

**Long Island Sound Dredged Material Disposal Environmental Impact Statement (EIS)  
Working Group Meeting  
Bridgeport, Connecticut  
July 24, 2002**

On July 24, 2002, from 10:00 a.m. to 3:00 p.m. a Working Group Meeting on the Long Island Sound (LIS) Dredged Material Disposal Environmental Impact Statement (EIS) was held at the Bridgeport Regional Vocational Aquaculture School in Bridgeport, Connecticut. Participants included members of the U.S. Army Corp of Engineers (USACE), U.S. Environmental Protection Agency (EPA), Battelle, Coastal Vision, and members of the working group. Attachment 1 includes a list of meeting attendees.

**Introduction**

Ann Rodney, EPA Region 1 began the meeting by giving a brief overview of past Working Group meetings and reviewed the meeting agenda. The meeting was set up as an open discussion focused on two presentations *GIS Screening for Alternative Sites* and *Alternative Site Field Sampling Program*.

**Project Status**

Mark Habel reviewed the activities that have occurred on the project since the last Working Group meeting in Port Jefferson. He stated that, in response to the efforts of the community, funds have been made available (\$600K Federal), which will allow fieldwork to be conducted at alternative sites and work to move forward on the EIS. In addition, he stated that the funding available in the next fiscal year looks positive. The Draft EIS is expected to be published and sent out to the public for review in the late spring to June 2003 timeframe, with the Final EIS being published around December 2003. Mr. Habel acknowledged that there is a lot of work to be done in the next 12-16 months, but reported that the money problem has been solved for now.

Question (Q)- Are adequate funds available because the EIS was split into two sections (Western and Central LIS and Eastern LIS)?

Answer (A)- The funding of the first phase is adequate because of the additional funds received. At this time, funding for the second phase is unknown because the work will take place in later fiscal years and the budget has not been presented for this portion of the work.

After Mr. Habel's opening remarks, Ms. Jean Brochi, EPA Region 1 informed the meeting participants that the information submitted to EPA on the May 2000 Ballots had been reviewed and incorporated into the present and future actions and discussions on the EIS project.

**GIS Screening for Alternative Sites Presentation**

Dr. Carlton Hunt of Battelle gave a brief overview of his background in dredging issues then gave a presentation on the revised Zone of Siting Feasibility (ZSF) and the procedures followed to screen for alternative dredged material disposal sites. Attachment 2 is the slide presentation given by Dr. Hunt (with the exception of the GIS layers shown). Dr. Drew Carey of Coastal Vision assisted Dr. Hunt with the revised ZSF presentation noting that it had been based on disposal needs in the central and western portions of LIS and the geographic conditions.

Included in the *GIS Screening for Alternative Sites* presentation was an explanation by Dr. Hunt of the Tier 1 level screening based on the Marine Protection, Research, and Sanctuaries Act (MPRSA) criteria (see Attachment 3) including an explanation of why areas were ruled out. During this explanation he showed several GIS layers and the results of the Tier 1 screening. A large portion of the area ruled out was based on the site needing to be located in water with

depths greater than a mean low water (MLW) depth of 18 meters. This depth was selected because studies have shown that dredged material deposited in areas with a MLW less than 18 meters are likely to be dispersed by current. Dr. Hunt then went on to discuss the Tier 2 factors noting that some data (e.g., archaeological factors) still need to be reviewed but other data (e.g. Connecticut Department of Environmental Protection (CTDEP) Trawl data) were adequate to determine site locations.

Several questions were asked by participants. These questions asked and the associated answers are provided below.

*Q- What did the trawls collect for information?*

A- The CTDEP Trawls were bottom trawls collecting bottom fish.

*Q-Why is there no New York (NY) data?*

A- Dr. Carey explained that most of the data came from studies conducted by CTDEP. At the time the GIS layer was developed, the CTDEP GIS data was easier to obtain. Work is still being conducted to collect the NY data.

*Q- Will the absence of data drive the selection of sites? (Sites will not be removed from consideration because of the lack of data?)*

A- Dr. Carey stated that the CTDEP data can be used to extrapolate information on similar habitat in other areas of LIS.

*Q- Are they similar?*

A- Dr. Carey states that although not all of the NY shoreline is similar to the CT shore, they are not that dissimilar.

*Q- Is Hubbard's 1983 Benthic Community data relevant?*

A- Dr. Carey stated that detailed site-specific data have been collected. Hubbard's data are unusual because of the broad sampling. Studies conducted since 1983 have collected data in smaller areas, but the results have been similar to those found in 1983. In addition, none of the sites have received dredged material since 1983.

