and analyzed for trace metals show significant increases in concentrations of copper, lead and zinc (Table 3). Control sample numbers are 1, 2 and 2A.

The Connecticut DEP has indicated that it will again condition its approval for sidecast dredging based on monitoring investigations to be performed by the Environmental Branch, Corps of Engineers.

These investigations will consist of transmissometer studies and diving observations to determine more precisely the areal extent and fate of the near bottom turbid or "organic fluff" layer created as a result of the dredging. The major concern is how this suspended layer will behave in a tidal stream and whether or not it will impact on adjacent scallop beds. Water samples will also be collected before, during and after dredging for comparison of heavy metals and suspended solid concentrations.

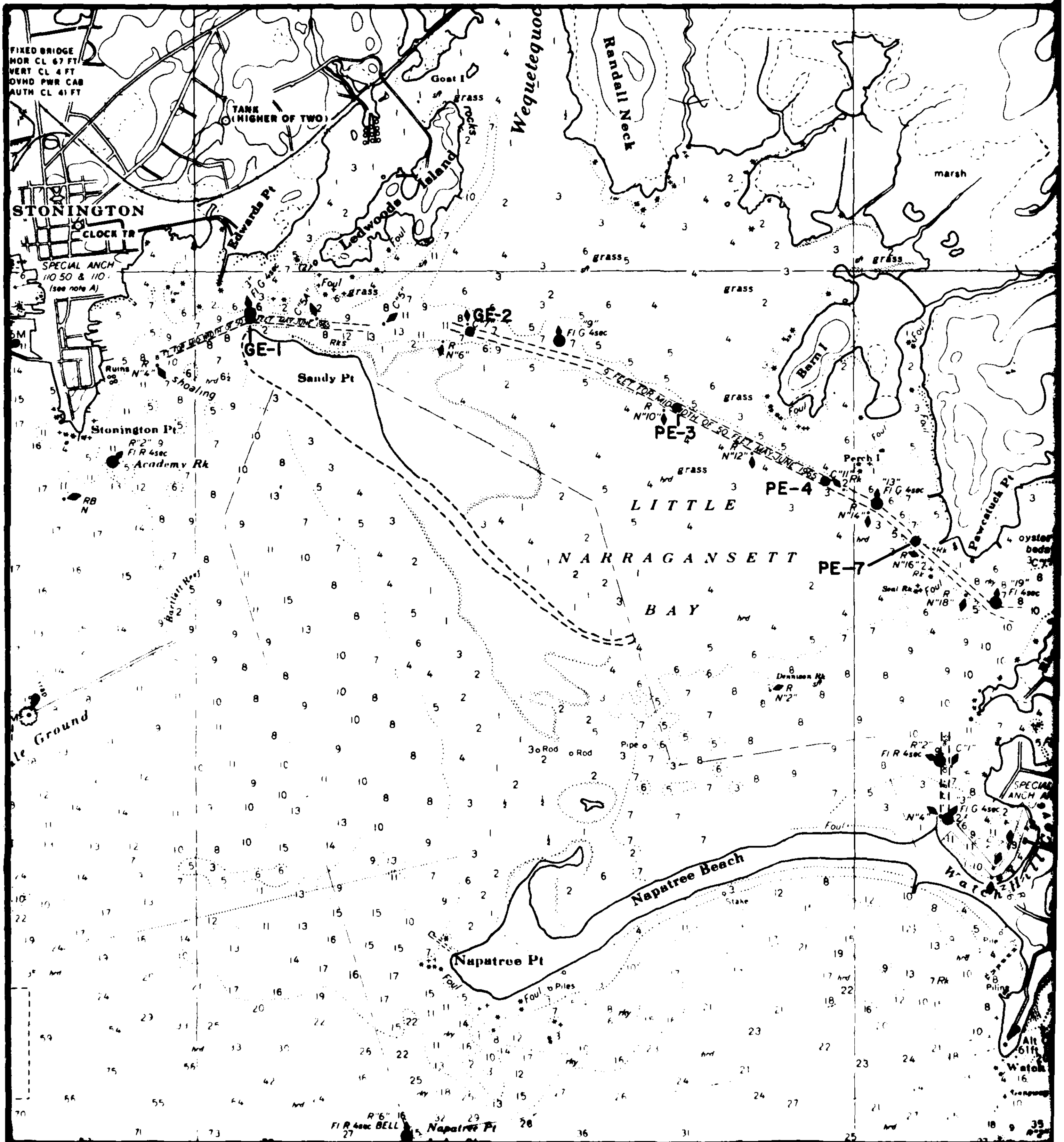
a. Analysis of Bottom Sediments. Locations of the samples taken from Little Narragansett Bay by the Corps are shown in Figure 2. As indicated previously, these sediment samples were obtained in August 1975.

The physical properties of two samples (one within the project area, the other adjacent but several hundred yards from the site) are described in Table 2.

TABLE 2

PHYSICAL CHARACTERISTICS OF LITTLE NARRAGANSETT BAY SEDIMENTS
(Samples Taken August 1975)

	GE- 1	GE-2
Sand Fraction (% retained on #200 U.S. standard sieve)	100	90
Visual Classification	Brown gravelly coarse to medium sand (SP) with marine odor	Grey silty medium to fine sand (SP-SM) with marine odor
Median Grain Size	2.20 mm	0.20 mm


FIXED BRIDGE
HOR CL 67 FT
VERT CL 4 FT
OVHD PWR CAB
AUTH CL 41 FT
TANK (HIGHER OF TWO)
STONINGTON
CLOCK TR
SPECIAL ANCH 110.50 & 110 (see note A)
Edwards Pt
Goat I
Ledwoods Island
Wequetequock
Randall Neck
marsh
GE-1
GE-2
Sandy Pt
Stonington Pt
Academy Rk
shoaling
PE-3
PE-4
PE-7
5 FEET FOR MID WIDTH OF 50 FEET MAY-JUNE 1985
LITTLE NARRAGANSETT BAY
Barn I
Perch I
Pawcatuck Pt
Dennison Rk
Seal Rks
Napatree Beach
Napatree Pt
Napatree Pt
Watch Hill

