

GUIDANCE DOCUMENT FOR DEVELOPMENT OF SITE MANAGEMENT PLANS FOR  
OCEAN DREDGED MATERIAL DISPOSAL SITES

February 1996

Developed by:

US Environmental Protection Agency

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## 1 PURPOSE

The purpose of this document is to provide guidance to the Environmental Protection Agency (EPA) Regions and the US Army Corps of Engineers (CE) Districts for preparation of ocean dredged material disposal site management plans. This guidance document lays out a recommended framework for site management plan development and content.

## 2 INTRODUCTION

### 2.1 General

The disposal of dredged material in ocean waters, including the territorial sea is regulated under the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), 33 U.S.C. § 1401, ff. The transportation of dredged material for the purpose of disposal into ocean waters is permitted by the CE (or, in the case of federal projects, authorized for disposal under MPRSA §103(e)) applying environmental criteria established by EPA. (Both permitted and authorized disposal will hereafter be collectively referred to as "authorized activities.") Section 103(b) of the MPRSA requires that the CE utilize dredged material disposal sites designated by EPA to the maximum extent feasible. Where use of a site designated by EPA is not feasible (e.g., if an EPA designated site does not have a management plan after January 1, 1997, and is unavailable for use), the CE may, with the concurrence of EPA, select an alternative site. (MPRSA § 103(b).)

The Water Resources Development Act of 1992 (WRDA 92; Public Law 102-580) made a number of changes to the MPRSA. As amended by Section 506 of WRDA 92, Section 102 (c) of the MPRSA provides that, in the case of dredged material ocean disposal sites:

- After January 1, 1995, no site shall receive a final designation unless a management plan has been developed.
- For sites that received a final designation prior to January 1, 1995, management plans shall be developed as expeditiously as practicable, but no later than January 1, 1997, giving priority to sites with the greatest potential impact on the environment.
- Beginning on January 1, 1997, no permit or authorization for dumping shall be issued for a site unless it has received a final designation or it is an alternate site selected by the CE under MPRSA Section 103(b).

MPRSA Section 102(c)(3), as amended by WRDA 92, sets forth a number of requirements regarding the content and development of site management plans, as follows:

Dredged material disposal sites - In the case of dredged material disposal sites, the Administrator, in conjunction with the Secretary, shall develop a site management plan for each site designated pursuant to this section. In developing such plans, the Administrator and the Secretary shall provide opportunity for public comment. Such plans shall include, but not be limited to-

(A) a baseline assessment of conditions at the site;

(B) a program for monitoring the site;

(C) special management conditions or practices to be implemented at each site that are necessary for protection of the environment;

(D) consideration of the quantity of the material to be disposed of at the site, and the presence, nature, and bioavailability of the contaminants in the material;

(E) consideration of the anticipated use of the site over the long term, including the anticipated closure date for the site, if applicable, and any need for management of the site after the closure of the site; and

(F) a schedule for review and revision of the plan (which shall not be reviewed and revised less frequently than 10 years after adoption of the plan, and every 10 years thereafter).

Management of ocean dredged material disposal sites (ODMDS) involves regulating the times, the quantity, and the physical/chemical characteristics of dredged material that is dumped at the site; establishing disposal controls, conditions, and requirements to avoid and minimize potential impacts to the marine environment; and monitoring the site environs to verify that unanticipated or significant adverse effects are not occurring from past or continued use of the disposal site and that permit terms are met.

Appropriate management of ODMDS is aimed at assuring that disposal activities will not unreasonably degrade or endanger human health, welfare, the marine environment or economic potentialities (see MPRSA §103(a)). ODMDS management is a continuum that begins with site designation. At the site designation stage, the emphasis is on selecting a site where disposal will not have a significant adverse impact on various amenities such as fisheries, coral reefs, historic sites (e.g., shipwrecks), or endangered species, or on other uses of the marine environment. The

site designation criteria are set forth at 40 CFR 228.5 and 228.6. The ODMDS designation documents should identify any topics of special concern and, as appropriate, identify constraints and conditions on the use of the site for inclusion in the site management plan or permits authorizing site usage. The EPA Region and CE District also must establish appropriate monitoring plans, as required by MPRSA §102(c)(3)(B).

