IMPORTANT NOTE:

Due to major changes in dredged material management policy that have taken place since the *Management of Dredged Material* chapter was written, this chapter is not being implemented as written but is instead in the process of being revised. For more information about the revised version, contact Bob Nyman at the HEP office.

PROBLEMS

The presence of contaminants of concern in material that needs to be dredged and disposed and the dispersal of the material throughout the Estuary.

Potential ecological risks, such as bioaccumulation and degradation of benthic community structure, which may be associated with sediment contamination and dredging and disposal operations.

Potential human health risks which may be associated with dredging and disposal operations.

Potential economic effects of dredging and disposal on the shipping industry, fish and shellfish industry (commercial and recreational), tourism, and recreation.

Regulatory delays due to the myriad of agencies regulating dredged material, the lack of available disposal alternatives, and uncertainties related to the implementation of revised testing protocols.

SOURCES CONTRIBUTING TO THE PROBLEMS

Existing, in-place contaminated sediments

Continuing inputs of toxic chemicals

- *Municipal discharges*
- *Industrial discharges*
- *Combined sewer overflows*
- *Storm water*
- *Non-point sources of pollution (including hazardous and solid waste disposal sites)*
- *Atmospheric deposition*
- *Chemical and oil spills*
- *Transport of contaminated sediment from upstream rivers and tributaries*

Lack of non-ocean disposal options

GOALS

To establish environmentally sound, economically feasible, dredged material disposal alternatives.

To have ongoing coordinated and integrated efforts with various state and federal groups and dredged material management task forces.

To maintain the contribution of the Port to the economy and quality of life of the Region.

To improve dredged material management plans for the Harbor.

To evaluate and implement, where practicable, alternative methods of dredged material disposal including those with beneficial uses, such as habitat restoration, landfill cover, etc.

To determine, and where practicable use, the best available technologies/methods for dredging and disposal.

To control continuing sources of toxic chemicals to ensure that all sediment entering

OBJECTIVES

D-1 Develop a future dredged material management structure.

D-2 Reduce continuing inputs of toxic chemicals and upland sediments and soils. Better understand the toxic contamination problem and take additional management actions as more is learned.

D-3 Characterize, categorize, and quantify material to be dredged.

D-4 Identify, evaluate, and select disposal and treatment/decontamination alternatives including beneficial uses of dredged material.

D-5 Develop plans for closure (including remediation and restoration) of the Mud Dump Site and historical disposal areas.

D-6 Improve dredging, transport, and disposal operations.

D-7 Expedite permit decisions.

MANAGEMENT OF DREDGED MATERIAL

THE PROBLEMS

The international Port of New York and New Jersey ("The Port") plays a vital role in the economy of the region, handling more general and containerized cargo than any other East Coast port. The Port is also part of an estuary of national significance. The Harbor is not naturally deep, and rivers continuously transport and deposit sediment, filling in navigation channels and berthing areas. To maintain the Port for modern deep draft vessels, large quantities of sediments (historically 6 million cubic yards/annually) must be dredged. A majority of this material was, and continues to be, disposed at the Mud Dump Site located 6 miles east of Sandy Hook, New Jersey and 11 miles south of Rockaway, New York. This material must be managed in an environmentally sound manner.

The sediments in and around the Harbor contain contaminants at varying concentrations. The presence of contaminants can cause significant environmental problems, including: bioaccumulation within marine organisms (and up the food chain), and changes in benthic community structure. Certain contaminants which may be found in sediments are bioaccumulated in marine organisms and may biomagnify up through the food chain and pose a threat to biota and public (human) health. Dredging contributes to resuspension of these sediments. In addition, ocean disposal raises concerns about exposing additional marine organisms and habitats to these contaminants of concern. Concern has also been expressed regarding the impact of dredged material, and its subsequent disposal, on water-dependent industries such as recreation, tourism, and commercial and recreational fishing.

Scientific concerns about these issues have led to changes in the national testing protocols for dredged materials. Uncertainties related to the implementation of these revised test protocols in the New York/New Jersey Harbor region, coupled with specific concerns about dioxin, and lack of available disposal options, have contributed to delays in regulatory decisions with respect to dredging and disposal.

Numerous regulatory requirements and concerns about resource use may delay the regulatory decisions of the many agencies which are either directly, or indirectly, involved in regulating dredged material. In order to regulate more

efficiently, all parties must work more closely to avoid delays in decision-making.

FACTORS CONTRIBUTING TO THE PROBLEMS

The New York/New Jersey Harbor, including many of the berthing areas and channels, contains primarily fine-grained sediment which may be contaminated with heavy metals, PAHs, PCBs, pesticides, and dioxin. These contaminants of concern may impact the ecosystem, depending on concentration. Not all dredged material is contaminated; however, it may contain contaminants at concentrations which require management, if the dredged material is ocean disposed, or which preclude the material from ocean disposal. The principal cause of the problem is the presence of contaminants of concern in a large portion of the material that needs to be dredged and disposed and the movement of these contaminants throughout the Harbor/Bight complex.

Pollutant Loadings

In addition to contaminated sediments already in the Harbor/Bight, there are sources of pollutants that continue to contaminate fine-grained sediments, water, and biota. Sources include:

- Ë Industrial discharges
- Ë Municipal discharges
- Ë Combined sewer overflows
- Ë Storm water
- Ë Non-point sources of pollution
- Ë Atmospheric deposition
- Ë Chemical and oil spills
- Ë Transport of contaminated sediment from upstream rivers and tributaries

Until these sources are adequately controlled, the problems associated with the Harbor/Bight complex, as well as dredged material management (i.e., contaminated sediment), will continue.

Lack of Disposal Options

Historically, ocean disposal has been the primary disposal option for materials dredged from the Harbor. Other disposal options in the region have generally not been used because of the readily available and relatively low cost of ocean disposal (until recently), as well as conflicting uses and environmental concerns associated with implementing other alternatives.

THE PLAN TO SOLVE THE PROBLEMS

The primary purpose of the dredged material management component of the CCMP is to establish immediate (within 1 year), short-term (1-3 years), and mid-term (3-9 years), environmentally sound, economically feasible, dredged material disposal alternatives. The U.S. Army Corps of Engineers (USACE) is developing a New York Harbor Dredged Material Management Plan (DMMP). The DMMP will include short-, mid-, and long-term alternatives. USACE, through existing programs and the DMMP, will provide technical support to achieve the objectives of this CCMP.

The dredged material component of the CCMP provides immediate and short-term disposal alternatives for dredged material which meet ocean dumping criteria while allowing for the selection, design, and implementation of mid- and long-term non-ocean disposal alternatives for dredged material not suitable for ocean disposal.

Consistent with the current practices of HEP, early implementation of selected elements of the dredged material management plan will be undertaken, including the pursuit and implementa-tion of non-ocean dredged material

disposal alternatives. In accordance with the Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, ocean disposal will be denied if it can be demonstrated that there are practicable alternative locations for disposal which would have fewer environmental impacts or potential risks to other parts of the environment than ocean dumping.

The dredged material management component of the CCMP plays a critical role in establishing and maintaining a healthy and productive Harbor/Bight ecosystem with full beneficial uses. This component of the Plan has the following **goals**:

- To establish environmentally sound, economically feasible, dredged material disposal alternatives.
- To have ongoing coordinated and integrated efforts with various state and federal groups and dredged material management task forces.
- To maintain the contribution of the Port to the economy and quality of life of the Region.
- To improve dredged material management plans for the Harbor.
- To evaluate and implement, where practicable, alternative methods of dredged material disposal including those with beneficial uses.
- To determine, and where practicable use, the best available technologies/methods for dredging and disposal.
- To control continuing sources of toxic chemicals to ensure that all sediment entering the Harbor Estuary will meet Category I criteria (see Action D-3.5 below).
- To restore, whenever possible, areas of the Bight Apex which have been adversely impacted by dredged material disposal activities to pre-disposal conditions.

