LONG-TERM MANAGEMENT STRATEGY FOR THE PLACEMENT OF DREDGED MATERIAL IN THE SAN FRANCISCO BAY REGION

12-YEAR REVIEW PROCESS

BACKGROUND INFORMATION FOR NOVEMBER 20, 2012, MEETING

FOCUS: POLICY AND STRATEGY

Prepared by

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1 INTRODUCTION

The Management Plan for the Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) program called for periodic review and/or modification to ensure that the program remains achievable and current in light of changing conditions over time (USACE et al. 2001). Specifically, the LTMS agencies were directed to complete basic reviews of the program every 3 years with input from interested parties. More comprehensive reviews occur every 6 years. A Six Year Review Report was issued in May 2006.

Because the beginning of 2013 will mark the end of the twelfth year and the LTMS transition period, the LTMS agencies began the review process by reviewing existing data, developing the first background information report, and organizing discussions held at a meeting on March 29, 2012. The process involves the LTMS agencies collecting, analyzing, and disseminating data about the program's performance to date and holding a series of meetings with stakeholders (each meeting focused on a different key topic suggested by stakeholders) culminating with a summary report. This process, the summary report, analysis, and recommendations will form a basis for discussing potential changes to program implementation.

During the March 29th meeting, the LTMS agencies and interested parties reviewed the policies and implementation of the LTMS program throughout the past 12 years in relation to both evaluation criteria established in Chapter 8 of the Management Plan as well as the LTMS goals. The LTMS goals are as follows:

- 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
- Establish a cooperative permitting framework for dredging and dredged material disposal applications

At the March 29th meeting, stakeholders identified the following three topics for future meetings:

1. Beneficial reuse (meeting held on June 19, 2012)
2. Costs and contracting (September 11, 2012)
3. Policy and strategy development (November 20, 2012)

Additional information requests from the March 29th meeting are either addressed in topic-related pre-meeting background documents or as part of the meeting presentations or will be included as part of the summary report.

This document presents information specific to the fourth LTMS stakeholder meeting and focuses on policies and strategies that have been used to implement the LTMS program to date. The information provided herein is intended to address specific questions on policy and strategy, provide background information for the upcoming meeting, and stimulate thoughtful and productive discussions. In particular, the LTMS agencies invite stakeholders to provide comments on policies and strategies at the program level.

2 OVERVIEW: IMPLEMENTING THE LTMS GOALS TO DATE

The LTMS Environmental Impact Statement/Environmental Impact Report (EIS/EIR) included policy-level mitigation measures, many of which were incorporated in implementation measures in the Management Plan. Appendix A provides a list of the 40 implementation measures from the Management Plan. Key policies and strategies that the LTMS agencies have used over the past 12 years to implement the Management Plan are described in the sections below, including which LTMS goal or goals are addressed by each measure. Some measures are formal (included in the San Francisco Bay Regional Water Quality Control Board's [RWQCB's] Basin Plan or the San Francisco Bay Conservation and Development Commission's [BCDC's] San Francisco Bay Plan amendments, or specifically adopted in the Management Plan) and some are informal (practices that, while not officially adopted by specific agency action, have nevertheless been applied on a project-by-project basis in a generally consistent manner throughout the transition period).

2.1 Dredged Material Management Office

LTMS Goal Addressed:
- Establish a cooperative permitting framework for dredging and dredged material disposal applications

Prior to the creation of the Dredged Material Management Office (DMMO), every applicant had to individually apply to each regulatory agency for a permit to dredge and dispose of dredged material. The DMMO is an interagency group created as part of the LTMS program to provide a "one-stop shop" for processing applications for dredging and disposal projects in the San Francisco Bay region. Each LTMS agency provides personnel to staff the DMMO. Also participating are representatives from the California Department of Fish and Game, National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (USFWS), who provide expertise and technical advice on the potential biological impacts of proposed projects.

The goal of this interagency group is to increase efficiency and coordination between the member agencies and to foster a comprehensive and consolidated approach to handling dredged material management issues. The DMMO also manages and tracks dredging and disposal projects in the region and has been a successful implementation of one of the key LTMS goals.

Establishment of the DMMO was one of the key goals of the LTMS program. The LTMS agencies have made it a high priority to continue supporting the DMMO's operation, even as funding for other aspects of LTMS implementation have become scarcer.

2.2 Minimize Dredging

LTMS Goals Addressed:
- Conduct dredged material disposal in the most environmentally sound manner
- Maximize the use of dredged material as a resource

The LTMS EIS/EIR and Management Plan identified minimizing unnecessary dredging as a goal. Resource agencies were concerned that dredging and disposal activities would affect endangered species. Dredging equipment might entrap or entrain fish, and dredge plumes might affect the behavior of fish or foraging birds. Disposal might directly bury fish, or disposal plumes might affect the behavior of fish or foraging birds. Due to the cost of dredging, dredging proponents do not usually dredge any more material than is absolutely necessary.

The DMMO agencies do not allow dredging of areas that are already at the design depth. Dredging of just a project's allowable overdepth is not allowed. Advanced maintenance dredging is not necessarily inconsistent with this strategy to the extent that it is designed to reduce dredging frequency.

