

DREDGED MATERIAL MANAGEMENT OFFICE



**DREDGED MATERIAL
MANAGEMENT OFFICE
(DMMO)**

ANNUAL REPORT

January 1, 2002 through December 31, 2002

May 2003

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Agency, Region IX, WTR-8**
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(or hit the DMMO link on the spn.usace.army.mil homepage)

I. INTRODUCTION

The multi-agency Dredged Material Management Office (DMMO) was established to foster a comprehensive and consolidated approach to handling dredged material management issues to reduce redundancy and delays in the processing of dredging permit applications, while ensuring environmental protection. The DMMO, in part, grew out of the Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (LTMS), which was started in 1990.

In 1995, the LTMS agencies formed a pilot DMMO, under existing authorities and budgets. The DMMO member agencies are the US Environmental Protection Agency, Region IX (EPA), the US Army Corps of Engineers, San Francisco District (USACE), the San Francisco Bay Regional Water Quality Control Board (RWQCB), the San Francisco Bay Conservation and Development Commission (BCDC), and the California State Lands Commission (SLC). The USACE acts as the “host” of the DMMO. The California Department of Fish and Game (CDFG) and NOAA Fisheries actively participate in the DMMO as commenting resource agencies.

The roles, responsibilities and jurisdictions of the DMMO agencies differ, depending primarily on the proposed dredged material disposal or reuse site. As a result, member agencies may play only an advisory role in certain aspects of the permitting process. Decisions made by the DMMO do not in any way supersede the primary roles of the permitting agencies, which remain free to accept or reject recommendations, including those of the DMMO staff. In practice, however, the discussions at the DMMO meetings help inform the permitting agencies of specific concerns and issues of the member agencies, often before finalization of project documents. This encourages and facilitates necessary project modifications at an early stage in project planning when such changes are more easily and economically accomplished.

The DMMO facilitates the processing of dredging permit applications within existing laws, regulations and policies. It was specifically designed to provide a mechanism for consistent review of permit applications through coordinated efforts by DMMO member agencies. It also provides a mechanism to allow the involvement and participation of permit applicants and interested parties during the application process. No new regulatory statutes were initiated in the formation of the pilot DMMO. All applicable regulatory authority and processes of the member agencies remain in full force and effect. The DMMO meetings are typically held twice monthly at the USACE offices in San Francisco and are open to the public.

The USACE posts meeting schedules and agendas on the DMMO Web site and sends electronic copies of these items to members of all pertinent resource agencies (e.g., CDFG, NOAA Fisheries, and the U.S. Fish and Wildlife Service).

The geographic area of the DMMO generally includes the San Francisco Bay Estuary up to Sherman Island, its major tributaries to the point where navigation is no longer feasible, upland areas surrounding the estuary, and the ocean disposal site designated by the EPA (the San Francisco Deep Ocean Disposal Site, or SF-DODS)¹.

The DMMO has been meeting since 1996. Procedures for its operation are documented in a Memorandum of Understanding signed by the DMMO agencies and in formal General Operating Principles (available on the DMMO Web site). These procedures include publication of annual progress reports and annual public meetings. This report covers the period from January 1, 2002 through December 31, 2002. The annual meeting to discuss activities of the DMMO during 2002 is scheduled for May 9, 2003.

II. ACCOMPLISHMENTS

During 2002, the DMMO continued to accomplish the goals and objectives set forth in the 1995 General Operating Principles. The DMMO continued review of dredging project proposals, preparation of guidance documents, maintained the DMMO Web site, took part in a number of working groups relevant to the DMMO efforts, and continued staff education activities. These efforts are described below.

A. PROJECT REVIEW

The DMMO discussed about 50 projects during the year (see Appendix A for details). Of those, the DMMO made final recommendations on 38 projects proposing a total of approximately 3.7 million cubic yards of dredging. Table 1 provides summary of the projects for which the DMMO completed review in calendar year 2002.

¹ Please note that the jurisdictions of the member agencies differ. The geographic area defined here represents an inclusive description of these jurisdictions.

Table 1. Project volumes proposed for dredging for which DMMO made final recommendations during calendar year 2002.

	Volume proposed for disposal	
	<i>cubic yards</i>	<i>% of total volume</i>
By Proposed Disposal Location		
In-Bay (SF-9, SF-10, SF-11 and SF-16)	2,289,349	62
Beneficial Reuse	452,770	16
Ocean (SF-8 and SF-DODS)	586,543	12
Other (Tier I not approved – testing required)	260,000	7
Total	3,680,771	
By Suitability Determination		
Suitable for unconfined aquatic disposal	3,068,662	90
Unsuitable for unconfined aquatic disposal	92,109	3
Other (Tier I not approved – needs test)	260,000	7

Over half of the material estimated for reviewed projects was proposed for in-Bay disposal. Less than one-quarter of the material was proposed for ocean disposal and represents two USACE projects: maintenance dredging of Oakland Harbor and maintenance dredging of Richmond Inner Harbor. The remaining material, 16%, was proposed for beneficial reuse at various locations, including drying ponds (with later reuse as construction fill or for levee maintenance), landfills (for daily cover) and Winter Island (for levee maintenance). This pattern is similar to that for projects reviewed during 2001.

In 2002, the proportion of material recommended as unsuitable for unconfined aquatic disposal was similar to the average for previous years. This year, 3% of material fell into this category; historically this value has been below 5%. The unsuitable material was all from maintenance dredging projects, most of it from projects (the Ports of San Francisco and Oakland and Glen Cove Marina) that proponents decided it was more expeditious to dispose of the material out of the Bay rather than undertake additional testing that may have modified the suitability recommendations for in-Bay disposal. The DMMO did not approve Tier I determinations for the City of Emeryville Marina or Greenbrae Marina. Material from these projects will require testing before DMMO can make suitability determinations.

The volumes in Table 1 are proposed only; the actual amounts and timing of dredging will depend on several factors. The DMMO process is just a portion of the permitting process for dredging proponents. After obtaining a suitability recommendation on sediment quality from the DMMO, project proponents must obtain authorizations from the appropriate regulatory agencies, secure funding, and arrange for a dredging contractor to perform the work. These additional steps can take weeks to years. Therefore, the numbers disclosed in this report cannot be used to predict, for example, in-Bay disposal in 2003. For some of the projects in Table 1, dredging was completed in 2002. For other projects, dredging may not occur for some time.

B. DREDGING AND DISPOSAL VOLUMES FOR 2002

The USACE tracks actual dredging and disposal volumes, and provides quarterly reports of these volumes to the other DMMO agencies. The complete annual report of disposal volumes is available from USACE. Table 2 summarizes the actual dredging and disposal volumes for calendar year 2002 (Appendix B and Appendix C contain more detailed information). Approximately 3.7 million cubic yards of material were disposed during the year. Of this volume, 52% went to in-Bay disposal, 30% was disposed at the deep ocean disposal site (SF-DODS), and 18% was reused beneficially. The beneficial reuse numbers included the Port of Oakland’s Berths 55-58 deepening project; as part of this new work project, about 166,000 cubic yards of material were used to provide fill material for reconfiguration of the Port’s Middle Harbor area. Other new work included retrofit and construction projects on three bridges in the Bay area that, together, employed all three disposal options. The LTMS policies encouraging that alternatives to in-Bay disposal be found for new work and USACE projects appear to be succeeding in diverting material from in-Bay disposal. The total amount of in-Bay disposal in 2002 was below the LTMS target of 2.3 million cubic yards per year during the first transition phase.