The interaction of the participants in the Dredged Material Management Forum, as discussed below, has resulted in many proposals to address dredging and disposal concerns. Based on these discussions, materials generated by the Forum, and the goals of the Forum, this plan includes **objectives** to:

- Develop a future dredged material management structure.
- Reduce continuing inputs of toxic chemicals (see Management of Toxic Contamination section) and upland sediments and soils (see Management of Habitat and Living Resources section).
- Characterize, categorize, and quantify material to be dredged.
- Identify, evaluate, and select disposal and treatment/decontamination alternatives.
- Develop plans for closure (including remediation and restoration) of the Mud Dump Site and historical disposal areas.
- Improve dredging, transport, and disposal operations.
- Expedite permit decisions.
- Better understand the toxic contamination problem and take additional management actions as more is learned (see Management of Toxic Contamination section).

USACE, through existing programs and the DMMP, will provide technical support to meet the objectives of this component of the CCMP.

COMMITMENTS AND RECOMMENDATIONS

OBJECTIVE D-1 ***Develop a future dredged material management structure***

In an effort to address the dredged material management problems in the Port, a Dredged Material Management Forum was convened. The Forum brought together a wide spectrum of groups, concerned with issues associated with the dredging and disposal of sediments, to seek cooperative and implementable solutions. The Forum became part of HEP because it was the most efficient and effective way to continue the work of the Forum.

The Forum created the following work groups: (a) Dredging, Transport, and Disposal; (b) Criteria; (c) Mud Dump Site; (d) Containment Facilities (including borrow pits and containment islands); (e) Decontamination Technologies/Site for Decontamination Facilities; (f) Sediment Contamination Reduction; and (g) Dredged Material Management Integration (consisting of the chairs of work groups a-f above as well as representatives of critical stakeholders).

ACTION D-1.1
Dredged Material Management Structure
HEP recently agreed on a long-term management structure, incorporating the work of the Dredged Material Management Forum into HEP (see section on Post-CCMP Management Structure below). In this structure, the Dredged Material Management Integration Work Group (DMMIWG) has several important functions: 1) it helps to support and coordinate the work of the six working groups; 2) it serves as a committee of the whole to work with USACE on the development of the long term management plan; 3) it presents policy positions and concerns to the HEP Policy Committee and the four principal agencies (USEPA, USACE, NYSDEC, and NJDEP); and 4) it serves as an Executive Committee of the Forum. In order to ensure that the DMMIWG can perform these functions effectively, it was agreed that: 1) the DMMIWG may report directly to the HEP Policy Committee without going through the Management Committee; 2) the DMMIWG, at its discretion, may request to meet with or report directly to any one or all of the heads of the four principal agencies; 3) the DMMIWG/Forum/HEP Policy Committee will continue to produce self-standing, independent dredged material management reports, e.g., future straw proposals, as well as the CCMP; 4) the HEP Policy Committee will convene and host the Forum, with USEPA continuing to serve as chair, and the DMMIWG may recommend that the Forum be convened from time to time; 5) the DMMIWG will serve as the Executive Committee of the Forum as well as represent the Work Groups; and 6) there will be no distinction between planning and implementation.

ACTION D-1.2
Responsible Parties for Implementing the Dredged Material Management Plan
The Forum, through the DMMIWG and in consultation with HEP, will identify responsible parties for all actions and commitments and will assist in the development of implementation programs for these recommendations through its work groups.

ACTION D-1.3
Reviewing Parties
Within the HEP structure, the Dredged Material Management Forum will continue to review and comment on work plans, Statements of Work, work products, etc.

ACTION D-1.4
USACE Dredged Material Management Plan

The DMMIWG, on behalf of the Forum, will interact with USACE in the development of the USACE management plan for dredged material in the New York-New Jersey Harbor.

ACTION D-1.5
Coordination
USACE, USEPA, NYSDEC, and NJDEP will coordinate plans, proposals, and alternative courses of action pertaining to any matters that fall within the scope of this document with the relevant work groups of the Forum through the DMMIWG or applicable work group.

The DMMIWG will meet on a regular basis to review and synthesize the progress of the Forum work groups. If necessary, the DMMIWG will prepare an issues paper to be discussed at quarterly meetings with the HEP Policy Committee and/or Forum Principals.

OBJECTIVE D-2 ***Reduce continuing inputs of toxic chemicals and upland sediments and soils***

Toxic Chemicals

One goal of this section is that, over the long-term, all dredged materials within the Harbor complex will become sufficiently free of contaminants and, therefore, not pose a problem with respect to disposal.

The major factor constraining the selection of dredged material disposal techniques and disposal site locations is the contamination of Harbor sediments by a wide range of chemicals of concern. Contaminated sediments, demonstrated through toxicity and bioaccumulation testing, have limited disposal options. These sediments pose a potentially serious environmental risk when dredged and disposed and may require costly containment and/or remediation techniques. Therefore, tremendous environmental and economic benefits would accrue if dredged sediments were free of harmful contaminants.

The successful long-range management of dredged sediments is dependent upon aggressive efforts to reduce and eliminate the sources of harmful contaminants, particularly those contaminants with an affinity for sediments. The Management of Toxic Contaminants section of this CCMP is the primary vehicle for addressing toxic contamination in the Harbor/Bight complex. One of the goals of the Toxic Contaminants section is to ensure that dredged sediments in the Harbor are safe for unrestricted disposal. In an effort to achieve that goal, the Management of Toxic Contaminants section contains objectives and associated actions to: 1) reduce continuing inputs of toxic chemicals to the Harbor/Bight; 2) remediate selected contaminated sediments; and 3) better understand the toxic contamination problem and take additional management actions as more is learned about the problems. A work group, the Sediment Contamination Reduction Work Group, has been convened to ensure that this CCMP addresses the reduction of sediment contaminant inputs and contamination. One specific proposal of the work group is that funding be provided to develop better data about the specific contaminants of concern, such as PAHs, for which data are now inadequate.

Actions to address rainfall-induced discharges are also expected to help reduce sediment contamination.

Upland Sediments and Soils

Reducing the amount of sediment entering the

waterways from the upland watershed will reduce the volume of material requiring dredging. Several actions are being taken, through the HEP Habitat and Living Resources component, to control point and non-point loadings of pollutants. These actions include several pilot projects which minimize the export of sediments to the Estuary (Actions H-2.1, H-2.2, and H-2.3).

ACTION D-2.0
Engineering Solutions
USACE will review options that prevent sediments from entering navigational areas through engineering solutions. These options, and the steps required to study and implement them, will be included in the draft "New York Harbor Dredged Material Management Plan (DMMP) Phase 1 Initial Appraisal Report" which was recently completed.

OBJECTIVE D-3 ***Characterize, categorize, and quantify material to be dredged***

There is no single "best" disposal or management option for all dredged material -- a combination of alternatives is needed. Establishing implementable disposal alternatives depends on the quality and quantity of the sediments requiring dredging.

Characterize - Ocean Disposal Criteria

The present bioaccumulation assessment approach uses a statistical comparison of contaminants accumulated by organisms exposed to test and reference sediments. If there is a statistically significant increase in test values compared to reference values, test values are then compared to "matrix" values. Matrix values were developed in the early 1980s by assessing biological tissue levels and the potential for bioaccumulation from ambient water in areas around the Mud Dump Site. Values for four Bioaccumulative Chemicals of Concern (BCCs) -- PCB, DDT, Hg, and Cd -- were established .

