CHAPTER 6

6.0 MANAGEMENT OF THE IN-BAY DISPOSAL GOAL

6.1 INTRODUCTION

This chapter presents the strategy for managing in-Bay disposal to achieve both short- and long-term objectives of the LTMS, how progress toward achieving these objectives will be measured, and any actions to be taken in the event these objectives are not met.

6.2 IMPLEMENTATION MEASURES

The LTMS agencies will implement several measures to facilitate management of the in-Bay disposal goal. These measures are shown as bulleted, italicized text.

6.3 MANAGEMENT OBJECTIVES

The alternative selected by the LTMS agencies in the LTMS EIS/EIR as the preferred alternative and the federal Record of Decision (ROD) provide for low disposal volumes at in-Bay sites. The adopted strategy includes a reduction in the placement of dredged material at in-Bay sites to 1.0 million cubic yards (mcy) per year. However, the LTMS is a long-term approach and will need to be phased in over a transition period.

The initial action of the LTMS, reducing allowable in-Bay disposal to 2.8 mcy per year, began with the signing of the Federal Record of Decision (ROD) for the LTMS in July 1999. This amount is halfway between the maximum annual disposal volume and the average annual disposal volumes in the Bay for the years 1991 through 1999. (Appendix H presents the data used in determining this volume.) A contingency volume of 250,000 cubic yards (cy) per year has been added to this figure of 2.8 mcy per year to cover unforeseen events. This volume will decrease by approximately 387,500 cy every three years.

The transition period will involve decreasing the amount of dredged material disposed in-Bay every three years over a 12-year period, from 2.8 mcy toward the LTMS goal of 1.0 mcy (Figure 6.1). The 12-year period was chosen to reduce economic dislocation to dredgers by allowing time for new beneficial reuse and upland disposal sites to come on-line, new equipment and practices to be implemented, and funding mechanisms and arrangements to be established. The first three-year period will begin with the adoption of the *San Francisco Bay Plan* (Bay Plan) and *Water Quality Control Plan* (Basin Plan) amendments necessary to implement the Management Plan.

6.3.1 Two-Phased Implementation

Implementation of the long-term management strategy will occur in two phases. Phase I is a voluntary effort by all parties to reach and maintain the long-term disposal goals. As long as the

overall yearly transition goals are met through voluntary efforts, dredging projects will not be required to comply with project-specific in-Bay disposal allocations. During Phase I, the Dredged Material Management Office (DMMO) will record actual disposal volumes as well as keep track of what individual disposal allocations would be if implemented under Phase II. Dredging projects will still be evaluated using existing Bay Plan and Basin Plan policies regarding disposal of dredged material and an analysis of whether in-Bay disposal is the least environmentally damaging practicable alternative pursuant to the Clean Water Act (CWA). However, this feasibility analysis will be more programmatic in nature than the detailed alternative analyses required as part of Phase II. If the LTMS disposal goals cannot be achieved through voluntary efforts, an allocation scheme will be implemented as Phase II.

6.4 MEASURING PROGRESS IN MEETING OBJECTIVES

To determine if the in-Bay disposal volumes are tracking the transition, it will be necessary to maintain accurate records of in-Bay disposal volumes. These records will be maintained by the DMMO, which will also maintain and publish a chart—beginning with data from 1991—showing the transition and long-term in-Bay disposal goals and actual volumes of material disposed in the Bay. The official volume record will be the in situ volume calculated as the difference between pre- and post-dredge bathymetric surveys usually required in permits. Until the in situ volumes are received, the bin volumes reported by dredgers will be used in volume calculations and reporting. By the end of March of each year, in conjunction with its annual meeting, the DMMO will publish (in its annual report) the volume of material disposed in the Bay during the preceding year by project and by total volume. This report will be used in the decision-making process to determine if any change should be recommended between Phases I and II.

6.5 MANAGEMENT ACTIONS

If the disposal volumes show that the goal (transition or long term, as appropriate) is not being met as described below, then the LTMS agencies will take actions to consider implementing Phase II of the plan, where specific volumes will be allocated to each dredging project, limiting their in-Bay disposal volume.

