EXECUTIVE SUMMARY

ES.1 INTRODUCTION

Historically, dredged material from navigation channels in San Francisco Bay was disposed of throughout the Bay. Beginning in the early 1970s, disposal was limited to a few state and federally designated sites, with most material taken to a site near Alcatraz island. Although sediments disposed of at the Alcatraz site were expected to disperse, a large mound of dredged material was discovered in 1982. Despite attempts to improve site management, the material continued to mound posing potential navigation problems and demonstrating the site's limited capacity. At the same time, representatives from the fishing, scientific, and environmental communities expressed concern regarding the impacts of dredged material disposal on the Bay's fisheries and other ecological resources.

The limited capacity for disposal and the controversies over environmental impacts highlighted the need for improved management of and alternative disposal options for dredged material. In 1990, the U.S. Environmental Protection Agency (USEPA), the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), the San Francisco Bay Conservation and Development Commission (BCDC), and the State Water Resources Control Board (SWRCB) joined with navigation interests, fishing groups, environmental organizations, and other interested parties to form the Long-Term Management Strategy (LTMS) program for dredged material from the San Francisco Bay Area (Figure ES.1). The goals of the LTMS included managing dredging and disposal in an economically and environmentally sound manner, maximizing the beneficial use of dredged material, and developing a coordinated permit application review process for dredging and disposal projects.

The *Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Policy Environmental Impact Statement/Programmatic Environmental Impact Report* (LTMS EIS/EIR) was jointly published by the LTMS agencies in 1998. The long-term strategy selected in the LTMS EIS/EIR, adopted in the federal Record of Decision (ROD) signed by the USACE and USEPA in 1999, and reflected in the SFRWQCB's *Water Quality Control Plan* (Basin Plan) amendments and the BCDC's *San Francisco Bay Plan* (Bay Plan) amendments of 2001 involves low disposal volumes at in-Bay sites, medium disposal volumes in the ocean, and medium volumes for beneficial reuse (Figure ES.2).

Since the initiation of the LTMS, substantial progress has been made toward meeting the program's goals. Allowable in-Bay disposal volumes have been reduced by more than 50 percent compared to pre-LTMS volumes, and actual in-Bay disposal in recent years has been about one-third of historical levels. Additionally, several dredged material disposal and beneficial reuse alternatives have been brought on-line, including the Sonoma Baylands restoration site, the Winter Island levee rehabilitation project, and the San Francisco Deep Ocean Disposal Site (SF-DODS)–to date, over 10 million cubic yards (mcy) of dredged material have been diverted from in-Bay disposal to these sites. Additionally, the interagency Dredged Material Management Office (DMMO) was established and has been successful in substantially streamlining the application and permitting process for dredging and disposal projects. Full implementation of the long-term dredging, disposal, and beneficial reuse strategy, however, will require further changes to existing management approaches and the creation

Figure ES.1

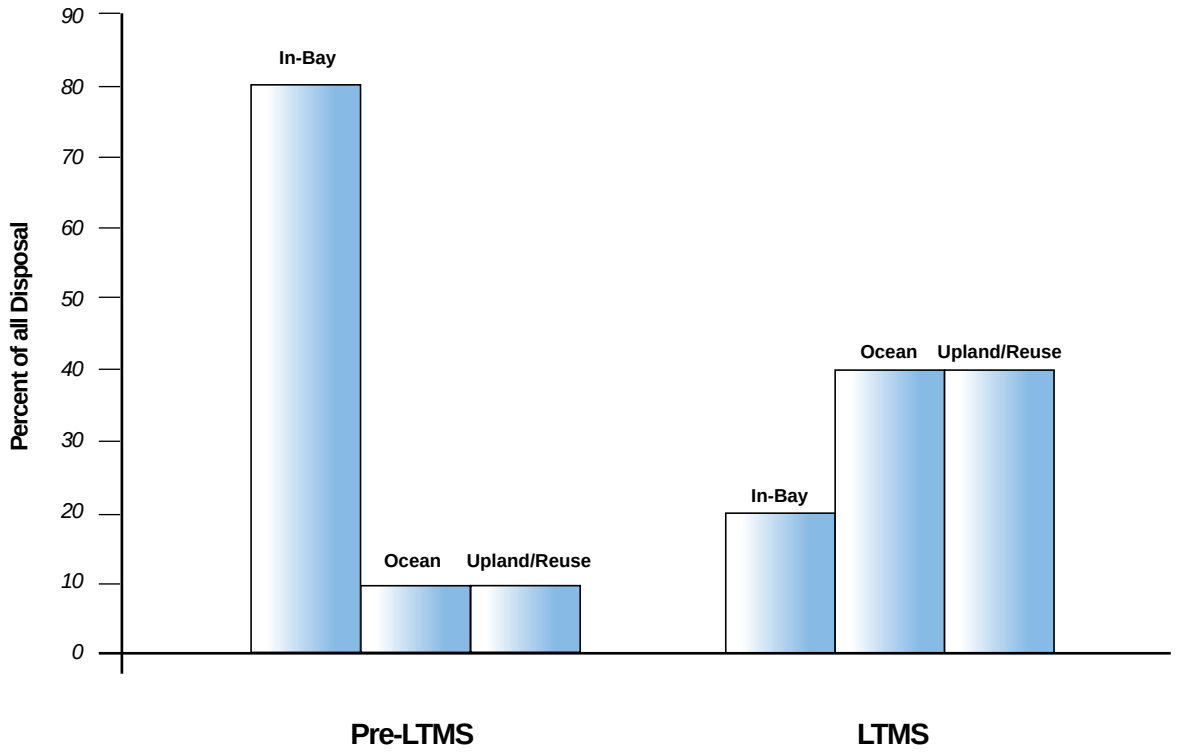
SOURCE: Final LTMS EIS/EIR, 1998

LTMS Management Plan Planning Area

Figure ES.2

SOURCE: Final LTMS EIS/EIR, 1998.

