#### ACTION DW-3.5 Designate dredged material reference sites for use in development of sediment testing protocols.

Who: LTMS Project

What: Determine background concentrations of sediment parameters in the Estuary. Compare sediments of proposed dredging projects to reference sites rather than to proposed disposal sites, in order to assess potential impacts of disposal. (\$20,000)

When: December, 1992

Cost: \$20,000

#### ACTION DW-3.6

Evaluate retention and removal needs for derelict structures in the Bay and Delta.

Who: U.S. Army Corps of Engineers

What: Various derelict structures along the shoreline are affecting sediment transport and local navigation. A comprehensive inventory should be completed to assess the feasibility of removing these structures on a case-by-case basis.

When: December, 1994

Cost: Approximately \$75,000

#### ACTION DW-3.7

Adopt regulatory and management policies for Estuary dredging activities and develop dredging and disposal projects that are consistent with the state's existing policies in the San Francisco Bay Plan and in the San Francisco Bay and Central Valley Basin Plans.

Who: Estuary regulatory, planning, and resource agencies and dredging project sponsors

What: Local, state, and federal agencies should modify their policies regarding dredging activities as needed to ensure that they are consistent with the policies of the San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan and the respective Basin Plans of the San Francisco Bay and Central Valley Regional Boards. Ports and other dredging sponsors should plan and conduct dredging activities consistent with the state's dredging policies.

When: Immediately

Cost: No direct cost

**Objective DW-4** 

Encourage the reuse of dredged material for projects such as wetlands creation/restoration, levee restoration, landfill cover, and upland building material where environmentally acceptable.

#### ACTION DW-4.1

Identify dredged material disposal options, including cost estimates and alternative disposal methods. Conduct periodic review as necessary.

#### Who: LTMS Project

#### What:

- List all available disposal options (See Appendix A for Status and Trends Report on Dredging and Waterway Modification) and document studies performed to date that are specific to each option and the Estuary disposal requirement. Identify disposal options feasible for the Estuary together with potential disposal capacity and document unfeasible options. (LTMS Phase II, Task 1, Work Element A) (\$25,000)
- Prepare cost estimates to a preliminary level (plus or minus 25 percent) for the dredging/disposal combinations under consideration. Develop a cost-estimating model covering the mobilization, excavation, hauling, disposal, and monitoring costs for the main dredging/disposal techniques under consideration. Develop methods for capitalization of costs considering funding by ports versus other methods, such as federal or state bonds. (LTMS Phase II, Task 3, Work Element B) (\$18,000)
- Summarize disposal options identified from previous actions. Categorize specific disposal options into management options and develop evaluation criteria. Criteria should consider environmental, engineering/economic, and institutional/regulatory factors. (LTMS Phase II, Task 4, Work Elements A, B) (\$20,000)
- Select dredged material disposal options. Evaluate alternative dredged material disposal approaches based on engineering, economic, and environmental criteria. Select the most practicable dredged material disposal option or options and provide the necessary documentation needed to support this selection. Develop site-specific management plans for the selected options, including site environmental and capacity monitoring, permit requirements, mitigation plans, operation procedures, guidance for site use, and delineation of site management responsibilities. (LTMS Phase III, Tasks 1, 2, and 3)
- Develop implementation component for dredged material disposal plan. The implementation plan should include administrative, procedural, management, and monitoring requirements; environmental documentation for the life of the plan; long-term water quality certification, site specific and regional permits and authorization; formalized regional mitigation strategies; and implementation of site management requirements. (LTMS Phase IV)
- Periodically re-evaluate the selected dredged material disposal plan based on changing regulatory, economic, environmental, and technological conditions. This review is to assure that decision-makers will maintain a viable implementation strategy that reflects changing conditions throughout the fifty-year implementation timeframe. (LTMS Phase V)

When: December, 1992

Cost: Approximately \$500,000

#### ACTION DW-4.2

Conduct modeling and field studies to determine the saltwater intrusion impacts caused by dredging projects.