Table 2. Dredged material disposal during calendar year 2002

Disposal Type	All Dredging		Maintenance Dredging		New Work	
	<i>cubic yards</i>	%	<i>cubic yards</i>	%	<i>Cubic yards</i>	%
In-Bay	1,887,555	52	1,875,795	60	11,760	2
Ocean	1,113,814	30	841,478	27	272,336	50
Beneficial reuse	649,803	18	389,439	13	260,364	48
Total	3,651,172		3,106,712		544,460	

C. FINALIZATION OF PERMANENT STATUS FOR THE DMMO

In 2002, the DMMO finally received permanent status and is no longer considered a “pilot” project. This minor modification has, nonetheless, fairly wide-reaching consequences. While most stakeholders were unaware of the DMMO’s status as a pilot, in fact, as a pilot project, the DMMO could have been disbanded at any time. As a permanent entity, however, project proponents and others can be assured that DMMO will continue indefinitely.

DMMO staff are working to update the implementing Memorandum of Understanding (MOU) to reflect this change. We expect that management will sign a new MOU documenting the change in status, as well as the expanding role of DMMO (e.g., as the initial point of contact for all dredging project, regardless of their proposed disposal/reuse location) in the LTMS sometime in calendar year 2003.

D. DMMO WEB SITE

The USACE initiated the DMMO Web site (www.spn.usace.army.mil/conops/dmimo.htm) in June 1998, and continues to maintain and update it. The Web site continues to provide access to:

- DMMO meeting schedules and agendas
- DMMO MOU and Operating Principles

- DMMO Annual Reports
- DMMO Newsletters
- Dredging Permit Consolidated Application Form and Instructions
- Local and federal guidance for sediment testing and dredged material management
- Links to the LTMS EIS/EIR and Management Plan
- Meeting schedules and agendas for LTMS public workshops and workgroup meetings
- Links to DMMO member agency Web sites

E. LTMS PARTICIPATION

DMMO members play an active role in developing, preparing for and participating in all the LTMS public workshops. Several of the DMMO staff have also been instrumental in establishing and fostering LTMS workgroups (see below for details). Some DMMO staff also participate in the LTMS program managers policy group and assist in preparing for and participation in LTMS Management Committee meetings.

DMMO staff were instrumental in arranging the January 2002 LTMS Public Workshop updating stakeholders on the status of the LTMS, particularly the implementation of the 40:40:20 strategy. Also discussed at the meeting were the LTMS workgroups, draft guidelines for cover/foundation material for wetland reuse, updates on planned reuse sites around the Bay, environmental windows, and coordination with CALFED, particularly regarding use of Bay dredged material for levee rehabilitation and restoration on delta islands.

Certain DMMO staff also have provided substantial input to the establishment of upland/wetland reuse sites, such as the Hamilton Army Air Field, Bel Marin Keys V, and Montezuma wetland restoration site, as well as ensuring continued capabilities at Winter Island and Sherman Island. DMMO staff have also been involved in the Mare Island Dredged Material Disposal Ponds EIS/EIR.

F. OTHER PROFESSIONAL INVOLVEMENT

Other local efforts some DMMO members were involved in during 2002 include:

- Participation in the Harbor Safety Committee
- Involvement in the Water Transit Authority meetings and review of various documents related to expanding ferry service in S.F. Bay
- Membership in the Marine Transportation Committee, including the Environmental Subcommittee
- Membership on the Regional Monitoring Program Technical Review Committee
- Involvement in the Delta Dredging Program, including review and comment on a number of drafts of program documents and input at Delta Dredging Program meetings
- Briefings for senior agency staff, including EPA HQ staff on DMMO and dredging and dredged material disposal in S.F. Bay
- Participation in CALFED Levee and Habitat Subcommittees, coordinating potential future beneficial reuse of dredged material at Delta islands.

G. 2002 ANNUAL MEETING

The DMMO held its 2002 Annual Meeting on March 28, 2002, where the 2001 Annual Report was provided and discussed. Presentations by the DMMO also included updates on SAP Guidance, Sediment Quality Guidelines, use of SFDODS and associated monitoring, development of an electronic, web-based application, and PCB congener analyses. DMMO members also discussed the decision-making process, Alternatives/Feasibility Analyses, and testing for different disposal environments with the attendees. Other pertinent topics included disposal site management (both in-Bay and SFDODS), disposal site volume limitations and working within the environmental windows. Much of the afternoon was spent discussing dredgers' projects and their relation to the environmental windows. We began the important and timely process of assisting dredgers, large and small, to coordinate their projects to make best use of available equipment, to initiate informal consultation with the resource agencies, and ensure that all projects can be dredged in an environmentally- and economically-sensitive fashion (see below for greater detail on accomplishments made in the environmental windows arena).

H. KNOCKDOWNS

DMMO members have come to realize the efficiency of the judicious use of "knockdowns" (i.e., operations wherein high spots are smoothed into deeper adjacent areas within the permitted dredging footprint). Knockdown events can provide project proponents with a viable solution to a full dredging episode, while ensuring safe navigation. In addition, knockdown operations are consistent with the LTMS goal of limiting in-Bay disposal, by reducing the number of dredging and disposal events that are necessary. As a result, DMMO has supported this practice, where appropriate. Projects that have used knockdown operations successfully during 2002 generally can identify several isolated high spots (sometimes referred to as "moguls") surrounded by deeper areas into which the material of the high spot can effectively be dragged through the use of a heavy beam, or sometimes, a clamshell. When a later full dredging operation is anticipated, this material is then characterized in the usual fashion and removed. This procedure is more efficient for the project proponents, while still ensuring that adequate information is provided in advance of disposal at a more distant location.

I. ENVIRONMENTAL WINDOWS WORKGROUP

In response to input at the DMMO 2002 Annual Meeting, the Environmental Windows Work Group was initiated formally as part of the LTMS to address concerns of the dredging community regarding the programmatic biological opinions for dredging and disposal in San Francisco Bay that were included in the LTMS Management Plan. The biological opinions from the NOAA Fisheries, the U.S. Fish and Wildlife Service and the agreement with the CDFG set forth dredging and disposal work windows for the Bay area to avoid impacts to endangered and threatened species and species of special concern. When a project cannot be scheduled to be completed within a work window, consultation with the appropriate resource agency is required as part of the permitting process.

The Environmental Work Window Work Group includes regulatory and resource agencies, including USACE, EPA, BCDC, NOAA Fisheries, U.S. Fish and Wildlife Services, and the CDFG, stakeholders, including small marinas, the Ports of San Francisco and Oakland, the Bay

Planning Coalition, the Dredging Action Committee, and members of the dredging industry. In 2002, this multi-stakeholder group developed a mission statement, prepared a draft work plan, held Short Term Solutions meetings to address the needs of dredging projects planned for 2002, and Long Term Solutions meetings to evaluate funding sources, scientific data gaps, technological and operational issues, and confounding factors.

