

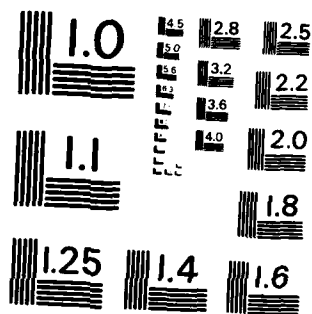
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**18-21 May 1981
Workshop Digest**

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1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A722607	3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle) REPORT OF LONG ISLAND SOUND DREDGED MATERIAL CONTAINMENT STUDY WORKSHOP PROJECT		5. TYPE OF REPORT & PERIOD COVERED FINAL	
7. AUTHOR(s)		6. PERFORMING ORG. REPORT NUMBER	
9. PERFORMING ORGANIZATION NAME AND ADDRESS LONG ISLAND SOUND TASK FORCE STAMFORD MARINE CENTER MAGEE AVENUE STAMFORD, CT 06902		8. CONTRACT OR GRANT NUMBER(s) DACW 33-81-M-0479	
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DIVISION 424 TRAPELO ROAD, WALTHAM, MA 02254		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) NEDPL		12. REPORT DATE MAY 1981	
16. DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED		13. NUMBER OF PAGES	
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		15. SECURITY CLASS. (of this report)	
18. SUPPLEMENTARY NOTES Cover title reads: 18-21 May 1981 Workshop Digest; One of the reports in the Long Island Sound Dredged Material Containment Feasibility Study		16a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Dredged material disposal Long Island Sound Containment sites LIS			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A compilation of papers from the four public workshops on disposal of dredged materials in coastal containment facilities in the Long Island Sound. The report summarizes the information presented at the workshops..			

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-FINAL-

Report on

Long Island Sound Dredged Material Containment Study
Workshop Project

Contract No. DACW33-81-M-0479

Submitted by:

The Long Island Sound Taskforce
Stamford Marine Center
Magee Avenue
Stamford, CT 06902

By:

Whitney C. Gilt

Whitney C. Gilt
Executive Director

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1.0 Introduction

Four public workshops on disposal of dredged materials in coastal containment facilities were coordinated by the Long Island Sound Taskforce under contract to the U.S. Army Corps of Engineers, New England Division, during May of 1981. The series allowed more than 200 people to hear, discuss, question and consider details of an option for disposing of materials dredged from Connecticut and New York harbors which has never been used in the Long Island Sound region.

The sessions in New London, CT; New Haven, CT; Stamford, CT; and Great Neck, NY, generated a significant volume of coverage in both the print and electronic media, carrying word of the containment concept to a wide audience. Articles on the workshop topic were published in the Sunday edition of The New York Times and carried on the wires of the Associated Press. News releases issued by the Taskforce in consultation with the Corps were reprinted in local newspapers around the region. Telephone discussions on containment were taped by a half-dozen radio stations and broadcast in each area just before the workshop date. Radio coverage of this issue ranged from a taped interview with WCBS "all news radio" in New York City to reports filed on each workshop by the news staff of local radio stations.

Media attention was combined with broad-based mailings, personalized correspondence, special publications and presentations before meetings. Mailings announcing the workshops were sent to a broad cross-section of the people who live around the Sound. Taskforce staff members made a special effort to develop a mailing list which moved beyond a readily available collection of coastal citizens and concerned conservationists. Members of the academic community, scientists, consultants, harbor development commissions, public officials and recreational interests were invited to participate in the workshops.

Personal letters were addressed to corporate leaders and elected officials during preparations for the sessions. In many cases, telephone calls were made to follow through on the information included in the mailing program. Special publications summarizing the containment concept were sent to several groups and the project was discussed at two important environmental meetings. Through these efforts, members of these varied interest groups in the Sound region attended virtually every workshop.

Special attention was devoted by the Taskforce staff and Corps personnel to designing a workshop format which encouraged interaction between speakers and participants and prompted individuals to raise questions during the

session. The variety of questions and concerns voiced during these meetings combined with written comments submitted by participants suggest the informal format utilized succeeded in reaching these goals.

This report summarizes the information presented, as well as the questions and concerns raised, at these workshops. Unresolved issues which merit further attention as well as efforts to promote public participation in these sessions are also examined in this digest. Throughout this project, the Taskforce has benefitted from the advice and assistance of Richard Quinn, director of the Corps continuing study of containment options in the Long Island Sound region. Gibb Chase, a Corps marine biologist, also made a significant contribution to this program. Special thanks for assistance should also go to Lawrence S. Grossman, public information specialist with the Corps, and Karen Kirk of the Corps staff.

2.0 Workshop Summaries

4

Each session was divided into five successive sections through a planning process of consultation and cooperation between Taskforce and Corps staff. This organizational approach is reflected in the text of opening remarks, "Group Memory," and closing comments from the New Haven workshop which comprise Section 8 of this report.

First, each meeting began with a set of opening remarks designed to establish the direction, objective and tenor of the session. Presented by Taskforce Project Director Thomas C. Jackson, these comments emphasized the program's participatory nature and encouraged members of the audience to ask questions about containment. After briefly reviewing the dredging concerns in the Long Island Sound region, Mr. Jackson served as moderator of the workshop, introducing speakers and recognizing participants to make comments or ask questions.

Second, an introduction to the concept of containment utilizing slides of facilities in the Great Lakes region and sections of the American coast was presented by Richard Quinn. During this segment of the session, Mr. Quinn examined the direction of the New England Division study, design elements of containment facilities, essential aspects of the containment process and common concerns raised on consideration of containment projects.

Third, Gibb Chase discussed the impact containment facilities for objectionable materials could have on the marine environment. Mr. Chase addressed concerns of uptake of toxics in the food chain, long term ecological effect, and specific hazardous substances of concern in the Long Island Sound region.

Fourth, the workshop was opened for discussion, questions and comments from participants. Since questions were taken after each of the first three presentations, this section generally developed into an informal give and take between speakers and the audience. This served to clarify the principal concerns and unresolved issues of individuals attending the meeting. The Moderator served as coordinator of this workshop segment, at times reformulating questions or answers to more precisely address underlying issues.

Fifth, closing comments were presented by Whitney C. Tilt. In these remarks, Mr. Tilt reviewed the major points raised during the evening and encouraged participants to continue their involvement in the study process. Mr. Tilt also served as recorder for each session, noting key topics on a large pad at the front of the room to form a "Group Memory" of the meeting. Participants were asked to correct any mistakes which appeared in the "Group Memory" and the

full set of these papers has been submitted to Mr. Quinn.

At each session, participants were asked to leave a registration card with a staff person at the door. Since this appeal met with less than universal acceptance, attendance figures are based on an actual count of persons in the room during the meeting. These cards, combined with our notes and the "Group Memory" of each workshop form the basis of this report's review of issues, concerns, questions and unresolved issues.

2.1 New London Workshop

May 19, 1981

More than 60 people traveled to New London Hall on the Connecticut College campus to join in the first workshop. This session also drew reporters from the New London Day, The Courant of Hartford, and an area radio station. Attendance was roughly double our expectations despite the rural nature of much of eastern Connecticut. Scientists, regional planners, community leaders, concerned citizens, industrial representatives, consultants and government officials participated in this workshop.

Issues raised during the session included: toxicity of materials to be dredged from urban harbors and contained in coastal facilities; potential odor problems from exposure of sediments to the air; costs of containment compared

to open water disposal; and maintenance of the completed containment complex.

Concerns of participants centered on safety (in terms of potential environmental damage from toxics contained in sediments as well as the hazard posed by storm damage to a containment facility which holds objectionable materials); costs (especially if a cost-sharing formula is adopted by the Corps); potential neglect of the completed complex (through improper maintenance); and odor.

Questions asked by participants included: is containment a viable option in terms of comparative cost analysis; is massive rip-rap needed to protect a facility from storm surge along the Sound; how will you transfer the material from a barge to the containment structure; how mobile will toxic chemicals be within the structure; will leaching be caused by acid rain; can you describe appropriate vegetation for a facility; would a structure be disturbed by a 100-year storm; are you concerned about the potential biological impact of a toxic waste disposal facility adjacent to the highly productive waters of the estuarine "nursery" region; how can we evaluate the impact of sacrificing valuable shallow estuarine habitat for these complexes; how will a marsh creation project work (be flushed by the tides); is the containment concept limited

to protected waters; is a monitoring system built into the construction program as a matter of course, is there any such thing as an "impervious dike" for containment of hazardous wastes; are any studies of forced transport of heavy metal laden sediment/fluid across a clay liner to show how many years (months?) the substance will maintain its impervious qualities; how about a cadmium study; what is the deepest water you can build a containment island in; and can the Corps construct such a facility without major cost sharing provisions.

Comments recorded on registration cards were generally supportive of the containment concept and included "I could envision this method being used for highly contaminated material only. The remainder could go to open water disposal;" "Good idea to come to the public before proposing a specific project;" "Thanks for the opportunity to question and comment;" "containment seems a good idea;" and "Good workshop."

2.2 New Haven, CT

May 19, 1981

Oystermen, scientists, marine operators, waterfront industry business persons, municipal officials, representatives of harbor development panels, environmentalists, Con-

gressional staff, and concerned citizens joined in the New Haven workshop on the Yale campus. Media coverage of the session included taped interviews broadcast on WELI, a major AM station in central Connecticut.

Issues discussed during this meeting centered on protection of living marine resources and specifically of oyster beds in coastal waters. In addition to protection of oyster beds, participants were also interested in: ecological impact of toxic materials contained in these facilities; the potential for storm damage; odor; and design of the complex.

Concerns voiced during the workshop revolved around the highly productive oyster beds in New Haven harbor and the shallow waters of Connecticut. Oystermen said the Quinnipiac River estuary is one of the world's most productive in terms of oyster propagation and warned any containment project in this area could have a direct impact on their industry by filling of oyster beds. During the evening it became clear further analysis of the containment option must include a comparative analysis between the benefits of the proposed project and those of the aquaculture industry. Construction costs, maintenance expenses, effects of storm damage, odors and affect on marine environmental quality also surfaced as areas of concern in the session.

Questions taken during the workshop included: if a containment island is built off the shore of Hammonasset State Park, how far would it be from the beach; how can you create a "biologically productive" saltmarsh if salt water is not allowed to flush the area (because of impervious dikes surrounding the site); even though the toxic sediments would be capped with "clean" material, won't the toxic material eventually enter the salt marsh food chain; does dewatering remove 100% of the water from the containment area; is this the level of removal needed; does rain water penetrating through the containment funnel through the weir system; any problem with desalinization; what is the ability of containment area to withstand storms and hurricanes without releasing toxic substances; what are proposed sites for islands, marshes; what about long term maintenance of containment facility to prevent dike erosion; who monitors; and finally, who pays for repairs.

Comments received on cards submitted at the close of the session generally supported continued study of containment and public involvement in this effort. Specifically, participants noted: "Intriguing proposal, could have tremendous value as wave energy dissipating (structure) possibly reducing shore and beach erosion;" "I support the theory of dredge disposal containment in Long Island Sound. It would be a good chance for research on Long Island Sound primary seral succession studies (both benthic and

island);" "The program presented was informative and well presented. The issue of dredging and dredge disposal demands attention -- it is nice to see forethought rather than hindsight used in the search for answers. The containment proposals seem to be potentially viable alternatives to dredge disposal (in open waters of the Sound);" "Containment sounds like a good idea. The great need for dredging may be met in this way. However, the costs must be considered vs. dumping;" "Proposals discussed regarding disposal of dredge spoils has been very positive and gives hope for successful management of a difficult problem;" "I feel the containment facilities are a very positive approach to dredged material disposal. It is an excellent idea to use dredged material for productive purposes, ie: recreational islands, etc. It would be critical to keep the costs to a minimum for the private sector for dumping purposes. Open water dump sites must also be kept open;" and "All for proposed ideas. Desperately needed."

2.3 Stamford, CT

May 20, 1981

Congressional staff, waterfront industry representatives, coastal management authorities, regional planners, consulting engineers, biologists, municipal officials, ecologists and concerned citizens joined in the workshop at Stamford's Westhill High School. Some 50 people participated in the session which was covered by The Advocate, The Bridgeport Telegram, and WSTC radio.

Issues discussed in the meeting involved the feasibility of utilizing containment as a dredging disposal strategy along an urban coastline as well as the potential for groundwater contamination, validity of Corps dredging projections for western Long Island Sound and costs involved with the concept.

Concerns arising in the session included: comparative costs; odor; potential impact of toxic dredged materials on the marine environment; potential for addition of valuable wildlife habitat; and ownership of any new land created through the containment process. Another problem recognized in this workshop is the future effect discharges of toxic chemicals, as permitted under current environmental regulations, will have on Long Island Sound. Since sediments can act as a sink and hold toxic substances, current discharge of hazardous materials may

create a continuing dredged materials disposal problem in this region.

Questions from participants ranged from: who is responsible for the presence of contaminants in the dredged material and will they pay for the containment facilities required to solve this ecological problem, to: what effort is being made to evaluate additional deep water sites in western Long Island Sound; what sites are being expanded in New York waters; how will the permit process be coordinated for creating a containment facility; will private parties be able to obtain a permit to operate this kind of complex; is it really feasible to constrict these large containment sites given current land use patterns along the Connecticut coast; are upland sites being considered; what kind of materials are on the bottoms of our harbors; where can we build these facilities; how high can you make a dike wall on a marsh; and could a private party (business, individual, utility) conceivably build, or have built, a containment facility for the purpose of increasing property acreage.

Comments noted on cards collected after the session generally supported the idea of dredged material containment in the Long Island Sound region. Specifically, participants write: "Very informative, appears that everyone attending got a lot out of the communications exchanges,

enhancing the pattern of education (or lack of it) of the masses. Continue!;" "Westchester (County) dredging projections are far too low;" "Helpful -- I'll be looking for further information on this topic. It appears as a viable alternative;" "This is the most logical primary solution to the problem;" "There is a critical need for sites in New York State waters of Long Island Sound for disposal sites for dredged materials;" "Give important consideration to liner-type 'containment' to extend, lengthen or create breakwaters;" and "Your next newsletter should include the list of criteria to give a guide to the locals as to what is a possible site (these criteria should include) minimum acreage, shellfish bed protection, public land, depth and low energy areas." Written comments from the Honorable Stewart B. McKinney, member of Congress, and Alfred B. DelBello, Westchester County Executive, were submitted and are included in Section 3 of this report.

2.4 Great Neck, NY

May 21, 1981

County officials, state employees, concerned citizens, environmental leaders, scientists, consulting engineers, marine biologists, Congressional staff, and representatives of recreational interests participated in the workshop on the U.S. Maritime Academy campus. Some 50 individuals

joined in the meeting which was covered by reporters from The New York Times, Newsday, and the Great Neck Record. A taped telephone interview was broadcast by a Long Island radio station in advance of the meeting. Attendance at this session was undoubtedly held down by the championship play-off game of the Islanders professional hockey team, a home game which began shortly after our presentation started.

Issues discussed in this session centered on protection of water quality from degradation by toxic contamination linked with dredged material containment facilities. A secondary area of discussion centered on protection of ground water quality from hazardous substances stored in dredged material containment facilities. Cost, location, and design were also reviewed during the session.

Questions taken at the workshop included: will organisms raised on an island with PCBs and heavy metals in the sediment contribute toxics to the food chain or poison wildlife, destroy wetlands sites; is working with toxic materials a health hazard for workers and the local population; can money available for dredging be used to stop the toxic dumping at the shore; what about the absorption of metals into plants and animals; what about more information on the studies (which support your assessment of containment's environmental impact); and are there any precautions to be taken to minimize the volatilization rate of PCB while materials are "drying out."

Comments generally supported use of containment facilities as a means of protecting Long Island's marine environmental quality. Specifically, participants wrote: "The need for disposing of dredge spoil obviously exists. These containment spoil islands offer a viable alternative to capping spoil in mid-Sound. They should be approximately located to the actual dredging location. Perhaps, besides these locations, a site should be available for dredging projects by municipalities, private individuals and corporations for disposal of spoil where a minimum user fee would be applied. This could alleviate some permit processing (costs) and red tape while providing a necessary service;" "Fine program! Please keep me informed of your work;" "Great care would be required in citing of new fill dubbed 'spoil containment' area. Perhaps places within such shallow harbors as New Haven would be acceptable. Better, use sand pits away from sole-source aquifers;" "Workshop programs like this are very educational and enlightening to the public as well as those concerned with the environment;" "Good presentation, it should appear that few sites would be suitable on the north shore of Long Island. The containment technique seems like a reasonable approach to Connecticut spoil disposal problems;" "I favor containment. It seems to better locate dredged materials, unlike 'open sea' dumping where containment is not predictable. I really approve of the utility of this approach, ie: making use of otherwise waste material;" and "Very Informative!!"

3.0 Official Statements & Written Communications

News from Stewart B.

McKinney.



Serving Connecticut's 4th District.

STATEMENT

by

Congressman Stewart B. McKinney May 20, 1981
Long Island Sound Taskforce Workshop, Containment Islands

Good evening. I wish to express my thanks to the Long Island Sound Taskforce for coordinating this workshop, in addition to three others, on the feasibility of disposing of dredged material through containment. I also appreciate the cooperation and work that the Army Corps of Engineers has put forth on this issue.

In January, 1977, I requested that the ACOE undertake a feasibility study regarding the construction of containment islands in Long Island Sound as a means of providing an environmentally safe method of disposing of dredged materials. Connecticut's harbors and navigable waterways suffer the ill effects of constant silting. If they are not dredged on a regular schedule, they become impassable. Connecticut depends on its waterways for both commercial and industrial transportation plus as the foundation of a fast growing business - recreational boating. Thus we must develop a method to dispose of the dredged material. Containment facilities have been successful in many areas. Hopefully they may solve our problem here on Long Island Sound.

Thank you all for coming this evening. This is an important issue which deserves our attention and constructive hard work. I trust that together we can solve the problems in the best interest of all.

WILLIAM R. RATCHFORD
FIFTH DISTRICT, CONNECTICUT

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(203) 748-3332

May 14, 1981

Thomas C. Jackson,
Project Director
Stamford Marine Center
Magee Avenue
Stamford, CT 06902

Dear Mr. Jackson:

Thank you for the kind invitation to attend the workshop on marine conservation during the week of May 18th.

I fully realize how important the task of preserving our Connecticut waters is to the state and I commend the outstanding job that you are doing.

As much as I would like to send someone from my staff to attend, they are all committed to a heavy schedule during that week.

Please extend my sincere best wishes to everyone involved. I would appreciate you keeping me informed on any developments.

Sincerely,

Bill Ratchford

William R. Ratchford
Member of Congress
Fifth District, Connecticut

WRR;js

GREGORY W. CARMAN
3RD DISTRICT, NEW YORK

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May 26, 1981

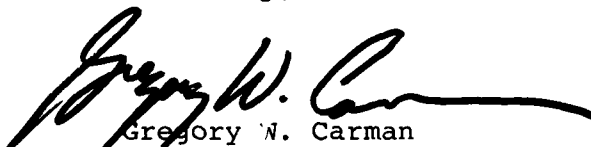
Mr. Thomas C. Jackson
The Long Island Sound Taskforce
of the Oceanic Society
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

Dear Mr. Jackson:

Thank you for the invitation to attend
the workshop on marine conservation.
Unfortunately, the invitation did not
arrive until May 15th, and it was impossible
for me to rearrange my schedule accordingly.

Again, thank you for your invitation.

Cordially,


Gregory W. Carman
Member of Congress

3.4 Letter from the Honorable John LeBoutillier

21

JOHN LEBOUTILLIER

8TH DISTRICT, NEW YORK

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May 27, 1981

Mr. Thomas C. Jackson
Board Member
The Long Island Sound Task Force
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

Dear Mr. Jackson:

Thank you for your letter and enclosed copy of The Tafrail.
I regret that I was personally unable to attend the meeting scheduled
for May 21st in Great Neck, but I did ask a representative of mine
to attend in my place, and he will report back to me shortly.

In addition, I am working on an issue which you might have some
familiarity with. I am interested in removing the rotting and ecologically
troublesome abandoned barges currently lying in Hempstead
Harbor, Nassau County, New York. I seek your input as well as any
other elements of advice from you or anyone in your organization
on this matter.

Thank you for keeping me informed.

Sincerely,



John LeBoutillier
Member of Congress

JLeB:eh

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MAJORITY COUNSEL
LAWRENCE J. O'BRIEN, JR.
MINORITY COUNSEL
MICHAEL J. TOOMEY

June 8, 1981

Mr. Thomas C. Jackson
Board Member
The Long Island Sound Task Force
of The Oceanic Society
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

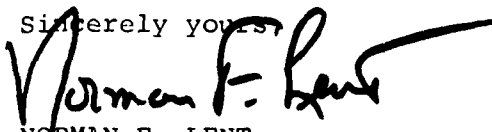
Dear Mr. Jackson:

Thank you very much for your May 12th letter regarding our mutual concern for the future of Long Island Sound. As a Member of the House Merchant Marine and Fisheries Committee, I am aware of the environmental hazards of disposing of contaminated dredge spoil.

The role of the ocean as a waste disposal site has come under close scrutiny in recent months, and thus, the "containment" process you mention is of great interest to me.

I appreciate your forwarding a copy of The Taffrail, and sincerely hope you will continue to keep me informed of your activities and concerns.

Sincerely yours,


NORMAN F. LENT
Member of Congress

NFL/rm



ALFRED B. DEL BELLO
County Executive

May 18, 1981

Mr. Tom Jackson
Vice President and Project Director
Long Island Sound Task Force in behalf of
U. S. Army Corps of Engineers
New England Division
c/o Stamford Marine Center
Stamford, Connecticut 06902

Re: Dredge Material Containment Sites

Dear Mr. Jackson:

Westchester County has been regarding with favorable interest recent proposals for the development of shoreside containment sites for dredged material from western Long Island Sound waters. With proper safeguards and impervious diking, it would appear that two benefits can arise. There is a need for geographically close and economically developed sites for dredging spoils if Westchester's harbors are to maintain their commercial and recreational viability. Secondly, the areas so developed can in themselves become enhancements to the ecology of the shoreline if properly planted and maintained.

In addition to the views above supporting dredge material containment sites, let me also add that the economic benefits from short-haul barging may be equally advantageous to Westchester County. I encourage further evaluation including sampling and study of deep water sites in the western waters of Long Island Sound to determine the impact of dredge material disposal at such sites on primary and secondary contact recreational uses of the waters and on fishing and shell fishing.

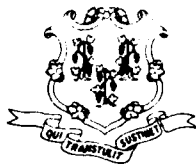
Very truly yours,

Alfred B. DelBello
County Executive

ADB/lm
12A11

3.7 Hon. Julie D. Belaga

24



State of Connecticut
HOUSE OF REPRESENTATIVES
STATE CAPITOL
HARTFORD, CONN. 06115

REPRESENTATIVE JULIE D. BELAGA
ASSISTANT MINORITY LEADER
ONE HUNDRED AND THIRTY-SIXTH DISTRICT

9 BERNDAL DRIVE
WESTPORT, CONNECTICUT 06880

May 11, 1981

Mr. Thomas C. Jackson
The Long Island Sound Task Force
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

Dear Tom,

Thanks for sending me an invitation to the Workshop on Dredging. I would have been very interested to attend but it is impossible.

Doggone it...who scheduled such hearings for three weeks before the end of the legislative session? There is no way that any legislator could attend any of the sessions, whether it is in New Haven, New London or Stamford. We will be in the Capitol on any of those days working until 9:00 p.m. or even later.

If you have any written information, I'd appreciate it because this is a subject that really interests me.

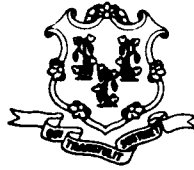
Thanks for thinking of me.

Cordially,

A handwritten signature in cursive script that reads "Julie".

Julie D. Belaga
Assistant Minority Leader

JDB/vb



State of Connecticut
HOUSE OF REPRESENTATIVES
STATE CAPITOL
HARTFORD, CONN. 06115

REPRESENTATIVE MARY M. MUSHINSKY
EIGHTY-FIFTH DISTRICT

72 SOUTH MAIN STREET, APT. 4-1
WALLINGFORD, CONNECTICUT 06492

TELEPHONE
HOME: 269-8378
CAPITOL: 566-8660

MEMBER
ENVIRONMENT COMMITTEE
ENERGY AND PUBLIC UTILITIES COMMITTEE

Tom Jackson
LIST of Oceanic Society

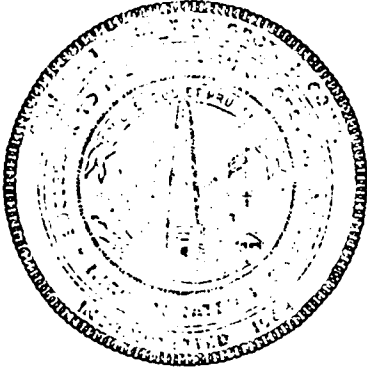
May 19, 1981

Dear Tom

Thank you for your invitation
to the containment of dredged
materials meeting tonight.