Long Term Management Strategy for the S.F. Bay Area



of new approaches. The *LTMS Management Plan* (Management Plan) presents specific mechanisms needed to implement this strategy. The Management Plan does not prescribe any new laws or policies or supplant existing authorities or jurisdictions of the LTMS agencies. Instead, the Management Plan is based on the existing laws and policies of the LTMS agencies, and will help ensure that these agencies apply their policies in a coordinated and comprehensive manner.

During the first three years following publication of the Management Plan, the LTMS agencies will produce an annual report on the progress of the program and reaching the LTMS goals. At the end of the first three-year period, the Management Plan will be reviewed and, if necessary, revised to reflect changing statutory, regulatory, technical, and environmental conditions. Subsequently, a programmatic review will occur every three years, with each six-year review involving amendments to the Bay Plan or Basin Plan, if necessary.

The dredged material management issues covered in each chapter of the Management Plan, and the specific implementation measures for addressing those issues, are briefly discussed in the pertinent sections of this Executive Summary. In instances where management issues cannot be addressed fully at this time because of a lack of authority, a lack of resources, or for other reasons, the implementation measures call for ongoing effort and attention in future versions of the Management Plan.

ES.2 LTMS STRUCTURE (CHAPTER 2)

Considerable progress has been made toward achieving the original LTMS goals. The goals have been revised to reflect the current status of the LTMS program, and ensure that the long-term strategy for dredging, disposal, and reuse continues to be effective (see text box).

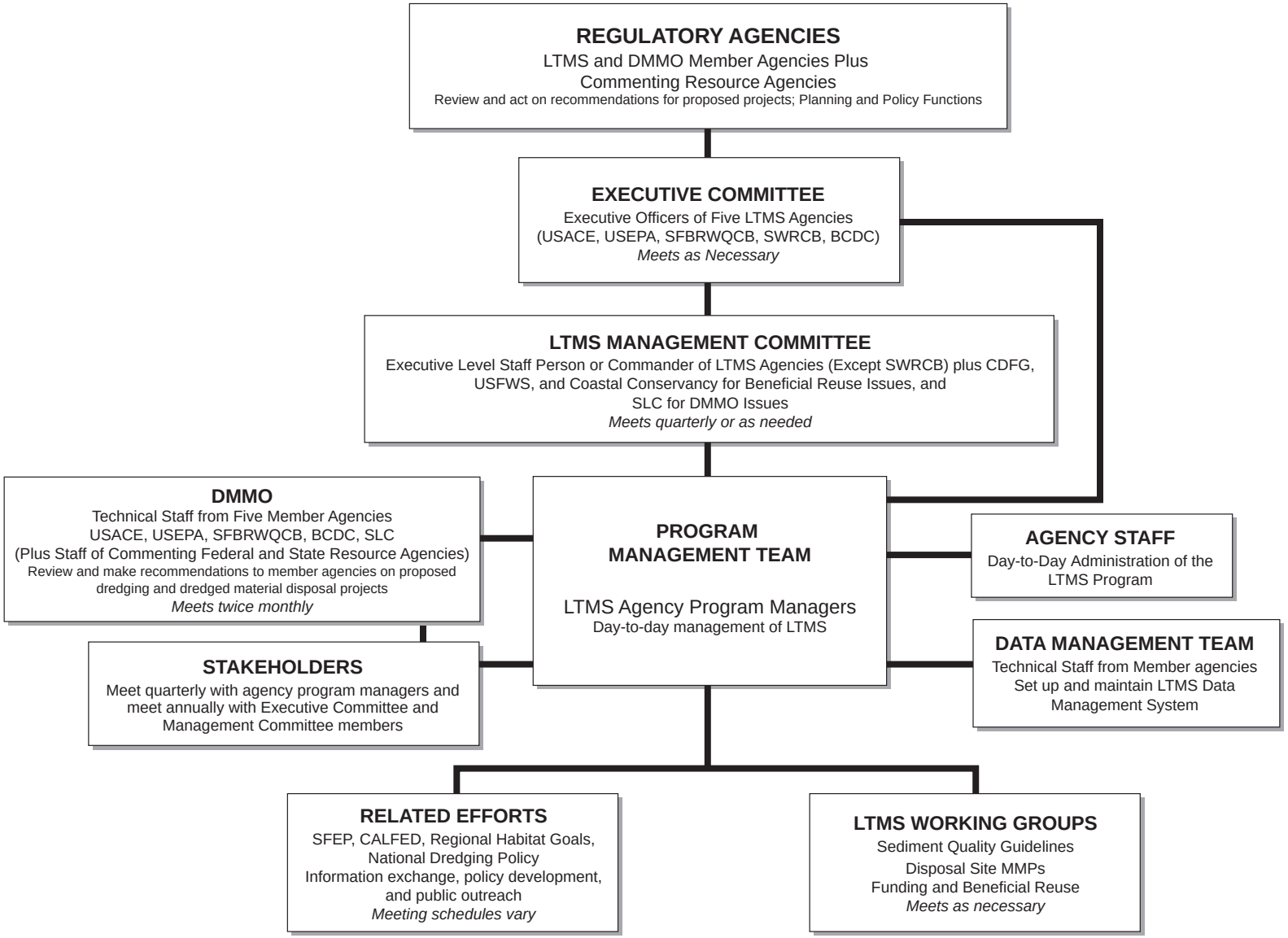
Revised LTMS goals (adopted by the LTMS Executive Committee)