During 2002, the Work Groups met approximately 18 times. Meetings continue on average, every six weeks. Dredging project proponents with upcoming projects, particularly ones that expect to have difficulty completing work within the environmental work windows, are encouraged to attend the Short Term Solutions meetings. Through the efforts of the various stakeholders, DMMO now has a comprehensive list of future dredging projects and has facilitated the completion of a number of projects outside of the work windows. For example, in 2002, the Short Term Solutions group reviewed approximately 25 projects, of which 17 were completed within 2002, including 11 that received extensions beyond the work windows as a result of formal or informal consultation. A draft consultation initiation packet is also in the works and should be available for use soon.

By the end of 2002, the Environmental Windows Work Group had expanded efforts and began implementing its draft work plan. As a result, four new work groups were formed to focus on specific issues: Science and Data Gaps, Technology and Operations, Confounding Factors and Funding. The Science and Data Gaps Group and the Technology and Operations Group are working to provide the most up to date and relevant information on dredging and disposal impacts to the regulatory and resource agencies to allow them to apply this information to the consultation and permitting process. The Confounding Factors Group is exploring ways to reduce delays associated with regulatory and process needs. The Funding Work Group is researching funding sources to support this work.

J. SEDIMENT QUALITY GUIDELINES

The DMMO has recognized that it would benefit the region to develop numeric sediment screening guidelines (SSGs) based on regional toxicity testing results to ensure appropriate environmental protection and minimize testing costs.

In November 2002, the DMMO hosted a public informational workshop on a project funded by the California Coastal Conservancy to evaluate existing SSGs for wetland creation/beneficial reuse and revise the existing guidelines based on the results of the evaluation and input from stakeholders. Project tasks completed in 2002 included design of a database structure for sediment chemistry, toxicity, and bioaccumulation data, populating the database with regional monitoring and dredging data, and performing quality assurance checks of the database. Tasks targeted for completion in 2003 include: 1) evaluating the accuracy of existing numeric SSGs at predicting acute amphipod toxicity; 2) deriving regional SSGs if current guidelines are not adequately predictive; 3) preparing draft and final reports with revised SSGs; and 4) developing procedures for the DMMO to update the SSGs as more regional data become available. In order to be able to evaluate and update the guidelines in the future, however, the DMMO will need to secure funding and staff to maintain the sediment quality database created during this project and add new dredged material testing data as it becomes available.

In addition, DMMO staff are actively involved in the State Water Resources Control Board (SWRCB) process to develop and adopt sediment quality objectives (SQOs) for enclosed bays and estuaries in California. The numeric objectives developed in this program will be based on protecting sensitive aquatic life represented by sediment dwelling organisms (e.g., benthic macroinvertebrate community). The DMMO will assist this effort by providing dredged material testing data from the San Francisco Bay region to be included in a relational database containing data on sediment contamination, toxicity, bioaccumulation, and benthic community impacts for marine and estuarine areas of California. The data compiled for the S.F. Bay SSG project has already been included in the statewide database. The state SQO development effort is expected to take about four years to complete, starting in 2003.

K. DMMO STAFF EDUCATION AND TRAINING

During 2002, the DMMO agencies continued to include education and training, both internal and external, as a primary objective. Education and training include informal internal workshops regarding the roles, regulations and responsibilities of the member agencies; speakers at DMMO meetings; DMMO coordination and self-evaluation meetings; site visits; and participation in regional and national meetings and workshops relating to dredging and dredged material management. "Internal" training, such as field visits, is imperative to agencies' understanding of a particular project or process (e.g., hopper dredging). Similarly, internal meetings, workshops and retreats, addressing coordination and communication, are necessary to ensure that DMMO members continue to work well as a team. Also important is "external" training, where DMMO members learn what other groups and entities dealing with dredging and dredged material management are doing, nationally and internationally.

The DMMO strives to be an efficient and effective body, a necessary component to the success of the LTMS, and a resource to the regulated public. The state of the art and the science continues to evolve and DMMO staff members need to keep pace with these changes in order for us to remain our most effective. Attendance at workshops, seminars and training, particularly those outside the Bay area, by DMMO members is needed to ensure that we keep current with regulatory and technical changes.

During 2002, the DMMO accomplished a number of our training goals. These are summarized below.

Internal/Regional Training:

- DMMO coordination, policy and self-evaluation retreat in May
- Regional Board DDT workshop in May
- Regional Board PCB workshop in August
- EPA in-house microbiology course in August
- Regional Board mercury TMDL workshop
- Information session on new positioning systems for dredgers
- Enforcement of violations of Section 404 and MPRSA in the Bay area

Site Visits to:

- Bel Marin Keys project site
- Petaluma dredging and upland disposal site
- Port Sonoma dredging and upland disposal site
- Valero Berth knockdown dredging project

- Vallejo Marina dredging project
- Suisun Channel and Martinez Marina dredging projects (including the USACE hopper dredge Essayons)
- Bay Bridge turbidity containment exposition
- Pierce Island upland dredged material disposal site
- Pittsburg Marina dredging operations
- Winter Island upland dredged material disposal site

External Training:

- Regional Monitoring Program Annual Meeting
- USACE/EPA Sediment Specialists and Dredged Material Managers Meeting
- Dredging '02 International meeting; DMMO staff presented a paper on the LTMS process
- USACE/EPA National Dredging and Dredged Material Management Seminar; DMMO staff gave presentation on DMMO to a regional and national audience
- USACE Annual Chemists meeting
- USACE GPS/GIS Applications course
- USACE Intermediate GIS training course
- NorCal SETAC Annual meeting; DMMO staff also acted as co-instructor of sediment toxicity short course

III. ON-GOING AND FUTURE ACTIVITIES

As the agencies continue implementation of the LTMS, DMMO finds that our responsibilities continue to increase. We recognize that we form the first portal of entry for many project proponents, both experienced and those new to the LTMS process. We accept and appreciate this role, as for many dredgers, contractors and consultants, we constitute a well-known body, versed in both the various regulations of our member agencies, as well as in the LTMS principles and goals. It has been particularly rewarding to us to find that project applicants, even when dredging is a minor part of their proposed project, wish to bring the project to DMMO. It is our purpose and goal to ensure that DMMO continues as a body wherein applicants can expect to find consensus, clarification of the various regulations, and a united recommendation. On-going and proposed future activities of the DMMO are described below.

Coordinated review of project proposals: The DMMO will continue to coordinate review of dredging project permit applications. Based on our experience, we expect that the DMMO increasingly will be involved in review of projects proposing disposal of dredged material at the ocean disposal site and at beneficial reuse sites.

Environmental Work Windows: In 2002, we made great strides in the area of environmental windows (see above). We have every intention of continuing the work and expanding upon our successes.

