



LONG TERM MANAGEMENT STRATEGY

Dredged Material Management Office (DMMO) Report of Dredging and Placement of Dredged Material in San Francisco Bay in 2011



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I. Introduction

Since 1996, the Dredged Material Management Office (DMMO) has been promoting economically and environmentally sound management of navigation by reviewing and making recommendations on dredging and dredged material placement projects in the San Francisco Bay region. Each year, the DMMO compiles and analyzes data on these projects, including sediment quality and compliance with environmental windows, and provides this information to the public. In addition, DMMO data are used to track success in meeting the placement volume targets set forth in the Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS) Program for individual aquatic placement sites and the San Francisco Bay region as a whole.

II. Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region Program Description

In 1990, due to concerns regarding mounding of dredged material at the main placement site, near Alcatraz Island, and potential impacts from dredging and dredged material placement to water quality, wildlife, and uses of the Bay, the San Francisco Bay Conservation and Development Commission (BCDC), the San Francisco Bay Regional Water Quality Control Board (RWQCB), the San Francisco District of the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (EPA) and the State Lands Commission (SLC), created the LTMS program. The LTMS has four main goals:

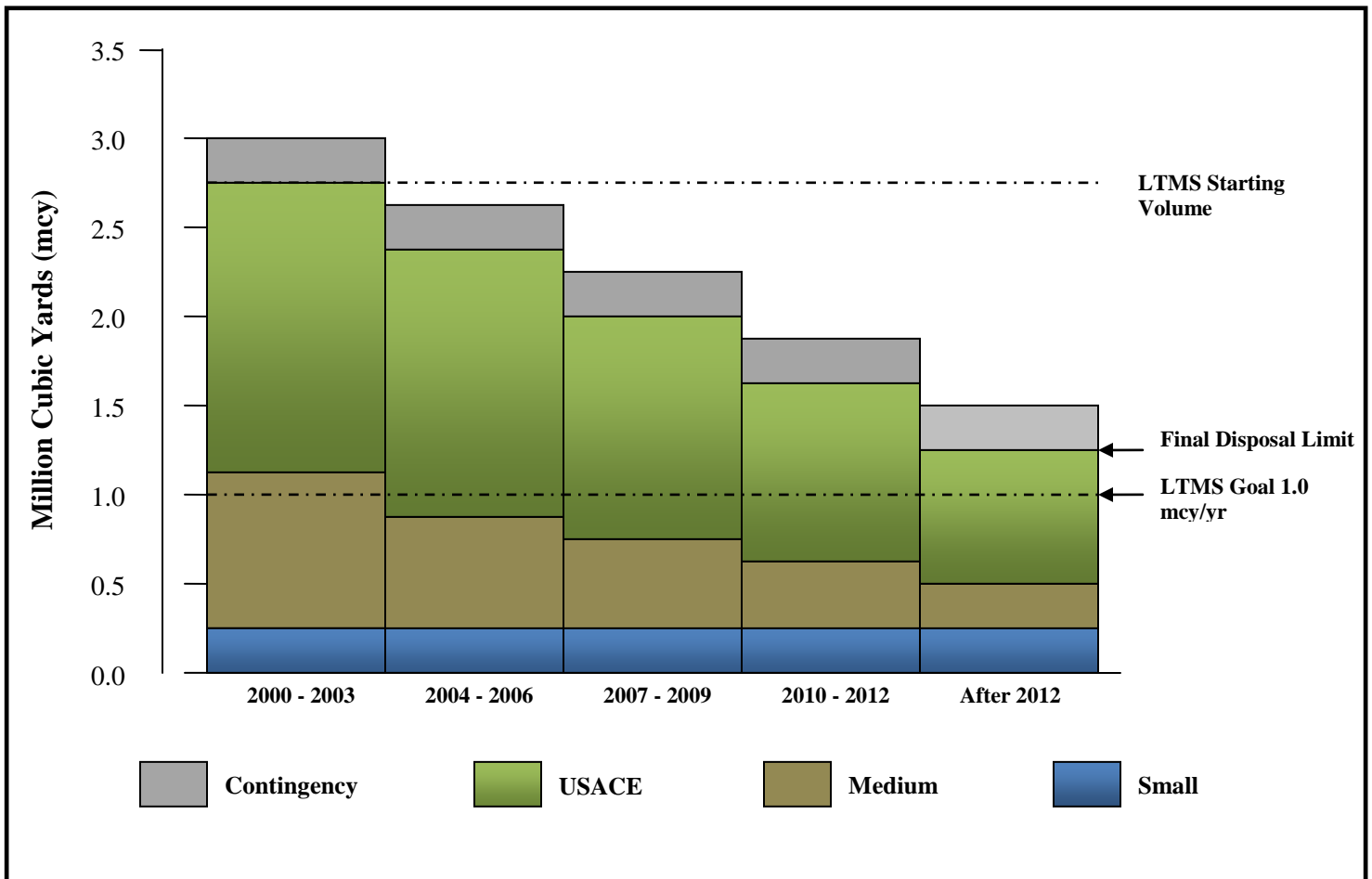
- In an economically and environmentally sound manner, maintain those channels necessary for navigation in the San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material placement in the most environmentally sound manner;
- Maximize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