- Maintain in an economically and environmentally sound manner those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material disposal in the most environmentally sound manner;
- Maximize the use of dredged material as a resource; and
- Maintain the cooperative permitting framework for dredging and disposal applications

The overall LTMS structure has been modified to address implementing and reviewing the program, as shown in Figure ES.3. The LTMS Executive Committee (Executive Committee), representing the five LTMS agencies, will meet as necessary to review policy guidelines and give direction on the overall program. The LTMS Management Committee (Management Committee) will manage and coordinate the LTMS effort, including review and revision of the Management Plan. To address beneficial reuse issues, the Management Committee will be joined by the California Coastal Conservancy, California Department of Fish and Game (CDFG), and U.S. Fish and Wildlife Service (USFWS). To address dredging and disposal issues that cannot be resolved at the staff level of the Dredged Material Management Office (DMMO), the Management Committee will be joined by the State Lands Commission (SLC).

Figure ES.3

LTMS Organizational Structure



The DMMO currently is a pilot program that is made up of representatives from the USACE, BCDC, SFBRWQCB, USEPA, and SLC. Following regulation changes by BCDC and SLC, the DMMO will be formalized. Lastly, in light of the changes to the LTMS, an integrated data management system that can provide a more comprehensive inventory of dredging and disposal information is needed. Therefore, the LTMS agencies implement the following measures:

- *The primary LTMS agencies—the USACE, USEPA, BCDC, SFBRWQCB, and SWRCB—will operate under a new LTMS structure that includes the Executive Committee, the Management Committee, the Program Management Team, and the DMMO. The California Coastal Conservancy, CDFG, and USFWS will participate on the LTMS Management Committee, as necessary, to implement beneficial reuse options. The SLC will participate on the Management Committee, as necessary, to settle dredging and disposal issues that cannot be resolved at the DMMO staff level.*

- *BCDC and SLC will initiate the regulation changes necessary to formalize the DMMO. Upon completion of these regulation changes, the DMMO General Operating Procedures will be revised, and a new Memorandum of Understanding will be adopted and signed by the DMMO member agencies.*

- *The LTMS agencies will create a Data Management Team to develop and maintain a data management system, which will be available to all interested parties.*

ES.3 AUTHORIZATION OF DREDGING AND DISPOSAL PROJECTS (CHAPTER 3)

The DMMO serves as a single point of entry for applicants to the dredging and disposal permitting process. The DMMO uses a single permit application form that meets the requirements of its member agencies, and makes consensus-based recommendations to these agencies on completeness of permit applications, adequacy of sampling and analysis plans, and suitability of sediments for disposal.

Under optimal conditions, coordination between the DMMO, the applicant, and the affected parties occurs early in and consistently throughout the permit and planning phases. A well-coordinated process helps to ensure that projects are consistent with the laws and policies of the DMMO member agencies, the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA). Therefore, the LTMS agencies implement the following measure:

- *The LTMS agencies encourage early involvement of the interested parties in the project planning phase, and thus will encourage project proponents to, if appropriate, conduct early coordination with the DMMO, and establish project-related work groups.*

Part of the documentation required of DMMO permit applicants is evidence that proposed projects meet the provisions of CEQA and NEPA. Although, these laws require public notification of projects, in some cases the public learns of projects after the environmental review has been completed and after public input is possible. To ensure maximum public involvement in the environmental review of projects, the LTMS agencies implement the following measure:

- *The LTMS agencies will prepare an information resource document on potential environmental impacts of dredging, disposal, and beneficial reuse projects, and the relevant regulatory processes. This document will cite the LTMS goals, program-level mitigation measures, and the* LTMS Management Plan *implementation measures. The document will be distributed to potential lead agencies for such projects, and used by the LTMS agencies during CEQA and NEPA review.*

In reviewing permit applications, the DMMO will assess whether projects are designed to protect listed species and their critical habitat, as determined by the state and federal resource agencies (CDFG, USFWS, and National Marine Fisheries Service [NMFS]). To achieve this goal, the LTMS agencies implement the following measure:

- *Dredging and dredged material disposal activities that are conducted within the work windows as indicated in Figures 3.2 and 3.3 (and in Appendix F) of the* LTMS Management Plan *do not require further Endangered Species Act consultation. The permitting agencies will closely review the rationale for any dredging and disposal projects proposing work outside the work windows. Pursuant to the federal and California Endangered Species Acts, any projects proposing deviation from the work windows are required to undergo consultation with the appropriate resource agency.*

Under the federal Clean Water Act and BCDC's laws and policies regarding fill in the Bay, permit applications involving aquatic disposal of dredged material must include an evaluation of the logistical, technological, economic, and environmental practicability of disposal alternatives. One key criterion for assessing the practicability of a disposal site is the quality of material proposed for dredging and disposal. Because sediment testing is costly, and tests vary for different disposal or reuse environments, the DMMO will encourage project proponents to submit alternatives analyses prior to conducting sediment tests. Therefore, the LTMS agencies implement the following measure:

- *To minimize the need for sediment sampling and testing events for multiple disposal environments, the DMMO will encourage project proponents to submit alternatives analyses pursuant to the Clean Water Act and BCDC's laws and policies regarding Bay fill before conducting sediment testing.*

The DMMO is a permit application review body only; the member agencies issue the actual permits. These permits often contain conditions to ensure dredging, disposal, and reuse activities are carried out in a manner consistent with each approval. To ensure permit compliance, reduce regulatory overlap, and eliminate inconsistency among the different agencies' permit conditions, the LTMS agencies developed a model for consolidated permit conditions, and also implement the following measure:

- *The LTMS agencies, in issuing permits for dredging and disposal projects, will coordinate permit conditions and may use, on a case-by-case basis, consolidated conditions contained in the* LTMS Management Plan *(Appendix G). Each agency may include permit conditions other than those identified in Appendix G.*

Permit applications are not subject to any particular processing fee by the DMMO; however, the SFBRWQCB and BCDC impose fees that vary depending on the type of permit for which approval is

sought. Charging new fees as a possible mechanism for offsetting disposal site impacts or funding beneficial reuse sites was discussed during development of the LTMS but put on hold because of the inability to reach consensus on the issue. Instead, a Funding Work Group was established to explore funding mechanisms. Therefore, the LTMS agencies implement the following measure:

- *The LTMS agencies will reconsider funding mechanisms for the LTMS program, including possibly instituting a new fee for dredging and disposal activities, at the initial three-year transition review period.*

ES.4 DREDGED MATERIAL SUITABILITY DETERMINATIONS (CHAPTER 4)

Material to be dredged must be tested to determine whether it is suitable for a proposed disposal or reuse environment—unless an exclusion is granted by the DMMO—using general guidance documents including the "Green Book" for ocean disposal and the "Inland Testing Manual" for in-Bay disposal.

Sediment quality criteria (SQC), which represent a single sediment concentration below which disposal poses minimal risk to the aquatic environment, have not been developed for the Bay Area. However, the LTMS agencies formed a work group that is considering development of sediment quality guidelines (SQG), including bioaccumulation trigger levels to help standardize when bioaccumulation testing is needed, and a preliminary list of bioaccumulative contaminants of concern with known presence in Bay sediments. To facilitate the ongoing effort of the work group, the LTMS agencies implement the following measure:

- *The LTMS agencies will continue to coordinate the efforts of the SQG Work Group and provide the work group's results for public review, including the technical basis for any proposed SQGs. The LTMS agencies also will hold at least one public meeting describing any such guidelines, their development, and their proposed use.*

Testing protocols are needed to better evaluate the suitability of Bay dredged sediments for the various beneficial reuse options. Currently, the wetland surface and wetland foundation material guidelines developed by the SFBRWQCB are used to help identify material suitability for beneficial reuse. To improve the evaluation of sediment suitability for beneficial reuse, the LTMS agencies implement the following measures:

- *The SFBRWQCB will revise* Sediment Screening Criteria and Testing Requirements for Wetland Creation and Upland Beneficial Reuse, *which will provide guidelines on testing (including recommendations for reference sites) and sediment quality screening for various beneficial uses. A draft version of the revised document has been issued for public comment and, following the close of the comment period, will be revised and finalized through the formal administrative process.*

- *A long-term goal of the LTMS agencies is to develop testing protocols to further improve the evaluation of the suitability of Bay Area dredged sediments for various beneficial reuse options. The LTMS agencies plan to reevaluate the appropriateness of existing sediment testing protocols, particularly bioassays, to ensure that they*

address the environments and potential biological receptors likely to be of concern for beneficial reuse projects.

Reference sites serve as points of comparison to identify potential effects of contaminants in material proposed for disposal. Reference sites are generally selected based on similarities to the grain size, composition, geology, and habitat of a designated aquatic disposal site. If an appropriate reference site match has not been found for a proposed disposal environment, confounding factors can be incorporated during testing and can result in skewed results. In 1995, USEPA issued a draft rule to address this matter; once the rule is finalized, the LTMS agencies will recommend that project testing be carried out using reference sites that more accurately represent typical healthy, finer-grained areas of the Bay. Therefore, the LTMS agencies implement the following measure:

- *Upon finalization of USEPA's proposed rule on reference sites, the LTMS agencies will recommend that testing for dredging projects be carried out using new reference sites from the SFBRWQCB's* Evaluation and Use of Sediment Reference Sites and Toxicity Tests in San Francisco Bay.

The LTMS agencies plan to develop a single testing manual for aquatic disposal and beneficial reuse that documents local and regional test protocols, contaminants of concern, appropriate species for bioassays, and quality assurance information. Therefore, the LTMS agencies implement the following measure:

- *The LTMS agencies will work to develop a comprehensive regional implementation manual (RIM), which will incorporate existing local guidance for testing requirements for all disposal environments in the LTMS planning area. A draft version will be issued, revisions made per public comments, and a final version prepared. The document will be revised or updated as needed.*

ES.5 DISPOSAL AND REUSE SITE MANAGEMENT AND MONITORING (CHAPTER 5)

Management and monitoring are critical to understanding and addressing the impacts associated with disposal and reuse of dredged material. An established Site Management and Monitoring Plan (SMMP) exists for the SF-DODS, and a less-comprehensive program is in place for the in-Bay disposal sites. Management and monitoring plans for reuse sites are typically prepared on a case-by-case basis.