Project tracking for LTMS planning: Included in Appendix B to this report are the monthly volumes dredged during 2002 listed by project. Section II of this report provides summary tables and discussion of these data. The DMMO will continue to track this information and make summaries available to the LTMS agencies for planning purposes. In addition, DMMO hosts, the USACE, maintains monthly project tracking of the in-Bay disposal sites to ensure that monthly

disposal limits are not exceeded and that disposal at SF-11 minimizes the potential for dangerous mounding. The EPA tracks disposal at SF-DODS.

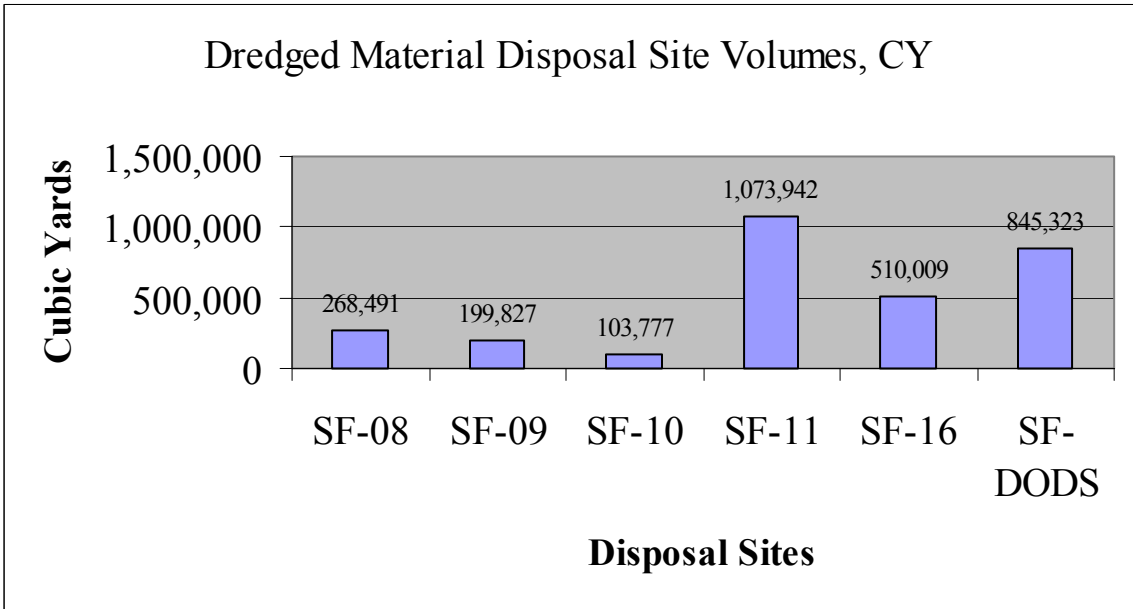
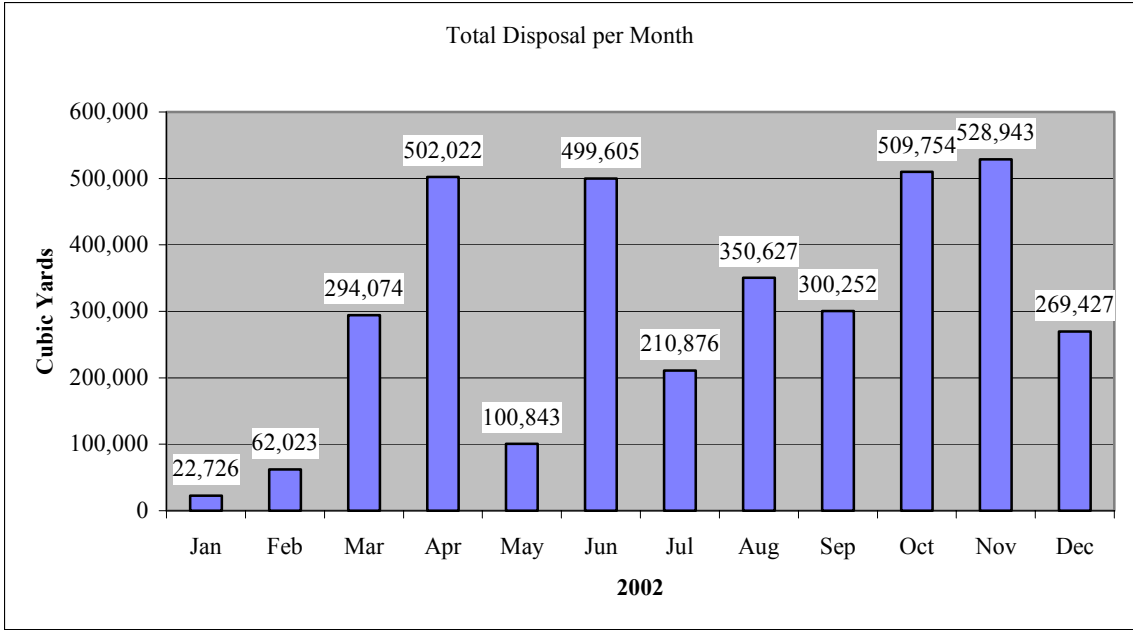
Regional Implementation Manual: The DMMO, because of other more pressing priorities, was able to expend little energy toward development a Regional Implementation Manual. We remain committed, however, to completion of a comprehensive manual compiling testing requirements for dredged sediment disposal at beneficial reuse, in-Bay and ocean sites based on Federal and State regulations and guidance.

Develop Alternate In-Bay Reference Sites: EPA HQ made no progress toward finalizing the 1995 Draft “Reference Rule” in 2002. Although this rule would improve consistency in reference site selection with that required by the Marine Protection Research and Sanctuaries Act (Ocean Dumping Act), as well as afford better and more appropriate protection to waters of the U.S., we do not know when it may be finalized. In the meantime, numerous project proponents choose to obtain both a “grain size appropriate” sample as well as the standard reference sample to account for confounding effects of grain size that are not associated with contaminant concentrations. We recognize that this is an inappropriate situation and continue to encourage EPA HQ to finalize the rule.