To further reduce the amount of dredging and disposal, some contracts are written to include 1 foot of paid allowable overdepth and 1 foot of non-paid allowable overdepth. This approach helps ensure that there is no incentive for a dredging contractor to dredge more than 1 foot of the allowable overdepth.

2.3 Monthly Limits on In-Bay Disposal

LTMS Goal Addressed:
- Conduct dredged material disposal in the most environmentally sound manner

The monthly volume limits at the in-Bay disposal sites set in the Basin Plan and reflected in the Management Plan are displayed in Table 1. These volume limits are based on the dispersive characteristics of the sites at any given time of the year. The limits add up to more than the total annual volume limit but do not affect the

overall annual target limit for each year. Also, the monthly limits are based on volumes and not on the percentages set for in-Bay versus out-of-Bay disposal.

Table 1

Monthly In-Bay Disposal Volume Limits

Site	Time Period	Limit (cy)
Alcatraz Island (SF-11)	October – April	400,000
	May – September	300,000
San Pablo Bay (SF-10)	Any Month	500,000
Carquinez Strait (SF-9)	Any Month	1,000,000
Suisun Bay (SF-16; USACE only)	Any Year	200,000

Notes:
cy = cubic yards

Due to the work windows and the actual timing of projects, most of the dredging and disposal occurs during the fall months, which results in a large volume of sediment being disposed of at that time. Over the past 12 years, the monthly limit has been exceeded only once. Several years ago, multiple projects disposed of dredged material at about the same time during the month of September, resulting in a minor exceedance of the limit. To avoid exceeding monthly volume limits, the DMMO has temporarily redirected projects to other disposal sites or arranged for projects to start later in the month in order to use the available volume for following months. Limits have not been exceeded in recent years, even though environmental work windows for dredging require most in-Bay disposal to occur over a relatively short period of time.

2.4 LTMS Transition Path

LTMS Goals Addressed:
- Conduct dredged material disposal in the most environmentally sound manner
- Maximize the use of dredged material as a resource

One of the principal public concerns about implementing the LTMS program was whether in-Bay disposal would actually decrease over time and whether alternatives (including beneficial reuse sites) would actually come online if implementation of the program was strictly voluntary on the part of dredging project proponents. In response, the Management Plan established a transition period that provided certainty for in-Bay disposal reductions over time as well as a significant degree of flexibility for dredgers to decide how best to use available alternatives to meet those reductions.

The Management Plan established a 12-year transition period during which overall in-Bay disposal volume limits were initially capped at a moderate level compared to historic

volumes, and then decreased systematically every 3 years until the long-term in-Bay disposal goal is reached. The 3-year length of each "step down" in the transition was intended, in part, to reflect the annual variability in overall dredging need caused by inter-annual differences in shoaling rates as well as the fact that different projects have different dredging cycles. Figure 1 shows the structure of the transition period's in-Bay disposal limits.