Currently, there are no evaluative criteria available for regional BCCs, except for dioxin and the matrix values. A chemical-specific bioaccumulation assessment approach is necessary. USEPA, USACE, and the Criteria Work Group are developing an interim regional chemical-specific approach which utilizes an index of toxicological significance derived through risk-based methodology. Reference and background level databases will also be used in the decision-making framework (i.e., for evaluating and categorizing dredged material). After the approach is developed, it will be

subject to peer and public review. Based on comments received, USEPA and USACE will make a decision to implement all, none, or part of the guidance. The present approach will be used until the regional chemical-specific approach is implemented by USEPA and USACE.

USEPA is developing a national guidance document to assist regions in bioaccumulation decision-making. The interim regional approach will be employed until USEPA develops this guidance. The national guidance will then be considered for regional implementation, and the use of the interim regional approach will be reevaluated. The national guidance will not contain numerical bioaccumulation threshold values but will provide specific cancer and non-cancer effect levels to the extent that data are available for bioaccumulative contaminants; state-of-the-art ecological risk assessment will also be included. The result of this effort will not be pass/fail bioaccumulative threshold values, but will provide the basis for conducting a site-specific risk assessment of the dredged material disposal actions.

ACTION D-3.1
Development of Chemical-Specific Bioaccumulation Assessment Approach

-- The Criteria Work Group will develop a plan to implement the interim chemical-specific bioaccumulation evaluation methodology. This includes assessing the adequacy of preliminary databases and identifying additional reference and background studies which may be necessary to develop the regional approach. Steps include the following:

  - **Ë** Develop draft approach based on existing data, if possible by April 1996.
  - **Ë** USEPA and USACE provided funds for a May 1995 survey to facilitate finalizing the chemical-specific bioaccumulation decision framework. Additional surveys were completed in September 1995.
  - **Ë** Conduct peer and public review by June 1996.
  - **Ë** Make a decision (USEPA and USACE) on whether to implement the approach, with regards to risk levels and factors in the approach, by July 1996.

ACTION D-3.2
Reference Site and Database

-- USEPA and USACE will, by February 1996, recommend an appropriate reference site.

-- USEPA and USACE, in consultation with the Criteria Work Group, will, by February 1996, recommend an approach for establishing a reference sediment database.

ACTION D-3.3
National Guidance for Bioaccumulation Decision-Making
HEP recommends that USEPA develop, by June 1997, a national guidance document to assist the regions in bioaccumulation decision-making.

ACTION D-3.4
Incorporation of Interim Approach into Mud Dump Site Monitoring and Management Plan
USEPA and USACE will modify, by October 1996, the Mud Dump Site monitoring and management plan to incorporate the regional chemical-specific, bioaccumulation approach.

Characterize - Upland Criteria

One dredged material disposal option is upland disposal. The states have the regulatory authority for this option. To date, there are no criteria established for upland disposal of dredged material.

ACTION D-3.5
Criteria for Upland Disposal
NJDEP and NYSDEC, in conjunction with the Criteria and Containment Work Groups, will identify draft criteria for upland disposal. This will include, but not be limited to, siting, sediment types, sampling and testing, and facility operation. Formal rulemaking may be necessary in New Jersey.
Categorize
As previously discussed, dredged material is characterized through a series of physical, chemical, and biological tests which determine the suitability of material for ocean disposal. Based on the results of these tests, USACE and USEPA have historically classified material into categories according to its suitability for ocean disposal as follows:

Category I - Sediments which meet ocean dumping criteria. Test results indicate no unacceptable toxicity or bioaccumulation in biological test systems. These sediments are acceptable for "unrestricted" ocean disposal. There are no potential short-term (acute) impacts or long-term (chronic) impacts; no special precautionary measures are required during disposal.

Category II - Sediments which meet ocean dumping criteria. Test results indicate no significant toxicity but a **potential** for bioaccumulation. To protect from this potential for bioaccumulation, USEPA and USACE will require appropriate management practices such as capping. This is referred to as "restricted" ocean disposal.

Category III - Sediments which do **not** meet ocean dumping criteria. These sediments are those that fail acute toxicity testing or pose a threat of signifi-cant bioaccumulation that cannot be addressed through available disposal management practices. These sediments cannot be disposed in the ocean.

Dredged material would be placed into one of the above categories, based on a characterization of suitability. These categories are important because of the disposal implications and options associated with each one. For example, Category I material should always be used for beneficial purposes, such as beach nourishment, or as an interim or final cap for borrow pits or ocean disposal sites. Category II material is suitable for ocean dumping with capping used as a management tool, but also may be suitable for disposal at

landfills, as daily or interim landfill cover, or for disposal in borrow pits or containment facilities. Category III material may be suitable for treatment and disposal at confined facilities, for sanitary landfill cover, or for borrow pit disposal.

Quantify Dredged Material In Each Category

Volume estimates, by category, are necessary for projecting future disposal requirements and the combination of alternatives necessary for dredged material management. It will be necessary to estimate immediate, short, and long-term proportions and quantities of dredged material falling within each dredged material category based on the regional approach. The estimates should initially be used to establish the implementability of alternatives to ocean disposal. USEPA and USACE will assess the type and amount of data that may be available or necessary to establish these estimates.

ACTION D-3.6
Dredged Material Categorization and Quantity Estimate
USACE will, by March 1996[1], categorize dredged material based on the regional bioaccumulation approach. USACE will then **estimate** the quantities of dredged material currently pending that could be expected using the above chemical-specific approach for evaluating bioaccumulation test results.

ACTION D-3.7
Additional sampling and testing
USEPA, USACE, and NYSDEC, will, by March 1996[1], perform pro-active sampling and testing (if necessary) to estimate quantities of dredged material in each Category. This is contingent upon available, allocated funds.

ACTION D-3.8
Disposal Alternatives vs. Category Table
USEPA, USACE, NYSDEC, and NJDEP will, by March 1996[1], develop a table which matches dredged material disposal alternatives with respect to the regional chemical-specific bioaccumulation approach for the dredged material categories. Use of additional approaches will be needed.

[1] Provided a second peer and public review is not necessary. If necessary, the target date is May 1996.

OBJECTIVE D-4 Identify, evaluate, and select disposal and treatment/ decontamination alternatives

It is imperative that implementable, environment-ally sound alternatives to the existing Mud Dump Site (MDS) be identified now because the MDS is quickly reaching capacity, and new testing protocols may increase the proportion of Category II and III materials to be disposed. Equally import-ant is the selection and implementation of suitable mid-term and long-term disposal operations. For Category I material, disposal alternatives with beneficial use are recommended, as appropriate.

Ocean Disposal Site[1]

Dredged material has been disposed in the New York Bight Apex since 1914. Consequently, large areas of the Apex floor have been, at a minimum, physically impacted. Additional impacts may have resulted from contaminants present in the dredged material. An expansion of the existing MDS may offer the potential opportunity for 1) providing remediation of contaminated areas by disposal of normal Harbor maintenance and new work dredged material, and 2) as a goal, restoring contaminated areas by disposal of materials which are beneficial to the marine environment.

The MDS, adjacent impacted areas, and historical disposal areas should be covered. USACE-Waterways Experiment Station (WES) is evaluating the erosion risks associated with creating mounds at the MDS if water depths, capping thickness, and storm event magnitudes are varied. Based on study recommendations, a depth will be determined at which little sediment resuspension or movement takes place. Areas with depths greater

than this depth may be used for disposal of Category II sediments **with an added measure of environmental protection -- subsequent expeditious capping with Category I material**. Areas with depths between the recommended depth and a controlling depth of -45 feet Mean Low Water (MLW) will be used only for the disposal of Category I materials. Should the MDS be expanded, the results of this expansion could include: 1) short-term disposal of Category II material below the recommended depth, while disposal alternatives are implemented; 2) remediation of contaminated areas by disposing of Harbor maintenance and new work dredged material; and 3) as a goal, restoration of contaminated areas by promoting the disposal of materials which are beneficial to the marine environment. Category I disposal will continue indefinitely (until closure requirements are met) as cover, thereby serving as a beneficial use.