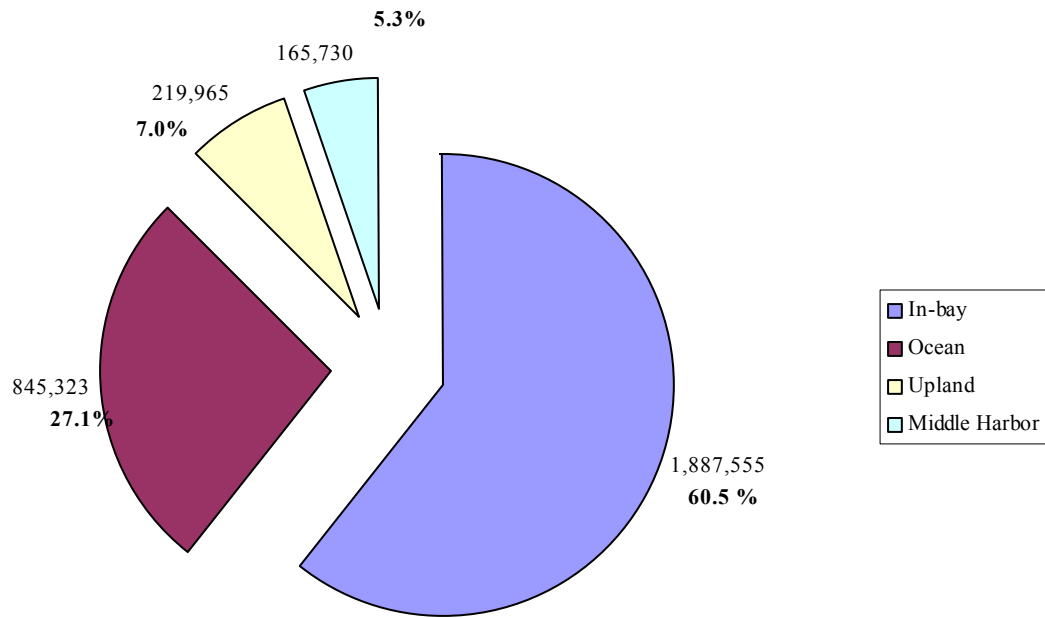
Workload Issues: As in previous years, the DMMO was not able to accomplish as much as we would have liked in 2002. As previously, this was due in large part to workload. We recognize that our stakeholders – as well as ourselves – want a comprehensive sediment quality database in place; we would like to provide more frequent guidance to project proponents and other stakeholders; we understand the usefulness of sediment quality guidelines. Although we have made strides toward these goals this year, without additional funds, a fully functional database, more timely guidance, and truly applicable sediment quality guidelines appear unlikely in the near future.

IV. CONCLUSIONS

The DMMO continues to improve review of dredging project proposals, encourage intra- and inter-agency consistency in the decision making process, while ensuring environmental protection. The DMMO continues to expand its role in dredging and dredged material management in the Bay area by increasing our review of projects proposing upland and ocean disposal, by participating in the LTMS implementation process and other groups associated with dredged material management, and by furthering public participation in the process. We are currently in the process of formalizing an updated MOU more appropriate to our current role in dredging and dredged material management in the S.F. Bay area.



