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An examination, analysis, and evaluation of Monterey Bay Harbor dredging projects

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AN EXAMINATION, ANALYSIS, AND EVALUATION OF MONTEREY BAY HARBOR DREDGING PROJECTS

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ABSTRACT

AN EXAMINATION, ANALYSIS, AND EVALUATION OF MONTEREY BAY HARBOR DREDGING PROJECTS

by Monica F. Wong

This research investigated the dredging project approval process for three harbors, Santa Cruz, Moss Landing, and Monterey, bordering the Monterey Bay National Marine Sanctuary. Permitting procedures used by each harbor were examined for the following activities: dredging and disposal site characteristics, sampling and testing information, dredging volumes and equipment, financial and dredging management information. Harbor and agency staffs were consulted to assess problems and successes of the dredging program. Two existing permit consolidation programs, in San Francisco Bay and Puget Sound, were compared to the management programs for the three harbors.

Based upon the responses to questions and research into the dredging project approval process, recommendations were made to improve coordination between agencies and the harbors. A consolidated permit checklist is recommended to streamline the harbors' permit approval process. Recommendations from this research project will be provided to Federal, State, and local agencies and the harbors for their considerations.

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ABBREVIATIONS

AHI	Aquatic Habitat Institute
BACT	best available control technology
CAD	Confined Aquatic Disposal
CADOT	California Department of Transportation
CCA	California Coastal Act of 1976
CCC	California Coastal Commission
CDF	Confined Disposal Facilities
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act of 1970
CSLC	(California) State Lands Commission
CWA	Clean Water Act Reauthorization and Amendments of 1987
cy	cubic yard
CZMA	Coastal Zone Management Act of 1972
DDT	dichloro diphenyl trichloroethane
DMC	Dredging Management Committee
DMMO	Dredged Material Management Office
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERM	Effects Range Median
ft	foot/feet
FWS	U.S. Fish and Wildlife Service
IWGDP	Interagency Working Group on the Dredging Process
JARPA	Joint Aquatic Resource Permit Application
juris.	jurisdiction
LTMS	Long Term Management Strategy
MBAPC	Monterey Bay Unified Air Pollution Control District
MBARI	Monterey Bay Aquarium Research Institute
MBNMS	Monterey Bay National Marine Sanctuary
MCEH	Monterey County of Environmental Health
MCPBI	Monterey County Department of Planning and Building Inspection
MCPD	Monterey County Planning Department
MCPW	Monterey County Department of Public Works
MCWRA	Monterey County Water Resources Agency
MHHW	mean higher high water
MLHD	Moss Landing Harbor District
MLLW	mean lower low water
MPRSA	Marine Protection, Research, and Sanctuaries Act of 1972
MRWMD	Monterey Regional Waste Management District
NA	not applicable
NEPA	National Environmental Policy Act of 1969
NMFS	National Marine Fisheries Services

ABBREVIATIONS (Continued)

NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OCRM	Office of Ocean and Coastal Resource Management
OPR	Office of Planning and Research
PAH	polycyclic or polynuclear aromatic hydrocarbons
PEL	Probable Effects Level
PSDDA	Puget Sound Dredged Disposal Analysis
RHA	Rivers and Harbors Act of 1899
RWQCB	Regional Water Quality Control Board
SCEH	Santa Cruz Department of Environmental Health
SCPBI	Santa Cruz County Department of Public Works
SCPD	Santa Cruz County Planning Department
SFBCDC	San Francisco Bay Conservation and Development Commission
SDTSC	(California) State Department of Toxic Substance Control
TBT	tributyltin
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency

(USEPA AND USACE 1988 and USEPA *et al.* 1996)

GLOSSARY

amphipods - small shrimp-like crustaceans such as sand fleas and related forms of which many live in marine sediment (i.e., are benthic) and feed on algae and detritus.

bioaccumulation - the process by which pollutants accumulate in the tissues of an organism.

bioassay - a test procedure which uses living organisms to determine the effect of some substance, factor, or condition.

bioavailability - the extent to which a pollutant is available for uptake and accumulation by living organisms.

DDT - (dichloro diphenyl trichloroethane) a chlorinated pesticide whose accumulation and persistence in aquatic and terrestrial ecosystems led to its ban in the United States in 1971.

dredged material - refers to materials and sediment which have been dredged from a water body.

dredged sediment - refers to material in a water body prior to the dredging process.

intertidal area - the area between high and low tide levels.

mean higher high water - the average height of the higher of the daily high tides.

mean lower low water - the average height of the lower of the daily low tides.

navigable waters of the United States - waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or presently used in the past or may be susceptible to use to transport interstate or foreign commerce.

PAHs - (polycyclic or polynuclear aromatic hydrocarbons) a class of complex organic compounds formed from the combustion of organic materials, of which some are persistent and cancer-causing.

TBT - (tributyltin) a chemical found in anti-fouling paints which are commonly used on boat hulls or other submerged objects to prevent organisms from attaching themselves to those surfaces.

(USEPA AND USACE 1988 and USEPA *et al.* 1996)

I. INTRODUCTION

Significance

Dredging of sediments in our nation's ports and harbors is necessary to maintain navigable waterways for a multitude of reasons pursuant to economic, environmental, recreational, safety, and national defense concerns (Kester *et al.* 1983). The dredging process entails the removal, transport, and placement of dredged sediments (USEPA *et al.* 1996). Planning, permitting, and completing dredging projects involve numerous Federal, State, and local regulatory agencies. This complex process can be confusing to permit applicants. Undertaking a dredging project entails a lengthy commitment of time and money that must be planned well in advance before actual dredging occurs and may extend after sediment disposal is completed. Projects are carefully evaluated from the standpoint of environmental acceptability, technical feasibility, and economics (USEPA and USACE 1992).