During the 1990's, the LTMS agencies analyzed the potential environmental impacts of dredging and disposal of dredged material from federal navigation channels, ports, refineries, marinas and privately owned docks; conducted demonstration projects; designated a new San Francisco Deep Ocean Disposal Site (SF-DODS); and proposed an LTMS Management Plan. In 2000, the LTMS agencies adopted the LTMS Management Plan to reduce in-Bay placement of dredged material and to maximize the beneficial reuse of dredged material. Beneficial reuse includes constructing wetland restoration projects in areas that had been historically diked-off from the Bay and subsided, such as the Hamilton and Montezuma Wetland Restoration Projects; levee repair in areas such as the Delta; and use as construction fill where appropriate.

III. LTMS Transition

The 2001 LTMS Management Plan established a 12-year “glide path” for achieving the overall goal of reducing in-Bay disposal to approximately 1.25 million cubic yards (mcy) per year. Every three years, annual in-Bay disposal volume targets are reduced by approximately 387,500 cubic yards (cy) in order to meet this goal (Figure 1). If the average annual disposal volume for any three-year period exceeds the target, the agencies may impose mandatory volume allocations for individual dredging projects to ensure that the annual disposal limits will be met in the future. The intent of the LTMS program, in cooperation with the dredging community, is to develop sufficient beneficial reuse opportunities to enable the region to “beat” the disposal targets for each period and avoid the imposition of allocations. The LTMS Management Plan set a goal of achieving a minimum of 40 percent beneficial reuse and a maximum of 20 percent in-Bay disposal, with the remainder of the material going to the ocean. In order to ensure the effectiveness of the program in meeting its goals, a programmatic review occurs every three years. In addition to the three-year programmatic review, the DMMO conducts a six-year review involving the consideration of policy amendments, if necessary.

Figure 1. LTMS In-Bay Disposal Transition Limits



During the previous “step-down” period from 2007 to 2009, the overall in-Bay disposal volume limit of approximately 2.03 mcy was not exceeded in any year. In 2007, 2008 and 2009, approximately 1.25, 1.51, and 1.1 million cubic yards, respectively, of sediment dredged from the LTMS program area was disposed at the four in-Bay disposal sites meeting the annual volume limits for this time period. 2010 marked the beginning of the current “step-down” period. The in-Bay disposal volume limit is 1.64 mcy per year for 2010 through 2012. After 2012 the in-Bay disposal volume limit drops down to 1.25 mcy.

IV. Dredged Material Management Office (DMMO)

The DMMO was 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 help staff the DMMO. Also participating are representatives of the California Department of Fish and Game (DFG), the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries or NMFS), and the U.S. Fish and Wildlife Service (FWS), who provide expertise and technical advice on potential biological impacts of proposed projects. The DMMO has five main tasks:

- Review sediment quality sampling and analysis plans;
- Analyze the results of sediment quality tests;
- Make suitability determinations for disposal;
- Review permit applications for dredging projects proposed for disposal in San Francisco Bay, the SF-DODS, and beneficial reuse sites; and
- Maintain current sediment contaminant testing protocols and provide testing guidance for dredging applicants and consultants;

Applicants use a consolidated DMMO permit application for dredging projects, and the agencies jointly review the applications and sediment data at public bi-weekly meetings before issuing their respective permits and authorizations.

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.

V. 2011 Dredging Projects

In San Francisco Bay, the majority of the approved dredging projects are considered maintenance projects because they are dredged to maintain the facilities’ design depth and the dredging area footprint. New-work projects either deepen an area that was previously maintained at a shallower depth or are areas that are dredged for the first time (including expansion of a previously dredged area). In addition, some projects have not been maintained for such a long period of time that they are considered new-work projects due to potential consolidation of the sediments in that area. In 2011, there was a total of 45 maintenance dredging projects and no new work dredging projects. Appendix 1 summarizes the volume dredged and the disposal location for all of the dredging projects that occurred in 2011. To understand other beneficial reuse projects completed by USACE in the region but not within the LTMS boundary, Appendix 1 includes volumes for the San Francisco Main Ship Channel (MSC). However, because the MSC is not located within the LTMS program area, it is not included in the evaluation of progress toward meeting the LTMS goals.