Who: U.S. Army Corps of Engineers and project proponents

What: Conduct modeling and field studies to determine the saltwater intrusion impacts caused by dredging projects. Based on the results of the studies, manage dredging projects to minimize the impacts caused by saltwater intrusion. Require project expansions and future projects to mitigate for saltwater intrusion significant impacts as identified during the NEPA process.

When: December, 1993

Cost: No direct cost

#### ACTION DW-4.3

Revise Public Notice 87-1, "Interim Testing Procedures for Evaluating Dredged Material Suitability for Disposal in San Francisco Bay," and develop testing procedures and protocols for ocean and upland environments.

Who: U.S. Army Corps of Engineers, U.S. EPA, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, and State Lands Commission

What: Based on past results of regulating dredging projects through Public Notice 87-1, "Interim Testing Procedures for Evaluating Dredged Material Suitability for Disposal in San Francisco Bay," revise and update Public Notice 87-1 to include A sediment quality objectives, designated reference sites, and current sediment testing requirements. Prepare and implement *E* testing procedures and protocols for each ocean disposal (using the U.S. EPA testing manual, *Evaluation of Dredged Material* ( *Proposed for Ocean Disposal*, February, 1991, No. 503/8-91/001) and wetland restoration/upland disposal projects.

When: December, 1992

Cost: Approximately \$40,000

Objective DW-5 Identify threats to and benefits for Estuary resources from future modifications to waterways.

ACTION DW-5.1

Determine areas subject to flooding and erosion and identify causes.

Who: The U.S. Geological Survey and local governments for local subsidence, U.S. EPA for global changes

What: Submit a report that identifies areas subject to extreme wave events. Determine relative sea level change by: 1) quantifying local elevation changes along the shoreline; and 2) determining the most supportable estimate for change in global sea level.

When: 1993

Cost: Approximately \$650,000

#### ACTION DW-5.2

Implement waterway modification policies that protect shoreline areas from detrimental flooding and erosion while maintaining natural resource values.

Who: State agencies, San Francisco Bay Conservation and Development Commission, the Delta Estuarine Agency, and local governments

What: Adopt enforceable policies that require preservation, where possible, of upland areas to build or enlarge protective levees or other flood control structures through local zoning, the U.S. Army Corps of Engineers, the Federal Emergency Management Agency, and the Department of Water Resources.

#### When: 1993

Cost: \$7,720,000 estimated total (\$7,720,000 state)

#### ACTION DW-5.3

Establish a program to acquire diked kistoric baylands listed as buffer areas for coastal flooding and sea level rise. (Cross-referenced to Wetlands Program)

Who: State Legislature, California Coastal Conservancy, land trusts, and State Lands Commission

What: Bond and mitigation funds should be provided to purchase diked baylands that can serve as buffer areas for rising sea level or that could be used to mitigate for erosion of tidal marsh.

When: 1992

Cost: \$7,520,000 estimated total (\$7,520,000 state)

The total estimated cost for the Dredging and Waterway Modification Program is \$24,172,000.

# **APPENDIX D**

**Excerpts Related to National Dredging Policy from** The Dredging Process in the United States: An Action Plan for Improvement U.S. Department of Transportation Maritime Administration

**Report to the Secretary of Transportation** 

# The Dredging Process in the United States:

# **An Action Plan for Improvement**

The Interagency Working Group on the Dredging Process

December 1994

U.S. Department of Transportation U.S. Department of the Army U.S. Environmental Protection Agency U.S. Department of the Interior, Fish and Wildlife Service U.S. Department of Commerce, National Oceanic and Atmospheric Administration

#### 1.0 INTRODUCTION

Ports play an essential role in the United States' economy, defense, and environment. The ports of the United States meet the demand for water transportation services, which is driven by the consumers and producers of waterborne cargo. This demand for waterborne cargo initiates a chain of economic activity which contributes to the overall national economy. The economic impact of the nation's port industry, port users, and public port capital expenditures is significant. In 1992, U.S. ports handled approximately 2.9 billion metric tons of cargo and supported over 15 million jobs.<sup>1</sup> In addition, approximately 95 percent of all U.S. exports and imports pass through U.S. ports. Foreign trade is an increasingly important element of the U.S. economy, currently accounting for over 20 percent of our Gross Domestic Product (GDP). This percentage is expected to grow in the future.