The LTMS agencies formed a work group to evaluate existing management and monitoring plans for the in-Bay disposal sites. This group's recommendations will be used to develop SMMPs for these sites, and likely will be included in the revision of the Management Plan prepared at the close of the first three-year period. This work group also will consider preparing a general guidance document for developing site-specific SMMPs for beneficial reuse projects. Therefore, the LTMS agencies implement the following measures:

- *As previously stated in the LTMS EIS/EIR, "[t]he LTMS agencies will develop and implement site management and monitoring plans for all multi-user placement or disposal sites. These plans will specify the [management measures] necessary to*

ensure that impacts are minimized and/or benefits are realized. The plans will also specify the monitoring requirements and post-closure activities as appropriate for each site. Site management and monitoring plans will identify specific conditions that would constitute acceptable performance, as well as adjustments to site use parameters (including termination of continued site use) that would be triggered by specific findings of non-performance." The LTMS agencies will continue to sponsor the efforts of the SMMP Work Group, which will serve as a vehicle for developing SMMPs.

- *As previously stated in the LTMS EIS/EIR, "[t]he LTMS agencies will provide opportunity for public input and comment on proposed site management and monitoring plans for new disposal or placement sites and on proposed substantive revisions to existing plans. Information from site monitoring efforts will be made available to the public, and opportunity for comment will also be provided as part of the periodic review for existing sites."*

- *Until formal SMMPs are prepared for the in-Bay disposal sites, existing management and monitoring practices will continue. The SMMP Work Group will meet, and formal SMMPs for the in-Bay disposal sites will be developed and included in the* LTMS Management Plan *prepared at the end of the first three-year period. At that time, the progress of the SMMP Work Group on beneficial reuse sites also will be included in the Management Plan.*

ES.6 MANAGEMENT OF THE IN-BAY DISPOSAL GOAL (CHAPTER 6)

The primary goals of the LTMS are to significantly reduce in-Bay disposal and to increase the beneficial use of dredged material and disposal at the SF-DODS. These goals will be achieved gradually over a 12-year transition period. The first step toward reaching this goal was the signing of the federal ROD for the LTMS EIS/EIR in 1999. Next, the BCDC's Bay Plan and SFBRWQCB's Basin Plan were amended, and BCDC's implementing regulations were changed. The 12-year transition begins with an overall in-Bay disposal volume of 2.8 mcy plus a contingency volume (for unforeseen events) of up to 250,000 cubic yards (cy). During this period, the volume of material allowed for in-Bay disposal will decrease by 387,500 cy every three years (Figure ES.4).

The LTMS agencies will use a two-phased management approach to reduce in-Bay disposal. During Phase I, the LTMS agencies will work with dredgers to voluntarily reduce dredging and disposal volumes. The LTMS agencies will initiate a regional planning effort to enhance coordination of dredging projects and cooperation among project proponents. Efforts also will be made to reduce unnecessary dredging and excessive disposal in the Bay through improved project planning and design, preparation and use of the USACE's dredged material management plans for the federal maintenance projects in the Bay, continued involvement in the BCDC's *Seaport Plan* planning process; implementation of existing regulatory mechanisms (e.g., permit requirements), and coordination with watershed planning efforts to improve management of sediment in the Bay.

During the 12-year transition period, the LTMS agencies will track the in-Bay disposal volumes. If the annual transition goals are not met through the voluntary efforts to reduce in-Bay disposal, Phase II will be triggered and individual in-Bay disposal volume allocations will be implemented. If Phase

II is initiated, individual allotments will not confer a right to dispose in the Bay if practicable or feasible disposal or reuse alternatives are available. To ensure the success of the transition and ultimately to achieve the goals, the LTMS agencies implement the following measures:

- *To achieve the 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.*

- *As previously indicated in the EIS/EIR, 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.*