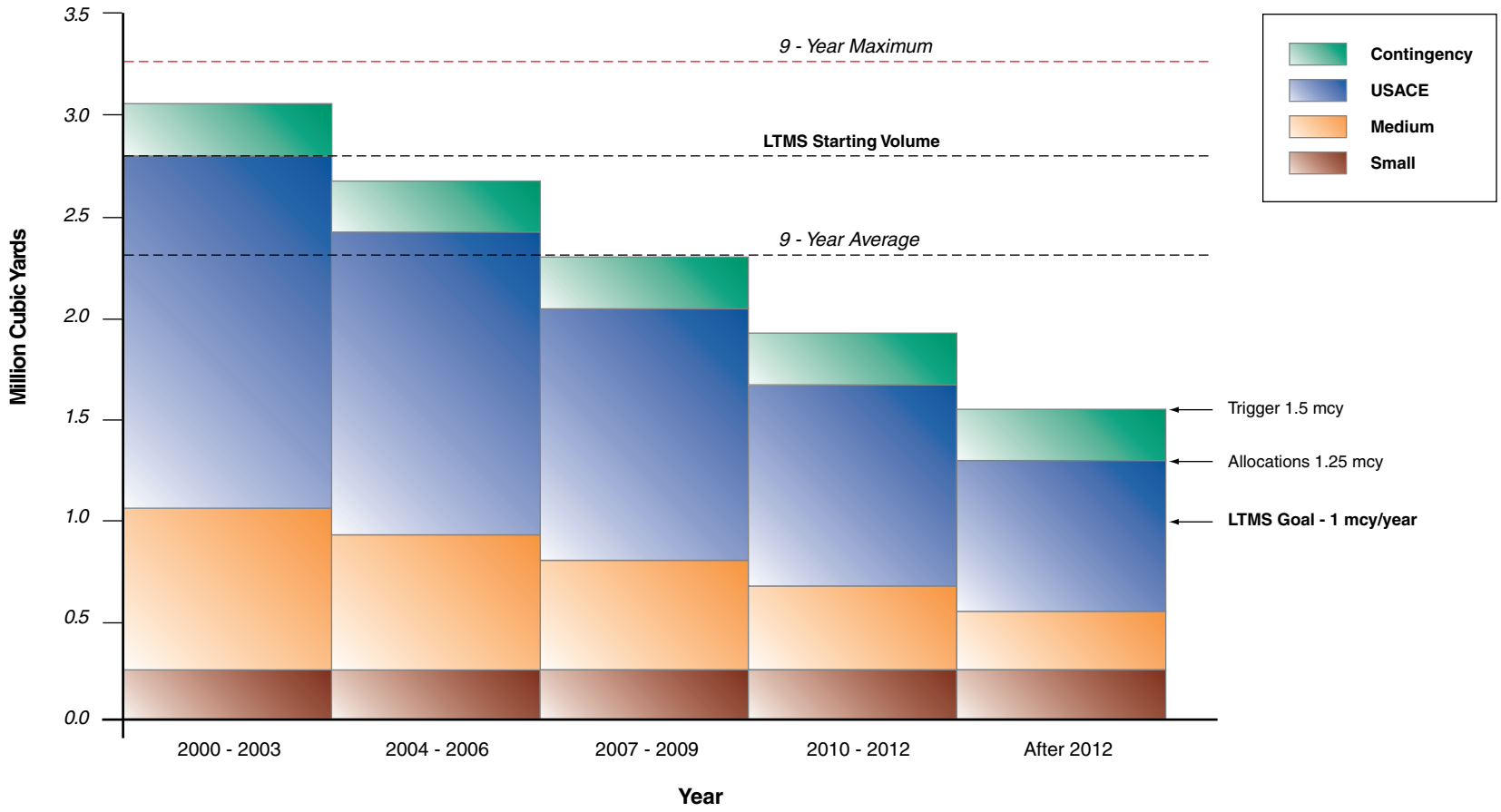
6.5.1 Trigger Mechanism

Two possible mechanisms would trigger Phase II. First, the LTMS Management Committee (Management Committee) may, based on the yearly review of disposal volumes and evaluation framework discussed below, recommend that the BCDC and SFBRWQCB vote to implement allocations. Second, at the triennial LTMS review, if the average in-Bay disposal volume from the prior three years exceeds the in-Bay targets plus the 250,000-cy contingency, the LTMS agencies will initiate consideration of allocations. Using a three-year average should provide adequate time for the interested parties to implement measures to bring in-Bay disposal volumes below the LTMS trigger volumes prior to implementing Phase II. Discussions would begin at an annual workshop immediately after the first year of any exceedance.

Figure 6.1

SOURCE: Final LTMS EIS/EIR, 1998.