Due to the potential impacts and risks associated with dredging and disposal, the dredging process is under the regulation of a permit process to minimize its effects upon the environment (USACE 1993b). Aquatic dredging operations can affect its surrounding environment by disturbing sediments during removal and placement of harbor material (Kagan 1991). Dredged material disposal and/or placement, containing contaminants or not, "can disrupt marine habitats, disturb water currents, and affect aquatic and bird life in nearby marsh areas" (Kagan 1991, 315). According to Kagan , should contaminated sediments be dislodged, they may eventually enter the human food chain through biomagnification (1991).

Harbors wishing to dredge must apply for several Federal and State permits. Applicants must submit "complete and technically adequate project applications" to the U.S. Army USACE of Engineers (USACE), which regulates dredging in the navigable waters of the United States (USDOT *et al.* 1994, 13). Other Federal agencies are involved in this process, including the U.S. Environmental Protection Agency (USEPA), the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Fish and Wildlife Service (FWS). State of California agencies involved in the dredging process include the California Coastal Commission (CCC), the California Department of Fish and Game (CDFG), the California Department of Parks and Recreation (CDPR), the State Lands Commission (CSLC), and the Regional Water Quality Control Boards (RWQCB). In the Monterey Bay region, local agencies involved in the dredging project approval process include the Monterey Bay Unified Air Pollution Control District (MBAPC), the Monterey County Department of Environmental Health (MCEH), the Monterey County Planning Department (MCPD), and the Santa Cruz County Department of Environmental Health (SCEH). These agencies must conduct a "prompt review and develop a decision" for the permit applicant (USDOT *et al.* 1994, 2). Unfortunately, the approval process is often not as timely or efficient as it could be due to several reasons including inadequate coordination, poor information exchange, poorly planned field sampling procedures and laboratory analytical protocols, unclear project information requirements from the review agencies, and conflicting permit conditions (USDOT *et al.* 1994).

In response to such problems, the Secretary of Transportation, Frederico Peña, convened the Interagency Working Group on the Dredging Process (IWGDP) in October

of 1993. The IWGDP, comprised of five Federal agencies (Maritime Administration, USACE, USEPA, FWS, NOAA's National Marine Fisheries Service [NMFS], and NOAA's Office of Ocean and Coastal Resource Management [OCRM]), evaluated the Federal dredging program. The dredging project approval process was one of four areas of concern addressed and summarized in their *Report to the Secretary of Transportation, The Dredging Process in the United States: An Action Plan for Improvement* (USDOT *et al.* 1994). The four areas of concern include: (1) strengthening planning mechanisms for dredging and dredged material management, (2) enhancing coordination and communication in the dredging project approval process, (3) addressing uncertainties about dredged material, and (4) funding dredging projects consistently and efficiently (USDOT *et al.* 1994).

Five methods were recommended to improve Area of Concern No. 2 (enhancing coordination and communication in the dredging project approval process): (a) establish a national dredging issues team and regional dredging issues teams, (b) schedule pre-application meetings between the USACE, the applicant, USEPA, other interested Federal agencies and relevant State agencies for dredging projects which are potentially controversial or may involve significant environmental issues, (c) develop and distribute a permit application checklist that identifies the information required from the applicant, (d) develop or revise the procedures for coordinating interagency review at the regional level to define the process by which various Federal parties coordinate on dredging projects, and (e) establish a memorandum of agreement to clarify roles and coordination mechanisms between the USEPA and USACE (USDOT *et al.* 1994).

Because the IWGDP working group is comprised of a consortium of Federal agencies that take part in the regulation of dredging, their recommendations are designed to improve upon the present procedures and create a simplified process. One of the five recommendations for improvement in Area of Concern No. 2 (dredging project approval process) calls for the development and distribution of a permit application checklist. Such a checklist would have two purposes: (1) identify the information required for a "complete" application, and (2) provide a consolidated application acceptable by all Federal, State, and local regulatory agencies involved in the dredging project approval process.

Ideally, the applicant and the regulatory agencies will benefit from this streamlining effort. For the dredging project applicant, the checklist will highlight areas of concern (i.e., site history, results from previous sampling and testing, site characteristics, sampling plans, and analytical protocols) that should be addressed in order to be deemed an application complete and technically adequate (USDOT *et al.* 1994, 13). IWGDP contends that for the regulatory agencies, the checklist would streamline the permit review process by serving as a common vehicle for evaluation of projects by consolidating application and project information for several Federal and State agencies (USDOT *et al.* 1994). A consolidated permitting checklist would improve upon the present practice of the submittal of separate applications to each regulatory agency by providing a cooperative permitting framework for which only one application is required.

Background

Dredging projects are classified as new work construction dredging or maintenance dredging (USEPA *et al.* 1996). New work construction dredging refers to the excavation of sediments in their natural undisturbed condition. Maintenance dredging refers to the dredging of recently deposited sediments to maintain authorized channel or berth depths.

Harbors planning to dredge their waterways must apply to the appropriate regulatory agencies for approval of their proposed project. The USACE has been the primary Federal agency responsible for regulating dredging activities in United States waters since 1890. The USACE's regulatory authority is based on several laws including: Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S.C. Section 403 *et seq.*), Section 404 of the Clean Water Act (CWA) of 1987 (33 U.S.C. Section 1344 *et seq.*), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. Section 1413 *et seq.*) (USACE 1995b).