*Q- Are there no resources in the deep areas of LIS?*

A- Resources in LIS are mainly along the shoreline (e.g., clams, quahogs, mussels, etc).

*Q- Will an explanation of the metadata used in the screening be provided for the working group meeting? For example, the screening data represents data compiled by many entities including USGS and it has been weighed all together. Will an explanation of what data was used in the screening be given? Would like to comprehend how the information was used and where it came from. Are we picking/choosing data layers?*

A- The screening used information that was related to the MPRSA criteria, some selection was involved based on its availability in GIS format, but it was not arbitrary. If data gaps are found, efforts will be made to fill these using previous studies or new data collections.

*Q- Is the data forthcoming, or are you making assumptions on data that we don't have?*

A- Dr. Carey stated the report needs to reflect process in its decision-making. The data may not be discriminatory, but some may be. He indicated that much of the data is uniform spatially and won't help in decision-making. Other data will show critical resources that will help make decisions.

*Q- Mr. Dan Natchez asked what was along the western edge of the ZSF?*

A- Dr. Hunt stated that the area was not considered due to its shallowness.

*Q- Mr. Natchez replied that he thinks there are good spots off of New Rochelle that are smaller. Have they been considered?*

A- Based on the information about the amount of material that will need to be dumped in the future, the alternative sites considered had a total area of 2 square nautical miles along with a proper substrate. Distinct large areas are easier to manage from a long-term monitoring situation and western areas don't allow for a site this size.

R - Mr. Natchez would prefer to see a number of smaller sites than two large sites.

A- Mr. Mark Habel stated that the logic for choosing a larger site over several smaller sites would be addressed in the EIS.

*Q- On the shellfish classification data layer, WLIS site is not shown as restricted. Is shellfishing allowed at the site?*

A- This data layer was created by CTDEP, thus we assume it is restricted based on our conversations with them, but was overlooked in the layer. In either case, historic disposal sites would be reviewed per the regulations. Alternatives need to be considered, existing, Milford, and Bridgeport.

*Q- What do we do now? What about the presence of threatened or endangered species?*

A- NMFS is not aware of the location of marine mammals that would be a discriminatory factor in the screening. NMFS was present when the initial screening was conducted. Once a site is selected, the data will be reviewed based on the site and the information will be addressed in the EIS.

*Q- What are dispersion considerations? Mounds? Need to assess long-term stability of mounds?*

A- Mr. Dave Tomey explained the management strategy which is to keep mound heights low. He stated they are more concerned about the stability. They have DAMOS data to use as an assessment.

*Q- Curious as to why agencies excluded pipeline areas. Is there a bias towards utilities? The regulations say we have to consider proposed, it looks like we are staking out acceptable sites.*

A- Dr. Carey replied that proposed cables have to be taken into consideration in disposal areas. In addition, MPRSA criteria indicate such areas should be avoided (40 CFR 228.6(a)8)

*Q- Why were the Bridgeport/Milford sites previously closed?*

A- Mr. Tomey stated that before 1980 a CT/NY study determined that a couple of larger disposal sites would be easier to manage and had less effects to LIS than a number of smaller disposal sites being used. Thus, the other sites were closed when the larger sites were opened.

*Q- Some of the shellfish areas presently listed as closed could be reopened, and Bridgeport is next to an open shellfish area. What effect would opening these sites have on closing areas near these sites.*

A- Dr. Carey clarified that these are useful guidelines, recognizing that we need to go a step further, in the evaluation of these areas. Adjacent impacts could occur, but this would be taken into consideration in the EIS. In addition, Dr. Hunt indicated that data gaps were noted during the screening and that additional data, including dredged material disposal volumes, site chemistry, sediment toxicology, and lobsters, would need to be collected.

*Q- Are Bridgeport/ Milford still on the table?*

A- Yes. Dr. Carey clarified that a predetermined number of sites was not considered. The screening determined that no action plus these sites will be considered.

*Q- Noted all the considered sites are located in CT.*

A- The present sites being considered were based on needs and haul distances, not necessarily on a lack of data

*Q- MPRSA criteria- what about criteria for CEQ? Stated we have to follow CEQ.*

A- Dr. Hunt explained the NEPA process.

*Q- Mr. Robert Frommer mentioned that the last Working Group Meeting presented volumes of dredged material estimated for disposal in future years. He asked if we are going to show in a GIS layer the growth boundaries and future disposal to see how it would affect resources?*

A- Mr. Tomey stated agencies will determine the volume need. A determination will be made of whether a site fills the capacity needs, or, if the site needs to be enlarged. Future use may determine the size and number of sites.