ACTION D-4.1
Confirmation of Controlling Depth
USEPA and USACE, in consultation with the Mud Dump Site Work Group, will, by April 1, 1996, confirm a controlling depth for Category II materials at the MDS and surrounding environs.

ACTION D-4.2
Criteria for Mounds
USACE will, by August 1, 1996, provide design criteria for various mound placement and capping options to USEPA.

Action D-4.3
Preparation of SEIS and Site Designation Rulemaking
In order to provide for the orderly phase-out of ocean disposal of Category II material, USEPA, USACE, NJDEP, and NYSDEC are proposing to expand the MDS (USEPA has designation authority), through the EIS process described

[1] USEPA, as requested by the majority of the DMMIWG, will provide a legal interpretation of the laws,

regulations, and policies governing the ocean disposal of dredged material. The text of the CCMP may be modified based on this interpretation and further discussions/negotiations. However, no policy decision has yet been made regarding this issue.

below, for the disposal of Category I and II materials. On February 3, 1995, USEPA issued a public announcement for the SEIS for expansion of the MDS for remediation and restoration. The use of the expanded MDS for Category II material will be restricted to a specified period of time; this period will be determined prior to the issuance, by USEPA, of the proposed site designation. The time period will be specified in the final designation rulemaking package and will be based on a number of factors listed below, including the amount of time required to develop and implement environmentally and economically feasible disposal alternatives. As part of the analysis and EIS process, alternatives will be evaluated, including the no-action alternative (i.e., no expansion of the site). In all cases where environmentally preferred, practicable non-ocean disposal alternatives exist for Category II materials, the use of the MDS will be denied. The Mud Dump Site Work Group will consider and make recommendations (to USEPA, USACE, NJDEP, and NYSDEC) regarding the number of years that an expanded Mud Dump Site could remain open for disposal of Category II material, the maximum volumes, and site monitoring activities. In doing this, the Work Group should take into account the anticipated volumes of Category II material based on the testing criteria, the pace of development of alternatives, detoxification techniques, pilot project implementation schedules, volume reduction and containment input abatement opportunities, and disposal incentive fees.

Non-Ocean Disposal Alternatives

There is no single "best" disposal or management alternative for all dredged material. All concerned parties will work within HEP to promote beneficial uses of dredged material including, but not limited to, enhancement of habitat, landfill daily cover, etc. The Forum and USACE are examining the use of multiple disposal alternatives, including:

- pits excavated in, or adjacent to, areas of highly contaminated sediments;
- pits excavated in the process of sand mining;
- existing subaqueous borrow pits;
- confined disposal facilities (CDFs);
- ocean subaqueous borrow pits (ocean disposal);
- containment islands;
- upland disposal; and
- beneficial uses such as habitat creation.

USACE is developing a long-term management plan (DMMP) that evaluates all disposal alternatives including ocean and near-shore borrow pits, containment islands, CDFs, beneficial uses, and upland disposal. The Dredged Material Management Integration Work Group will work directly with USACE in developing the long-term management plan. USACE expects that its plan will provide the technical support for Forum recommendations.

One component of the long-term management plan is the evaluation of the development and construction of containment areas/islands in the near-shore, offshore, and ocean. USACE and the Port Authority have begun to assess the feasibility and logistics of containment areas/island creation. These areas/ islands should be designed to promote beneficial purposes such as habitat, recreation, or port operations uses.

USACE has issued a Record of Decision on its Final Environmental Impact Statement for operational scale borrow pits and has requested water quality certification (WQC) from NYSDEC for the existing borrow pits in the Lower Harbor. NYSDEC has expressed a number of concerns, including a potential conflict between the USACE proposal and sand mining proposals. It

is recommended that, if NYSDEC cannot issue a WQC for an operational scale pit, it consider issuing a conditional WQC for a USACE demonstration scale study of subaqueous borrow pit disposal using an existing pit, preferably the Lower East Bank Pit. With satisfactory monitoring and conclusive results, this could be implemented as a short-term disposal alternative.

The Port Authority of New York and New Jersey is studying the possible use of upland disposal sites within the region. The states will aid the Port Authority by providing active regulatory guidance.

Neither of the states will undertake an upland disposal site pilot project; however, the states will develop upland criteria (siting and disposal). In addition, the states will monitor the progress of private sector applicants seeking to site or operate upland disposal areas with respect to legal, political, and social factors.

ACTION D-4.4
Dredged Material Management Plan
USACE will, in consultation with USEPA, DMMIWG, NYSDEC, and NJDEP, by July 1996, prepare an interim report on the comprehensive management plan for dredged material, which evaluates alternatives. This interim report is based on a broad one year investigation and siting of alternatives. The second stage is a focused two year detailed investigation culminating in the design and optimization of those alternatives and sites identified in the interim report. The selected alternatives will be based on ability to meet the immediate and projected dredged material management needs of the region and agreement by the decision makers. The final plan will be produced by July 1998.

New York and New Jersey will review USACE's 1989 recommendations for siting containment islands and provide initial input as to whether these sites, or other sites within the Harbor/Bight complex, should be considered for detailed review in the USACE Dredged Material Management Plan. The target date for this activity is October 1996.

ACTION D-4.5
Newark Bay Borrow Pits
Following up on a recommendation of the Containment Work Group to the New Jersey Governor's Dredging Task Force, several studies are being conducted related to development of borrow pits in Newark Bay.

-- The Port Authority of New York and New Jersey will act as lead to implement a subaqueous borrow pit in Newark Bay as an applicant to the USACE. Environmental and engineering studies are being performed.

-- The Containment Work Group has conducted a comparison analysis of federal and non-federal sponsorship for implementing subaqueous borrow pits in Newark Bay and will continue to make recommendations to the Forum. The Port Authority is currently assessing operation and maintenance costs of the pits. The issues of ownership, ownership transfer, and liability are being reviewed by a committee of the NJ Governor's Dredged Material Management Team.

ACTION D-4.6
Existing Borrow Pits

-- New York State will expedite its WQC determination and consider requiring that USACE plan a demonstration program for existing borrow pits in the Lower Harbor.

-- Should the project (operational or demonstration) be approved, USACE will implement the project as soon as possible.

-- Should a conditional WQC allow for a demonstration project, then within six months of demonstration project completion and data submittal and review, the State of New York will review the demonstration project and make a determination on whether the WQC conditions were satisfied to allow for an operational scale borrow pit program.

ACTION D-4.7
Consideration of Sand Mining Practices to Create Suitable Pits For Dredged Material Disposal
USACE, NYSDEC, and NJDEP should assess the feasibility of soliciting modified sand mining proposals so that suitable borrow pits, outside of navigation channels, might be created through sand mining practices. This should take place in consultation with the Dredging, Transport, and Disposal Work Group. Consideration of sand mining proposals must include an assessment of how to best manage the sand resource to gain environmental use and benefits. Environmental benefits could be conditions of permits issued for sand mining.

ACTION D-4.8
Upland Disposal
Small-scale upland disposal may be feasible on a case-by-case basis.

-- The States of New Jersey and New York will monitor the progress of private sector applicants seeking to site and operate upland disposal areas in the Port region. These actions will take place in consultation with the Criteria, Containment, and Dredging, Transport, and Disposal Work Groups.

