REGULATOR'S PERSPECTIVE — ENVIRONMENTAL PROTECTION AGENCY

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Introduction

The US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) share responsibility for ensuring that dredged material disposal into the aquatic environment is occurring in an environmentally acceptable manner. The USACE and other dredgers excavate over 350 million cubic yards of sediment each year to maintain and improve the nation's more than 25,000 miles of navigable waterways. These waterways serve over 150 commercial ports and more than 400 small boat harbors, which are valuable for commercial, defense, and recreational purposes. Of all the sediment dredged annually, about 250 million cubic yards are disposed into waters of the US; 60 million cubic yards into the ocean; and 40 million on land. This paper describes EPA's role in the regulation and management of dredged material and a number of recently completed and ongoing activities to improve consistency, predictability, and equity of dredged material management.

Legislative Authorities

The disposal of dredged material into the aquatic environment is regulated principally under either the Federal Water Pollution Control Act Amendments of 1972, also called the Clean Water Act (CWA), or the Marine Protection, Research, and Sanctuaries Act (MPRSA) depending on the location of the disposal site. An important feature common to both statutes is that the USEPA and USACE are directed to share responsibility for managing dredged material disposal. The pertinent aspects of these and other statutes (e.g., NEPA, CZMA, ESA, RCRA, CERCLA) affecting dredged material management are discussed below.

The Clean Water Act. The CWA regulates the discharge of dredged or fill material into the waters of the United States. Section 404 of the CWA requires the USEPA, in conjunction with the USACE, to promulgate Guidelines to be used in the evaluation of proposed dredged material discharges. The purpose of the Guidelines is to ensure that the proposed discharge will not result in unacceptable adverse environmental impacts to the waters of the United States. The USACE is assigned the responsibility for applying the Guidelines to each proposed discharge and, if in compliance with the Guidelines and other factors (e.g., the public interest, other applicable statutes, etc.), for permitting such discharge. The USEPA and USACE also have authority to identify sites in advance that are either suitable or unsuitable for the discharge of dredged or fill material. In addition to reviewing project proposals, USEPA has the authority under Section 404(c) to veto proposed discharges which would result in unacceptable adverse effects to certain aquatic resources. The USEPA Guidelines are contained in 40 Code of Federal Regulations (CFR) Part 230.

The Marine Protection, Research and Sanctuaries Act. The MPRSA regulates the dumping of all matter, including dredged material, into the ocean. Section 102 of the MPRSA requires that USEPA, in consultation with USACE, develop Criteria that must be complied with before any proposed ocean dumping activity is allowed to proceed. Section 103 of the MPRSA assigns to the USACE the responsibility for issuing permits for the ocean dumping of dredged material. In evaluating proposed ocean dumping activities, the USACE is required to determine whether such proposals comply with the Criteria. The Act requires that EPA independently review the proposed ocean dumping activity for compliance with the Criteria; if USEPA determines the Criteria are not met, dumping may not occur without a waiver of the Criteria by the USEPA Administrator. In addition, the USEPA is to designate sites where the dumping of dredged material would not violate the Criteria. The USACE is required to use such sites when available and feasible; when use of such a site is not feasible, the USACE is authorized to select a site, provided it complies with the Criteria and USEPA concurs. The USEPA Criteria are contained in 40 CFR 220-229.

Figure 1 illustrates the geographical jurisdiction of the CWA and the MPRSA. As shown in this figure, there is an overlap of jurisdiction within the territorial sea. Dredged material proposed for disposal in the territorial sea is regulated under MPRSA. Dredged material discharged as fill (e.g., beach nourishment,