I already had a conflict -
now it looks like we'll still be
in session through 8:30pm - in any
case I have asked the Corps to
keep me on their list and send
any written material

- Mary Mushinsky



THE CITY OF GROTON CONNECTICUT

295 MERIDIAN STREET

06340

Conservation Commission

May 18, 1981

Department of the Army
N. E. Div., Corps of Engineers
424 Trapelo Road
Waltham, Mass. 02154

Attn: Mr. Richard Quinn

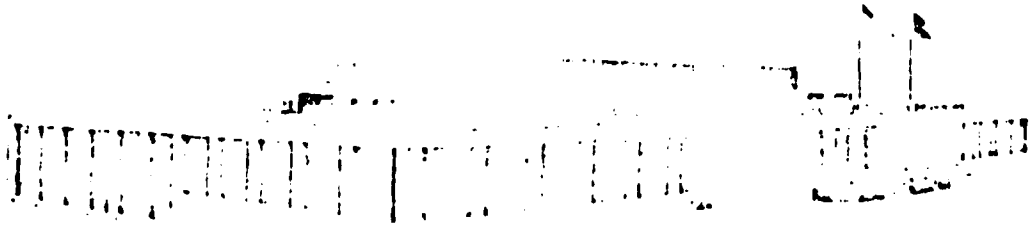
Dear Mr. Quinn:

At a regular meeting of the City of Groton Conservation Commission held on May 5, 1981, it was concurred that a feasibility study be undertaken of a man-made island at Black Ridge in Fisher's Island Sound to contain dredge spoils from area dredging projects.

The study should include but not be limited to the following:

1. Area to be serviced by the island.
2. Life cycle and size of the island.
3. Method(s) of containment and filtering of slurry run-off.
4. Method of dredging and disposition (transfer) of spoils onto the island.
5. Type of spoil contaminates.
6. Possible odors or caustic and corrosive out-gassing which might be objectionable to residents on the shoreline.
7. Effect of beach and shore erosion northeast of the proposed island against the southwest prevailing sea storms.

It is expected that in addition to providing a cost effective, environmentally beneficial containment of area dredge spoils, protection against erosion and siltation of City beaches, Pine Island Bay anchorage, Baker's Cove, and Poquonnock River will be provided with proper design and orientation of the island.



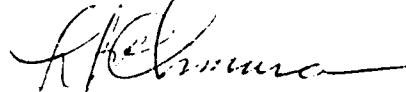
-2-

May 18, 1981

Enclosed is a copy of our November 21, 1977 letter with a chart showing the location of the suggested location. This location is the location that was inspected by you in company of John Spcier, Wm. Spicer, and myself on April 14, 1981.

Very truly yours,

THE CITY OF GROTON

A handwritten signature in dark ink, appearing to read 'L. J. Chmura', written over the typed name.

L. J. Chmura
Conservation Commission



THE CITY OF GROTON CONNECTICUT

295 MERIDIAN STREET

06340

Conservation Commission

November 21, 1977

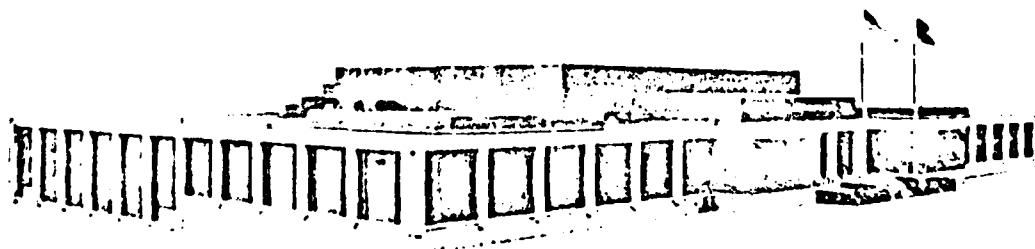
Department of the Army
New England Division
Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Sirs:

At the regular meeting of the City of Groton Conservation Commission held on Tuesday, November 15, 1977, it was unanimously voted that consideration be given to study the feasibility of a man made island in Fishers Island Sound, east of the entrance to the Thames River to contain dredge spoils from the eastern end of Long Island Sound, Fishers Island Sound, and its tributaries.

Such island to be located generally but not limited to the area depicted on the section of the enclosed chart. This island would contain the spoils of several generations of small marina maintenance and river dredging spoils.

The suggested area is presently a hazard to navigation of recreational boating and is of little value for fishing and lobstering. The environmental impact is considered minimal as compared to the overriding benefits to the public. The island could serve as a controlled ecological educational studies facility and ultimately developed as a nature preserve. The island location will also serve as a protection to the southern shores of the City of Groton.



Corps of Engineers

-2-

November 21, 1977

Should such a feasibility study be undertaken, this Commission is available to assist in any way if requested.

Sincerely,

L. J. Chmura, Chairman
Conservation Commission

LJC/ncs

Enc.

cc: City Council
Waterfront Comm.
SCRPA
Conn. DEP
Senator Dodd
Pat Hendel
Senator Weicker
Senator Ribicoff
UConn. Avery Pt.

action numbers shown with area designation

RACING BUOYS

ig buoys within the limits of this
re not shown hereon. Informa-
ay be obtained from the U.S.
Guard District Offices as racing
ner privately maintained buoys
e all listed in the U.S. Coast
Light List.

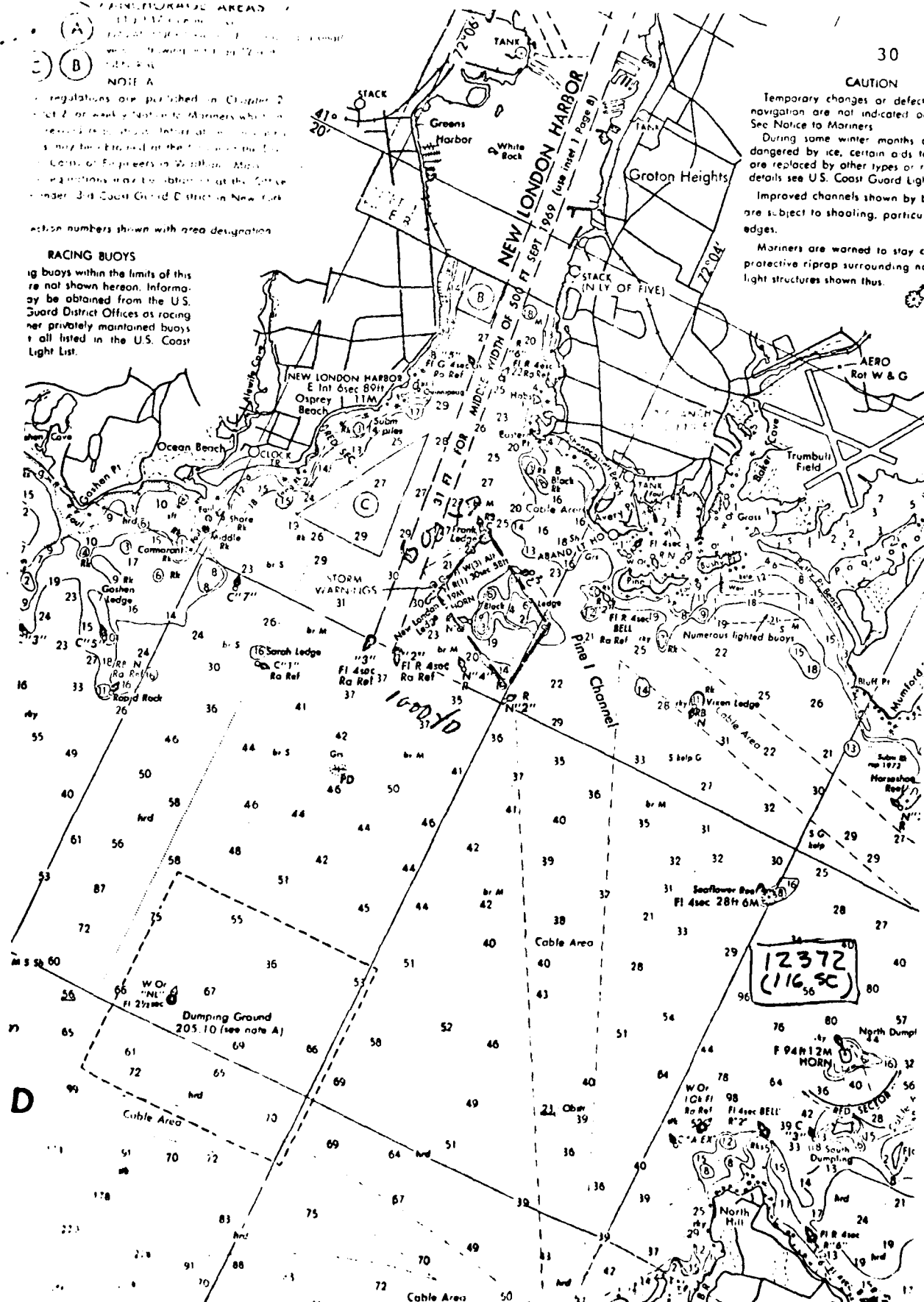
CAUTION

Temporary changes or defects in navigation are not indicated on Sec Notice to Mariners.

During some winter months, o
dangered by ice, certain aids to
are replaced by other types or re
details see U.S. Coast Guard Lig

Improved channels shown by b
are subject to shooting, particul
edges.

Mariners are warned to stay clear of the protective riprap surrounding navigation light structures shown thus.



4.0 Composite Narrative Account of Workshops

The workshops' overall objective was to inform people of the containment option in managing disposal of objectionable materials dredged from Long Island Sound harbors. A significant step in this project entailed identifying individuals, organizations, agencies and special interests concerned with the regional problem of dredging and marine environmental protection. A special effort was made to reach beyond readily available mailing lists and involve as broad as possible a segment of those who live around or work on the Sound.

The "target groups" defined during our planning process include: concerned coastal citizens; environmentalists; scientists; members of harbor development panels; representatives of water dependent industries; oystermen; sports fishermen; harbormasters; municipal chief elected officials, planning commissioners, and conservation commissions; representatives of state, regional and federal agencies; members of the press; consulting engineers; and marine biologists. The public information program developed for the workshops focused on these segments of our society.

Through a combination of publications, media exposure and personal communications, we hoped to draw between 25 and 30 people to each of the four workshops. Our goal was to include in that number a cross-section representative of the 15 million

people who live around the Sound. We also worked to develop a meeting format which would encourage the free exchange of information with a goal of identifying unanswered questions as well as possible contaminant facility sites.

Based on these objectives, the workshops were an outstanding success. More than 200 people elected to spend a spring evening inside a meeting room to learn of a dredged materials disposal alternative which will not be implemented in the Long Island Sound region for years to come. Each workshop attracted a diverse set of participants and virtually all target groups were involved in at least one session. A broad range of unresolved issues were voiced and are summarized in this report. Finally, the project developed a wide ranging mailing list which can be used in future public participation efforts by agencies addressing Soundwide issues.

4.1 General Review of Issue Presentation

Issues to be addressed during the workshops were identified by the Taskforce staff working in consultation with the Corps and considered in light of the "target group's" interests. Our perception and view of topics to be addressed in the meetings were tested in personal communications with individuals invited to attend the session. Through this process, we decided to address the following areas of concern in the presentations:

- design elements, including a definition of containment and an introduction to this disposal strategy;
- toxic hazards, an issue beyond the scope of any single meeting but one which could serve as a major factor in public review of containment proposals;
- odor, including information from the Great Lakes projects and details of the dewatering process within a containment facility;
- potential biological impact, quantified in terms of long term effects from chronic exposure to objectionable materials; and
- costs, comparing containment to alternative means of disposal to the extent possible.

In developing a format for presentation of issues at the workshop, we decided to use a non-Corps individual as a moderator to minimize the potential for confrontation. By emphasizing the session as an informal exchange of information in front of the group, we were able to concentrate on reaching the project's objectives. Questions were taken throughout the meeting and each session continued until all concerns were aired. After each workshop closed, staff were available for informal discussions with participants and members of the press. As a result of this approach, the workshop process developed a long list of critical concerns which can be viewed as unresolved issues.

4.2 Discussion of Unresolved Issues

The very nature of the containment debate around Long Island Sound insured issues identified as critical concerns during the planning process would also be unanswered at the end of the workshops. Questions of cost, for example, can only be resolved when a specific project has been proposed and is under active consideration. Until that occurs, we seem to be locked in a context of comparative generalities and best estimates. While these estimates may be in the ballpark, it is clear a broad range of the public wants more specific cost projections to be included in consideration of the containment option.

General concern with the effectiveness of public expenditures also surfaced in repeated questions on maintenance of completed containment facilities. "Who pays?," a common query during the workshops, was expanded along the line to include "Who maintains?," "Who benefits from the project?," "Who owns the 'new' land?," and "Who is responsible if things go wrong?"

Concern for potential damage to the marine environment was a second major issue raised during the workshops. Without a specific containment project at hand and the scientific data needed to support that proposal it was very difficult to address this concern. Participants were principally interested in the potential, as a result of storm damage, for a catastrophic

release of sediments containing objectionable materials, and of the long term effect chronic exposure to toxic chemicals in the containment facility might have on marine ecosystems. PCBs and cadmium were mentioned as toxic substances of special concern in the workshops.

During the discussion of unresolved issues in each workshop, it became clear that resolution of the dredging dilemma through containment involves a trade-off between alternative uses for areas of Long Island Sound. Repeatedly, participants suggested any analysis of comparative costs would have to move beyond consideration of open water disposal expenses to include broader economic and environmental factors.

5.0 Compilation of Unresolved Issues

This review of unresolved issues is based upon analysis of the "Group Memory" from specific workshops, staff notes and the cards submitted after each session. The division between primary and secondary areas of concern stems from our assessment and reflects factors such as the frequency questions arose at successive meetings. The discussion opens with a review for containment facilities during the project.

5.1 Potential Sites

Specific suggestions for containment sites presented at the workshops include:

- "It seems as if some of the degraded lower (inland) portions of the western north shore harbor (of Long Island) might be considered for sites;"
- "Have you considered the rock chain along East Haven's shore(eg: West Indies to Rand Rock)? It does not have high shellfish bed concentrations inside Townsend ledge, yet there already exists high productivity in the Farm River System for (speeding) succession."
- "I would like information on the possibility of the Corps studying the construction of a containment area for dredged material from the Saugatuck (River) which would expand the Parker-Harding parking area and add a roadway bypassing the Westport Business Center and a fringe of park extending from Gorham Island on the North to Levitt Pavilion on the south along the east bank of the river;"
- "Two probable sites for small containment related projects in the New Haven area could be the Morris Cove area, where the State created a 50 foot hole, and the north side of a sandy pit in West Haven;" and
- a proposal for an island creation project at Black Rock Ledge in Fisher's Island Sound advanced by the Groton, CT Conservation Commission and included as Section 3.9 of this report.

5.2 Primary Concerns

The following unresolved issues discussed during the workshop project are seen to be of primary concern:

- Toxicity, including the potential for a catastrophic release of sediment from a containment facility as a result of storm damage; the environmental impact of chronic exposure to toxic substances through bioaccumulation and the food chain which may be associated with some containment facilities; durability of the physical barrier designed to keep materials from leaching out of contained sediments into the marine environment; possible contamination of groundwater resources; as well as dangers posed by the presence of PCBs, cadmium, or other objectionable materials in dredged sediments;

- Ecological impact, centered on the effect construction of a containment structure would have on the marine environment and includes the question of "trade offs" between the economic benefit of harbor maintenance and the loss of highly productive shallows and estuarine regions in the Sound;

- Costs, including comparative costs for open water or upland disposal, maintenance, and future liability for design failure;

- Living marine resources, specifically protection of oyster beds along the Connecticut coast and safeguarding ecologically sensitive areas which serve essential roles in the life cycle of shellfish, finfish or waterfowl;

- Pollution potential, or whether continuing discharge of objectionable materials, as permitted by current law, poses the threat of continued contamination of sediments to be dredged from urban harbors in the future and, if so, whether dischargers of objectionable materials should be required to pay a portion of the additional cost for containment;

- Demonstration projects, or will a demonstration project be built in the Long Island sound region,

- Baseline data, or whether sufficient scientific data exists to assess the effect of containment in the Long Island Sound region and, if additional information is required, how this research will be completed;

- Citizen participation, or whether the U.S. Army Corps of Engineers, New England Division will continue to involve a broad cross-section of those who live in the Long Island Sound region in consideration of the containment option;

- Criteria, or what are the standards for site selection and which sites currently under consideration; and

- Adequacy of projections, or whether Corps projections for maintenance dredging and harbor improvements are accurate.

5.3 Secondary Issues

Secondary Issues raised during the series of workshops include: who owns the land created through a containment project; potential health hazard to workers from construction

of containment facility containing objectionable materials; utilization of sediment control or land use plans which minimize sedimentation as a means of limiting the need for maintenance dredging; adequacy of plans for continuing scientific monitoring and maintenance of containment facilities once constructed; whether a private party or corporation could build a containment facility along the Sound; how the design of a salt marsh containment project works; and how the dewatering process functions.

6.0 Public Information Program

This section discusses in general terms the project's public information program and includes examples of the press releases, public service announcements and publications developed as part of this effort. This element of the project was developed by the Taskforce staff in consultation with the Corps.

6.1 Overview of Public Information Effort

Essentially, our public information program was composed of four elements keyed to communicating with members of the target audience. Releases to daily and weekly newspapers were combined with public service announcements for radio stations to serve as one component of this work. A series of mailings was designed to combine basic information on the containment alternative with motivation for attending the

nearest workshop. Special publications in the form of newsletters to members of the Connecticut Environmental Caucus and Taskforce membership supplemented this effort. Personal contact, including appearance before meetings such as the State of the Sound Conference, completed this part of the project.

Press releases were keyed to specific meeting dates and places: the New London Day received information promoting the Connecticut College meeting while the New Haven Advocate received word on the workshop at Yale. This "localization" of media releases continued in the public service announcement utilized for the meetings. Press releases were followed by a series of telephone calls to specific reporters and editors urging them to publish information on the containment issue in advance of the meeting. This personal contact led to the Associated Press wire stories.

Radio stations were also contacted and news staff members alerted to the workshop plans. This communication usually occurred a few days before the meeting in the station's service area and was designed to generate a taped telephone interview which could be used during morning drive time on the day of the workshop. A second objective during this call focused on obtaining coverage of the session by a member of the news staff.

The media campaign contained two especially successful features: first, graphics generated by the Corps were included with one of the two press releases issued as part of this program

and then used in containment workshop publications; and second, a press kit containing additional information and all materials released to the press were given to all reporters covering the session.

Mailings for the project included:

- A. a brochure drafted by the Corps and reviewed by Taskforce staff presenting introductory information on the containment option;
- B. an announcement of the workshop keyed to the interests of target group members;
- C. a reminder card sent a few days before the workshops were to be held;
- D. personal correspondence, focused on individuals not familiar with the topic or the Taskforce. Personal letters were usually followed up with a telephone call a few days before the workshop was scheduled to be held.

Through this effort, individuals were urged to register in advance for the workshops. Persons who could not attend were asked to contact the Taskforce or Corps for further information on the containment alternative. Copies of all mailing lists generated during the project, including a listing of press contacts, were submitted to the Corps.



6.2
Sample Press Release



42

THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

For Immediate Release

April 27, 1981

For further information
contact: Thomas C. Jackson
(o) (203) 327-9786
(h) (203) 776-4190

A potential solution to the "dredging dilemma" in Long Island Sound will be discussed in a series of four public workshops during May. The free meetings will focus on a means to resolve the conflict which can arise between a need to dredge an urban harbor and the potential environmental impact from disposal of contaminated sediment from that port.

The public workshops are scheduled to begin at 7:30 p.m. in New London May 18 in room 113, New London Hall, Connecticut College; in New Haven May 19 at room A-74, 135 Prospect Street, School of Organization and Management, Yale University; in Stamford May 20 at the little theater of West Hill High School at the intersection of West Hill and Roxbury Avenues; and May 21 in Great Neck, NY at room B-202 of Bowditch Hall of the U.S. Maritime Academy.

Coordinated by the Long Island Sound Taskforce for the U.S. Army Corps of Engineers, New England Division, the sessions will center on the concept of containing sediments dredged from urban

-more-

22222 - Dredged Spoil Containment

harbors behind dikes. Although new to the Sound, containment structures have been used successfully throughout the country to prevent ecological damage from dredged materials containing chemicals or other toxic substances.

Registration and additional background information is available by contacting the Long Island Sound Taskforce, Stamford Marine Center, Stamford, CT 06902 or by calling Whitney Tilt at (203) 327-9786. All workshops are open to the public without charge, pre-registration is requested but not required.

'Dredge We Must'

Continued recreational and commercial use of many Long Island Sound ports may hinge on finding an environmentally acceptable way to dispose of contaminated sediments dredged from channels and moorings. Without periodic dredging these areas will become unsafe as navigable portions of harbor and rivers become filled with silt or sand.

Historically, sediments dredged from Connecticut and Long Island ports have been managed through disposal at designated sites in the open waters of Long Island Sound. While this poses little apparent danger for clean materials, the bottoms of many city harbors contain toxic substances and other objectionable materials, Army Corps of Engineers officials say. Containment offers a strategy for protecting both the environment and continued use of the Sound, they add.

Containment consists of placing dredged materials behind a dike.

-more-

33333 - Dredged Spoil Containment

Once the area behind the dam is filled, clean material is placed atop the bottom sediments. The area can be designed to serve a number of commercial or recreational uses once the project is completed.

Building New Islands

If the dike is connected to existing shoreline, the project can create parkland or new salt marshes. Or, the dam can be built in shallow water to create an artificial island. In either case, the containment facility would be designed to isolate dredged materials from the environment. The U.S. Army Corps of Engineers, New England Division, is currently evaluating the effectiveness of containment as an environmentally sound, long-range solution to the dredging disposal problem. The May workshops are designed to inform citizens of the containment option in the dredging considerations, Corps officials say.

Each public meeting will open with a slide presentation documenting the use of containment structures in the Great Lakes region. Common community concerns -- including the potential for contamination and odor problems -- will be discussed. Throughout the session, questions will be taken from the floor. The meeting will also encompass data reported in the "Dredged Material Containment in Long Island Sound" report recently issued by the Corps.

**PRESS
RELEASE**



45

6.2
Sample Press Release

THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

FOR IMMEDIATE RELEASE

FOR MORE INFORMATION:

April 29, 1981

Thomas C. Jackson
(o) (203) 327-9786
(h) (203) 776-4190

EDITORS: A copy of the "Dredged Material Containment"
brochure is being sent to you under separate cover.

Graphics accompanying this release are for your use.

A brochure describing a "new approach" to an old problem confronting many Long Island Sound ports is now available without charge.

Titled "Dredged Material Containment," the publication examines the potential for containing behind dikes contaminated sediments dredged from urban harbors. The brochure is part of a public education program which will continue with a series of four workshops during May.

The public workshops are scheduled to begin at 7:30 p.m. in New London May 18 in room 113, New London Hall, Connecticut College; in New Haven May 19 at room A-74, 135 Prospect Street, School of Organization and Management, Yale University; in Stamford May 20 at the little theater of West Hill High School at the intersection of

-more-

Stamford Marine Center Magee Avenue Stamford, Connecticut 06902 (203) 327-9786

22222 - Dredged Material Containment

West Hill and Roxbury Avenues; and May 21 in Great Neck, NY at room B-202 of Bowditch Hall of the U.S. Maritime Academy.

Copies of the booklet and information on the public sessions is available from the Long Island Sound Taskforce, Stamford Marine Center, Magee Avenue, Stamford, CT 06902 or by calling (203) 327-9786. The Long Island Sound Taskforce, the regional chapter of the Oceanic Society here, is coordinating the workshop program for the U.S. Army Corps of Engineers, New England Division.

Containment of dredged materials behind dikes offers a new approach to protecting both the marine environment and continued use of the Sound, Corps officials say. Containment consists of placing objectionable materials behind a dam and placing clean fill atop the sediments once the project is complete. The containment facility can be designed to serve as an artificial island (see Illustration A) or as a biologically productive salt marsh (see Illustration B). In either case, the structure is designed to isolate sediments from the surrounding environment.

Although new to the Long Island Sound region, containment has been used successfully, Corps officials say, in other areas of the country. Each workshop will include a review of containment facilities used in the Great Lakes and provide ample opportunity for questions to be raised by all participants. Common community concerns -- including contamination and odor problems -- will be discussed during the sessions.

**PRESS
RELEASE**



47

THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

CUTLINE

Illustration A **ARTIFICIAL ISLAND CREATED**

This conceptual diagram shows how dredged material containment can be used to create artificial islands. First, dikes of impervious materials are built to enclose a lagoon in shallow water. Then, as shown at left, materials dredged would be discharged into the enclosure. Coarse grained material will settle near the discharge pipe while finer grained sediments would move farther away from the pipe. Water flowing from the containment area is relatively clean. At right, the filled area has been covered with clean material and seeded.