In 2011, approximately 3.3 million cy of sediment, based on in-situ volumes, was dredged in San Francisco Bay, all of which was material from maintenance dredging projects. Table 1 shows that approximately 50.7% of the material dredged within San Francisco Bay was disposed at the in-Bay disposal sites, 19.6% at the deep ocean disposal site, and 29.7% at beneficial reuse or upland sites. The volume of material going to in-Bay disposal sites in 2011 (50.9%) was above the LTMS target of 40% in-Bay disposal. The 1,661,074 cy that was placed in-Bay was also slightly above the volumetric target of 1.64 mcy in-Bay disposal. The target volume percentages are based on a 3-year average over the LTMS step-down period. The current step-down period is 2010-2012, so this report covers only the second year of the 3-year step-down period. Each additional year will be evaluated to determine whether the program is on track to meet the goals, and approved disposal volumes will be adjusted accordingly.

The percentage of in-Bay disposal was higher in 2011 primarily because the Port of Oakland Deepening Project, which beneficially reused the majority of its dredged material, was completed in 2010. The Hamilton Restoration Project was at capacity in 2011, except for the USACE projects (i.e. Port of Oakland Inner and Outer Harbor and Richmond Inner Harbor). Additional beneficial reuse sites were either not available or did not have an offloading equipment in place. Therefore, beneficial reuse was limited in 2011. One USACE dredging project, Richmond Inner and Outer Harbor, involved placement of material at the Montezuma Wetlands Restoration Project in 2011 (50,021 cy).

Table 1: 2011 Disposal by Location for All Dredging Projects within the LTMS Program

Placement Environment	Volume (cubic yards)
Reuse/Upland	971,368
Deep Ocean Disposal Site	641,821
In-Bay Disposal Sites	1,661,074
TOTAL	3,274,263

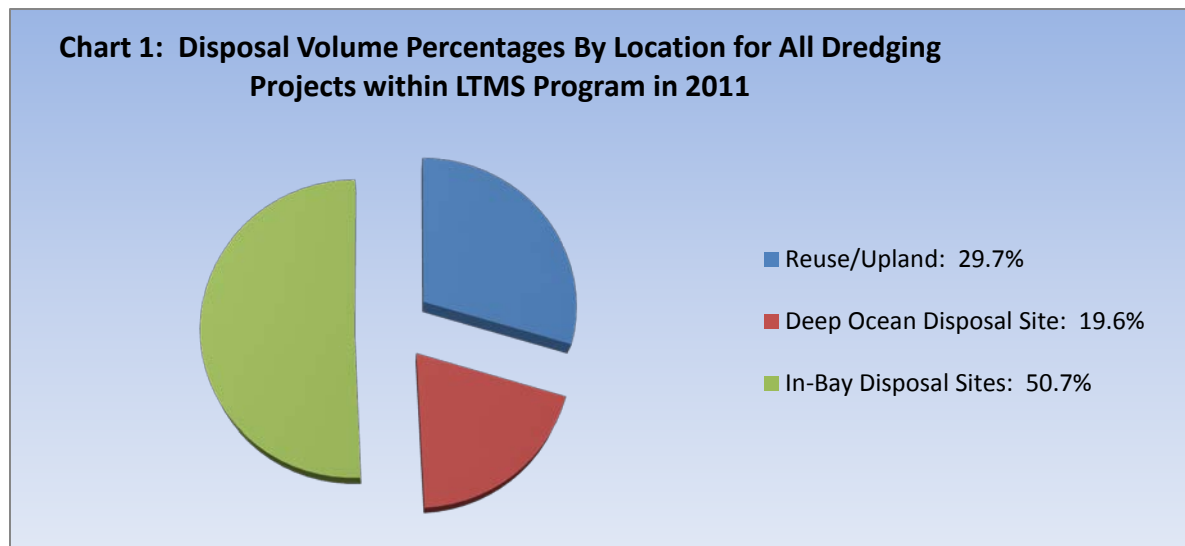


Table 2 shows the volume breakdown for just the LTMS maintenance dredging projects completed in 2011. (Note: Because there were no new-work projects, the maintenance dredging project disposal volumes are the same as the totals in Table 1.) Therefore, without the new-

work projects, approximately 50.7% of the material was disposed of at the in-Bay disposal sites, 19.6% at the deep ocean disposal site and 29.7% at beneficial reuse or upland sites.