*Q- Will we map out projected mound growth?*

A- Dr. Hunt answered that he hasn't seen it done that way. It is a management issue.

*Q- Mr. Frommer asked of the need to project impacts on known history of fate/transport. What will growth in the boundary look like to determine impacts? He would like to see a graphic of the site over 20 years with volumes and spatial growth in sound*

A- Mr. Tomey stated we will describe site boundaries and management of the site, and dredged material volumes to see how we'll manage the site, or if the site will be constrained in what it will accept.

*Q- Will borrow areas be effected?*

A- These areas were screened out as most are located in shallow areas. This does not preclude them as a disposal option under 404 regulations, but designation would have to follow Clean Water Act regulations.

*Q- LIS Reserve System is presently under discussion. Do we have a GIS layer for it? Do we need to include one? The EPA LIS Sound office would have the information*

A- Mr. Joe Salata stated the U.S. Fish and Wildlife Service is looking at areas, but not underwater areas.

*Q- Will the present eastern dredged material disposal sites remain open?*

A- Although the New London Disposal Site will be considered as an alternative for site designation in the Supplemental EIS, at the present time the site has not been selected for the second five years of use under the guidelines of the Ocean Disposal Act (ODA) criteria (dredging sponsored by a Federal Agency or over 25,000 cubic yards of material disposed by a commercial or state agency). If the New London Disposal Site is selected for a project under the ODA criteria then the site would need to be designated by EPA as a ocean disposal site within 5-years of this use or closed.

*Q- What about land use activities and impacts on waters?*

A- This is an EIS for open ocean site designation rather than a programmatic EIS. Each individual program or project would need to look at these issues.

*Q- Site Monitoring Management Plans (SMMP) - will they be prepared in tandem with the EIS?*

A- The Final EIS will identify a preferred alternative(s). At that time a draft SMMP will be prepared for public comment.

### **Alternative Site Field Sampling Program Presentation**

During the initial site screening, it was determined that there was inadequate information on the alternative sites (Bridgeport and Milford). At the meeting, Dr. Hunt presented information (see Attachment 4) on a proposed field sampling program to collect information for areas where data gaps were noted. The field sampling program was developed to collect sediments for various analyses (e.g., sediment chemistry, benthos, grain size) from the Bridgeport and Milford sites and lobster resource data for the central and western portions of the Sound.

*Q How far out will reference stations be?*

A- The reference stations are within approximately 1 nautical mile of each site.

*Q- How far can the camera penetrate?*

A- Basically the top few centimeters (up to 20 cm depending on the sediment type) where organisms burrow into the sediment. The data collected will be comparable/consistent with other work performed at other dredged material disposal sites in Long Island Sound.

*Q- Will Total Organic Carbon be analyzed and used to compare the data?*

A- Yes. In the interpretive phase.

*Q- Why are the reference stations to the east of sites? How does the sand move there? Why there?*

A- The reference sites were located such that similar depths and substrate were present, but where dredged material was not present. The goal is to find areas that are undisturbed but similar to make a comparison against the disposal sites.

*Q- Will it be hard to get lobster information?*

A- Interviews will help. Mr. Mike Ludwig from NMFS further explained why interviews will be done and the difficulty in trawling for lobsters in the western Sound.

Jeff Stedman from Connecticut Harbor Management Association then spoke on his interest in ensuring that the EIS was written. His group began a study of the federal dredging process in Connecticut. It's a lengthy process to get a Dredged Material Disposal Permit. He stated that there are a number of Connecticut harbors that need to be dredged, and their continued use is dependent on the availability of LIS disposal sites. The report from their study is almost ready. They have determined that there are no Connecticut agencies that play an active role in helping to get these permits processed, which leaves towns on their own. His group is actively advocating funding for additional work. They are developing draft recommendations that the state be more involved. He stated they feel that a cabinet-level person needs to be involved. Because of funding problems, the Connecticut Harbor Management Association went to Congress to ask for more funding for the project. They understand there is no need for new money in the new fiscal year, but they will be advocating for additional funding in the future.

### **Next steps**

Mr. Mark Habel stated we need comments on the information presented by July 31 as to whether the approach is reasonable and prudent. He also noted that tissue data reports will be available in the next few weeks as they are on their last set of reviews. By fall, we should have the benthic community data on the alternative sites (no tissue) and lobster and fish data around LIS.

*Q: How can we do this? How can we comment without the reports? Not all the information is there.*

A- Comments should be based on the presentations.

*Q- Is there any process to look at harbor sediments?*

A- Not here, but as projects come up, sediments are analyzed for proper disposal options. We are not looking at Sound-wide characterization. The Corps has enough historical information to characterize for purposes of the EIS the expected volume and quality of sediments needing to be disposed.