In-Bay Transition Allocations



6.5.2 Evaluation Framework

In evaluating whether to implement Phase II allocations, the LTMS agencies will not rely solely on a comparison of in-Bay disposal volumes to target volumes. The agencies will also take into account other factors, such as the status of cooperative efforts to implement beneficial reuse options, exigencies that hamper use of alternative sites, and other relevant factors. The review process described below will follow a consistent framework regardless of the level of review described in sections 6.5.3.1 through 6.5.3.3. Each of the review processes will consider the following factors:

- Magnitude of any exceedance
- Frequency of any exceedance
- Trends or projections for the future (including the Management Plan success criteria listed in Chapter 8)
- Demonstrated efforts by all parties to support beneficial reuse, establishment of upland sites, and funding and use of such sites

Other regional planning factors (Section 6.6) to be used by the agencies to measure efforts to meet the in-Bay disposal goal include:

- Coordination of dredging projects to minimize environmental impacts
- Inter-project coordination to reduce year-to-year variability in in-Bay disposal volumes
- Development of upland sites
- Delta reuse
- Political support for funding of LTMS[1]
- Rehandling facility development
- Combination of projects for reduced mobilization cost and increased efficiency
- Compliance with dredging "best management practices" to minimize the need for dredging (Appendix I)
- Shared cost of disposal and reuse site monitoring

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1 Nothing in this document is intended to influence congressional representatives to favor or oppose any legislation. It is the policy of the Chief of Engineers that all Corps of Engineers personnel fully adhere to the spirit and intent of 18 U.S.C. 1913, which prohibits such advocacy. The purpose of presenting this information is to inform the public of how the USACE carries out its mandate to maintain federal navigation channels.

6.5.3 Yearly Review Process

Every year, the LTMS agencies will review the progress toward the in-Bay disposal goals, investigate any exceedances of the trigger, and recommend changes as necessary. This analysis will be conducted as part of the DMMO annual review and publishing of dredging and disposal data. The review consists of three levels and includes the DMMO, the Program Managers, and the Management Committee, and will be open and documented. This process is the same regardless of which phase it is in or whether a recommendation is being made to change phases. Chapter 8 further discusses LTMS program reviews.

6.5.3.1 Level I Review

The Level I review will be accomplished by the DMMO and considers the following factors and produces a report documenting the results of the review:

- Disposal volumes to each disposal environment for the year, prior year's disposal volumes and relation to the in-Bay site limits and applicable disposal goals
- Projections of the following year's disposal volumes in relation to the in-Bay site limits and application disposal goals
- Magnitude of exceedance of any trigger(s) or annual target
- A statistical analysis of both the frequency and magnitude of any trigger(s) or annual target (Appendix J)
- An investigation of any causes of trigger or annual target being exceeded
- An evaluation of the LTMS success criteria (see LTMS Management Plan Success Criteria, Chapter 8)
- A workshop to obtain input from interested parties if a recommendation to go into or out of Phase II (allocation) is under consideration

6.5.3.2 Level II Review

If the DMMO concludes further actions need to be taken based upon the programmatic review, then the Level II review will be conducted by the Program Managers to evaluate the causes of any trigger exceedances or other issues identified by the DMMO and provide written recommendations to the LTMS Management Committee.

6.5.3.3 Level III Review

The Level III review will be performed by the Management Committee to validate the written report submitted by the Program Managers. A workshop will be held to obtain input from interested parties regarding identifiable issues and potential actions to be taken. Based upon the input from interested parties and any other factors it deems appropriate, the Management Committee will prepare its recommendations for any actions needed to resolve the identified issues, and forward the report with

any modifications to the BCDC and the SFBRWQCB. If the Management Committee recommends that the Phase II allocations be made, the BCDC and SFBRWQCB will consider whether to implement allocations within 60 days. The BCDC and SFBRWQCB will conduct a public hearing on why mandatory allocations should not be made, and the allocation program will be instituted, unless the BCDC and SFBRWQCB vote against implementing allocations. The vote on whether or not to go into allocations would be based on a majority of those present and voting.

6.5.4 Triennial Review Exceedance

As part of the three-year review, if the DMMO determines that the annual average disposal volume at the in-Bay sites over the preceding three years exceeds the trigger volume for that period, then the same process as described above for the annual review will be followed. However, the BCDC and SFBRWQCB will vote on whether or not to implement allocations regardless of the Management Committee's recommendation.