- *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.*

- *As 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.*

- *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.*

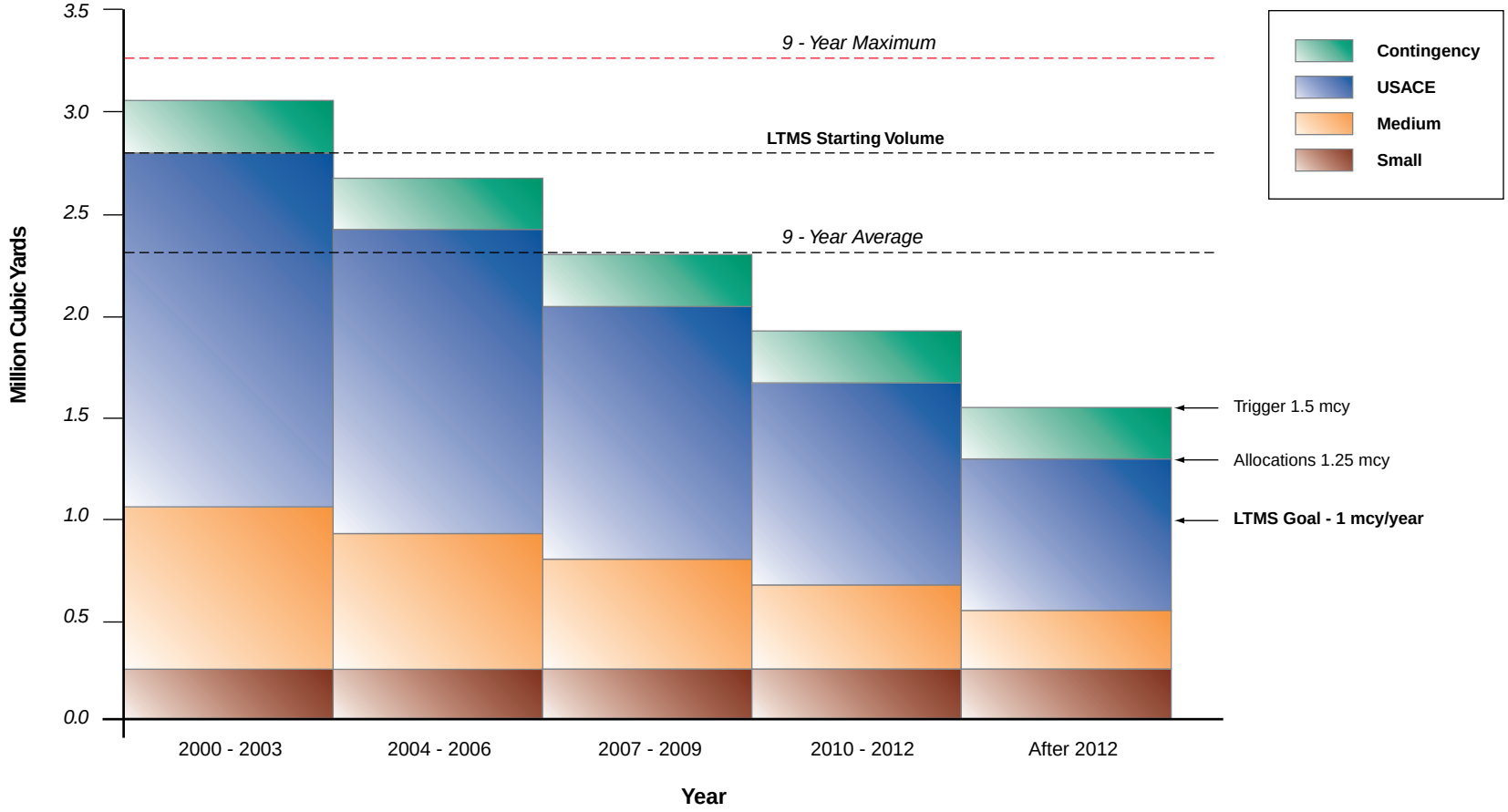
ES.7 IMPLEMENTATION OF BENEFICIAL REUSE AND DISPOSAL PROJECTS (CHAPTER 7)

Dredged material from the Bay can be used for wetland restoration, levee reconstruction, and in-Bay habitat creation. After processing is completed at rehandling facilities, material can also be used at landfills for cover or construction purposes. Although multi-user sites and reuse opportunities for

Figure ES.4

SOURCE: Final LTMS EIS/EIR, 1998.

In-Bay Transition Allocations



material that is unsuitable for unconfined aquatic disposal are currently limited, planning efforts are under way for major new projects (e.g., the wetland restoration sites at the former Hamilton Army Airfield and adjacent sites, and the Montezuma Wetlands site). (Figure ES.5 identifies existing and potential beneficial reuse and disposal projects.) Because the success of the long-term strategy depends heavily on the availability of beneficial reuse and upland disposal options, efforts to develop such options are critical. Therefore, the LTMS agencies implement the following measures:

- *The LTMS agencies will work closely with the dredging and environmental communities to implement and fund beneficial reuse projects.*

- *With the California Coastal Conservancy, BCDC and USACE will implement the Hamilton Wetlands Restoration project. Further, the LTMS agencies will continue to participate in the Hamilton Restoration Group.*

- *The LTMS agencies will continue to work to resolve issues and process applications for implementation of the Montezuma Wetlands Project.*

- *The LTMS agencies will create one new staff position with responsibility for facilitating selection and implementation of beneficial reuse and upland disposal options, including serving as the point of contact for such projects, attending relevant meetings, and pursuing funding and legislative opportunities for project implementation.*

- *The LTMS agencies will provide status reports regarding potential and existing beneficial reuse and disposal options through the LTMS Program Management quarterly public workshops.*

The typical dredger seeking a beneficial reuse or disposal option is not likely to single-handedly design or implement a new project, but rather use an existing site. The LTMS agencies will work with proponents to facilitate planning, design, and implementation of projects, and therefore implement the following measures:

- *To facilitate preliminary investigation and selection of beneficial reuse and upland disposal sites, the LTMS agencies will work with project proponents during the project planning stage to assess potential sites.*