Ocean dredged material disposal sites are selected so as to minimize the risk of potentially adverse effects to human health and the marine environment. A decision to authorize disposal at a designated ocean dredged material disposal site (i.e., approve a project or permit, with or without conditions), is based primarily on:

- 1) The disposal site's characteristics, as defined during the site designation process;
- 2) Compliance with the ocean dumping criteria, including the results of effects-based testing of the proposed dredged material; and
- 3) The ability to manage the disposal operation and monitor the site for changes.

These three elements also are building blocks for developing site management plans.

The effective management of an ocean dredged material disposal site is necessary to ensure that the dredged material disposal will not result in unreasonable degradation to the marine environment. Site management plans facilitate management action by the EPA Region and the CE District over the full use period of the disposal site and in appropriate cases, following site closure. Management plans should focus on the broad, overall management issues associated with ocean disposal of dredged material at a given site. They also should identify critical amenities and site conditions warranting further consideration or continuing evaluation, such as unusual currents that could affect dispersal.

## 2.2 Timing

In order to meet the deadlines imposed by MPRSA regarding development of management plans, the following general principles should be followed:

- 1) The EPA Regions and CE Districts should come to agreement on which sites will need to be used shortly after the deadline of January 1, 1997. Priority consideration shall be given to designated sites considered to have the greatest impact on the environment.
- 2) When use of a site is not anticipated in the near future, the development of site management plans may be deferred beyond the January 1, 1997, deadline but must be completed prior to issuance of permits or authorizations for use of the site.

3) Similar sites receiving similar material may be combined into a single management plan, provided that all the MPRSA Section 102 (c)(3) requirements are met for each site.

4) Sites that cannot have a management plan in place by January 1, 1997, may be specified in a CE Section 103 permit and used as a short term solution until an MPRSA management plan is developed and the Section 102 site can be used. Formal MPRSA site management plans are not required for such CE selected Section 103 sites.

### 2.3 Management Plan Review and Availability

Site management plans may be appended to the site-designation Environmental Impact Statement (EIS) or distributed independently of the EIS.

Section 102(c)(3), as amended by WRDA 92, requires that "the Administrator and the Secretary shall provide opportunity for public comment" in developing site management plans for each dredged material disposal site designated by the Administrator pursuant to § 102. The statute does not specify any particular procedure for obtaining comment on a draft management plan; however, the means employed should be sufficient to notify all interested parties of the issues involved, so that they may comment on the plan. For currently designated sites, comment may be sought through circulation of a public notice using distribution similar to that used for permit notification, publication of a public notice in a local newspaper, notification through appropriate mailing lists, or a combination of these or other techniques, so long as interested parties are fairly apprised of the issues involved in the draft plan. It is recommended that the notice be issued jointly by EPA and the Corps, and that any notice indicate both Agencies are seeking comment.

For designation of new sites, public notice of the management plan should be undertaken as part of the EIS/site designation public notice process. Due to the fact that management plans need to be periodically revised and updated, it is not recommended that the plans themselves be published in the Federal Register as part of site designations or other regulatory actions.

In addition to the opportunity to review the draft plan, all interested parties, Federal and State agencies, project sponsors, other users of the marine environment, and concerned groups or individuals should have access to the final plan.

Section 3 below provides guidance for the content of MPRSA site management plans.

### 3 COMPONENTS OF SITE MANAGEMENT PLANS

#### 3.1 General

Whenever the site management plan is developed, it should be prepared jointly by the EPA Region and the CE District responsible for managing the ocean dredged material disposal site. Close coordination between the personnel of the Region and the District is essential to the preparation of a workable and effective management plan. In addition, as noted in Section 2.3 above, plan development must also include an opportunity for public comment. Components of a typical site management plan as required by Sec 102(c)(3) of MPRSA, as amended by WRDA 92, are discussed below.

Site-specific management plans should be prepared in conjunction with the site designation and may be summarized in or appended to the site designation EIS. However, time, funding, and administrative constraints, as well as incomplete characterization of the proposed dredged material, may have precluded the development of a management plan when the site was designated. After January 1, 1997, a permit or authorization for use of a designated site cannot be issued unless a management plan is in place or a site has been selected by the CE pursuant to §103.