6.5.5 Phase Transition

If an exceedance is documented at a triennial review or if the Management Committee recommends that allocations should be implemented, then the review process described above will begin. The process begins with the DMMO review and culminates in a public hearing, with final decisions on implementing Phase II made by the BCDC and the SFBRWQCB.

The DMMO will initially evaluate the existing information in light of factors above. The DMMO will pass all information on to the Program Managers, along with a recommendation. The Program Managers will consider the information in light of the factors and will make a recommendation to the Management Committee. The Management Committee will make a final recommendation to BCDC and the SFBRWQCB. If, in any year, the Management Committee recommends implementation of Phase II or if the target at a three-year review is exceeded, then the allocations will be implemented unless both the BCDC and the SFBRWQCB vote against allocations.

6.5.6 Allocations

The annual starting volume for in-Bay disposal, including the contingency volume of 250,000 cy, is 3.05 mcy. The existing volume limits at the federally designated dredged material disposal sites are not scheduled to change (see Section 1.2.2.1, Chapter 1). Although the cumulative disposal volume allowed at these sites is greater than the total in-Bay limit of 3.05 mcy, this approach is intended to allow flexibility in management of the individual disposal sites and dredging activities.

Individual allocations will be based on the three-year allocations that would be in place had the LTMS agencies initiated an allocation system upon adoption of state policies. Allocations will be given to medium dredgers and the USACE. Small dredgers, which cumulatively generate 250,000 cy per year, will not be given allocations. The starting volume reflects actual disposal activity while taking into account the historical variability of in-Bay disposal volumes and the level of uncertainty inherent in such predictions, and will decrease by approximately 387,500 cy once every three years until allowable annual in-Bay disposal volumes do not exceed 1.5 mcy in January 1, 2013 (Figure 6.1).

The overarching goals of the LTMS are to reduce in-Bay disposal to 1.0 mcy per year and to increase the beneficial use of dredged material and use of the federal deep ocean disposal site. Achievement of this goal, however, takes into account: (1) the variability in dredging needs; (2) the time necessary for new beneficial reuse sites to come on-line, new equipment and practices to be implemented, and funding mechanisms and arrangements to be established; and (3) the potential economic impacts to dredgers and ways to reduce such impacts. Therefore, in-Bay disposal will ultimately be reduced from the initial volume of approximately 2.8 mcy (plus the contingency volume) per year to 1.5 mcy per year (rather than the LTMS goal of 1 mcy per year) over a 12-year period.

An allocation does not confer a right to dispose of dredged material in the Bay. Project proponents must still satisfy CWA requirements and Bay Plan feasibility requirements, and comply with any environmental window limitations, site capacity volume limitations, and permit conditions exactly as required in Phase I. If an alternative other than in-Bay disposal is practicable and feasible, in-Bay disposal will not be allowed.

Once a project has used its total in-Bay disposal volume allocation, unless the project would qualify for a portion of the contingency volume, no dredged material from the project could be disposed in the Bay until a new allocation is received. The basic options available to a project would be not to dredge until a future allocation is received or to use alternative disposal options.

Unused portions of annual volume allocations may be banked from year to year. If Phase II is invoked, dredging projects would receive an allocation based on what their allocations would have been had the mandatory allocations begun at the inception of the transition. Trading of allocations, or portions of them, will be considered by the LTMS agencies as a potential management tool prior to implementation of Phase II and only after opportunity for public comment. It should be noted that the USACE could not participate in trading.

6.5.6.1 Contingency

A contingency allocation of 250,000 cy per year of in-Bay disposal would be available for unforeseen dredging situations. This contingency allocation would not affect individual volume allocations, but would be in addition to the overall in-Bay disposal volume target. This allocation volume will not be given out automatically. Rather, dredgers would apply to the DMMO and document their need and applicability for contingency volumes, subject to review and approval by the Management Committee. Unforeseen dredging needs involve situations where unanticipated shoaling occurs substantially beyond normal shoaling patterns and would be determined after condition surveys.

6.5.6.2 Emergencies

Emergency dredging would be based on agency definitions for emergency permit situations. BCDC's definition of an emergency is found in CCR Title 14, Section 10120, and is defined as "…a situation that poses an immediate danger to life, health, property, or essential public service and that demands action by the commission more quickly than the Commission's normal permit procedures would allow. A situation that poses an immediate danger to life, health, property, or essential public services may include, for example, an accident, sabotage, vandalism, fire, flood, earthquake, or soil or geologic movements."

