

June 3, 2004

Ms. Linda M. Murphy
Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency, Region I
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: F-2004-0228 DA
U.S. EPA - Designation of Open-water Disposal Sites - Long
Island Sound
Objection to Consistency Determination

Dear Ms. Murphy:

The Department of State (DOS) has completed its evaluation of the U.S. Environmental Protection Agency's (EPA) consistency determination relating to the designation of two dredged material disposal sites in Long Island Sound (the Sound). Pursuant to 15 CFR § 930.41(a), DOS objects to EPA's consistency determination on the basis that it has failed to provide sufficient information and further, based on the information that has been provided, finds that it is not consistent to the maximum extent practicable with applicable policies of the New York State Coastal Management Program (CMP).

The Department of State has consistently requested that a dredged material management plan be developed prior to, or in conjunction with, the current EPA proposal to designate open-water disposal sites in Long Island Sound. The Department has also consistently identified the need for, and identification of, alternative dredged material disposal options and re-use opportunities which, when employed systematically and comprehensively throughout the Long Island Sound region, would reduce, or eliminate, the need for open water disposal of dredged material. EPA has not satisfactorily addressed these requests or provided such information.

Background

On March 8, 2004, the DOS received EPA's determination that the designation of two Long Island Sound dredged material disposal sites under the Ocean Dumping Act would be consistent with New York's Coastal Management Program. These two disposal sites- the Central Long Island Sound (CLIS) site and the Western Long Island Sound (WLIS) site - would be situated in the Connecticut portion of the Sound along the Connecticut/New York border. The receipt of EPA's determination started a review period for DOS to either concur with or object to the consistency determination. The conclusion of the review period was extended until June 5, 2004 by agreement with the EPA.

Title I of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972, more commonly referred to as the "Ocean Dumping Act" (ODA) (33 USC § 1412), authorizes the EPA Administrator to designate sites where ocean disposal may be permitted. In 1980, Congress amended the ODA to subject the dumping of dredged material in Long Island Sound by federal agencies, or by private parties dumping more than 25,000 cubic yards of dredged material, to the site selection, site designation and environmental testing criteria of the ODA (33 USC § 1416(f), known as the "Ambro Amendment").

Pursuant to the Coastal Zone Management Act (CZMA), "each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs." (16 USC § 1456 (c)(1)(A)) The CZMA regulations define the phrase "consistent to the maximum extent practicable" to mean "fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency" (15 CFR § 930.32(a)(1)).

Federal agencies cannot use a general claim of a lack of funding or insufficient appropriated funds, or a failure to include the cost of being fully consistent in Federal budget and planning processes as the basis for not being consistent to the maximum extent practicable with an enforceable policy of a state management program (see, 15 CFR § 930.32 (a)(3)).

Moreover, a federal agency's consistency determination must be based on an evaluation of the relevant provisions of a state's management program. It should be prepared only after sufficient information has been obtained to reasonably determine the consistency of the project, but before the federal agency reaches a significant point of decision-making in its review process.

Here, while EPA has failed to provide New York with all relevant information to fully assess the likely impacts on the Coastal Zone of the proposed federal action in designating these two dump sites in the Sound, the information that EPA has submitted demonstrates that designation and subsequent use of these sites will adversely affect coastal resources and uses and will contravene the enforceable policies of the CMP.

Accordingly, the State of New York finds that the proposed federal action is not consistent to the maximum extent practicable with the State's coastal management program.

There are currently three active dredged material disposal sites in use in Long Island Sound: Western Long Island Sound Disposal Site (WLIS), Cornfield Shoals Disposal Site (CSDS), and New London Disposal Site (NLDS). Authorization for disposal at the Central Long Island Sound Disposal Site (CLIS) expired on February 18, 2004, at the end of a second 5-year exception under the ODA. In March 2002, the U.S. Army Corps of Engineers (the Corps), as the relevant permitting agency under the ODA, and EPA made a determination to narrow the Zone of Siting Feasibility (the area in which existing dredged material disposal sites may be located) to initially consider the potential designation of one or more sites in the western and central regions of Long Island Sound, deferring review of the eastern region to a later date.

The two disposal sites in the Zone of Siting Feasibility currently proposed for designation are the CLIS and WLIS sites. CLIS is approximately 2 nautical miles by 1 nautical mile in size and is situated 5.6 miles south of

South End Point, Connecticut. Water depths at CLIS currently range from 59 feet to 74 feet below Mean Sea Level (MSL). Since 1941, CLIS has received close to 14 million cubic yards of dredged material (FEIS Executive Summary p. ES-5). WLIS is a 1.2 by 1.3 nautical mile rectangular disposal area situated approximately 2 nautical miles north of Lloyd Point, New York, and 2.5 miles south of Long Neck Point, Connecticut. Water depths at WLIS range from 79 feet to 118 feet below MSL. Between 1982 and 2001, WLIS received approximately 1.7 millions cubic yards of dredged material (FEIS Executive Summary p. ES-4).

Long Island Sound is a 110-mile-long, predominantly enclosed, tidal estuary at the interstate boundaries of New York, Connecticut, and Rhode Island. It is hydrologically connected to the Atlantic Ocean at its eastern end through Block Island Sound, and to New York Harbor at its western end through the East River at Throg's Neck and the New York City incorporated municipal boundary.

As noted by the U.S. Geological Survey (USGS), the circulation in Long Island Sound, which is controlled by an east-to-west weakening of tidal-current speeds coupled with the westward-directed estuarine bottom drift, has produced a succession of sedimentary environments. The succession begins with erosion at the narrow eastern entrance to the Sound, changes to an extensive area of coarse-grained bedload transport in the east-central Sound, passes into a contiguous band of sediment sorting (where the estuary noticeably widens), and ends with broad areas of fine-grained deposition on the flat basin floor in the central and western Sound.

Long Island Sound is one of the most productive estuarine waters in the world. It provides valuable breeding, nesting and feeding habitats for myriad aquatic, avian and animal species, and provides commercial fishing, tourism and recreational benefits to the communities along its shoreline. The Long Island Sound region is also one of the most densely populated areas in North America; more than 8.4 million people live in the Sound's watershed (FEIS ES-8). The Sound is used for water-dependent industries, recreational boating, commercial and recreational fishing and shellfishing, and recreational beach-going. It is one of New York's most valuable natural resources. For these reasons, the cleanliness of Long Island Sound is of paramount importance. While there is a recognized need for dredging in order to maintain navigable water ways, the designation of dredge spoil disposal sites in the Sound and the consequent dumping of sediments, as currently proposed, will degrade the Sound and threaten its environmental resources and economic viability.

As noted by the Second Circuit Court of Appeals in Town of Huntington v. Marsh, 859 F.2d 1134, 1135 (2nd Cir. 1988):

The Long Island Sound (the "Sound") is host to a myriad of recreational and industrial uses, including swimming, boating and fishing. Recreational users, commercial fisheries and environmentalists share a sometimes uneasy co-existence with use of the Sound as a waste dumping ground. Marinas and harbors which line the Sound must be dredged periodically to provide safe berthing for pleasure craft, commercial fishing boats, and military ships. The spoil from these dredging operations has for decades been dumped into the Sound. This litigation arises out of the ongoing effort of citizens and the federal government to balance the use of the Sound as a waste dumpsite with the need to protect its increasingly fragile waters.

"Due to the enormous population, the Sound is used heavily and its sea floor has been impacted by human activities. There are many benthic habitats in the Sound that support large commercial and recreational fisheries.

Sediments of the Sound are a sink for wastes and contaminants from various sources such as riverine input, wastewater treatment plants, urban and agricultural runoff, and sediment and waste disposal" (Maps of Benthic Foraminiferal Distribution and Environmental Changes in Long Island Sound between the 1940s and the 1990s by Ellen Thomas, Taras Gapotchenko, Johan C. Varekamp, Ellen L. Mecray and Marilyn R. Buchholtz ten Brink).

As noted in an article entitled, "Biogeochemistry and Contaminant Geochemistry of Marine and Estuarine Sediments, New Haven, Connecticut," (Kruge & Benoit 2002): "The urbanized shore areas of Long Island Sound in the vicinity of New Haven, Connecticut have a long history of exposure to point and non-point sources of pollution, New Haven having been one of the birthplaces of the industrial revolution. As an unintended consequence of such activities, the region's sedimentary systems have incorporated a complex mixture of organic and inorganic contaminants. The tidally-influenced Quinnipiac, Mill and West Rivers empty into the harbor, the shoreline of which is the site of docking facilities, a petroleum tank farm, a power generation station, sewage treatment facilities, a busy interstate highway, housing and park land. The shipping channel leading into the inner harbor is maintained by periodic dredging."