##### 3.1.1 Objectives of Site Management Plan.

The site management plan should provide a clear, concise statement of management objectives and an overview of its purpose and function. Where applicable, specific management activities designed to address concerns identified during the site designation process should be clearly stated. The more specific the objective, the easier it will be to identify appropriate management activities.

##### 3.1.2 Site Management Roles and Responsibilities.

The management plan developed jointly by the EPA Region and the CE District should clearly identify roles and responsibilities for all participants and provide for coordination of management activities. The focus and intensity of site management activities are likely to vary on a case-by-case basis and site management roles and responsibilities may change.

Under the MPRSA, the EPA Regions have responsibility for designation of ODMDs, although under MPRSA Section 103(b), the CE may select a disposal site if use of an EPA designated site is not feasible. While the CE Districts evaluate disposal projects, and their issuance of permits or authorizations is subject to EPA concurrence, development of management plans is a joint responsibility of the Regions and Districts (MPRSA Section

103(c)(3)). Enforcement is also a shared responsibility and depends on the nature of the violation.

Determination of baseline conditions during designation of an ODMDS is the responsibility of the EPA and CE. If supplemental baseline information is needed related to a specific authorized activity, it should be obtained in conjunction with the authorization of that activity; this would generally be the responsibility of the permittee or the CE for Federal Projects. Identifying and evaluating any impacts outside the designated site typically is the responsibility of the EPA Region and CE District; permitted site users may be required to provide information to support such determinations.

### 3.1.3 Funding

Generally, funding for site management plan development is shared between the EPA Region and the CE District. All new site designations shall have management plans developed as part of the site designation for the site, either included in the EIS, or as a stand-alone document. All site management plans should generally describe who is responsible for funding and carrying out the various activities described in the plan.

## 3.2 BASELINE ASSESSMENT

MPRSA 102(c)(3)(A) requires that the management plan include a baseline assessment of conditions at the site.

The establishment of baseline conditions at an ODMDS is a part of the site designation process for new sites and part of the historical record for previously used sites. The intent is to determine if the site is suitable for designation, obtain data for future use in evaluating material for disposal, and to serve as a basis of comparison against which to measure potentially significant adverse impacts to the marine environment at or in the vicinity of the site. An original baseline is usually established during site designation where the sea floor has not been disturbed. This assessment may or may not accurately reflect the conditions inside and outside the site several years later after sediment has been disposed of at the site. Since conditions in the site change after disposal (e.g., depth), some new baseline information may need to be gathered prior to new disposal operations.

### 3.2.1 Disposal Site Characterization.

The baseline established during site designation or additional site characterization data collected since designation should be used to provide a description of the disposal site, the marine

environment near the site, and critical amenities that may be potentially affected by disposal of dredged material. The site characterization described in the management plan should include a summary of the physical, chemical, and biological characteristics of the sediments and water column (See 40 CFR 228.5 and 228.6).

### 3.2.2 Disposal Site History.

The disposal activities at the site should be documented. This information is important for evaluating monitoring data and making adjustments to the management plan that will maximize site use and avoid any unacceptable impacts.

Disposal history information for management plan implementation typically includes the following:

- Known historical uses of the proposed disposal site.
- Transportation and disposal methods used.
- Monitoring findings.
- Enforcement activities.

## 3.3 MONITORING PROGRAM

MPRSA 102(c)(3)(B) requires that management plans include a program for monitoring the site.

### 3.3.1 Site Monitoring.

Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding a site and to verify compliance with the site designation criteria, any special management conditions, and permit or federal authorization requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. A monitoring program should have the ability to detect environmental change and assist in determining regulatory and permit compliance. The program should be designed to provide the following:

- (1) Information indicating whether the disposal activities are occurring in compliance with the permit and site restrictions;
- (2) Information indicating the short-term and long-term fate of materials disposed of in the marine environment; and
- (3) Information concerning the short-term and long-term environmental impacts of the disposal.



It is important to understand that disposal site monitoring is not a stand-alone activity; it is based on the site designation process, the characteristics of the dredged material, and compliance with permit or §103(e) authorization terms. Disposal site monitoring is a key component of site management. The main purpose of a disposal site monitoring program is to determine whether dredged material site management practices, including disposal operations, at the site need to be changed to avoid unreasonable degradation or endangerment of human health or welfare or the marine environment.

