



Environmental Effects of Dredging Technical Notes



Long-Term Management Strategy (LTMS) National Forum: Corps of Engineers Summary and Findings

Purpose

This Technical Note summarizes the National Forum on Implementation Strategies of Long-Term Management of Dredged Material held January 28-31, 1991, at Baltimore, MD. The findings of the Forum have been documented in a report to be published by the Environmental Effects of Dredging Programs (EEDP) in FY 92. The information gained from the Forum participants is also being incorporated into proposed policy and technical guidance to help direct, develop, and implement Long-Term Management Strategy (LTMS) studies and plans by the US Army Corps of Engineers (USACE).

Background

The USACE needs long-term dredged material management solutions to properly and efficiently maintain the Federal navigation program. Locating and retaining environmentally and economically acceptable dredged material disposal sites is a major management problem facing the national dredging program today (US Congress, Office of Technology Assessment 1987).

The USACE headquarters has received from its field offices a considerable number of high-priority funding requests to develop individual LTMS plans for Federal navigation projects with strong national economic implications. The broader scoped, regional or geographically based studies such as San Francisco Bay and Upper Chesapeake Bay/Baltimore Harbor are the focus of attention because of their scope, controversy, and economic and potential environmental impacts. The need also encompasses the nation's future ability to maintain a number of recently constructed deep-draft harbors. The need is equally evident for several national defense ports, where, unfortunately, emergency dredging is the norm rather than the exception due to the present inability to establish feasible long-term dredged material management solutions. However, the greatest need relates

to providing dredged material disposal site capacity for individual project reaches. In many cases, this has resulted in the inability to achieve the maximum intended project benefits, and, in some cases, continued project viability itself has been jeopardized.

To respond to this need, the USACE began a major new initiative to develop the appropriate management process, procedures, and policy guidance for incorporating the concept of LTMS as a management tool into the USACE national dredging program (Francingues and Mathis 1989). Considerable progress has been made in refining the LTMS concept to more effectively and efficiently address the Nation's diverse dredging needs. As part of this refinement process, the Corps hosted the National Forum to exchange information, views, experiences, and lessons learned concerning LTMS and to identify innovative procedures, tools, and impediments to implementing LTMS plans. The Forum was attended by approximately 170 representatives of a very diverse cross-section of Federal, State, and local governmental agencies, port authorities, environmental groups, private consultants, and concerned citizen groups.

Additional Information

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Long-Term Management Strategy (LTMS) National Forum

The National Forum on Implementation Strategies of Long-Term Management of Dredged Material was held in Baltimore, MD, January 28-31, 1991. It was sponsored by the US Army Corps of Engineers (USACE). The meeting was organized by EA Mid-Atlantic Regional Operations, EA Engineering, Science, and Technology, Inc., Sparks, MD, under contract with the US Army Engineer Waterways Experiment Station (WES), Vicksburg, MS.

MG Patrick Kelly, Director of Civil Works, and Dr. Tudor Davies, Director of the US Environmental Protection Agency's (USEPA) Office of Marine and Estuarine Protection, presented their Agency's views on LTMS development, current status, and future direction. Panel presentations were made on a variety of pertinent issues; five illustrative case studies and eight poster presentations were also given.

Overview of LTMS - the Process

The LTMS process developed and presented by the USACE at the Forum consists of five phases to help guide LTMS studies and plan development and implementation. Each phase consists of essential activities before proceeding to the next appropriate phase. The process is described in detail in *Environmental Effects of Dredging Technical Notes EEDP-06-10* (Francingues and Mathis 1990), which was

provided to each meeting participant at registration. A brief description of the five phases follows.

Phase I is a comparison of disposal needs versus available capacity and is extremely important in defining the needs and required scope of the study and LTMS plan.

Phase II is the systematic development and retention of all viable long-term management options that meet the specific study goals and objectives developed during Phase I. This includes, where appropriate, in-water, upland, ocean, and beneficial use options.

Phase III is the selection of the most practicable LTMS plan consisting of one or more alternatives for implementation and the necessary in-house documentation needed to support this selection.