2002 Dredged Material Disposal, CY



Appendix A. Projects Reviewed by the DMMO or Dredged During Calendar Year .2002

Site Dredged	USACE File Number *1	Volume Approved, CY	Disposal Site	Application Date	Tier I Approved	SAP Approved	Results approved	Pre Dredge Survey Date	DOP approved	Post Dredge Survey Date	Notes
1 BALLENA ISLE MARINA	21920	50,000	Upland	12/10/1999	NA	1/12/1996	9/24/1998	5/1/2001	7/17/2000	4/29/2002	NW35 DOP approval
2 BENICIA PORT TERMINAL COMPANY	23107	43,000	SF-09	10/16/1997	No letter	NA	NA	2/28/2002	3/22/2002	*6	
3 BENICIA-MARTINEZ BRIDGE RETOFIT & NEW, PILINGS	21392	17,165	SF-09 & *3	4/5/1995	old	NA	NA	4/1/2002	4/9/2002	Working	and Winter Island
4 BENICIA-MARTINEZ BRIDGE, MARAD ACCESS CHANNEL	21392	40,550	Upland *3	4/5/1995	old	NA	NA	11/27/2001	1/4/2002	2/28/2002	start 1/7/02
5 BOAT DOCK, GARY SCHEIER	24519	227	SF-10	11/3/1999	No letter	NA	NA	4/12/2002	5/29/2002	Pending	did not dredge yet
6 BOAT RAMP, CITY OF SUNNYVALE, NASA	27211	60	Upland	8/7/2002	9/25/2002	NA	NA	Pending			at City landfill
7 CHEVRON LONG WHARF, RICHMOND, Berth 1	24369	84,000	SF-11	4/21/1999	7/22/2002	NA	NA	6/24/2002	7/22/2002	8/22/2002	
8 CHEVRON LONG WHARF, RICHMOND, Berth 2	24369	84,000	SF-11	4/21/1999	7/22/2002	NA	NA	6/24/2002	7/22/2002	8/22/2002	
9 CHEVRON LONG WHARF, RICHMOND, Berth 3	24369	84,000	SF-11	4/21/1999	7/22/2002	NA	NA	6/24/2002	7/22/2002	8/22/2002	
10 CHEVRON LONG WHARF, RICHMOND, Berth 4	24369	84,000	SF-11	4/21/1999	7/22/2002	NA	NA	6/24/2002	7/22/2002	8/22/2002	
11 CHEVRON LONG WHARF, RICHMOND, Berth 9,11,bargeway	24369	84,000	SF-11	4/21/1999	7/22/2002	NA	NA	6/24/2002	7/22/2002	8/22/2002	
12 CITY OF BENICIA MARINA	22724	20,300	SF-09	3/10/1997	3/14/2002	NA	NA	6/25/2002	9/13/2002	12/20/2002	
13 CITY OF BENICIA MARINA	22724	51,250	SF-09	3/10/1997	3/14/2002	NA	NA	6/25/2002	7/26/2002	9/9/2002	
14 CITY OF EMERYVILLE MARINA	27213	198,000	SF-11	8/2/2002	NA	Pending					12/18/02 not Tier I
15 CITY OF PETALUMA MARINA	27481	37,000	Upland	12/6/2002	NA	12/19/2002	3/24/2003	Pending			at City PCDDA
16 CITY OF PITTSBURG MARINA	26215	124,000	Upland *3	6/6/2001	NA	7/6/2001	9/24/2001	6/28/2002	8/6/2002	*6	direct pipeline
17 CITY OF SUISUN CITY MARINA	26781	175,000	Upland	8/5/2002	NA	4/3/2002	7/22/2002	10/21/2002	10/21/2002	12/31/2002	LOP Upland
18 CITY OF VALLEJO MARINA	23768	133,000	SF-09	7/21/1998	NA	8/14/2001	11/2/2001	4/24/2002	7/30/2002	12/5/2002	
19 CITY OF VALLEJO MARINA	23768	171,000	SF-09	7/21/1998	NA	7/29/1999	12/27/1999	8/13/2001	10/19/2001	4/24/2002	
20 CLIPPER YACHT HARBOR	26643	51,000	SF-11	1/17/2002	NA	3/6/2002	7/17/2002	Pending			
21 COYOTE POINT MARINA	26774	107,500	SF-11	5/23/2002	NA	4/3/2002	7/30/2002	Pending			
22 EMERY COVE MARINA	25155	75,250	SF-11	5/4/2000	NA	7/19/2000	2/6/2001	11/8/2001	12/5/2001	7/1/2002	
23 GLEN COVE MARINA	27201	5,000	Upland	8/13/2002	8/20/2002	NA	NA	Pending			to landfill
24 GREENBREA MARINA, PROPERTY QWNERS ASSOCIATION	27251	62,000	SF-10	1/6/2003	NA	12/18/2002	2/20/2003	Pending			10/07/02 NOT Tier I
25 HANSON AGGREGATES, OAKLAND YARD	26355	600	Upland	8/29/2001	3/6/2002	NA	NA	*6			
26 LOCH LOMOND MARINA	25764	90,000	SF-10	11/30/2000	NA	2/6/2001	6/28/2001	3/26/2002	5/28/2002	8/23/2002	or SF-11
27 LOCH LOMOND MARINA	25764	*2	SF-10	11/30/2000	NA	2/6/2001	6/28/2001	8/23/2002	5/28/2002	10/24/2002	or SF-11
28 LOCH LOMOND MARINA	25764	*2	SF-10	11/30/2000	NA	2/6/2001	6/28/2001	10/24/2002	5/28/2002	Pending	or SF-11
29 MARIN CO. SERVICE AREA 29, PARADISE CAY ENTRANCE	23416	50,000	SF-11	3/20/1998	8/1/2002	NA	NA	Pending			
30 MARINA PLAZA HARBOR	26488	20,000	SF-11	3/6/2002	NA	11/15/2001	3/12/2002	Pending			
31 PARADISE CAY YACHT HARBOR	26655	83,000	SF-11	2/1/2002	3/12/2002	NA	NA	Pending			
32 POINT SAN PABLO YACHT HARBOR	27325	40,000	SF-10		NA	10/10/2002	12/19/2002	Pending			No app yet
33 PORT OF OAKLAND, BERTH 20	23162	1,200	Upland	11/12/1997	NA	11/27/2002	11/27/2002	11/22/2002	11/22/2002	*6	at Berth 10
34 PORT OF OAKLAND, BERTH 21	23162	900	SF-11	11/12/1997	11/27/2002	NA	NA	7/25/2002	11/22/2002	*6	
35 PORT OF OAKLAND, BERTH 22	23162	1,200	SF-11	11/12/1997	NA	11/27/2002	11/27/2002	11/22/2002	11/15/2002	*6	
36 PORT OF OAKLAND, BERTH 22	23162	1,200	Upland	11/12/1997	NA	6/21/2002	11/27/2002	11/22/2002	11/15/2002	*6	at Berth 10
37 PORT OF OAKLAND, BERTH 23	23162	10,200	SF-11	11/12/1997	NA	2/6/2001	6/13/2001	11/1/2000	6/28/2001	3/19/2002	
38 PORT OF OAKLAND, BERTH 24	23162	28,500	SF-11	11/12/1997	7/22/2002	NA	NA	5/29/2002	9/20/2002	*6	
39 PORT OF OAKLAND, BERTH 25	23162	*2	SF-11	11/12/1997	7/22/2002	NA	NA	5/29/2002	9/20/2002	*6	
40 PORT OF OAKLAND, BERTH 26	23162	*2	SF-11	11/12/1997	7/22/2002	NA	NA	5/29/2002	9/20/2002	*6	
41 PORT OF OAKLAND, BERTH 30	23162	9,700	SF-11	11/12/1997	NA	4/3/2002	6/17/2002	2/27/2002	6/28/2002	*6	
42 PORT OF OAKLAND, BERTH 32 DOLPHINS/CATWALK	27425	4,500	Upland	3/11/2003	NA	12/5/2002	Pending				
43 PORT OF OAKLAND, BERTH 35	23162	18,400	SF-11	11/12/1997	NA	2/6/2001	7/20/2001	9/17/2001	10/2/2001	3/14/2002	
44 PORT OF OAKLAND, BERTH 37	23162	6,900	SF-11	11/12/1997	11/27/2002	NA	NA	7/25/2002	11/18/2002	*6	
45 PORT OF OAKLAND, BERTH 67	23162	5,200	SF-11	11/12/1997	12/14/2001	NA	NA	1/25/2002	7/29/2002	*6	
46 PORT OF OAKLAND, BERTH 68	23162	4,400	SF-11	11/12/1997	12/14/2001	NA	NA	1/25/2002	Pending		only 67 approved
47 PORT OF SAN FRANCISCO, ISLAIS CREEK	22718	167,410	SF-11	3/4/1997	NA	8/19/2002	10/23/2002	5/24/2002	10/29/2002	12/11/2002	
48 PORT OF SAN FRANCISCO, PIER 35 E	22718	51,011	Upland *3	3/4/1997	NA	6/11/2001	9/26/2001	3/4/2001	10/30/2001	4/30/2002	WINTER ISLAND
49 PORT OF SAN FRANCISCO, PIER 35 E	22718	15,008	SF-11	3/4/1997	NA	6/11/2001	9/26/2001	3/4/2001	10/30/2001	4/30/2002	
50 PORT OF SAN FRANCISCO, PIER 35 E	22718	11,298	Upland	3/4/1997	NA	6/11/2001	9/26/2001	3/4/2001	10/30/2001	4/30/2002	at Berth 94/96
51 PORT OF SAN FRANCISCO, PIER 35 W	22718	6,000	Upland	3/4/1997	NA	7/30/2002	7/30/2002	7/23/2002	7/23/2002	7/25/2002	at Berth 94/96
52 PORT OF SAN FRANCISCO, PIER 80 A	22718	30,680	SF-11	3/4/1997	8/14/2002	NA	NA	5/24/2002	10/29/2002	12/11/2002	
53 PORT OF SAN FRANCISCO, PIER 80 B	22718	28,804	SF-11	3/4/1997	8/14/2002	NA	NA	5/24/2002	10/29/2002	12/11/2002	
54 PORT OF SAN FRANCISCO, PIER 80 B	22718	5,200	Upland	3/4/1997	NA	8/15/2002	8/15/2002	3/4/2002	4/1/2002	4/12/2002	at Berth 94/96
55 PORT OF SAN FRANCISCO, PIER 80 C	22718	11,543	SF-11	3/4/1997	NA	8/19/2002	10/23/2002	5/24/2002	10/29/2002	12/11/2002	
56 PORT OF SAN FRANCISCO, PIER 92	22718	11,543	SF-11	3/4/1997	NA	8/19/2002	10/23/2002	5/24/2002	10/29/2002	12/11/2002	
57 POTRERO POWER PLANT, MIRANT	26357	6,100	Upland	7/9/2001	2/6/2002	NA	2/6/2002	Pending			to landfill