Prior to 1960, the USACE's main regulatory purpose was to protect navigation. Within the past four decades their regulatory purpose has grown in scope to include the safeguarding of certain environmental aspects. Their mission now considers "the full public interest for both the protection and utilization of water resources" (USACE 1995b, 2). Dredging project applications submitted to the USACE are, therefore, processed with the public interest in mind. Each year the USACE reviews between 10,000 and 30,000 applications for dredging permits across the country (AHI and Phillip Williams and Associates 1990).

Nationwide, the USACE annually dredges an estimated 380 million cubic yards (cy) of sediment for maintenance of existing channels and approximately 100 million cy of sediment for new work dredging for Federal projects (AHI and Phillip Williams and Associates 1990). In addition, permit applicants (e.g., harbors, marinas, port authorities, terminal owners, industries, and private individuals) dredge 100-150 million cy annually from ports, berths, and marinas under individual USACE permits (AHI and Phillip Williams and Associates 1990).

Federal navigation channels are waterways constructed and maintained by the U.S. government. The USACE (Cotter 1997a) defines the construction and maintenance of such channels and waterways as Federal navigation projects. According to Cotter, although the USACE does not issue itself a permit for the construction or maintenance of Federal projects, they must comply with the requirements of CWA Section 404, MPRSA Section 103, RHA Section 10, and the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. Section 4321 *et seq.*) (1997a).

Waterways other than Federal channels are constructed and maintained by permit applicants. Permit applicants wishing to dredge must obtain a RHA Section 10 permit to dredge and either a CWA Section 404 to place fill in the waters of the U.S. or nourish beaches, or a MPRSA Section 103 for ocean disposal of dredged material (USACE 1997a). A RHA Section 10 permit is required for all applicants in conjunction with either a CWA Section 404 permit or a MPRSA Section 103 permit. There are three types of CWA section 404 dredge and fill permits: (1) nationwide permits, (2) maintenance permits (generally in place for five years), and (3) construction permits (issued when a

new project or single dredging event project is planned). There are two types of MPRSA Section 103 ocean dredged material disposal permits: (1) maintenance permits (generally in place for five years) and (2) construction permits (issued when a new project or single dredging event project is planned). Nationally, the USEPA has review and approval authority on all USACE CWA Section 404 and MPRSA Section 103 permits.

In California there are several agencies that issue and review dredging projects. The CCC issues Coastal Development permits and reviews USACE permits for Federal consistency under Section 307(c) of the Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. Section 1451 *et seq.*). The CDFG reviews USACE RHA Section 10 permits and CWA Section 404 permits to determine whether State marine resources will be affected by proposed dredging and disposal projects. The CDPR issues temporary use permits to prevent beach resource impacts. The CSLC issues leases for use of State Lands. The RWQCB issues Waste Discharge Requirements for the discharge of waste to comply with provisions of the California Water Code to prevent degradation of water quality.

In the Monterey Bay Area, the Monterey Bay National Marine Sanctuary (MBNMS) determines if the proposed action(s) complies with their regulations at 15 CFR Part 922. In addition, the MBNMS also participates with Federal and State agencies during the review of USACE RHA Section 10 permits and CWA Section 404 permits, CCC Coastal Development permits, and RWQCB Waste Discharge Requirement permits for dredging projects.

Coordination between Federal, State, and local regulatory or resource agencies as well as other parties involved in dredging is vital for the facilitation of prompt decisions on proposed projects. The USEPA and USACE recommend early coordination of planning efforts by all "affected interests" including Federal, State, and local regulatory and resource agencies, harbor operators, contractors, environmental groups, and the public (USEPA and USACE 1994, 7). Such an early coordinated approach is beneficial to those involved because problem areas can be identified before significant amounts of time, effort, and money are spent; and project modifications can be recommended to reduce or eliminate problems. Nonetheless, when problem areas are identified, additional data and information gathering may be necessary to resolve environmental, technical, and public concerns.

Overview of the Research

Due to natural seasonal weather conditions and harbor traffic, sediment accumulates within harbor channels and berth areas. There are three harbors along the coastline of Monterey Bay and the MBNMS (Figure 1) that must dredge their waterways periodically in order for harbor traffic to navigate safely. These three harbors are Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor. Pillar Point Harbor in Half Moon Bay also borders the MBNMS; however, this harbor is not currently planning a dredge project in the near future (Wolfenden 1997). The purpose of this study was to collect permitting, sampling, testing, dredging, disposal, and monitoring information from each of the three harbors in order to examine and analyze each harbor's project