Besides being the gateways for domestic and international trade, ports also play an important role in our national security by handling essential cargoes for military operations. Channels to ports and berths must remain navigable and safe to ensure efficient and effective response to national and international emergencies.

Likewise, many ports are located in or near some of the Nation's most environmentally sensitive areas such as valuable wetlands, estuaries and associated fisheries. These ecosystems have economic, recreational and aesthetic value. They are critical to the vitality of fish, birds, and other wildlife, and many support profitable commercial fisheries. In 1988, the commercial fishing industry generated over 350,000 jobs. Also, about 94 million people annually participate in recreational boating and fishing.<sup>2</sup> Port development necessarily results in impacts of varying degrees to wetlands, fish habitats, and other aspects of the environment, such as recreational areas, while improper disposal of contaminated dredged material can present costly environmental and human health risks.

Historically, many regulatory programs which govern dredging have attempted to balance economic growth and national security with the economic and environmental value of coastal resources. This is generally done on a case-by-case basis. It has become clear that these objectives are not mutually exclusive. Early planning for environmental protection ensures that economic development will cost less and reap more benefits. Acknowledging the value of a port and/or region's environmental resources early in the planning process for dredging projects can substantially reduce conflicts which arise during dredging and dredged material disposal, resulting in economic growth *and* environmental protection.

U.S. ports and their surrounding environments are facing increased difficulties. Over the past two decades, a number of factors have complicated the development, operation, and maintenance of the nation's harbors, particularly in the area of dredged material management. These factors include increases in the demands of commerce, rapid evolution of shipping practices (containerization and intermodalism), increasing environmental awareness and mounting environmental problems affecting coastal areas and ocean waters, heavy

<sup>&</sup>lt;sup>1</sup>Public Port Financing in the United States, MARAD, July 1994.

<sup>&</sup>lt;sup>2</sup>1992-1993 Biennial Report to Congress on the Administration of the Coastal Zone Management Act, OCRM, 1994.

population shifts to coastal areas, and a general increase in non-Federal responsibilities in the development and management of navigation projects. As a result, dredged material management has often become a contentious problem at all stages of harbor development and operation, from planning new projects to maintaining existing ones. Left unattended, these problems could cause a crisis.

This action plan presents specific ways to improve the dredging process to ensure that the Nation can maintain and develop needed coastal port capacity while protecting and conserving our important environmental resources. Furthermore, the recommendations support the goals of the National Performance Review's "Reinventing Government" effort, since government will improve the way it does business regarding dredging issues through interagency coordination and cooperation.

# 2.0 THE DREDGING PROJECT REVIEW PROCESS: OPPORTUNITIES FOR IMPROVEMENT

The U.S. Army Corps of Engineers (Corps) dredges and disposes of about 300 million cubic yards of dredged material annually from Congressionally-authorized navigation improvement and maintenance projects. In addition, permit applicants (e.g., port authorities, terminal owners, industries, and private individuals) dredge an additional 100 million cubic yards annually from navigation projects (i.e., ports, berths, and marinas). The Corps reviews projects and issues permits for dredging and dredged material disposal in accordance with the Rivers and Harbors Act (RHA), the Clean Water Act (CWA), and the Marine Protection, Research and Sanctuaries Act (MPRSA); Congressionally-authorized projects conducted by the Corps do not receive permits but must comply with the same substantive permitting procedures and requirements. Under the CWA and MPRSA, the Environmental Protection Agency (EPA) is responsible for developing the environmental criteria used by the Corps to evaluate proposed discharges of dredged material and for environmental oversight. Several other project development and environmental compliance statutes, regulations and policies at the Federal (see Appendix A), state and local level can apply to typical dredging projects.

Ideally, dredging permit applicants submit complete and technically adequate project applications to the Corps and other review agencies for prompt review and decision; dredged material testing results provide enough information to assess the environmental impacts of dredged material disposal at the proposed disposal site, and to evaluate the risks and uncertainties associated with the proposed project; information is then shared readily among all relevant stakeholders, from Federal and state agencies to the general public; and Congress expeditiously reviews, authorizes, and funds essential new Federal navigation projects. Unfortunately, the ideal is not always achieved.