-- The Port Authority will continue to seek regional upland disposal sites.

Treatment Methods

Treatment (including, but not limited to, decontamination, physical separation, etc.) is not a disposal alternative. Rather, it is a method which may facilitate the management of contaminated dredged material within the Harbor (whether dredged for navigation and/or remediation). The main purpose of current investigations is to identify effective technologies, which may be readily applied to large volumes of contaminated dredged material, in a cost-effective and environmentally sound manner, and which yields products which may be used beneficially. The implementation of operational scale treatment technologies may require a processing site, possibly a large site, on or adjacent to a waterway.

The Water Resources Development Act (WRDA) of 1992 mandated that the USACE and USEPA jointly select decontamination technologies for contaminated sediments. Resources of $2.7 million and $2.3 million were appropriated to USEPA in fiscal years (FY) 1993 and 1994, respectively. Additional funding of $1.8 million was appropriated by Congress in FY 1995.

ACTION D-4.9
Base Catalyzed Decomposition (BCD) Study
Bench-scale studies have been completed. There was greater than 98 percent destruction of chlorinated organics (dioxins and PCBs). Removal of PAHs and mercury was 89 percent and 95 percent, respectively. An accompanying pilot-scale design report demonstrated full-scale treatment costs at $108 per cubic yard, not including additional treatment train costs. A decision to expand to a pilot study has been postponed and will be considered based on the outcome of other studies described in Action D-4.10 below.

ACTION D-4.10
Innovative Technologies Study
Contracts were awarded for 7 bench-scale technologies in August 1995. Field collections were completed in October 1995. Bench-scale demonstrations were underway in November 1995 and were completed in January 1996. Based upon the success of the bench-scale effort, pilot-scale demonstrations will commence in March 1996, if indoor siting facilities are made available. If not, and again depending on the technology, the demonstration may commence in early spring 1996, with a total project completion date of December 1996.

OBJECTIVE D-5 Develop plans for closure (including remediation and restoration) of the Mud Dump Site and historical disposal areas

As previously discussed, the MDS, adjacent areas, and historical disposal areas need to be managed in the short-term and eventually closed, when practicable non-ocean alternatives become available. Large areas of the ocean floor have been, at a minimum, physically impacted from dredged material disposal, occurring since 1914. Prior to 1977, dredged material was

disposed without bioassay/bioaccumulation analysis and very little chemical analysis.

In October 1994, USEPA and USACE conducted a sediment toxicity/chemistry survey (utilizing USEPA's Ocean Survey Vessel PETER W. ANDERSON) within the 23 square nautical mile area (MDS and historical disposal areas) proposed for expansion. The survey was conducted in support of the MDS expansion SEIS and remediation/restoration of historical disposal areas. Forty-four samples were collected and analyzed for toxicity (using the amphipod *Ampelisca*), sediment chemistry, and benthic community structure. Worms were also collected and archived for future body burden analyses. Of the 44 samples analyzed, 27 samples (9 inside the MDS and 18 outside the MDS) exhibited toxicity. The 27 samples represent an area of approximately 10.2 square nautical miles, out of the 23 square nautical mile study area.

The areas inside the MDS can be remediated immediately by USEPA and USACE by directing Category I dredged material to the desired locations. Some of the areas sampled in October have already been covered with Category I dredged material. The areas outside the MDS require formal designation prior to any disposal of dredged material for remediation. This supports the Dredged Material Management Forum's plan to prepare an SEIS to expand the MDS into historical disposal areas for purposes of remediation/restoration.

The chemical and biological impact of dredged material in areas outside of the existing MDS is, at present, unknown. Dredged material disposed prior to the implementation of water pollution control laws may contain higher concentrations of contaminants of concern than dredged materials disposed at the MDS today. The expansion of the MDS offers the potential opportunity for providing remediation of contaminated areas and, as a goal, restoration of contaminated areas (from disposal of sands, muds, large rubble, etc.).

MDS Site Management and Monitoring Plan
A plan will be developed to evaluate all dredged material disposal areas and determine if they have been adversely impacted by disposal activities. The plan will address remediation (and restoration) of the impacted areas, for the protection of human and ecological health, using Category I materials. The value of sand or other material as a final cap will be reviewed. It is the expressed consensus of the Dredged Material Management Forum to seek opportunities to restore, to the maximum extent practicable (considering cost, logistics, technology availability), areas of the Bight Apex which have been adversely impacted by dredged material disposal.

ACTION D-5.0
Pre- and Post-Closure of Ocean Disposal Sites

-- USEPA, in consultation with USACE and the Mud Dump Site Work Group, will develop closure management and monitoring plans for the MDS, adjacent areas, and historical disposal sites. Pre- and post-closure monitoring plans will include physical, chemical, and biological sampling. The following issues will be addressed: remaining capacity, frequency of post-closure surveys, costs and funding, and the erosion potential of the existing mounds. Plans will incorporate the controlling depth strategy for Category I and II materials, as previously described in the "Identify and Select Disposal Alternatives" section. Plans will be hierarchial in nature: remediation activities will be the primary concern and restoration opportunities will be considered a goal, when suitable materials are available.

-- USEPA, in consultation with USACE, will implement the closure monitoring and management plan, when appropriate.

OBJECTIVE D-6 Improve dredging, transport, and disposal options

Operations

Improved dredging, transport, and disposal operations will reduce the potential environmental risks posed by these operations. Information on the selection of dredging equipment and on the advantages and limitations of various types of dredging equipment is available. However, its applicability to the Harbor region is uncertain. There are two concerns associated with dredging: resuspension of sediments and removal precision. Resuspension can be caused by excavation, barge/hopper overflow, spillage, leakage, spud movement, barge movement, etc. Removal precision refers to how accurately a given dredge can remove desired areas and thicknesses of contaminated sediment. Precision is important from the standpoint that contaminated and uncontaminated materials might be segregated so that each may be handled in the most appropriate manner possible. The ability to use improved or innovative disposal techniques depends, in part, on the disposal site selected.

Containment of dredged material in geotextile containers has helped solve several difficult construction problems in the past few years. More recently, the focus has turned to large-scale contaminated dredged material disposal in these containers. Engineering and environmental studies concerning geotextile containment are being conducted by USACE-WES to develop and demonstrate dredged material containment systems that are technically feasible, environmentally sensitive, and cost effective. The Port Authority of New York and New Jersey developed a pilot project utilizing the geotextile containers. Monitoring was performed and results are expected March 1, 1996.

ACTION D-6.1
Improvements in Equipment
The Dredging, Transport, and Disposal Work Group will continue to recommend specific improvements for equipment and methods used in dredging, transport, and disposal operations.

ACTION D-6.2
Borrow Pit Disposal Techniques
USACE will determine if hydraulic dredging is feasible for borrow pit disposal and very confined sites.

ACTION D-6.3
Geotextile Containers
The Port Authority of New York and New Jersey selected a pilot project for dredged material disposal in geotextile bags. Monitoring was performed and results will be available March 1, 1996. This and other experiments are continuing.

Volume Reduction/Selective Dredging

Any reduction in the volume of material to be dredged is important because it provides greater flexibility with respect to the disposal alternatives available and because of the limited capacity of these disposal alternatives. General criteria to be considered in every dredging permit evaluation are the need for the proposed work and the practicability of using reasonable alternative methods to accomplish the objective of the proposed work when there are unresolved conflicts as to resource use. Prior to issuing any dredging permit, the need for the dredging must be established. It may, in some instances, be feasible to dredge only limited areas of a facility and still not affect facility operations. Many federal navigation channels, including their physical dimensions, were designated at a time when the number of ships utilizing the Harbor

was greater than at present. A channel assessment and reconfiguration in Norfolk, Virginia, using a computer simulation of ship movement, significantly reduced the cost of maintaining channels in that region.