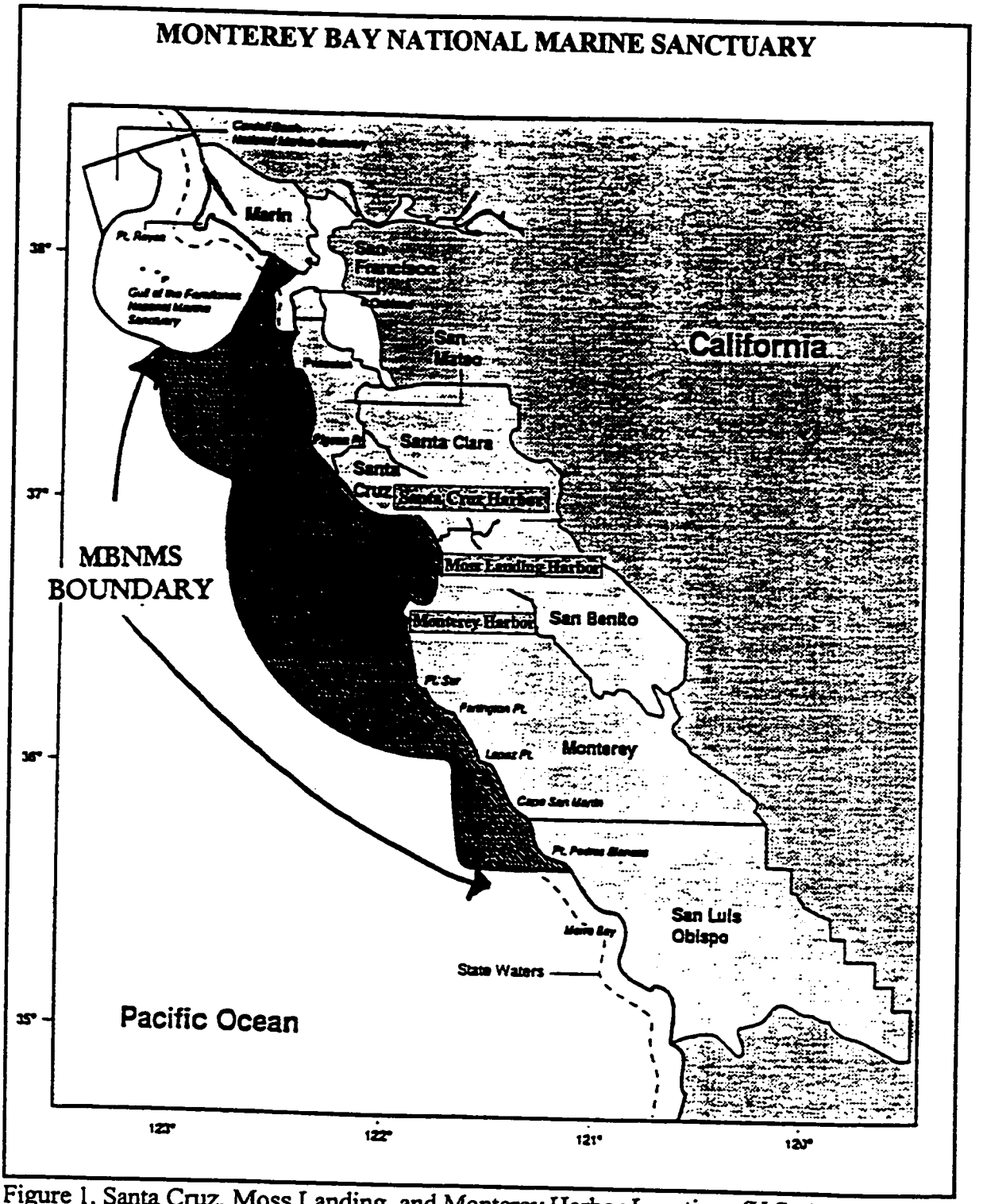

Figure 1. Santa Cruz, Moss Landing, and Monterey Harbor Locations (U.S. Army Corps of Engineers, March 1996, Pillar Point Harbor; San Mateo, California: Reconnaissance Report).

application processes with respect to a recommended dredging project checklist. In addition, this study evaluated each of the harbors' procedures with respect to a recommended cooperative permitting framework.

This study concentrated on each harbor's efforts in the application process for approval of 1996-1997 dredging projects that occurred between September 1, 1996 and August 31, 1997. The study compares and contrasts the harbors' experiences with one another and the cooperative dredging permitting framework. This research has been guided by three questions (Table 1) in order to meet the study objectives (Table 2).

Table 1. Guiding Questions

Number	*Question*
1	Have applications for proposed dredging projects been approved within the harbors' intended time frames?
2	Is all information required for dredging permit applications obtained and reported sufficiently?
3	Can Federal, State, and local regulatory and resource agencies assist the harbors in Monterey Bay to improve upon their dredging permit application procedures?

Table 2. Study Objectives

Number	*Objective*
1	Identify each harbor's efforts to submit a complete permit application
2	Identify ineffective, insufficient, redundant, and costly procedures
3	Critique each harbor's efforts in order to consolidate and/or gather the necessary information that will comprise a complete and technically adequate project application under the structure of the cooperative dredging permitting framework
4	Critique the agencies' efforts in providing guidance, assistance, and information in a timely and helpful manner to the harbors
5	Recommend changes to streamline the agency permit application process and reduce costs

The objectives have been accomplished by asking a total of 46 investigative questions from three categories (Table 3). The investigative questions from Category 1

examined the three dredging project approval processes by focusing on historical information questions, previous and/or current permit details, and each harbor's dredging permit application process. Category 2 investigative questions examined, analyzed, and evaluated the impact a cooperative checklist would have by asking questions in regards to the San Francisco Bay Area's Dredged Material Management Office (DMMO) and Washington State's Joint Aquatic Resource Permit Application (JARPA) consolidated checklist results. For Category 3 investigative questions information was examined about agency processing of dredging projects by asking questions about the regulations and standards used to review permit information.