*Q- \$5.5M to complete the EIS. Do we have a timeline and dollar line that is needed?*

A- We have created a dollar/time line but do not have it here. At this time funding is available for the next steps in the EIS process, but more funding will be needed. We cannot comment on what future budgets will bring but more money will be needed in future years.

*Q- What is the EIS timeframe and legislation to extend sites?*

A- We cannot comment on legislation. February 2004 CLIS closes. We plan on dredging the harbors in 2003-2004. If not completed, activities may cease. The Corps could not ask for an extension on the use of these sites, advocates would have to do this.

*Q- What considerations are being given to capping material?*

A- EPA regulations say that capping is not permitted in ocean waters. We would have to find another site for unsuitable material. You can't use physical containment for unsuitable material in an open water site. In the past there has been some capping but not since 1983/84.

*Q- Based on historical data, do we know what percentage of the material meets the criteria for open ocean?*

A- We haven't run the numbers. In the future, maybe half of the material from Bridgeport and a portion of the lower Connecticut River. Otherwise approximately 80% of the material from other areas has been considered suitable in the past.

Ms. Anne Rodney closed the meeting by stating that the next work group meeting will possibly be held in late September. If any additional questions or concerns are noted, please send all requests to Ms. Anne Rodney at EPA (Rodney.Anne@epa.gov).

## Attachment 1

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**ATTACHMENT 2**

**GIS Screening for  
Candidate Alternative Dredged  
Material Disposal Sites  
Presentation**

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# Long Island Sound Dredged Material Disposal Site Evaluation Study Revised ZSF and GIS Screening for Candidate Alternative Dredged Material Disposal Sites

July 24, 2002

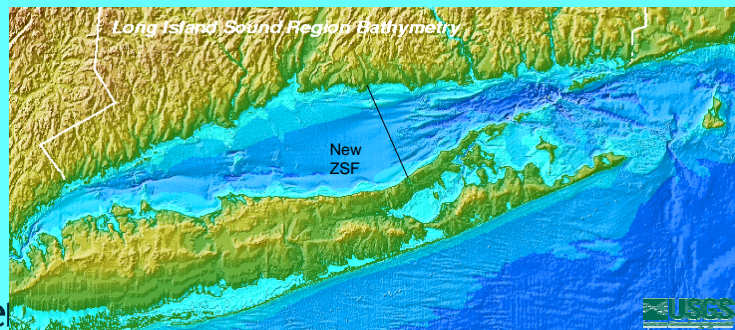
Bridgeport, CT

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## Revision of the Zone of Siting Feasibility

- USACE and EPA have decided to narrow the Zone of Siting Feasibility of the initial effort, to the potential designation of one or more dredged material disposal sites in the western and central LIS regions, while deferring review of the eastern region in a Supplemental EIS to be prepared at a later date.



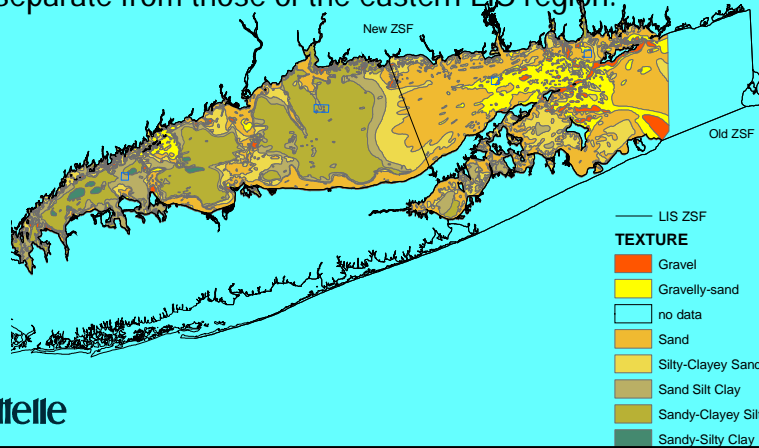
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USGS

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## Revision of the Zone of Siting Feasibility

- The disposal needs and alternatives of the central and western LIS regions are geographically and environmentally separate from those of the eastern LIS region.



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## Revision of the Zone of Siting Feasibility

- Need to assess, in a timely manner, the appropriateness of maintaining operational continuity and continued use of a central LIS disposal site.
- Change in scope will not preclude consideration of a comprehensive range of alternatives for disposal site(s) for all three LIS regions.