U.S. Army Corps of Engineers Graphic



THE LONG ISLAND SOUND TASKFORCE

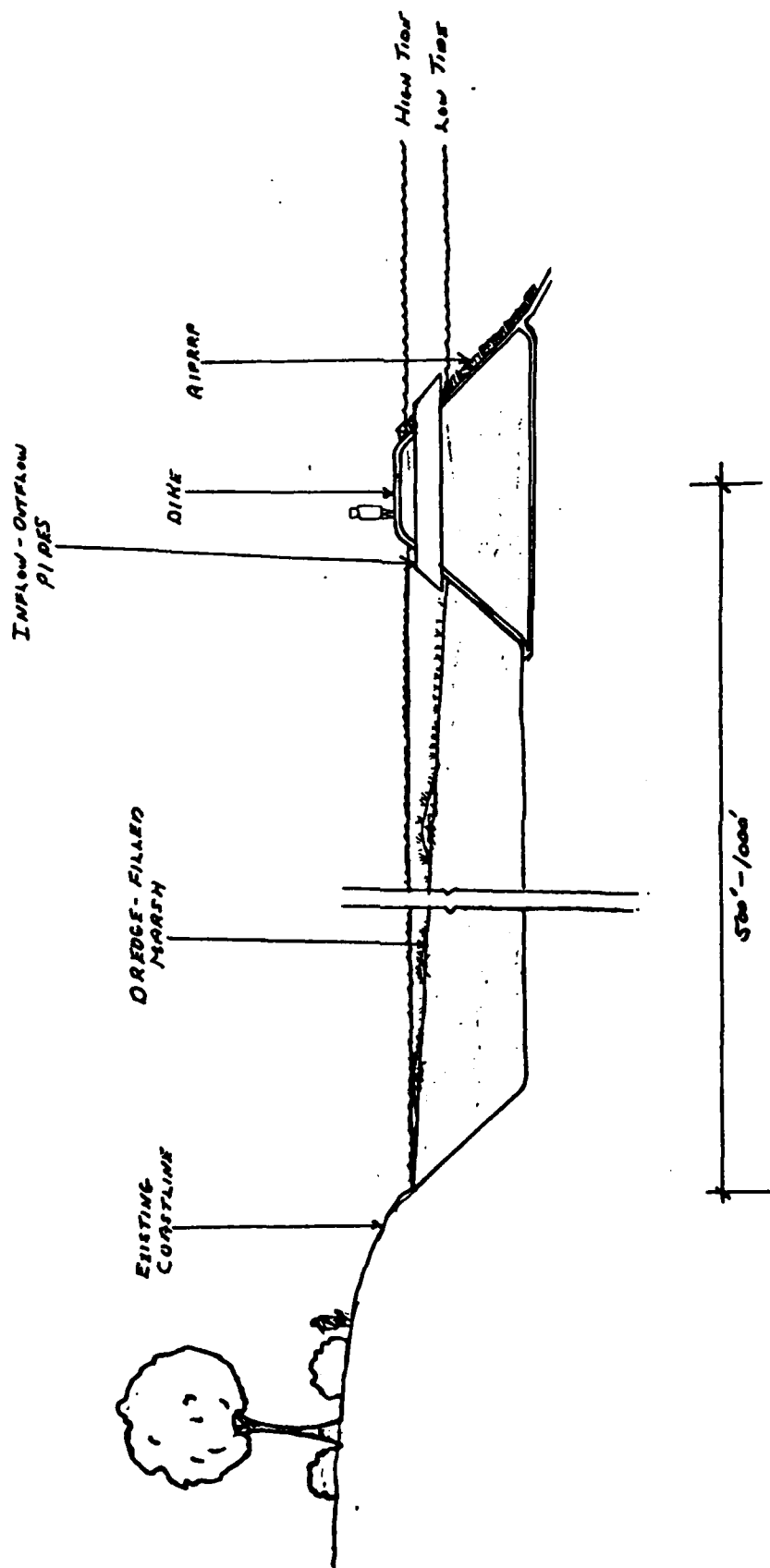
of The Oceanic Society

CUTLINE

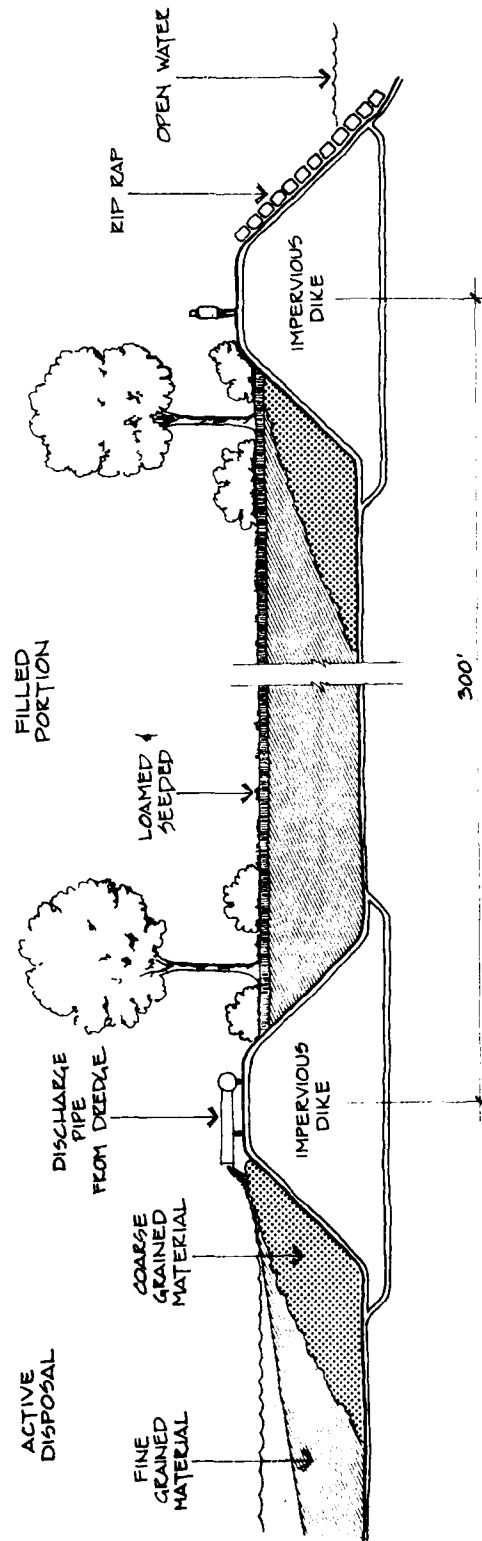
Illustration B NEW SALT MARSH

This conceptual diagram shows how a dredged material containment area can be designed to create new biologically productive salt marshes. Once filled with sediment, the facility is capped in a way to allow tidal flow on the site. As in the artificial island, the dikes are designed to contain materials in the sediments and isolate them from the marine environment.

U.S. Army Corps of Engineers Graphic



CONCEPTUAL DIAGRAM OF A
DREDGED MATERIAL CONTAINMENT AREA



CONCEPTUAL DIAGRAM OF A
DREDGED MATERIAL CONTAINMENT AREA

**PRESS
RELEASE**

6.3
Sample Public
Service
Announcements



51

THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

Public Service Announcement

A POTENTIAL SOLUTION TO THE "DREDGING DILEMMA" IN LONG ISLAND SOUND WILL BE DISCUSSED DURING A FREE PUBLIC WORKSHOP MONDAY, MAY 18 IN ROOM 113 OF NEW LONDON HALL AT CONNECTICUT COLLEGE.

THE 7:30 P.M. SESSION WILL CENTER ON THE CONCEPT OF CONTAINING SEDIMENTS DREDGED FROM URBAN HARBORS LIKE NEW LONDON BEHIND DIKES. CONTINUED RECREATIONAL AND COMMERCIAL USE OF MANY LONG ISLAND SOUND PORTS MAY HINGE ON FINDING AN ENVIRONMENTALLY ACCEPTABLE WAY TO DISPOSE OF SEDIMENTS CONTAMINATED WITH CHEMICALS OR TOXIC SUBSTANCES. WITHOUT PERIODIC DREDGING NAVIGATION CHANNELS AND MOORING AREAS CAN FILL WITH SILT OR SAND, BECOMING UNUSABLE.

THE DREDGED SEDIMENT CONTAINMENT WORKSHOP IS SPONSORED BY THE U.S. ARMY CORPS OF ENGINEERS AND COORDINATED BY THE LONG ISLAND SOUND TASKFORCE, THE REGIONAL CHAPTER OF THE OCEANIC SOCIETY. FOR REGISTRATION AND/OR BACKGROUND INFORMATION, CONTACT THE LONG ISLAND SOUND TASKFORCE, STAMFORD MARINE CENTER, STAMFORD, CT 06902 OR CALL (203) 327-9786.

- 30 -

Stamford Marine Center Magee Avenue Stamford, Connecticut 06902 (203) 327-9786



52

THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

6.3 Sample Public Service Announcement

A POTENTIAL SOLUTION TO THE "DREDGING DILEMMA" IN LONG ISLAND SOUND WILL BE DISCUSSED DURING A FREE PUBLIC WORKSHOP TUESDAY, MAY 19 at room A-74, 135 PROSPECT STREET, SCHOOL OF ORGANIZATION AND MANAGEMENT, YALE UNIVERSITY.

THE 7:30 P.M. SESSION WILL CENTER ON THE CONCEPT OF CONTAINING SEDIMENTS DREDGED FROM URBAN HARBORS LIKE NEW HAVEN BEHIND DIKES. CONTINUED RECREATIONAL AND COMMERCIAL USE OF MANY LONG ISLAND SOUND PORTS MAY HINGE ON FINDING AN ENVIRONMENTALLY ACCEPTABLE WAY TO DISPOSE OF SEDIMENTS CONTAMINATED WITH CHEMICALS OR TOXIC SUBSTANCES. WITHOUT PERIODIC DREDGING NAVIGATION CHANNELS AND MOORING AREAS CAN FILL WITH SILT OR SAND, BECOMING UNUSABLE.

THE DREDGED SEDIMENT CONTAINMENT WORKSHOP IS SPONSORED BY THE U.S. ARMY CORPS OF ENGINEERS AND COORDINATED BY THE LONG ISLAND SOUND TASKFORCE, THE REGIONAL CHAPTER OF THE OCEANIC SOCIETY. FOR REGISTRATION AND/OR BACKGROUND INFORMATION, CONTACT THE LONG ISLAND SOUND TASKFORCE, STAMFORD MARINE CENTER, STAMFORD, CT 06902 OR CALL (203) 327-9786.

-30-



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THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

6.3 Sample Public Service Announcement

A POTENTIAL SOLUTION TO THE "DREDGING DILEMMA" IN LONG ISLAND SOUND WILL BE DISCUSSED DURING A FREE PUBLIC WORKSHOP ON THURSDAY, MAY 21, AT ROOM B-202 OF BOWDITCH HALL OF THE U.S. MARITIME ACADEMY.

THE 7:30 P.M. SESSION WILL CENTER ON THE CONCEPT OF CONTAINING SEDIMENTS DREDGED FROM URBAN HARBORS LIKE GREAT NECK BEHIND DIKES. PORTS MAY HINGE ON FINDING AN ENVIRONMENTALLY ACCEPTABLE WAY TO DISPOSE OF SEDIMENTS CONTAMINATED WITH CHEMICALS OR TOXIC SUBSTANCES. WITHOUT PERIODIC DREDGING NAVIGATION CHANNELS AND MOORING AREAS CAN FILL WITH SILT OR SAND, BECOMING UNUSABLE.

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-30-



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THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

6.3 Sample Public Service Announcements

For immediate use

April 27, 1981

For further information

contact: Thomas C. Jackson

(o) (203) 326-9786

(h) (203) 776-4190

News directors: A copy of the "Dredged Material Containment" brochure is being sent to you under separate cover.

A FREE BROCHURE DESCRIBING A "NEW APPROACH" TO AN OLD PROBLEM CONFRONTING MANY LONG ISLAND SOUND PORTS IS NOW AVAILABLE TO COASTAL CITIZENS AND BUSINESSES.

TITLED "DREDGED MATERIAL CONTIANMENT," THE PUBLICATION EXAMINES THE POTENTIAL FOR CONTAINING BEHIND DIKES CONTAMINATED SEDIMENTS DREDGED FROM URBAN HARBORS. THE BROCHURE IS PART OF A PUBLIC EDUCATION PROJECT WHICH WILL CONTINUE WITH A FREE PUBLIC WORKSHOP ON THIS TOPIC THURSDAY, MAY 21 AT ROOM B-202 of BOWDITCH HALL OF THE U.S. MARITIME ACADEMY.

FOR A COPY OF THIS BROCHURE OR REGISTRATION INFORMATION ON THE WORKSHOP PLEASE CONTACT THE LONG ISLAND SOUND TASKFORCE, STAMFORD MARINE CENTER, STAMFORD, CT 06902, AND CALL (203) 327-9786. THE LONG ISLAND SOUND TASKFORCE OF THE OCEANIC SOCIETY IS COORINATING THE WORKSHOP FOR THE U.S. ARMY CORPS OF ENGINEERS, NEW ENGLAND DIVISION.

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THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

6.3 Sample Public Service Announcement

A POTENTIAL SOLUTION TO THE "DREDGING DILEMMA" IN LONG ISLAND SOUND WILL BE DISCUSSED DURING A FREE PUBLIC WORKSHOP ON WEDNESDAY, MAY 20, AT THE LITTLE THEATER OF WEST HILL HIGH SCHOOL AT THE INTERSECTION OF WEST HILL AND ROXBURY AVENUES.

THE 7:30 P.M. SESSION WILL CENTER ON THE CONCEPT OF CONTAINING SEDIMENTS DREDGED FROM URBAN HARBORS LIKE STAMFORD BEHIND DIKES. PORTS MAY HINGE ON FINDING AN ENVIRONMENTALLY ACCEPTABLE WAY TO DISPOSE OF SEDIMENTS CONTAMINATED WITH CHEMICALS OR TOXIC SUBSTANCES. WITHOUT PERIODIC DREDGING NAVIGATION CHANNELS AND MOORING AREAS CAN FILL WITH SILT OR SAND, BECOMING UNUSABLE.

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6.3
Sample Public Service
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PROJECT WHICH WILL CONTINUE WITH A FREE PUBLIC WORKSHOP ON THIS TOPIC
MONDAY, MAY 18 AT 7:30 p.m. IN ROOM 113 of NEW LONDON HALL IN
CONNECTICUT COLLEGE.

FOR A COPY OF THIS BROCHURE OR REGISTRATION INFORMATION ON THE
WORKSHOP PLEASE CONTACT THE LONG ISLAND SOUND TASKFORCE, STAMFORD
MARINE CENTER, STAMFORD, CT 06902, AND CALL (203) 327-9786. THE
LONG ISLAND SOUND TASKFORCE OF THE OCEANIC SOCIETY IS COORDINATING THE
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-30-



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-30-



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THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

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FOR A COPY OF THIS PROCHURE OR REGISTRATION INFORMATION ON THE WORKSHOP PLEASE CONTACT THE LONG ISLAND SOUND TASKFORCE, STAMFORD MARINE CENTER, STAMFORD, CT 06902, AND CALL (203) 327-9786. THE LONG ISLAND SOUND TASKFORCE OF THE OCEANIC SOCIETY IS COORDINATING THE WORKSHOP FOR THE U.S. ARMY CORPS OF ENGINEERS, NEW ENGLAND DIVISION.

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The Connecticut

ENVIRONMENTAL NEWS

April, 1981. Published by the Connecticut Environmental Caucus, 69 Lafayette Street, Hartford, Connecticut 06106.

CONTAINMENT:

A NEW DREDGING STRATEGY TO HELP THE SOUND?

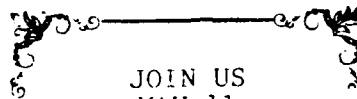
A potential solution to the "dredging dilemma" in Long Island Sound will be discussed in a series of four public workshops during May. The free meetings will focus on a means to resolve the conflict which can arise between a need to dredge an urban harbor and the potential environmental impact from disposal of contaminated sediment from that port.

The public workshops are scheduled to begin at 7:30 p.m. in New London May 18 in room 113, New London Hall, Connecticut College; in New Haven May 19 in room A-74, 135 Prospect Street, School of Organization and Management, Yale University; in Stamford May 20 at the little theater of West Hill High School at the intersection of West Hill and Roxbury Avenues; and May 21 in Great Neck, NY in room B-202 of Bowditch Hall of the U.S. Maritime Academy.

Coordinated by the Long Island Sound Taskforce for the U.S. Army Corps of

Engineers, New England Division, the sessions will center on the concept of containing behind dikes sediments dredged from urban harbors. Although new to the Sound, containment structures have been used successfully throughout the country to prevent ecological damage from dredged materials containing chemicals or other toxic substances.

Cont. on pg. 2



JOIN US
MAY 11

The next Connecticut Environmental Caucus meeting is set for 10 a.m. Monday, May 11 at 69 Lafayette Street in Hartford. Dr. Patricia Smith of OPM's Energy Division is scheduled to discuss Connecticut's energy plan and an update on environmental legislation pending before the state General Assembly will be presented. The direction of Connecticut's Environmental Caucus will also be reviewed during the morning meeting.

Continued from first page

Registration and additional background information is available by contacting the Long Island Sound Taskforce, Stamford Marine Center, Stamford, CT, 06902 or by calling Whitney Tilt at (203) 327-9786.

Continued recreational and commercial use of many Long Island Sound ports may hinge on finding an environmentally acceptable way to dispose of contaminated sediments dredged from channels and moorings. Without periodic dredging these areas will become unsafe as navigable portions of harbor and rivers become filled with silt or sand.

Historically, sediments dredged from Connecticut and Long Island Sound ports have been managed through disposal at designated sites in the open waters of Long Island Sound. While this poses little apparent danger for clean materials, the bottoms of many city harbors contain toxic substances and other objectionable materials, Army Corps of Engineers officials say. Containment offers a strategy for protecting both the environment and continued use of the Sound, they add.

Containment consists of placing dredged materials behind a dike. Once the area behind the dam is

filled, clean material is placed atop the bottom sediments. The area can be designed to serve a number of commercial or recreational uses once the project is completed.

If the dike is connected to existing shoreline, the project can create parkland or new salt marshes. Or, the dam can be built in shallow water to create an artificial island. In either case, the containment facility would be designed to isolate dredged materials from the environment. The U.S. Army Corps of Engineers, New England Division, is currently evaluating the effectiveness of containment as an environmentally sound, long-range solution to the dredging disposal problem. The May workshops are designed to inform citizens of the containment option in the dredging considerations, Corps officials say.

Each public meeting will open with a slide presentation documenting the use of containment structures in the Great Lakes region. Common community concerns -- including the potential for contamination and odor problems -- will be discussed. Throughout the session, questions will be taken from the floor. The meeting will also encompass data reported in the "Dredged Material Containment in Long Island Sound"

CAUCUS MEMBERS PRESS ENVIRONMENTAL PROGRAM SUPPORT
IN MEETINGS WITH CONNECTICUT'S CONGRESSIONAL DELEGATION

A statewide effort to muster citizen support for endangered federal environmental protection programs emerged from the April 14 Connecticut Environmental Caucus meeting.

"Our purpose is to emphasize continued citizen support of vitally important conservation programs which are vitally important to Connecticut and this country", a Caucus spokesperson said. "Our meetings will try to bring this message home to our representatives in all of Connecticut's six Congressional Districts."

"Axing environmental protection programs may save each of us a few pennys a year," the spokesperson continued. "But these same cutbacks will cloud our air, foul our waters and leave unchecked the growing hazard posed by toxic chemicals. In the name of false economy, we are being asked to trade a safe environment for deteriorating public health."

Key areas of concern voiced by Connecticut conservation leaders at the Hartford meeting included:

- * support for a strong Clean Air Act as the Congress considers reauthorizing this controversial environmental measure. Connecticut's air quality is among the worst in the country during warm weather and efforts to curtail air pollution here hinge on this law.

- * support for continued Coastal Area Management (CAM) funds through the federal coastal zone management program. Proposed budget cuts would eliminate this program -- and the funds municipalities receive -- to manage Connecticut's congested shoreline. Conservationists supported a gradual phase out of federal funds to allow state support of CAM in Connecticut.

- * support for the Marine Mammal Commission, described as a "critical element in our effort to save the great whales from extinction" during the meeting with Congressmen and Senators. Funding for the Commission has been all but eliminated by the Reagan Administration proposals.

- * support for Sea Grant, a program of federal support for research in marine sciences similar to the land grant college system. Sea Grant provides citizens, commercial fishermen and businesspeople with scientific information to help manage marine resources, conservationists said. President Reagan has proposed eliminating Sea Grant in the next two fiscal years.

SIGN UP!

Caucus participants and newsletter recipients who have not yet sent contributions are invited to use the form below to support Caucus efforts in any of the following categories: \$5.00, Individual; \$25.00, Organization; \$50.00, Contributing; \$100.00, Supporting, Over \$100.00, Sustaining.

Return to: CT Environmental Caucus, 69 Lafayette St., Hartford, CT 06106.

Enclosed is ☐ our
☐ my \$_____ donation to keep the
Caucus working.

_____		_____
NAME		TELEPHONE

ORGANIZATION (If Representative)		

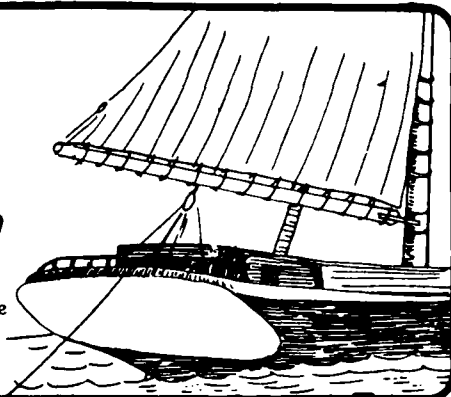
_____	_____	_____
Street address	City/Town	ZIP

CONNECTICUT ENVIRONMENTAL CAUCUS
69 LAFAYETTE STREET, HARTFORD, CT 06106
(203) 527-8737

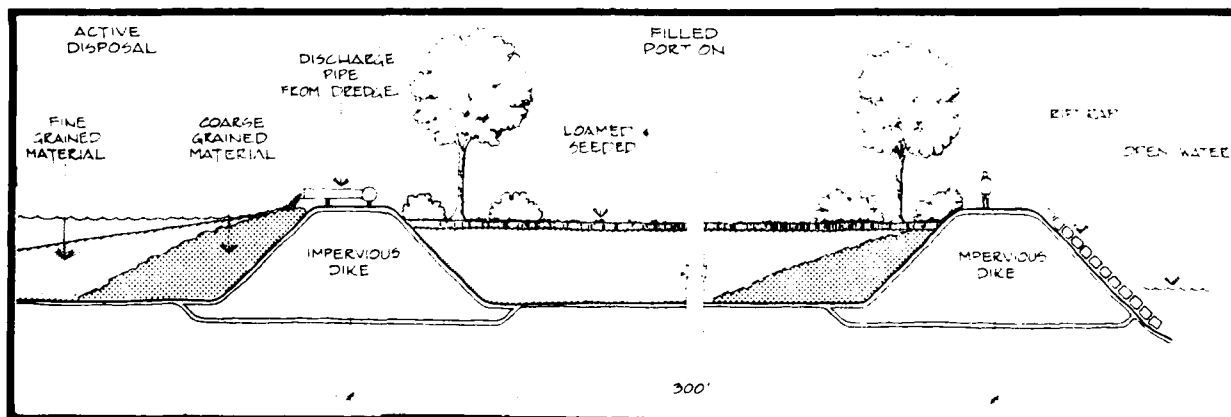
THE TAFFRAIL

By
Long Island Sound Taskforce
of
The Oceanic Society

Vol. VI No. 4 May, 1981



Containment: A Sound Dredging Solution?



CONCEPTUAL VIEW OF CONTAINMENT FACILITY CREATING ARTIFICIAL ISLAND

A potential solution to the "dredging dilemma" in Long Island Sound will be discussed in a series of four public workshops during May. The free meetings will focus on a means to resolve the conflict which can arise between a need to dredge an urban harbor and the potential environmental impact from disposal of contaminated sediment from that port.

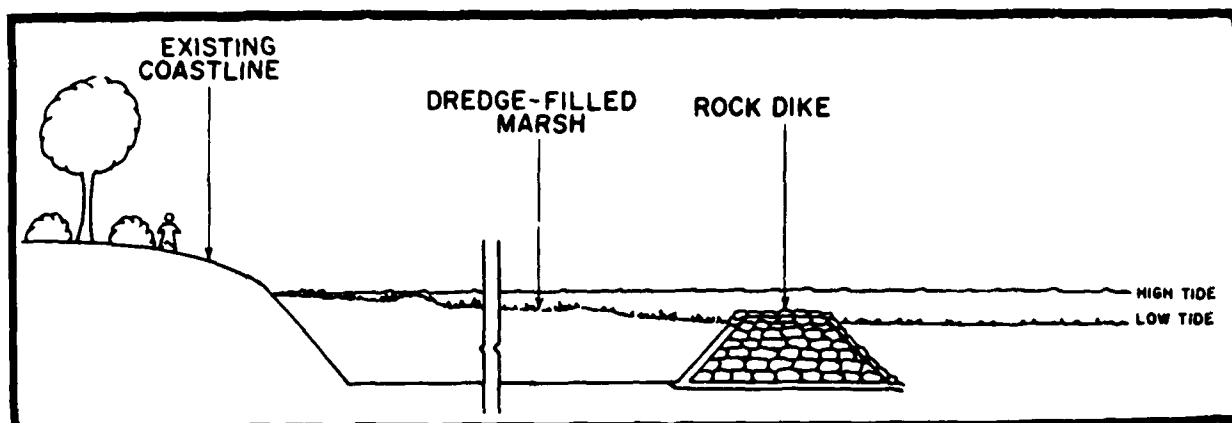
The public workshops are scheduled to begin at 7:30 p.m. in New London May 18 in room 113, New London Hall, Connecticut College; in New Haven May 19 in room A-74, 135 Prospect Street, School of Organization and Management, Yale University; in Stamford May 20 at the little theater of West Hill High School at the intersection of West Hill and Roxbury Avenues; and May 21 in Great Neck, NY in room

B-202 of Bowditch Hall of the U.S. Maritime Academy.