Table 3. Categories of Investigative Questions

Category	*Question*
1	Questions for Harbor Staff and Agency Personnel
2	Questions for the Review of the Model Consolidated Checklists
3	Questions for Agency Personnel

Obtaining a CWA Section 404 permit to fill wetlands or nourish beaches or a MPRSA Section 103 permit for ocean disposal of dredged material is a major part of the dredging project approval process. Harbors must address regulatory requirements adequately in order to receive the appropriate permits for proposed dredging projects. Dredging is also an environmental issue because of the increasing challenge, which exists in locating acceptable disposal sites and "predicting the fate and stability of disposed materials" at those sites (Scheffner 1996, 127). Harbor facilities that are unable to find environmentally acceptable disposal sites for their dredged materials may prevent their facilities from operating because of the inability to maintain, expand, and modernize (Grenell 1993). According to the MBNMS's final environmental impact statement, Moss

Landing Harbor and Santa Cruz Harbor dredge on a regular basis (NOAA 1992). Moss Landing Harbor's Federal channel is dredged every two to three years with an annual amount of 50,000 cy of material removed (NOAA 1992). Santa Cruz Harbor dredges between 125,000 cy and 250,000 cy of sediment from its entrance channel and approximately 5,000 cy from the inner harbor each year (USACE 1995a and Foss 1997). Moss Landing Harbor and Santa Cruz Harbor dredge their berthing areas less often. Monterey Harbor conducts minor dredging and only removes approximately 2,000 cy yearly (NOAA 1992). Dredging permits or dredging approvals are required for each project.

Research has been conducted in the following manner: (1) consultations with the harbor staff to retrieve the dredging project information; (2) consultations with Federal and State agency personnel; (3) evaluation of historical data from each site, including site characteristics, sampling and testing data, other relevant environmental monitoring data, financial information, previous or current dredging project details, agency permits; (4) examinations of two checklists currently in use: the San Francisco Bay Area Dredged Material Management Office's "Consolidated Dredging-Dredged Material Reuse/Disposal Permit Application" (USACE *et al* 1996b) and Washington State's "Joint Aquatic Resource Permit Application" (JARPA Pilot Workgroup 1996) currently in use; and (5) examination of two Federal evaluations of pilot cooperative dredging permit frameworks: *Pilot Program of the Dredged Material Management Office Six-Month Pilot Review eport* (DMMO 1997) and *Joint Aquatic Resource Permit Application Test Summary and Recommendations* (JARPA 1996).

II. RELATED RESEARCH

Harbors and Ports

According to Mayer, harbors are areas that provide protection for vessels against certain elements including wind, currents, and waves (1988). All harbors, whether artificial or natural, are "designed to interrupt or minimize" the actions of the recurring elements (Mayer 1988, 78). The protection capability of a harbor is achieved through landscape geography, man-made structures, or as in most cases, a combination of both.

Another term often used when discussing harbors is *port*. Although used on a regular basis, a port can be delineated from a harbor in a number of ways. According to Hershman, ports are public or private facilities where vessels moor and exchange passenger traffic and cargo (1998b). In addition, the term "port" is also used as a reference to a unit of organization or operation of facilities associated with maritime activities including the interchange of waterborne commerce, naval installations, and the servicing or repair of sea vessels (Mayer 1988).

Although the definition of a port differs from that of a harbor, the two are closely related and are used in describing one another. Concisely stated by Mayer (1988) and Hershman (1988b), harbors are protected areas within ports and where port operations take place.

The Need to Dredge

The need to dredge harbors and ports has been defined in numerous books, journals, and reports: to maintain the nation's navigation system for defense, economic,

environmental, recreation, and safety concerns (Austin 1995, Kester *et al.* 1983, USEPA and USACE 1992, Lansey and Menon 1993, US Congress 1993 and 1994). Dredging channels is necessary to ensure our nation's defense readiness; military cargoes must be delivered from sea to land, and waterways must be navigable should response to national and international emergencies arise (USDOT *et al.* 1994). The nation's economic well-being will continue to depend on the effective functioning of the federal navigation system (US Congress 1994). Harbor facilities and services that contribute to the regional and national economies include recreational boating, commercial and recreational fishing, passenger boats, ship repair, military facility operations, research laboratories, and tourism (USEPA *et al.* 1996). Approximately 94 million people participate in recreational boating and fishing each year (USDOT *et al.* 1994). Environmentally, many harbors are located in or near valuable wetlands, estuaries, and associated fisheries that are vitally important to the area's wildlife. Harbor wildlife and adjacent areas also support local commercial fisheries (USDOT *et al.* 1994).

Methods of Dredging

The type of dredging methods and equipment used depends on several factors. Factors considered with regard to the material being dredged include physical characteristics of the proposed dredged material, volume of material to be dredged, and contaminant concentrations in sediments. Factors considered regarding dredging and disposal site operations include dredging depth, distance to the disposal site, physical

environment of the dredging and disposal sites, method of disposal, rate of production (i.e., cubic yards per hour), types of dredge equipment available, mobilization and demobilization cost, and water quality at the dredging and disposal site (USEPA *et al.* 1996).

According to the USACE and USEPA, the two most common methods for dredging are hydraulic dredging and mechanical dredging. Hydraulic dredging, usually for maintenance dredging projects, is one mechanism used to remove loosely compacted materials (USEPA and USACE 1992). Mechanical dredging is used for both maintenance dredging and new work construction dredging to remove loose or hard compacted materials (USEPA and USACE 1992).

Hydraulic dredging involves the removal and transport of sediment in a liquid slurry form (USEPA and USACE 1992). Materials are removed by a variety of devices including cutterhead, dustpan, hopper, hydraulic pipeline plain suction, and sidecaster dredges (USEPA *et al.* 1996). Hydraulic dredges are mounted on barges and carry centrifugal pumps. The diesel or electrically powered centrifugal pumps produce a vacuum that forces a liquid slurry of water and sediments through a suction pipe. The slurry is then transported through pipelines ranging from 6 to 48 inches in diameter to the disposal site.