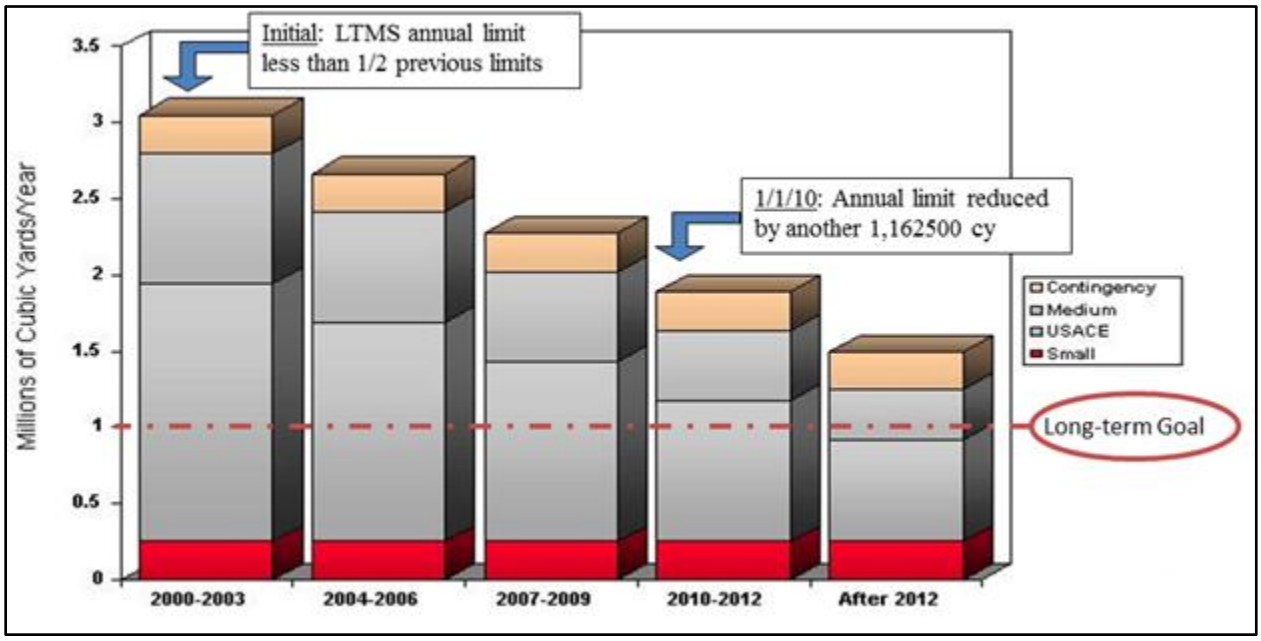

Figure 1. Annual In-Bay Disposal Limits under the LMTS Transition

Beginning in 2000, the overall in-Bay disposal was initially set at 2.8 million cubic yards (cy) per year (less than one-half of the historic dredging volumes). Every 3 years since then, the annual limit has decreased by 387,500 cy. The annual in-Bay disposal limit in 2012—the last year of the transition period—is 1,637,500 cy, which represents an annual reduction of 1,162,500 cy compared to the limit in 2000. Starting in 2013, the final in-Bay limit of 1.25 million cy per year (1.5 million cy per year with the contingency volume included) will be reached and, per the Management Plan, will continue unchanged.

As long as the overall in-Bay limits are met in each 3-year period through the efforts of individual projects, the voluntary approach can continue. However, if the overall in-Bay disposal volume cap is exceeded during any 3-year period, the LTMS agencies are required to consider invoking mandatory project-specific "allocations" (discussed further in Section 2.2) to ensure that volumes will not be exceeded again. Because allocations would limit individual projects to a percentage of their historic dredging volume independent of their actual dredging need in any particular year, dredgers have a powerful incentive to help avoid allocations by doing their best to dispose of the least amount of material in-Bay as is possible.

To date, the LTMS transition has been successfully implemented. In-Bay disposal limits have not been exceeded on a yearly or a 3-year average basis. Now that the lower long-term in-Bay limits are approaching, exceedances may become more likely. The transition also allows the LTMS agencies to permit an additional 250,000 cy of in-Bay disposal during any year as a contingency against years with abnormally high dredging needs.

2.5 Analysis of Disposal Options

Federal and state regulations require an analysis of alternatives to aquatic disposal of dredged material prior to the authorization of a dredging and disposal project. An alternatives analysis is needed for every project, and preparing an adequate one can be time-consuming and expensive. Although the language used in the various regulations differs somewhat, the essential purpose of an alternatives analysis is to minimize environmental impacts of disposal as much as possible.

LTMS Goals Addressed:
- 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

The LTMS EIS/EIR evaluated alternatives to in-Bay disposal on a programmatic basis and concluded that, over time, the region should be able to feasibly achieve at least 40 percent beneficial reuse and reduce in-Bay disposal to 20 percent (with ocean disposal as a "safety valve" for the remainder at any time). However, the LTMS goals were programmatic; achieving them relies on individual projects evaluating and using alternatives to in-Bay disposal.

Compared to other areas of the country, many navigation facilities in the Bay Area need to be maintenance dredged frequently, and conducting time-consuming analyses for every dredging episode at each facility can be challenging. From another point of view, many maintenance dredging projects in the Bay Area are fortunate to share a number of common traits, including physical conditions, equipment options, the array of disposal or placement sites available at any time, and management under the LTMS program that strives to reduce aquatic impacts and increase beneficial reuse region-wide. These factors have allowed the alternatives analysis process for maintenance dredging in the Bay Area to be substantially streamlined in two important ways.

First, "small dredgers" were evaluated as a class in the 2004 *Small Dredger Programmatic Alternatives Analysis for Disposal of Maintenance Dredged Material* (SDPAA). This class is defined by projects that are 12 feet and less in design depth and generate an average of 50,000 cy or less of dredged material per year. Small marinas and homeowners associations

are typical of the small dredger class. Because combined small dredger projects have historically generated only approximately 250,000 cy per year (only 5 to 10 percent of all regional dredging and 10 to 20 percent of all aquatic disposal), the potential aquatic disposal impacts of the class were determined to be cumulatively minimal. In addition, cost and logistical considerations pertaining to this class made alternatives to in-Bay disposal much less potentially feasible. On these bases, small dredger projects were programmatically exempted from the requirement to perform individual alternatives analyses. Over 60 small projects are covered by the SDPAA.

Second, for dredgers that do not qualify under the small dredger exemption (including the U.S. Army Corps of Engineers [USACE], ports, refineries, etc.), the LTMS agencies reduced the need for annual, facility-specific alternatives analyses by instituting Integrated Alternatives Analyses (IAAs). IAAs allow each dredging entity to evaluate their overall dredging program across a 3-year period. IAAs significantly reduce the number of facility-specific alternatives analyses that would otherwise be needed, because a single analysis covers all of the dredger's facilities (many dredgers maintain multiple permitted facilities, such as separate shipping berths) for the 3-year period. For dredgers, the additional benefits of an IAA include the flexibility to determine how they can best meet the LTMS goals for reducing in-Bay disposal on average over the 3-year period and the ability to plan ahead (financially and otherwise) to achieve that proposal. For the LTMS program, IAAs provide an increased likelihood that in-Bay disposal reduction goals will in fact be met, because alternatives to in-Bay placement often require more time for planning and financing than is available on a year-by-year basis.

Streamlined or not, conducting an alternatives analysis does not by itself make alternatives any more available or feasible. However, it does help ensure that impacts of individual projects are minimized in the short term, while streamlining the process has also helped reduce the regulatory burden on project proponents.