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## Objectives of the Screening

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- To identify areas within the revised ZSF acceptable for locating an open water disposal site designated under the Ocean Dumping Regulations
- To identify specific alternative disposal site(s) within the acceptable area(s) for further evaluation in the EIS

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## Approach to Screening

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### General

- Review Marine Protection, Research, and Sanctuaries Act of 1972 Criteria
  - 5 general (40 CFR 228.5) and 11 specific regulatory criteria (40 CFR 228.6) for ocean dredged material site designation.
- Map previously defined LIS alternative dredged material site evaluation factors onto the ocean dumping regulation criteria
- Prioritize the LIS factors into Tier 1 and Tier 2 screening levels
  - Tier 1 – rule out areas not acceptable for an open water disposal site
  - Tier 2 – identify specific locations for alternative site(s)

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## Approach to Screening

### Tier 1: Rule out areas based on the following

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- Stability and Feasibility - 228.5(b)
- Areas with conflicting uses – 228.6(a)(8)
  - Beaches and amenities – 228.6(a)(3)
  - Utilities (pipelines, cable areas, etc)
  - Conservation areas (sanctuaries, wildlife refuges, national seashores, parks, fish havens, artificial reefs)
- Shellfisheries areas – 228.5(a)
- Interference with Navigation – 228.5(a)
- Valuable marine habitats – 228.5(a)
  - Gravel and hardbottom areas
- Areas of high dispersion potential 228.6(a)(6)

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## Approach to Screening

### Tier 1 Screening Results

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## Approach to Screening

### Tier 2: Identify specific alternative site locations

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- Minimizing impact to
  - Archeological resources – 228.6(a)(11)
  - Fish habitats, fish concentrations – 228.5(a); 228.6(a)(9); 228.6(a)(8)
  - Living resources (breeding, spawning, nursery, feeding, passage) – 228.6(a)(3)
  - Benthic community – 228.6(a)(6)
  - Shellfisheries/fisheries resource areas – 228.5(a)
- Historic Dump Sites – 228.5(d)
- Preferred siting in areas based on
  - Site characteristics - 228.6(a)(6)
    - Contaminants – Sediment Chemistry
    - Texture – Sediment
    - TOC - Sediment

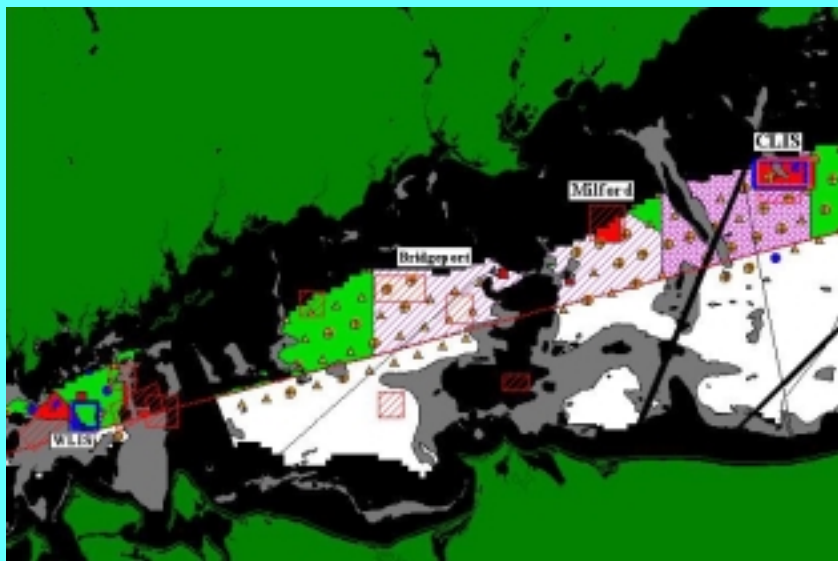
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## Approach to Screening

### Tier 2: Screening Results

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## Tier 2 Alternative Site Considerations

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- Several factors must be considering when assessing an area as an alternative site.
  - Site Boundaries – 228.5(d), 228.6(a)(4), 228.6(a)(5)
  - Buffer Zones – 228.5(b), 228.6(a)(6)
  - Reference areas for monitoring and testing – 228.6(a)(5)

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## Tier 2 Alternative Site Considerations Interpretive factors for inclusion in the EIS

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- Once alternative site(s) are selected
  - Tier 1 criteria will be addressed as appropriate in EIS
  - Tier 2 criteria will be examined in detail in the EIS
- Additional EIS considerations will include
  - Existing water quality - 228.6(a)(9)
  - Nuisance Species - 228.6(a)(10)
  - Economic impacts - 228.6(a)(8)
  - Site protection requirements – Environmental consequences
    - 228.10 Evaluating disposal site impacts