The USACE regulations for permits in 33 CFR 325.2(e)(4) defines emergency as "…a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures."

The USACE regulations for Operation and Maintenance of Army Corps of Engineers Civil Works Projects involving the discharge of dredged or fill materials into waters of the U.S. or ocean waters in 33 CFR 335.7 state, "Emergency means a situation which would result in an unacceptable hazard to life or navigation, a significant loss of property, or an immediate and unforeseen significant economic hardship if corrective action is not taken within a time period less than the normal time needed under standard procedures."

6.5.6.3 Requests for Increased Allocations

Project proponents who propose in-Bay disposal for either new dredging projects that have not previously been assigned allocations or existing projects needing increased allocations will be required to prepare a detailed project-specific analysis regarding alternatives to in-Bay disposal pursuant to the CWA and BCDC's policies for review by the DMMO. Granting of a new allocation may be made only if the DMMO review of the alternatives analysis shows in-Bay disposal to be the only practicable and feasible alternative. This analysis will also take into account applicant and regional efforts to implement alternatives to in-Bay disposal, the necessity for the project, and other relevant factors. The volume allocated would be the minimum yearly average volume needed to maintain the facility. However, this in-Bay disposal allocation would be reduced, similar to other Bay projects, as if the project had been part of the allocation plan when the transition period started. The DMMO would determine, subject to Management Committee review, whether the new allocation should be made and whether it should be a one-time or ongoing allocation.

6.5.7 Alternatives Considered

The transition approach described in the preceding sections was developed by the LTMS agency staff in coordination with the interested parties. Facilitated workshops were held over the course of 18 months as the approach was formulated and refined. Consequently, the selected approach balances many interests. The LTMS agencies considered a range of alternatives to implement the transition, from strict in-Bay limits that decrease over time on a first-come, first-served basis, to relying solely on voluntary efforts to implement the LTMS goals. Other aspects were discussed, including various methods to trigger transition from Phase I to Phase II, and how to treat contingency volumes and emergency dredging under the transition. Appendix Q includes four position papers that were issued by the LTMS agencies over the course of this process. These documents help to explain the present transition process and the alternative approaches considered.

6.6 REGIONAL PLANNING

Many examples of regional approaches to long-term planning can be found in the Bay Area and throughout the United States. Many localities have elevated planning for public services and facilities to the regional level, due to their recognition that planning for these and other activities is not purely local in nature and requires a regional approach. Today many single-purpose regional agencies and

special districts provide planning for water supply, transportation and waste management. Regional planning requires strong leadership to define the issues, to develop consensus on dealing with them, to build support for a program, and to marshal the resources needed for implementation.

BCDC and the SFBRWQCB are Bay Area regional planning agencies which have developed plans to address specific resource and/or development issues. As described in this document, approximately a decade ago those agencies along with the USACE and U.S. Environmental Protection Agency (USEPA) joined together with navigation interests, fishing groups, environmental organizations, and other members of the public to establish a long-term regional planning program for dredged material. This Management Plan is the result of that regional planning effort. Nationally, there are several programs which address dredged material management through regional planning approaches. These include the National Dredging Policy, the National Estuary Program, the recent report to Congress by the Department of Transportation, and the USACE Engineering Regulation.[2,3,4,5]

Regional planning requires close coordination and planning at all governmental levels and with all aspects of the private sector. The most successful regional planning efforts are those which have the ability to develop regional plans and the regulatory authority to implement their plans. Although the LTMS agencies have existing regulatory authority to implement most of the measures presented in this Management Plan, full implementation will likely require additional actions on the part of these agencies in coordination with the interested parties. Full implementation will require planning activities beyond preparation of the Management Plan. This section discusses several specific advantages of continued development of regional planning activities and the consideration of areas not currently addressed in the Management Plan.

6.6.1 Definition of Regional Planning

Regional planning involves cooperative efforts by dredgers, agencies and other interested parties to promote and implement the LTMS goals. These efforts include cooperatively using beneficial reuse sites; coordinating in-Bay disposal projects to prevent spikes in total disposal volumes and minimizing variability to reduce the chances of triggering Phase II allocations; and coordinating monitoring and management of disposal sites to reduce redundancy and costs.