ACTION D-6.4
Volume Reduction/Innovative Dredging Techniques USACE will, in coordination with the appropriate state agencies, review each permit application and federal project to ensure that volume reduction and dredging techniques have been considered.

ACTION D-6.5
Channel Assessment and Reconfiguration
The Maritime Administration (MARAD) will assess the impact of reducing the width or depth of specific channels.

Tipping Fees

The potential exists for the establishment of tipping fees for all new and existing disposal areas. These fees could be directed to the dredging program to offset general management and operational costs. Tipping fees might provide a financial incentive to reduce the amount of dredging. However, studies must be conducted to better understand the regional economic impacts of dredging before any tipping fee system could be considered.

ACTION D-6.6
Economic Assessment of Tipping Fees
DMMIWG will identify a responsible entity, by October 31, 1996, to sponsor an economic assessment of tipping fees in the Port of New York and New Jersey. The target date for completion of the assessment is January 1997.

ACTION D-6.7
Assessment of Implementation of Tipping Fees
DMMIWG will identify a responsible entity, by October 31, 1996, to seek Congressional input on the establishment of tipping fees.

OBJECTIVE D-7 Expedite permit decisions

There are many complex federal, state, and local laws, Executive Orders, and regulations governing dredging and dredged material, with overlapping jurisdictions. The result is a cumbersome and sometimes conflicting regulatory process. The keys to expediting this process are appropriate regulatory coordination and the availability of disposal sites for the type (category) of dredged material to be disposed.

USEPA and USACE have prepared a regional Memorandum of Understanding (MOU) to effectively execute statutory responsibilities associated with technical and administrative procedures under MPRSA pertaining to: monitoring and management of ocean disposal sites; dredging and disposal permit review and approval, including regionally appropriate sediment testing and evaluation protocols; dredging and ocean disposal permit compliance and enforcement; and appropriate reporting and record keeping of documents pertaining to MPRSA activities. It is the intent of the agencies to minimize duplication of effort, paperwork, and delays in the management of ocean disposal sites and dredging and disposal permits and authorizations.

Joint permit information packages for federal and state regulatory agencies and the development of consistent testing requirements would likely expedite permit processing and regulatory decisions. In addition, a unified regional regulatory guidance document which clearly and concisely identifies all resource agencies' concerns (e.g., seasonal restrictions and reaches affected, endangered species) should be developed and include generic and specific permit conditions. This will allow regulatory agencies to identify and resolve, if possible, conflicts early in the process.

ACTION D-7.1
Memorandum of Understanding
USACE and USEPA will, by September 1996, finalize an MOU for ocean disposal site management and site designation. Site management plans will be subject to full public review and comment.

ACTION D-7.2
Joint Permit Applications
USACE, NJDEP, and NYSDEC, in cooperation with DMMIWG, are exploring development of joint permit information packages for projects proposing ocean and/or non-ocean disposal.

ACTION D-7.3
Federal Regulatory Guidance
USACE, USEPA, NOAA-NMFS, USFWS, NYSDEC, NJDEP, and others, in cooperation with DMMIWG, are exploring development of a federal regional regulatory guidance document which addresses the concerns of the federal resource agencies with appropriate generic, and recommended specific, special permit conditions for federal permits.

ACTION D-7.4
State Regulatory Guidance
NYSDOS, NYSDEC, and NJDEP, in cooperation with DMMIWG, are developing a regional state regulatory guidance document which addresses the concerns of the state resource agencies with appropriate generic, and recommended specific, special permit conditions for state permits.

ACTION D-7.5
Integration Task Force
USACE, in cooperation with DMMIWG, will explore, by April 1996, the formation of a federal and state interagency group to integrate federal and state regulatory guidances.

ACTION D-7.6
Conflict Resolution
USACE, USEPA, NOAA-NMFS, USFWS, NYSDEC, NJDEP, and others, in cooperation with DMMIWG, are exploring establishment of a unified regulatory process for resolving resource use concerns.

ACTION D-7.7
Consistent Testing Requirements
USEPA, USACE, NJDEP, and NYSDEC will explore, by June 1996, development of consistent testing requirements for dredged material disposal. Separate requirements may be needed for ocean, non-ocean, and upland alternatives.

ACTION D-7.8
Status of Streamlining Efforts
USACE will provide a status report to the Dredged Material Management Forum every six months on the efforts of the regulatory agencies to streamline permit processing. If any of the above recommended actions cannot be implemented, USACE will provide an explanation as to the reasons, including any obstacles encountered.

COSTS OF IMPLEMENTING THIS PLAN

Many of the commitments and recommendations in the Dredged Material Management section of the CCMP can be accomplished through the effective use of base program resources. In fact, full implementation of the CCMP relies, in large part, on continued operation, and funding at current levels, of existing programs to address dredged material management issues. The Dredged Material Management component of the CCMP itemizes 33 new HEP-driven commitments operating through base programs. These actions represent a major commitment to CCMP implementation.

As shown on Table 14(dc) below, the Dredged Material Management component of the CCMP also includes 9 significant commitments and recommendations that entail enhanced program funding of $14.4 million, plus target dates for additional cost estimates.

The Dredged Material Management component of the CCMP also includes 7 actions that will or may require the expenditure of project implementation funds by responsible entities. As shown in Table 15(dc) below:

- The Plan includes 4 actions for which funds, totaling $126.730 million, have been committed by the responsible entities.
- The Plan includes 3 actions for which additional funds may be required to be expended by responsible entities, based on the potential outcome of several ongoing or planned efforts.

The costs of implementation actions to address Dredged Material Management may be large, particularly for the longer-term alternatives not discussed in this Plan. Cost estimates for the actions discussed in this Plan will continue to be developed as part of the continuing planning process.

Table 14(dc). Enhanced Program Costs for Dredged Material Management

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION D-3.1: Conduct surveys, as necessary, to develop interim chemical specific bioaccumulation evaluation methodology.	$300,000			
ACTION D-3.7: Perform pro-active sampling and testing to categorize and quantify dredged material.			*	
ACTION D-4.3: Consider expansion of the Mud Dump Site.	$1.3 million			
-- Perform necessary studies/surveys in support of a Supplemental Environmental Impact Statement.				
-- Publish a Supplemental Environmental Impact Statement.				
-- Publish Rulemaking.				
ACTION D-4.4: Develop Dredged Material Management Plan (Phases I and II).	$12.8 million			
ACTION D-4.8: Seek regional upland disposal sites.	*			
ACTION D-6.5: Perform computer simulation and assessment of necessary channel dimension.	*			
ACTION D-6.6: Perform economic assessment of tipping fees.	*			
TOTAL	$14,400,000 + *[1]		*	

* Enhanced program costs to be developed as part of the continuing planning process.
[1] Notation (+ *) indicates cost plus additional costs to be determined.

Table 15(dc). Project Implementation Costs for Dredged Material Management

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION D-4.5: Implement a Newark Bay subaqueous borrow pit.**	**	*		
ACTION D-4.6: Perform demonstration pilot project using an existing subaqueous borrow pit.**	**			
ACTION D-4.6: Implement operational scale use of an existing subaqueous borrow pit.**	$80 million for large pit $40 million for small pit	*		
ACTION D-4.9: Conduct bench-scale studies and, if promising, pilot-scale studies of BCD technology.	$1 million			
ACTION D-4.10: Conduct bench- and pilot-scale studies of innovative treatment technologies.	$5.48 million (to date) + *			
ACTION D-5.0: Implement the Mud Dump Site Closure Monitoring and Management Plan.***	***	*		
ACTION D-6.3: Perform pilot disposal project using geotextile containers.	$250,000			
TOTAL	$126,730,000 + *[1]	*		

* Project implementation costs to be developed as part of the continuing planning process.
** Costs to be included in the EIS.
*** To be included in closure management and monitoring plan 9/96.
[1] Notation (+ *) indicates cost plus additional costs to be determined.