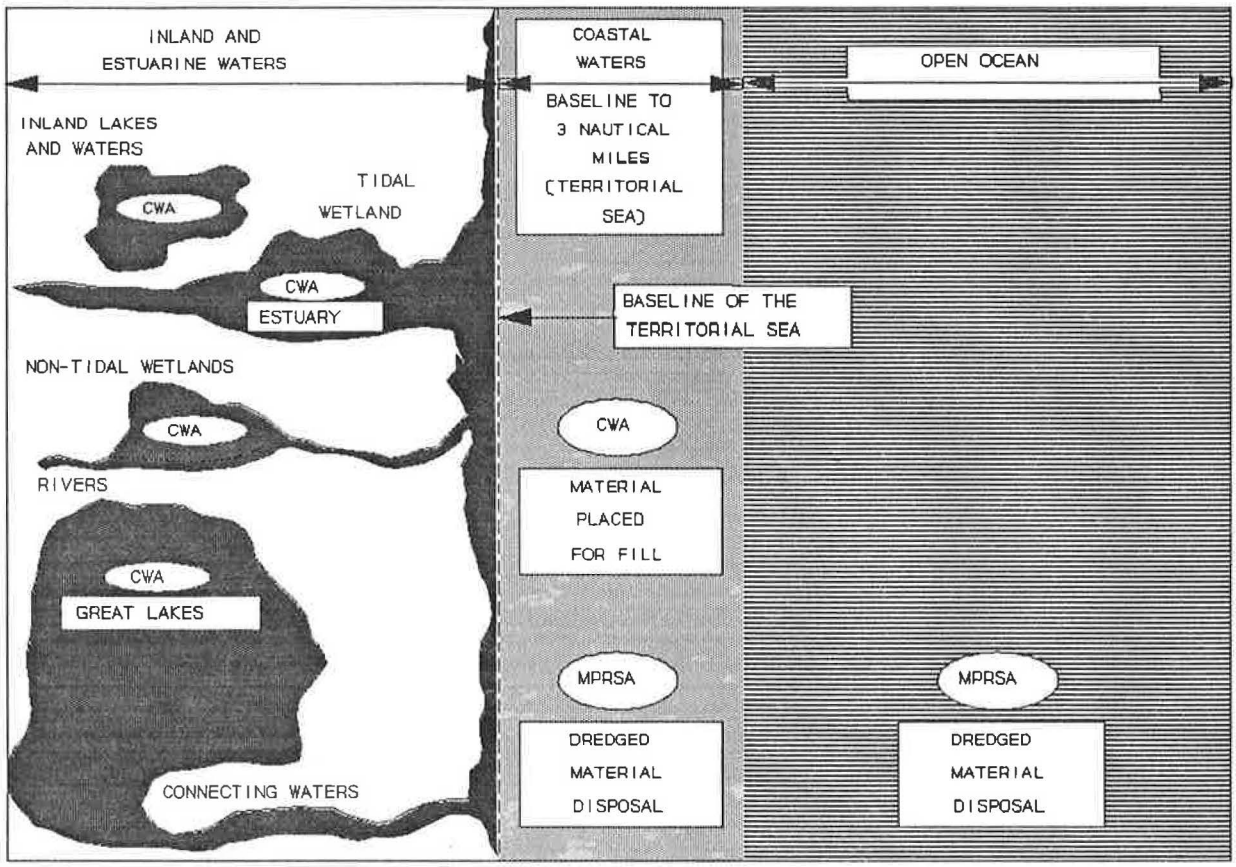

Figure 1 Geographical jurisdiction of the Marine Protection, Research and Sanctuaries Act and the Clean Water Act. [Adapted from NACOA, 1981]

island creation, or underwater structures) in the territorial sea is regulated under the CWA.

Other Statutes. A number of additional Federal statutes may affect the management of dredged material. The National Environmental Policy Act (NEPA) requires that Federal officials consider the environmental consequences of major Federal actions (e.g., proposals, permits, and legislation), that alternative approaches including no action be considered, and that the public be allowed to review and comment on analyses of alternatives and environmental consequences. USEPA is directed to review and comment on other agencies analysis of environmental consequences and to determine if such analysis is satisfactory. The consideration of alternatives conducted under NEPA is similar to requirements under the MPRSA and CWA to demonstrate a need for the disposal; a single, comprehensive needs/alternatives analysis can satisfy these statutes.

Dredged material projects and USEPA regulations and site designations require review by, and possibly more thorough consultation with, other Federal agencies under several conservation-related laws, including the Fish and Wildlife Coordination Act (FWCA), the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA). These acts as well as the Coastal Zone Management Act (CZMA) and section 401 of the CWA provide states with authorities to play a role in dredged material management. It is also possible for certain projects that solid-waste and hazardous-waste laws could affect dredged material management. Such laws could include the Toxic Substances Control Act (TSCA; affecting dredged material contaminated with PCBs greater than 50 parts per million), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Clean Vessel Act (CVA), and the Shore Protection Act (SPA).