Continuous monitoring of all physical, chemical, and biological parameters and resources in and around a typical disposal site is not necessary. Monitoring programs should be structured to address specific questions (null hypotheses) and measure the conditions of key indicators and endpoints, particularly those identified during site designation, or major project-specific issues that arise.

Because of their site-specific nature, no two disposal site monitoring programs are likely to be exactly the same. Monitoring activities should be tiered (see Zeller et. al. 1986, for a discussion of tiered monitoring). The number of monitoring tiers, categories of hypotheses, and other program elements can and do vary among regions and disposal sites. The ultimate responsibility for the design of site-specific monitoring programs resides jointly with the CE Districts and EPA Regions.

An effective monitoring program should be designed by the CE Districts and EPA Regions as a tiered series of investigations. The most effective monitoring programs for ocean disposal sites should:

- be integral components of site management;
- evaluate the fate and effect of dredged material disposal;
- use a tiered monitoring approach;
- link specific measured effects (action levels) with predetermined management actions;  
and
- support decision making.

In addition to serving as a basis for management actions, the site monitoring program provides an historical record of site conditions that can be used in the future to understand the impacts of past site management. The data form the basis of technical discussions regarding the site that lead to better and more informed management decisions. Site monitoring results also provide a data record that can be used to determine the need for current and future management actions or permit conditions.

### 3.3.2 Monitoring Description in Management Plans.

Site management plans must describe the overall monitoring program designed to monitor the environment of the disposal site. The monitoring program should be based on an overall assessment of what is known about the site environs, the past use of the site, and amenities in or near the site that need to be protected.

The development of the monitoring program should include an assessment of:

- Baseline or environmental information collected at or near the site describing its condition in the past and/or present;
- Characteristics of materials already dumped at the site and characteristics of materials that may potentially be dumped at the site in the future; and
- Special management conditions used at the site that could affect the environmental effects or fate of dumped material.

Management plans should use this type of information to develop realistic questions (null hypotheses) regarding potential impacts, that need to be answered to protect the environment of the site. These questions should address all realistic environmental concerns and should be specific. They should cover such issues as long and short term fate of the dumped material, and its long and short term effects. The management plan should then describe if/how the existing knowledge about the site answers any of the questions. The remaining questions should be specifically identified in the management plan monitoring program, and the types of monitoring proposed to collect sufficient information to answer them should be described. This should be done at a sufficient level of detail to provide an overall structure and focus for subsequent monitoring activities. However, details such as precise sampling stations and frequencies are better left to subsequent development of survey plans rather than being included in the MPRSA site management plan, as the specifics will vary over time and frequency of disposal, as well as being affected by budgetary considerations.

### 3.4 SPECIAL MANAGEMENT CONDITIONS OR PRACTICES

MPRSA 102(c)(3)(C) requires that management plans include special management conditions or practices to be implemented at the site that are necessary for the protection of the environment.

The need for special management conditions or practices should be carefully considered during designation of the ODMDS or development of the management plan. The need for special management conditions or practices may also become evident during the evaluation of the material proposed for ocean disposal and the nature of a particular disposal operation(s). In this case, special conditions should be included, as necessary, in the permit or authorization for disposal at the site.

Special management conditions or practices are likely to be unique to each ODMDS, material, or disposal operation (e.g., consider grain size to limit current transport or to match existing substrate). Hence, they need to be considered on a case-by-case basis. For some ODMDSs, there may be no need for special constraints on the disposal of any material that meets the environmental impact criteria of the MPRSA regulations. For others, disposal may need to be limited to certain types of material at certain times at a specific location within the site, or the quantity disposed of within a given time period may need to be limited. Special management conditions may include:

- Disposal methods;
- Capping provisions;
- Quantity restrictions;
- Weather restrictions;
- Sediment grain size restrictions;
- Seasonal restrictions;
- Equipment requirements (equipment for dredging, transportation and disposal, navigation and positioning, etc.);
- Discharge point and allowable tolerances in position;
- Debris removal provisions;
- Provisions to address spillage, and leakage of dredged material;
- Record-keeping and reporting requirements; and,
- Inspection and surveillance provisions.
- Other appropriate conditions that are necessary for protection of the environment

### 3.5 QUANTITY OF MATERIAL AND PRESENCE OF CONTAMINATION

MPRSA 102(c)(3)(D) requires that management plans include consideration of the quantity of the material to be disposed of at the site, and the presence, nature, and bioavailability of the contaminants in the material.