Table 2: 2011 Disposal for Maintenance Dredging Projects within LTMS Program

Placement Environment	Volume (cubic yards)
Reuse/Upland	971,368 (29.7%)
Deep Ocean Disposal Site	641,821 (19.6%)
In-Bay Disposal Sites	1,661,074 (50.7%)
TOTAL	3,274,263

In 2011, the DMMO continued to hold public meetings twice a month and reviewed 38 dredging projects throughout the year. Of these projects, 29 conducted dredging in 2011 and the remaining projects may move forward with dredging in the future. Typically, the DMMO reviews requests for exemption from testing (Tier 1 Exemptions), Sampling and Analysis Plans (SAPs), and Sampling Analysis Results Reports (SARs). The following link has information and guidance on preparation and submittal of SAPs, SARs, and Tier 1 Requests in addition to other DMMO guidance materials: <http://www.spn.usace.army.mil/conops/guidance.html>. A “Tier I” decision by the DMMO is a suitability determination based on the review of existing physical, chemical, and biological data from the site where dredging is proposed. SAPs provide methods and protocols for conducting new sampling and testing (i.e. physical, chemical, and biological analyses) of the sediment proposed to be dredged. After the DMMO has approved a SAP, sampling and analyses can move forward. A SAR summarizes the test results and must be reviewed for placement suitability by the DMMO prior to dredging.

Specifically, in 2011, the DMMO members reviewed 8 Tier I requests, 17 SAPs, and 13 SARs. Of the 13 SARs that the DMMO reviewed, 2 projects were determined to have some sediment that was not suitable for unconfined aquatic disposal (NUAD) in the Bay. Of the projects with material not suitable for unconfined aquatic disposal (NUAD), the unsuitable material was less than 10% of the total volume to be dredged and was either left in place or placed at a suitable upland or ocean disposal site.

VI. In-Bay Disposal (Aquatic)

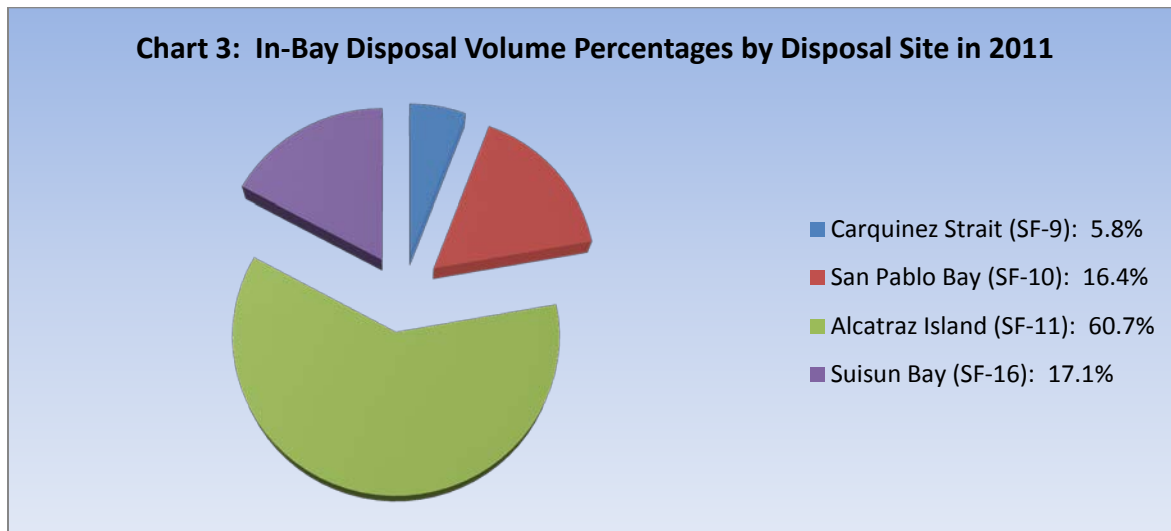
Currently, there are four open-water dredged material disposal sites in San Francisco Bay: the Alcatraz Island Disposal Site (SF-11); the San Pablo Bay Disposal Site (SF-10); the Carquinez Strait Disposal Site (SF-9); and the Suisun Bay Disposal Site (SF-16), which is only available to the USACE. There are two designated ocean disposal sites: San Francisco Deep Ocean Disposal Site (SF-DODS), which is approximately 55 nautical miles out to sea; and the San Francisco Bar Channel Disposal Site (SF-8), which accepts only sandy material. Appendix 2 summarizes the volumes placed at each disposal site in 2011.