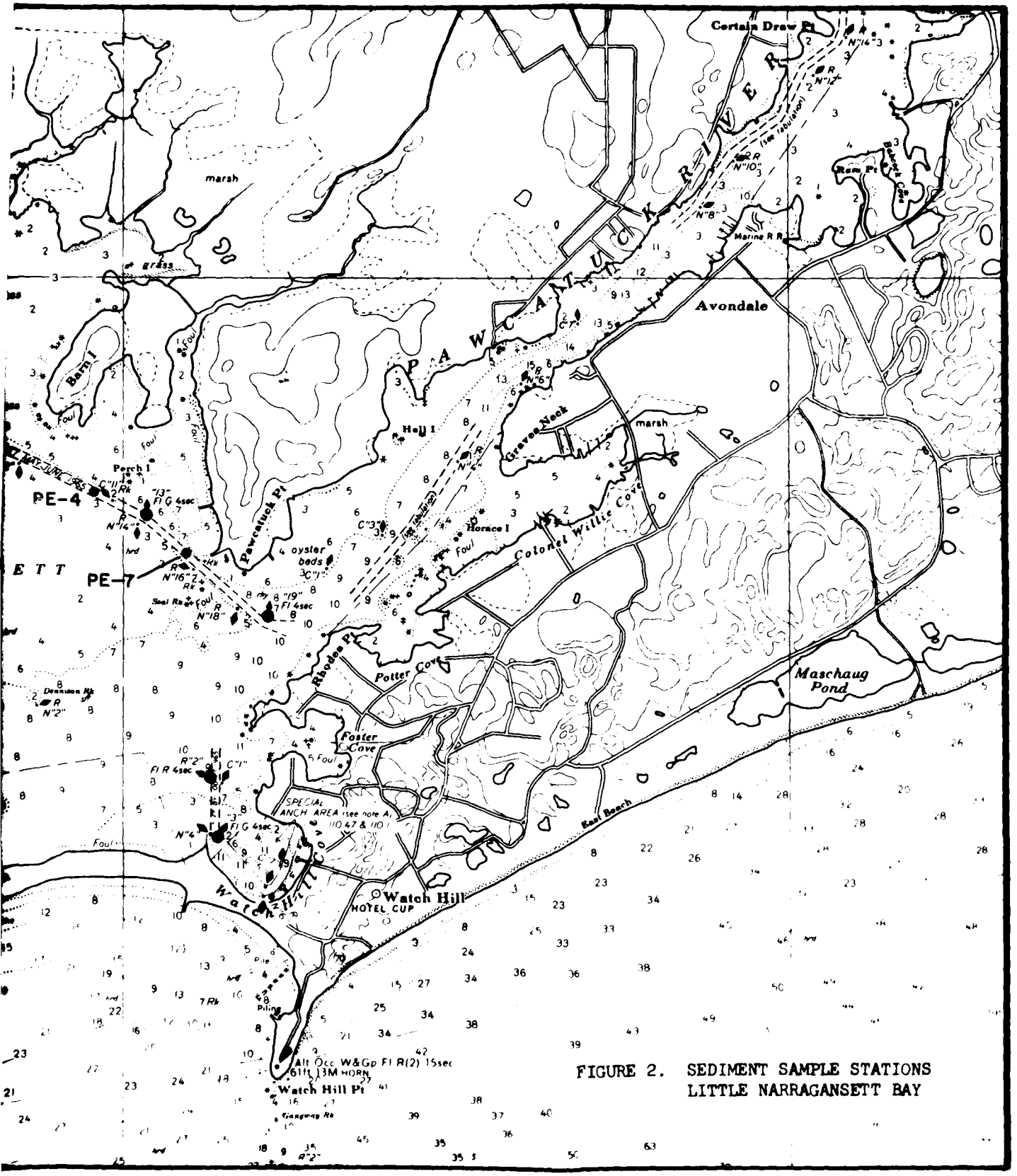


FIGURE 2. SEDIMENT SAMPLE STATIONS
LITTLE NARRAGANSETT BAY

Sample GE-1 is characteristic of most of the material to be sidecast. This sample was found to consist of gravelly coarse to medium sand with very little organic material. This clean, relatively coarse sand will settle very quickly when sidecast, causing few turbidity problems. This material could smother and bury some nonmobile benthic life, however.

Sample GE-2 was obtained from the maintained channel, about 500 yards beyond the project area. This sample may be characteristic of up to 25% of the material to be dredged and consists of somewhat finer sand than sample GE-1. Grain size curves for both samples are included in the appendix. The amount of organic material in this sample was still low which might indicate that the "organic fluff" layer would be reduced. Properties of the two Little Narragansett Bay samples are compared with other sidecast projects in Appendix 1. The comparison shows that Little Naraagansett Bay sediments are also very clean. Complete data for all of the Little Narragansett Bay samples is shown in Table 4.

Based on chemical and physical sediment data, and the geographical location of the channel, the material to be dredged is acceptable for ocean dumping in accordance with criteria set forth in Section 227.13 (b) (1) and (3) of the U.S. Environmental Protection Agency's Final Revision of Regulations and Criteria for Ocean Dumping (Fed. Register 11 January 1977).

Little Narragansett Bay sediments have lower concentrations of metals and other parameters than samples from other projects due to physical differences in the material. Both samples GE-1 and GE-2 are mainly sand. Due to less surface area, sand grains have a much smaller adsorbtion and absorbtion capacity than silts or clays, and so usually exhibit lower levels of trace metal concentrations. With these low concentrations of metals and other measured qualities, the dredged material should not chemically adversely impact the bay benthos.

Physically, some burial and smothering will undoubtedly take place. Due to the large particle size of the dredged material most will settle quickly in the area to which it has been cast.