Coordinated by the Long Island Sound Taskforce for the U.S. Army Corps of Engineers, New England Division, the sessions will center on the concept of containing behind dikes sediments dredged from urban harbors. Although new to the Sound, containment structures have been used successfully throughout the country to prevent ecological damage from dredged materials containing chemicals or other toxic substances.

Registration and additional background information is available by contacting the Long Island Sound Taskforce, Stamford Marine Center, Stamford, CT, 06902 or by calling Whitney Tilt at (203) 327-9786. All workshops are open to

Continued on page 2



ENGINEER'S CONCEPTION OF CONTAINMENT PROJECT CREATING SALT MARSH

Continued from page 1

the public without charge, pre-registration is requested but not required.

Continued recreational and commercial use of many Long Island Sound ports may hinge on finding an environmentally acceptable way to dispose of contaminated sediments dredged from channels and moorings. Without periodic dredging these areas will become unsafe as navigable portions of harbor and rivers become filled with silt or sand.

Historically, sediments dredged from Connecticut and Long Island Sound ports have been managed through disposal at designated sites in the open waters of Long Island Sound.

While this poses little apparent danger for clean materials, the bottoms of many city harbors contain toxic substances and other objectionable materials, Army Corps of Engineers officials say. Containment offers a strategy for protecting both the environment and continued use of the Sound, they add.

Containment consists of placing dredged materials behind a dike. Once the area behind the dam is filled, clean material is placed atop the bottom sediments. The area can be designed to serve a number of commercial or recreational uses once the project is

completed.

If the dike is connected to existing shoreline, the project can create parkland or new salt marshes. Or, the dam can be built in shallow water to create an artificial island. In either case, the containment facility would be designed to isolate dredged materials from the environment. The U.S. Army Corps of Engineers, New England Division, is currently evaluating the effectiveness of containment as an environmentally sound, long-range solution to the dredging disposal problem. The May workshops are designed to inform citizens of the containment option in the dredging considerations, Corps officials say.

Each public meeting will open with a slide presentation documenting the use of containment structures in the Great Lakes region. Common community concerns -- including the potential for contamination and odor problems -- will be discussed. Throughout the session, questions will be taken from the floor. The meeting will also encompass data reported in the "Dredged Material Containment in Long Island Sound" report recently issued by the Corps.

Register Now!

Marine Mammal Network Formed For Strandings

A Marine Mammal and Sea Turtle Stranding Network for New York State has been started by the State Department of Environmental Conservation.

A key feature of the program is a "hotline" telephone number, (516) 653-4511, for reporting whale, seal, dolphin and sea turtle beachings on Long Island and other coastal areas. Collect calls will be accepted.

Numerous beachings occur on the shore of Long Island annually. Notification of the location of a stranded animal will result in a quick response by biologists. If the animal is alive, prompt action is necessary to minimize stress and to better insure survival. A marine mammal veterinarian is cooperating in the program and will be available if needed.

With dead animals, biological specimens, measurements and photographs will be taken to assist in determining the cause of death. Biological data collected from strandings will be made available

to cooperating marine wildlife researchers to aid in the conservation of these species.

For health and safety reasons, carcasses of marine wildlife must be handled with care and disposed of properly. Whales have been known to explode as decomposition takes place, and a virus causing seal deaths may be transmitted to man by direct contact. The stranding program will minimize such risks to the public.

All species of sea turtles and marine mammals which occur in New York's coastal waters are federally protected by the Endangered Species and Marine Mammal Protection Acts.

This program is a cooperative effort of the Department's Divisions of Fish and Wildlife and Law Enforcement, the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the Okeanos Ocean Research Foundation, a private non-profit center for marine mammal research located in Jamesport, New York.

— Courses & Seminars —

May 21, 7-10 p.m.

Beginning Sailing for Adults

May 21, 28, June 4, 18. Classroom sessions at the Stamford Marine Center. 16 hours of actual sailing the weekend of June 6/7 and June 27/28. Course fee includes all materials. \$80.00.

May 21, 8:00 p.m.

The 1979 Fastnet Race, a film and slide presentation never before shown in the United States, conducted by Canadian skipper Chuck Bently of Horizon Sails. At the Greenwich Library, 101 Putnam Avenue. \$3.00 fee, \$2.00 for students and senior citizens.

June 13-14

Cruising or Racing Instruction aboard your own boat. A program structured to fit your own sailing needs. Conducted by Horizon

Sails, the course is designed to give the participant confidence in cruising, knowledge of sail and boat handling, racing techniques and sail trim. You provide your own group or sign up and join a group we will assemble. Cost: \$100 (for owners of boats used there will be no charge.)

May 26 & 28

7:30-9:30

June 2, 4, 9

Coastal Piloting, or "how to find your way home." A five session course which is designed to give the student the basics of chart reading, aids to navigation, and basic piloting: i.e. course plotting, distance finding, compass reading, etc. In addition, weather, rules of the road, and local hazards will be covered. Course fee includes all materials except text. Enrollment is limited. \$40 for LIST members.

Expansion of Existing Ferry System Urged

The New York Department of Transportation has released a Summary of Findings for the Long Island Sound Ferry Improvement Study. This study was initiated when the concept of a cross-Sound bridge was abandoned as economically unfeasible.

The Ferry Improvement Study examines types of vessels suitable for cross-Sound service and develops patronage and revenue estimates for various levels of service and fares, for six new routes as well as two existing routes. Capital costs for boats, terminals and access roads are projected, along with operating costs for terminals and vessel. Possible sources of funds for improvements are also outlined.

Basically, the report finds that the two existing ferry routes (Port Jefferson-Bridgeport and New London-Orient Point) offer the best potential for improving service in this short run. Several new routes could be considered over the long term, their feasibility depending on prospective costs, revenues, environmental impacts and availability of funds. Six to eight modern boats operating at each of two existing or new locations would increase patronage about seven-fold.

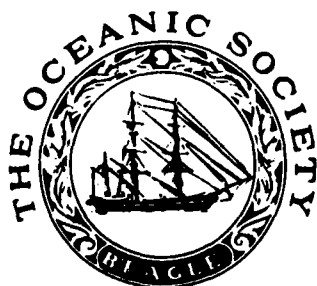
Among the economic benefits perceived, beyond the construction

stimulus, are new sales and business opportunities that could provide 2,500 additional jobs on Long Island and 1,300 jobs in Connecticut, and increases in total personal income amounting to \$150 million on Long Island and \$60 million in Connecticut. An additional \$10 million in New York State income and sales taxes could be generated by 1990.

Concerning the existing facilities the report finds:

* Year-round service is offered between New London and Orient Point. Patronage has increased steadily as more service and capacity have been offered. Three boats are loaded close to capacity throughout the summer, and are unable to handle vehicle demand on summer weekends. The two old smaller boats must soon be replaced.

* One old boat operates five months of the year between Bridgeport and Port Jefferson. It is packed with vehicles on nearly every trip during the summer. Passenger ridership has grown steadily, and vehicle patronage has increased as more service has been offered. The Bridgeport and Port Jefferson Steamboat Company would like to acquire a new boat, but to date has not been able to arrange for financing.



The LIST of
THE OCEANIC SOCIETY
 MAGEE AVENUE, STAMFORD, CONNECTICUT 06902

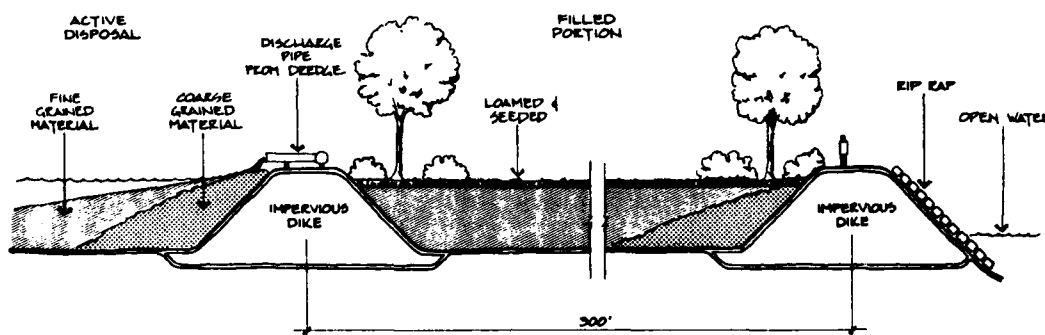
Nonprofit Organization
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 Permit No. 215

Public Workshop Notice:

67

Dredged Material

Containment: a new strategy for the Sound?



Cross section of Artificial Island

- New London, CT May 18 7:30 p.m. - room 113, New London Hall, Connecticut College
- New Haven, CT May 19 7:30 p.m. - room A-74, 135 Prospect Street, School of Organization and Management, Yale University
- Stamford, CT May 20 7:30 p.m. - the little theater of West Hill School at the intersection of West Hill and Roxbury Avenues
- Great Neck, NY May 21 7:30 - room B-202 of Bowditch Hall of the U.S. Maritime Academy

Continued recreational and commercial use of many Long Island Sound ports may hinge on finding an environmentally acceptable way to dispose of contaminated sediments dredged from channels and mooring areas. A possible solution to this dilemma will be discussed during a series of four public workshops in May around the Sound. Although new to this region, the containment strategy of containing sediments behind dikes has been used successfully throughout the country to prevent ecological damage from dredged sediments containing chemicals or other toxic substances.

Each workshop will focus on the potential for using coastal or near-shore structures to contain objectional dredged materials in this region. Once filled and capped with clean materials, these structures could serve recreational or commercial uses as biologically productive salt marshes or artificial islands. In either case, the containment structure would be designed to isolate these sediments from the environment. The Corps is prepared to undertake the studies needed to evaluate the effectiveness of containment as an environmentally sound long-range solution to the disposal problem.

A slide presentation documenting use of existing containment structures for managing toxic sediments in the Great Lakes region will open each workshop. Common community concerns - including the potential for contamination and odor problems - will be discussed. Throughout the session questions will be answered. The meeting will also encompass data reported in the "Dredged Material Containment in Long Island Sound" report recently issued by the U.S. Army Corps of Engineers, New England Division. These workshops are sponsored by the Corps of Engineers and coordinated by the Long Island Sound Taskforce, the regional chapter of the Oceanic Society. Your concerns and ideas are vitally important in this study process and your active involvement in the workshop is important. These meetings are designed to provide citizens with information on the concept of dredged material containment. It will also be an opportunity for you to ask questions and voice your concerns or support for this disposal strategy.

For additional background information on Dredge Material Containment in Long Island Sound or to register contact the Long Island Sound Taskforce, Stamford Marine Center, Magee Avenue, Stamford, Conn., 06902 or call (203) 327-9786. All workshops are open to the public but pre-registration is requested to insure availability of workshop materials for all participants.

Register Now!

Please use the enclosed card or call (203) 327-9786 today!

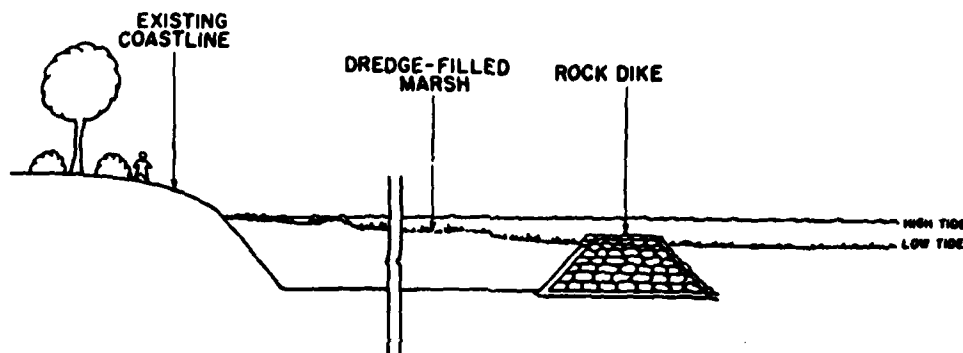
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Silt filled harbors + contaminated sediments = dredging problem

Possible Sound solution: containment facilities

**or building new
salt marshes?**





THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

May 8, 1981

Dear Soundwide Caucus Member:

Dredging has been one of the main environmental debates around the Sound for many years. Now, we are exploring a new dredge disposal method which can avoid open water disposal of toxic sediments removed from urban harbors. It is called containment and it may provide a way to protect the marine environment and increase public access to the Sound.

Starting at 7:30 p.m. Thursday, May 21, the Long Island Sound Taskforce will open a public workshop on the containment option for Long Island Sound in room B-202 of Bowditch Hall of the U.S. Maritime Academy. To reach the session, simply drive to the Academy and ask for specific directions at the entrance gate.

Containment consists of placing contaminated sediments dredged from a harbor behind a dike to form new land. This land can take the shape of an artificial island designed for recreational use or a new salt marsh to increase the Sound's biological productivity. Either way, the marine environment benefits.

We need your help in demonstrating public interest in the containment option. We hope you will be able to bring five friends to the May 21 workshop. We will be happy to send along additional background information and to reserve a place for your people at the session.

Please call if you have any questions.

Sincerely,

Thomas C. Jackson
Board Member

TCJ:pob



THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

May 5, 1981

The Honorable Lowell P. Weicker, Jr
United States Senate
Washington, D.C. 20510

Dear Senator Weicker:

Dredging is an environmental protection issue which affects much of Connecticut's coast. Dredging is an essential element in keeping harbor channels clear of shoaled sediment and permitting safe marine transport of petroleum and a host of other products. Concern focused on the environmental hazard posed by disposal of contaminated sediments from urban ports into the Sound's open waters has often made dredging a center of conflict between conservationists and marine interests.

The Long Island Sound Taskforce is coordinating for the U.S. Army Corps of Engineers, New England Division, a series of workshops around the Sound designed to explore an alternative to open water disposal of contaminated dredged sediments. Called containment, this process places tainted silts dredged from harbors behind dikes to form artificial islands, new land or new salt marshes. Through containment we may be able to resolve the environmental conflict which has long centered on dredging and provide significant benefits to the public.

We hope a member of your staff will be able to attend one of the workshops listed on the attached sheet. We have also included a copy of our recent Taffrail newsletter which describes the containment option in more detail.

Thank you for your interest in this important environmental issue. We look forward to reserving a place at one of the workshops for a member of your staff.

Sincerely,

Thomas C. Jackson
Project Director

TCJ:bas

Encl.

Stamford Marine Center Magee Avenue Stamford, Connecticut 06902 (203) 327-9786

Sample letter to Long
Island Sound region
Congressmen



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THE LONG ISLAND SOUND TASKFORCE *of The Oceanic Society*

May 6, 1981

The Honorable Anthony Moffett
House of Representatives
Washington, D.C. 20515

Dear Toby:

We hope you will be able to send a member of your staff to join a most important workshop on a marine conservation issue which is critically important to the future of Long Island Sound.

As you know, dredging is an environmental protection issue which affects much of Connecticut's coast. Dredging is an essential element in keeping harbor channels clear of shoaled sediment and permitting safe marine transport of petroleum and a host of other products. Concern focused on the environmental hazard posed by disposal of contaminated sediments from urban ports into the Sound's open waters has often made dredging a center of conflict between conservationists and marine interests.

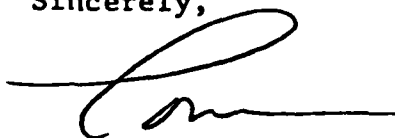
The Long Island Sound Taskforce is coordinating for the U.S. Army Corps of Engineers, New England Division, a series of workshops around the Sound designed to explore an alternative to open water disposal of contaminated dredged sediments. Called containment, this process places tainted silts dredged from harbors behind dikes to form artificial islands, new land or new salt marshes. Through containment we may be able to resolve the environmental conflict which has long centered on dredging and provide significant benefits to the public.

-continued-

The Honorable Anthony Moffett
May 6, 1981
Page two

Thank you for your interest in this important environmental issue. We look forward to reserving a place at one of the workshops for a member of your staff.

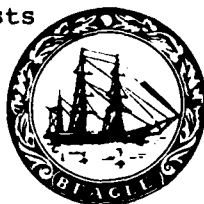
Sincerely,

A handwritten signature in dark ink, appearing to be 'Tom', with a long horizontal line extending to the right.

Thomas C. Jackson
Project Director

TCJ:bas

Encl.



THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

Dredging has been a prime marine conservation concern for years in the Long Island Sound region. Now we have a chance to explore a dredging disposal option which meets many environmental concerns and increases the Sound's recreational capacity.

At issue is containment, a disposal method which consists of placing contaminated sediments dredged from urban harbors behind a dike to form new land. The land can be designed to serve as an artificial island to increase recreational access to the Sound; or it can be designed to serve as a new salt marsh, increasing the Sound's biological productivity. Either way, sporting interests around the Sound directly benefit.

We hope you'll join us for a most important discussion of the containment option beginning at 7:30 May 21 in room B-202 of Bowditch Hall of the U.S. Maritime Academy. We also hope you will bring some friends to demonstrate citizen interest in this new dredging solution. We've enclosed some background information on containment with this letter for your information.

Please feel free to call if you have any questions or would like to reserve a place at the workshop. Pre-registration is not required but would be appreciated.

Thank you for your interest in Long Island Sound..

Sincerely,

Thomas C. Jackson
Board Member

TCJ:pob



THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

We hope you will join us May 20 for an important public workshop which may affect future dredging of your harbor. Sponsored by the U.S. Army Corps of Engineers, the session will focus on containment of dredged materials and will begin at 7:30 p.m. at the little theater of West Hill High School at the intersection of West Hill and Roxbury Avenues.

Coordinated for the Corps by the Long Island Sound Taskforce, this workshop will examine the option of containing dredged sediments behind dikes to minimize adverse environmental impact from toxic chemicals found in the sediments of many Long Island Sound ports. Containment can also improve public access to the Sound through creation of artificial islands for recreational uses or improve the Sound's biological productivity by building new salt marshes.

The Taffrail newsletter which accompanies this letter describes the containment approach in more detail. We would be happy to send you additional information on this dredging technique before the workshop and would be glad to invite anyone else you feel might be interested in this session.

Please let us know if we can reserve a place at the May 20 workshop for you or your representative.

Sincerely,

Thomas C. Jackson
Board Member

TCJ:pob
Enc.

Stamford Marine Center Magee Avenue Stamford, Connecticut 06902 (203) 327-9786



**US Army Corps
of Engineers**
New England Division

LONG ISLAND SOUND

DREDGING AND DISPOSAL THE SEARCH FOR A SOLUTION



DREDGED MATERIAL CONTAINMENT

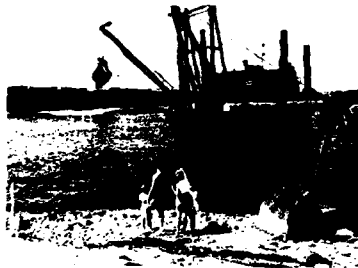
WHY CONTAINMENT ?

Long Island Sound is important to both recreational boaters and commercial ship traffic. Yet in recent years, dredging in Long Island Sound has not kept pace with the accumulation of sediments in the many harbors and estuaries. It has become difficult to carry out needed dredging projects because of growing resistance to traditional ways of disposing of dredged material, i.e., dumping at designated open water sites in the Sound.

In response, the Corps of Engineers is seeking new approaches for coping with the Long Island Sound dredging problem. This brochure represents one feature of the Corps program.^a It is being distributed prior to a series of public workshops. We encourage you to attend a Workshop and participate in formulating policy for dredging and disposal which will ensure a clean, healthy, and navigable Long Island Sound for many years to come.

One alternative receiving serious consideration for Long Island Sound is the possibility of constructing several enclosed containment areas large enough to receive the Sound's contaminated dredged material over a period of several decades. Focus on the containment alternative began with a Resolution adopted on May 10, 1977, by the Committee on Public Works and Transportation of the U.S. House of Representatives. The Resolution called upon the U.S. Army Corps of Engineers to determine the feasibility and impacts of creating several artificial islands or diked shoreline extensions to accommodate dredged material in Long Island Sound. The Resolution also instructed the Corps to investigate possibilities of using these containment facilities for marsh building, recreation, resource recovery, and solid waste disposal.

This brochure has two objectives: (1) to inform the states, public officials, other Federal agencies, and the public about the problems of dredged material disposal in Long



Island Sound; and (2) to encourage your participation in an examination of the containment or artificial island alternative as at least a partial solution to the disposal problem in Long Island Sound.

The brochure is structured to supply the basic information you will need in considering the disposal problem and in assessing the merits and shortcomings of contained disposal. Background information will assist in putting the problem and proposed solutions in perspective. A discussion of Long Island Sound as an ecosystem will help you see the Sound as a viable, and somewhat fragile, living entity subject to man's effluents and disruptive intrusions.

There is a discussion of the historical perspective of dredging in the Sound, and from this review, projections of dredging and disposal requirements are developed. Physical, chemical, and biological characteristics of sediments are discussed and the means explored in detail by which contaminants enter and then are concentrated in sediments. Pertinent Corps planning and site-selection procedures are related to the overall study and planning process, and there is a treatment of the relationship of containment and dredging in general to policy issues and special areas of concern. The brochure concludes with additional specific information about Federal, State, and public participation in this search for disposal alternatives in Long Island Sound.

WHAT IS CONTAINMENT DISPOSAL?

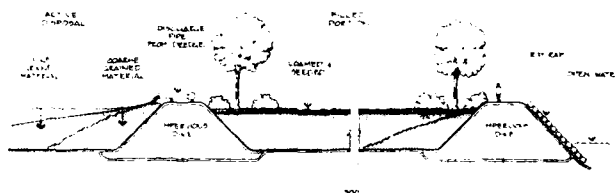
Dredged material containment facilities usually consist of large shallow basins, surrounded by structured dikes. Dredged material is placed in these basins and sediment is allowed to settle out while the water is gradually drawn off through weirs or piping systems. Material is often placed in containment structures when it must be retained at a specific location, and (1) large volumes of dredged material are removed frequently; (2) hydraulic dredging requires separation of water and sediment, i.e., the containment structure is used as a settling basin; (3) where local topography (extensive flat, shallow areas) facilitates construction of dike systems; and (4) extension of land areas or establishment of artificial islands is desired.

Recently, concern about contamination of some dredged materials has focused new attention on containment as a means of protecting marine life from the pollution which can result from open water disposal. Containment has been proposed as a solution to the problem of disposing large volumes of contaminated material dredged in Long Island Sound. Containment will retain water-sediment slurries until the particulate material settles, permitting controlled release of the water as it becomes clean. Contaminants remain primarily with the sediments and are not discharged in the water. Holding polluted sediments in the containment basins minimizes opportunities for marine flora and fauna to collect, retain, and accumulate contaminants. This lessens the chances of damage to the Sound's environment. Containment facilities can be large enough to serve a region, thus reducing the number of disposal areas required.

Three types of containment basins have been considered for Long Island Sound: (1) very large diked

CONTINUED ON NEXT PAGE

A series of Public Workshops is being planned You are invited to attend see page 11 for Details



WHAT IS CONTAINMENT DISPOSAL (CONT.)

Structural features of containment basins include dikes, weirs or sluiceways, baffles or spur dikes to slow water flow and enhance sediment settling, and sectional dikes separating the facility into sub-basins. Exterior walls of the main dikes are equipped with rip-rap to prevent wave action erosion. Specialized facilities may have other features.

WORKING TOGETHER TO IMPROVE LONG ISLAND SOUND

Many interested parties have focused their attention on the Sound in recent years. Some of the regional efforts to develop guidelines and management programs are noted below.

STATE PROGRAMS

New York - Connecticut Interim Disposal Management Program:
During the early 1970s, New York and Connecticut became parties to certain legal actions growing out of increased concerns about impacts

Coastal Zone Management
Programs and Other State Level
Activities: The Federal Coastal Zone
Management Act of 1972 requires
that all Federal agencies conducting,
supporting, or licensing activities
directly affecting coastal manage-
ment act in a manner consistent with
each affected State's program.

Connecticut has a Coastal Zone Management program within its Department of Environmental Protection as the Planning and Coordination/Coastal Management Unit. Corps officials confer with this office and exchange information whenever pertinent matters are at hand. A similar arrangement exists with the Long Island Sound Task Force of the Oceanic Society, a non-governmental organization headquartered in Connecticut. The New York State Coastal Zone Management Program operates within the Office of Coastal Affairs section of the New York Department of State. Information is channeled principally through the New York Department of Environmental Conservation (DEC) which, in turn, works closely with the Office of Coastal Affairs.

Interim Plan for Disposal of Dredged Material from Long Island Sound: This report was issued by the New England River Basins Commission (NERBC) in August, 1980.

CORPS OF ENGINEERS PROGRAMS

Under authority of the present Resolution and other directives, the Corps of Engineers has carried out several studies directed at solutions to the Long Island Sound disposal problem.

Reconnaissance Report:
Dredged Material Containment in Long Island Sound: This 1979 report focused on Connecticut waters and investigated the feasibility of large containment facilities or artificial islands as (a) nearshore land extensions, (b) shallow water islands, and (c) deep water islands within the Sound. Investigators concluded that the fine-grained nature of Connecticut sediments earmarked for dredging significantly limited the feasibility of large artificial islands except where dewatering equipment could be installed to speed up water removal. The study indicated that large volume containment structures are probably feasible only as longshore land extensions.