6.6.2 Need for and Advantages of Regional Planning

Based on average annual volumes for medium and small dredgers and anticipated near-future USACE maintenance volumes, it appears as though in-Bay disposal will be well below the in-Bay disposal goals at the beginning of the transition. However, over time it will become increasingly difficult to meet these goals in the event long-range regional planning efforts are not taken, for instance, to obtain

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2 The Dredging Process in the United States: An Action Plan for Improvement, December 1994 http://www.epa.gov/OWOW/oceans/ndt/report.html) or Appendix D of LTMS PLTMS EIS/EIR, Volume II.

3 Available at http://www.epa.gov/nep/nep.html.

4 An Assessment of the U.S. Marine Transportation System, A Report to Congress, September 1999 (http://www.dot.gov/mts) .

5 ER 1105-2-100, Planning Guidance Notebook, Appendix E18, April 22, 2000.

necessary USACE funding to implement disposal and reuse alternatives (see Appendix L), and bring multi-user beneficial reuse projects on-line.

Dredging is extremely expensive and time-consuming. Mobilization and demobilization costs often range from 33 to 67 percent of the cost of a dredging episode. Moreover, SF-DODS monitoring costs range from $750,000 to over $1,000,000 a year and are largely independent of the volume of material. Faced with such costs, dredging sponsors generally delay dredging until absolutely necessary. Improved regional planning would allow ports, harbors, marinas, federal and state agencies, and environmental groups to coordinate dredging projects, in an effort to streamline tasks such as mobilization or monitoring. This will create greater economic efficiencies, while maintaining safe navigation and associated commerce vital to the Bay Area's economy. In addition, establishment of a Regional Planning Group will help ensure that dredged material management plans incorporate environmental considerations in the identification of short-term and long-term disposal alternatives, consider methods to reduce dredging, and maximize the beneficial use of dredged materials. Better coordination of dredging projects and cooperation among dredging project proponents increase the likelihood that alternative disposal sites (e.g., outside of the Bay) will be used in economies of scale enabling smaller dredging projects to consider disposal or reuse sites not practicable for individual projects.

Both BCDC and the SFBRWQCB have adopted regional plans for the Bay. Chapter 10 of this document presents the relevant elements of these plans that have been changed to allow the BCDC and SFBRWQCB to implement the long-term dredging and disposal strategy developed through the LTMS. For effective and appropriate implementation of this strategy, and to ensure maximum overall benefits to the region, it is critical that the implementation also be considered in light of other regional planning activities. A regional planning initiative would ensure that this coordination would occur, and would strive to achieve and maintain consistency with the Bay Plan, the Basin Plan and other plans such as the Baylands Ecosystem Habitat Goals report recently issued by the San Francisco Bay Area Wetlands Ecosystem Goals Project. One initial role of a regional planning initiative would be to identify other regional plans and planning activities and establish coordination mechanisms.

Effective regional planning efforts strive to preserve local authority over land use matters of purely local concern. Regional planning in most cases is more likely to empower local governments by giving them a greater voice in determining the future of their regions and protecting them from unregulated impacts from outside their communities.

The LTMS agencies implement the following measure:

- *To achieve long-term dredging, disposal, and reuse goals for the Bay Area, the LTMS agencies will create a regional planning initiative to coordinate dredging projects and foster greater economic efficiencies, ensure consideration of environmental issues and mechanisms to minimize potential impacts, maximize beneficial use of dredged material, and facilitate project consistency with other regional planning efforts and affected local communities.*

6.7 ELIMINATING UNNECESSARY DREDGING

The need for individual projects and the necessary depths for projects vary on a case-by-case basis. During the scoping period for the LTMS EIS/EIR it was concluded that the assessment of individual dredging projects was beyond the scope of that document. This Management Plan presents several measures ensuring that dredging occurs only as necessary and in a manner that minimizes environmental risk and expenditure of public funds.[6]

6.7.1 Dredging by USACE

USACE policy states "Dredging shall be accomplished in an efficient, cost-effective, and environmentally acceptable manner …"[7] and indicates the USACE is committed to conducting dredging and managing dredged material in an environmentally sound manner. The USACE in its initial evaluation of the benefits and costs of each project determines the need for ship channels and other navigation features. This assessment is periodically reviewed and updated to reflect changing conditions over time. The USACE's dredging projects need to be economically justified through a formal benefit–cost analysis and will not be dredged until the benefit cost ratio is greater than one. If the costs to construct or maintain a particular project exceed the expected benefits, the project is not economically justified.