Other dredging projects have indicated that a bottom layer of turbidity ("fluff") may develop. As mentioned previously, the Corps will monitor dredging operations and attempt to determine the areal extent of this layer, its duration, and ultimate fate. These studies, however modest, will allow for a more reliable prediction of impacts for future projects concerning this particular dredging method.

The impact of this "fluff" layer depends on many things; its extent, density and duration, currents, the season, the indigenous biota at the site and undoubtedly many other factors. Environmental impacts might range from essentially none to local smothering or irritation of benthic and pelagic organisms or the transport of pollutants (such as heavy metals) to different areas.

TABLE 3

CLINTON HARBOR

WATER SAMPLES

Sample No.	Lab. Ser. No.	Salinity mg/l	Total Cu ug/l	Total Pb ug/l	Total Zn ug/l	Total Cd ug/l	Total Ni ug/l	Total V ug/l	Total Cr ug/l	Total As ug/l	Total Hg ug/l
1	100-107-1A		7.5	3	10.0	L0.5	11	L4	L4	11	0.0
2	100-107-1B	22,000	7.5	3	11.5	L0.5	11	L4	L4	0	0.0
3	100-107-1C		22.0	5	16.0	L0.5	11	L4	L4	0	0.25
4	100-107-1D	17,000	22.0	10	21.5	L0.5	11	L4	L4	14	0.7
5	100-107-1E		20.0	25	18.5	L0.5	11	L4	L4	0	0.0
6	100-107-1F		23.5	10	24.5	L0.5	11	L4	L4	11	0.0
7	100-107-1G		18.5	20	20.0	L0.5	7	L4	L4	0	0.0
8	100-107-1H		17.5	10	17.0	L0.5	7	L4	L4	10	0.0
2A	100-107-11		10.0	10	12.0	0.5	7	L4	L4	3	0.0

TABLE 4

CHEMICAL ANALYSIS-BOTTOM SEDIMENTS
OF LITTLE NARRAGANSETT BAY

PARAMETER		GE-1	GE-2	PE-3	PE-4	GE-5	PE-6	PE-7
% Vol Solids-EPA		0.22	0.71	11.76	1.65	0.70	0.47	9.73
% Vol Solids-NED		0.13	0.55	10.27	1.47	0.58	0.42	8.43
% Tot Vol Sol-EPA		1.52	2.10	16.5	3.49	2.20	1.78	14.3
% Chem Oxygen Dem		0.20	0.80	15.5	2.21	0.89	0.471	13.2
% Tot Kjdl Nit		0.005	0.017	0.434	0.057	0.019	0.00	0.407
% Hex Sol-Oil & Grease		0.000	0.051	0.355	0.048	0.016	0.017	0.249
% Mercury	X10**-5	0.33	0.00	0.36	0.80	0.00	0.00	8.3
% Lead	X10**-3	0.65	0.78	6.9	2.0	1.7	1.8	7.6
% Zinc	X10**-3	0.87	2.60	15.1	2.8	1.3	1.0	15.8
% Arsenic	X10**-3	0.04	0.07	0.69	0.14	0.09	0.06	0.41
% Cadmium	X10**-3	0.09	0.10	0.48	0.11	0.05	0.05	0.04
% Chromium	X10**-3	0.50	1.1	7.8	1.7	0.64	0.66	8.7
% Copper	X10**-3	1.1	2.6	13.8	2.5	0.64	0.51	14.0
% Nickel	X10**-3	0.44	0.88	3.8	0.97	0.84	0.87	2.9
% Vanadium	X10**-3	1.3	1.6	0.0	1.7	0.0	1.5	7.0
% PCB	X10**-3	-	-	0.0	-	-	-	-
% DDT	X10**-3	-	-	0.02	-	-	-	-

All tests, unless otherwise noted, were performed in accordance with EPA Chem Lab Manual

Surveys following other sidecast projects have shown that;

1. There were no dissolved oxygen reductions detected during dredge disposal operations.

2. The occurrence of live epibenthos following dredging indicates that the dredge method does not adversely affect those populations beyond the actual work period.

3. The recovery rate of benthic populations will vary depending on the substrate and according to the diversity and species numbers found at a particular project.

It was concluded that local conditions characterizing individual harbor-channel environs produce differences in the dilution rate and areal extent of the turbidity plume and that in general, more investigations are still required.[7]

b. Terrestrial Impacts. The proposed project will have little impact on terrestrial resources. Gulls and other birds may find a temporary food source in some of the organisms the sidecaster turns up, but except for Sandy Point, the dredge will not be near dry land.

Conceivably, the material could be sidecast onto part of Sandy Point to be used as beach sand. This of course would depend on whether or not this material was desired by the owner of Sandy Point, but since it is clean sand there would at least be little impact if it was used.

c. Recreational Impacts. The project has been scheduled for the month of May in accordance with dredge availability and in order to minimize interference with recreational traffic. The sidecaster itself is a fully self-contained and highly maneuverable craft. Therefore, the operation will represent only a minimal obstruction, if any, to boating activities. The public will also be notified in advance before the project is started, so few recreational impacts are anticipated.

5. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED ACTION BE IMPLEMENTED.

The adverse environmental effects due to dredging will be temporary and localized. There will most likely be some local redistribution and some burial of the benthic populations, and an increase in turbidity.

If sidecast dredging was not used for the project there would be additional environmental impacts on offshore or landed spoiling sites, depending on the method of disposal.

6. ALTERNATIVES TO THE PROPOSED ACTION.

a. No Action. The alternative to periodic maintenance is no dredging. If maintenance dredging is not carried out, natural shoaling will continue and may eventually close the channel to deeper draft boat traffic during the lower tidal stages. Some long range effects of continued shoaling would cause:

(a) An economic burden to local commercial facilities which depend on harbor utilization.

(b) Increased navigation hazards to mariners.