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## Alternative Sites for Consideration

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- Using the Tier 1 and Tier 2 screening, USACE, EPA, NMFS, and CT and NY agencies have tentatively identified the following locations as possible dredged material disposal sites:
  - Current Dredged Material Disposal Sites
    - Western Long Island Sound (WLIS)
    - Central Long Island Sound (CLIS)
  - Former Dredged Material Disposal Sites
    - Bridgeport
    - Milford

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## Alternative Sites Under Consideration

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**Attachment 3**

**MPRSA Ocean Dumping Regulation  
Reference Table**

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<b>Ocean Dumping Regulation Reference Table for the Western and Central LIS Disposal Site Designation EIS</b>			
<b>Ocean Dumping Regulation</b>	<b>Key Words and Phrases</b>	<b>LIS Evaluation Factors</b>	<b>Screening Tier</b>
<b>40 CFR 228.5(a-e): General Criteria for the Selection of Sites</b>			
228.5(b)	perturbations to the environment during initial mixing	Disposal Site Feasibility and Stability	1
228.5(e)	designating historically used sites	Disposal Sites	1
228.5(a)	interference with other activities: <i>avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation</i>	Navigation considerations Existing Marine Habitats Commercial and Recreation Fisheries	1 1 1
228.5(d)	limiting site size for monitoring and surveillance	Accessibility	2
228.5(c)	closure of interim ODMDSs	N/A	N/A
<b>40 CFR 228.6(a)(1-11): Specific Criteria for Site Selection</b>			
228.6(a)(3)	location relative to beaches and amenities		1
228.6(a)(6)	site dispersion, transport, and mixing characteristics	Disposal Mound Height Limit Disposal Site Feasibility and Stability Duration of Potential Adverse Impacts Site Characteristics	1 1 2 2
228.6(a)(8)	interference with other uses	Other Site Use Conflicts Conservation Areas Site Use Conflicts Economic Impacts	1 1 2 2
228.6(a)(1)	geography, depth, topography, distance from coast	State Waters/Basins Site Characteristics	1 2
228.6(a)(2)	location relative to living resources: <i>breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases</i>	Endangered Species	2
228.6(a)(9)	existing water quality and ecology of site	Existing Habitat(s) at Site Recreational Uses Essential Fish Habitats	2 2 2
228.6(a)(4)	types and quantities of wastes and disposal methods	Capacity and Area of Impact	2

<b>Ocean Dumping Regulation</b>	<b>Key Words and Phrases</b>	<b>LIS Evaluation Factors</b>	<b>Screening Tier</b>
228.6(a)(11)	proximity to historical features	Cultural/Archaeological Resource Sites or Historic Districts	2
		Economic Impacts	2
		Site Protection Requirements	2
228.6(a)(5)	feasibility of site surveillance and monitoring	EIS Evaluation	
228.6(a)(7)	previous dumping, cumulative effects	EIS Evaluation	
228.6(a)(10)	nuisance species	EIS Evaluation	
<b>40 CFR 228.10: Evaluating Disposal Impact</b>			
228.10(b)(1)	impact to estuaries, sanctuaries, beaches, or shorelines	Environmental Consequences Chapter of EIS	
228.10(b)(2)	impact to fish or shellfish areas	Environmental Consequences Chapter of EIS	
228.10(b)(3)	impact to pollution-sensitive biota	Environmental Consequences Chapter of EIS	
228.10(b)(4)	changes in water quality or sediment	Environmental Consequences Chapter of EIS	
228.10(b)(5)	changes in biota composition	Environmental Consequences Chapter of EIS	
228.10(b)(6)	bioaccumulation	Environmental Consequences Chapter of EIS	
228.10(c)(1)(i)	movement/accumulation within 12 miles of shoreline, sanctuary or critical area	Environmental Consequences Chapter of EIS	
228.10(c)(1)(ii)	adverse affect to commercial or recreational species	Environmental Consequences Chapter of EIS	
228.10(c)(1)(iii)	impairment of other major uses	Environmental Consequences Chapter of EIS	
228.10(c)(1)(iv)	adverse affects to commercial or recreational species	Environmental Consequences Chapter of EIS	
228.10(c)(1)(v)	toxicity outside ODMDS 4 hours after disposal event	Environmental Consequences Chapter of EIS	

**Five General Criteria for the Selection of Ocean Dredged Material Sites.**

[40 CFR Section 228.5]

Part 228.5(a) *The dumping of materials into the ocean will be permitted only at sites or areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries, and regions of heavy commercial or recreational navigation.*