The USACE and USEPA contend that hydraulic dredging is often the first choice when dredging occurs in enclosed water bodies or near turbidity-sensitive aquatic resources (USEPA and USACE 1992). However, at the disposal site, water management

and water quality must be regulated because the amount of water carried throughout the process is many times the volume of sediment removed.

Devices used to remove sediment in mechanical dredging include clamshell, dipper, and ladder dredges (USEPA *et al.* 1996). Mechanical dredging involves the removal of materials by a direct application of mechanical force (USEPA and USACE 1992). This mechanical force loosens and removes bottom sediments in their original densities. The excavated materials are then placed in barges and transported to the disposal site.

According to the USACE and USEPA, mechanical dredging is often the first choice when there are capacity limitations at the disposal site because the amount of water carried throughout the process is small and requires little water management (USEPA and USACE 1992). However, at the dredging site, water quality must be regulated due to the resuspension and disturbance of sediments. Impacts on benthic organisms are also a concern at the disposal site for hydraulic or mechanical dredging operations.

Methods of Disposing Dredged Material

According to the *Long-Term Management Strategy* (LTMS) *for the Placement of Dredged Material in the San Francisco Bay Region*, the method selected for disposal of dredged material is based upon environmental, technical, and economic considerations (USEPA *et al.* 1996). There are three main options for the disposal of dredged material:

unconfined open-water disposal, confined disposal, and beneficial reuse (USEPA and USACE 1992).

Unconfined open-water disposal refers to the placement of dredged material at designated aquatic sites by direct pipeline discharge, direct mechanical placement, or release from hopper dredges or barges (USEPA *et al.* 1996). Aquatic sites may include rivers, lakes, estuaries, and oceans. Unconfined open-water disposal is limited due to capacity constraints and the potential environmental impacts of contaminated sediment (USEPA and USACE 1992).

Unconfined open-water disposal is managed to reduce potential environmental impacts that can occur due to the physical behavior of discharges or toxicity. The physical behavior of discharges depends upon the type of dredging performed, equipment used, the physical characteristics of the material dredged, and the hydrodynamics of the disposal site (USEPA *et al.* 1996). Disposal sites can either be predominately dispersive or predominantly non-dispersive (Scheffner 1996). At sites that are predominantly dispersive, the material being disposed disperses either during placement or erodes from the bottom over time and is transported away from the disposal site by currents and waves (Moritz and Randall 1995). At sites that are predominately non-dispersive, the material disposed remains within the disposal site boundary and forms mounds (Moritz and Randall 1995).

Confined disposal refers to the placement of dredged material in restricted areas by pipelines or mechanical handling. The two types of confined disposal areas are confined disposal facilities (CDF) and confined aquatic disposal (CAD). CDFs are

settling and storage areas designed to: provide sufficient storage for the material being dredged, retain solid dredged material, and prevent the release of any contaminants in the environment (USEPA *et al.* 1996). Such structures are built as upland sites, nearshore sites, and island containment areas. CDFs can be designed for many years of use. Material can be removed periodically as the dredged material settles and additional room becomes available. Dredged material placed in CDFs by pipelines associated with hydraulic dredging is initially a large volume due to the amount of water added during the excavation process. Eventually, the material settles over time, and water is discharged as effluent or the water evaporates. The remaining sediments consolidate to their original densities. CDFs filled by mechanical dredging do not need to provide as much storage space because less water is added during the dredging operation.

The term CAD is used to describe the category of options related to the physical restriction of contaminated materials in the aquatic environment (USEPA *et al.* 1996). According to USEPA *et al.*, such physical restriction isolates the contaminated sediments in a "saturated and chemically reduced state" from aquatic organisms (1996, 3-87). Material is sequestered from the surrounding environment by depositing it in an area that is low in energy and then capping it with a layer of clean material. The cap is designed to chemically and biologically seal the contaminated materials within the designated area (USEPA *et al.* 1996). An example of one of the many types of caps that are used is a cap that is three feet thick and consists of two layers. One layer consists of a one-foot thick mixture of silt and clay to chemically seal and prevent the long-term release of contaminants. The second layer is a biological seal up to three feet thick that allows

burrowing organisms to recolonize the cap, but prevents them from being exposed to the contaminated sediment.

Because of potential dangers to the surrounding environment, there are two considerations that must be addressed in CAD projects (USEPA *et al.* 1996). The first consideration is to minimize potential impacts to aquatic resources and environmental values. The second consideration involves the thoroughness in the design and operation of the project. These two considerations can be adequately addressed beforehand through rigorous initial site investigations, documentation supporting the site's ability to isolate contaminated materials, and by selecting a site that will remain free from activities that could affect the cap's integrity (i.e., dredging, shipping, mooring, storms, etc.).

Beneficial reuse is the utilization of non-contaminated dredged material for a productive purpose (USEPA and USACE 1992). USEPA and USACE consider clean dredged material a "valuable soil resource" that should be incorporated into project plans "to the maximum extent possible" (USEPA, *et al.* 1996, 3-8).

Ten broad categories of beneficial resource exist based on the functional use of the dredged material or site (Table 4). Beneficial reuse projects serve a multitude of purposes including the creation and improvement of resource areas for fish and wildlife, the stabilization of shorelines, and the controlling of erosion. In addition, beneficial reuse helps to alleviate the pressure to dispose at limited open-water sites and containment facilities, many of which are almost at capacity (Austin 1995).