The USACE, San Francisco District has also taken actions to reduce maintenance dredging requirements over the past 12 years. These actions include reducing over-depth dredging, realigning channels, and prioritizing dredging projects. Reducing over-depth dredging was implemented in the late 1980s. Before this time, the USACE typically paid for over-depth dredging up to two feet below project depths. Recently, no payment has been made for dredging below project depths and the amount of allowed over-depth dredging has been reduced. When necessary, the USACE realigns channels based on channel conditions and sedimentation rates. Realignment is limited by navigation considerations and channel authorization limits. No formal alignment evaluation procedure exists. In 1996, the USACE realigned the Napa River Channel to take advantage of deeper, natural portions to minimize the need (and cost) of dredging. By realigning the channel, the USACE avoided the need to dredge 200,000 cy for each dredging cycle. Prioritizing dredging projects is a program applied to all USACE Maintenance navigation projects. Maintenance dredging needs for each project are categorized according to usage and costs. Greater usage and lower cost (relative to cargo tonnage) categories are assigned higher priorities. Available funds for maintenance dredging are committed to higher priority categories first.

In the LTMS report *Reducing Dredging Requirements* (LTMS 1992), the feasibility of reducing the maintenance dredging requirements for five federal navigation channels (the Petaluma River, Pinole Shoal, Redwood City Harbor, San Rafael Creek, and Suisun Bay Channel) in the San Francisco Bay

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6 The majority of the federal military facilities around the Bay shoreline have been closed in recent years. These facilities include the former Mare Island Naval Shipyard, Naval Air Station Alameda, the Naval Supply Center Alameda and Concord Navel Weapons Station. As these areas are developed for civilian uses, some dredging may still be needed, but significant reductions to in-Bay dredging have already resulted from these base closures.

7 USACE ER 1130-2-520, Navigation and Dredging Operations and Maintenance Policies, Chapter 8, 29 November 1996.

region was identified. Twenty-seven alternatives to reduce maintenance dredging requirements were identified for these projects. Of these, 12 were considered favorable, i.e., they had benefit-cost ratios of greater than one and involved modest reductions to the required maintenance dredging volumes (10 percent to 20 percent). Some of the alternatives included changing dimensions of channel and flattening side slopes.

To ensure that USACE dredging occurs which is necessary and which minimizes environmental risk and expenditure of public funds, the LTMS agencies implement the following measure (as previously stated in the EIS/EIR for the LTMS):

- *As previously indicated in the EIS/EIR for the LTMS, in 2001, the USACE will initiate preparation of dredged material management plans for the federal maintenance dredging projects in San Francisco Bay, and perform NEPA reviews as required, including supplementing the* Composite Environmental Impact Statement for Maintenance Dredging. *These reviews will include consideration of potential project design changes to reduce the dredging volumes necessary to meet navigational needs, such as modifications to channel widths and depths.*

6.7.2 Dredging by Ports

For ports, determining the need for dredging will continue to be based not only on site-specific aspects but also on the particular port's competitive position compared to other ports in the region and, particularly for intermodal cargo, to other ports up and down the coast that compete for intermodal trade.[8] The existence of deeper channels and berthing areas is only one factor affecting the distribution of intermodal trade. This competition also varies due to factors such as rail connections and routes, origin and destination of intermodal cargo, and alliances between rail and shipping carriers. This complex and dynamic analysis was beyond the scope of the LTMS EIS/EIR, as is true for this Management Plan.

Ports have no control over the increasing drafts of cargo ships. However, failure to provide sufficient channel depths will usually result in a loss of port calls and the revenue that would accrue to the regional economy. Instead of a project-by-project assessment of dredging needs, an analysis of historic dredging volumes and of potential factors that might affect the historic volumes was presented in the LTMS EIS/EIR. From this analysis, a planning estimate of the expected volume of dredged material over the next 50 years was derived. Furthermore, the LTMS EIS/EIR evaluated how best to distribute the expected volume of dredged material between the three disposal environments; to prepare for a worst-case scenario, the high range of the planning estimate—up 296 mcy over a 50-year period—was used.