Appendix A. Projects Reviewed by the DMMO or Dredged During Calendar Year .2002

Site Dredged	USACE File Number *1	Volume Approved, CY	Disposal Site	Application Date	Tier I Approved	SAP Approved	Results approved	Pre Dredge Survey Date	DOP approved	Post Dredge Survey Date	Notes
58 RICHMOND-SAN RAFAEL BRIDGE, RETROFIT	22065	237,000	Upland *3	2/6/1996	NA	10/2/1996	4/16/1997	3/15/2001		6/28/2002	working
59 RYER ISLAND BOAT HARBOR, VENOCO	25732	3,000	SF-09	9/18/2000	NA	1/22/2001	5/22/2001	7/9/2002	8/1/2002	9/6/2002	
60 SAN FRANCISCO DRYDOCK, BERTH 2	26977	257,000	SF-11	2/8/2003	NA	11/4/2002	3/19/2003	Pending			
61 SAN FRANCISCO-OAKLAND BAY BRIDGE, EAST SPAN	23013	616,721	*4	9/12/2001	NA	10/26/1998	8/17/2001			Pending	and 11/21/01 to WI
62 SAN FRANCISCO-OAKLAND BAY BRIDGE, ELL GRASS	23013	800	*5	9/12/2001	8/5/2002	NA	NA	Pending			Sand
63 SAN FRANCISCO-OAKLAND BAY BRIDGE, ELL GRASS	23013	400	*5	9/12/2001	10/9/2002	NA	NA	Pending			Sand
64 SCHOONMAKER POINT MARINA	23776	19,260	SF-11	1/10/2000	NA	10/15/1998	4/2/1999	11/9/2001	5/24/2002	Pending	suspended 10/8/02
65 TOSCO REFINING COMPANY, RICHMOND TERMINAL	26486	13,000	SF-10	3/19/2002	NA	11/15/2001	10/9/2002	Pending			Hydraulic dredge
66 TOSCO REFINING COMPANY, RODEO TERMINAL (PHILLIPS)	23455	64,000	SF-09	4/8/1998	10/31/2002	NA	NA	Pending			
67 U.S. ARMY RESERVE CENTER AT MARE ISLAND, P22&23	25989	30,000	SF-09	4/24/2002	NA	3/30/2001	11/20/2001	7/15/2002	8/22/2002	9/5/2002	
68 USACE, LARKSPUR LANDING FERRY CHANNEL	-02-C-0013	120,000	SF-11	NA	6/12/2002	NA	NA	9/11/2002	NA	11/10/2002	and SF-10
69 USACE, MAIN SHIP CHANNEL	CORPS	300,000	SF-08	NA	2/13/2002	NA	3/6/2002	12/13/2001	NA	7/10/2002	FY02
70 USACE, OAKLAND INNER HARBOR, turning basin (50)	-02-C-0006		Upland	NA	NA	NA	NA	NA	NA	Pending	Working
71 USACE, OAKLAND OUTER HARBOR	-02-C-0010	2,000	SF-DODS	NA	6/18/2002	NA	NA	4/4/2002	NA	6/30/2002	FY02 w/Essayons
72 USACE, OAKLAND INNER HARBOR, reach 3	-02-C-0010	421,663	SF-DODS	NA	6/5/2002	NA	NA	10/24/2002	NA	12/28/2002	FY02
73 USACE, OAKLAND INNER HARBOR, reach 4	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	10/24/2002	NA	12/28/2002	FY02
74 USACE, OAKLAND INNER HARBOR, reach 5	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	10/24/2002	NA	12/28/2002	FY02
75 USACE, OAKLAND OUTER HARBOR, reach 1	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	9/26/2002	NA	12/24/2002	FY02 adv maint
76 USACE, OAKLAND OUTER HARBOR, reach 1	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	9/26/2002	NA	12/24/2002	FY02
77 USACE, OAKLAND OUTER HARBOR, reach 2a	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	9/26/2002	NA	12/24/2002	FY02
78 USACE, OAKLAND OUTER HARBOR, reach 2b	-02-C-0010	*2	SF-DODS	NA	6/5/2002	NA	NA	9/26/2002	NA	12/24/2002	FY02
79 USACE, PETALUMA RIVER	-03-C-0001	240,710	Upland	NA	8/21/2002	NA	NA	10/22/2002	NA	2/24/2003	FY03
80 USACE, REDWOOD CITY HARBOR, reach 3	-01-C-0024	56,000	SF-11	NA	4/4/2002	5/10/2002	8/8/2002	4/10/2002	NA	6/6/2002	FY02
81 USACE, RICHMOND HARBOR, INNER, 152-212	-02-C-0012	6,000	NA	NA	12/11/2002	NA	NA	12/18/2002	NA	1/18/2003	knockdown FY03
82 USACE, RICHMOND HARBOR, INNER, 151-164	-02-C-0012	162,880	SF-DODS	NA	6/5/2002	NA	NA	9/23/2002	NA	1/18/2003	FY02
83 USACE, RICHMOND HARBOR, INNER, 73-81	-02-C-0012	*2	SF-DODS	NA	6/5/2002	NA	NA	9/23/2002	NA	1/18/2003	FY03
84 USACE, RICHMOND HARBOR, INNER, 92-151	-02-C-0012	*2	SF-DODS	NA	6/5/2002	NA	NA	9/23/2002	NA	1/18/2003	FY03
85 USACE, RICHMOND HARBOR, LONG WHARF	CORPS	86,261	SF-11	NA	2/13/2002	NA	NA	12/9/2001	NA	4/17/2002	FY02
86 USACE, RICHMOND HARBOR, SOUTHAMPTON SHOAL	CORPS	16,641	SF-11	NA	2/13/2002	NA	NA	12/9/2001	NA	4/17/2002	FY02
87 USACE, SAN RAFAEL CREEK CHANNEL	-02-C-0015	86,000	SF-11	NA	9/11/2002	NA	NA	10/11/2002	NA	Pending	Working
88 USACE, SUISUN BAY CHANNEL	-02-C-00	157,088	SF-16	NA	4/24/2002	NA	NA	3/13/2002	NA	6/26/2002	FY02
89 USACE, SUISUN BAY CHANNEL (Bulls Head Reach)	CORPS	15,000	SF-16	NA	9/11/2002	NA	NA	7/27/2002	NA	10/7/2002	FY03
90 USACE, SUISUN BAY CHANNEL (East Bulls Head Reach)	CORPS	*2	SF-16	NA	9/11/2002	NA	NA	7/27/2002	NA	10/7/2002	FY03
91 USACE, SUISUN BAY CHANNEL (Point Edith Reach)	CORPS	*2	SF-16	NA	9/11/2002	NA	NA	7/27/2002	NA	10/7/2002	FY03
92 VALERO REFINERY TERMINAL	26982	28,000	SF-09	5/8/2002	NA	6/11/2002	9/25/2002	Pending			
93 VALERO REFINERY TERMINAL, Event 1	22881	1,215	NA	6/16/1997	NA	NA	NA	3/4/2002	3/1/2002	3/8/2002	knockdown
94 VALERO REFINERY TERMINAL, Event 1	22881	16,000	SF-09	6/16/1997	NA	NA	NA	6/28/2002	7/2/2002	7/18/2002	to SF-09
95 VALERO REFINERY TERMINAL, Event 2	22881	2,351	NA	6/16/1997	NA	NA	NA	4/8/2002	NA	4/22/2002	knockdown
96 VALERO REFINERY TERMINAL, Event 2	22881	1,634	NA	6/16/1997	NA	NA	NA	8/26/2002	NA	9/14/2002	knockdown
97 VALERO REFINERY TERMINAL, Event 3	22881	489	NA	6/16/1997	NA	NA	NA	5/27/2002	NA	6/12/2002	knockdown

Note: These projects were discussed but no official action was taken by DMMO.