2.6 Establishment of Allocations

LTMS Goal Addressed:
- 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

The Management Plan established a process for allocating in-Bay disposal volumes to individual dredgers in the event that either the transition goals or the long-term disposal volume goal are exceeded. The San Francisco Bay Plan and the Basin Plan have been amended to allow for implementation of the mandatory allocations, if recommended by the LTMS Management Committee. There are two possible mechanisms for triggering Management Committee

consideration of whether to recommend allocations: 1) the Management Committee may recommend allocations in any year, based on a review of disposal volumes and an evaluation framework outlined in the Management Plan, or 2) the Management Committee must consider recommending allocations if the 3-year average in-Bay disposal volume (plus the 250,000 cy contingency) exceeds the applicable in-Bay target for that 3-year period. In either case, BCDC's Commission and the SFBRWQCB's Board must each hold a public hearing and vote on whether to impose mandatory allocations before such a program can be implemented.

Starting in 2013, the allocation trigger will be the final annual limit of 1.5 million cy (1 million cy [LTMS goal] plus 250,000 cy [small dredger set-aside] and 250,000 cy [contingency volume]). If this trigger is exceeded as a 3-year average, and it becomes necessary to implement allocations in the future (2013 and beyond), then the 1 million cy per year would be split between medium-sized dredgers and the USACE based on their relative percentage of in-Bay disposal during the 1991 through 2000 baseline evaluation period. Small dredgers are exempt from the individual allocation process and would continue to receive the 250,000 cy set-aside. The contingency volume of 250,000 cy would be retained but not allocated up-front.

Because dredgers have met the in-Bay disposal targets on a voluntary basis during the transition period, the LTMS agencies have not had to consider invoking mandatory allocations. However, as the LTMS agencies transition into the Management Plan's final step-down goal, the possibility of having to invoke allocations may increase.

2.7 Disposal of New Work Dredging Material In-Bay

LTMS Goal Addressed:
- Conduct dredged material disposal in the most environmentally sound manner

Because the Management Plan reduces in-Bay disposal over time, it assumes that there would eventually be insufficient capacity to accommodate material from both maintenance and new work dredging projects. New work dredging is different from maintenance dredging in several ways. Some of these differences relate directly to the (rebuttable) presumption that alternatives to in-Bay disposal should be practicable for a new work project. For example, the funding basis is typically different: new work projects are generally capitalized, while maintenance projects are often expensed. Thus, new work projects may be less constrained (financially and otherwise) in terms of the alternatives that are reasonable to consider, while maintenance projects may be more constrained. Similarly, new work projects often have longer planning lead-times and less certain construction start times than maintenance projects. As such, there is often more opportunity to coordinate new work dredging with availability of reuse sites. New work projects are often of a larger

scale than maintenance projects in order for economies of scale to help make beneficial reuse alternatives more feasible.

For these and other reasons, the LTMS agencies have always held new work projects to the highest standard and presumed that alternatives to in-Bay disposal are practicable unless clearly shown otherwise by the project proponents. In most cases, this presumption has been correct. Both USACE and non-USACE channel or berth/marina deepening projects have been able to place new work material at alternative sites, often for beneficial reuse. Other kinds of construction projects have also been able to place material at alternative site. Material has included most dredged material from seismic work on Bay Area highway bridges (in only a few cases have limited volumes of dredged material been approved for in-Bay disposal from certain new work projects; e.g., small volumes from around individual piles being constructed for the San Francisco-Oakland Bay Bridge east span replacement). In fact, new work projects have accounted for the vast majority of all beneficially reused dredged material during the first 12 years of implementing the Management Plan.

2.8 New In-Bay Disposal Sites

LTMS Goal Addressed:
- Conduct dredged material disposal in the most environmentally sound manner

Neither the Management Plan nor policies in the San Francisco Bay or the Basin plans specifically prohibit the possibility of selecting new in-Bay disposal sites. It is important to note that new in-Bay *disposal* sites are different from potential new in-Bay *reuse* sites, which are discussed in Section 2.6. However, the LTMS EIS/EIR noted that consideration of shutting down, relocating, or designating specific new disposal sites was outside the scope of that programmatic document. Any proposal for new or relocated in-Bay disposal sites would require a separate site-specific evaluation and environmental review, as well as any associated regulation changes.

More importantly, the selected alternative in the LTMS EIS/EIR (subsequently implemented in the Management Plan) called for a substantial reduction of allowable in-Bay disposal volumes. Given this reduction, and the close management of in-Bay disposal volumes during the transition period, additional in-Bay disposal sites were never identified or pursued. Because the existing in-Bay disposal sites have been capable of accommodating the in-Bay disposal volumes allowed under the Management Plan, and pre-LTMS mounding problems at the Alcatraz site (SF-11) have generally been manageable at the reduced disposal volumes, no new in-Bay disposal sites are proposed at this time.

2.9 New In-Bay Reuse Sites

LTMS Goal Addressed:
- Conduct dredged material disposal in the most environmentally sound manner

The development of the LTMS program did not specifically evaluate in-Bay (areas of tidal action) placement of dredged material for beneficial reuse, and therefore, it was not included in the LTMS EIS/EIR or the Management Plan. In addition, the concept was controversial at the time.