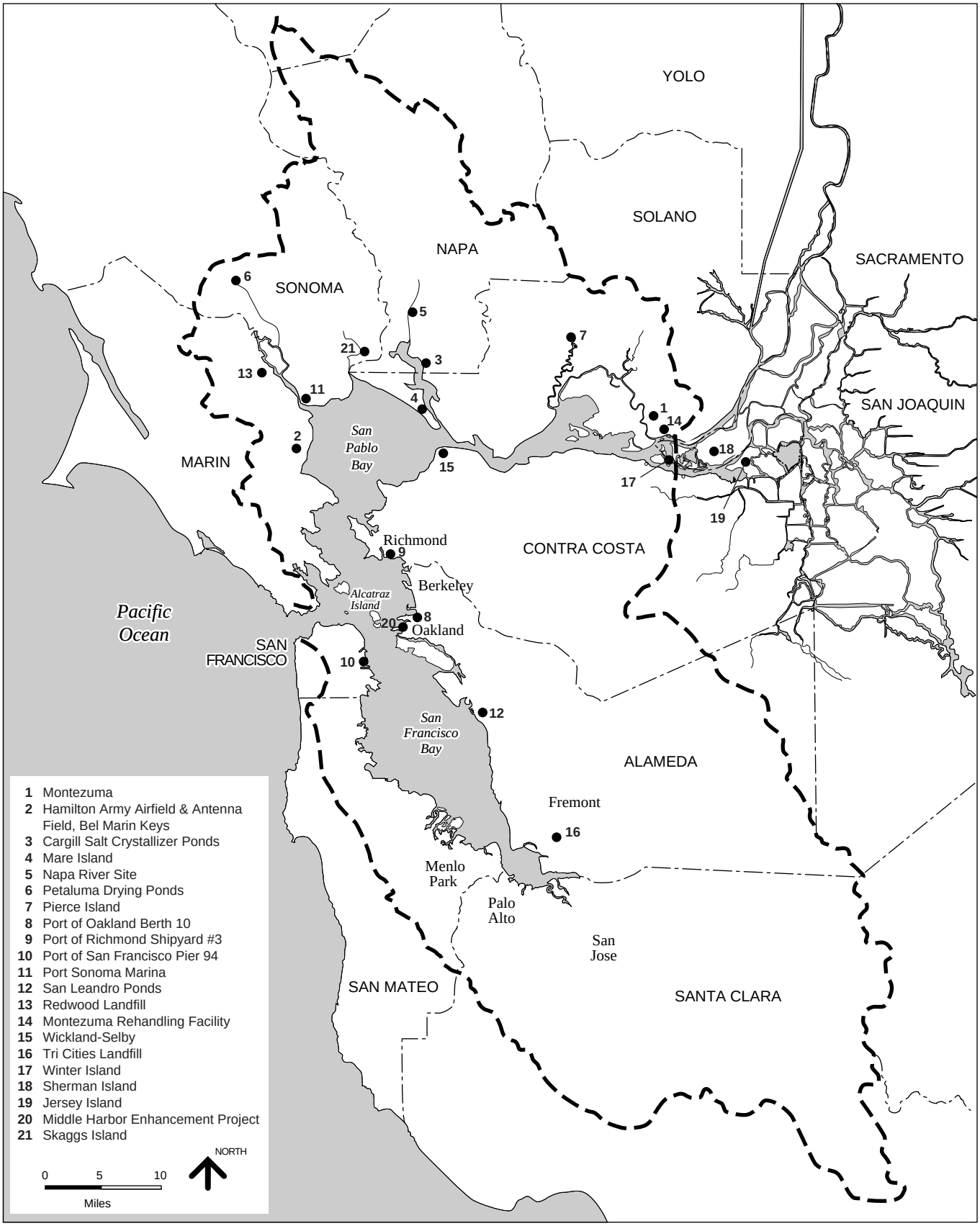
- *The LTMS permitting agencies will work with project proponents during the design phase of habitat restoration projects using dredged material to ensure the development of biological goals and physical design features (including fill elevations and material placement guidelines, and appropriate physical and chemical characteristics of dredged material) to achieve these goals. Additionally, the LTMS permitting agencies will require, as legally appropriate, that proposed restoration projects include biological goals, physical design features, and monitoring and remediation measures.*

Every reuse project has a unique set of site-specific physical and environmental conditions, regulatory requirements, CEQA and NEPA review, and technical issues. Implementation of certain reuse

Figure ES.5

SOURCE: Final LTMS EIS/EIR, 1998

Existing and Potential Beneficial Reuse and Upland Disposal Sites



projects could result in the conversion or loss of existing habitat. In the case of dredged material reuse at landfills and at existing rehandling facilities, habitat conversion or loss is possibly a minor issue in light of the already disturbed nature of these sites. Habitat conversion or loss can take on greater significance where diked historic baylands are used for habitat restoration, a new rehandling facility is constructed or expanded, and levees are restored. To foster an ideal mix of habitat patterns and types in the region and minimize habitat conversion impacts, the LTMS agencies implement the following measures:

- *To ensure an ideal mix of wetland patterns and types and to minimize impacts of local habitat conversion, the LTMS agencies will work to maximize the consistency of projects with applicable regional habitat goals (e.g., USFWS's Endangered Species Recovery Plans, the San Francisco Bay Area Wetlands Ecosystem Goals Project, and the San Francisco Bay Joint Venture). As stated in the LTMS EIS/EIR, "the LTMS agencies will encourage and authorize as legally appropriate, restoration efforts using dredged material that are designed to be consistent, to the maximum extent practicable, with specific habitat goals established by regional planning efforts—with the understanding that such projects are dynamic, changing processes—for managing the region's natural resources." To ensure restoration of the full range of Bay habitats, the LTMS agencies will require dredged material restoration proposals to include, as appropriate, an assessment of project consistency with regional habitat goal projects.*

- *As stated in the LTMS EIS/EIR, for restoration projects using dredged material in areas not covered by regional habitat goals, "the LTMS agencies will also encourage and authorize as legally appropriate, such projects which would clearly result in an overall net gain in habitat quality and would minimize loss of existing habitat functions. Whenever feasible, such projects will provide, as part of the project design, for a no net loss in the habitat functions existing on the project site or, where necessary, provide compensatory mitigation for lost habitat functions in accordance with state and federal mitigation requirements."*