(c) Reduction in recreational boating in the area.

(d) Diversion of the recreational fleet to other already overcrowded harbors.

b. Alternative Forms of Dredging. Instead of sidecaster operation, two alternative methods of dredging are conceivable. These include dredging the channel hydraulically and pumping the material via a discharge pipe to a shore disposal site or dredging by bucket and disposing of the material at sea.

Although these methods are technically feasible, both are inferior when compared to the operational flexibility of the sidecaster dredge. Strong currents in the channel would make locating the hydraulic plant very difficult and their effect on shifting it around presents additional problems in the connection of the discharge pipeline.

A bucket and scow were used to dredge the project previously. The dredged material was placed in the Stonington dump grounds at that time. This site, however, is no longer used. Dredging the project in this way would most likely not significantly reduce the environmental impacts in Little Narragansett Bay and would add the impacts of dumping the material.

The sidecast dredge itself is best suited for the proposed maintenance operation for several reasons.

(1) It is a self-propelled, highly maneuverable vessel. As such it would provide less of a hindrance to recreational traffic.

(2) The sidecaster is more suited for highly exposed areas and can handle swells and wave action better than other types of dredges.

(3) The job takes less time with the sidecaster.

7. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE OF LONG-TERM PRODUCTIVITY.

Continued use and future development of Little Narragansett Bay and the Pawcatuck River is contingent upon adequate maintenance of the channel. Since bottom sediment samples indicate that the material to be dredged is not polluted and that for the most part it will settle very quickly, periodic restoration of the outer portions of the channel to its authorized dimensions will have little effect on the maintenance or enhancement of long-term fish and wildlife resources within the Little Narragansett Bay area.

The employment of the sediment dredge "FRY" at Little Narragansett Bay is being conducted on an experimental basis. Future use of this dredging method at this particular project site is dependent on its success in removing the sand shoals and its maneuverability within the relatively high current project area.

The only other certain commitment of resources involved in implementing the project is the cost and labor to operate the dredge.

8. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES.

The project was committed to being a waterway when the channel was originally constructed. The maintenance dredging will not further commit the natural resources of the area, instead it would serve to maintain the original commitment. The resources which would be expended on this project are those of labor and capital.

Some benthic life will be irretrievably buried or smothered by the maintenance dredging. This will be a temporary effect, as bottom dwellers will repopulate the areas affected since the bottom sediment type will not change as a result of the project.

9. COORDINATION WITH OTHER AGENCIES.

Coordination is maintained with the major Federal regulatory agencies represented by the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service. In addition, since the project is practically on the border between Connecticut and Rhode Island (the dredging to take place entirely in Connecticut) coordination is being maintained with agencies of both states. These include the Connecticut Department of Environmental Protection and the Rhode Island Department of Natural Resources.

Corps personnel met with members of the Connecticut D.E.P. to informally present the project and discuss the impacts of past sidecast dredging projects. At this time it was determined that more information was needed concerning the possible impacts and fate of the bottom turbidity layer as described in Section 4. Subsequently, the Corps has agreed to monitor the Little Narragansett Bay sidecast operation in an attempt to answer these questions.

The information contained herein reflects a preliminary assessment of the potentially effected resources and dredging impacts based on existing knowledge. There appears to be no major environmental concern associated with the proposed dredging in Little Narragansett Bay and it is deemed therefore that a formal Environmental Impact Statement (EIS) is not necessary at this time. However, specific details on the probable effects identified with this particular dredging method and

for each project area involved are still under evaluation by the Environmental Analysis Branch.

Letters of coordination regarding the proposed sidecast maintenance dredging are attached in the Appendix.

The proposed dredging project has been discussed (orally or in written communications) with the following persons:

Dick Sisson, Rhode Island Division of Marine Fisheries

Edward Wong, Shellfish Specialist, U.S. EPA

Denis Cunningham, Conn. Dept. Environmental Protection

Robert Craig, Conn. Dept. Environmental Protection

Mike Ludwig, Marine Resources Specialist, Natl Marine Fisheries Service, Milford

Robert Birmingham, Stonington Town Planner

Thomas Hoehn, Conn. Dept. Environmental Protection

Dr. Lance Stewart, Sea Grant Coordinator, Univ. Conn, Marine Research Lab Noank

References

1. Recommended Regional Development Plan, Southeastern Connecticut Regional Planning Agency, Norwich, Ct. 1967.

2. Personal Communication. Thomas Hoehn, Connecticut D.E.P., Marine Region, Waterford, Ct.

3. "List of Restricted Shellfish Areas in Connecticut Where Closure Lines Have Been Definitely Established by the State Department of Health," Connecticut State Department of Health, 1974.

4. Alfieri, D., 1975. Organismal development on an artificial substrate 1 July 1972 - 6 June 1974. Estuarine and Coastal Marine Science. 3:465-472.

5. Personal Communication. Mike Ludwig, National Marine Fisheries Service, Milford, Ct.

6. Pearcy, W. G. and S. W. Richards. 1962. Distribution and Ecology of Fishes of the Mystic River Estuary, Connecticut. Ecology. 43(2): 248-259.

7. Chase, G.L., Evaluation of Environmental Effects Associated with Sidecast Dredging. Proc. Offshore Technology Conference, Dallas, Texas, May 1976.

8. U.S. Environmental Protection Agency. 1975. Discharge of Dredged or Fill Material in Navigable Waters, Fed. Register 5 September 1975 40(173): 41292-41298.

CONCLUSIONS

Upon evaluating the information presented in this Environmental Assessment Report it is my belief that sidecast maintenance dredging of Little Narragansett Bay channel is in the best public interest

The sidecaster was developed by the Corps of Engineers to dredge a relatively small amount of material from rapidly shoaling entrance channels. This method of dredging is relatively low in cost in comparison with the more conventional dredging operations such as pipeline or bucket dredges. The sidecast method is also more mobile and capable of accomplishing the work in less time. Environmentally, the operation should have a minor impact on water quality and marine resources. However, per request of the Connecticut Department of Environmental Protection the New England Division's Environmental Branch will conduct a one time transmissometer monitoring survey and chemical analysis of the discharge. It is also agreed that the dredged sediments will be cast southward in the direction of Sandy Point Island.