Reducing aquatic disposal in favor of beneficially reusing the sediment over time is the main focus of the LTMS program. In 2011, the total volume of sediment disposed of in the Bay at the four disposal sites was 1,661,074, cy. This equates to approximately 50.9% of the total dredging being disposed at the in-Bay disposal sites. (Table 3 summarizes the in-Bay disposal volumes in 2011.) Of this total volume, 1,377,164 cy of sediment was placed at the three multi-user dispersive disposal sites: Carquinez Strait, San Pablo Bay and Alcatraz, with 1,007,993 cy placed at the Alcatraz Island Disposal Site alone. Throughout the dredging season, the monthly

volume limits for the individual in-Bay disposal sites were not exceeded. Appendix 2 summarizes the 2011 monthly disposal at the in-Bay sites.

Table 3: 2011 In-Bay Disposal Volumes by Disposal Site

Disposal Location	Volume (cubic yards)
Carquinez Strait (SF-9)	95,712
San Pablo Bay (SF-10)	273,459
Alcatraz Island (SF-11)	1,007,993
Suisun Bay (SF-16)	283,910
TOTAL	1,661,074



VII. Ocean Disposal (Aquatic)

In 1995, the EPA developed and designated SF-DODS as an alternative to in-Bay disposal as an alternative when beneficial reuse sites are not available or an option. The annual disposal limit for this site is 4.8 mcy. Since the designation, the USACE and many private dredgers have used SF-DODS. The USACE and the EPA monitor SF-DODS annually and no deleterious effects of the dredged sediment disposal have been found.

In 2011, 641,821 cy of sediment were placed at SF-DODS, which is well below the annual volume limit. This volume is approximately twice the volume placed at SF-DODS in 2010 (270,680 cy). The projects that placed material at SD-DODS in 2011 were the USACE Richmond Inner Harbor, the Marina Bay Yacht Harbor, the BAE Systems, the Alameda Point Navigation Channel, and the Port of San Francisco's Berths 27 and 35 maintenance dredging projects. Of the projects that took material to SF-DODS for disposal in 2011, four were required to do so due to sediment contaminant concentrations that prevented them from placing material at other disposal sites. These four projects were Marina Bay Yacht Harbor, BAE Systems, and the Port of San Francisco Berth 27 and Berth 35. Appendix 2 summarizes the monthly disposal volumes at SF-DODS.

VIII. Beneficial Reuse and Upland Placement in 2011

In 2011, roughly 971,368 cy, or 29.7% of the total 3.27 mcy of sediment dredged was beneficially reused or taken to upland placement sites. The following is a summary list of upland placement and beneficial reuse activity in 2011.

- A. **Hamilton Wetland Restoration Project (HWRP).** The HWRP will restore almost 1000 acres of tidal and seasonal wetlands at the former Hamilton Army Airfield in Marin County using 10.6 mcy of dredged material. Approximately 6.6 mcy of dredged material was placed at the HWRP via an offloader system located in San Pablo Bay in the last four years. In 2011, HWRP received approximately 801,976 cy of dredged material. The majority of the sediment, 789,520 cy, originated from the federal channel in Oakland. Due to the availability of the offloader, only one private project delivered a total of 12,456 cy of dredged material to the HWRP.
- B. **Carneros River Ranch.** Carneros River Ranch is a privately owned and operated agricultural site located on the north side of Highway 37 from the Port Sonoma Marina near the mouth of the Petaluma River. The property owner, Berg Holdings, has applied for a permit to construct an offloader facility at Port Sonoma, which will deliver dredged material to the Carneros River Ranch site. In 2011, 8,636 cy from Port Sonoma Marina were placed at the site.
- C. **Winter Island Levee.** Winter Island is located to the west of the confluence of the Sacramento and San Joaquin Rivers. Previously dredged sediment could be placed both on levees and the upland area the Island. Severe subsidence and only partial completion of repairs to a 2004 breach have caused sections of the levee to be in direct contact with aquatic habitat and therefore only sediment that meets the Water Board's wetland surface/cover quality chemical screening thresholds will be approved for levee maintenance (i.e. beneficial reuse). In 2011, 35,262 cy of dredged sediment met this criteria and were placed at designated upland disposal location
- D. **SF-8 Bar Channel Site, Eastern Portion.** The eastern portion of SF-8, which is located approximately five miles outside the Bay, past the Golden Gate Bridge, is an inland disposal site. Placement of clean sand within the easternmost portion of SF-8 is considered beneficial reuse because it is part of the littoral transport system and nourishes Ocean Beach and its environs. These projects must have 80% or greater sandy sediment at their project site to be eligible for this site. In 2011, Conoco-Philips Rodeo Terminal Project placed 6,969 cy of sandy material at this site.
- E. **Montezuma Wetland Restoration Project (MWRP).** MWRP is a privately owned and operated wetland restoration project located at the eastern edge of the Suisun Marsh that will restore nearly 2,000 acres of tidal and seasonal wetlands and can use both "cover quality" and "foundation quality" sediment. Since opening in December 2003, Montezuma has received approximately 3.0 mcy of dredged material. With the offloading facility in place, MWRP is operational and has a total capacity of 14,000,000 cy of dredged material.
- F. **Castro Cove Area of Concern:** The Castro Cove Area of Concern is a Water Board required remediation site located near the Chevron Refinery in Richmond. The 20-acre site has been using clean dredged sediment for capping underlying sediments contaminated with PCBs and restoring the shoreline bathymetry. A total of approximately 53,780 cy of dredged material from Chevron Rod and Gun Club and the Point San Pablo Yacht Harbor projects were placed at the Castro Cove Area of Concern.