Part 228.5(b) *Locations and boundaries of disposal sites will be so chosen so that temporary perturbations in water quality or the environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery.*

Part 228.5(c) *If at any time during or after disposal site evaluation studies, it is determined that existing disposal sites presently approved on an interim basis for ocean dumping do not meet the criteria for site selection set forth in §§ 228.5 through 228.6, the use of such sites will be terminated as soon as suitable alternate disposal sites can be designated.*

Part 228.5(d) *The sizes of ocean disposal sites will be limited in order to localize for identification and control any immediate adverse impacts and permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as a part of the disposal site evaluation or designation study.*

Part 228.5(e) *EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used.*

**Eleven Specific Factors To Be Considered in the Selection of Ocean Dredged Material Sites.**  
[40 CFR Section 228.6(a)]

Para. No.

- (1) *Geographical position, depth of water, bottom topography, and distance from the coast;*
- (2) *Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases;*
- (3) *Location in relation to beaches and other amenity areas;*
- (4) *Types and quantities of wastes [dredged material] proposed to be disposed of, and proposed methods of release, including methods of packaging the waste [dredged material], if any;*
- (5) *Feasibility of surveillance and monitoring;*
- (6) *Dispersal, horizontal transport, and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any;*
- (7) *Existence and effects of current and previous discharges and dumping in the area (including cumulative effects);*
- (8) *Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance, and other legitimate uses of the ocean;*
- (9) *The existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys;*
- (10) *Potentiality for the development or recruitment of nuisance species in the disposal site;*
- (11) *Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.*

**Attachment 4**  
**Alternative Site**  
**Field Sampling Program**  
**Presentation**

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# Long Island Sound Dredged Material Disposal Site Evaluation Project

## Alternative Site Field Sampling Program



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## Alternative Sites Selected

- Based on the results of the Tier 1 and Tier 2 screening, four sites were selected as possible locations that could be considered for future dredged material disposal in the western and central portions of Long Island Sound.
- Two sites are the currently Western (WLIS) and Central (CLIS) Long Island Sound Dredged Material Disposal Sites
- Two sites are former Dredged Material Disposal Sites
  - Bridgeport (Western LIS)
  - Milford (Central LIS)

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## Alternative Sites Selected



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## Information Review

## Data Adequacy

- Review of information collected for the Long Island Sound Dredged Material Disposal Evaluation Project shows:
  - Information available on the present condition of sediments at the WLIS and CLIS sites is adequate for an impact analysis.
    - DAMOS program and previous site studies.
  - Information available on the sediment conditions at the historic dredged material disposal sites near Bridgeport and Milford is inadequate for an impact analysis.
    - Further surveys required

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## Additional Required Information on Historic Sites

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- Discussions among USACE, EPA, NMFS, and CT and NY agencies determined that additional data in the following areas are needed:
  - Sediment Chemistry
    - Physical Measurements (Bulk sediment characteristics)
    - Organic Contaminants
    - Inorganic Contaminants
  - Benthic Community Structure
  - Sediment Toxicity
  - Habitat and Sediment Characteristics
  - Bottom Topography and Historic Usage
  - Lobster Resources

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## Historic Sites - Field Sampling Program

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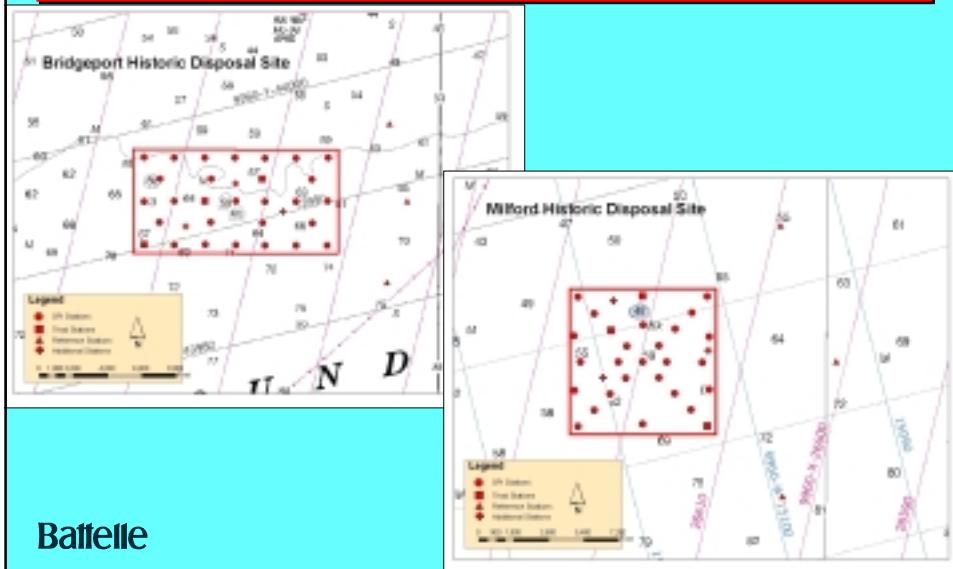
- The USACE and EPA collaborated to develop a sampling program to address the additional data needs.
- Objectives
  - Fill in data gaps to determine the present condition, usage and possible future usage of these historic sites as open water dredged material disposal sites.
- The field sampling plan will include stations within each site. Reference stations outside each site boundary will also be sampled.