The Middle Harbor Enhancement Area (MHEA), which placed 5.8 million cy of sediment in the Bay to restore shallow water habitat, has been "the exception to the rule" on beneficial reuse of dredged material in the Bay. This project is complex and its many components (not discussed in this document) were evaluated under a separate EIS/EIR and reviewed by resource and regulatory agencies. In addition, BCDC issued an amendment to the San Francisco Bay Plan (in the Dredging Policies under Policy 11) to specifically address this project. Because of the environmental concerns surrounding this project and the uncertainty of its success, the policy further limited any additional in-Bay placement of dredged material for habitat restoration until the MHEA was shown to be a success, unless the volume was minor with no adverse environmental impacts (for additional information, refer to the San Francisco Bay Plan). The MHEA is still under construction, with a completion target of 2016, after which monitoring will be undertaken.

Other than the MHEA, only limited in-Bay placement for beneficial reuse has been allowed. For example, a few contaminant remediation projects have used clean dredged sediment to backfill areas where contaminated sediments were removed in an aquatic setting.

Recent research of the sediment budget and transport in the Bay and from the Delta has revealed a "step change" in the sediment system. The sediment originating from the hydraulic gold mining area has largely moved through the system. This change, along with the construction of water control structures in the Delta and throughout tributaries to the Bay, has measurably reduced the sediment loading to the Bay. In addition, the increase in sea level rise over time will affect the sustainability of Bay wetlands. Over the past year, the LTMS agencies have become interested in implementing beneficial reuse focused on addressing sediment supply issues and marsh sustainability.

2.10 Implementing Beneficial Reuse

LTMS Goal Addressed:
- Conduct dredged material disposal in the most environmentally sound manner
- Maximize the use of dredged material as a resource

During the preparation of the Management Plan, the broad consensus among Bay Area dredging stakeholders was that beneficial reuse of dredged material, broadly defined at the time as using dredged material for a variety of purposes, such as habitat restoration, rather than disposing of it as a waste, was the cornerstone in implementing the LTMS program. The following categories of beneficial reuse were initially identified as generally feasible and appropriate for consideration in the Bay Area:

- Tidal wetland restoration (habitat development)
- Rehandling facilities for landfill cover and other end uses
- Levee rehabilitation
- Beach nourishment
- Construction fill

During the 12-year transition period, the LTMS agencies have focused on encouraging the use of large multi-user habitat restoration projects to achieve economies of scale and lower the costs to dredgers. At the beginning of the transition period, the agencies expected that a few large projects would provide affordable beneficial reuse capacity for decades into the future. Although two large multi-user projects have come online, this approach has not occurred to the extent anticipated, due in part to the logistical and cost/contracting challenges posed by transporting and offloading material into diked bayland restoration sites.

Despite such challenges, there has been substantial success in the beneficial reuse of dredged material to fill several large restoration projects to elevations necessary to create a variety of aquatic habitats. Major accomplishments include 5.8 million cy placed at the Hamilton Wetland Restoration Project to restore 962 acres of tidal and seasonal wetlands; nearly 4 million cy placed in Phase I of the Montezuma Wetlands Restoration Project to restore 560 acres of tidal marsh; and 5.8 million cy placed in the MHEA to restore 180 acres of shallow water habitat such as eelgrass beds. A number of beneficial reuse sites are currently permitted and cumulatively have a substantial available capacity, such as Montezuma Wetlands Restoration Project and Cullinan Ranch.

The LTMS agencies acknowledge that beneficial reuse capacity has not increased at the rate anticipated by the Management Plan. Looking toward the future, the LTMS agencies are actively seeking to expand beneficial reuse opportunities by working with the San Francisco Bay Joint Venture to identify restoration projects currently in need of sediment. The

agencies are also working with the USACE as it studies, through hydrodynamic modeling, the potential for unconfined or non-engineered in-Bay placement to beneficially nourish mudflats or coastal salt marsh in select nearshore locations.

2.11 Project Coordination Work Group

LTMS Goal Addressed:
- Establish a cooperative permitting framework for dredging and dredged material disposal applications
- Maximize the use of dredged material as a resource
- Conduct dredged material disposal in the most environmentally sound manner

When environmental work windows were established in the Management Plan, the dredging community had considerable concerns. The concern centered around the work windows limiting dredging and disposal of dredged sediment to as little as 3 months in the most limited areas and 6 months in most areas of the Bay. In response, the LTMS agencies, resource agencies, and stakeholders identified several strategies to assist the dredging community in completing dredging projects within the work windows, identify techniques to reduce impacts from dredging and disposal, and improve the scientific and technical knowledge about the listed species. The Project Coordination Work Group (previously known as the Short-Term Windows Work Group) was designed to educate dredging project proponents about the windows and coordinate informal consultations with the resource agencies when a windows extension is needed and justified. The assumption was that, through better planning and coordination, many projects could be completed within the work windows, thereby better protecting listed species.

This work group has enjoyed good participation and thoughtful discussions. In most cases, the resource and permitting agencies are in attendance and have worked together to solve individual projects' problems. In addition to agency participation, project proponents, consultants acting on behalf of their clients, and dredging contractors have participated and provided very valuable insight.