Interim Report: Dredged Material Containment in Long Island Sound - With Special Emphasis on Eastern New York Waters: This
study concluded Stage 1 planning by examining the New York shoreline of Long Island Sound. The report also performed some Stage 2 planning by reviewing problems posed by all disposal alternatives and began development of guidelines for selection of potentially suitable locations for shoreline extension containment centers.

Programmatic Environmental Impact Statement for the Disposal of Dredged Material in the Long Island Sound Region: This document, scheduled for release later in 1981, is being prepared by the U.S. Army Corps of Engineers as a result of litigation between the Corps of Engineers and the Natural Resources Defense Council et al., and the States of New York and Connecticut. It addresses generic impacts associated with a range of disposal alternatives and supplies basic information upon which future Environmental Impact Statements or Environmental Assessments can be developed for specific sites within the Sound. It is intended to reduce significantly the duplication usually intrinsic in separate, case-by-case

CONTINUED ON NEXT PAGE

• A PROGRESS REPORT AND REVIEW •

WORKING TOGETHER (CONT.)

considerations. Yet, use of the document will assure a complete and thorough survey of all impacts and alternatives.

MAJOR CORPS OF ENGINEERS PROPOSED IMPROVEMENT PROJECTS

Two major improvement dredging programs have been proposed by the Corps of Engineers for Long Island Sound. One is for improvement of New Haven Harbor; the other for similar improvement of Bridgeport Harbor. The scope of the two programs is sufficiently large to constitute a major proportion of the improvement dredging volumes projected for the Sound in the near future.

Navigation Improvements - New Haven Harbor: New Haven is an important New England port, one of the region's major petroleum off-loading sites. A number of alternatives have been examined for ways to maintain the area's importance as a terminal for residual fuels, distillates, and gasoline. The improvement program judged most practical and desirable calls for deepening the six miles of the main shipping canal to 41 feet and widening it to 500 feet. In addition, plans call for enlarging and deepening the Harbor's turning basins. This program will produce approximately 4.8 million cubic yards of dredged material. Several alternatives have been reviewed for disposal of this material, including open water disposal and containment in an area adjacent to the Harbor. This project could be a candidate situation for a prototype containment program.

Navigation Improvements - Bridgeport Harbor and Vicinity: Commercial, recreational interests, and State and local officials in the Bridgeport area have urged a substantial waterway improvement program, and a plan incorporating economically feasible components has been developed. Dredging is proposed in Ash Creek, Cedar and Burr Creek Anchorages, Black Rock Harbor Anchorages, the Turning Basin, and Union Street Dock area in the main Harbor and Johnsons River.

Total estimated volume for dredged material is approximately 3.1 million cubic yards. Disposal alternatives have been considered, including open water disposal and containment in or adjacent to Bridgeport Harbor. Improvement dredging proposed here also provides opportunities for examining the practicality of containment disposal.

LONG ISLAND SOUND AS AN ECOSYSTEM

An ecosystem is a recognizable unit, incorporating both living and non-living components and the functional relationships that hold the system together. Ecosystems have both physical and non-living components, organic or inorganic materials; a producer component of photosynthetic plants able to manufacture food from sunlight and inorganic substances; a consumer component, primarily animals deriving their nutrition by consuming plants and other animals; and a decomposer component consisting of bacteria and fungi, which break down plant and animal remains into the basic nutrients required by the producers.

There is a cyclic nature to ecosystems. Nutrients and nutrient-forming elements continually cycle within the system, primarily driven by energy from the sunlight utilized in photosynthesis. Few ecosystems are completely separate units, as they usually overlap or interact in varying degrees. Thus, there is almost always some exchange of nutrients and organisms among them.

Easily defined ecosystems have clearly recognizable boundaries such as those characteristic of lakes, islands, and forests. Although the east and west ends of Long Island Sound connect with the Atlantic Ocean, the Sound is still sufficiently distinct to permit viewing it as a discrete ecosystem.

Marine plants and animals residing in the Sound, although not unique, may constitute discrete populations separated to varying degrees from similar populations outside the Sound. Some species, particularly finfish, may visit the Sound only during certain months of the year. Others, plankton for example, may occur within the Sound only during certain seasons yet live out their short life span without leaving the region.

Considering that nutrient flow is necessary for maintenance of a healthy Long Island Sound ecosystem,

man's actions can initiate changes which are eventually felt through the entire system. Dredging and dredged material disposal are human activities which can potentially affect the Long Island Sound ecosystem. Much of the material dredged represents the accumulation of urban and industrial growth and activity. Contaminants may accumulate in plants and animals to levels that are toxic when consumed by "upper level" consumers including man.

Attention has focused in recent years on ways of continuing necessary dredging while preventing or minimizing entry of harmful contaminants into the Sound's nutrient cycles and food chains. Artificial islands and other containment structures are possible solutions to this problem. Open water disposal of dredged material has been practiced in Long Island Sound for many years. Dumped material, settling to the bottom, covers and eliminates those bottom dwellers either attached or unable to move fast enough to avoid burial. This is probably not a significant impact because organisms quickly recolonize the area. More important, however, is the mobilization of contaminants. As the material falls through the water, a small portion is dissolved and swept away. Remaining mobilized contaminants stay within the dredged material and fall to the bottom.

Presently, marine life recolonizes the newly deposited sediment. Adults of some species take up residence, and newly hatched forms of other species come to rest on the material. Many of these organisms routinely seek their sustenance from the sediment around them. Inadvertently, they consume and concentrate harmful contaminants. Certain contaminants, such as DDT, mercury, and possibly some forms of PCBs, may magnify upward through successively higher levels of the food chain and create cause for concern. It is desirable, therefore, to develop ways of removing and

disposing of contaminated dredged material while effectively preventing pollutants from entering food chains of the Long Island Sound ecosystem.



LONG ISLAND SOUND DREDGING PAST, PRESENT, AND FUTURE

Traditionally, two kinds of dredging have been identified in Long Island Sound. One is channel maintenance, commonly labeled operations and maintenance (O&M); the other, improvement dredging. Operations and maintenance is essentially the removal of material filling previously dredged channels and basins. Improvement dredging constitutes new work deepening and widening existing channels and basins or creating new channels and basins. Generally, material removed during O&M dredging is unconsolidated silt and fine substances. Improvement dredging may involve fine sands, clays, heavy gravel, and rock. Sometimes, bedrock must be blasted loose and removed. Contamination is usually restricted to the surface and near-surface layers.

Historical Perspective: Dredged materials and other wastes have been routinely discharged in Long Island Sound for over 100 years. Materials have usually been deposited simply by dumping in designated areas. Although many locations have been used in the past, only three sites, New Haven, Cornfield Shoal, and New London, remain open on an interim basis for carefully controlled disposal.

The quantity of improvement dredging and operations and maintenance dredging in Long Island Sound has varied from year to year. In New York waters, there were extensive improvement projects during the 1920s and 1930s. Most dredging came to a halt during World War II, but after the war extensive maintenance work brought most

areas back to pre-war conditions. In Connecticut waters, a large improvement program was launched in the late 1940s. Since the early 1960s, there has been a reduction in improvement dredging in Connecticut and an increase in New York waters.

Although maintenance projects have outnumbered improvement authorizations in both states, volumes removed by improvement work have exceeded those from maintenance work. However, there has been no improvement work by the Corps of Engineers along the Connecticut shore since 1970, and only one improvement project has been undertaken in New York waters during the same period. Three factors probably contribute to this decrease: a reduced rate of shoreline development, increased concern about dredging and disposal impacts, and increased costs.

In addition to projects undertaken by the Corps of Engineers, the Corps issues permits for Federal, State, and local agencies and private parties to dredge in the Sound. Along New York shores, non-Corps dredging has historically produced volumes approximately equal to those removed by the Corps. In Connecticut, Corps-removed volumes have been several times larger than those produced by permit dredging. Upland and shore disposal sites were utilized in some instances. Thus, the entire volume indicated for any year was not necessarily deposited in the Sound. At present, there are 19 continuing authorized Federal projects in New York State waters of the Sound and 27 in Connecticut

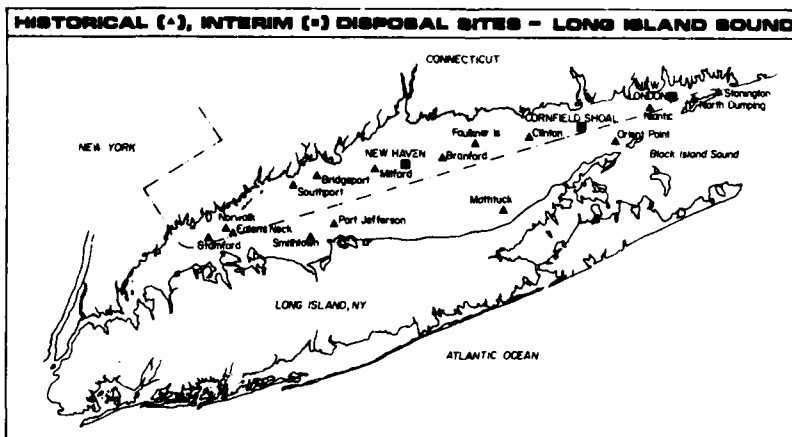
waters.

Projections: Developing projections for future dredging projects is necessary to estimate disposal requirements for the coming decades. New trends and policies are emerging. On Long Island, Nassau and Suffolk Counties have formulated new policies calling for scaling down of new dredging work by deauthorization of Federal programs in Manhasset Bay, Hempstead Harbor, Huntington Harbor, and Northport Harbor; and transfer of petroleum terminal activities to new offshore facilities in Hempstead and Port Jefferson Harbors. The new policies also call for consolidation of deep-draft vessel facilities in deeper areas such as Glen Cove Creek, Huntington Harbor, Port Jefferson, and Greenport Harbor. In contrast, the New York District, Corps of Engineers, is considering possible channel improvements in Echo Bay and New Rochelle Harbor in Westchester County.

Two major improvement proposals for Connecticut have been described in this booklet. These projects alone, if carried out as proposed, could produce nearly 8 million cubic yards of material. Other improvement projects have been discussed for Clinton, Patchogue River, and New London.

The Corps of Engineers has developed projections for dredging and dredged material volumes extending 50 years into the future, to approximately 2035. Several assumptions provide a basis for these projections. For maintenance dredging, it is assumed that silting will continue at present rates. If improvement dredging proceeds as anticipated, some additional maintenance programs will have to be

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• LONG ISLAND SOUND • DREDGING •

PAST, PRESENT AND FUTURE (CONT.)

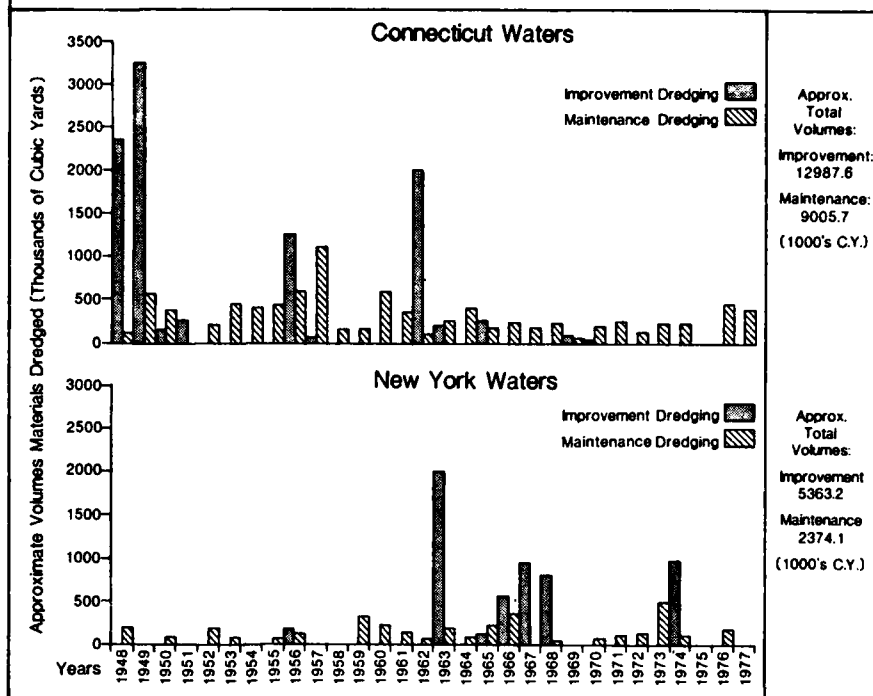
instituted to clear improved areas completed early in the projected term. Improvement dredging projections take into consideration work levels ranging from maintenance of the status quo (zero improvement dredging) to activation of all planned projects. Although not separated, non-Federal, Corps-authorized projects characteristically involve both maintenance and improvement dredging.

Dredging projections for New York waters are itemized in geographical subsections: (1) dredging in New York City in the East River; (2) dredging in New York City areas adjacent to the western end of Long Island Sound; (3) dredging in Westchester County; (4) dredging in Nassau County; and (5) dredging in Suffolk County. Dredging for East River areas has been included since Long Island Sound serves as a depository for dredged materials.

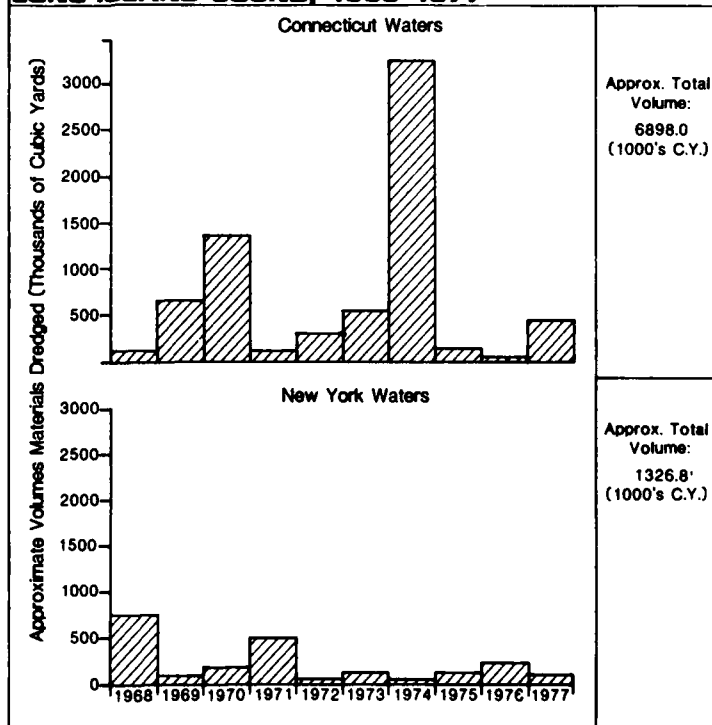
Projected dredging requirements in Connecticut are developed (non-Federal, Federal improvement, and Federal maintenance) for western, central, and eastern portions of the Sound. The western sector extends from Greenwich to the Housatonic River; the central region from Milford to the Connecticut River; and the eastern section from Niantic to the Pawcatuck River.

Using the most probable future conditions and combining New York and Connecticut portions of projected dredging activity, the most reasonable projection of likely dredged material volume for the Sound appears to be approximately 68 million cubic yards in the next 50 years.

CORPS OF ENGINEERS DREDGING, CONNECTICUT AND NEW YORK 1948-1977



COMBINED IMPROVEMENT AND MAINTENANCE DREDGING PERMITTED BY CORPS OF ENGINEERS, LONG ISLAND SOUND, 1968-1977



• SEDIMENT CHARACTER • IMPACTS •

PAST, PRESENT AND FUTURE (CONT.)

LONG ISLAND SOUND DREDGING PROJECTIONS
1985-2035
(values in yd³)

NEW YORK			
Area	Federal		Non-Federal
	Maintenance	Improvement	
New York City East River	2,365	250	4,250
New York City Long Island Sound	140	50	100
Westchester County	350	400	550
Nassau County	180	150	550
Suffolk County	327	150	5,450
TOTAL	3,362	1,000	10,900
AREA TOTAL FOR NEW YORK: 15,262			
CONNECTICUT			
Western Sound	5,695	2,950	3,300
Central Sound	12,885	7,760	11,300
Eastern Sound	1,570	1,900	5,500
TOTAL	20,150	12,610	20,100
AREA TOTAL FOR CONNECTICUT: 52,860			
GRAND TOTAL FOR NEW YORK AND CONNECTICUT: 68,122			

• FINDING A SITE FOR STUDY •

CHARACTERISTICS OF DREDGED MATERIAL

Physical characteristics of dredged material are a function of particle size distribution and specific gravity. Particle size distribution indicates the range and abundance of different sized particles, and specific gravity denotes the weight of particles relative to that of water.

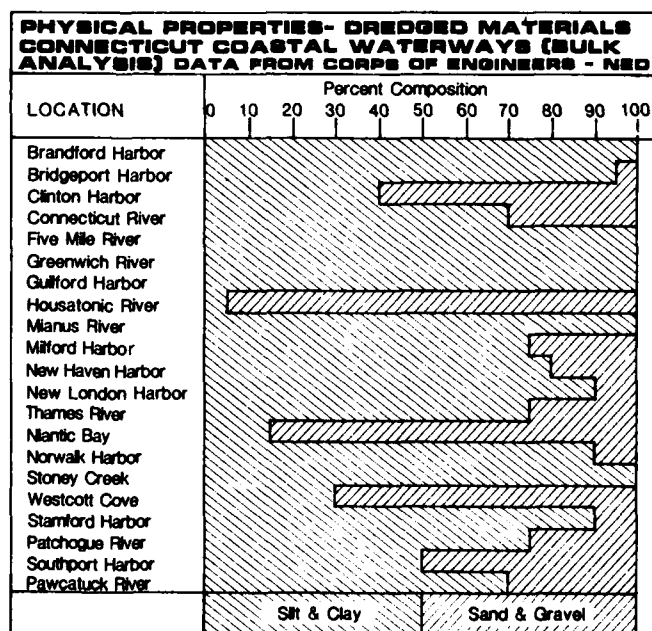
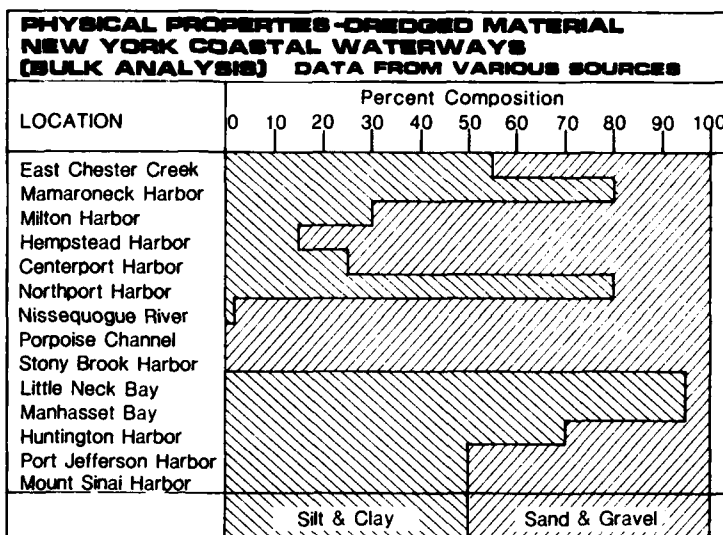
Both factors affect how rapidly the material will settle to the bottom and whether or not water currents will resuspend the material and sweep it away. If the dredged material is placed in a containment area, engineers must think about how quickly the materials will settle and how much they will separate from the water. Very fine particulates settle more slowly and, when settled, retain more water between particles. Settlement rate and water retention, then, determine the space required for containment and dictate the foundation bearing strength of the material, once settled.

Chemical characteristics of dredged materials are determined by the kind and abundance of chemicals in the material. Some of these chemicals occur naturally; others accumulate as a result of man's activities and discharges. Many of these chemicals can be mobilized back into a soluble state during dredging. If the dredged material is discharged in open water, it will be colonized by various benthic organisms. Many of these plants and animals derive a portion of their nutrients or food precursors from the bottom sediments around them. Frequently, the individuals themselves are not harmed by the toxic substances but accumulate the substances, producing concentrations higher than those in the contaminated dredged material. This accumulation, if passed to higher levels in the food chain, as is possible with DDT, etc. can reach man through his various seafoods.

Sediment characteristics vary widely around the Sound. Urbanized harbors frequently receive treated and untreated sewage, industrial wastes, oil spills, general urban runoff, and river and stream discharges.

As an aid in assessing relative contamination of dredged materials, New York and Connecticut have jointly established criteria for classification of dredged materials:

Class I Sediments: Coarse-grained materials with high solid content. Pollutant levels are usually



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EXAMINING SPECIAL ISSUES · CONCERNS

CHARACTERISTICS (CONT.)

low. Class I sediments are suitable for open water disposal, covering more polluted materials, and beach nourishment.

Class II Sediments: Fine-grained materials with moderate solid content. Usually moderate contaminant levels. Disposal on a case-by-case basis.

Class III Sediments: Usually fine-grained sediments with low solids content. High in contaminants. Class III sediments may be "potentially degrading" or "potentially hazardous." Strict conditions are usually placed on the disposal of Class III sediments. A series of "acceptance" ranges have been established for assessing contaminant or pollution conditions. An examination of typical contaminant and pollutant condition levels in sediments from New York and Connecticut waters reveals that sediments from the Connecticut side of the Sound are consistently more contaminated, regularly falling in Class III.

In general, bioassay and bioaccumulation analysis are required on Class II and III material in accordance with Environmental Protection Agency (EPA) guidelines for Section 103 of Public Law 92-523, Ecological Evaluation of Proposed Discharge of Dredged Material in Ocean Waters. Such disposal requires Section 404 permits and Section 401 Water Quality certification, and Coastal Zone Management consistency requirements approvals. Recently proposed regulations could require

NEW YORK - CONNECTICUT BI-STATE CRITERIA FOR CLASSIFICATION OF DREDGED MATERIALS (Values in ppm or mg/l)

Substance or Category	Class I	Class II	Class III
Percent Volatile Solids	5	5 - 10	10
Oil and Grease	5,000	5,000 - 10,000	10,000
Mercury	0.5	0.5 - 1.5	1.5
Lead	100	100 - 200	200
Zinc	200	200 - 400	400
Arsenic	10	10 - 20	20
Cadmium	5	5 - 10	10
Chromium	100	100 - 300	300
Copper	200	200 - 400	400
Nickel	50	50 - 100	100
Vanadium	75	75 - 125	125

CLASSIFICATION OF NEW YORK AND CONNECTICUT SEDIMENTS ACCORDING TO BI-STATE CRITERIA

Substance or Category	New York	Connecticut
Percent Volatile Solids	---	---
Oil and Grease	III	III
Mercury	II	III
Lead	III	III
Zinc	III	III
Arsenic	I	III
Cadmium	II	III
Chromium	I	III
Copper	III	III
Nickel	II	III
Vanadium	---	III

application of Environmental Protection Agency (EPA) Section 103 guidelines on all dredging projects of more than 25,000 cubic yards of material. Projects of 25,000 cubic yards or less will still be subject to

Sections 404 and 401 and may be required to meet some additional testing on a case-by-case basis. Projects in the Sound utilizing open water disposal require Connecticut Water Quality Certification inasmuch as all three interim disposal sites are located in Connecticut.

Sediments are usually not uniformly contaminated. Excavations penetrating recently deposited materials into sediments laid down before industrialization and urbanization usually show much higher concentrations near the surface. Examination of surface and near surface layers does not show clear cut distinctions. Rates of deposition, turbulence, re-settlement, bio-turbation (disturbance of sediment by organisms living in it), and earlier dredging frequently stir up the upper few feet of harbor sediments. Particle size differences can indicate a potential difference in contaminant distribution. Finer material (silt-clay) frequently shows greater contamination than does coarse material (sand-gravel), because of the greater surface area. Natural processes concentrate heavy metals, chlorinated hydro-

UNDERSTANDING THE PLANNING PROCESS

The Corps of Engineers follows specific planning procedures for development of new disposal areas. These procedures apply even when attention is focused on only assessing the feasibility of a new disposal technique.

Three stages are activated sequentially. STAGE 1-RECONNAISSANCE, determines whether a proposed program merits a survey scope feasibility study and whether preparations should start for work required by the next Stage. The emphasis is on identifying pertinent issues and solutions for any water and land resource management problems. Most of the work conducted for containment in Long Island Sound has been at the Stage 1 level.

STAGE 2-DEVELOPMENT OF INTERMEDIATE PLANS, explores a range of alternatives and management measures. In effect, Stage 2 is a screening process, singling out

feasible options. Specific studies are then developed for Stage 3 work. Some Stage 2 preliminary work has been completed for the Long Island Sound containment program, and the workshops following distribution of this booklet will constitute further Stage 2 activity.

STAGE 3-DEVELOPMENT OF DETAILED PLANS, incorporates detailed studies focussing on the remaining viable alternatives. Four planning tasks, used at all stages, now assume greater importance. The tasks center on definition of planning objectives; identification of potential management objectives; identification of potentially significant impacts; and determination of whether the program merits continuation.

Stage 3 activities for the Long Island Sound containment study program will develop after workshop results are assessed and further Stage 2 studies completed.