For a broad range of reasons, dredging projects can become stalled in the review process. The project review process has improved since passage of the Water Resources Development Act of 1986 (WRDA '86). Nonetheless, the process is not perfect, and in some cases, projects have experienced significant delays. During the Group's review of the dredging process, the following problems were identified:

- Lack of a unifying national dredging policy to serve as a focus for individual Agency programs;
- Unresolved interagency conflicts can result in significant delays in the dredging process;
- Inadequate planning by Federal, state, and local entities, especially with regard to dredged material management, can result in conflicts among stakeholders and long project delays;
- Insufficient information exchange and coordination among all involved stakeholders, can
  result in poor dredged material management planning, incomplete and/or technically
  inadequate permit applications, stakeholder dissension, and project delays;
- Unclear expectations of the relevant Federal, state, and local agencies, can result in the need to generate additional information late in the process, and project delays;
- Uncertainties regarding the scientific ability to evaluate risks to the environment associated with contamination and the disposal alternatives (e.g., open ocean disposal, confined disposal facilities, and beneficial use) can cloud disposal decisions;
- Inconsistent funding policies regarding open water, upland, and confined disposal, as well as beneficial use of dredged material, can skew disposal decisions and result in inefficient use of Federal and non-Federal funds; and
- Insufficient financial and staff resources at many Federal, state, and local resource agencies constrain the ability of the agencies to conduct adequate advanced dredged material management planning, dredging project reviews or disposal site management.

The problems which slow down the dredging process can be categorized into the following areas: planning, the project review process, scientific uncertainties, and inconsistent funding allocations. This action plan addresses each of these problem areas with specific recommendations which, when implemented, will make the dredging process more timely, efficient, and predictable. The Group did not seek to change the basic legislative framework that applies to dredging in the United States. Accordingly, the Action Plan focuses on measures that the responsible agencies can take to improve the implementation of these laws.

# 3.0 THE INTERAGENCY WORKING GROUP ON THE DREDGING PROCESS

The Group was convened by Federico Peña, the Secretary of Transportation, in October 1993 to investigate and recommend methods to improve the dredging project review process. The Group had two major objectives:

• Promote greater certainty and predictability in the dredging project review process and dredged material management, and

• Facilitate effective long-term management strategies for addressing dredging and disposal needs at both the National and local levels.

The Group is comprised of members from the Department of the Army, United States Army Corps of Engineers (Corps); the Department of Commerce, National Oceanographic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), and Office of Ocean and Coastal Resource Management (OCRM); the Department of the Interior, U.S. Fish & Wildlife Service (FWS); the Department of Transportation (DOT), Maritime Administration (MARAD); and, the Environmental Protection Agency (EPA). Liaisons from the Office of Management and Budget (OMB); the Office of the Secretary of Transportation; the U.S. Navy; the U.S. Coast Guard; and, the White House Office on Environmental Policy also participated.

To meet its objectives, the Group reviewed the current processes for authorizing Federal and non-Federal dredging projects; for identifying, planning for, and selecting dredged material disposal alternatives; and for funding Federal dredging projects. This review included analyzing the aforementioned processes and identifying ways to improve them, including coordination, information gathering, environmental compliance, overall sequencing of approvals, and use of long-term dredged material management planning.