In my evaluation this assessment has been prepared in accordance with the National Environmental Policy Act of 1969 and will be coordinated with appropriate regulatory agencies. Based on the scheduling of the actual work and previous monitoring investigations it appears that the dredging can be conducted with subsequent minimization of environmental impacts. The assessment therefore precludes the need for preparation of a formal Environmental Impact Statement.

7 February 1977
(DATE)

JOHN P. CHANDLER
Colonel, Corps of Engineers
Division Engineer

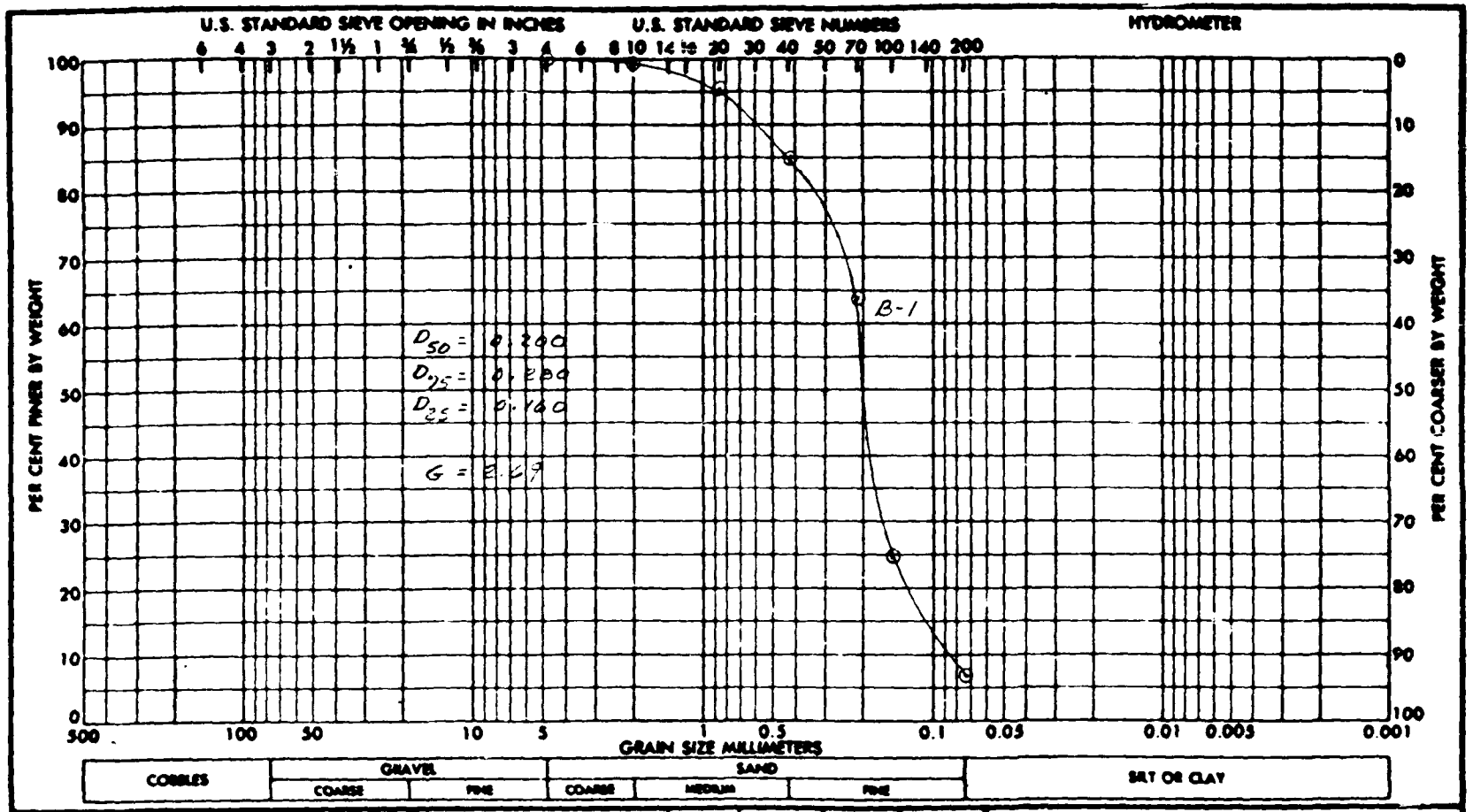
APPENDIX A

GRAIN SIZE GRADATION CURVES

SIDECAST DREDGE MAINTENANCE AREA

LITTLE NARRAGANSETT BAY

A-1



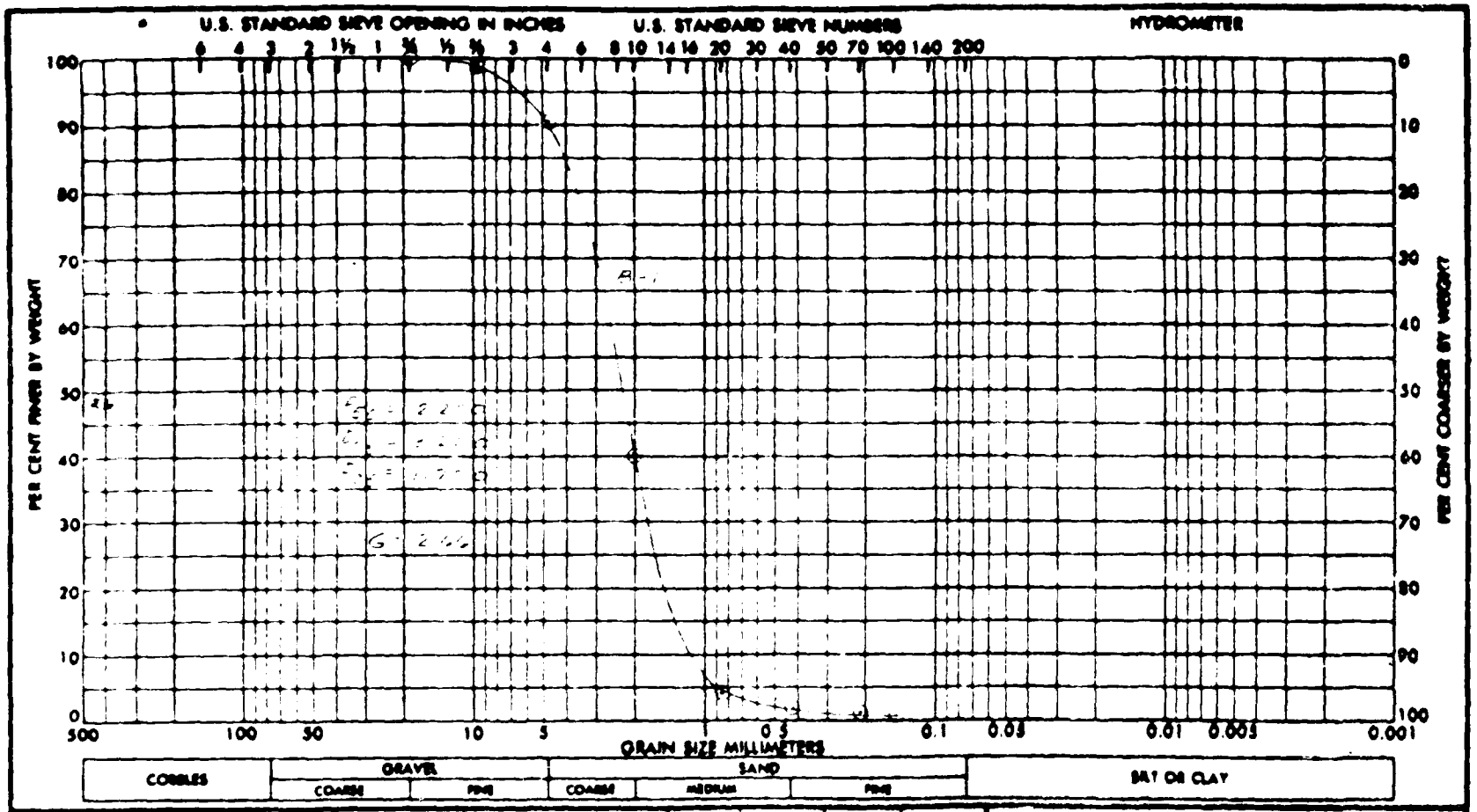
SAMPLE NO	ELEV OR DEPTH	CLASSIFICATION	NAT W%	LL	PL	PI
B-1	Surface	silty medium to fine SAND (SM-SP)				

GRADATION CURVES

PROJECT Little Narragansett Bay
Watch Hill, R.I.
AREA
BORING NO GE-2 (Lab. Sri. No. 100-209-2)
DATE

ENG FORM 2087
1 MAY 63
REPLACES WES FORM NO 1261, SEP 1962, WHICH IS OBSOLETE.

A-2



SAMPLE NO	ELEV OR DEPTH	CLASSIFICATION	NAT W%	LL	PL	PI
B-1	Surface	poorly graded coarse to medium SAND (SP)				

GRADATION CURVES

PROJECT Little Narragansett Bay
Watch Hill, R.I.
AREA
BORING NO GE-1 (Lot Sec. No. 100-209-1)
DATE February 1976

ENG FORM 2087
1 MAY 63
SUPERSEDES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE.

APPENDIX B

MARINE SEDIMENT ANALYSIS

FROM NEW ENGLAND SIDECAST

DREDGE NAVIGATION PROJECTS

(from Chase, 1975)

TABLE 1 - MARINE SEDIMENT ANALYSIS OF VARIOUS FEDERAL NAVIGATION PROJECTS, NEW ENGLAND REGION (% DRY WT.)