Table 4. Categories of Beneficial Reuse (USEPA *et al.* 1996 and Austin 1995)

Number	*Category*
1	Habitat restoration/enhancement; wetland, upland, island, and aquatic sites including use by fish, wildlife, and waterfowl and other birds
2	Beach nourishment
3	Aquaculture
4	Parks and recreation; commercial and non-commercial
5	Agriculture forestry and horticulture
6	Strip mine reclamation and landfill cover for solid waste management
7	Shoreline stabilization and erosion control; fills, artificial reefs, submerged berms, etc.
8	Construction and industrial use; port development, airports, urban, and residential
9	Material transfer; for dikes, levees, parking lots, and roads
10	Multiple purposes - combinations of the above

The Need for Dredging and Disposal Permits

Dredging and dredged material disposal activities are regulated due to their potential primary and secondary impacts upon human health and the environment (USEPA and USACE 1994). Proper management of dredging and dredging disposal activities can decrease or eliminate the adverse effects upon aquatic and terrestrial organisms (USEPA and USACE 1992).

Allen and Hardy (1980) identified and assessed three categories of impacts of maintenance and new construction projects at the dredging site: water column impacts, bottom impacts, and other impacts. Water column impacts include increased turbidity, increased oxygen demand, and the release of contaminants and nutrients. Bottom impacts in the project area include the removal of benthic organisms, low diversity of recolonizing species, decreases in oxygen supply in and around the channel substrate, and

changes in bottom topography. Other impacts include the alteration of drainage patterns and decreases in water quality due to runoff from industrial development sites.

According to the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. Testing Manual (Draft)*, also referred to as the *Inland Testing Manual*, the potential effects of a discharge of dredged materials into the waters of the United States "may range from unmeasured to substantial" (USEPA and USACE 1994, 26). Although there is the potential for dredged material to contain a variety of chemical contaminants that when disposed may negatively affect aquatic organisms, the majority of dredged material proposed for disposal is not contaminated (USEPA and USACE 1994).

Because the greatest potential for environmental effects from dredged material disposal is upon the benthic environment, a significant effort is dedicated to evaluating material to be disposed and the effects at the disposal site (USEPA and USACE 1994). In addition to physical and chemical tests, suspended particulate phase bioassays, whole-sediment bioassays, and bioaccumulation tests are conducted to evaluate the potential toxicity of the material planned for disposal. The bioassays are used to predict acute effects, and bioaccumulation tests are used to predict the bioavailability of contaminants in the dredged material.

In the San Francisco Estuary, there is concern regarding the effects of dredged material disposal. There is fear that deposited dredged material may contribute and cause indirect and direct physical effects upon benthic organisms (AHI and Phillip Williams and Associates 1990). Indirect effects include the transportation of contaminants into the food chain and/or the contaminated material may lead to acute or chronic effects (AHI

and Phillip William and Associates 1990). Direct effects include the burial and smothering of the bottom dwellers. In addition, the disposal of contaminated sediments is of concern. Much of the regulatory agencies' efforts to regulate dredged material are designed to prevent disposal of contaminated sediment at unconfined aquatic disposal sites.

According to Segar, there is concern about decreasing fishing success in and around a dredge disposal site in the San Francisco Bay (1990). The site, known as the Alcatraz Dumpsite, is a 2,000-foot circular area that was selected as a disposal site because of its fast tidal currents that maximize dispersion (Segar 1990). Disposal activities at the Alcatraz Dumpsite heavily contributes to suspended sediment loads in the western portion of Central San Francisco Bay. In addition, disposal activities may also increase background turbidity during dry seasons when other sources of suspended sediments are minimal. It is suspected that the fishery declines are not likely a result of increased turbidity, but instead partly because of the toxicity of contaminated materials being disposed (Segar 1990).

The Puget Sound Dredged Disposal Analysis Example

The Puget Sound Dredged Disposal Analysis (PSDDA) is a comprehensive study of unconfined dredged material disposal in Puget Sound, Washington, conducted from April 1985 through March 1989. The PSDDA study resulted in the development of regional dredged material disposal management programs and criteria (USACE *et al.* 1989). The management programs and criteria established regional guidelines on dredged

material sampling, testing, and test interpretation requirements for both the permitting agents (i.e., USACE, USEPA, Washington State Department of Natural Resources, and Washington State Department of Ecology) and permit applicants (i.e., Pierce, Clallam, Skagit, and Whatcom counties). The PSDDA criteria and guidelines were established due to the "lack of fully consistent evaluation procedures, or specific objective decision criteria" (USACE *et al.* 1989, ES-4). According to the USACE *et al.*, the final results of the study did not lead to the creation of a permit checklist application (1989). Rather the process lead to guidelines to improve consistency and predictability in the decision-making process with regard to environmentally safe unconfined and open-water disposal of material.

The Washington State Example

In Washington State, a consolidated permit application has been designed to simplify the permit process. The "Joint Aquatic Resource Permit Application" or JARPA was created to combine seven permit application forms from Federal, State, and local permits (JARPA Pilot Workgroup 1996). This statewide application has undergone three pilot tests successfully, including two regional tests and one statewide test. Because of the successes of the tests and the positive feedback from subsequent surveys, JARPA is being used by 60 cities, 24 counties, and several Federal and State regulatory agencies in the State of Washington (JARPA Pilot Workgroup 1996).

Seven benefits of JARPA have been identified: (1) reduced paperwork and processing time stemming from the efficiency of the single application format,

(2) improvements in the information received due to the multiple agency requirements, (3) reduction in time for receipt of permits because one application is simultaneously sent to all appropriate agencies, (4) a reduction of violations because of a pre-defined list of permits identifying which permits are needed, (5) reduced revisions and increased coordination between agencies due to the consistency of information received from the applicants to the agencies, (6) the potential for regulatory reform, and (7) a reduction in the number of permits required resulting from improved planning, reduced duplicating efforts, and combining resources between agencies (JARPA Pilot Workgroup 1996).