3.5.1 The quantity of material allowable for disposal at a particular ODMDS is a function of the capacity of the site and the type of material. For non-dispersive sites, the site will eventually become "full". The concern, in such a case, usually will be that the material not impact amenities outside the ODMDS boundaries or cause a navigation hazard. There may also be vertical limitations so as to avoid navigation hazards.

For dispersive sites, the material may not remain within the boundaries of the ODMDS after disposal. The rate and direction of movement across the ODMDS boundaries is determined by physical transport mechanisms. Depending on these transport mechanisms and the nature of the material, transport may be rapid and continuous, or may occur only during episodic events, such as storms or seasonal changes in transport mechanisms. The management of dispersive sites is usually focused on the vertical axis with the goal being to avoid formation of navigational hazards from shoaling.

The management plan should summarize the information utilized in determining the overall size of the site and its life span and to protect against storm-induced erosion.

3.5.2 The presence, nature, and bioavailability of contaminants in the dredged material is determined during the evaluation of the material proposed for dredging and disposal. National guidance (i.e., the "Green Book") on dredged material evaluation has been jointly developed by EPA and CE.

The guidance developed is national in scope and cannot address every local or site-specific concern. Therefore, regional implementation manuals have been developed to adapt, as necessary, the generic elements of the guidance to the specific conditions found at regional disposal sites. Local District/Region manuals typically provide the following information for specific disposal sites:

- Contaminants of concern
- Test organisms for bioassays
- Reference sediment location(s)
- Ambient water quality for elutriate evaluations
- Mixing zone parameters for model analyses
- Factors to evaluate bioaccumulation data

The evaluation procedures are intended to ensure that all dredged material disposal is consistent with the MPRSA. The information is used by the CE District and EPA Region to

evaluate the suitability of the dredged material for disposal at a given site. Any conditions resulting from those evaluations would be included in the documents authorizing disposal at the site. Monitoring (Section 3.4 above) is used to assess whether the predictions regarding impacts to the environment from specific dredged material at the particular disposal site were correct. The site management plan should summarize the appropriate requirements used to determine the suitability of the dredged material.

### 3.6 ANTICIPATED SITE USE

MPRSA 102(c)(3)(E) requires that the management plan include consideration of the anticipated use of the site.

The management plan must describe the anticipated use of the site over the long term, including the anticipated closure date for the site, if applicable, and any need for management of the site after the closure of the site. As indicated above, the anticipated use should be considered in developing site conditions and monitoring plan.

### 3.7 SITE MANAGEMENT PLAN REVIEW AND REVISION

MPRSA 102(c)(3)(F) requires that the management plan include a schedule for review and revision of the plan which shall not be reviewed and revised less frequently than 10 years after adoption of the plan, and every 10 years thereafter.

The management plan must include a schedule for its review and revision. It should describe how modifications or updates may be made based on specific needs identified for specific authorized projects. If the site is not used for over 10 years, the management plan should be updated in conjunction with activities authorizing use of the site.

### 3.8 REFERENCES

The following references will provide useful information during the development of site management plans.

EPA/USACE. 1991. Evaluation of dredged material proposed for ocean disposal — Testing Manual. Environmental Protection Agency, Office of Marine and Estuarine Protection, Washington, DC, and Department of the Army, United States Army Corps of Engineers, Washington, DC. EPA 503/8-91/001. February 1991. xii + 211 pp. + appendices.

EPA ORD. 1994. Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods. U.S. EPA, Office of Research and Development, Narragansett, RI. EPA 600/R-94/025. June 1994. 134pp + appendices.

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USACE/EPA 1992. Evaluating Environmental Effects of Dredged Material Management Alternatives - A Technical Framework. EPA 842-B-92-008. November 1992. 73 Pages + Appendices.

Zeller, R.W., and T.A. Wastler. 1986. Tiered Ocean Disposal Monitoring Will Minimize Data Requirements. Pp. 1004-1009 in *Oceans 86*, Vol. 3: Monitoring Strategies Symposium. Institute of Electrical and Electronics Engineers, New York, NY.

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