Phase IV, plan implementation, and Phase V, periodic plan review and update, are specific steps that have been lacking in many previous applications of the LTMS concept. These phases require the dredging manager to face head-on the major unknown question with the LTMS concept—how to effectively implement an LTMS plan once agreed to by all parties concerned, while simultaneously providing appropriate review and updating to ensure the continued long-term viability of the established plan. These two components are intrinsically interrelated, and both are essential for effective LTMS plan implementation.

LTMS Objectives

Some of the objectives for LTMS include:

- Reduction of cost and time for Operations and Maintenance (O&M) dredging.
- Increased regulatory and permit efficiency.
- Improved long-term planning.
- Potential for local sponsor agreements.
- Avoidance of crisis management.

Scope and Criteria for LTMS

The scope of individual LTMS plans should be flexible and may involve single projects or project reaches or groups of projects with common dredged material management needs or geographic boundaries. The following national criteria have been established for developing an LTMS:

- The LTMS must include all foreseeable Federal new-work, O&M, and non-Federal project-related dredging activities. The basic premise is that it is not in the best public interest to construct a Federal project if there are no reasonable assurances that the project can be maintained and intended project benefits accrued over the long-term.
- Whenever possible, the LTMS should be for the anticipated project life. The target goal is to plan for 50 years into the future, but in no case for less than 10 years.
- The LTMS should fully address both structural and nonstructural alternatives for maintaining navigation. Every effort should be made to seek means of reducing dredging requirements and costs for the individual navigation projects.
- The LTMS must consider all practicable dredging and dredged material management alternatives. No one option can be considered a panacea for dredged material disposal, nor can it be ruled out in the initial planning process for other than sound economic, environmental, and engineering reasons.
- Beneficial uses of dredged material are to be incorporated whenever practicable.
- Site management, both upland and open water, is essential and required for successful implementation of LTMS plans.
- The LTMS plan must provide for periodic review, revision, and update, and must incorporate, whenever appropriate, new improvements in dredging equipment and dredged material management technologies.

What is LTMS?

Essentially LTMS is a process for providing reasonable assurances that navigation projects can be effectively maintained and anticipated benefits can be accrued over the long-term (for example, the economic life of the project). In short, LTMS can be viewed as:

- A USACE process rather than a program, and not a process funded separately from new work construction or O&M navigation dredging.
- A five-phase process that incorporates long-range solutions to navigation dredging needs consistent with existing USACE planning, engineering, construction, and O&M programs.
- A potential mechanism to focus and facilitate the use of existing and innovative procedural and regulatory instruments (for example, special area management, advanced identification of sites, and general and regional permits) for implementing comprehensive dredged material management plans.

- A potential mechanism to provide information/technology transfer to other agencies and the public.
- A forum to assist better coordination, foster cooperation, and to provide consensus-building opportunities to achieve preferred dredged material management consistent with USACE authorities, regulations, and established policies.

What LTMS is Not

Because of the misconceptions conveyed by several of the Forum participants and for clarification, it is important to highlight clearly features which LTMS is not presently intended to provide. Therefore, LTMS is not:

- A formally institutionalized, new program with a major new authorization and appropriation.
- The source of funds to pursue environmental initiatives not clearly established by present authorities for the USACE at the expense of the national navigation program.
- An environmental habitat restoration program.
- A contaminated sediment cleanup program.

Corps Assessment of Forum Findings

Most of the Forum participants, including the regulatory agencies, were very receptive and supportive of the LTMS concept. Many expressed a desire and willingness to fully cooperate in developing and implementing long-term solutions to the problem of managing dredged material.

The Forum findings have been categorized for presentation according to the following broad topics: implementation; beneficial uses of dredged material; contaminated sediments; public awareness, communication, and education; and recommendations.

Implementation

- Partnerships and participation in developing and implementing LTMS plans received considerable discussion concerning roles and responsibilities of various participants in the LTMS process.
- Federal implementation instruments can only be fully effective where there is a sponsoring local agency to reflect local needs and issues (for example, balancing development and resource conservation/protection). This will

require greater consensus on what constitutes technically defensible priority habitats and values.