Regulation and Guidance Development

As part of their dredged material management program responsibilities, the USEPA and USACE develop regulations and guidance to assist each agency's field offices in implementing the program. This section describes a number of existing program guidance documents and several regulation revisions and additional guidance currently under development.

Existing Guidance

Framework for Evaluating Dredged Material Management Alternatives. In November 1992, the USEPA and USACE jointly issued the guidance document entitled, "Evaluating the Environmental Effects of Dredged Material Management Alternatives A Technical Framework," also known as the Framework Document (USEPA/USACE, 1992). This document describes a consistent technical framework for evaluating dredged material management alternatives under the CWA, MPRSA, and NEPA. The Framework Document addresses a broad range of dredged material, both clean and contaminated, and the broad array of management alternatives: confined (diked intertidal and upland) disposal, open-water (aquatic) disposal, and beneficial-use applications. Application of the Framework Document will allow for consistency in decision-making across statutory boundaries and consideration of the full continuum of dredged material management options.

Dredged Material Testing Manuals. The evaluation of potential environmental effects of dredged material disposal into the aquatic environment relies heavily on biological effects-based testing. In the ocean dumping program, guidance on performing biological and other necessary tests is contained in the Ocean Dumping Testing Manual, also known as the Green Book (USEPA/USACE, 1991). This manual was last revised in 1991 and will be updated as the state-of-the-science advances. Testing guidance for disposal into CWA jurisdiction is being developed. A joint USEPA/USACE work group has completed a draft manual, which has been submitted to USEPA's Science Advisory Board for review. After the SAB's comments are addressed, the guidance will become available for public review, sometime in the spring of 1994. The USEPA and USACE are also developing detailed guidance on performing quality assurance/quality control procedures during dredged material testing.

Ocean Dump Site Designation Guidance. The "Ocean Dumping Site Designation Delegation Handbook for Dredged Material" (USEPA, 1986) compiles and summarizes existing literature, documents and agency policies pertinent to site designation and management. This guidance is built on a joint USEPA/USACE document published in 1984 (USEPA/USACE, 1984).

Under Development

Ocean Dumping Regulation Revision. With the passage of the Ocean Dumping Ban Act and the end of sewage sludge and industrial waste dumping, activities to revise the ocean dumping regulations will focus on dredged material. The revisions will clarify and update the regulations to reflect scientific and program experience and statutory changes, including enactment of the Water Resources Development Act of 1992 (WRDA 1992). WRDA 1992 amended the MPRSA to require the development of ocean disposal site management plan, written EPA concurrence on dredged material ocean dumping permits, and limited permit durations. The revisions are being prepared by an Agency workgroup and a proposal in the *Federal Register* is expected in late 1994.

Clean Water Act Regulation Revision. The USEPA is developinga regulation revision to the 404(b)(1) Guidelines to change the point of comparison for dredged material evaluations from the disposal site to an off-site reference sediment. This technical change is intended to make the CWA dredged material program more consistent with the MPRSA program.

Ocean Dump Site Management Guidance. The USEPA is developing guidance for designating, managing and monitoring ocean disposal sites. This guidance will discuss policies, procedures and responsibilities for the management of ocean dredged material disposal sites. After producing a draft document, the USEPA will work with the USACE to transform it into joint-agency guidance.

EPA's Dioxin Reassessment. In April 1991, USEPA began a scientific reassessment of the risk of 2,3,7,8-tetrachlorodibenzo-p-dioxin ("Dioxin"), and similar chemicals, to human health and the environment. During this reassessment, USEPA continues to make decisions regarding the risk of dioxin to human health based on policies developed prior to initiating the reassessment. Because there were very few previous studies about ecological risks of dioxin, emerging information will be used in programs as it is published by the Agency. In March 1993, an interim report on the risk of dioxins to aquatic life and associated wildlife was released (USEPA, 1993). The review of the human-health risks of dioxin is being conducted in a highly open, peer-

reviewed process. A draft human-health reassessment will be available for public review in the Spring of 1994.

Dioxin in Dredged Material Guidance. Pending the overall USEPA dioxin reassessment, the USEPA and USACE dredged material program offices agreed to develop dredged material decision-making guidance using the best available analytical techniques and interpretive guidance. The guidance will address: how to evaluate ecological and human-health effects of multiple-congener contamination; how to identify appropriate detection limits for sediment, water and tissue; how to conduct site-specific exposure assessments; how to manage disposal (including monitoring) to minimize environmental impacts within the limits of applicable regulations; and how to communicate testing requirements and results to fully inform the public and avoid unnecessary permitting delays. A draft of this guidance is expected to be available for public review in the Spring of 1994.