BENEFITS OF IMPLEMENTING THIS PLAN

HEP's Plan to address dredged material management will assist in attaining our vision to establish and maintain a healthy Harbor/Bight ecosystem and to implement dredged material disposal alternatives that promote beneficial uses. While the Plan is multi-faceted, all facets move along parallel tracks. The Plan provides environmentally reasonable immediate and short-term disposal alternatives for dredged material while allowing for the selection, design, and implementation of mid- and long-term non-ocean disposal alternatives for dredged material not suitable for ocean disposal. The Plan aggressively sets forth an integrated approach stressing coordinated and expeditious regulation of dredged material and early implementation of alternate disposal options and pollution control measures.

Full implementation of the actions associated with the Dredged Material Management component of this Plan is expected to ensure that the contribution of the Port to the economy and quality of life of the Region is maintained. The outcome of implementation of this Plan may, among other things, be demonstrated through an improvement in the quality of sediments deposited in the Estuary, remediation and restoration of areas adversely affected by dredged material disposal, the development of alternatives to ocean disposal, more efficient regulation of dredged material, the development of treatment technologies for dredged material, and the growth of water-dependent industries such as tourism and commercial and recreational fishing.

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
OBJECTIVE D-1: Develop a future dredged material management structure (also see section on Post-CCMP Management Structure).				
ACTION D-1.1: Evaluate alternatives and determine Forum/HEP structure.				
-- Suggest options for Forum/HEP structure.	Chairs - HEP PC reps, HEP CAC, Forum DMMIWG	Completed	Base program	C/N
-- Determine Forum/HEP structure.	HEP Policy Committee	Completed	Base program	C/N
ACTION D-1.2: Identify responsible parties for all actions and commitments and assist in the development of implementation programs for these actions.	Forum, through the DMMIWG, in consultation with HEP	Ongoing	Base program	C/N
ACTION D-1.3: Review and comment on work plans, SOW, work products, etc.	DMMIWG	Ongoing	Base program	C/N
ACTION D-1.4: Interact with USACE in the development of the long-term plan for dredged material in the New York-New Jersey Harbor.	DMMIWG on behalf of the Forum	Ongoing	Base program	C/N

Note: It is HEP's goal that all the recommendations in the CCMP become commitments.

-- In some cases CCMP actions are recommendations, not commitments, because responsible entities require resources to implement the action. HEP will advocate making these resources available.

-- In other cases, CCMP actions are recommendations because HEP has not obtained the commitment of regulated entities and other responsible entities to implement the action. By issuance of this CCMP, HEP seeks the commitment of the responsible entities and requests that they step forward to voluntarily agree to implement the actions.

[1] Responsible entities may accomplish the actions directly or via contract or grant.

[2] C/O - An ongoing commitment, not driven by the HEP CCMP
C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-1.5: Coordinate plans, proposals, and alternative courses of action pertaining to any matters that fall within the scope of this document with the relevant workgroups of the Dredged Material Management Forum.	USACE, USEPA, NJDEP, NYSDEC	Ongoing	Base program	C/N
OBJECTIVE D-2: Reduce continuing inputs of toxic chemicals and upland sediments and soils (see Management of Toxic Contamination section and the Management of Habitat and Living Resources section, Actions H-2.1, H-2.2, H-2.3).				
ACTION D-2.0: Review options that prevent sediments from entering navigational areas.	USACE	Draft: Completed Interim: Jul 1996 Final: Jul 1998	Base program	C/O
OBJECTIVE D-3: Characterize, categorize, and quantify material to be dredged.				
ACTION D-3.1: Develop interim chemical specific bioaccumulation evaluation methodology.				
-- Develop plan for implementation.	USEPA & USACE, in consultation with the Criteria Work Group	Completed Feb 1995	Base program	C/N
-- Develop draft guidance.		Apr 1996		
-- Seek authorization/appropriations for surveys, as necessary, to facilitate the chemical-specific bioaccumulation decision framework.	USEPA & USACE	Completed	Base program	C/N
-- Conduct surveys as necessary.	USEPA & USACE	Initial survey: May 1995 Final surveys: Sep 1995	Enhanced program cost - $300,000	C/N
-- Conduct peer and public review of guidance.	USEPA & USACE	Comments due: Jun 1996	Base program	C/N
-- Make decision to adopt all, part, or none of guidance.	USEPA & USACE	Jul 1996	Base program	C/N

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C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
-- Implement guidance, as appropriate.	USEPA, USACE, regulated community	Oct 1996	Base program	C/N
ACTION D-3.2: Recommend reference site and reference sediment database.	USEPA & USACE	Feb 1996	Base program	C/N
-- Recommend an appropriate reference site.				
-- Recommend an approach for establishing a reference sediment database.				
ACTION D-3.3: Develop a national guidance document to assist the USEPA regions in bioaccumulation decision-making.	USEPA	Jun 1997	Base program	R
ACTION D-3.4: Modify the Mud Dump monitoring and management plan to incorporate the interim chemical-specific, bioaccumulation approach.	USEPA, USACE, in consultation with Mud Dump Work Group	Oct 1996	Base program	C/N
ACTION D-3.5: Develop draft criteria for upland disposal.	NJDEP, NYSDEC, Criteria and Containment Work Groups	NJ: Jan 1996 NY: To be determined	Base program	C/N

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C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-3.6: Categorize and quantify dredged material.	USACE	Mar 1996	Base program	C/N
-- Categorize sediments based on the regional bioaccumulation approach.				
-- Estimate the quantities of dredged material currently pending in each category using the interim chemical-specific approach.		Jul 1996		
ACTION D-3.7: Determine need for pro-active sampling and testing.	USEPA, USACE, NYSDEC	Mar 1996	Base program	C/N
-- Collect data if necessary.			Enhanced program costs to be estimated by Jan 1996	R
-- Estimate quantities of dredged material in each category.			Base program	C/N
ACTION D-3.8: Develop a table which matches dredged material disposal alternatives to regional dredged material categories.	USACE, USEPA, NJDEP, NYSDEC, Forum work groups	Mar 1996	Base program	C/N
OBJECTIVE D-4: Identify, evaluate, and select disposal and treatment/decontamination alternatives.				
ACTION D-4.1: Determine a recommended depth and controlling depth for dredged material at the MDS and its environs.	USEPA & USACE, in consultation with the Mud Dump Work Group	Apr 1, 1996	Base program	C/O
ACTION D-4.2: Provide design criteria for various mound placement and capping options.	USACE & USEPA	Aug 1, 1996	Base program	C/O

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C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-4.3: Prepare SEIS and site designation rulemaking for expanded Mud Dump Site.			Enhanced program - total cost of designating a new, expanded site is estimated at $1.3 million	
-- Perform necessary studies.	USEPA & USACE, in consultation with Mud Dump Site Work Group	Initiated: Oct 1994 Completed: Sep 1995		C/N
-- Publish a supplemental EIS.	USEPA	Oct 1996		C/N
-- Publish rulemaking.	USEPA	Post-Nov 1996		C/N
ACTION D-4.4: Develop management plan for dredged material. (Phase I - completed).	USACE	Final: Jul 1998 Interim: Jul 1996	Enhanced program cost - $12.8 million (Note: Cost for implementation of the plan to be estimated by Jul 1996.)	C/O
-- Review USACE recommendations for siting containment islands and provide input.	NY & NJ	Oct 1996	Base program	C/N

[1] Responsible entities may accomplish the actions directly or via contract or grant.