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## Historic Sites – Sampling Locations



## Historic Sites – Sampling Methods

- The measurements and methods for the field sampling effort will be comparable with measurements and methods used in previous investigations of the WLIS and CLIS dredged material disposal sites conducted in the past three years.

## Historic Sites – Sediment Chemistry

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- Sediment samples will be collected for physical and chemical measurements.
  - 3 replicates will be collected at each of 3 stations located within each site.
  - 3 replicates will be collected at one reference station near each site.
- Physical Measurements
  - Grain size
  - Specific Gravity

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## Historic Sites – Sediment Chemistry

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- Organic Contaminants
  - Polynuclear Aromatic Hydrocarbons (PAHs)
  - Bis(2-ethylhexyl)phthalate
  - Polycyclic Biphenyls (PCBs)
  - Pesticides
  - Dioxin/Furans
  - Dioxin-like Polycyclic Biphenyls
  - Total Organic Carbon



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## Historic Sites – Sediment Chemistry

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### ■ Inorganic Contaminants

- Arsenic
- Beryllium
- Cadmium
- Chromium
- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

### ■ Acid Volatile Sulfides (AVS)

### ■ Simultaneously Extracted Metals (SEM)

- Cadmium, Copper, Lead, Nickel, Silver, and Zinc

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## Historic Sites – Benthic Community Structure

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- Sediment Profile Imaging records the predominant sediment types found at each site and assists in assessing the effects dredged material disposal may have on the benthos.

- 3 photographs will be taken at each of 29 stations located within each site
- 3 photographs will be taken at each of 3 stations located at the reference site associated with each disposal site.



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## Historic Sites – Benthic Community Structure

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- Benthic infauna sediment grab samples will be collected at selected locations to determine the abundance and diversity of the benthic community.
  - 3 replicates will be collected at each of 3 stations located within each site
  - 3 replicates will be collected at the reference site associated with each disposal site.

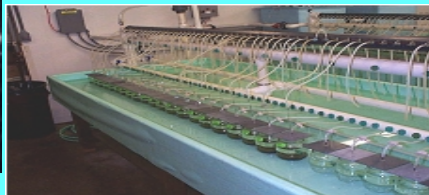


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## Historic Sites – Sediment Toxicity

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- Sediment toxicity will be determined by exposing amphipods (*Ampelisca abdita*) to sediment from the Bridgeport and Milford sites in bioassay tests for a period of 10-days.
  - 3 composite samples from each site and 1 composite sample from each reference station will be analyzed.



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## Historic Sites – Habitat and Sediment Characteristics

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- Side-scan Sonar
  - Broad scale sediment texture (Habitat)
- Sub-bottom Profile System
  - Historic Use and Archaeology
- Bathymetry
  - Bottom Topography
- Magnetometer
  - Archaeology

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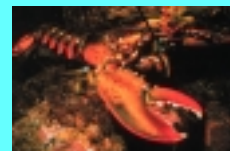
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## All Sites - Lobster Resources

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- Meetings will be hosted by the National Marine Fisheries Service to involve local area lobsterpersons in discussions on the importance of
  - Historic Bridgeport and Milford dredged material disposal sites as locations for catching lobsters.
  - Lobster usage and presence at the currently active WLIS and CLIS sites
- Ensures that recent information is collected on all four sites.



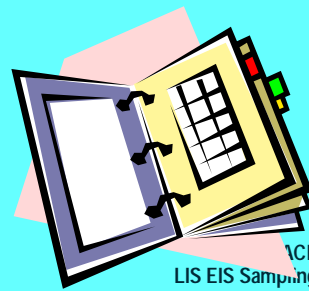
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## Analysis and Reporting

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- Data from the field sampling effort will be analyzed and compiled into data reports.
- Once finalized, these reports will be made available to the public on the Long Island Sound Website (<http://www.epa.gov/region01/eco/lisdreg/index.html>)



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