2.12 Programmatic Consultations with Resource Agencies

LTMS Goal Addressed:
- Maximize the use of dredged material as a resource

The LTMS EIS/EIR resulted in the federal resource agencies issuing a programmatic Biological Opinion (BO), with the concurrence of the state resource agency, that took into consideration the benefits of the program eliminating unnecessary dredging, reducing in-Bay disposal, beneficially reusing dredged sediments (particularly in habitat projects), and the ability to look at the dredging projects and their impacts through a single review process. This strategy has resulted in a more holistic analysis and a better collective understanding of each of the agencies'

perspectives. It requires considerable and concentrated efforts by the LTMS and resource agencies—well beyond those legally required—but the participants understand the benefits and willingly participate.

During the 12 years the LTMS program has been in place, the original BOs were completed. Significant revisions were since made by the USFWS, a programmatic Essential Fish Habitat (EFH) consultation was completed and is being implemented, and an amendment to the NMFS BO has been initiated. By implementing these programmatic consultations, the workload of all the agencies has been reduced, environmental compliance has improved, and most dredging projects are not required to undertake individual consultations.

2.13 Windows Science Strategy

LTMS Goal Addressed:
- 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

In developing the programmatic BOs for the LTMS program, the resource agencies developed environmental windows for different geographic areas in the Bay based on the presence or absence of listed species. The development allowed dredging projects that are able to comply with the environmental work windows to implement their projects without having to go through individual consultations with each of the agencies. As part of the LTMS Environmental Windows Work Group, the agencies established a Science Work Group to examine the existing science for impacts of dredging and dredged sediment disposal on listed species. New information obtained through this work group was intended to inform the regulatory and resource agencies.

The Science Work Group identified the need to develop a framework describing the needed information from the perspective of both the resource agencies and the dredging community. Once completed, the framework included a matrix of studies and subjects that should be addressed. Through funding from the LTMS program (through the USACE), original research and several literature reviews were conducted; the resulting documents are available on the LTMS website: http://www.spn.usace.army.mil/ltms/ltms_studies_symposia.html. Studies on herring and least tern, as well as salmon and green sturgeon tracking data, have been provided to the resource agencies, which have used the information to assist with consultations. To date, the information has not resulted in changes to the programmatic consultations. In the case of herring research, data confirmed that the window as it currently exists is an appropriate management tool on a programmatic level.

Unfortunately, due in part to a change in both the political and economic climate, funding that was previously available from the USACE through Congress is not currently available,

and this work group's efforts have been suspended. If additional funding becomes available, it is possible that the work group could continue its efforts but would likely take on scientific issues beyond the programmatic work windows.

2.14 Funding Sources

LTMS Goal Addressed:
- 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
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The LTMS EIS/EIR and Management Plan both recognize that the selected LTMS program could not be fully implemented in the long term without securing reliable sources of funding. The Management Plan called for the establishment of the Funding and Beneficial Reuse Site Work Group (later referred to simply the Funding Work Group) to help address this issue. The Funding Work Group has been instrumental in obtaining funding through the federal appropriations process to support LTMS operations and science studies.

Over the years, various agencies and organizations have also provided support in the form of funding, studies, services, and participation, including the State of California (California Coastal Conservancy) and the Port of Oakland. However, the greatest share of funding has been provided to the USACE through the annual Federal Energy and Water Development Appropriations Acts as an "earmark" or "Congressional Add" to the President's Budget. This funding has been due in large part to the efforts of the stakeholder community's annual trips to Washington, D.C., to ensure that the program is financially supported in the annual federal budget. The USACE, in turn, has used these funds to pay for the studies and reports identified as needed to further the knowledge base by the LTMS work groups. Unfortunately, this source of funding has been greatly reduced in recent years as Congress has taken a position of no longer supporting "earmarks" or "Congressional Adds."

3 PRELIMINARY CONCLUSIONS

The November 20, 2012, stakeholder meeting, for which this background information document was prepared, will be the last of four meetings held to share information about and collect feedback on the first 12 years of LTMS implementation. From here, the LTMS agencies will compile the 12-Year Review Report and make it publically available. The completed 12-Year Review Report will be the basis for further discussion with stakeholders about whether any changes to the LTMS program may be needed for the future. These public discussions will begin in early 2013.

Although the 12-Year Review Report itself is not yet complete, the LTMS agencies believe that some important preliminary conclusions about implementation of the LTMS program can be made based on the information presented in the background information documents to date and input from stakeholder meetings held so far. The following preliminary conclusions are presented to stimulate discussion at the final stakeholder meeting:

- The LTMS transition has been successfully implemented to date. The key LTMS goal of reducing in-Bay disposal has occurred, in-Bay limits have not been exceeded, and allocations have not been invoked. Ocean disposal has successfully served the "safety valve" role envisioned, helping reduce in-Bay disposal even when reuse sites have not been available.
- Great progress has been made toward accomplishing the key LTMS goal of increasing beneficial reuse, and substantial capacity exists for ongoing reuse projects. However, more needs to be done to make reuse more practicable for dredging projects, and additional reuse opportunities need to be developed.
- The LTMS program has successfully implemented a cooperative permitting framework that streamlines the permitting process without reducing environmental protections. The DMMO has been recognized as a regulatory model nationwide.
- The LTMS program has instituted a number of measures to minimize the amount of dredging necessary.
- Dredging and disposal operations have been conducted in an environmentally sound manner, and environmental protectiveness has improved in a number of ways, including implementing testing program improvements and increased protection for EFH and sensitive species.
- Much of the success of the LTMS program has been due to the support of stakeholders who have worked over a number of years to successfully secure federal funding, both for daily operations and important study initiatives. Future funding levels are unknown, and the ability to implement the existing program more fully than has been possible to date is a significant question for the future.