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C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-4.5: Make decisions on Newark Bay subaqueous borrow pit.				
-- Act as lead to implement subaqueous borrow pits.	Port Authority as an applicant to USACE, in consultation with the Containment Work Group & NJ Governor's Task Force	Ongoing	Base program; included in EIS	C/N
-- Conduct comparison analysis of federal and non-federal sponsorship for implementation.	Containment Work Group	Completed	Base program	C/N
-- Conduct EIS.	USACE or Port Authority	Dec 1996	Project implementation cost to be included in EIS	C/N
-- Determine appropriate cooperating agency.	USACE, NJDEP, Port Authority	Dec 1996		
ACTION D-4.6: Make decisions on existing subaqueous borrow pits.				
-- Lower Bay Demonstration Scale Borrow Pit.				
• Make state regulatory decisions on WQC.	NYSDEC	To be determined	Base program	C/O
• Implement.	USACE	To be determined	Project implementation cost to be determined within 3 months of decision on WQC	C/O*

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C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

* Contingent upon receipt of State Water Quality Certification.

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
-- Lower Bay Operational Scale Borrow Pit.				
• Make state regulatory decisions on WQC.	NYSDEC	Within 6 months of demo project completion	Base program	C/O
• Implement (including design and construction).	USACE	To be determined	$80 million for a pit with 9.3 million cy capacity $40 million for a pit with 4.7 million cy capacity	C/O*
ACTION D-4.7: Assess feasibility of modifying sand mining practices for the purpose of creating new borrow pits.	USACE, NJDEP, NYSDEC, in consultation with the Dredging, Transport & Disposal Work Group	Ongoing	Base program	C/O
ACTION D-4.8: Monitor upland disposal.				
-- Monitor the progress of private sector applicants seeking to site and operate upland disposal areas.	NJDEP & NYSDEC	Ongoing	Base program	C/O
-- Seek regional upland disposal sites.	Port Authority	Ongoing	Enhanced program cost to be determined	C/N

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[2] C/O - An ongoing commitment, not driven by the HEP CCMP
C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

* Contingent upon receipt of State Water Quality Certification.

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-4.9: Conduct studies of the Base-Catalyzed Dechlorination (BCD) technology.	USEPA, in consultation with USACE and the Decontamination/ Siting Work Group		Total project cost - $1 million	
-- Complete bench-scale studies.		Completed		C/O
-- Begin pilot-scale studies (if promising).		As appropriate		C/O
ACTION D-4.10: Arrange for bench- and pilot-scale studies of viable technologies for treating sediments.	USEPA & USACE, in consultation with the Decontamination/ Siting Work Group		$5.48 million	C/O
-- Award contracts for 7 bench-scale technologies.		Awarded Aug 1995		
-- Collect sediments.		Collected Oct 1995		
-- Complete bench-scale studies.		Completed Jan 1996		
-- Begin pilot-scale studies (if promising).		Initiate pilot: Mar 1996 Project finished: Dec 1996 Feasibility report for full scale operation: Dec 1996		

[1] Responsible entities may accomplish the actions directly or via contract or grant.

[2] C/O - An ongoing commitment, not driven by the HEP CCMP
C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
OBJECTIVE D-5: Develop plans for closure of the Mud Dump Site and historical disposal areas.				
ACTION D-5.0: Develop and implement closure plans for ocean disposal sites.				
-- Develop closure management and monitoring plans for the MDS, adjacent areas, and historical disposal sites. This includes remediation and restoration.	USEPA & USACE, in consultation with the Mud Dump Site Work Group	Sep 1996	Base program	C/N
-- Implement the closure management and monitoring plan.		As appropriate	Base program + project implementation cost to be determined by Sep 1996	C/N
OBJECTIVE D-6: Improve dredging, transport, and disposal operations.				
ACTION D-6.1: Recommend specific improvements for equipment and methods used in dredging, transport, and disposal operations.	Dredging, Transport, and Disposal Work Group	Ongoing	Base program	C/N
ACTION D-6.2: Determine if hydraulic dredging is feasible for borrow pit disposal and very confined sites.	USACE	To be determined	Base program	C/N
ACTION D-6.3: Conduct pilot dredging projects for disposal in geotextile containers.	Port Authority & USEPA, in consultation with the Dredging, Transport, and Disposal Work Group	Completed Results Mar 1, 1996	$250,000	C/N
-- Determine need for full scale use of geotextile containers.		Ongoing	Base program	
ACTION D-6.4: Ensure consideration of volume reduction and innovative dredging techniques (if warranted).	USACE, NYSDEC, NYSDOS, NJDEP	Ongoing	Base program	C/O
ACTION D-6.5: Assess the impact of reducing the width or depth of specific channels through computerized simulations.	MARAD	Ongoing	Enhanced program cost to be estimated by Jan 1996	C/O

[1] Responsible entities may accomplish the actions directly or via contract or grant.

[2] C/O - An ongoing commitment, not driven by the HEP CCMP
C/N - A new commitment, driven by the HEP CCMP
R - Recommendation

(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-6.6: Sponsor an economic assessment of tipping fees in the Port.	DMMIWG will identify responsible entity to complete	Oct 1996; Completion by Jan 1997	Enhanced program cost to be estimated by Jan 1996	C/N
ACTION D-6.7: Seek Congressional input on the establishment of tipping fees.	DMMIWG will identify responsible entity to complete	Oct 1996; Completion by Jan 1997	Base program	C/N
OBJECTIVE D-7: Expedite permit decisions.				
ACTION D-7.1: Finalize a draft MOU for ocean disposal site management and site designation.	USEPA & USACE	Draft completed Sep 1995 Final by Sep 1996	Base program	C/O
ACTION D-7.2: Explore development of joint permit information packages for projects proposing ocean and/or non-ocean disposal.	USACE, NYSDEC, NJDEP, in cooperation with DMMIWG	Ongoing	Base program	C/N
ACTION D-7.3: Explore development of a federal regional regulation/guidance document addressing the concerns of the federal resource agencies.	USEPA, NOAA-NMFS, USFWS, NYSDEC, NJDEP, USACE, in cooperation with DMMIWG	Ongoing	Base program	C/N
ACTION D-7.4: Develop a regional state regulatory/guidance document which addresses the concerns of the state resource agencies.	NYSDOS, NYSDEC, NJDEP, in cooperation with DMMIWG	Ongoing	Base program	C/N
ACTION D-7.5: Explore the formation of a federal and state interagency group to integrate federal and state regulatory guidances.	USACE in cooperation with DMMIWG	Apr 1996	Base program	C/N

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(Continued)

Table 16(ds). Summary—Management of Dredged Material

ACTION	RESPONSIBLE ENTITY[1]	TARGET DATE	ESTIMATED COST	STATUS[2]
ACTION D-7.6: Explore establishment of a unified regulatory process for resolving resource use concerns.	USACE, USEPA, NMFS, USFWS, NYSDEC, NJDEP, in cooperation with DMMIWG	Ongoing	Base program	C/N
ACTION D-7.7: Explore development of consistent testing requirements for dredged material disposal for both ocean and non-ocean disposal alternatives. This will be coordinated with the Criteria Work Group and the Dredged Material Management Forum.	USEPA, USACE, NJDEP, NYSDEC, Criteria Work Group, Forum	Jun 1996	Base program	C/N
ACTION D-7.8: Report on status of efforts to streamline permitting.	USACE	Every 6 months	Base program	C/N

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