As part of this review, the Group solicited information from the stakeholders involved in dredging and dredged material management. The range of stakeholders included Federal, state, and local governments; port and shipping interests; environmental groups; commercial fishermen; recreational boaters; maritime labor unions; local businesses; and the general public. The Group held a series of public outreach sessions to meet with stakeholders in January and February 1994. Following the first outreach sessions, the Group issued the May 1994 *Options Paper*, which identified the problems raised and proposed a series of alternatives for improving the dredging process. A second round of outreach sessions was held in May and June 1994 to collect stakeholder comments on the *Options Paper*. Using the results of the stakeholder feedback, the Group evaluated all options and developed the set of final recommendations contained in this paper to improve the dredging process.<sup>3</sup>

# 4.0 NATIONAL DREDGING POLICY

The Group identified the need for a unified national dredging policy to guide in the development of recommendations and to focus Federal agency commitments. The Group recommends that the Administration adopt the following Findings and Principles as a statement of National Dredging Policy. The findings are:

• A network of ports and harbors is essential to the United States' economy, affecting its competitiveness in world trade and national security. Port facilities serve as a key link

<sup>&</sup>lt;sup>3</sup>Appendix B presents a brief methodology used by the Group and Appendix C provides a copy of the Executive Summary of the <u>Options Paper</u>.

in the intermodal transportation chain and can realize their full potential as magnets for shipping and commerce only if dredging occurs in a timely and cost-effective manner.

- The nation's coastal, ocean, and freshwater resources are critical assets which must be protected, conserved, and restored. These resources are equally important to the United States by providing numerous economic and environmental benefits.
- Consistent and integrated application of existing environmental statutes can protect the environment and can allow for sustainable economic growth.
- Close coordination and planning at all governmental levels, and with all aspects of the private sector, are essential to developing and maintaining the nation's ports and harbors in a manner that will increase economic growth and protect, conserve, and restore coastal resources.
- Planning for the development and maintenance of the nation's ports and harbors should occur in the context of broad transportation and environmental planning efforts such as the National Transportation System and the ecosystem/watershed management approach.

The principles are:

- The regulatory process must be timely, efficient, and predictable, to the maximum extent practicable.
- Advanced dredged material management planning must be conducted on a port or regional scale by a partnership that includes the Federal government, the port authorities, state and local governments, natural resource agencies, public interest groups, the maritime industry, and private citizens. To be effective, this planning must be done prior to individual Federal or non-Federal dredging project proponents seeking individual al project approval.
- Dredged material managers must become more involved in watershed planning to emphasize the importance of point and non-point source pollution controls to reduce harbor sediment contamination.
- Dredged material is a resource, and environmentally-sound beneficial use of dredged material for such projects as wetland creation, beach nourishment, and development projects must be encouraged.

The findings and principles are embraced by all of the Group's participating agencies. The Federal agencies commit themselves to the fulfillment of these principles, and to complete and timely implementation of the following recommendations.

# 5.0 RECOMMENDATIONS TO IMPROVE THE DREDGING PROCESS: AN ACTION PLAN

The Group has developed a series of 18 recommendations to improve and expedite the existing dredging project review process. These recommendations require up-front, comprehensive planning with increased public participation, effective interagency communication and cooperation, and better tools to ensure timely and informed project review and decision making. The recommendations represent an approach to the dredging process which recognizes the economic benefits of improving and maintaining our ports and channels and addresses environmental concerns associated with dredging and dredged material disposal.

Specific recommendations for improvement are presented in four areas: dredging and dredged material management planning mechanisms, the project review process, scientific understanding of dredging activities, and funding methods. Each recommendation is numbered for the reader's convenience, though this is not intended to convey any priority or ranking. These final recommendations will be implemented by the headquarters of the relevant Federal agencies, except where specifically noted.

Most of the recommendations can be initiated immediately, while others will require legislative and regulatory modification. These recommendations pertain to the dredging of deep-draft channels and berths and do not specifically address inland waterway dredging. However, many elements of the recommendations can be applied to similar issues in the dredging of inland waterways.

# 5.1 Strengthening Planning Mechanisms for Dredging and Dredged Material Management

**Problem Statement:** Inadequate early planning for dredging and dredged material management at the local, regional, and national levels impacts most aspects of the dredging project review process:

- Federal and state regulatory agencies often do not adequately coordinate or communicate their concerns about dredging projects early in the permitting process. This contributes to delays in the decision making process and the approvals required by Federal and state law;
- Stakeholders frequently do not effectively participate in planning efforts. Concerns and issues may be raised late in the review process, resulting in conflicts and project delays;
- Planning decisions for dredging projects are often based on an incomplete analysis of the comparative values and/or cumulative effects of the entire plan;
- Planning decisions about dredged material management, including disposal alternatives, site monitoring, and determining the suitability of dredged materials for beneficial use, are not always realistically incorporated into port dredging plans. Thus, disposal alternatives may be unavailable when they are needed and dredging projects are delayed;