- 1 Bahia Lagoon 22880
- 2 Bectel Power Plant at Mare Island *6
- 3 Benicia Port Industries, Pier 95 27782
- 4 City of San Rafael Homeowners 26633
- 5 Mare Island Disposal Ponds 25148
- 6 Mare Island Outfall *6
- 7 Port Sonoma Marina 22477
- 8 Sausalito Marine Properties 25916
- 9 Tesero Refinery, Avon Wharf

- *1: Contract # for Corps projects = DACW07-XX-C-XXXX
- *2: Volume included in line above
- *3: WI = Winter Island Disposal
- *4: Some to SF-11, Most to SF-DODS, Some to Winter Island
- *5: Beneficial Reuse to try to establish eel grass beds
- *6: No Data Available as of 4/30/03

Appendix B. Dredged Material Disposal Volumens for Calendar Year 2002

Project	Bin Volume	In-Situ Volume	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 BALLENA ISLE MARINA	27,129	27,129				27,129								
2 BENICIA PORT TERMINAL COMPANY	17,400	*1				17,400								
3 BENICIA-MARTINEZ BRIDGE RETROFIT & NEW	3,513	Working				631	350	846	648		614	115	208	101
4 BENICIA-MARTINEZ BRIDGE MARAD ACCESS CHANNEL	42,035			42,035										
5 CHEVRON RICHMOND LONG WHARF	111,000	85,331							17,100	93,900				
6 CITY OF BENICIA MARINA	50,950	54,249								20,700	2,800	13,350	11,250	2,850
7 CITY OF PITTSBURG MARINA	112,224	*1									18,620	50,628	42,976	
8 CITY OF SUISUN, CITY MARINA	129,759	129,759										1,000		128,759
9 CITY OF VALLEJO MARINA	76,980	104,796								20,680	20,875	18,925	16,500	
10 EMERY COVE MARINA	81,050	71,799	13,000	10,825	15,400	18,750	15,725	7,100	250					
11 LOCH LOMOND MARINA	59,375	53,304						14,500	16,150	12,225	10,650	5,850		
12 PORT OF OAKLAND, BERTH 20-22	7,200	*1												7,200
13 PORT OF OAKLAND, BERTH 23	4,500	7,884			4,500									
14 PORT OF OAKLAND, BERTH 24	10,800	*1											10,800	
15 PORT OF OAKLAND, BERTH 25	9,800	*1									300	9,500		
16 PORT OF OAKLAND, BERTH 25/26	1,000	*1											1,000	
17 PORT OF OAKLAND, BERTH 26	5,800	*1										5,800		
18 PORT OF OAKLAND, BERTH 30	10,000	*1							9,000				1,000	
19 PORT OF OAKLAND, BERTH 35	4,500	15,018			4,500									
20 PORT OF OAKLAND, BERTH 37	6,000	*1												6,000
21 PORT OF OAKLAND, BERTH 67	3,600	*1									3,600			
22 PORT OF SAN FRANCISCO, ISLAIS CREEK	107,600	114,999											87,200	20,400
23 PORT OF SAN FRANCISCO, PIER 35 E	65,350	27,267			38,750	26,600								
24 PORT OF SAN FRANCISCO, PIER 35 W	9,500	10,057							9,500					
25 PORT OF SAN FRANCISCO, PIER 80 A	39,200	26,142											39,200	
26 PORT OF SAN FRANCISCO, PIER 80 A&B	11,200	*2										11,200		
27 PORT OF SAN FRANCISCO, PIER 80 B	51,800	34,836				7,400							44,400	
28 PORT OF SAN FRANCISCO, PIER 80 C	4,800	5,913												4,800
29 PORT OF SAN FRANCISCO, PIER 92	37,600	33,314												37,600
30 RICHMOND-SAN RAFAEL BRIDGE, RETROFIT	48,201	Working	9,726	9,163	9,129	6,693	1,593	178	5,121	2,236	1,700	922	1,448	292
31 RYER ISLAND BOAT HARBOR	3,850	2,350												
32 SAN FRANCISCO-OAKLAND BAY BRIDGE, EAST SPAN	284,981	Working						12,004	92,879	102,625	67,805	1,800		9,668
33 SCHÖNNMAKER POINT MARINA	5,850	*1									5,050			
34 U.S. ARMY RESERVE CENTER AT MARE ISLAND	34,155	37,374								25,264	8,891			
35 USACE, LARKSPUR LANDING FERRY CHANNEL	172,013	123,710									17,683	148,296	6,034	
36 USACE, MAIN SHIP CHANNEL	268,491	132,088			214,699	53,792								
37 USACE, OAKLAND INNER HARBOR	68,314	54,050										6,992	58,065	3,257
38 USACE, OAKLAND INNER HARBOR, turning basin (50)	209,507	Working					40,185	45,874	45,828	48,350	19,770	2,500		7,000
39 USACE, OAKLAND OUTER HARBOR	259,211	232,563						1,480		22,297	120,394	115,040		
40 USACE, REDWOOD CITY HARBOR, reach 3	78,260	35,495				35,270	42,990							
41 USACE, RICHMOND INNER HARBOR	245,482	150,277										19,200	153,662	72,600
42 USACE, RICHMOND OUTER HARBOR, LONG WHARF	186,044	45,078						186,044						
43 USACE, RICHMOND OUTER HARBOR, SOUTHAMPTON SHOAL	129,409	2,077			7,096	122,313								
44 USACE, SAN RAFAEL CREEK CHANNEL	30,350	Working										6,250	17,600	6,500
45 USACE, SUISUN BAY CHANNEL	417,623	21,784							417,623					
46 USACE, SUISUN BAY CHANNEL (Bulls Head Channel)	37,352	8,757											37,352	
47 USACE, SUISUN BAY CHANNEL (East Bulls Head Reach)	16,999	528											16,999	
48 USACE, SUISUN BAY CHANNEL (Pt Edith Reach)	38,035	5,742											38,035	
49 VALERO REFINERY TERMINAL	14,400	12,522								14,400				

*1 : No post dredge survey submitted as of 4/30/03
 *2: included with 80A & 80B Post totals

Appendix A. Projects Reviewed by the DMMO During Calendar Year 2002.

Forty-nine projects were reviewed during the year; eleven of these were still in review as of December 31, 2002, and review was completed for thirty-eight projects.

Appendix B. Dredged Material Disposal Volumes for Calendar Year 2002.

Projects conducted dredging in the months indicated. The quantities are in cubic yards (cy). Bin quantity is an estimate of sediment plus water that is deposited at the disposal site). In situ volume is also in cy; it is calculated as the difference between pre-dredge and post-dredge bathymetric surveys, and is a more accurate measure of the quantity of material removed from the dredge site. Monthly volumes are reported as bin volumes.

Appendix C. Dredged Material Disposal Volumes and Sites for Calendar Year 2002.

Projects conducted dredging in the months indicated and disposed of the quantities at the sites indicated. The quantities are in cubic yards (cy). Bin quantity is an estimate of sediment plus water that is deposited at the disposal site). In situ volume is also in cy; it is calculated as the difference between pre-dredge and post-dredge bathymetric surveys, and is a more accurate measure of the quantity of material removed from the dredge site. Disposal site volumes are reported as bin volumes.