PROJECT AND LOCATION	NO. SAMPLES	VOLATILE SOLIDS EPA		VOLATILE SOLIDS NED		C.O.D.		KJDL NIT.		HEX.SOL. OIL & GREASE	
		Avg.%	Range %	Avg.%	Range %	Avg.%	Range %	Avg.%	Range %	Avg.%	Range %
MAINE											
Pig Island Gut	4	5.79	3.71 - 7.51	4.57	2.69 - 6.49	6.64	3.87 - 8.82	0.134	0.098 - 0.275	0.069	0.048 - 0.091
1971	4	0.40	0.40 - 0.40			0.95 -	0.68 - 1.51		0.01 - 0.02	0.026	0.018 - 0.045
Scarboro River 1972	6	0	0.35 - 1.10	-	- -	0.72 -	0.29 - 1.05		0.166 - 0.170	0.026	0.008 - 0.031
Saco River	9	1.03	0.43 - 3.40	0.85	0.32 - 2.71	1.34	0.06 - 4.33	0.052	0.032 - 0.136	0.045	0.027 - 0.152
Wells Harbor	5	0.83	0.35 - 2.46	0.64	0.20 - 2.20	0.85	0.21 - 3.01	0.037	0.006 - 0.100	0.036	0.019 - 0.045
NEW HAMPSHIRE											
Hampton Harbor	3	0.40	0.36 - 0.47	-	- -	0.25	0.19 - 0.29	0.003	0.00 - 0.01	0.03	0.02 - 0.04
MASSACHUSETTS											
Annisquam River	4	9.18	1.06 -25.09	8.01	0.75 - 21.62	10.92	0.92 - 3.06	0.23	0.03 - 0.64	0.32	0.05 - 0.74
Chatham Stage Harbor	4	0.3	0.2 - 0.4	-	- -	0.26	0.18 - 0.45	0.01	0.01 - 0.01	0.03	0.03 - 0.05
Gloucester Harbor	11	4.9	0.4 -10.1	-	- -	5.39	0.40 -10.21	0.14	0.01 - 0.30	0.12	0.03 - 0.23
Hyannis Harbor	5	3.56	0.19 - 8.97	3.25	0.23 - 8.26	6.20	0.40 -15.1	0.13	0.01 - 0.36	0.18	0.02 - 0.41
Annisquam River	9	2.0	0.4 - 6.5	-	- -	2.52	0.20 - 6.90	0.07	0.02 - 0.18	0.06	0.011 - 0.176
Newburyport Harbor	5	0.48	0.4 - 0.6	0.22	0.2 0.3	0.61	0.43 - 0.79	0.012	0.01 - 0.02	0.02	0.007 - 0.050
Menemsha Creek	7	0.70	0.32 - 2.43	0.56	0.20 - 2.17	2.1	0.73 - 3.96	0.04	0.02 - 0.10	0.04	0.01 - 0.08
RHODE ISLAND											
Point Judith Harbor	11	3.56	0.48 -11.3	2.67	0.18 - 8.53	4.78	0.609-18.3	0.126	0.042 - 0.290	0.06	0.008 - 0.317
Block Island Harbor Refuge	9	1.24	0.40 -2.72	1.01	0.36 - 1.94	0.97	0.44 - 2.93	0.05	0.006 - 0.159	0.024	.001 - .069
Great Salt Pond, B.I.	5	3.26	1.41 -4.89	-	- -	2.17	1.09 - 3.64	0.113	0.085 - 0.137	0.00	0.00 - 0.002
Little Narragansett Bay	7-8	3.84	0.39 -13.74	3.36	0.30 - 12.54	5.32	0.73 -17.60	0.17	0.03 - 0.57	0.10	0.030 - 0.391
Watch Hill Cove	3	7.42	1.13 -10.82	6.18	1.00 - 9.14	9.35	3.11 -13.37	0.24	0.11 - 0.32	0.13	0.032 - 0.257
CONNECTICUT											
Clinton Harbor	6-7	3/34	0.8 - 7.8	2.37	0.5 - 5.8	4.73	0.82 -13.60	0.14	0.04 - 0.35	0.10	0.016 - 0.20

TABLE 2 - HEAVY METAL CONCENTRATIONS IN SEDIMENTS FROM NEW ENGLAND SIDECAST DREDGE NAVIGATION PROJECTS (% DRY WT.)

PROJECT	As %x10⁻³ Avg.	As %x10⁻³ Range	Cd %x10⁻³ Avg.	Cd %x10⁻³ Range	Cr %x10⁻³ Avg.	Cr %x10⁻³ Range	Cu %x10⁻³ Avg.	Cu %x10⁻³ Range	Ni %x10⁻³ Avg.	Ni %x10⁻³ Range	V %x10⁻³ Avg.	V %x10⁻³ Range
Pig Island Gut	1.64 (0.85)	0.51-2.12 (0.43-1.25)	0.24 (0.14	0.16-0.21 (0.29-0.11)	2.09 (1.93)	1.17-2.30 (0.85-2.56)	7.23 (3.86	5.41-9.09 (2.51-4.93)	1.85 (1.44)	1.09-6.42 (0.64-1.42)	4.10 (3.27)	0.31-3.75 0.24-0.47
Scarboro River 1971	--	-- --	--	-- --	0.05	0.05-0.05	1.19	0.82-1.73	0.23	0.21-0.31	1.01	0.97-1.07
1972	0.19	0.05-0.78	0.17	0.10-0.53	--	-- --	--	-- --	--	-- --	--	-- --
Wells Harbor	--	-- --	--	-- --	0.80	0.13-2.09	1.09	0.82-1.51	0.60	0.98-1.02	1.04	0.97-1.20
Hampton Harbor	--	-- --	--	-- --	--	-- --	0.8	0.7 -1.0	--	-- --	--	-- --
Menemsha Creek	0.02	0.02-0.03	0.87	0.05-5.79	0.25	0.19-0.58	1.86	0.74-3.41	0.29	0.19-0.58	1.16	0.93-8.5
Martha's Vineyard	(0.03)	-- --	(6.21)	-- --	(1.24)	-- --	(3.73)	-- --	(1.62)	-- --	(3.73)	-- --
Point Judith Harbor	0.218 (0.077)	0.06-0.85 (0.00-0.16)	0.41 0.427	0.13-1.20 (0.33-0.52)	1.72 (15.95)	0.20-7.2 (2.7-41.0)	3.15 (6.32)	0.08-9.2 (3.5 -9.6)	2.98 (5.82)	1.2 -6.6 4.4-15.2	4.07 (6.92)	1.7 -9.9 (4.4 -8.9)

TABLE 3 - HEAVY METAL CONCENTRATIONS IN SEDIMENTS FROM NEW ENGLAND SIDECAST DREDGE NAVIGATION PROJECTS (% DRY WT.)