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- Long-term port planning has not been linked to broader watershed management. Specifically, despite increased control over upstream pollution, downstream sediment quality continues to suffer due to historic sources and continued inputs, such as nonpoint sources of pollution;
- Decision-making criteria for the selection and funding of Federal dredging projects have not always maximized beneficial uses of dredged material. When resource agencies or the public believe that opportunities for beneficial uses have not been adequately formulated, project delays may result; and,
- The need for port dredging and dredged material management is not always integrated with planning for landside transportation systems.

In addition to these problems, changes over the last two decades in the economy and in technology have created new challenges to be addressed by the planning process. These changes include: increased international/waterborne commerce; rapid evolution of shipping practices to include containerization and intermodalism; increased environmental awareness and understanding, particularly regarding the impacts of contaminated sediments, as well as the ecological value of wetlands and coastal resources; population growth in coastal areas; and increased cost sharing and management responsibilities for local partners in dredging projects.

*Recommendations*: The planning process for dredging projects and dredged material management must be improved. Individual port development, regional and national economic development, and appropriate management of the environmental effects of dredging and dredged material disposal must be considered during the planning process. Progressive dredged material planning also must be coordinated with broader watershed and transportation planning efforts. Properly executed, dredged material management planning provides a framework for all Federal, state and local agencies to commit to a specific, integrated approach to implementing dredged material management.

Encouraging all concerned parties to participate early in the dredging planning process will promote proactive, rather than reactive, decision making. Further, advanced planning will provide an open forum for the affected parties to voice their concerns, thus providing an opportunity to resolve issues before they become adversarial. The following are key concepts to consider during the planning process for dredging projects:

- The planning process must reflect the unique mix of environmental, political, and economic circumstances in the individual port and the region;
- Planning strategies must be flexible enough to consider advances in technology, new scientific data, and changes in economic circumstances, and to efficiently integrate these new factors into the decision making process;
- Regional and local planning interests must develop direct mechanisms for early coordination and advanced planning for dredging activities, and selection and management of dredged material disposal sites;

- Public participation must be broadened to include all stakeholders so that there is widespread understanding of the importance of: the role of the local port in the regional economy, the availability of dredged material management options, the environmental considerations of dredging, and the roles and responsibilities of the involved agencies;
- Local dredged material planning efforts must be consistent with, or at least must not conflict with, regional or national dredging policies; and
- All agencies must be committed to developing, as well as implementing, the plans.

The project review process currently uses an *ad hoc* planning process, resulting in a piecemeal rather than an integrated planning approach. The recommendations listed below are intended to enhance the planning process to facilitate/emphasize long-term planning for dredged material disposal and broader state-led regional, watershed, and transportation planning efforts.

Recommendation 1: Create and/or augment regional/local dredged material planning groups to aid in the development of regional dredged material management plans.

In March 1993, the Corps issued a new policy which requires a dredged material management plan for every Federal project. In many areas of the country, Corps-led efforts have generated comprehensive regional dredged material management planning efforts. Regional/local planning groups may use other cooperative efforts to broaden the scope of their activities and integrate dredged material management planning into broader watershed efforts. Examples of Federal efforts include the EPA's National Estuary Program (NEP) and the NOAA's work under the Coastal Zone Management Act (CZMA) to assist states with developing Special Area Management Plans (SAMPs). Other examples of cooperative dredged material planning efforts include the Puget Sound Dredged Disposal Analysis plan and the San Francisco/Oakland Long-Term Management Strategy plan.