EPA maintains that degradation need not occur as a result of dredged material disposal: "The disposal of uncontaminated dredged materials at ocean sites that have been properly sited using the MPRSA criteria (see Section 1.2.2) can be managed such that environmental damage does not occur." Clearly, however, the sedimentary environment that is intended for dredging and subsequent disposal at these proposed sites is not uncontaminated.

Long Island Sound has historically had a rich fishery but in recent years the western part of the Sound is increasingly deficient of marine life. It is unclear why this is happening. Before EPA designates disposal sites in the Sound, the cause of the decline in fisheries should be examined and understood. This is a crucial failing in EPA's consistency determination, since protection of fishing resources is an important part of New York's Coastal Management Program.

As reported by the New York Sea Grant Institute:

Since Fall 1999, the state of the Long Island Sound lobster fishery has been in question. Lobsters have been experiencing unprecedented outbreaks of disease that have resulted in massive mortalities, particularly in the Sound's western basin. At the same time, lobsters in the eastern Sound have been suffering from "shell disease," a bacterial infection that has been around for awhile but appears to have greatly increased.

In late summer and fall of 1999, the States of Connecticut and New York began receiving reports from lobster fishers of dead, dying and excessively lethargic lobsters in their catches. By late fall 1999, lobster landings in western Long Island Sound are reported to have decreased by as much as 90% to 100% and by 30% in central and eastern Long Island Sound. Using a federal grant through the Long Island Sound Lobster Initiative of the New York and Connecticut SeaGrant, researchers at the University of Connecticut found four chemicals known as alkylphenols in both lobsters and marine sediments. All four are known endocrine disruptors in vertebrates, which cause changes in hormones controlling basic physiological processes, such as reproduction. All four were found in lobsters from Long Island Sound and were shown to affect the endocrine systems of test organisms.

Much higher levels of these four endocrine disrupting alkylphenols were found in the sediments themselves, than in the sampled lobster tissue.

The commercial lobster die-off has related socio-economic costs. During the recent die-off, up to 50% of commercial lobster fishers went out of business and many more simply gave up for the season after determining that the effort and operational expense were not justified by the scant harvest of marketable lobster. As recently as 2001, lobster trawls continued to reflect reduced numbers of lobster with the reported landings being the 4th lowest in 18 years of survey data (NY-Ct. Sea Grant, Long Island Sound Lobster Initiative, March 2002). New York landings of lobster from the Sound (86% of New York's total lobster catch) have decreased by eight million pounds in the six years from 1996 to 2002 (NOAA's National Marine Fisheries Service, Marine Fisheries Annual Landings Report).

The die-off and shell disease occurred soon after 1.2 million cubic yards of sediment contaminated with dioxin and other carcinogens were dumped at the New London Disposal Site in 1996. None of the existing studies on this matter have looked at the correlation between contaminants introduced through dredged material disposal and lobster disease. The latest report from "Lobster Health News" (Spring 2004, Sea Grant) does not provide reasons for the mortalities and disease.

Over the past three decades, major efforts have been undertaken by government and the general public to improve the quality of the Sound, and limit the open-water disposal of dredged materials. The need to improve the quality of the Long Island Sound ecosystem is reflected in: the Long Island Sound Regional Study by the New England River Basins Commission in the 1970's; an Interim Dredged Materials Disposal Plan in the early 1980's that identified the need to limit dredged materials disposal and develop a comprehensive dredged materials management plan for the Sound; Congressional amendments to the federal Ocean Dumping Act limiting the disposal of contaminated materials in the Sound; the Sound's designation as an Estuary of National Significance pursuant to the National Estuary Program and the subsequent undertaking of the Long Island Sound Study and development of a Comprehensive Conservation and Management Plan (CCMP) for the Sound.

Most recently, the U.S. Department of Commerce concurred with the development and incorporation of the State of New York's Long Island Sound Regional Coastal Management Program into the CMP, which includes enforceable policies reflecting the findings, needs, and objectives of the public interest in the Long Island Sound region. On October 10, 2001, the Long Island Sound Regional Coastal Program became effective as a formal amendment to the CMP. Activities which may effect the uses and resources of the Long Island Sound coastal area are subject to consistency with the CMP. The NYS Long Island Sound Regional Coastal Management Program establishes specific policies governing federal and State activities affecting the resources and uses of the Sound. EPA's proposed activity would have significant, adverse effects to the Sound on both a short and long-term basis. The need to develop and address alternatives to the disposal of contaminated dredged materials in Long Island Sound, in order to improve water quality in the Sound and remediate degradation from past practices, is identified in all of these efforts.

In addition, several municipalities on the NYS Sound shore employ approved local waterfront revitalization programs (LWRPs) as amendments to the CMP. The municipalities with approved LWRPs identified by EPA are: the Village of Port Chester; the City of Rye; the Village of Mamaroneck; the Town of Mamaroneck and the Village of Larchmont (joint program); the City of New York; the Village of Bayville; the Village of Lloyd

Harbor; the Town of Smithtown; the Villages of Head-of-the-Harbor and Nissequogue (joint program); the Village of Greenport; and the Village of Sag Harbor. For direct federal agency activities that affect land or water uses and resources in the coastal area covered by an LWRP, such local programs must be used by EPA in its determination of the consistency of its proposal with the NYS CMP and relevant approved LWRPs, and by DOS in its review of that determination. Here, again, EPA's consistency determination is deficient in that it fails to address the LWRPs, without explaining why the dump sites chosen will not have significant impacts on local waterfront revitalization efforts.

I. Information Deficiencies

In the FEIS, EPA expresses a desire to assess, in a timely manner, the appropriateness of maintaining "operational continuity" and continued use of a central LIS disposal site. The Department's review of EPA's consistency determination finds that this may well be the driving motivation for pushing ahead with site designation when studies of environmental problems have not been adequately conducted and solutions to them have not been considered.

The State of New York objects to EPA's consistency determination because it provides inadequate information and an incomplete record for determining the coastal effects of the proposed designations and subsequent disposal of dredged material in Long Island Sound. As set forth in detail below, EPA's consistency determination does not include, or reference, a detailed description of coastal effects sufficient to support its determination. The consistency determination, DEIS and FEIS fail to describe the cumulative and secondary, direct and indirect effects and impacts on New York State's coastal land and water uses and resources.

EPA's determination and information submission is deficient: a) by failing to discuss in its consistency determination how open-water placement of dredged material is consistent to the maximum extent practicable with New York's CMP; b) by failing to discuss decontamination technologies, upland and other beneficial uses of dredged material as alternatives to open water disposal; c) by failing to conduct a cumulative analysis of dredging events and other contaminant inputs in the Sound; and d) by failing to provide a strategy for comprehensively managing dredged material for the Long Island Sound region in a manner which is consistent, to the maximum extent practicable with New York's CMP.

A. Consistency Determination

EPA has failed to submit information which demonstrates that the proposed designations of the CLIS and WLIS dump sites will be consistent to the maximum extent practicable with the New York CMP. From a procedural and substantive standpoint, EPA cannot make, or support, such a conclusion.

EPA's consistency determination fails to address contamination in the ambient environment and inadequately considers important data. EPA's consistency determination should identify known, understood and reasonably foreseeable beneficial and adverse effects of this activity, commensurate with the National Environmental Policy Act and required by the Coastal Zone Management Act of 1972, as amended. In particular, EPA should have analyzed the range of parameters that would be affected by designation of disposal sites and dumping activity including, but not limited to:

1. physical parameters such as living space (immediate burial of, and benthic changes to, living space), circulation (changed as a result of changes in bathymetry caused by dumped material), turbidity (from the discharge and resuspension of fine sediments during and after initial dumping), morphology, substrate type, and erosion and sedimentation rates as dumped material winnows;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and
3. chemical parameters such as dissolved oxygen (which will be reduced in the water column during dumping activities), carbon dioxide, acidity, dissolved solids (which will increase during dumping activities), nutrients (which will increase during dumping activities), organics (which will be increased during and after dumping activities), and pollutants such as heavy metals, toxics, and hazardous materials (which will be released in the water column during dumping activities and will be present after dumping is completed).
4. comparative parameters establishing a justification for the continuing practice of dumping dredged material in Long Island Sound when it has been discontinued in the Atlantic Ocean.
5. use of alternatives which minimize the need for dumping.
6. use of methods to minimize sediment sources which, in turn, reduces the need for dredging.

The federal consistency provisions of the CZMA require that EPA provide DOS with a consistency determination based on actual, as well as reasonably foreseeable, direct and indirect effects on any coastal use or resource (15 CFR §930.33(a)(1)). EPA must consider and evaluate the impacts from different dredging projects, together with natural riverine depositions.