PROJECT AND LOCATION		NUMBER SAMPLES	Hg %x10^{-5} Avg.	Hg %x10^{-5} Range	Pb %x10^{-3} Avg.	Pb %x10^{-3} Range	Zn %x10^{-3} Avg.	Zn %x10^{-3} Range
MAINE								
Pig Island Gut		4	1.8	0.6-4.3	2.85	2.32-3.49	7.92	5.84-9.17
			(0.6)	(0.2-0.7)	(1.39)	(0.64-2.27)	(8.73)	(3.10-19.35)
Scarboro River	1971	4	0.47	0.2-1.0	0.06	0.043-0.084	0.13	0.112-0.158
	1972	6	0.30	0.3-0.5	0.52	0.53-0.49	1.04	0.77-2.19
Saco River		9	0.5	0.1-2.3	1.20	0.48-3.89	2.60	1.75-3.19
Wells Harbor		5	0.38	0.2-0.6	0.56	0.31-1.20	1.68	1.25-3.29
NEW HAMPSHIRE								
Hampton Harbor		3	0.80	0.4-1.4	0.40	0.3-0.4	2.90	2.5-3.6
MASSACHUSETTS								
Andrews River		4	2.2	1.2-4.4	4.4	1.62-11.80	2.69	0.75-7.20
		3	(0.7)	(0.5-1.4)	(5.04)	(3.03-7.96)	(2.76)	(0.71-6.33)
Annisquam River	1971	5	1.46	0.5-3.1	2.39	0.31-5.03	3.67	1.19-7.34
		4	(1.5)	(0.4-2.3)	(2.35)	(0.32-6.12)	(4.83)	(1.36-4.39)
	1975	2	1.3	1.0-1.6	0.75	0.73-0.77	0.86	0.73-1.0
Chatham Harbor		4	0.7	0.4-0.9	0.99	0.88-1.25	1.06	0.40-2.74
Cuttyhunk Harbor		4	1.43	0.3-2.6	3.19	2.30-5.24	4.62	2.30-8.48
Hyannis Harbor		6	2.0	0.2-5.9	4.0	0.6-8.9	5.8	0.8-12.8
		3	(1.2)	(0.1-3.4)	(4.86)	(0.3-10.3)	(6.6)	(0.7-12.8)
Menemsha Creek		7	0.35	0.2-1.0	0.82	0.46-1.40	1.0	0.42-3.01
		1	(0.34)	---	(4.35)	---	(9.32)	---
Newburyport Harbor		5	0.24	0.2-0.3	0.07	0.047-0.096	0.216	0.187-0.228
RHODE ISLAND								
Point Judith Harbor		11	3.19	1.4-4.8	2.99	1.4-616	5.21	1.3-20.0
		4	(5.45)	(3.7-7.1)	(8.47)	(6.3-10.8)	(7.82)	(6.4-11.3)
Block Island Harbor	1973 & 1975	9	5.60	0.0-38.0	4.08	1.5-11.8	4.2	1.7-5.8
Great Salt Pond, B.I.		5	0.04	0.009-0.064	0.49	0.31-1.01	2.26	0.56-7.55
Little Narragansett Bay		8	1.57	0.6-4.9	4.44	0.76-7.27	5.98	1.04-14.23
Watch Hill Cove		3	3.23	1.5-4.9	3.85	1.93-5.57	7.12	3.05-10.56
			(0.66)	(0.4-1.1)	(1.29)	(0.48-1.83)	(3.14)	(0.91-4.31)
CONNECTICUT								
Clinton Harbor		6	1.25	0.5-2.8	0.23	0.05-0.6	1.23	0.27-2.50
			(2.45)	(0.4-9.0)	(0.18)	(0.05-0.5)	(1.30)	(0.31-3.50)

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Federal Building, 14 Elm Street
Gloucester, Massachusetts 01930

January 20, 1977

Col. John P. Chandler
Division Engineer
Department of the Army
Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Colonel Chandler:

The National Marine Fisheries Service has reviewed the proposed locations of work by the sidecaster dredge FRY during the March-to-May period for this calendar year. During a meeting held December 17, 1976, with representatives of the New England Division Corps of Engineers, Connecticut Department of Environmental Protection, and members of my staff, it was pointed out that there is an on-going effort to re-establish the Bay scallop (Argopecten irradians) in Little Narragansett Bay and, while the area proposed for work is somewhat removed, there is a strong potential for suspended sediments migrating onto those cultivated areas. It was also noted that the sediment grain size of the inner portion of the work area (approaching mile point 1) is significantly finer than the materials carried along the oceanic face of Sandy Point. This tends to heighten the danger of siltation within the inner embayment areas.

In order to properly address this problem of turbidity-generated density currents of suspended sediments at this site, as well as at other locations, it would appear that a careful study, performed in the work area at the entrance to the Bay, should be undertaken during the FRY's operation. Such a survey might provide in-sight into delineating the extent of drift of the "marine fluff" and the volume of material(s) involved.

24 JAN 1977

B-4

In view of these considerations, the National Marine Fisheries Service recommends that such an investigation be incorporated as part of the actual proposal for this activity at Little Narragansett Bay. Furthermore, such a study should be closely coordinated with those groups presently involved in the shellfish activities in Little Narragansett Bay.

Very truly yours,

Warwick F. Bowen

William G. Gordon
Regional Director

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Region
Federal Building, 14 Elm Street
Gloucester, Massachusetts 01930

January 18, 1977

Col. John P. Chandler, USA
Division Engineer
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Colonel Chandler:

This is in reference to your letter of December 13, 1976, concerning maintenance dredging of three waterways in the New England area. Dredging will take place from about March 6 to May 31, 1977.

Our report concerning Little Narragansett Bay, Rhode Island, and Connecticut will be provided by a separate letter.

Maintenance dredging at Chatham (Stage) Harbor, Massachusetts, is not expected to result in any long-term adverse impacts on fisheries resources; therefore, we have no objection.

Maintenance dredging in Hampton Harbor, New Hampshire, poses a few minor problems, which could be reduced if the channel inside the breakwater is dredged during outgoing tides and dredging operations are completed prior to May 1, 1977. Hampton Harbor Inlet has a 5- to 6-knot current during tidal change. Because of the strong tidal current, it is possible that dredged sand may be transported into the inner harbor. Such conditions could be reduced by dredging the channel inside the limit of the jetties during outgoing tides. Further, beginning in late April, soft-shelled clams begin spawning activities and peak in the summer months. Also, at this time, other biological activities begin their life cycles. Therefore, in order to minimize the possibility of interference with these activities, we urge that dredging of Hampton Harbor be completed prior to May 1.

Sincerely, Marvin L. Bousson

for

William G. Gordon
Regional Director

B-6

END

DATE
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