Contaminated Sediment Management Strategy. The USEPA is completing work on a strategy for managing contaminated sediments. This strategy is intended to enhance coordination and consistency among Agency programs when dealing with contaminated sediment. Program areas addressed in the strategy include assessment, prevention, remediation, and dredged material management. Activities the Agency will conduct as part of strategy implementation include conducting a survey of contaminated sediment sites and developing consistent sediment assessment techniques. The strategy is expected to be published in the *Federal Register* for public review and comment in the Spring of 1994.

Sediment Quality Criteria. USEPA is developing Sediment Quality Criteria (SQC) based on the Equilibrium Partitioning Approach (Eq-P) for non-ionic organic chemicals. On January 18, 1994, the first five chemicals were published in the *Federal Register* for public review. These chemicals are: endrin, dieldrin, acenapthene, fluoranthene, and phenanthrene. The Agency expects to issue approximately three additional SQC per year. Research is continuing on developing SQC of metals and polar-organic chemicals. The use of SQC has not been finalized for the dredged material management program; however, the preamble to the proposed ocean dumping regulation revisions will discuss potential options for the use of sediment quality criteria in the ocean dumping program and seek public comment on this issue.

Contaminated Sediment Treatment. There are two programs in USEPA developing innovative methods to decontaminate sediments: the Superfund Innovative Technology Evaluation (SITE) demonstration program; and, the Assessment and Remediation of Contaminated Sediments (ARCS) program in the Great Lakes. Both programs have increased substantially the state-of-knowledge of decontamination technology and its utility in remediation programs. The WRDA 1992 directed the USEPA and USACE to conduct a demonstration project for remediating dioxin contaminated dredged material from New York Harbor; promising technologies from the SITE and ARCS programs will be reviewed and used, as appropriate.

Contaminated Sediment Capping Guidance. In 1994, the USEPA and USACE will begin to develop technical guidance on designing capping projects. Capping is the engineered placement of contaminated dredged material at an open-water disposal site, followed by a covering or cap of clean isolating material. The document will include guidance on selecting a site, designing a cap, and operational and monitoring requirements.

Beneficial uses of Dredged Material Guidance. The USEPA is planning to develop a manual describing implementation strategies for beneficially using dredged material. The manual will discuss recent statutory changes that will allow greater opportunities for beneficial-use projects. A key aspect of the guidance will relate to developing public/private partnerships.

Research and Development Activities. The USEPA, in coordination with the USACE, continues to conduct research and development activities in assessing the effects of contaminated sediment. Ongoing activities include developing chronic bioassay and interpretive guidance for bioaccumulation testing.

Coordination

Because the governing statutes have established shared responsibility between the USEPA and USACE, the success of the dredged material management program is directly contingent on the effective coordination and cooperation between these two agencies. The USEPA and the USACE have developed a number of means for agency coordination including, as described above, the preparation of joint guidance documents. Joint training and a joint Ocean Dumping Coordinating Committee are other mechanisms the two agencies use to assure that the program is consistently administered around the country.

To say that the realm of coordination is solely *between* the USEPA and the USACE would be incomplete. Within the USEPA, there is substantial coordination between the CWA and MPRSA programs. Likewise, considerable coordination takes place between USEPA headquarters and Regional field offices. All of this is done to ensure that dredged material aquatic

disposal sites are managed in a consistent manner whether they are in the deep ocean, an estuary, or a river, or used by one project or many. While this section discusses coordination within, and between, the USEPA and the USACE, it must be understood that other agencies and the public have important roles in decision-making.

Closing Thoughts

The USEPA and USACE have worked hard over the last few years to ensure that dredged material disposal is environmentally acceptable and to make the dredged material management program more consistent and predictable for the regulated community and the public. Ongoing and planned activities of the two agencies will continue progress towards these important objectives. The challenge ahead for the USEPA and the entire dredged material management community is to incorporate the program into the emerging watershed protection and ecosystem management approaches and to harmonize what we do in these programs with the larger goals and principles of sustainable development.

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