As an example of information that should have been provided by EPA, such as documentation on sediments in the Thames River, Connecticut which have been traditionally disposed of at the CLIS site, is relevant and compelling. Bioaccumulation testing of Thames River sediments reveal that channel sediments near the SUBASE (homeport site of the U.S. Navy's SEAWOLF-class submarines) piers contain materials which could cause accumulation of organic contaminants in the tissues of benthic organisms. These contaminants can in turn bioaccumulate and have more far-reaching environmental impacts. Sediments in the river contain varying concentrations of metals, poly-cyclic aromatic hydrocarbons (PAH), pesticides, poly-chlorinated biphenyls (PCBs) and other chemicals above naturally-occurring background levels. PAHs are the most consistently encountered contaminant found in the river. The FEIS prepared by the Navy for the SEAWOLF submarine base states that based upon a review of sediment testing in the river, "[c]oncentrations of PAHs in sediments near piers and marinas are generally higher than in the navigation channel. High concentrations of metals, PCBs, and pesticides have been observed in river sediments, but in selected areas only."

Low molecular weight PAHs exhibit acute toxicity and other adverse effects on some organisms, but are non-carcinogenic, while high molecular weight PAHs are significantly less toxic, but many are demonstrably carcinogenic, mutagenic or teratogenic to a wide variety of organisms including fish and other aquatic life. Bulk chemical analysis indicated elevated levels of PAHs and low to moderate levels of metals in samples at many

stations in the channel north of the Interstate-95 Bridge, which prompted the need for additional testing. This suite of contaminants will result in acute and chronic toxic effects in a wide variety of Long Island Sound fish species, will bio-accumulate and subsequently affect avian and other species.

Bivalve mollusks tend to accumulate high PAH levels due to their inability to metabolize and excrete them, and Nereis, a marine worm, also tends to bioaccumulate organic contaminants. The results of testing indicated that statistically significant bioaccumulation of PAHs occurred in clams exposed to samples from three locations in the Thames River. Several PAHs, including the more toxic high molecular weight compounds, were found at some sample locations. Statistically significant accumulations of lead appeared in both worms and clams. Zinc also accumulated in clams at this location. Sediments from some locations caused statistically significant bioaccumulation of several PAHs, including the more dangerous high molecular weight compounds. As a result of 28-day bioaccumulation tests, sediments from sample locations, if uncapped, could cause bioaccumulation of certain PAHs in benthic organisms at the NLDS. The EPA's analysis of the potential sources of sediments to be deposited at the sites did not include a thorough discussion of such biological and chemical parameters.

When considering potential disposal sites, one of the factors that EPA must consider is that "[t]he 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" (40 CFR § 228.5(a)). Without knowing the cumulative effects of dumping and contaminant inputs from other sources, EPA should not designate dump sites in this important estuary.

B. Failure to Provide a Thorough Analysis of Alternatives

Before it can designate open-water disposal sites, the EPA Administrator is required to consider:

"G. Appropriate locations and methods of disposal or recycling, including land-based alternatives and the probable impact of requiring use of such alternatives locations or methods upon consideration affecting the public interest." (33 USC §1412(a)) (see also 33 USC §1412(c)(1))

The EPA did not provide a thorough analysis of re-use and upland disposal alternatives, as required by statute (33 USC §1412(a) and (c)). In our November 17, 2003 letter commenting on the draft environmental impact statement (DEIS), DOS and the NYS Department of Environmental Conservation (NYS DEC) indicate that more detailed information regarding alternatives to the open water disposal of dredged materials is necessary and that the continuing use of the Sound for open-water disposal of dredged material, as the least-preferred dredged material placement option, should not be advanced without a comprehensive Sound-wide dredged material management plan and the identification of such alternatives and site capacities. EPA provided a one-paragraph response to New York's concerns (page 549, Appendix L of the FEIS), stating that their evaluation of alternatives and beneficial reuse opportunities "...reflects the paucity of available upland disposal sites ... capable of providing long-term regional capacity."

In Appendix C, most of EPA's brief discussion of alternatives considers, in addition to the no-action alternative, the evaluation of other potential open-water disposal areas. The opening sentence on page 1-2 of Appendix C, promises: "The EIS will include generic assessments for upland and alongshore beneficial use alternatives."

However, the FEIS dismisses discussion of available alternatives and the possibility of advancing them, and fails to recognize and analyze the range of beneficial uses and decontamination technologies. Other than averring there are few specific sites where dredged materials can be used for a beneficial uses, there is neither identification of beneficial uses over a broad geographic area, nor a systematic program for implementing beneficial reuse of dredged material in the Long Island Sound region.

Open-water disposal of dredged material is neither a favored management option nor is it an activity consistent with the relevant parts of the New York State Coastal Management Program, as required in 15 CFR §930.32(a)(1). However, EPA avoids any detailed analysis of available alternatives to the open-water disposal of contaminated and uncontaminated dredged material. Further, Such alternatives for both contaminated and uncontaminated dredged material are, in fact, available and have been used in the Long Island Sound region including in New York Harbor, Eastchester Creek and Hempstead Harbor and should thoroughly be evaluated in a region-wide assessment of potential dredged material management options. Consistent with national coastal zone management objectives, such an assessment would lead to dredged material management that minimizes, or avoids to the maximum extent practicable, adverse effects to coastal uses and resources.

For example, dredged sand and gravel is used for a wide range of aggregate or general construction purposes throughout the northeastern U.S. Those materials could be dredged from many areas in the Long Island Sound region, moved to aggregate transshipment facilities, many of which function along the shoreline as water-dependent uses, and transport them elsewhere for construction projects. This is a process similar to the means by which many major construction activities successfully were provided with raw construction aggregates through former in-water and shoreline sand and gravel-mining operations in Pennsylvania, New York and New Jersey.

In order to maintain its status as a the third-largest U.S. port and the busiest Atlantic gateway,¹ the Port of NY and NJ must conduct maintenance dredging activities that result in the removal of up to 8 million cubic yards of dredged material *annually*. Prior to 1996, dredged material disposal occurred almost exclusively at the open-water dump site six miles east of Sandy Hook, New Jersey. That site was closed to dredged material management by executive order of the office of the President in 1997, and is now undergoing remediation. Instead of ocean dumping, the majority of dredged sediments are now successfully being used for habitat creation, landfill remediation, landfill contouring and closure, brownfield remediation, mine reclamation, beach nourishment, and construction materials.

Notwithstanding the fact that Ocean Dumping Act standards for dumping degraded material in the Atlantic Ocean legally apply to Long Island Sound, disposal of contaminated dredged materials in Long Island Sound continues, while the disposal of similar materials in the Atlantic Ocean is prohibited. As a result, federal agency interpretations of the ODA criteria result in dumping dredged materials on the north side of Long Island (in the relatively small Long Island Sound waterbody) and no dumping of similar material on the south side in the significantly larger Atlantic Ocean. The dumping of contaminated sediments into Long Island Sound continues to deteriorate this invaluable resource and is not consistent with the New York Coastal Management Program.

Alternatives to ocean disposal are being implemented by New York, New Jersey, and the Port Authority of New York and New Jersey, so that the Port can dispose of its 8 million cubic yards of dredged sediments each year. The New Jersey Department of Commerce and Economic Development reported that dredged material is being

used to remediate, reclaim and reuse brownfield upland sites. New Jersey has agreed to a request from the State of Pennsylvania to conduct a demonstration using dredged materials for the closure of strip mines in the Commonwealth. New Jersey is developing new sites for all dredged material. New Jersey recognizes that there is a lot of competition for dredged material which often goes to the lowest bidder. Additionally, over the last two years, New Jersey has interviewed nearly 200 vendors of remediation technology and continues exploring new dredged material management and new physical opportunities.² Researchers at the Brookhaven National Laboratory (BNL) in Long Island are participating in research to develop alternatives for treating highly contaminated dredged material. The EPA has offered that BNL is helping develop several promising technologies that have the power to solve the problem of dredged material (Newswire, April 7, 2004). The benefit from decontaminating dredged material that distinguishes this management option from disposal, is useable products like cement, aggregate, bricks, blocks and soils for brownfield remediation.³

Material routinely dredged from areas on the north shore of Long Island is used for beach or dune nourishment. In other circumstances, dredged material is sold as a valuable commodity and hauled from dredging sites to be used in aggregates, for upland filling, and for construction activities. The range of these beneficial uses of dredged materials include the raising of parking areas, roadbeds and buildings above base flood elevations, backfilling dilapidated bulkhead areas, filling and grading of land for new construction, the manufacture of concrete, general sand and gravel aggregates for construction including roadbeds, using the materials in asphalt products, and in landfill contouring, capping and closure. Aggregate and asphalt industry representatives have indicated to DOS that those industries would grow to meet increasing demands for dredged material having criteria meeting their needs, for use in manufacturing processes. A discussion of the comprehensive application of such viable alternatives to open-water dumping is neither included, nor reflected, in the DEIS, consistency determination and the FEIS.