The planning groups proposed by this recommendation will consist of Federal and state agencies and other affected stakeholders. The groups will ensure that dredged material management plans identify short-term and long-term disposal alternatives, consider methods to reduce dredging, and maximize beneficial use of dredged materials. Some of the responsibilities of the groups will include:

- Identifying incentives for agencies and the public to participate in dredged material management planning and informing both agencies and the public about the benefits of such a program;
- Promoting watershed planning efforts and providing public forums to educate the various stakeholders, in conjunction with comprehensive dredged material disposal planning efforts; and,

 Identifying funding sources for developing dredging plans. The plans will be costshared by the participating agencies both through direct funding and in-kind services.

#### Recommendation 2: Identify the characteristics of successful Federal/state/local partnerships for use in developing dredged material management planning efforts.

The EPA, the Corps, the NOAA, and the MARAD will develop a guide to assist with establishing dredged material management planning efforts. The information will be in the form of a program guide and include a series of case studies. The information will assist regional efforts recognizing that each port area is unique and, therefore, must develop a management plan tailored to meet its own needs. The guide will cover the following subjects:

- Early public involvement;
- Federal/state/local cost-sharing and coordination;
- Facilitation of multi-jurisdiction coordination;
- Coordination of regional planning efforts with ecosystem/watershed planning;
- Comprehensive site management,
  - selection of environmentally-sound sites,
  - baseline data collection,
  - permit compliance monitoring,
  - environmental monitoring,
  - feedback coordination;
  - Funding sources/long term financial commitment,
  - local assistance for cost-sharing beneficial use projects,
  - user fees as adopted by law,
  - government funding options,
  - identification of cost savings; and
  - Technical and policy issues related to dredged material management.

#### Recommendation 3: Develop public outreach and education programs to facilitate stakeholder involvement.

All agencies will immediately review their existing public participation programs. Each agency will develop education and outreach programs designed to encourage and facilitate public participation by:

- Building awareness of existing mechanisms for public involvement through basic education and outreach programs/materials that are created for different target groups (e.g., fishermen, conservation organizations, port interests).
- Communicating issues of human and environmental risk from contaminated sediments to non-technical audiences. The program will increase the public's understanding of the comprehensive testing to measure contamination and the implications of the test results, which drive many disposal decisions.

- Educating the public about the dredged material planning and evaluation process, and the impacts associated with dredged material disposal/beneficial use alternatives.
- Recommendation 4: Provide guidance to relevant Agency field offices, state and local agencies, and the general public on opportunities for beneficial use of dredged material.

The Corps will review existing regulations and guidance and, as necessary, provide additional guidance to the field that requires considering beneficial use of dredged material at an early point in the planning process of both new navigation projects and operations and maintenance activities. Other agencies such as the EPA, the FWS, and the NMFS, will participate in the development of this guidance to ensure that appropriate agency roles and functions are designated for beneficial-use options such as wetland or other habitat creation.

Each resource agency has a role and commitment to promote beneficial use of dredged material. The Corps and the EPA will develop technical explanatory guidance for use by field personnel and the public on cost-sharing provisions affecting beneficial uses and potential sources and strategies for funding the incremental costs of beneficial uses. The FWS, NMFS, OCRM, and DOT will support and promote beneficial use of dredged material and will work with state and local constituency groups to identify potential non-Federal partners for beneficial-use projects.

Recommendation 5: Update guidance on disposal site monitoring requirements and procedures.

The EPA and the Corps will complete technical guidance to be used by their field offices in developing and implementing site management and monitoring plans. This guidance will improve the ability of the field offices to identify potential impacts of greatest concern, provide technical guidance and advice on monitoring tools and techniques, direct available resources for monitoring to issues of environmental significance, work to assure compliance with permit conditions, and promote consistency between sites and regions.

The guidance will encourage use of common data collection protocols and procedures to assure that site-specific monitoring plans are coordinated, and that data is transferred among Federal, state, and local agencies, and the public. This will minimize duplication of monitoring efforts and assure that relevant resource agencies and the public are kept informed about potential disposal impacts or lack thereof.

Recommendation 6: Ensure that dredged material management planners work with pollution control agencies to identify point and nonpoint sources of sediment and sediment pollution, and to implement watershed planning.

The EPA, the Corps, and other dredged material managers must work with watershed planners to ensure that upstream sources of sediment and sediment pollution are