- *The LTMS agencies recognize that temporal losses in existing habitat may occur at sites and will work with project proponents to minimize such losses. During the planning stage, project proponents should clearly define, evaluate, and, if feasible, incorporate existing habitat types at a potential reuse site. Proposed projects could be sited in areas that minimize loss of existing seasonal wetland habitat, where possible. Further, restoration projects could be designed to include restoration of seasonal and other important habitat types.*

- *Where possible, proposed rehandling facilities should be located in areas that minimize loss of existing habitat or alternatively on sites located outside of the diked historic baylands with limited habitat value.*

- *During the planning stage, rehandling project proponents should, if feasible, incorporate habitat values at proposed facilities by including individual ponds that could be managed solely for habitat use or by managing the facility for habitat use*

during periods when dredged material is not processed. Where necessary, project proponents should provide compensatory mitigation for lost habitat functions in accordance with state and federal mitigation requirements.

- *Project proponents should develop long-term management plans for beneficial reuse and upland disposal sites, and appropriate mechanisms to ensure permanent protection of restored habitat values. In projects where significant existing habitat is proposed to be impacted, project proponents could be required to develop project-specific mitigation goals, conduct monitoring, and, if necessary, remediate. The LTMS agencies will fully and appropriately apply existing laws, regulations, and policies to ensure that adverse impacts associated with project implementation will be minimized and, as necessary, mitigated.*

Mechanisms, such as state and federal regulatory requirements, and site design features exist for preventing or minimizing impacts associated with the release of contaminants or salt from dredged material to on-site or surrounding waters. However, more information is needed regarding potential salinity impacts from Bay dredged material on the freshwater Delta environment. Because of the tremendous potential for using dredged material in the Delta for levee restoration, this issue is a potential obstacle to implementation and needs to be addressed. Therefore the LTMS agencies implement the following measures:

- *To facilitate implementation of Delta levee projects using material from the Bay, to ensure protection of Delta water quality, and to prevent unacceptable or contaminant-related effects, the LTMS agencies will work with the Central Valley Regional Water Quality Control Board, the California Department of Water Resources, local governments, and local reclamation districts. Further, the USACE will pursue a Water Resources Development Act Section 204 study to reuse Bay dredged material in the Delta. The LTMS agencies will develop a strategy to improve coordination with the CALFED program, and, as a first step, the LTMS Management Committee will send a letter to the CALFED Policy/Management Committee co-chairs urging CALFED to examine the potential for reuse of Bay dredged material in the Delta.*

- *The LTMS agencies will work to address potential salinity impacts in the Delta associated with using Bay dredged material for levee restoration. The LTMS agencies will pursue funding and research opportunities to help understand how Bay material affects the freshwater environment. Data collected and other "lessons learned" from initial projects will be analyzed by the LTMS agencies, in coordination with appropriate Delta entities, to determine the feasibility of other projects and to improve project design (including salinity control measures) and management.*

- *The LTMS agencies will foster, sponsor, or undertake, as resources allow, technical analyses of issues concerning habitat restoration using dredged material, and make scientific data available to improve the design and management of restoration sites.*

ES.8 MANAGEMENT PLAN REVIEW AND REVISION (CHAPTER 8)

The Management Plan will be periodically reviewed and modified, as necessary, to reflect changing statutory, regulatory, technical, and environmental conditions. Public review and comment will be an important component of each review. Therefore, the LTMS agencies implement the following measure:

- *During the initial three-year period of implementation, the LTMS agencies will produce an annual progress report of the program. Subsequently, the LTMS agencies will conduct three-year reviews. A more comprehensive review resulting in policy changes, if necessary, will be conducted every six years.*

ES.9 RESOURCE NEEDS (CHAPTER 9)

The LTMS agencies have determined that additional resources and funding are needed to fully implement the long-term strategy for dredging, disposal, and reuse in the region. The LTMS agencies prepared preliminary estimates that will require further refinement, in part through the efforts of the LTMS Funding Work Group. Therefore, the LTMS agencies implement the following measure:

- *The LTMS agencies will participate in the Funding Work Group, which will further assess the program's ongoing resource needs and potential funding sources. The work group's findings will be used to more accurately determine what is needed to achieve the goals of the LTMS program.*

ES.10 AMENDMENTS TO THE BAY AND BASIN PLANS AND CHANGES TO BCDC'S IMPLEMENTING REGULATIONS (CHAPTER 10)

The Bay Plan and Basin Plan provide the basic framework for the regulatory and planning activities of the BCDC and SFBRWQCB, respectively. To allow both agencies to implement the long-term strategy for dredging, disposal, and reuse, and to achieve the LTMS goals, the Bay Plan and Basin Plan have been amended. These amendments were similar in intent but had a slightly different focus for each agency because of their differing, but complementary, mandates.

The amendments support reducing in-Bay disposal of dredged material and developing disposal and reuse alternatives, and support the concept of a voluntary allocation program for in-Bay disposal with implementation of mandatory allocations, if necessary. Additionally, BCDC amended its implementing regulations to facilitate the in-Bay disposal site management strategy involving a two-phased allocation system. The formal process for approving the Bay Plan and Basin Plan amendments and BCDC's implementing regulations was completed in 2001.