Despite these facts, the EPA repeatedly states that investigating the need for alternative dredged material management, and implementation of alternatives to open-water placement, is not economically viable. The EPA also conversely states that "[b]eneficial use is encouraged where a need for such use exists and any additional cost associated with that method of disposal is justified by the benefit" (DEIS, Page 3-5). EPA should have, but did not, provide further evaluation of reusing dredged material for beneficial purposes where such beneficial uses can be applied region-wide, instead of deferring to the evaluation of alternatives to open-water dumping on a case-by-case, permit-application basis.

The EPA (and the Corps) suggests that the designation of open-water dredged material disposal sites is the least-costly, environmentally acceptable alternative for the ultimate disposition of dredged material and, as such, is to be advanced as the preferred alternative. The EPA appears to be giving undue weight to the additional costs that could be associated with upland disposal methods, or for open-water disposal outside of Long Island Sound. In fact, costs appear to be the driving force justifying EPA's decision to designate the CLIS and WLIS sites:

With alternatives other than the four Long Island Sound sites, disposal costs would likely increase by well over 20 percent over current costs. These higher costs would likely restrict both Federal and non-Federal dredging projects. With static budgets and increasing unit costs for disposal, fewer projects would be dredged over any given period ... (FEIS §5.3).

Open-water disposal is not environmentally acceptable in this case where reasonable environmentally acceptable alternatives are available. Moreover, open-water disposal may not be less costly when the cost of environmental damage is adequately considered. Cost, however, cannot be used as a bar to the consistency of a direct federal agency activity, to the maximum extent practicable, with the applicable policies of the New York State's Coastal Management Program and cannot be used to justify an alternative for a federal activity unless a federal appropriation act itself prohibits full consistency, or if full consistency is otherwise prohibited by federal law (see 15 CFR §930.32(a)(3)). Neither of these conditions exist.

In contrast to EPA's assertion that the use of dump sites in the Sound is less costly than alternatives, consideration of the cited alternative disposal options could, in fact, absolutely reduce the introduction of contaminants into the marine environment. Alternatives re-using dredged material may actually reduce costs compared to the costs of open-water disposal of contaminated dredged materials, and have been used successfully in New York's Long Island Sound region. For example, the City of Glen Cove has implemented a widely successful revitalization effort, with Glen Cove Creek at its core. Given how dredged materials from Glen Cove Creek (Hempstead Harbor) are currently being managed, i.e. by being incorporated into bulkhead reconstruction, and for use by the City's Department of Public Works as fill in public works projects for upland beneficial uses, it is clear that these and similar alternatives to the open water disposal of both clean and contaminated dredged materials in Long Island Sound are available. EPA should encourage the use of alternatives to open-water disposal, and advance efforts which expand their use over the long term using dredged material as a valuable and needed commodity.

EPA's consistency determination does not adequately address the availability of alternatives to open-water disposal of dredged materials in Long Island Sound. While there are alternatives that were not adequately considered, those that were considered are inappropriately limited primarily to some landfill and brownfield activities, beach nourishment, and nearshore disposal. These options are appropriate in many circumstances, but others that are viable in different circumstances, such as the use of PAH-laden material in asphalt manufacturing, were not properly considered. EPA's discussion of alternatives is inadequate, and is inappropriately biased against upland and beneficial reuse options.

The viability of alternatives to open-water disposal in Long Island Sound is dismissed with " ... no alternatives to open-water disposal in Long Island Sound would satisfy the need for long-term regional disposal options" Meaningful discussion of the range of uses, past and present, of dredged material, or the successful handling of contaminated material that could render such material inert, harmless to human health and the environment, and beneficially reused, is missing from the DEIS, the FEIS and the consistency determination.

C. Cumulative Impact Analysis

For many years, dredged material from the marinas and harbors which line Long Island Sound has been dumped at disposal sites in the Sound, without regard to the cumulative environmental effects on that water body. According to the EPA, the sites have "historically" been used as U.S. Army Corps of Engineers (Corps) disposal areas, pursuant to the Corps's authority for such designation under the Clean Water Act (CWA) and the ODA. The FEIS states in Section 1.1 "History of Dredging and Disposal in Long Island Sound" that, " ... dredged material from projects in Connecticut and New York rivers, harbors and coastal areas has been disposed of at open-water sites in Long Island Sound since at least the 1870s." While detailed records of dredging activities

extend back to this time, disposal methods and sites for projects were not systematically recorded until the 1950s; however, there is evidence of continuous use of some sites since 1941 (Fredette *et al.*, 1992). From the 1950s through the early 1970s about 19 open-water disposal sites were active in Long Island Sound (Dames & Moore, 1981)." (FEIS p. 1-3) Between 1941 and 2000, approximately 37,710,289 cubic yards of sediment have been deposited in the central and western portions of the Sound.

The ODA provides that "In designating recommended sites, the Administrator shall utilize wherever feasible locations beyond the edge of the Continental Shelf." (33 USC §1412 (a)(1)) The ODA siting regulations further provide that "EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used." (40 CFR 228.5 (e)). In the FEIS (p. 3-30), the EPA wrongly contends that CLIS and WLIS are "historically used" ocean dumping sites, suitable for designation.

The rationale of designating dump sites beyond the Continental Shelf is self-evident; to keep the disposal of such materials far from the biologically productive areas along the shore. In proposing to designate dump sites within a tightly enclosed waterway like Long Island Sound, EPA directly contravenes the spirit of the ODA. Since the relevant provisions of the ODA predate the Ambro Amendment that included Long Island Sound as the sole territorial sea area within the ambit of the ODA, the words "other such sites that have been historically used" must mean ocean sites. Moreover, another EPA Region's explanation of the regulations points out that it must "wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and where historical disposal has occurred." (61 Federal Register 54118-54119 EPA Proposed Rules: Ocean Dumping; Amendment of Site Designation, 40 CFR Part 228)

Also, the use of the CLIS and WLIS open water disposal sites in the Sound was based on a 1980 interim plan between New York, Connecticut and involved federal agencies that provided for a long-term plan to be developed to reduce and eliminate the open water disposal of dredged materials in the Sound. The interim plan contemplated that all in-water disposal of dredged materials would stop, and suitable upland disposal areas or uses would be found. This logic is reinforced today, in light of the closure of the Mud Dump Site in the Atlantic Ocean. In contrast, EPA urges that the "historic use" of these sites, which was to be temporary under the multi-agency Agreement, justifies the permanent designation and continued use of these sites.

EPA also contends that the dredging and disposal needs and alternatives of the western and central LIS regions are geographically and environmentally separate from those of the eastern LIS region. The Sound is a semi-enclosed, restricted system, where water circulates in the shallow basin. The effects of dumping at one or more sites will necessarily affect all basins in the Sound. Dumping is currently permitted at WLIS, Cornfield Shoals Dispersal Site and New London Disposal sites, all in the Sound. EPA acknowledged that the possibility exists of multiple projects occurring simultaneously. (FEIS ES-15) However, nowhere in the submitted documents is there an analysis of the cumulative effects of multiple dredging projects and the dumping of dredged material at all sites. EPA's segmentation of the proposed designations improperly limits EPA's range of review and the consideration of cumulative environmental impacts from past and future dredge spoil disposal in the Sound. Moreover, even if EPA were correct and the Sound were not treated as a whole, the goal of most of the regional plans listed earlier were to improve water quality and habitats in the western Sound - the most degraded portion - and not allow it to further decline.

EPA has conceded that there will be cumulative impacts from the designation of dredged material disposal sites in this enclosed waterway. The FEIS (p. ES-16) states:

In Long Island Sound, disposal of dredged material could result in releases of contaminants in the water column, impacts to fish and shellfish, and impacts to navigation. Other activities in the Sound could also result in releases of contaminants (*e.g.* , nonpoint source pollution or spills from vessels), environmental stresses on fish and shellfish, and use of the Sound by ships and recreational watercraft. Thus, the impacts of the disposal of dredged material in the Sound, together with those resulting from other unrelated activities, could result in cumulative impacts. These cumulative impacts are not expected to be significant or to threaten a violation of any federal, state, or local requirements.

Here again, EPA states that cumulative adverse effects are not expected to occur and forgoes an appropriate analysis of available information. In fact, these cumulative impacts are already significant, given the fisheries and lobster declines and die-offs. While admitting the likelihood of cumulative impacts, but without the benefit of a Sound-wide analysis, EPA minimizes the significance of the effects.

Also, while acknowledging the link between site designation and subsequent act of dumping dredged material, EPA nonetheless avoids examination of this cause-and-effect relationship with regard to water quality: "Although the potential water quality effects of EPA dredged material disposal site designations under the MPRSA are evaluated under EPA's site selection criteria, see 40 Code of Federal Regulations (CFR) 228.5(b) and 228.6(a)(4) and (9), EPA site designations are not directly subject to the anti-degradation provisions of state water quality standards. This is because the site designation does not directly allow any discharges of any kind into the waters of Long Island Sound (FEIS, Appendix L, page 487).