- G. **San Rafael Rock Quarry:** The San Rafael Rock Quarry is located in San Rafael and provides aggregate to the construction industry. The San Francisco Marina West Basin project placed 13,225 cy of dredged sand at this site.
- H. **Upland Placement or Landfill Disposal.** In 2011, the Levin Richmond Marine Terminal maintenance dredging project involved placement of 1,500 cubic yards of NUAD dredged material at their upland rehandling area where it was dried and then taken to an appropriate upland landfill.
- I. **Ocean Beach Pilot Project Placement Site (SF-17).** In an effort to reduce erosion at the southern end of Ocean Beach, at San Francisco's Sloat Street stormwater outfall, the USACE has been placing sand dredged from the Main Ship Channel directly offshore of Ocean Beach instead of at SF-8. In June 2011, the USACE placed 339,534 cy of sand at the Pilot Project site. While the LTMS agencies support this project, it is not currently part of the LTMS program because the S.F. Bar Channel is outside the LTMS Program boundary, and therefore is not included in the volume assessment of the LTMS goals.

IX. Additional Beneficial Reuse and Upland Placement Sites

In 2011 one permitted beneficial reuse site in the Bay region was not utilized, primarily due to the lack of offloading equipment on site:

- A. **Cullinan Ranch.** No dredged material was placed at Cullinan Ranch in 2011 due to site preparation and lack of offloading equipment. Cullinan Ranch is State-owned and managed by the FWS and the DFG. It is located adjacent to San Pablo Bay just west of the Highway 37 Bridge over the Napa River. Approximately 1,500 acres of former hayfield farm lands are proposed to be restored to tidal marsh. Up to 400,000 cy of dredged material can be reused as part of this project. The restoration project is permitted, and should have an offloader in place making it available as a beneficial reuse site in 2012.
- B. **Bair Island Restoration Project (BIRP).** This restoration site is no longer taking dredged sediment.

X. Alternatives Analysis

Dredging projects in the Bay are divided into three types of dredging projects: small dredgers, medium dredgers and large dredgers. According to the federal and state Clean Water Act and the San Francisco Bay Plan policies on dredging, an alternatives analysis for placement of dredged material must be completed.

In 2004, due to the common characteristics of most small dredger projects, the LTMS agencies developed a Small Dredger Programmatic Alternative Analysis (SDPAA) for navigational maintenance dredging projects that dredge to a design depth that is no more than 12 feet below mean lower low water (MLLW) and dredge an average of 50,000 cy or less per year. This analysis was developed in recognition of this class of projects limited resources both in the ability to develop individual alternative analysis and ability to use beneficial reuse site due to lack of resources and the need to use small dredging equipment that is not typically capable of ocean disposal or beneficial reuse. In 2011, 15 small dredger projects dredged approximately 335,337 cy of material and placed the dredged material primarily at the Carquinez (SF-9), San Pablo Bay (SF-10), and the Alcatraz Placement Site (SF-11). In 2011, some small dredgers and their contractors were able to acquire equipment allowing them to transport material to SF-DODS for disposal. Due in part to this new ability to take material to SF-DODS, approximately

a third (34%) of the material dredged by small dredgers (114,908 cy) was placed either at SF-DODS or at beneficial reuse and upland dredged material placement sites.