The overall preliminary conclusion of the 12-year review process is that the goals set forth in the Management Plan have been met to a significant degree. In fact, several aspects of the program have been more fully implemented than had been viewed as likely given the authority and funding constraints existing at the time the Management Plan was adopted. (Appendix A). The LTMS agencies believe the LTMS goals themselves remain appropriate and largely implementable. Therefore, they expect to recommend that the basic program continue, even if some changed conditions may indicate a need for increased flexibility and innovation in implementing the goals. Key issues to address moving forward include improving the feasibility of reuse options; the potential to develop new reuse options; and

the need to coordinate long-term dredged material management planning with other regional sediment management efforts, in light of seal level rise.

4 REFERENCES

USACE et al. (U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, San Francisco Bay Conservation and Development Commission, and San Francisco Regional Water Quality Control Board), 2001. *Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Management Plan*. Cited June 5, 2012. Available from: http://www.spn.usace.army.mil/ltms2001/.

APPENDIX A
LTMS IMPLEMENTATION MEASURES IDENTIFIED IN THE MANAGEMENT PLAN

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Chapter 2					
LTMS goals	LTMS Executive Committee adopt revised LTMS goals	2001	LTMS Executive Committee[1]	Within existing funding levels	Completed
LTMS revised structure	LTMS Management Committee meet annually, if necessary, with stakeholders; meet, as necessary, on other LTMS issues	On-going	LTMS Management Committee[2]	Within existing funding levels	On-going
	LTMS Management Committee integrate Coastal Conservancy, U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG) regarding reuse issues	After finalization of Management Plan	Coastal Conservancy, USFWS, and CDFG	Within existing funding levels for LTMS agencies 3	Completed
	LTMS Management Committee integrate State Lands Commission (SLC) regarding necessary dredging and disposal issues	After finalization of Management Plan	SLC	Within existing funding levels for LTMS agencies 4	Completed
	Executive Committee meet annually with stakeholders; meet, as necessary, on other LTMS issues	On-going	Executive Committee	Within existing funding levels	Not completed
	LTMS Program Managers and agency staff carry out day-to-day management of LTMS program; hold quarterly workshops; meet, as necessary, with interested parties; manage working groups	On-going	LTMS Program Managers and agency staff[2]	Likely beyond existing funding levels	On-going

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Formalize Dredged Material Management Office (DMMO)	San Francisco Bay Conservation and Development Commission (BCDC) and SLC change regulations (to include DMMO application)	(All) After finalization of Management Plan[5]	BCDC and SLC	BCDC within existing funding levels[4]	Largely completed
	Revise DMMO General Operating Procedures		DMMO member agencies[6]	Within existing funding levels	Not completed
	Sign Memorandum of Understanding by DMMO member agencies		DMMO member agencies	Within existing funding levels	Completed
Data management system	Participate on Data Management Team and create and manage data management system	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	In progress
Chapter 3					
DMMO operation	Day-to-day regulatory and miscellaneous duties; bi-monthly meetings; track day-to-day and annual disposal volumes and annual report	On-going	DMMO member agencies	Within existing funding levels	On-going
Consistent environmental review of projects	Prepare guidance document on impacts of dredging, disposal, and reuse relevant to regulatory processes and distribute to lead agencies	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	Not completed

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Project proponent coordination with agencies, interested parties, and DMMO	Encourage project proponents to involve interested parties and DMMO during project planning	On-going	LTMS agencies	Within existing funding levels	On-going
Biological windows	Review projects for consistency per biological windows	On-going	LTMS agencies	Within existing funding levels	On-going
Determine disposal location before sediment testing	Encourage proponents to submit alternatives analysis pursuant to Clean Water Act and BCDC Bay fill policies before sediment testing	After finalization of Management Plan	DMMO	Within existing funding levels	On-going
Standard permit conditions	Coordinate permit conditions	On-going	LTMS agencies	Within existing funding levels	In progress
Chapter 4					
Sediment quality guidelines	Oversee Sediment Quality Guidelines Work Group, publish work group results, hold workshop	On-going through 2002	LTMS agencies	Within existing funding levels	Not completed (overtaken by events)
Revise San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) beneficial reuse SQGs	Finalize SFBRWQCB's guidelines	On-going	SFBRWQCB	Within existing funding levels	In progress

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Develop upland testing protocols	Develop testing protocols to better evaluate the suitability of Bay Area dredged sediments for various beneficial reuse options	After finalization of Management Plan (longer-term goal)	LTMS agencies	Beyond existing funding levels	Not completed (overtaken by events)
Prepare RIM	Prepare, hold related workshops, and revise as needed	After finalization of Management Plan (long-term goal)	LTMS agencies	Beyond existing funding levels	Completed in 2001; on-going
Chapter 5					
Site Management and Monitoring Plans (SMMPs)	Implement existing informal SMMPs for in-Bay sites	On-going	U.S. Army Corps of Engineers (USACE)	Within existing funding levels	Not complete
	Implement existing SMMP for San Francisco Deep Ocean Disposal Site	On-going	USACE, U.S. Environmental Protection Agency (USEPA), and permittees	Additional funding likely needed	Not complete
	Oversight of Management and Monitoring Work Group	On-going through end of 2002	LTMS agencies	Within existing funding levels	Not complete
	Develop formal SMMPs for in-Bay disposal sites and hold public workshops	End of 2002	LTMS agencies	Beyond existing funding levels	Not complete
	Develop general guidance for reuse sites	After SMMPs finalized	LTMS agencies	Beyond existing funding levels	Not complete