In its comments on the DEIS, dated October 21, 2003, the U.S Fish and Wildlife Service/New England Field Office focused on cumulative impacts in Long Island Sound, stating:

On pages 5-88 and 5-89, statements are made that cumulative impacts could occur at designated disposal sites and as a result of other activities on or near LIS. However, this rather brief discussion of cumulative effects ends with a sentence stating that the dredged material component of these cumulative impacts is not expected to be significant or to threaten a violation of any federal, state or local requirements. In our view, this is not an adequate discussion and evaluation of cumulative effects on LIS, especially when a significant portion of Chapter 4 is devoted to identifying changes that have occurred to various resources over the past 30 or more years. One example of an incremental effect that EPA should consider evaluating in detail in the cumulative effects section is the increase in concentrations of chemical parameters at the disposal sites as a consequence of past and anticipated future disposal activity at these sites. This incremental impact is identified and briefly discussed under the sediment quality triad analysis and in Section 4.6.2., but is not evaluated as a cumulative effect. Other examples of incremental impacts that have not been evaluated for cumulative effects include elevated tissue concentrations of organic and inorganic (metals) contaminants in lobster and clam and worm tissues and disturbance to benthic habitat and communities as a consequence of disposal activity, hypoxia effects, dredging, weather related effects and other discharges into LIS (FEIS, Appendix L, p. 486).

EPA summarily dismissed the concerns of the U.S. Fish and Wildlife Service which are also of concern to DOS. EPA's response alludes only to the other open-water sites considered as alternatives, ignoring the cumulative effects of dumping at any one site and the benefits of alternative placement, treatment and reuse options.

The U.S. Fish and Wildlife Service comments further provide:

"On page 4-38 et al., the document discusses the sediment toxicity studies by Wolfe et al. and Buchholtz ten Brink et al. and concludes that acute sediment toxicity appears to be primarily in nearshore areas of LIS. Since the dredge material being disposed in LIS originates primarily from nearshore areas, it would appear to be prudent for EPA to discuss the potential for incrementally enhancing sublethal or even acute toxicity at the disposal sites commensurate with the incremental changes in sediment chemistry and tissue chemistry."

EPA, however, abrogates thorough assessment and evaluation of sediment toxicity in nearshore areas and the cumulative effects of concentrating these contaminated sediments at the proposed disposal areas in favor of benthic monitoring post-dumping. Also, additional, available toxicity data is not adequately included or discussed. This includes sediment pore-water toxicity testing of sea urchins conducted by U.S. Geological Survey (USGS). While the methodologies may not be comparable (see EPA's response, FEIS, Appendix L, page 487), these additional data are worth including and examining on their own, in light of the importance of the Long Island Sound ecosystem and its benthic resources. The U.S. Fish and Wildlife Service has further indicated that EPA fails to identify the USGS sites in this analysis; fails to use the sea urchin test as a tool for examining sediment quality in the active and inactive dump sites; and whether the sea urchin test is a tool for identifying potential disposal sites, such as impaired sites, that could be restored using site designation and management.

It was the "growing environmental degradation" of Long Island Sound that prompted the USGS in 1995 to undertake a multi-disciplinary study of the environmental conditions and the geologic processes that influence these conditions in the Sound. Through its Long Island Sound Environmental Studies program, the USGS has been focusing on contaminants and accumulation in sediments of Long Island Sound. It noted:

Semi-enclosed marine areas, such as Long Island Sound, are particularly sensitive to the effects of human activity because they are not as well flushed as open coasts. The larger cities of New York, New Haven, and New London are located on Long Island Sound, as are numerous smaller cities and towns on both the northern and southern shores. In addition, the Housatonic, Connecticut, Thames, and other rivers drain extensive inland areas into the sound (USGS 1995).

In the FEIS, EPA listed many of the authorized navigation projects in Connecticut and New York in and around Long Island Sound which utilize the proposed dump sites (see list on pages 1-4 and 1-5). Among them are navigation facilities which contain highly contaminated sediments or are identified sources of contamination. The past, present and future contributions from these sources - whether by dredge disposal or natural flow into the Sound- was not discussed by EPA in its consistency determination or the EIS documents.

The Housatonic River in Connecticut drains into Long Island Sound. Reportedly, Housatonic fish, waterfowl, and sediment contain some of the highest levels of PCBs in the country. EPA Region I is guiding the cleanup of this Superfund site and is now concentrating on the "rest of the river." Years of drainage of sediments into the Sound have occurred. A USGS study, "The Distribution of Mercury in Sediment from Long Island Sound and

Surrounding Marshes" (Varekamp, Buchholtz ten Brink, Mecray, and Kreulen, Open File Report 00-304 Chapter 7), concluded that the high concentrations of mercury (Hg) in western Long Island Sound surface sediments at 650 ppb Hg is in significant part "due to input of Hg-rich sediment from the Housatonic River Basin." This important contributor of contaminants was not addressed by EPA.

Naval facilities are present along the Thames River, and some of those facilities contain federal Superfund sites. Additional stratified sampling and testing for these pollutants, and additional stratified sampling and testing for the actual levels of pollutants in sediments throughout all of the areas to be dredged, would likely have revealed more types and higher actual levels of contaminants in the areas to be dredged, as opposed to "homogenized" sampling and testing that averages clean areas out with highly contaminated areas. Radioactive Cobalt-60 is also present in the Thames River sediments. According to scientists at the Marine Sciences Research Center at the State University of New York at Stony Brook, the levels of Cobalt-60 reported in the SEAWOLF FEIS are under-reported for the Thames River area. The introduction of Cobalt-60 into the open water marine environment could result in rendering certain commercially and recreationally important marine species unacceptable for human use. The effects and consequences of introducing this, and other radioisotopes, into the marine environment has not been considered in the consistency determination and the environmental impact statement documents.

The EPA fails to mention the disastrous dredged material dumping project that involved the Navy's homeporting plan for the Seawolf submarine. The Navy used the New London Disposal Site for the disposal of approximately 1.3 million cubic yards of materials from the Thames River, of which approximately 300,000 cubic yards was contaminated. The Navy and other federal agencies assured the public that the contaminated materials would be effectively contained at the disposal site and that contaminants would not bioaccumulate in marine organisms. Unfortunately, a monitoring report prepared for the Navy indicates that approximately 116,000 cubic yards of the contaminated materials and 71,100 cubic yards of the capping materials could not be accounted for, and that some of that material might not have been adequately contained. The effects of the release of contaminated dredged materials for this project, together with all other inputs of contaminants, has not been considered in the EIS's evaluation of cumulative effects.

The EPA also states that the Regional Implementation Manual (RIM), projected to be finalized in mid-2004 as guidance for evaluating dredged material that may be proposed for disposal in New England waters, would be incorporated into the Site Management and Monitoring Plans for each site by reference. The RIM references the EPA's "Evaluation of Dredged Material Proposed for Ocean Disposal Testing Manual" for determining the suitability of dredged material for open water disposal in the Sound based on an evaluation of reference sediment which is intended to represent ambient sediment quality in the vicinity of the open-water dump site(s). There is, however, an absence of substantial discussion regarding the existing levels of contamination found at the proposed sites, and the cumulative effects of continuing disposal of contaminated sediments at the proposed sites using reference data that, itself, reflects elevated levels of contamination. Reference material is the baseline of evaluation, but it only tests whether the sediments proposed for open water disposal present a threat significantly worse than the sediments already in the vicinity of the site. Testing dredged material to determine if it would present an **increased** threat when added to the reference sediments, which may be contaminated by any number of sources other than dredged spoils that are dumped in the Sound is not discussed.

If the reference material itself causes harm to test animals because of levels of pollution within the reference site sediments, the pollution levels in the sediment proposed for open water disposal would inappropriately appear

less injurious, and more benign, and the cumulative effects of open water dumping would remain inadequately assessed. The RIM, and its stated purpose for determining the suitability of material for open water dumping remains incomplete and faulty, further frustrating the DOS's decision-making with regard to the EPA's determination of consistency for the proposed site designations.

Trace metal contamination of sediments from land-based activities is found throughout Long Island Sound and its watershed. In 1996, the USGS collected samples of surface sediments in the Sound to measure amounts and locations of metal contaminants and to establish a baseline for identifying changing conditions. Average concentrations of silver and copper in the Sound were 4-5 times greater than naturally-occurring background values. Zinc, lead, and manganese concentrations were enriched 1.5-2 times greater than natural background levels. The concentration distributions of these elements correlates with the sedimentary environment, the sediment texture, the organic carbon content, and the abundance of *Clostridium perfringens*, a bacterium used as a sewage tracer. Strong water currents remove fine-grained sediments, and the contaminants that are associated with them from sandy, reworked environments and concentrate them in the depositional basins. Thus, the greatest enrichment of metals is found in the depositional environments and muddy sediments of the central and western basins, due to both proximity to pollutant sources and the natural movement of sediments and contaminants within the Sound.