Medium and large dredgers are required to conduct a disposal site alternatives analysis or an Integrated Alternatives Analysis (IAA) for placement site options associated with the proposed project. An alternatives analysis evaluates dredging placement options for a single episode of dredging and an IAA evaluates dredge material placement options for multi-site and/or multi-episode dredging projects, generally over a three-year period, providing flexibility in meeting the LTMS goals. In 2011, nine medium-sized dredging projects, such as those completed by refineries and ports, conducted alternatives analyses or made use of an IAA. These nine medium-sized projects dredged 816,466 cy and placed 45,801 cy of the dredged material (5.6%) at upland or reuse sites, and approximately 243,600 cy (29.8%) at SF-DODS, with the remainder (527,065 cy or 64.6%) in Bay.

The USACE has long been the largest dredger in San Francisco Bay, both in volume and acres dredged annually. As such, the USACE's maintenance dredging program is a key component determining the overall success of the LTMS program. The USACE dredges the San Francisco Main Ship Channel, New York Slough, Suisun Bay Channel, Pinole Shoal Channel, Richmond Outer and Inner Harbor Channels, Oakland Outer and Inner Harbor Channels, and Redwood City Channel, annually. In addition, there are several smaller projects such as San Rafael Canal, the Petaluma channels, and the Jack T. Maltester Channel in San Leandro that are dredged on a periodic basis. In 2011, the USACE maintenance dredged a total of 2,122,460 cy from Pinole Shoal Channel, New York Slough, San Rafael Channel, Port of Redwood City Channel, Richmond Inner and Outer Harbor Channels, Port of Oakland Inner and Outer Harbor Channels, and Suisun Bay Channel. The USACE beneficially reused 839,540 cy of this sediment (39.6%) at upland or reuse sites (Hamilton Wetland Restoration Site, and Winter Island), and disposed of 1,011,220 cy (47.6%) at in-Bay disposal sites. The remaining 271,700 cy (12.8%) of dredged material from USACE maintenance projects was taken to SF-DODS. While these percentages are not consistent with the three year goals, it is important to remember that the target volumes are an average of each three year period. At the end of 2012, the volumes from 2010 through 2012 will be averaged to determine if the project is still within the target disposal and beneficial reuse volumes.

XI. 2011 Environmental Work Windows

In 1999, NOAA Fisheries and FWS issued programmatic biological opinions that established environmental work windows for dredging projects and disposal of dredged sediment in the Bay to protect species that are threatened, endangered or are species of special concern. The DFG issued a concurrence letter for the LTMS Management Plan. Since 1999, the LTMS agencies have been working with the dredging community to complete their dredging projects within the established work windows. When necessary, the LTMS agencies initiate informal consultations with NOAA Fisheries, FWS and DFG regarding permission to work outside of the environmental work windows. The requests to dredge outside of the work windows are normally limited to two weeks or less.

Each year, best efforts are made to complete the majority of the projects within the work windows. In 2011, thirteen (13) projects, 43 percent of the dredging projects, were dredged partly or completely outside of the environmental work windows. The volume dredged outside of the environmental work windows was 1,089,111 cy or approximately 33% of the total dredging volume completed outside the work windows in 2010. The USACE was responsible for 962,932 cy, or approximately 88% of that volume primarily due to contracting and funding delays that resulted in a delay in start times after the work windows for four of the projects: Oakland Inner and Outer Harbor, Port of Redwood City, Richmond Inner Harbor, and the San Rafael Canal.

For comparison, in 2010, twelve projects out of 31, dredged 676,617 cy partially or completely outside of the environmental work windows, which also amounted to 33% of the total volume dredged for that year. (See Appendix 2 for the Corps' monthly dredging volumes).

As has been the agency practice since 2009, the DMMO will not grant episode approval for dredging projects that are proposed late in the dredging year unless the project sponsors can clearly show that dredging would be completed within the remaining environmental work windows and it is not feasible to suspend and restart the dredging project the next year.