CONTINUED ON NEXT PAGE

CHARACTERISTICS (CONT.)

carbons, pesticides, nutrients, and oil and grease compounds in bottom sediments. In oxygenated, surface waters, these contaminants are not usually highly soluble. When significant concentrations enter the water, most of the contaminants are absorbed or adsorbed by suspended particles and then deposited on the bottom when the particles settle out.

Sediments accumulated in bays and harbors gradually develop an anaerobic (no free oxygen) environment extending to within a few inches of the surface. In these anaerobic sediments, heavy metals such as cadmium, copper, chromium, lead, and zinc are stabilized as insoluble sulfides and become immobilized. During dredging and disposal, anaerobic sediments are mixed with oxygen-laden water, initiating a series of chemical reactions. The heavy metals form oxides that are slightly more soluble than the sulfides found in anaerobic sediments. However, iron and manganese are also present in reduced form in the anaerobic sediments and, upon exposure to oxygen-rich water, form oxides more soluble than those of other metals. The iron and manganese oxides tend to coat suspended particles and then attract the other, less soluble metallic oxides. Thus, particles covered with iron and manganese oxide films scavenge the metallic contaminants from the water and settle into the sediments and may produce toxic conditions.

Two types of marine organisms, filter feeders and deposit feeders, convey these contaminants into the marine food chain. Epifaunal feeders are marine invertebrates that feed by drawing large volumes of water through mucus-covered nets and gill-like structures, straining particles from the water. Infaunal deposit feeders ingest deposited sediments and remove nutrient particles, discharging the non-organic residues. Both kinds of animals can have elevated levels of contaminants in their body tissue if their habitat is polluted. Surprisingly, there is often no significant difference in contaminant tissue burdens for the two groups. Near bottom water movement is frequently sufficient to maintain a layer of resuspended material. As a result, filter feeders and deposit feeders draw food and toxic burden from the same contaminant environment.

Filter feeders (i.e., oysters, mussels, quahogs) are counted among man's seafood. Most deposit feeders, worms and certain bi-valves, are not routinely eaten by man, but both are foods for marine animals eaten by man.

In containment areas, a major focus is the retention of water in

which the dredged sediment is suspended until settling out is complete. Once most of the toxic substances have been retained in the settled material, the water can be released without transferring contaminants to the Sound's ecosystem. It will also be important to prevent colonization of the containment areas by those organisms which could extract, concentrate, and pass the toxic substances to other components of the Long Island Sound system. Covering contaminated sediments, or capping, with clean sediments is one means of sealing off the polluted material.



HOW TO SELECT A STUDY SITE

An important component of the Long Island Sound containment program is the selection of one or more sites where feasibility studies can be carried out. This does not necessarily mean that any selected locations will actually be used as dredged material containment sites. What it does mean is that there must be a transfer from hypothetical to real locations to develop a basis for accurate feasibility assessment. The analysis must be derived from real data at actual locations. Only in this way can there be a dependable answer to whether dredged material containment is a possible solution to the problem of disposing contaminated sediments in Long Island Sound.

Selection of sites is a major component of the planning process. In the course of planning, a series of limiting criteria will be applied for each site possibility. These criteria are: (a) bathymetry (bottom topography) and the resulting potential containment volume; (b) shoreline ownership and location of existing disposal areas; (c) proximity to special ecological areas, wetlands, or major beaches; (d) wave energy - potential containment wall erosion; and (e) land use compatibility and reuse potential.

Once a series of possible sites are identified, further evaluation will proceed using these additional criteria: (a) engineering feasibility; (b) economic value; (c) environmental

considerations; (d) social acceptance; and (e) legal or regulatory requirements. A weighting system is used to develop a matrix for evaluation. Criteria points representing physical and geographic characteristics are also awarded for each site's suitability compared to an optimal site.

Data for general, large scale investigations are usually developed from existing information sources, i.e., charts, maps, previous studies, and surveys. As sites become more specific, the investigations become more refined and greater effort is expended on considerations specifically appropriate for each site alternative.

POLICY ISSUES

Section 150 of the Water Resources Development Act of 1976 (P.L. 94-587), authorizes the Secretary of the Army, through the Chief of Engineers, to "plan and establish wetland areas as part of an authorized water resources development project under his jurisdiction." The Corps of Engineers policy is to encourage the productive use of dredged material and the creation of fish and wildlife habitat, while avoiding actions in existing wetlands. All relevant factors are to be considered in reviewing a proposed disposal site.

In considering whether to create a wetland, or to select alternative methods of waste disposal, the benefits to be gained from creation of the wetland must be judged equivalent to the costs associated with the establishment of the wetland. If the environmental, economic, and social benefits can justify its creation, the wetland alternative can be no more than \$400,000 costlier than alternatives.

All costs associated with establishing a wetland under this policy are borne by the Federal government. Policy Issue 79 19 sets forth the Corps' policy for cost sharing for retaining structures for dredged material: "Retaining structures (dikes) will be provided by the Corps unless the authorizing documentation indicates explicitly that such structures are a local responsibility, except for cases where retaining structures become a new requirement for maintenance of the project for environmental reasons."

In special cases, the Corps will recommend legislation to modify the local cooperation requirement to include retaining structures, and continue critical maintenance while such legislation is pending. If a containment structure is designed to receive fill from several Federal and non-Federal projects, financial responsibility may have to be defined as a special case.



USES OF DREDGED MATERIAL

Historically, dredged material has been disposed of by the most convenient and generally the least expensive method available. This has translated into dumping on the nearest available open space on land, or more often, in water. The growing concern about contaminants in these wastes has reduced the acceptability of previous methods. Concurrently, economics has reduced the acceptability of transporting dredged materials long distances for offshore open water disposal. The need for dredging and resultant production of huge volumes of materials have led to alternative methods of disposal which minimize damage to the environment and in some instances, prove to be environmental and/or economic assets.

Dredged material can be used for creation of or improvements to wildlife habitat. These sediments can also be used to create upland habitats for mammals, or nesting and feeding areas for waterfowl. In specialized applications, periodic

deposition of new material can prevent excessive vegetation and preserve a habitat for species dependent on bare sand for nesting purposes. Where transport is economically feasible, dredge materials can be used to fill abandoned pits and quarries, or reclaim strip mined lands. In areas where grain size is compatible, sediments can be utilized for beach nourishment.

Along waterfront areas, dredged material can expand or supplement existing facilities. Possibilities include such diverse choices as port development, industrial/commercial development, open space recreation areas, and marinas. Proper design of the containment structure to allow access to the intended facility, and requisite drainage to allow settling and compaction of sediments, makes dredged material a candidate for multiple applications in waterfront development. Similar methods can be used to create offshore artificial islands for special facility siting.

PUBLIC INVOLVEMENT

Many opportunities for public review of plans and proposals are provided in the Corps of Engineers planning process. In the Long Island Sound containment study, public participation is channeled into three phases. Initially, lines of communication are established with all affected agencies and non-governmental groups. Second, appropriate Stage I planning documents are circulated for public review and discussion at follow-on public meetings and workshops. Finally, as Stages II and III get underway, specific public involvement avenues are developed, including additional public information meetings and workshops.

This booklet has a dual function. First, it supplies general information regarding the status and nature of the Long Island Sound containment

program. Second, it signals the beginning of the public participation process. The Corps of Engineers wishes to obtain comments, suggestions, and guidance for continuation of the study.

The booklet is being distributed to agencies, organizations, and

CONTINUED ON NEXT PAGE



MALODOR ABATEMENT

Sediments with organic matter also contain by-products of anaerobic bacterial decomposition, such as hydrogen sulfide, sulfur-containing compounds, fatty acids, aldehydes, amines, and other odorous substances. More often than not, odors emitted by a containment disposal area are not perceptible beyond the vicinity of the receiving basin. Under certain weather and wind conditions, however, odors may be detected at distances from disposal sites. Malodor abatement is, therefore, a matter that must be addressed.

The most important consideration in dealing with an odor problem is the distance of the site from nearby communities and the direction of prevailing winds, especially during warmer weather. Where practicable, a project should be scheduled for periods when the population is indoors, when atmospheric conditions are favorable for optimal dispersion, or when prevailing breezes blow offshore. When dredging cannot be so controlled, a gas release device can be installed in the dredge line at the point most distant from any affected population. Placement of the discharge end of a slurry line underwater can also further reduce release of malodors.

Ozonation and aeration are potential methods for reduction of odors. However, these treatments are possible only when sludge is in a slurry, a condition where efficient gas mixing is difficult. Masking with a counteractive agent is sometimes effective but generally results in a change of odor character with little decrease in intensity.

Once a fill operation is complete, various applications can abate odors. Lime is often used with dewatered sludge. Calcium oxide or other additives can shift the pH beyond the optimal bacterial growth range and thus, decrease gas production. Sealants, such as sand layers, and diffusion barriers, such as wood chips, are other inexpensive alternatives.

PUBLIC REVIEW OF PLANS & PROGRAMS

PUBLIC INVOLVEMENT (CONT.)

individuals concerned with the Sound. In the very near future, a series of Public Workshops will be announced for convenient locations around the Sound. The Corps of Engineers hopes you will plan to attend one or more of these meetings. There is a need for comprehensive review of urgent concerns, and suggestions for possible containment study sites will be appreciated. If you are unable to attend a Workshop, please don't hesitate to communicate your comments in writing.

The Long Island Sound containment study program is a long-term effort to accommodate navigation needs and simultaneously, protect the waters of the Sound. We hope you will make it your program, too.

WORKSHOP MEETING DATES AND LOCATIONS

ALL MEETINGS AT 7:30 P.M.

New London, Conn.-May 18, 1981

Room 113
New London Hall
Connecticut College

New Haven, Conn.-May 19, 1981

Room A 74
135 Prospect Street
School of Organization
and
Management Yale
University

Stamford, Conn.-May 20, 1981

West Hill School
West Hill St./Roxbury Ave.

Great Neck, New York-May 21, 1981

Room B202
Bowditch Hall
U S Maritime Academy

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7.0 Media Coverage Generated by Workshop Project

The New York Times

SUNDAY, MAY 17, 1981

CONNECTICUT
WEEKLY

Proposal to Create Silt Islands in Sound

By HUGH O'HAIRE

A PROPOSAL to use contaminated sediments dredged from the bottoms of Connecticut harbors as fill to create artificial islands and salt marshes in Long Island Sound, will be discussed at public hearings this week in Connecticut.

The first of the "workshops" on "dredged material containment" is to be held tomorrow evening in New London. They are part of a joint effort by the United States Army Corps of Engineers and the Long Island Sound Task Force to find an "environmentally acceptable way" to dispose of contaminated sediments.

"These are educational sessions to explain dredged material containment to the public," said Richard Quinn, project manager for the proposal for the Corps. "There will be a slide show and we will be there to answer any questions."

Whitney Tilt, director of the Long Island Sound Task Force, said: "We know it works in other areas of the country. What we want to find out is whether or not it will work for Long Island Sound." A hearing is also scheduled for Long Island.

Each year, more than 500,000 cubic yards of sediment is dredged from harbors and ports around Long Island Sound and dumped in open Sound waters by New York and Connecticut.

Toxic materials contained in sediments are picked up and carried downstream and deposited on harbor bottoms by rivers passing through industrial areas. The poisons include cadmium, mercury, lead, hydrocarbons, chlorides and PCB's, task force officials said.

According to the proposal, artificial islands would be created by anchoring two dikes to the Sound bottom and then filling the lagoon between the two dikes with contaminated sediments. The dikes in the bottom of the lagoon would be lined with an impervious clay material to prevent leakage. When filled, the islands would be topped off with several feet of clean fill and landscaped. They could be used as wildlife habitats, parks or for industrial uses.

Salt marshes would be created by placing a dike under water offshore and then backfilling with contaminated sediments on a rising grade from below the low-water line to the existing coastline. The contaminated material would be capped, sealing the sediments from tidal flow.

"We think containment has some really exciting prospects because we can isolate highly contaminated materials from the environment indefinitely, create new and valuable land, as well as biologically productive salt marshes," said Tom Jackson, task force project manager for the proposal.

Most of the dredging in the Long Island Sound area is done on Connecticut's river ports — Norwalk, Bridge-

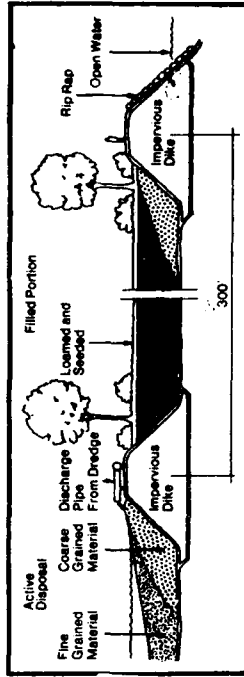
port, Stratford, New Haven, Old Saybrook and New London. Connecticut rivers drain vast areas of New England into the Sound, carrying off large amounts of silt which fill up harbors, endangering shipping lanes and recreational boating and necessitating constant dredging.

Task force officials contend that the poisons contained in the sediments are less dangerous while buried on harbor bottoms, but when they are dredged up and then dumped back into the open water of the Sound they can drift onto shellfish beds or enter the food chain and be ingested by commercial fin fishes including valuable commercial striped bass and bluefish.

At present, dredged sediments can only be dumped at one site in the Sound off New Haven. "If you're from New Rochelle and have to tow your material all the way over to New Haven, it's a very expensive proposition," said Mr. Tilt.

Using the containment technique, its advocates say, a number of new sites would be located close to the harbors and other areas that do the most dredging, thus eliminating high transportation costs. However, no sites have yet been determined, Mr. Quinn said. "We are still in the screening process."

"Containment wasn't viable in the past because it was too expensive," said Mr. Jackson. "Now with the in-



The New York Times / May 17, 1981

creased cost of transporting sediments, it makes sense."

Since 1890, a minimum of 100 million cubic yards of sediments has been dredged from federally maintained waterways in Long Island Sound, according to Corps estimates. From 1968 to 1977, Connecticut dredged 400,000 cubic yards a year while New York projects that 68.1 million cubic yards of sediment will have to be dredged from the Sound over the next 50 years.

The state public hearings, which will start at 7:30 P.M., are scheduled for tomorrow in Room 113, New London Hall, Connecticut College, New London; Tuesday in Room A-7, School of Organization and Management, Yale University, New Haven; and Wednesday at West Hill High School, Stamford.

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^New Method Proposed For Dreiging Long Island Sound<

^By SUSAN OKULA=

^Associated Press Writer=

STAMFORD, Conn. (AP) - The delicate marine ecosystem of Long Island Sound feels adverse effects from the economically necessary practice of dredging, but a solution may exist, according to a member of the Long Island Sound Taskforce.

Instead of dumping contaminated sediments, dredged from Connecticut's urban harbors, in the open waters of the Sound, the U.S. Army Corps of Engineers is considering containing them behind dikes, Thomas C. Jackson said Saturday.

Jackson, who is a Taskforce project chairman for a series of informational public workshops on the proposal, says that the idea, if implemented, may minimize the environmental impact of dredging.

Dredging is the clearing away of sediment from the bottom of selected parts of the Sound and rivers running into it for the benefit of free-running commercial and pleasure marine traffic, Jackson said.

Explaining that most petroleum products are brought to the state via Long Island Sound, Jackson said "the bottom line says there has to be dredging."

The decades-old practice of dredging urban harbors and river channels and then dumping the sediment miles offshore has slowed down and come under increasing attack because the toxic chemicals contained in the sediment harms marine life, Jackson said.

He called the bottom of urban harbors, such as the one in New Haven, the "storehouses of toxic pollution" of many Connecticut cities.

The new containment methodology involves building a dike in the Sound, possibly attached to existing land, and then filling the space with sediment, Jackson said. A layer of heavily contaminated sediment would be covered with cleaner material, he said.

The new land created by the project could become a bird sanctuary, salt marshes, or an artificial island, he said.

Jackson said the method is used in the Great Lakes and that study shows there are isolated incidents of the contaminated sediment leaking out. But he said that wasn't a significant problem.

"It's a fairly secure system," he said. "Unless Noah's flood comes and messes it up, it is safer to do this (than open dumping)."

The U.S. Army Corps of Engineers is considering two possible containment sites, in the Clinton Harbor area and Black Rock off of Groton, Jackson said.

Because this is a new technology, Jackson said that it needs considerable public support to be eventually implemented. Toward that end, the Taskforce and the engineer corps are holding a series of public informational workshops.

Scheduled to begin at 7:30 p.m., they will be held in: New London, May 18 at Connecticut College; New Haven, May 19 at Yale University; Stamford, May 20 at West Hill High School; and Great Neck, N.Y., May 21 at the U.S. Maritime Academy.

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Engineers offer plan used elsewhere in U.S.

Toxic dredging sludge may be used in new landfills

by Patricia Rosenau
The Advocate

The Army Corps of Engineers is considering a method of disposing of toxic dredged materials — never before used in New England — by dumping it behind containment dikes and converting it to islands, extensions of partland or salt marshes.

Corps officials who spoke at a workshop Wednesday night said the study, due for completion next year, is far from the stage when specific sites will be named. But after the meeting, a Long Island Sound Task Force staff member said Kosciuszko Park will be on the study list.

Thomas Jackson, project director for the task force, which sponsored the workshop, said other sites under consideration are in Groton and Clinton.

He said there had been problems with developing Kosciuszko Park in the past, chiefly funding, but now that the corps has become interested in developing containment as a project, there is a lot better chance now the local park will be extended.

The Army Corps officials acknowledged they have been under pressure from conservationists, fishermen and

others to find an alternate disposal method to the dumping now going on at a site off New Haven.

Stamford, Greenwich, Darien, Westport and other Fairfield County residents raised questions about whether toxic materials would leach through the clay or limestone dikes of the containment, what government body would take over control of the land, once it was completed; and what it would cost, compared to other disposal methods.

They in turn were asked to submit their own recommendations for sites, based on knowledge of their own town's shorelines, and where containment would be most appropriate.

They were told that leaching had not been a problem at existing containments, and that control and cost were still to be studied.

Disposal of dredging spoils has been a lively issue in Stamford since conservationists lined up against the Army and a group of shorefront businessmen in the late 1970s.

The conservationists expressed fears the corps' plan to dump off New Haven would damage marine life, and East Branch businessmen worried that, without dredging, barges would no longer be able to navigate the branch and their businesses would fail.

After extensive hearings, the corps, the Oceanic Society and its regional chapter, the Long Island Sound Task Force, agreed on a method of capping the spoils with clean material, and a system of monitoring to make sure the toxic material does not escape.

But the conservationists continued to push for an alternate method.

Meanwhile, U.S. Rep. Stewart B. McKinney, R-4th, who had been pushing for a containment dike to extend Kosciuszko Park, sponsored legislation to pay for a containment study. He was joined by Sen. Chris Dodd, D-Conn., and former U.S. Rep. Robert Giaino, D-New Haven.

Wednesday's workshop, one of several in Connecticut and Westchester County, is part of the study.

Sally Bolster, of McKinney's office, told the workshop the Congressman considers containment a likely solution to the dredging problem.

The harbors and waterways of Southwest Connecticut suffer the effects of constant silt, she said, affecting industry, commerce, boating and recreation.

Richard Quinn, manager of the study for the corps, said it will be more than a year before the group reviews hundreds of sites and comes up with a handful of recommendations.

They will have to be studied from the point of view of the environment — New Haven residents have already explained where the oyster beds are — the cost and other factors, he said.

He said, according to his calculations, Stamford Harbor will need to have 300,000 cubic yards of material dredged during the next 50 years. The total for the Sound is 20 million cubic yards.

Since no containment structures have yet been built in New England, he said, it is difficult to determine how much they will cost. He showed slides of containments in the Great Lakes, Florida, California, North Carolina and Virginia. There are more than 200 in the United States.

The corps staff will compare the cost containment with the cost of barging the material to the New Haven site, as is done now. With containment, the site is usually near the scene of the dredging, said Quinn.

Dredging and filling continues for about 10 years, he said, after which it is converted to usable land.

Gib Chase, marine biologist with the corps, said most toxic minerals adhere to the fine grains of the sediment and settle at the bottom of the containment, and water, as the impurities settle out of it, is piped out.

New method asked for dredging of Long Island Sound

STAMFORD, Conn. (AP) — A member of the Long Island Sound Taskforce says the use of containment dikes to hold sediments scraped from the bottom of city harbors could help lessen the environmental impact dredging has on surrounding waters.

In past years, the sediments were dumped in the open waters of the Sound, but Thomas C. Jackson said Saturday the U.S. Army Corps of Engineers has proposed the use of dikes.

Jackson is a Taskforce project chairman for a series of informational public workshops on the proposal.

The decades-old practice of dredging urban harbors and river channels and then dumping the sediment miles offshore has slowed down and come under increasing attack because the toxic chemicals contained in the sediment harms marine life, Jackson said.

The new containment methodology involves building a dike in the Sound, possibly attached to existing land, and then filling the space with sediment, Jackson said. A layer of heavily contaminated sediment would be covered with cleaner material, he said.

The new land created by the project could become a bird sanctuary, salt marshes, or an artificial island, he said.

The Army Corps is considering two possible containment sites, in the Clinton Harbor area and Black Rock off of Groton, Jackson said.

Because this is a new technology, Jackson said it needs considerable public support to be eventually implemented. Toward that end, the Taskforce and the engineer corps are holding a series of public informational workshops.

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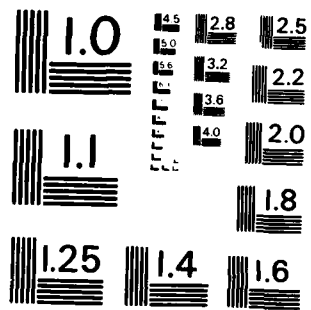
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STAMFORD ADVOCATE

Monday, May 18, 1981

***Task force to discuss
method for containing
dredged toxic material***

A method for containing toxic material dredged from harbors will be explained by staff members from the Long Island Sound Task Force at a workshop Wednesday at 7:30 p.m. at Westhill High School.

Participants will include businessmen, particularly those who have shorefront facilities; operators of marinas, commercial boat operators, sailors, yacht clubs, environmentalists and all others interested in the dredge disposal issue.

Thomas Jackson, project director, said results of the meetings will be added to a containment study being developed by the New England Division, Corps of Engineers.

The task force, a regional chapter of the Oceanic Society, is coordinating the workshops for the corps, said Jackson.

Containment would involve dumping toxic substances behind impervious dyke materials. These could form islands, or a point of land could be extended with the dyked material, said Jackson.

All harbors need periodic dredging, he said, because of the silt and sediment carried into them with each rainstorm.

If the silt is mixed with toxic chemicals, as it frequently is in Stamford, disposal becomes a problem, he said.

The dredged materials can be dumped in the open waters in the Sound, he said, which works well when the material is clean. Another method is to dump the toxic materials, then cap it with clean silt, he said, a method which was used to dispose of material dredged in Stamford Harbor's east branch in a site off New Haven.

That was a demonstration, he said, and the results are not yet complete, but it may be a solution to the problem.

The containment method, he said, offers a way to "avoid confrontation without sacrificing marine commerce or environmental quality."

Containment also might prove to be a practical way of disposing of clean dredged material, said Jackson, because the cost of towing any material to a point miles off shore has been steadily increasing.

Environmental front:

Sound outlook on dredging

By ROBIN GORDON

One of the most obvious things we on Long Island have in common with Connecticut is Long Island Sound, but the condition and use of our harbors is very different.

While Long Island harbors are primarily used for recreation and some delivery of petroleum products, the busy harbors of Connecticut tend to be situated at the mouths of major rivers and serve a more industrial and commercial function. The rivers that drain New England carry sediment that is deposited in these harbors. Regular and extensive dredging is required to maintain safe shipping channels.

Another thing we share with Connecticut is vulnerability to a shipping accident with the possible discharge of chemicals or oil into the Sound. Dredging is a fact of both our communal lives.

Up to now the Army Corps of Engineers has maintained the channels and dumped the deposit in open sea sites, covering them with "clean" sand. The dredged material contains a variety of heavy metals, petroleum products and toxic chemicals such as PCB's that tend to accumulate in industrialized harbor beds. Growing concern over possible harmful effects of open sea dumping — for instance erosion of the clean cover and shellfish burrowing into contaminated soil then entering the food chain — has led to the search for alternate dredge disposal methods.

The Army Corps of Engineers and the Long Island Sound Taskforce (LIST), a regional chapter of the Oceanic Society, held a week long series of workshops to report on a feasibility study requested by Connecticut legislators in anticipation of the estimated 70-million cubic yards that will need to be removed from harbors in the Sound over the next 50 years.

Richard Quinn of the Corps welcomed the audience to "a one-night crash course in an exciting new technology." The proposal that has been used successfully in other less populated and industrialized areas of the country would create new land masses out of the dredging, either islands, extensions of shore line or marshes. The plan calls for construction of a perimeter of dikes with drainage "weirs" installed. Material that is originally 80 per cent water is pumped off barges into the site. There it settles and dries slowly so as to retain the fine sediment to which most of the contaminated substances adhere. When the site is full it is capped with clean soil, seeded and made available for recreational or other use. In Michigan a large park has been created. Off the coast of N. Carolina and Florida the islands made are now thriving bird colonies run by the Audubon Society.