D. Dredged Material Management Plan

The EPA and Corps must prepare a comprehensive plan for managing dredged material in the region to identify the alternatives to open water dumping. This was done successfully for NY Harbor following the 1997 on dumping in the Atlantic. While the development of a regional dredged material management plan (DMMP) is a separate process from the LIS site designations, the consequences and cumulative effects of both are inseparable. DOS has repeatedly stated to the EPA, most recently in a letter dated April 30, 2004 from Secretary of State Randy A. Daniels to EPA Administrator Michael Leavitt, that a dredged material management plan must precede the designation of any site. The DEIS, FEIS and consistency determination do not contain this crucial management tool.

The proposed action by EPA to designate the two disposal sites improperly concludes that open-water disposal of contaminated sediments in Long Island Sound is the only significant and reasonable option for managing dredged material. However, this approach is not consistent with the CMP and is not consistent with existing federal policy for the south side of Long Island in the Atlantic. It is also inconsistent with New York's investment of \$340 million to cleanup Long Island Sound and is false. Moreover, the goal of the ODA is to eliminate open-water disposal, not to designate new sites, especially in an Estuary of National Significance (Pacific Legal Foundation v. Quarles, 440 F.Supp. 316, 328 (C.D. Cal. 1977)). EPA's offer to "... host meetings to map out the next steps for initiation" in response to our comments on the need for a DMMP is insufficient justification for the current EPA determination of consistency, to the maximum extent practicable, for site designation. The current designation process would result in degrading, rather than improving, the quality of the Sound. EPA should have, but did not, quantify dredging needs, evaluate dredged material management options, consider the cumulative and secondary effects of this activity, and develop a comprehensive dredged material management plan for the entire Long Island Sound region.

II. Policy Analysis

In addition to information and data deficiencies which lead this agency to object to the EPA's consistency determination on the grounds of insufficient information, the review of information made available to DOS also leads us to conclude that the EPA's activity proposing to designate open-water sites in Long Island Sound is inconsistent with the following Long Island Sound Regional Coastal Management Program policies:

Policy 5 *Protect and improve water quality and supply in the Long Island Sound coastal area.*

One of the principal purposes of this policy is to protect the quality of water in the Long Island Sound area. Water quality protection and improvement in the region must be accomplished by the combination of managing new and remediating existing sources of pollution.

Dredging and dumping dredged material in open-water degrades water quality. Adverse effects to human health and the estuarine environment can be directly attributable to the discharge of dredged material in open water. These effects are acutely exacerbated with the presence of elevated levels of known contaminants, such as mercury, PCB congeners, and dioxin.

Dredged material that would be disposed of in the Sound after designation will contain elevated levels of organic material and nutrients, including nitrogen, which exert oxygen demand on those waters and promote algae growth. The direct effect of this nutrient loading is decreased dissolved oxygen levels in the Sound. Programs costly to municipalities and taxpayers which are intended to remove nitrogen and implement storm-water controls are mandated by EPA in order to lessen contamination of the Sound, while the lowest-cost, most environmentally damaging dredged material disposal option is being advanced by the EPA on the basis, apparently, of economic advantage alone.

Policy 5.3 *Protect and enhance the quality of coastal waters.*

The resuspension of sediments during dredging operations and during the transit of dredged material through the water column upon final placement, results in the re-exposure of contaminants in dredged sediments to the environment in addition to substantial local oxygen depletion during each bulk sediment movement through the water column. Managed dredged material (i.e. dumped with capping protocols) remains exposed to the environment during removal and placement prior to any final capping or complete sequestration. Capping disturbs the underlayment, causing spatially large dispersals. Experience in Long Island Sound has shown that capping dredged material is unpredictable as a reliable management technique for isolating contaminant-bearing fine-grained sediment from the environment, particularly in depths of water such as that found at the CLIS and WLIS sites. This exposure, and the adverse effects associated with such exposure, will result in degradation of water quality in the Long Island Sound ecosystem. These contaminant-laden constituents of dredged material continue to bio-accumulate and remain exposed to transfer throughout the ecosystem. The presence of elevated contaminant levels in sampling across the study area suggests the unreliability of this management method.

Managing dredged material systematically in order to avoid, or reduce, open-water disposal significantly reduces the likelihood of adverse effects to human health and the environment from the open-water dumping of dredged

material. The EPA suggests, in the DEIS and FEIS, that the estimates of dredged material to be placed at the open-water sites is derived, in part, from survey responses and the catalog of federal projects in the Long Island Sound region. The survey is referred to as having been sent to "Navigation-dependent facilities and contacts" but, many of those businesses have changed names, been sold, or gone out of business. This variation complicates the uncertainty of determining accurate needs over the suggested time-scale (i.e. 20 years) and fails to anticipate changes in dredging needs due to the introduction, or re-introduction, of new non-federal navigation-dependent facilities. One consequence of the NY Harbor Navigation Study (Harbor Deepening Study) is the accelerated increase in shipping, port and navigable fairway maintenance, and traffic five years into the study's projected fifty-year life span above the rate originally anticipated in the study. The Needs Assessment cannot provide an accurate estimate of dredging needs and potential dredged material placement volumes where there is less than a 35% response rate to the survey. Such a survey response rate may be acceptable for determining general trends, but for forecasting specific volumes, in this case, the responses are insufficient for appropriate needs forecasting. For each of the survey areas (e.g. dredging centers/economic areas), the undetermined potential dredging needs represent a statistically significant volume of material that could be placed in the open-waters of Long Island Sound but is unaccounted for in the current assessment. Future land and water development plans and uses are unquantified and unaccounted for, and would add to dredged material volumes to be managed. For the reasons cited above, the proposed activity is inconsistent with this policy.

Policy 6 *Protect and restore the quality and function of the Long Island Sound ecosystem.*

The Long Island Sound ecosystem consists of physical components, biological components, and their interactions. Certain natural resources that are important for their contribution to the quality, function and biological diversity of the Sound ecosystem have been specifically identified by the State for protection.

People continue to be attracted to the Long Island Sound coastal area and development pressures on the natural resources of the region continue to grow. Unfortunately, Long Island Sound has been polluted for a long time. Every summer, the dissolved oxygen content in the western Sound's basin reaches such low levels that marine life dies. The need to clean the Sound and reverse its decline was recognized by Congress when it designated the Sound as an estuary of national significance. The EPA should have included data indicating whether the designation of the proposed sites could affect dissolved oxygen levels or other water quality parameters in Long Island Sound.

EPA maintains the designation and continuing use of these sites for dumping dredged material are, therefore, consistent to the maximum extent practicable, with the applicable, enforceable policies of the NYS CMP, as it is expressed in the Long Island Sound Regional Coastal Management Program. The EPA's view that these proposed designations would have negligible effects on ecosystem quality fails to assess the cumulative effects of the proposed designations and the cumulative effects of the long-term use of these sites after designation, and the historical and potential future use of other open-water sites in Long Island Sound, like the Cornfield Shoals and New London open-water disposal areas. For these reasons, the proposed activity is inconsistent with this policy.

Policy 6.1 *Protect and restore ecological quality throughout Long Island Sound.*

The EPA neglects to discuss what reasonably foreseeable effects may likely accrue from this direct federal activity when using the farfield, inactive and active mound sediment data as an index for allowing further open-water dumping of dredged material and the subsequent degradation of the Sound environment with the use of the proposed disposal sites, as required by 15CFR§930.33(a)(1).

The Marine Protection Research and Sanctuaries Act requires the designation of dredged material disposal sites that will mitigate adverse impact [of open-water dredged material placement] to the greatest extent practicable (MPRSA 33USC§1412 (I)(c)(1)). EPA's proposed designation of two disposal sites, however, is based on the apparent and erroneous assumption that the sites proposed for designation, because of their past use for receiving dredged material and the associated presence of elevated contaminant levels in baseline sampling, are appropriate and, when continued to be used for the acceptance of dredged material that does not meet NYS water quality standards, would not significantly degrade the Long Island Sound ecosystem. There is no discussion of how the proposed direct federal activity improves the Sound ecosystem. This determination also fails to address reasonably foreseeable effects of continuing to use the sites in the context of sampling that reveals elevated reference levels of non-inert, and toxic, constituents, as required in 15 CFR Part 930.33(a)(1). The EPA presents data showing these elevated contaminant constituent levels (i.e. mercury, copper, and pesticides, like toxaphene) in their baseline sediment surveys, and suggests that the historical use of these sites, and the presence of contaminants such as mercury and copper, does not preclude the sites continuing use as dredged material disposal areas and would not result in further degradation of the environment and Long Island Sound ecosystem. However, the historical use of these sites has already contributed to the degradation of ecological quality throughout the Sound. Future use would present reasonably foreseeable, and avoidable, cumulative effects exacerbating the Sound ecosystem's exposure to additional contamination.