Similar to the manner in which the USACE evaluates the costs and benefits of each new project, in order to determine the need for specific ship channels and other navigation features, the needs of the

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8 Intermodal transportation means the convenient, rapid efficient, and safe transfer of people or goods from one mode to another during a single journey to provide the highest quality and most comprehensive transportation service for its cost (San Francisco Bay Conservation and Development Commission and the Metropolitan Transportation Commission, April 18, 1997 as amended September 18, 1997, San Francisco Bay Area Seaport Plan).

region's ports are assessed periodically and updated to reflect changing conditions over time. Each of the major ports, within the region, engages in a periodic review of past, present, and future port operations, as a part of the planning process for the *Seaport Plan* (BCDC and MTC 1997). During such reviews, the ports may consider the feasibility of structural and other measures that could reduce dredging requirements. Only dredging that is necessary should occur. The following implementation measure will serve to ensure this and minimize environmental risks and expenditure of public funds:

- *As previously stated in the EIS/EIR for the LTMS, "BCDC, in consultation with other LTMS agencies, will continue to work with area ports within the framework of its joint seaport planning process within the Metropolitan Transportation Commission to identify potential means to reduce the need for dredging while meeting the navigational needs of each port facility." Further, within the framework of its seaport planning process, BCDC will consider the need for dredging — in addition to minimizing fill.*

6.7.3 Regulatory Requirements

As a part of the existing authorization process, the LTMS agencies—individually or through the DMMO—require the project proponent to provide certain information regarding proposed dredging projects in order to determine whether such proposals are necessary and whether they involve dredging the minimum volume necessary. This information includes discussion regarding the need and purpose of the proposed project, pre-dredging hydrographic surveys of the proposed dredging footprint and existing depths or elevations, and total volumes proposed for dredging.

The permitting LTMS agencies will issue permits or authorizations containing certain requirements, which will be used to ensure that projects dredge the minimum volume necessary (i.e., approved volumes), including post-dredging hydrographic surveys and volume reports. Following project authorization and completion, such data can be used to determine if dredging in excess of the approved volume or outside the approved footprint occurred; if so, the permitting LTMS agencies can pursue such activities as violations potentially subject to appropriate fines and penalties. To ensure that projects dredge the minimum volume necessary, the LTMS agencies implement the following measure:

- *As a part of the permitting process, the LTMS agencies will require that permit applications include data demonstrating whether proposals involve dredging the minimum volume necessary, and include measures in permits that ensure projects are carried out in compliance with the authorized terms.*

6.7.4 Policy Requirements

Several of BCDC's Bay Plan policies ensure that projects involve dredging the minimum volume necessary. For example, Bay Plan Dredging Policy 2 states in part that: "Dredging should be authorized when the Commission can find: (a) the applicant has demonstrated that the dredging is needed to serve a water-oriented use or other important public purpose…[and] (d) the siting and design of the project will result in the minimum dredging volume necessary for the project…".

BCDC has other Bay Plan policies in place that are aimed toward reducing or eliminating unnecessary dredging. For example, the Bay Plan policies regarding recreation state, in part, that when considering the location and approval of new recreational marinas, the BCDC considers "unsuitable sites" to be those "…that tend to fill up rapidly with sediment.…" Further, with regard to such proposals, the recreation policies state that "frequent dredging [at such marinas] should be avoided" (BCDC 1969, as amended). Further, recent changes to several Bay Plan policies and Bay Plan maps have been made to reduce unnecessary dredging throughout the Bay. These revisions as well as the full text of the Bay Plan Dredging policy can be found in Chapter 10 of this Management Plan.

6.8 REDUCING DREDGING NEEDS

Dredging is necessary because suspended sediments settle out in navigation channels, port berthing areas, and marinas. Some of these suspended sediments are introduced by erosional processes in streams and rivers tributary to the Bay. However, the Bay is relatively shallow and supports extensive areas of mudflats. Large volumes of sediments are reworked in the Bay each year by wind and tides. Maintenance dredging would be needed even if new sediment sources were removed. Recent research indicates that there may be a reduction in sediments loading to the Bay that could result in erosion to its marshes and mudflats. Understanding these processes and their interaction with the Bay dredging and disposal projects requires a watershed approach. While it is a national dredging principle to encourage dredged material managers to become more involved in watershed planning, the emphasis has been to reduce harbor sediment contamination. Therefore, the LTMS agencies implement the following measure:

- *As part of a regional planning initiative, the LTMS agencies will establish a work group to explore coordination with watershed planning efforts to improve the understanding and management of sediment dynamics in the Bay related to natural and human processes (including dredging and disposal, water diversions, and shoreline armoring), and to establish links with the Natural Resources Conservation Service.*

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