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Chapter 6					
Management of in-Bay disposal goal	Adopt Bay Plan Amendments and Regulations	2001	BCDC	Within existing funding levels	Completed
	Adopt Basin Plan Amendments	2001	San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)	Within existing funding levels	Completed
	Create and manage Regional Planning Group	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	Completed
Eliminate unnecessary dredging	Initiate Dredged Material Management Plans (DMMPs) for channels, and NEPA reviews as needed for maintenance dredging	2001	USACE	Within existing funding levels	In progress
	On-going work in Seaport Planning process	On-going	BCDC	Within existing funding levels	On-going
	Within context of Seaport and MTC planning, consider need for dredging in addition to minimizing fill	After finalization of Management Plan	BCDC	Within existing funding levels	On-going

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
	Require permit applicants to submit data to determine whether proposals involve minimum dredging necessary, and include measures in permits ensuring that projects are carried out consistently with authorized terms	After finalization of Management Plan	LTMS agencies	Within existing funding levels	On-going
	Establish watershed work group	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	Completed (RSM)
Chapter 7					
Project planning and site selection	Implement and fund beneficial reuse projects	On-going	LTMS agencies and interested parties	Within existing funding levels	On-going
	Participate in Hamilton Restoration Group	On-going	LTMS agencies	Within existing funding levels	Completed
	Provide guidance on selection and use of reuse projects	On-going	LTMS agencies	Within existing funding levels	On-going
	Work with Montezuma project sponsor to facilitate implementation	On-going	LTMS agencies	Within existing funding levels	On-going
	Work with specific entities for Delta projects	On-going	LTMS agencies	Within existing funding levels	On-going
	Pursue Section 204 study on reuse of dredged material in Delta	After finalization of Management Plan	USACE	Within existing funding levels	Not completed

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
	Develop a strategy to improve coordination with CALFED	After finalization of Management Plan	LTMS agencies	Within existing funding levels	Not completed
	Send letter to CALFED to facilitate reuse in Delta	After finalization of Management Plan	LTMS Management Committee	Within existing funding levels	Not completed
	Work with project proponents to assess and select sites	On-going	LTMS agencies	Within existing funding levels	On-going
	Provide status reports on reuse sites at quarterly public workshops	After finalization of Management Plan	LTMS agencies	Within existing funding levels	On-going
Dedicated staff position[7]	Create one reuse staff position	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	Not completed
Restoration project design	Work with project proponents in design phase to ensure the development of biological goals and physical design features, and require that projects include goals and design features and include permit conditions stipulating design, operation features, and monitoring and remediation	After finalization of Management Plan	LTMS agencies	Within existing funding levels	On-going
Research needs and opportunities	Foster/sponsor technical analyses regarding wetland restoration with dredged material	On-going	LTMS agencies	Beyond existing funding levels	On-going

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
	Pursue funding, research, and analysis of salinity control measures (for Delta projects)	After finalization of Management Plan	LTMS agencies	Beyond existing funding levels	On-going
Minimize habitat conversion and loss	Encourage and authorize project consistency with applicable regional habitat goals	(All) After finalization of Management Plan	(All) LTMS agencies and project sponsors	(All) within existing funding levels	On-going
	Encourage projects resulting in net habitat gain and no net loss of habitat functions				
	Work with proponents to minimize temporal habitat losses				
	Locate rehandling facilities outside of diked historic baylands				
	Incorporate wetland habitat values and provide compensatory mitigation in rehandling projects				
Long-term site management plans	Project proponents to develop site management plans and necessary mitigation	After finalization of Management Plan	LTMS agencies and project proponents	Within existing funding levels	On-going
Chapter 8					
Management Plan review and revision	Produce annual progress report during first 3-year period	2001-2003	(All) LTMS agencies	(All) beyond existing funding levels	Completed
	Conduct 3-year review of program success	2004			Completed
	Comprehensive 6-year review and Bay and Basin Plan amendments	2007			Completed

Implementation Measure	Description	Timeline	Lead	Potential Funding Needs	2012 Status
Chapter 9					
Funding	Sponsor Funding Work Group, assess the resource needs and mechanisms and funding sources to meet them	On-going	LTMS agencies	Within existing funding levels	Completed

Notes:
1 USACE, USEPA, BCDC, SFBRWQCB, and State Water Quality Control Board
2 USACE, USEPA, BCDC, and SFBRWQCB
3 Funding needs undetermined for non-LTMS agencies.
4 SLC funding needs undetermined.
5 This note indicates specific date yet to be determined.
6 USACE, USEPA, BCDC, SFBRWQCB, and SLC
7 This would be a single new staff position at one of the LTMS agencies.