Without specific criteria for determining the potential toxicity of dredged material and an assessment of the cumulative effects of open-water dumping according to those criteria, the EPA fails to demonstrate the consistency of their proposed designations, to the maximum extent practicable, with the applicable policies of the Long Island Sound Regional Coastal Management Program, and Policy #6.1, in particular. In its consistency determination for the proposed designations, EPA states that "[p]otential adverse impacts to water quality are expected to be minimal" (EPA Consistency Determination, March 4, 2004, page 4). This statement implies that the use of the CLIS and WLIS disposal areas after designation would not result in significant, adverse cumulative effects to the Sound ecosystem. For the reasons cited above, the activity is inconsistent with this policy.

Policy 8 *Minimize environmental degradation in the Long Island Sound coastal area from solid waste and hazardous substances and wastes.*

The intent of this policy is to protect people from sources of contamination and to protect Long Island Sound's coastal resource from degradation through proper control and management of wastes and hazardous materials. Attention is required to identify and address sources of contamination resulting from in-place sediment contamination in the Long Island Sound region.

In NYS, dredged material is regulated as a solid waste. The development and implementation of a strategy that avoids open-water dumping of dredged material (a solid waste) would be a proper management practice. EPA's

consistency determination fails to provide such a strategy and therefore is not consistent with the state's management program.

Policy 8.1 *Manage solid waste to protect public health and control pollution*

The proposed management of dredged material (a solid waste) is to dump the material in the Sound. The analysis of prospective alternative options, particularly the beneficial reuse of material dredged in the Long Island Sound Region, has not been adequately addressed in the EPA consistency determination, or in the draft and final environmental impact statements. The expansion of alternative upland placement sites and opportunities, similarly, has not been thoroughly studied. In NYS, the open-water placement of dredged material is the least-favored option for managing dredged material, and should be considered only after all other options are exhausted, as previously recommended to EPA by the DOS and NYS DEC in our November 17, 2003 letter. Guidance for the implementation of this policy specifically addresses the prevention of solid waste discharges into the environment by using proper handling, management, and transportation practices. EPA has, however, failed to consider this guidance. The proposed activity is inconsistent with this policy.

Policy 8.3 *Protect the environment from degradation due to toxic pollutants and substances hazardous to the environment and public health.*

In addition to the adverse effects associated with the re-introduction of dredged material contaminants to the water column and benthos, the open-water disposal of dredged material has adverse effects on aquatic species and the benthic community directly through sediment dispersal through the water column, and burial. The effects of chemical contamination may not be manifest until after several generations of species propagation. Reference samples provided in the site designation environmental impact statement reflect concentrations of some contaminants beyond known toxic limits and can not reliably be used as indicators for subsequent dredged material sediment contamination evaluation. Furthermore, reference data which shows minimum toxic effects levels (MEL) of contamination, or greater, would set an unreasonable and injurious standard for permitting the open-water disposal of contaminated sediments in Long Island Sound.

One strategy of the Long Island Sound Comprehensive Conservation and Management Plan is to undertake and support efforts which comprehensively address toxic contamination in Long Island Sound by: controlling and preventing toxic contamination *from all sources*; addressing sediment contamination; improving human health risk management; monitoring and assessing toxic contaminants; and, conducting toxic contaminant research. The 2003 goal for achieving this strategy is to "[e]liminate toxicity of bioaccumulation impacts on living resources by reducing contaminant inputs, cleaning up contaminated sites and managing risk to humans from seafood consumption."

The Sediment Analysis data provided with the environmental impact statement for the proposed site designations (Appendix F, Volume 1) exhibits reference sample data from several locations that contain higher levels of certain contaminants that are known to pose risks to human health and the environment.⁴ These sample results, compared with existing established toxic limits from sources such as the NYS DEC Technical Guidance for Screening Contaminated Sediments⁵, if used to establish the suitability of dredged material for open-water placement, would result in the continued disposal of contaminated material in the open-waters of Long Island Sound without management protocols following site designation and are unacceptable. More importantly, the

reference data at each proposed site reflect levels of copper (Cu) which exceed the toxic-effects level in the NYS DEC guidance for that constituent⁶. High levels of this contaminant have been detected at nearly the Severe Effect Level in reference samples.

The importance of the presence of copper in sediments and the water column is two-fold. Copper is shown to have predictably fatal effects on American lobster (a LIS fishery that has declined drastically in recent years) in low concentrations⁷. For example, copper is considered lethal to lobster at concentrations of 0.056 ppm (parts per million). Concentrations ranging from 50.8 to 56 ppm copper in sediment samples at the CLIS site and from 62.5 to 82.7 in the WLIS site have been recorded. These levels are more than 1000 times the known fatal limit of copper for lobster. Copper is important as a micronutrient in animal growth and development, but it can become toxic when present in excess. Research has indicated that copper is among the more toxic metals to aquatic animals, especially crustaceans. It appears likely that copper contained in dredged materials that have been dumped at the CLIS and WLIS have had a negative impact on lobster survivability. Toxicity profiles presented in the EPA's website concerning ecological risk assessment include information on copper as a toxic inorganic substance. According to the profile, "[c]opper is highly toxic in aquatic environments and has effects in fish, invertebrates, and amphibians." Lobster represents a valued resource to commercial fisheries, and is consumed by humans. Contaminant accumulations in this resource pose direct threats in sufficient quantities to human health.

Copper is abundantly used in anti-fouling compounds and may provide a correlation to areas most-frequently dredged like boat basins, marinas, and navigation channels that are populated by boats employing this element in anti-fouling hull paint. Its presence in reference sediments, obtained near the proposed disposal areas, implies that dredged material historically placed in the open water has originated in those areas where dredging is most likely to occur (i.e. marina basins and navigable fairways) and has not been successfully sequestered at the disposal sites; never reached its intended final disposition location, or was not managed and has migrated through the water column.

Other contaminants, like PCB congeners, are known to exist in sediments near the proposed disposal areas (DEIS Appendix F, Table 4-1), and in active site sediments. These contaminants have been shown to bioaccumulate in benthic and aquatic marine life. The U.S. EPA has determined PCBs to be probable human carcinogens.⁸ Their presence in, and around, the proposed disposal sites (see DEIS Appendix F, Table 4-1), in sediments likely to be dredged from Sound tributary rivers and harbors, and the absence of specific protocols for preventing their disposal at the proposed sites would lead to further degradation of the Sound environment. Furthermore, the maximum acceptable level of continuous exposure to PCBs by aquatic communities is .03 parts per million without detectable adverse effects, according to U.S. national water quality standards and sediment data in Table 4-1 for total PCBs exceed this national standard.

The information presented in the EIS does not adequately support the conclusion that potential risks to human health "appear to be very low" for EPA's preferred disposal options. For example, for several contaminants in finfish (e.g., dioxins) and for all contaminants in lobster (a key species due to particularly high contaminant levels in hepatopancreas), the EIS calculated potential human health risks using modeled contaminant levels only, even though actual monitoring data were collected. In some cases, modeled contaminant levels were considerably lower than measured levels and the use of modeled levels may underestimate health risks. The EIS risk estimates for PCBs are at levels at which EPA typically recommends measures to reduce exposure, but the accuracy of these and other risk estimates cannot be verified based on the information provided. Also, the EIS

did not address potential health risks to children. Finally, the EIS is incomplete in that it did not characterize the potential health risks associated with other disposal options and therefore comparison of various alternatives on the basis of health risk is not possible. Given the foregoing, the designation of dredged material disposal sites in the open waters of Long Island Sound is inconsistent with this policy.

Policy 10.6 *Provide sufficient infrastructure for water-dependent uses.*

The EPA states in their consistency determination that open-water site designation advances water-dependent uses and the infrastructure that supports those uses in making this cost-effective, but environmentally damaging disposal option available. The EPA further states that "... no alternatives to open-water disposal in Long Island Sound would satisfy the need for long-term regional disposal" To support the long-term viability of navigation and water-dependent uses in the Long Island Sound region, a long-term strategy for managing dredged material, in a manner consistent with the objectives of reducing sedimentation and contaminants at the sources, protecting the Sound ecosystem, and improving water-quality in the Long Island Sound region is required and must be advanced by all stakeholders, including the U.S. EPA and the New England District of the Corps.

Specific guidance for supporting water-dependent uses and providing the necessary infrastructure for such uses is described in the Long Island Sound Regional Coastal Management Program. Policy 10 promotes beneficial uses of dredged material, consistent with past practices in the Long Island Sound region, by requiring the beneficial use of suitable dredged material "... for beach nourishment, dune reconstruction, and other beneficial uses," allowing "... placement of suitable dredged material in nearshore locations to advance maritime and port-related functions" and avoiding "placement of dredged material in Long Island Sound when opportunities for beneficial reuse of the material exist" (LIS CMP at page 85). The appropriate strategy should include establishing accurate estimates of all classes of dredged material expected to be removed from navigable fairways throughout the region, identify all opportunities for the beneficial reuse of dredged material, and provide a comprehensive schedule in a Sound-wide dredged material management plan of needs and opportunities which support maritime and recreational uses of the Long Island Sound, improves the quality of the Long Island Sound environment, and which places dredged material, as a coastal resource, in beneficial uses. The proposed activity is inconsistent with this policy.