- Procedural instruments are presently available and workable for the effective implementation of LTMS plans. There are no major procedural impediments to using existing instruments; however, there may be different geographical considerations in the use of various instruments. The LTMS process should, in fact, help to focus or serve as a catalyst to facilitate the use of existing procedures or processes.
- The regulatory community must play a major role in LTMS plan implementation. The benefits will not only result in fully implementable solutions but also in reducing the overall regulatory workload.
- The states often have an essential role in effective LTMS plan implementation through Coastal Zone Management (CZM), land-use planning/zoning, and long-term certifications.
- LTMS implementation requirements and procedures are equally applicable to navigation and habitat restoration projects.
- Implementation of long-term management plans specific to dredged material received less discussion and attention than was originally envisioned. This was attributed primarily to confusion concerning the apparent hierarchy of related environmental management issues that tended to overshadow the objectives of the Forum. This hierarchy of issues includes resource management (for example, National Estuary Program and Coastal America), sediment management to include contaminated sediments and source reduction, and dredged material management for navigation and beneficial uses.

Beneficial Uses of Dredged Material

- Beneficial use of dredged material was identified by many participants as their option of first choice. In fact, this item led to considerable discussion of the Federal Standard concept versus the "least-cost, environmentally acceptable beneficial use alternative."
- As emphasized by Forum participants, establishing priority environmental resources and values must be a focus. The need is critical in developing long-term resource management plans for appropriately locating future dredged material disposal sites, guiding future beneficial use applications of dredged material, using mitigation strategies to include related instruments such as mitigation banking and, in light of new USACE authorities, incorporating future fish and wildlife habitat restoration projects.
- The fact that dredged material is a valuable resource and the many potential beneficial uses of dredged material must be clearly demonstrated to the public. Unfortunately, the public has the misconception about the volume

of sediment that is actually contaminated because of the focus on noxious types of waste dumping activities (for example, sludge and municipal refuse).

Contaminated Sediments

- Contaminated sediments received considerable discussion time. Participants were concerned about how much material was contaminated and where was it located; how to define contaminated sediments; how to test it; which procedures were acceptable; and what methods were available to manage highly contaminated sediments.
- The reduction and control of sources of sediment load and contamination to navigation projects were highlighted as a major need. USEPA is developing a Contaminated Sediment Management Strategy in which the USACE should play a significant role, in light of the USACE's new authorities for environmental dredging and the potential applicability of the LTMS concept for managing contaminated sediments.

Public Awareness, Communication, and Education

- There is a need for more effective communication with, and better education and involvement of, the public in finding solutions to the problem of long-term management of dredged material. Some at the Forum suggested that LTMS would be an excellent medium for this purpose.
- It is also important to educate USACE and other Agency staff about how other long-term solutions to dredging problems have effectively involved the public to increase the probability of success on each new project(s) considering an LTMS.

Recommendations

- Environmental and economic factors dictate that the USACE proceed with developing policy and procedural guidance to implement the LTMS concept for the existing navigation program and within the existing funding authorities.
- LTMS policies and procedures should remain sufficiently flexible to allow the pursuit of related sediment management objectives (for example, management of highly contaminated bottom sediments). This should be done in conjunction with individual LTMS studies where it is in the best public interest and cost effective to do so and where supplemental funding sources can be identified and are provided.

References

Francingues, N. R., Jr., and Mathis, D. B. 1989. "Long-Term Management Strategy for the Corps' Navigation Dredging Program," *Dredging, Technology, Environmental, Mining, Proceedings*, XIIth World Dredging Congress, Orlando, FL, May 2-5, 1989.

Francingues, N. R., Jr., and Mathis, D. B. 1990. "Corps of Engineers Initiatives to Develop Long-Term Management Strategies for Navigation Dredging Projects: Overview and Framework," *Environmental Effects of Dredging Technical Notes EEDP-06-10*, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

US Congress, Office of Technology Assessment. 1987 (April). "Wastes in Marine Environments," OTA-0-334, US Government Printing Office, Washington, DC.