Great Neck Record
June 4, 1981

Though the audience numbered only 40, it was designated by Whitney Tilt of the (LIST) Long Island Sound Taskforce, as the "most inquisitive", of the four presentations. Dr. Donald Cotten, director of Environmental Analysis of the Sierra Club, expressed the thought that containment sites be located near the harbors requiring the most dredging, with New Haven as a case in point. Also present were representatives of Congressman John LeBoutillier, Assemblywoman May Newburger, the Town of North Hempstead, N.Y. State Department of Environmental Conservation and several other groups.

The main drawback of the plan is its cost, estimated at three to four dollars per cubic yard. A minimum-sized site of 400,000 cu yds. would cost over \$1,000,000.

The next step of the study will be a determination of locations for containment facilities. Calling actual construction "six years down the line," Quinn assured the audience that sites would most likely be on publicly owned land near the dredging area to minimize cost and would require Department of Environmental Conservation approval.

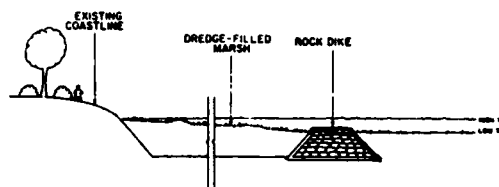
Sites in Nassau and Suffolk are unlikely.

On The Connecticut Shore

A brochure describing a new approach to an old problem confronting many Long Island Sound ports is available for those hundreds of Connecticut residents concerned about their beloved shoreline. Titled "Dredged Material Containment," the publication examines the

of Connecticut residents concerned about their beloved shoreline. Titled "Dredged Material Containment," the publication examines the

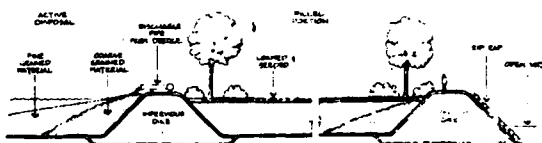
THE DEBRIS OF DREDGING



NEW SALT MARSH

b

A dredged material containment area can be designed to create new biologically productive salt marshes. Once filled with sediment, the facility is capped in a way to allow tidal flow on the site. As in the artificial island, the dikes are designed to contain materials in the sediments, and isolate them from the marine environment.



ARTIFICIAL ISLAND

a

This conceptual diagram shows how dredged material containment can be used to create artificial islands. First, dikes of impervious materials are built to enclose a lagoon in shallow water. Then, as shown at left, materials dredged would be discharged into the enclosure. Coarse grained material will settle near the discharge pipe, while finer grained sediments would move farther away from the pipe. Water flowing from the containment area is relatively clean. At right, the filled area has been covered with clean material and seeded.

potential for containing, behind dikes, contaminated sediments dredged from urban harbors.

Containment of dredging materials behind dikes offers an alternative approach to protecting both the marine environment, and continued use of the Sound, U.S. Army of Engineering Corps officials say. Containment may involve placement of objectionable materials behind an earthen dike, then placing clean fill atop the sediments once the

project is complete. The containment facility can be designed for use as an artificial island (see *Illustration A*) or as a biologically productive salt marsh (see *Illustration B*). In either case, the structure is designed to isolate sediments from the surrounding environment.

For a copy of "DREDGED MATERIAL CONTAINMENT" contact Stamford Marine Center, Magee Ave, Stamford, CT 06902.

7.8 Discussion of Radio Coverage

Through radio coverage of the workshops, the media campaign succeeded in blanketing the Long Island Sound region with word of the workshop series and the issue of containment. Public service announcements keyed to specific sessions were sent to key area radio stations weeks before the meetings began. Telephone calls by Taskforce staff in the days before each session generated additional radio exposure.

By far the most significant radio coverage came on WCBS, the "all news" station of the CBS Network in New York City. A major source of news information in the Long Island Sound region, WCBS is a 50,000 watt AM station which is the prime news station in the New York metropolitan area.

Additional news coverage was generated on at least one regional radio station in each of the workshop areas. By regional radio station, we mean a major AM or FM broadcast service which serves more than one community. Specifically, stations in New London, New Haven, Stamford and Long Island were involved in this aspect of the containment workshop.

8.0 Review of Presentation

8.1 OPENING REMARKS

Thomas C. Jackson
Workshop Moderator
May 1, 1981 - New Haven, CT

Good evening and welcome to the second in our series of public workshops examining the concept of using containment facilities to contain both contaminated sediments and address some of the controversy generated by dredging around the Sound.

My name is Tom Jackson and I'm serving as the workshop project director for the Long Island Sound Taskforce of the Oceanic Society. The Taskforce is a membership based marine conservation group with offices in Stamford, CT. The Taskforce is coordinating this workshop series for the New England Division of the U.S. Army Corps of Engineers.

Joining me in tonight's program is Richard Quinn, Director of the Corps' Containment Study for Long Island Sound; Gib Chase, a marine biologist with the Corps and familiar with the Sound's ecosystems; and Whitney Tilt, Executive Director of the Long Island Sound Taskforce. Throughout most of the night, I will serve as moderator for the workshop while Whitney serves as a recorder of important points and questions.

At this point, I'd like to emphasize this is not a public hearing or even a formal public meeting. We are gathered tonight to discuss a technology which may or may

not hold some promise for protecting the marine environment. Containment may or may not be economically viable. It may or may not be ecologically desirable. It may or may not answer a difficult question: how do we safely dispose of contaminated sediments dredged from urban harbors around Long Island Sound?

We cannot answer those questions here tonight, nor will we try to convince you that containment is the best -- or only -- answer. Instead, we are trying to acquaint a cross section of those concerned with the Sound: business people, marine commerce interests, harbormasters, conservationists, coastal residents and just plain concerned citizens, with the concept of containment.

We are trying to give you a one-night crash course in the basics of a new technology for the Sound... a technology which has been used for a decade or more in other areas of the country. We hope you will leave with an understanding of the basics of containment: of the unanswered questions and the issues which should be raised in consideration of any future containment proposal.

Since this is a workshop, we welcome your questions and observations. We ask you to identify yourself and state any affiliation when asking a question. At the conclusion of the evening, we will be happy to hear your thoughts on containment and the value of this public participation process. We also ask you to be sure and return the registration

card before you leave as it is the only record we have of attendance and interest. It is also the only way we can revise our mailing list to avoid duplications.

Whitney will serve as recorder tonight. That means he will note the key points raised in the discussion as well as the questions raised. Being a recorder is a difficult task, and Whitney needs all the help he can get, so please let us know if we miss a point, or if the notes aren't clear. The recorder's sheets will serve as a "permanent" record of tonight's discussion.

Many here tonight are familiar with the issues surrounding dredging. But for others this is a new issue. For those members of the public, a quick review of dredging in Long Island Sound and the idea behind containment.

Much of this region's petroleum -- as well as building materials and other bulky products -- move through Long Island Sound ports. Beyond this, literally thousands of boaters and sportsmen use the Sound as a recreational resource. And beyond this, a growing fishing industry can be found along the Sound as oysters, lobsters, and finfish are taken in increasing numbers. All of these uses of the Sound depend in some degree on safe access to Connecticut's harbors.

To ensure the safe transport of petroleum and other products as well as safe use of Sound ports by others, the U.S. Army Corps of Engineers is charged with maintaining

channels in designated areas. These channels are nothing more than lanes cut through the bottom to ensure a depth of water adequate for safe passage at all times. These channels tend to fill with fine grained silts washed down from Connecticut's uplands and rivers. When the channels are choked with silt, the U.S. Army Corps must either dredge or abandon the channel. Since the economic benefits of maintaining the channel are significant, the decision is almost always made to dredge the channel. For this reason, tonight we are taking the idea the dredging will continue around the Sound as a "given" in the discussion.

In the Sound, the problem with dredging urban ports has often centered on toxic contamination. Historically, sediments have been taken to designated sites in the open waters of the Sound and dumped. Over the years, however, in many cities toxic substances have been or are being discharged into the marine environment. These substances -- ranging from heavy metals to chemicals like PCB's -- tend to lodge in the fine grained sediments on the bottom of the harbor. And these are often the sediments which must be removed to clear the channel.

Many conservationists have been concerned in the past that open water disposal of sediments tainted with toxic substances would have an adverse impact on the Sound. This concern has led to controversy, bitter disputes, litigation, compromises, and the exploration of alternatives to open

water disposal for contaminated sediments.

Containment is one of the options the Corps of Engineers is studying. This workshop is a part of a larger study examining the potential for using containment in the Long Island Sound region. Again, I want to emphasize the results of this study are not in, the decisions have not been made, and the issue has not been decided. We are coming to you tonight with news of a new technology for the Sound and inviting your involvement at the start of this project.

As you can see from the illustrations around this room, and in our publications, containment consists of placing dredged material behind dikes to form either an extension of existing land or an artificial island. These dikes would be covered with large stones on the water side and contain an impregnable core to prevent contaminants from leaching into the marine environment. Containment has been studied for many years in other areas of the country and Dick Quinn will review that in a moment.

Before we begin, are there any questions so far? Are there any statements from local officials, groups, elected officials, or other interested parties which should be accepted at this time?

Dick, will you pick up the discussion of containment structures?

8.2 Remarks by Richard Quinn
Study Manager, Long Island Sound
Dredged Material Containment Study
New England Division
Corps of Engineers

We are authorized to conduct this study under resolution from the U.S. House of Representatives at the request of three Connecticut Representatives: Dodd, Giaimo and McKinney. The purpose of the study is to determine if dredged material containment facilities are feasible for Long Island Sound. Dredged material containment is one alternative means of disposing of dredged material. It has been used very successfully in other parts of the country. We have completed the first phase of the study, and are now in the formulation of alternatives phase. This is a very complicated and time consuming stage.

We are presently looking at potential dredged material containment sites throughout Long Island Sound. We are going through a screening process to eliminate sites which are not feasible for containment. We are still modifying our list of potential sites, and if anyone feels they are aware of a potential site we will be glad to consider it.

Many different aspects must be considered in citing a containment facility: one factor which is of great significance is what environmental harm there will be in the area where the site is being considered. Mr. John Baker of Connecticut Department of Aquaculture spent considerable time explaining to me the value of oysters to the economy of Long Island. Many of the sites considered to date could unfortunately have a significant impact on

this valuable resource. Every measure possible will be taken to assure that anything we consider will have as minor an impact on the oystermen, or for that matter on anyone, as is possible and yet do what we are required: and that is to determine if containment structures for Long Island Sound are feasible.

Another important factor is the location of the site in relation to the dredging activity. In Connecticut, there is a combined 50-year dredging projection for a total of 52,860,000 cubic yards of material. Of this amount 20,150,000 will be from maintaining the currently authorized navigation channels in Connecticut. Our dredging volumes are very low when compared to other portions of the country. These volumes are not all generated from one distinct area either. The central Connecticut area, which includes the nine harbors from Milford eastward to the Connecticut River, generates almost 60 percent of the maintenance dredging or 12,900,000. New Haven harbor alone will have an expected maintenance dredging of 6,000,000 cubic yards. The western coastal area which includes Greenwich harbor and all points eastward to the Housatonic River generates slightly less than 6,000,000 cubic yards, but this includes 11 harbors. The eastern area goes from the Pawcatuck River westward to Niantic Bay, for a total of 6 harbors. However, only 1.6 million cubic yards are projected to be dredged from this area in the fifty year projections period. Permit dredging almost equals that generated from the maintenance of the channels in Connecticut, 20,000,000

cubic yards. A major portion of this amount is the proposed New Haven project which will generate 7,200,000. Many of these figures were included in the information brochure handed out or mailed.

(For New York Only)

Another important factor is the location of the site in relation to the dredging activity. In Connecticut, there is a combined 50-year dredging projection for a total of 52,860,000 cubic yards of material. Of this amount, 20,150,000 will be from maintaining the currently authorized navigation channels in Connecticut. In the New York area potentially impacting Long Island Sound, there is a projection of slightly over 15,200,000 cubic yards for the next fifty years. A major portion of this amount, almost 7,000,000 cubic yards, comes from the East River area which is not an actual portion of Long Island Sound. The East River has been included as an impact area because historically when Eatons Neck and other nearby disposal areas were open, material had been dumped there. The total Federal maintenance dredging volumes for the 11 authorized projects actually in Long Island Sound for the next fifty years is very small, about 1,000,000 cubic yards, considerably less than the over 20,000,000 cubic yards generated in the 26 Connecticut harbors. A major component of the dredging volume in the New York harbors comes from non-Corps dredging or permit work in Suffolk County. This amounts to 5,500,000 cubic yards. In recent years virtually all of this has been disposed of on upland sites or as beach nourishment projects and is not

actually disposed of in Long Island Sound waters. This practice is expected to continue in the future.

The permit dredging for the remainder of New York's waters are projected to be small: 550,000 for Westchester; 550,000 for Nassau; and 100,000 for New York City for a total of 1,200,000 cubic yards.

(End of New York Text)

The third type of dredging that must be considered is improvement dredging which, for the New York area, is again small, relatively speaking. There are few planned projects at this time, and they amount to less than 750,000 cubic yards. In reality, the amount of dredged material projected to be dumped in open water from the New York harbors abutting Long Island is very small, less than 2,000,000 cubic yards over the next fifty years. This compares to over 50,000,000 which will be disposed of from Connecticut harbors. Thus most of the concerns surround the disposal of material from Connecticut harbors although there is still some concern on the disposal of the material from the East River and the dredged material that will come from Westchester County, material that is projected to be dumped in open waters from N.Y. harbors on the Sound.

In this study we are considering the feasibility of offshore islands, shoreline extension projects, or marsh creation/restoration projects either in conjunction with a containment facility or by itself. Another suggestion we are evaluating is using some of the nearshore "holes," created by material excavation, in the Sound floor which are now devoid of marine life. This has been mentioned to me from discussions I have had with various people.

In the near future, we will be evaluating in detail at several areas the existing environmental base line conditions; the design of a containment facility, along with preparatory detail costs; develop some thoughts on final usage at the site; determine the whole array of social and economic impacts, and the legal and institutional problems and constraints. Essentially, we will prepare a detailed environmental impact report on the sites. This information will be used to further assist us in planning where the containment facilities could be possible. While the economics of dredging are fairly well documented, the economics of a containment facility are not. Many intangible items, both pro and con, have to be considered. Many believe that a containment facility will cost more than conventional open water disposal. Many of the private interest groups here know that it is very expensive to hire a barge and scow and have it transported to the New Haven dumpsite. We believe there may be instances where it could even cost less to build a containment site than conventional disposal.

Dredged material containment facilities are not unique. There are many constructed dredged material containment facilities (DMCF) throughout the United States and the rest of the world. While no published number is available, we have determined that there are over 200 active DMCF in this country alone. The Corps of Engineers office in Charleston, South Carolina, has built over 70 containment facilities. Many of the facilities are designed to be used in conjunction with what is known as a hydraulic dredge.

Slide 1: Essentially, this operates similar to an underwater vacuum cleaner where the bottom sediment is swept up by a suction nozzle, which may vary in size and type, and discharged through a pipe which either floats on the surface or is placed temporarily on land until its final discharge point.

Slide 2: In the case of containment facilities, the free end of the pipe would be used inside of the confined dike.

Slide 3: Much of the dredging in Long Island Sound has been handled by bucket and skow systems such as that shown. Some dredged material containment facilities have been built to handle this type of disposal method.

Another less common means of clearing our channels where clean generally acceptable quality material is present is from this type of dredge called a sidecaster. A fourth type is called a hopper dredge (slide 4) which essentially operates as a hydraulic dredge that I showed you but rather than pumping it away from the site, the material is stored onboard in storage holds or hoppers. Material is then either dumped at sea by opening bottom doors or transporting it to either a containment facility or an upland disposal site, reversing the pumps and then discharging it into the facility. The next series of slides are from two containment facilities in the Detroit area that I visited last summer, Bolles Harbor and Point Mouillee, which are slightly south of Detroit, on the western side of Lake Erie.

Slide 5: The first is Bolles Harbor which is a combined containment facility and a recreation project. It was built in conjunction

with the Michigan Department of Natural Resources. The dredged material which is disposed in this containment facility all comes from this harbor. It is about 1000 foot long by 400 foot wide. It is designed to hold about 400,000 cubic yards of material and is classified as a shoreline extension. It cost \$980,000 to construct, all paid for the the Corps. The unit cost is about \$2.00 per cubic yard.

Slide 6: This slide shows the shoreline just south of the facility. It is in a reasonably heavily developed area with many homes and cottages nearby. The dredged material from the harbor is very fine grained organic matter with a high oil and grease concentration.

Slide 7: This shows the entrance channel to the harbor which is all recreational boating. The containment facility is in the background. The segment shown is made of steel sheet piling which was placed there to protect several large trees which would have to be cut down if a conventional dike system were used.

Slide 8: This is a view from the top of the containment facility looking outward towards the fishing pier. The area in the background is that shown previously.

Slide 9: This is another view of the entrance to the harbor taken from the fishing pier. The rip rap or stone protection is actually the starting point for the shoreline extension project.

Slide 10: This is a view standing on the nearshore portion of the containment dike looking outward into the containment facility and Lake Erie. You can note the portion of the facility that juts out where the steel piling was placed. The dredged material is clearly visible in this picture and it supports successional vegetation.

Slide 11: This is a view of the harbor itself from the northern side of the containment facility. The dredged material is again clearly visible.

Slide 12: This view is taken from the northern dike looking shoreward. It shows the rip rapping on the right of the dike, placed on a gradual 1 on 2 slope: the top of the dike which is generally 10 to 12 foot wide, sufficient to allow for a vehicle to travel: and the dredged material inside. The dike itself is built out of an impermeable core, usually either clay or prepared crushed limestone. The dike is about 12 feet above the lake level, in about 4 to 10 feet of water.

Slide 13: This is a view from within the facility. It has experienced some drying out or dessication on the surface.

This facility, along with those constructed in the Great Lakes will store the dredged material for a ten year design life. After the facilities are complete, they will be capped with topsoil in some cases, and then given over to the State for use as wildlife habitats or park facilities.

Slide 14 (blank): The next series of slides shows Point Mouille, a very large containment facility, located slightly north of Bolles Harbor. It will be, when completed, an offshore island with a marsh creation project. It will hold a volume of 18.1 million cubic yards of dredged material, excluding material generated during the construction phase and some dredging backlog. The dredged material will come from the Detroit River, and is heavily laden with metals of all types. The land adjacent to the site is primarily

a State owned park and a privately owned duck hunter's association.

Slide 15: This shows the dike construction process in general.

To the left of the dike, which is made almost entirely out of prepared limestone with a rip rap face on the exposed sides, is a portion of the actual containment facility. To the right will be a fresh water marsh creation project. The material which will be used to create the marsh will be clean material generated during the construction dredging activities. The total length of this project is $3\frac{1}{2}$ miles by a maximum of $\frac{1}{2}$ mile. It will cost an estimated \$48 million to build, all Federal monies. This is equivalent to about \$2.60 per yard of material stored.

Slide 16: This shows an elaborate causeway system leading out to the containment island. When I took this picture I was standing on the containment dike looking towards the existing shoreline. The rip rap or heavy boulders that you see along the face of the dikes are essentially at final grade. The height of the limestone dike will be raised an additional 3 or 4 feet before the end of the construction phase. The reduced height allows for a temporary greater top width so that there will be two way travel on the dike which will allow construction equipment to move faster.

The pipes under the causeway allow for flushing action of the newly created marsh.

Slide 17: This is another shot overlooking what eventually will be a marsh creation. The average water depth is about 4 feet. This area will be randomly filled so that there are some islands several feet above the lake level as well. In this shot you can also notice a piece of black filter cloth. The purpose is to

separate the fine grained materials from the rip rap so that the material will not be able to erode or wash away due to the energy waves.

Slide 18: This shows the top of the containment dike and some of the dredged material already placed inside. The tire tracks lead to the causeway road that I previously showed. The material has only recently been placed inside within the last several months from the date of the picture.

Slide 19: This shows the Lake Erie side of the facility. The dikes are at its completed height and the dredged material is also filled to capacity within this "cell." During the last phases of construction this area will be capped with topsoil and turned into a wildlife sanctuary. Point Mouillee is divided up into 3 other cells. This one will become a wildlife areas immediately.

Slide 20: This shows one of several cross dikes within the cell. It acts to help increase what is called the sedimentation rate where your fine grained particles are allowed to settle out inside of the containment facility. Many of the treatment practices and theories of sanitary engineering or wastewater management are directly applicable to containment design. Also shown are the overflow weir structures which allows the clarified, or clear, water to pass back into the aquatic environment. The yellow floats near the cross dike would capture and retain any oils or greases which become freed from the sediment particles. Reiterating this is a very large facility.

Slide 21: These are several barges which are used to help in the construction works and to clean out portions of the entrance channels. The pipe shown in the lower portion of the picture is permanently placed and is where the free end of the hydraulic dredge is anchored. The material will then be "blown" into the containment cell. This portion of the site will be left open until the first two cells are filled up with material. The dike system will then be closed off and this area then filled in with dredged material. Again, the facility is designed for only a ten year usage period.

Slide 22: This is another view of previously placed dredged material which is presently undergoing dewatering and densification. It is a similar shot to that shown previously.

Slide 23: This is an overall view of Point Mouillee which was recently taken. Visible are the various cross dikes and the causeway that has been shown earlier. They are still working on the wetland creation portion of the job. Eventually, the State of Michigan will plant corn and wild rice crops for the wildlife to feed off of.

Slide 24: This view, while not from either of the two sites, is an idea of what the area inside of a containment facility looks like near the discharge pipe from the hydraulic dredge. As you can see there is considerable coarse grained material near the discharge pipe.

Slide 25: And as you get farther away the material becomes finer. The structure here is a wood duck house which was put there by the Boy Scouts and local conservation commissions.

Slide 26: And this is still much finer type material that is

farther away from the discharge. (Also slide 27).

The next series of slides shows some bird islands and wetland creation projects that have been completed by the Corps. I'll run through these rather quickly.

Slide 28: A dredged material island in Florida with large colonies of nesting birds.

Slide 29: A dredged material salt marsh in salt pond San Francisco - species Spartina foliosa.

Slide 30: A group of ruddy turnstones on a dredged material shoreline extension project in Florida.

Slide 31: Brown pelican and herons resting on a dredged material marsh creation in Florida.

Slide 32: A dredged material island housing a large bird colony in North Carolina.

Slide 33: A dredged material island in Florida for nesting wading birds.

The next two slides illustrate a barge/skow rehandling facility for one of the largest containment facilities in existence, Craney Island, Virginia.

Slide 34: This graphic points out the location of the rehandling basin along with an entrance channel to the hopper dredge unloading facility. It is off of the main channel, and the skows are towed in, dumped, and then returned to the worksite. The dredged material is stored inside of a dredged pit in the bottom of the rehandling basin somewhat similar to a subaqueous pit. It is closed on three sides, and a portion of the fourth. A hydraulic dredge empties the basin out whenever it gets filled up to capacity.

This is primarily for non-Corps users, fee schedules are established for usage.

Slide 35: This view just captures a portion of the dike leading out to the rehandling basin. It is the best shot which I have available to me. The size of this facility, is enormous, one mile on each side for a surface area of about 2600 acres. It is presently designed to hold 200,000,000 cubic yards of material. It has been in actual use since 1947.

Remarks on Environmental issues and concerns will be given by Gib Chase.

Much of our guidance in planning for containment structures comes from what is called the Dredged Material Research Program which was recently completed by our Vicksburg, Mississippi, waterways experiment station. They have undertaken considerable environmental monitoring of existing containment facilities, some of which Gib just mentioned. We will be using their data and expertise as much as possible throughout this study. While each small area has unique characteristics we will be able to apply some of this information to the Long Island Sound area.

Our study schedule calls for completion of detailed screening by September 1982. The sites that progress to that stage will have an environmental assessment prepared for it. The sites that then survive the screening, if there are any, will then undergo intensive environmental and engineering analysis. A series of alternatives for containment disposal will then be developed. This will take an estimated $\frac{1}{2}$ to 2 years to complete. Until the study is completed, we will be meeting with local interest groups regularly

to discuss recent events. We will try to publish at least semi-annually a status brochure similar to the one you received earlier. When detailed plans become available we will hold formal public meetings to solicit the public's views. After the detailed screening process we plan on preparing a report which would be distributed to interested individuals as well as groups for them to evaluate. After a reaonable review period, we will hold another series of informal workshops to explain what we have done and to determine if what has been produced so far, has merits for further consideration.

Thank you.

8.3 Sample: "Group Memory"

Page 1.

Safe use of Long Island Sound (LIS)

Safe sediments disposal

Alternatives: open water
 ocean, deep water
 upland
containment

Look at potential sites

shellfish/finfish grounds -- avoid

placement of sites near demand

central Connecticut coastline - greatest demand

1. offshore islands
2. shoreline extension
3. salt marsh

baseline data for potential sites

Economics: cost more attractive as open water disposal
 cost increases

200+ sites in use in U.S.

Page 2.

Bolles Harbor 1,000' X 400'

approx. 400,000 cubic yards

cost of containment alone = approx. \$2.00/c.y.

Great Lakes facilities have approx. a ten year "fill" time

a series of weirs allow controlled dewatering of containment area

Q. Where does the silt come from? Both upstream sources and
 sound, majority of sediment from upstream.

Deep water sites (25+) are cost prohibitive

Oysters & other shellfish vs. site selection

Q. Distances to site? 10-15 miles

Q. Is the oil industry involved? no.

Q Use of existing breakwaters? Recon. report completed by ACE

Page 3.