Policy 11 *Promote sustainable use of living marine resources in Long Island Sound.*

The living marine resources of the Sound play an important role in the social and economic well-being of the people of the Long Island Sound region. Commercial and recreational uses of the Sound's living marine resources constitute an important contribution to the economy of the region and the State. Continued use of the Sound's living resources depends on maintaining long-term health and abundance of marine fisheries resources and the habitats, and on ensuring that the resources are sustained in usable abundance and diversity for future generations.

The EPA, in their environmental statement acknowledges an adverse effect of open-water dredged material disposal on benthic and aquatic resources during open-water dumping. These effects are direct burial of living benthic organisms during placement of dredged material at the sites. Those that survive an act of dumping,

without large ranges of normal movement, tend to accumulate any dredged material constituents that have toxic effects in the sediment and in the water column. Biological effects of toxicity multiply. The EPA declares that these effects are acceptable due to the re-colonization that may happen after a period of time. The proposed dumping, however, will be done periodically over 20 years with little, if any, recovery time between dumping events. Subsequent placement will result in additional effects. It is not clear from the information provided, however, what effects management through capping would have on the re-colonization that is suggested to occur at the disposal sites. Less certain, and left undefined in the DEIS, the FEIS, and EPA's consistency determination, is what trophic variations are likely to result from such management activities when management material is intentionally composed of different physical characteristics than the ambient, or endemic, benthos material for the long-term. These physical changes will result in differences in colonization species, success, and duration. For these reasons, the proposed activity is not consistent with this policy.

Policy 11.1 *Ensure the long-term maintenance and health of living marine resources.*

Very little data are provided on the cumulative effects to the benthic ecology from repeated disposal activities at these sites. While the Corps and the EPA have relied on the DAMOS monitoring program, and provide very little detail in the revised site monitoring and management plans, there is no evidence that management of contaminated material would successfully encourage re-colonization at the disposal sites by species that may have originally inhabited these locations. Moreover, data in the environmental impact statement, as discussed above, may be indicative of material that has migrated through the water column originating in dredged material, and would prove to be hazardous to marine resources typically inhabiting Long Island Sound in these water depths and temperatures. Therefore, the activity is inconsistent with this policy.

Local Waterfront Revitalization Programs

As discussed above, EPA provided a discussion of the relevance and, in some instances, consistency, of the proposed direct federal activity with approved local waterfront revitalization programs (LWRP) that are elements of the CMP. Unquestionably, the health, vitality and future of each and every waterfront community depends, in part, on the same health, vitality and future of their waterfront areas and water resources.

EPA's consistency determination, however, is noteworthy by the absence of a consistency discussion for many policies that received a "Not Applicable" consideration from EPA.

All LWRPs have the same basic policies, and EPA does briefly consider LWRP Policy #8: *Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bioaccumulate in the food chain, or which cause significant sublethal or lethal effects on those resources.*

The information presented in the EIS, and referenced in the EPA's consistency determination, demonstrates, however, that significant levels of contaminants are found in the sediments at, and near, the proposed dump sites. EPA's proposed designation of open-water disposal sites, using reference data which reflects the presence of significant levels of contaminants, particularly concentrations of copper that is lethal to the important Long Island Sound commercial lobster fishery, does not protect aquatic species from the introduction of hazardous material, and does not avoid, or eliminate, the introduction and bioaccumulation of contaminants known to cause

significant adverse effects to aquatic species. Thus, EPA fails to set forth any rational reason why its proposed action will be consistent with these local program policies. For these reasons, the proposed activity is not consistent with this policy.

Equally, EPA cites LWRP Policy #35: *Dredging and dredge spoil disposal in coastal waters will be undertaken in a manner that meets existing state dredging permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.*

EPA states that, because the sites are situated within Connecticut waters and a water quality certification from the appropriate issuing agency would be granted, the activities are consistent with this policy, or this policy does not apply to the proposed designations. However, the farfield and active mound sediment sample data at each site proposed for designation show elevated levels of contamination, and these constituents remain exposed to the environment and cannot be guaranteed to remain in Connecticut waters. For direct federal agency activities, the CZMA requires agencies to consider both cumulative and reasonably foreseeable effects to coastal uses and resources. The presence of toxins in lobster and other aquatic organisms' tissue is indicative of the tendency of contaminants to migrate into NY waters and the inability, under current practices and management methods, to accurately and predictably confine contaminant-laden dredged material at these sites. The activity is inconsistent with these local program policies.

EPA's response to the consistency of the proposed designations with LWRPs policy #31 for the applicable local programs, is also indicated as being "Not Applicable," even in light of the LWRP policy standard requiring that "... those waters already over-burdened with contaminants will be recognized as a development constraint." EPA argues the site designations would encourage port and water-dependent use development in LIS communities in their discussion of the relevant local programs' small harbor policies (generally, policy 4) by providing for the "... designation of open-water dredged material disposal sites in Long Island Sound [which] will contribute to the economic viability of traditional small harbor uses and the maritime identity of the community" A similar, incorrect argument is made for water-dependent uses in Sound communities with approved LWRPs. EPA's discussion fails to identify, consider and address reasonably foreseeable cumulative effects of the proposed designations and does not advance the State CMP's dual objectives of promoting water-resource related uses and activities, and preserving sensitive coastal resources. The activity is inconsistent with this policy.

Conclusion

The proposed designation of two open-water disposal sites in Long Island Sound, the Central Long Island Sound site, and the Western Long Island Sound site, is inconsistent with the applicable, enforceable policies of the NYS Coastal Management Program as it is expressed in the Long Island Sound Regional Coastal Management Program and local waterfront revitalization programs in the Long Island region. Given an incomplete evaluation of alternative placement options; an inaccurate projection of future dredging needs, anticipated dredged material volumes, and capacities of the subject sites; the incompleteness of information available to reasonably determine the foreseeable adverse and beneficial effects of the activity, failure to adhere to the requirements of the ODA for designating such sites; and, the absence of a comprehensive management plan for dredged material in the Long Island Sound region, the Department of State objects to the EPA's consistency determination for this activity.

Alternative

Pursuant to 15 CFR §930.43(a)(3), alternative measures may be described which, if adopted, would allow an activity to proceed in a manner that is consistent to the maximum extent practicable with the enforceable policies of the CMP. An alternative to the current proposal to designate two open-water disposal sites in central and western Long Island Sound that would be consistent with the NYS CMP, would be a ban on open water disposal, as was done with the Mud Dump site in the Atlantic Ocean.

Pursuant to 15 CFR §930.43 and §930.112, you may attempt to resolve these issues with DOS, or request Secretarial Mediation from the U.S. Department of Commerce. Given that the mediation process may be lengthy, if you would like to continue discussions with this office while pursuing mediation, please call Mr. Sam Messina at (518) 473-2469.

The U.S. Department of Commerce is being notified of this decision by copy of this letter.

Sincerely,

George R. Stafford
Director
Division of Coastal Resources

GRS:vab

cc: OCRM - John King
NYS DEC

¹ Lillian Barrone, Director of the Department of Port Commerce, The Port Authority of New York and New Jersey to the Subcommittee of the Senate Environment and Public Works Committee, May 23, 2000.

² Piror, James T., "Dredging, Boost to New Jersey," *New Jersey Business*, November, 1997.

³ Ibid.

⁴ Appendix F, "Sediment Analyses," Volume 1, *Environmental Impact Statement for the Designation of Dredged Material Disposal Sites in Central and Western Long Island Sound, Connecticut and New York*, U.S. Environmental Protection Agency, New England Region and U.S. Army Corps of Engineers, New England District, July 2001, Table 4-1, Long Island Sound Study Sediment Chemistry and Grainsize Results, pp. 2/85 et. seq.

⁵ "Technical Guidance for Screening Contaminated Sediments," Division of Fish, Wildlife and Marine Resources, New York State Department of Environmental Conservation, January 25, 1999.

⁶ FEIS Appendix F, op. cit.

⁷ Estrella, Bruce T., *Techniques for Live Storage and Shipping of American Lobster, 2nd Ed.*, Commonwealth of Massachusetts, Department of Fisheries, Wildlife & Environmental Law Enforcement, Division of Marine Fisheries, January 1993.

⁸ "Polychlorinated Biphenyls (PCBs): A Fact Sheet," Massachusetts Department of Environmental Protection and United States Environmental Protection Agency, August 1997.