XII. Related Issues and 2011 Program Update

- A. **NOAA Fisheries Programmatic Biological Opinion.** NOAA Fisheries is in the process of updating the NOAA Fisheries Programmatic Biological Opinion for LTMS maintenance dredging projects in San Francisco Bay. The North American green sturgeon was federally listed as threatened on April 2, 2006, critical habitat was designated on October 9, 2009, and the final 4(d) rule was released on June 2, 2010. The green sturgeon will also be incorporated into the revised Biological Opinion. NOAA Fisheries anticipates that an updated Programmatic Biological Opinion for maintenance dredging in San Francisco Bay may be released sometime in 2012.
- B. **Essential Fish Habitat.** On June 9, 2011 the USACE and EPA issued the final document entitled, "*Agreement on Programmatic EFH Conservation Measures for Maintenance Dredging Conducted Under the LTMS Program (Tracking Number 2009/06769)*". The LTMS agencies have implemented the EFH agreement, including its provisions related to residual contaminants, bioaccumulation testing, and minimizing potential adverse effects to eelgrass and additional information in the DMMO annual report. The LTMS agencies also began to compile information on mercury bioaccumulation test results, with the intent to amend the EFH agreement early in 2012 to eliminate the requirement for bioaccumulation testing for mercury. The complete agreement can be found on the DMMO website at: <http://www.spn.usace.army.mil/conops/guidance.html>.
- C. **Longfin Smelt.** In 2009, the California Department of Fish and Game (DFG) Commission listed longfin smelt as a threatened species under the California Endangered Species Act (CESA). The DFG will continue to require incidental take permits for projects that "take" longfin smelt, particularly for hydraulic dredging projects. At this time, all dredging project sponsors must submit an assessment of the potential for their project to take longfin smelt to the Regional Water Quality Control Board, BCDC and the DFG. To aid in this process, the LTMS agencies developed a reference document, titled *Longfin Smelt: Information for Impact Assessments for Non-Federal Dredgers*. The document is available on the LTMS website at the following address: <http://www.spn.usace.army.mil/ltms/index.html>.
- D. **DMMO Database.** LTMS funds are being used to develop a web-based data management system to store, retrieve, query and update data and information in support of the DMMO. The web-based database will further enhance the DMMO's goal of improving efficiency and coordination between the DMMO agencies and to foster a comprehensive and consolidated approach to dredged material management issues. The DMMO has created a domain name in order to access the database online, and is nearing completion of the database in 2012. The next steps for the DMMO Database include standardizing SAPs and test result reports format from permittees, applicants, and laboratories for ease of inputting into the database.

- E. **Management of the Alcatraz Island Disposal Site (SF-11).** In the past, there have been issues with mounding at the Alcatraz disposal site creating the potential for navigational hazards. Because the USACE is the largest dredger in the Bay Area and is responsible for maintaining safe navigation, they are also responsible for monitoring and specifying the appropriate disposal areas within SF-11. During 2011, approximately 1,007,993 cy (31% of total dredging volume) of dredged material were placed at SF-11 but monthly monitoring did not detect mounding at the site. As shown in Appendix 2, the heaviest use of SF-11 occurred during the months of August, September, October and November in 2011.

XIII. Conclusion

After review of the dredging and dredged material disposal and reuse data for 2011, there appear to be both positive and negative trends regarding meeting the LTMS targets for dredged material placement. In 2011, the LTMS program was still on track and the in-Bay placement of dredged material volumes are well below the transition period annual volume limit. However, the long-term LTMS goal of placing a 40% of sediment at beneficial reuse and upland sites and no more than 20% at the in-Bay disposal sites, with the remainder going to the ocean disposal site, were not yet met. Approximately 50.9% of the total dredged material was placed at in-Bay disposal sites, which is above the LTMS goal of 20%. Approximately 19.6% of the total dredged material was placed at the ocean disposal site (SF-DODS) and approximately 29.5% of the dredged material was placed at beneficial reuse or upland sites, below the goal of 40%.

The main reason the placement percentages did not meet the LTMS program goals is due to the fact that the Hamilton Wetland Restoration Project was closed to non-USACE dredging projects in 2011, with the exception of a small quantity from the Valero maintenance dredging project. The relatively large amount of material placed at the Alcatraz Disposal Site (SF-11) in 2011 (1,007,993 cy) was twice the volume placed at Alcatraz in 2010. Also, approximately 1,268,658 cy more material was dredged in 2011 than in 2010. This increase is mostly attributed to the larger amount of material dredged by the USACE in 2011- 2,122,460 cy compared to 719,985 cy in 2010.

It is important to remember that the transition period step-downs for reducing in-Bay placement and meeting the long-term LTMS goal are averaged over a three-year period. 2011 was the second year in the 2010-2012 step-down period and will be averaged over the 2010 and 2012 dredging seasons to determine if the LTMS goals have been met. It is important that there be beneficial reuse sites available to small, medium and large dredgers in order to meet the LTMS goals.

New beneficial reuse sites are becoming available and others have been underutilized, such as Montezuma Wetland Restoration Project. The Montezuma Wetland Restoration Project now has an offloading facility that is fully operational and can accept dredged material on a regular basis. The new sites, and the use of Montezuma, may partially compensate for the closure of HWRP as a beneficial reuse site. With the continuation of existing partnerships and exploration of new ones, the LTMS program can continue to successfully manage dredging and the placement of dredged material in an increasingly environmentally and economically sound and sustainable manner. This success will require the continuation of the collaborative efforts and spirit that has supported the success of the LTMS program since its inception.