Q. Are sites federally funded? Unknown at present time

Q. Past disposal sites are eyesores & barren. These sites are
 still in use.

Problems exist to find monies to grade and restore these areas

Q. Who operates? ACE while in use

Q. Cost for private user? Not determined for LIS

Public comment is welcomed by Corps.

Use of island for airport

New Haven improvement proposal

Odor

Monitoring of open water sites on-going

Productive use of materials

Page 4.

Spartina accumulates toxic material without apparent harm to grass
 Metal uptake by Spartina
 generally metals are not
 However S. alterniflora has been found to take up mercury
 Also possibility of cadmium uptake in eel grass
 Odor - site selection
 abatement - site preparation
 time of year
 placement of discharge pipe
 chemical treatment
 Odor appears to be a minor concern
 sediment is not "sludge" as defined
 metals found in sediment are in association with fine grain sediment

Page 5.

Who gets the finished product?

1. state
2. town
3. private

Is the finished product a liability to the party accepting the containment site?

What is life expectancy?

The "best" structurely possible

Shore - 50' contour = oyster habitat

Western LIST Clinton - NYS

Dewatered product at times better than ambient water quality

Trade-offs will be necessary

recall oyster grounds lease

Toxics continue to find their way into sediments

A "Group Memory" was recorded for each workshop by Long Island Sound Taskforce Executive Director Whitney C. Tilt. Standing in front of the meeting room, Mr. Tilt noted key points in the presentation, questions, and major areas of discussion on a large pad of paper which was turned toward the audience. Participants were encouraged to call for corrections if they felt the written record inaccurately reflected any dimension of the session. Since these corrections could be, and in some cases were made, the written "Group Memory" can be taken as an accurate representation of each meeting. Page numbers in this section refer to the pages of the "Group Memory."

8.4 Closing remarks, Whitney C. Tilt

Thank you for coming

Purpose of LIST & these public workshops

In New Haven - OYSTERS vs CONTAINMENT

Open water disposal also affects finfish and shellfish

Clinton -- New York

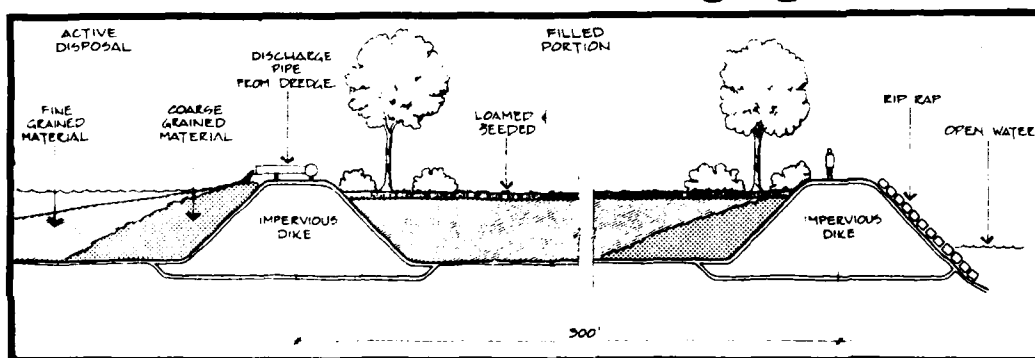
Question of trade-offs

Connecticut being able to keep their own problem

local solution to local problem

every inch of Long Island Sound means something to someone

Containment: A Sound Dredging Solution?



CONCEPTUAL VIEW OF CONTAINMENT FACILITY CREATING ARTIFICIAL ISLAND

A SERIES OF FOUR PUBLIC WORKSHOPS
 COORDINATED BY
 THE LONG ISLAND SOUND TASKFORCE
 FOR THE
 U.S. ARMY CORPS OF ENGINEERS,
 NEW ENGLAND DIVISION

CONTAINMENT WORKSHOPS

NEW LONDON, CT

New London Hall, Room 113
Connecticut College

NEW HAVEN, CT

135 Prospect Street
Room A-74
School of Organization and Management
Yale University

STAMFORD, CT

Westhill High School
(little theater)
West Hill Road

GREAT NECK, NY

Room B-202
Bowditch Hall
U.S. Maritime Academy

Tonight's workshop is sponsored by the U.S. Army Corps of Engineers, New England Division, and coordinated by the Long Island Sound Taskforce (LIST). A non-profit membership conservation organization, LIST sponsors a wide range of marine environmental programs.

PROGRAM

A. INTRODUCTION

A review of the need for dredging in the Long Island Sound region and of the role containment may play in protecting marine environmental quality by Thomas C. Jackson, LIST Project Director and moderator of tonight's program.

B. CONTAINMENT STUDIED AND DEFINED

A slide presentation and talk examining current studies of containment in the Long Island Sound region as well as examples of containment projects in other areas of the country by Richard Quinn, Long Island Sound Containment Study Manager, U.S. Army Corps of Engineers, New England Division.

C. COMMON CONTAINMENT CONCERNS

A discussion of key containment concerns presented by Gib Chase, a U.S. Army Corps of Engineers Marine Biologist with the New England Division.

D. SUMMATION

A review of the current status of containment for dredged materials in the Long Island Sound region by Mr. Quinn.

QUESTIONS WILL BE WELCOME THROUGHOUT THE EVENING.

Whitney C. Tilt, Executive Director of the Long Island Sound Taskforce, will serve as recorder for tonight's workshop.

FOR FURTHER READING

Garbisch, E. W. "Recent and Planned Marsh Establishment Work Throughout the Contiguous United States A Survey and Basic Guidelines." Contract Report D-77-3, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Mississippi (1977).

Huffman, R. T., et al, "Wetland Habitat Development with Dredged Material: Engineering and Plant Propagation," Technical Report D-78-16, U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Mississippi (1978).

FOR FURTHER INFORMATION

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(617) 894-2400

WHITNEY C. TILT
EXECUTIVE DIRECTOR
THE LONG ISLAND SOUND TASKFORCE
STAMFORD MARINE CENTER
MAGEE AVENUE
STAMFORD, CT 06902
(203) 327-9786

9.0 Conclusion

Response to the workshop program demonstrates a clear public interest in the containment option and in participating in the process of evaluating this alternative as part of a solution for the Long Island Sound regional dredging problem. Based on available information, many participants in the project voiced support for the concept of containment.

Continued public participation efforts by the Corps are needed to address unresolved issues and keep individuals informed of progress toward the goal of an environmentally acceptable disposal strategy for objectionable materials dredged from the Sound's urban harbors. In part, this work could be carried through with a series of workshops focused on overall disposal strategy and keyed to the Draft Soundwide Environmental Impact Statement currently being considered in this region.

Essential unresolved issues include those associated with toxicity and marine environmental impact; site criteria and potential sites; and cost. A scientific advisory panel might be formed to address ecological concerns and provide information for sound management of living marine resources. An advisory panel might be formed to work with the scientific group and address questions of storm damage, odor, maintenance and site criteria.

Clearly, demonstration projects are needed to quantify many of the open ended variables now associated with cost estimates and ecological impact of containment facilities. Ideally, a demonstration project would be located in both the eastern and western sections of the Sound.

10.0 Appendix

10.1 Workshop Attendees

New London, CT
May 18, 1981

James S. Butler, Chairman
New London Conservation Comm.

L. J. Chmura
Groton, CT

Dr. Peter Pellegrino
Southern CT S.C.

George C. Mathiesson
Old Saybrook, CT

Paul Biscati
Storrs, CT

David Cook
Lyme, CT

John Spicer
City of Groton Waterfront Comm.

Aubrey J. Hamilton
Harbor Master, Groton

Edith Fairgrieve
CT Transportation Coalition

Persis M. Hourigzon
Preston City, CT

Charles Collins
New Rochelle, NY

W. L. Mansfield
Public Works Dept.
New London, CT

Robert G. Buttinger
General Dynamics
Groton, CT

Thomas Alford
Shore Facilities Planning Office
Public Works Department
Groton, CT

Joseph J. Lewis
Noank, CT

Ralph S. Lewis
Waterford, CT

William H. Malloy
Quaker Hill, CT

Mickey Weiss
Project Oceanology
Groton, CT

William Terry
Quaker Hill, CT

Anthony Uzzo
New Haven, CT

Peter Auster
UCONN - Marine Research Lab
Noank, CT

William C. Spicer
Groton, CT

Denis Cunningham
CT DEP - Water Resources Unit

Leon B. Tunnecki
Norwich, CT - Harbor Master

Marilyn Walker
Old Lyme, CT

Russell Johnston
Glastonbury, CT

Ward G. Hadley
Clinton, CT - Harbor Commission

R. C. Coen
General Dynamics - Electric Boat
Gales Ferry, CT

W. A. Niering
CT College
New London, CT

Scott Warren
Botany Dept. - CT College
New London, CT

New London - May 18, 1981 - Page two

Christine M. Suarez-Mureas
CT DEP - Coastal Management

Charles Mannix
Clinton Harbor Study Group

Bernard Howard
Clinton, CT - Harbor Comm.

Glenn Dreyer
Old Lyme, CT

Linda Krause
Ledyard, CT - Director of Planning

Dave Rossiter
CT DOT
New London, CT

Mary B. Walton
S.O.S. Comm. Inc.
Jewett City, CT

William C. Spicer
Groton Conservation Comm.

Gerald Holmberg
Quaker Hill, CT

Mrs. Nicola Magro
New London, CT

Caroline A. Karp
Science Applications, Inc.
Newport, R.I.

Lynn Johnson
CEM - Hartford, CT

Lawrence H. Bentley, P.E.
DiCesare - Bentley - Engineers
Groton, CT

Mrs. Irina F. Levonius
Canterbury, CT

Eric Smith
DEP - Marine Fisheries
Waterford, CT

Susan Merrow
Sierra Club
Colchester, CT

Gene Lohrs
Waterford, CT

Lance Stewart
UCONN - Marine Service Inst.
No. Stonington, CT

Daniel Vece, Jr.
First Selectman
Clinton, CT

Workshop Attendance

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New Haven
May 19, 1981

Frank Maitland
New Haven Terminal

Larry R. Johnston
Ralph M. Field Associates, Inc.

Joseph M. Sorge
Bridgeport, CT

William F. Robart
ARCO Terminal Superintendent

Caswell Cooke
Geotactics, Inc.

Thomas P. Murphy
Madison, CT

Gilbert Zawadski
Harbor Master - Bridgeport

Ens. Carl H. Lautenberger
New Haven, CT

Bob Leary
Coastal Management - DEP

Catherine Jackson
Branford, CT

Francis E. Fagan
Director of Parks & Recreation
City of Bridgeport

Peter Neill, Director
Schooner, Inc.

Trevor O'Neill
New Haven, CT

David K. Bartlett
Clinton, CT

William Jacobs
Hamden, CT

Ted Schaffer
New Haven, CT

David Heckamn for
Congressman Toby Moffett
New Britain, CT

Arthur M. Cincilio
New Haven, CT

J. W. Vervaat
Preserve the Wetlands, Inc.
Rowayton, CT

Fred Banach
DEP, Water Compliances Unit

Jeffrey Shapiro
Cedar Island Marine
Clinton, CT

Benjamin Brownstein
New Haven, CT

Albert K. Hotchkiss
Marine Contractor - Milford, CT

Tina McKay
New Haven, CT

M. S. Stemborski
Blakeslee Arpaja Chapman

Arthur W. Lenzi
New Haven Civil Defense

Kenneth E. Neff
Chairman - Milford Harbor

G. M. Northrop
CEM, Inc.

Charles L. Johnson, Mgr.
Long Island Oyster Farms

Mark Dumont
New Haven, CT

Michael Ludwig
National Marine Fisheries

David E. Olsen
Stratford Marina

New Haven - May 20, 1981 - Page two

Gene J. Festa
New Haven Coastal Planning

Jim Gardella
Norwalk, CT

Catherine Shea
Milford, CT

John Herrin
Madison, CT

Linda Reed
Coastal Planner
Planning & Zoning - Norwalk

Lauren Brown
Office of Downtown and
Harbor Development
New Haven, CT

Elsa Jennings
National Audubon Society

G. Curtis Whelan
Clinton, CT

William Hubbard
New Haven, CT

John A. Heeran
North Haven, CT

Robert J. Hughes
Director Marine Patrol
Madison, CT

Workshop Attendance

Stamford
May 20, 1981

Karen Hayward DEP Water Compliance	Bob Georgalas Westport, CT
Clara McKeever Old Greenwich, CT	Herb Funke Cos Cob, CT
John Wyslier Greens Farms, CT	Dick Carpenter South Western RPA
Bernard Cohen City of Stamford	Frank Romano United Illuminating Co.
Edward A. Connell Stamford, CT	Elinor Fredston Larchmont, NY
W. B. Hopkins Norwalk Abatement Committee	Dennis Snow Yacht Haven - Stamford
A. H. Beede Stamford, CT	William L. McCann Town Hall - Stratford, CT
John Gotch, Jr. Greenwich, CT	Rita Levine for Congressman Lawrence DeNardis New Haven, CT
David C. Bolster Rowayton, CT	Joseph Zeranski Greenwich, CT
Bob Poind Aqua Dredge, Inc. Armonk, NY	Drew Friedman Westport, CT
Larry M. Bolster Congressman Stuart McKinney Bridgeport, CT	Richard W. Redniss Stamford, CT
Jim DeStefano Greenwich, CT	Dan Natchez Mamaroneck, NY
Calvin E. Weber Westchester County Department of Health	Daniel E. Offutt Weston, CT
	Mr & Mrs James C. Baldwin Redding, CT

Charles C. Sterle
Pilots Point Marine

Reynolds Girdler (Mrs)
Riverside, CT

Peter H. Vanderwaart
Stamford, CT

J. Gale
Stamford, CT

Joseph H. Schachter
Westport, CT

Hiram Peck, III
Woodbury, CT

A. A. Constantine
Maritime Consultant
Governor's Vacation/Travel Council
Chairman - Marine Activities Commission

Christine M. Suarez-Murias
CT DEP - Coastal Management

Workshop Attendance

Great Neck, NY
May 21, 1981

James Barron
The New York Times

David Sedlak
Oyster Bay Environmental Council

Robin Gordon
Great Neck, NY

William J. Kolodnicki
Huntington Audubon Society
Oyster Bay, NY

Patrick E. Callahan
Port Authority of NY/NJ

Basil Tangredi
Lyman Langdon Audubon Society
Northport, NY

D. Cotten
Sierra Club
Bayville, LI

Alfred H. Brand
Mueser Rutledge Johnston of DeSimone
New York, NY

Raymond C. Ingersoll, P.E.
Northport, NY

Julia Samu
Great Lakes Dredging
Jamaica, NY

Anthony W. Delgado
Great Lakes Dredge & Dock Co.
Staten Island, NY

Kevin Rush for
State Senator Norman J. Levy
Albany, NY 12247

James Morton
NYS Dept. of State
Albany, NY

Linda O'Leary
NYC Ports and Terminals
NYC, NY

Marc Katz for
Congressman John LeBoutillier
Manhasset, NY 11030

Brian McMenamin
Manhasset, NY

Professor Julian Kane
Great Neck, NY

Sarah Meyland
Comm. on Water Resource Needs
Great Neck, NY

Jeremy Barth
Environmental Control Specialist
Syosset, NY

Wilbur J. Smith
Huntington, NY

Daniel J. Larkin
NYS DEC
Stony Brook, NY

Donald L. Scanlon
Nassau County Dept. of Health
Mineola, NY

David Schindler
Great Neck, NY

Andrew R. Yerman
NYS DEC, SUNY
Stony Brook, NY

Devin Quinn
Town Hall - North Hempstead
Manhasset, NY

George W. Rocklein, P.E.
N. Hempstead Dept. of Public Wks.
Manhasset, NY

George H. Wilde
Seaford, LI

Great Neck, NY - May 21, 1981 - Page two

Jack Catanzaro - NYS DOT
Dix Hills, NY

John H. Finkenberg
Babylon, NY

Jeffrey Stroat
Oyster Bay Env. Council

Dr. Thomas F. McKinney
Dames & Moore
Cranford, NJ

Muriel Kane
Great Neck, NY

Robert Nuzzi
Central Islip, NY

A. Christopher Gross
Env. Engineering Dept. - LILCO
Hicksville, NY

Janet Dieterick
Dept. of Environmental Control
Huntington, NY

Basil P. Tangredi, D.V.M.

Greenlawn Veterinary Clinic 51 Broadway, Greenlawn, New York 11740 • 757-8700

14 July 1981

C.E. Edgar III, Col.
Dept of Army
New England Division Corps of
Engineers
424 Trapelo Rd
Waltham, Mass 02254

Dear Col. Edgar,

Some six weeks ago I received at my home address (153 Old Winkle Point Dr, Northport, N.Y. 11768) the Programmatic Environmental Impact Statement relating to the subject of dredge spoil disposal in Long Island Sound. While I am generally philosophically opposed to open water dumping, I realize that dredging must take place on both shores of Long Island Sound and that disposal is thus inevitable. The identification of several sites for such disposal in the PEIS would be acceptable for the cleaner materials (Classes I and II). For dredge materials containing significant toxic substances I would endorse the containment facilities outlined in the workshop given last spring in conjunction with the L.I. Sound Taskforce. I realize this latter method entails considerable expense, and the dikes would require ongoing maintenance. However, I believe that any alternative that would expose the marine environment to contamination with these substances would entail greater expense to the economy and public health.

Sincerely,

B. Tangredi DVM

B. Tangredi
Board of Directors of
Lyman Langdon Audubon Soc.

10.2 Written Communication from State Officials,
Local Leaders and Concerned Citizens

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RALPH M. FIELD ASSOCIATES, Inc.

68 Church Lane, Westport, Connecticut 06880

(203) 226-3785/227-7979

May 15, 1981

Mr. Thomas C. Jackson
Board Member
The Long Island Sound Task Force
of The Oceanic Society
Stamford Marine Center
Magee Avenue
Stamford, CT 06902

Dear Mr. Jackson:

Many thanks for your invitation to the workshop on Dredged Material
Containment. I will be unable to attend the workshop in Stamford, but
am planning to be at the one in New Haven on May 19.

Sincerely,

Larry R. Johnston

Larry R. Johnston

LRJ/rm

10.2 Written Communication from State Officials,
Local Leaders and Concerned Citizens

135

DANAHER, LEWIS & TAMONEY

ATTORNEYS AT LAW

39 RUSS STREET

HARTFORD, CONNECTICUT 06106

TELEPHONE 278-2300
AREA CODE 203

ROBERT C. DANAHER
ARTHUR M. LEWIS
THOMAS H. TAMONEY
MICHAEL D. O'CONNELL
R. CORNELIUS DANAHER, JR.
GARY G. ATTMORE
FREDERICK B. TEDFORD
JAMES T. FLAHERTY
GREGORY A. SHARP
SHEREEN F. EDELSON
JOYCE A. LAGNESE

May 15, 1981

Mr. Thomas C. Jackson
The Long Island Sound Task Force
of The Oceanic Society
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

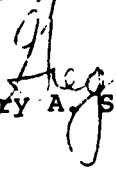
Dear Tom:

Thank you for your kind invitation to the May 19th workshop on dredge spoil containment at Yale. Unfortunately I have already committed myself to a meeting in Hartford that same night so I will be unable to attend.

Very truly yours,

DANAHER, LEWIS & TAMONEY

By:


Gregory A. Sharp

GAS:mak

10.2 Written Communication from State Officials,
Local Leaders and Concerned Citizens

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REGIONAL PLANNING AGENCY OF SOUTH CENTRAL CONNECTICUT

96 GROVE STREET NEW HAVEN CONNECTICUT 06510 TELEPHONE 777-4795

May 28, 1981

Mr. Tom Jackson
Oceanic Society
Stamford Marine Center
Magee Avenue
Stamford, Connecticut 06902

Dear Tom:

Due to a heavy work load on the Quinnipiac River Corridor Recreation and Preservation Program project I was unable to attend the Dredge Spoils Workshop. I am writing to request a copy of the proceedings when they become available, as the issue is of concern to several of the region's coastal municipalities.

Thanks.

Sincerely,



Erin O'Hare
Environmental Planner
EO/gp

CITY OF STAMFORD, CONNECTICUT

ROBERT B. COOK, Superintendent
PARKS & NATURAL RESOURCES



July 25, 1981

Mr. Christopher Roosevelt, President
The Oceanic Society
Magee Avenue
Stamford, Connecticut 06902

Dear Mr. Roosevelt:

I am belatedly following up our conversation of last month on the Long Island Taskforce Study of an alternative dredging strategy.

The Parks Department alone, has a great need for a practical solution to this problem just in terms of the municipal marinas, which are silting up. Since upland disposal is not feasible in this area, ocean disposal is the only real means of preventing the loss of one of the City's more valuable assets.

In particular, I want to give my support to the "Off-Shore Containment Area", or "Island" concept. I feel that this approach would be much more preferable than looking to the shoreline containment solution, especially along Kosciuszko Park. This, if for no other reason than the latter method would have greater impact on abutting land uses, existing and future, and that any one project could be jeopardized by local constraints.

I would appreciate any background material on the subject that you have available, as well as supporting and participating in any continuing efforts on this subject.

Very truly yours,

Robert B. Cook,
Superintendent
Parks & Natural Resources

RBC:jMc



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



May 15, 1981

Mr. Thomas C. Jackson
Long Island Sound Taskforce
Stamford Marine Center
Magee Avenue
Stamford, CT 06902

Re: Containment Workshops

Dear Tom:

This is in response to yours of May 8th. The workshops have generated considerable interest within various Units of the Department and will be attended by staff from my office, the Coastal Management office, and the Water Compliance Unit. I expect to attend all three Connecticut sessions. However, I will be unable to attend the New York State session due to time restrictions on seeking out-of-state travel authorization (need three week advance notice on meeting).

I discussed the workshops with New York DEC staff this week and believe they will be attending both the Stamford and Great Neck meetings. If you have not already done so, you might call George Danskin, Region 3 Regional Supervisor (New Paltz) to discuss the meetings. His phone is 914-255-5453.

Sincerely,

A handwritten signature in cursive script, appearing to read "Denis Cunningham".

Denis Cunningham
Assistant Director
Water Resources Unit

DC/dr

Phone:

State Office Building, Hartford, Connecticut 06115

An Equal Opportunity Employer

10.3 Principal Project Staff

A. Christopher Roosevelt, President of the Oceanic Society and member of the LIST Board of Directors. Mr. Roosevelt will serve as a consulting advisor to the project, drawing on his extensive knowledge of Long Island Sound dredging issues, the public education process, and legal expertise. A former U.S. Attorney for the Southern District of New York, Mr. Roosevelt has served on advisory panels examining dredging and spoil disposal in the Sound and has moderated several sessions focused on this topic.

B. Whitney C. Tilt, LIST Executive Director. Mr. Tilt will serve as project supervisor, bringing his knowledge of marine ecosystems and public education to the project. A former federal naturalist and research scientist, Mr. Tilt has studied the dredging issues in the Long Island Sound region during the past year.

C. Thomas C. Jackson, Member, LIST Board of Directors and Vice President of the Oceanic Society. An award-winning environmental writer, Mr. Jackson brings a combination of public information and coordinating skills to the project. Mr. Jackson has coordinated a series of public policy forums for the Oceanic Society and other conservation groups. He has followed dredge spoil disposal in the Sound for a decade and written extensively on the subject.

10.4 LIST Background

Formed in 1972, the Long Island Sound Taskforce plays a vital role in marine educational programs designed to foster improved public understanding of the entire Long Island Sound ecosystem. Working through the Soundwide Environmental Caucus, LIST coordinates a variety of programs designed to increase understanding of the Sound as a single, unified natural system. This holistic approach to the Sound encompasses citizens, conservationists, fishermen, yachtsmen, and scientists as well as interests which utilize these waters for commercial purposes.

LIST's educational programs range from seminars on recreational use of the Sound to celestial navigation courses and special projects -- such as our annual Sea Camp -- for children. LIST sponsors a variety of conferences and symposia type presentations each year. As part of the Soundwide Environmental Caucus effort, LIST presents an annual:

* Environmental Leaders Workshop, each winter to allow local conservationists, municipal and state officials and concerned citizens a chance to discuss critically important Soundwide issues. Representatives from regional and federal agencies, including the Army Corps of Engineers, the New England River Basin Commission and U.S. Environmental Protection Agency, have regularly participated in these sessions.

* State of the Sound Conference, each spring draws scientists, managers and regulators into the process with concerned citizens and local conservationists. Once again, government representatives play a vital role in assessing the condition of the Sound's estuarine environment. Scheduled for May 2, 1981, this year's session will include promotion of the proposed containment workshops.

* Soundfest, a public festival each summer which draws a wide range of people to a weekend educational celebration of the Sound in Bridgeport, CT. This year's festival is scheduled for mid-August at the city's Pleasure Beach complex.

LIST also coordinates a continuing communications network among citizen leaders concerned with Soundwide issues. This network is sustained by LIST's monthly newsletter, The Taffrail, a publication which will include advance information on proposed workshops to a nucleus of citizen leaders around the Sound (copy attached).

The Soundwide Caucus activities place LIST in a unique position to perform the duties entailed in this proposal. The appended background information includes recent issues of The Taffrail as well as some of LIST's printed material. Additional information on the Soundwide Caucus effort and LIST's Stamford Marine Center education programs is available from our Executive Director, Whitney C. Tilt.

END

DATE
FILMED

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