According to staff, a revised JARPA form, dated December 1996, was distributed to all local governments, consultants, agencies, and other users (Martin 1998 and JARPA Pilot Workgroup 1996). This joint application is used "almost exclusively" for all required permits (Martin 1998). However, according to the JARPA Pilot Workgroup, the implementation of JARPA will continue with changes and improvements made as needed by the pilot workgroup, and local governments may decide individually if they would like to use JARPA (1996).

The San Francisco Bay Area Example

A "Consolidated Dredging and Dredged Material Reuse/Disposal Permit Application" has been developed by the Dredged Material Management Office (DMMO) in the San Francisco Bay region (USACE *et al.* 1996b). The combined interagency application form has resulted from the DMMO's mission to "foster a comprehensive and consolidated approach to handling dredged material management issues in order to reduce

redundancy and delays in the processing of dredging permit applications" (DMMO 1997, 1). Modeled after the PSDDA approach, the consolidated form also relies on the cooperation between Federal, State, and local regulatory agencies (USACE *et al.* 1996a).

The DMMO is a pilot program enacted on July 1, 1996 by a memorandum of understanding by regulatory agencies involved in the dredging project approval process (USACE 1997b). The five agencies include: (1) the San Francisco District (USACE) of Engineers, (2) USEPA Region IX, (3) the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), (4) the San Francisco Bay Conservation and Development Commission (SFBCDC), and (5) CSLC. As signatories, these five agencies benefit from coordinated reviews and decision-making, while being able to continue to their individual statutory requirements (USACE *et al.* 1996b).

The consolidated dredging permit application is accepted by all DMMO agencies. The program is applicable to maintenance and new work construction dredging projects in the San Francisco Bay region defined as all of the San Francisco Bay Estuary from the Golden Gate Bridge in the west to Sherman Island in the east. The permit processes for the individual agencies only begin once an application is deemed complete. DMMO agencies work together to review sampling plans, test results, dredging plans, and post-dredging monitoring data.

At the conclusion of each of the pilot program's two six-month phases, reports were issued reviewing the program. According to the *Pilot Program of the Dredged Material Management Office* (DMMO) *Six-Month Pilot Phase Review Report*, the initial six-month phase of the program's coordination efforts "successfully increased the member

agencies' permit processing efficiency and decreased the redundancies associated with multi-agency review" (1997, 8). The second phase was also deemed a success and has led to the recommendation of a third pilot phase of one year in length (Dwinell 1998). The pilot has been extended an additional year in order to allow SFBCDC enough time to change their regulations to incorporate the DMMO (Dwinell 1998). According to staff, full adaptation of the DMMO will probably be made after the conclusion of the third pilot phase (Dwinell 1998).

III. METHODOLOGY

Introduction

This research investigated the dredging project approval process of three harbors bordering the MBNMS in Monterey Bay. The permitting procedures used by the three harbors have been examined, analyzed, and evaluated by project information. Dredging project information including: dredging or disposal site characteristics, sampling and testing data, dredging volumes, disposal sites, dredging and disposal equipment, financial information, and previous and/or current dredging projects and permit applications was examined. Two recommended consolidated permit applications were compared with current procedures. Harbor staff, agency personnel, and other dredging experts were consulted. Each harbor's dredging project approval processes were analyzed and evaluated. And, as a result of investigations and research, a consolidated permit checklist is recommended.

Population and Sample

The three harbors chosen, Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor, are located in Monterey Bay (Figure 1). In addition, all three harbors border the MBNMS. Sanctuary designation is pertinent to the three harbors because Sanctuary regulations prohibit the designation and use of new dredged material disposal sites within MBNMS waters after the effective date of the MBNMS regulations (40 CFR section 922.132 (a)) (NOAA 1992).

A second reason the three harbors were chosen is because dredging projects were proposed by Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor in 1996-1997. A third reason the three harbors were chosen is on the basis that they are located in close proximity to San Francisco Bay Area which has a pilot cooperative checklist program managed by the DMMO. The DMMO successful pilot program is being conducted by regulatory agencies, several of which also have regulatory jurisdiction over the three harbors (USACE, USEPA, CDFG, and CSLC). Because several of the agencies also have jurisdiction over the three study harbors, the requirements for submitting complete and technically adequate applications should be very similar. A consolidated permit program idea and sediment testing guidance are being developed by Federal and State agencies for the harbors that border the Sanctuary (Cotter 1997a). Results of this research will provide additional information to support the efforts to manage dredging at the three harbors in this study.

Design

The investigative questions (Table 5) were designed to allow for the variety of responses depending on each harbor's dredging project approval experiences. To decrease response variability, answers have been obtained from information in documents containing background information, sampling and analysis plans, permit applications, and permits. Harbor staff, agency personnel, and other experts involved in the realm of harbor dredging were contacted directly to obtain their input.

Table 5. Investigative Questions

Category 1. Questions for Harbor Staff and Agency Personnel	
A. The three dredging project approval processes were examined by first asking the following historical information questions:	
1	When was the harbor constructed?
2	What type of dredging permits have been applied for: maintenance dredging or new work construction dredging?
3	What procedures were followed in an effort to obtain the permits?
4	What permits were required for the 1996-1997 dredging project?
5	What agencies were contacted regarding to 1996-1997 dredging project year?
6	What data were used to make permitting decisions?
7	How much material was dredged?
8	Where was the material disposed?
9	Were any problems encountered at the dredging site?
10	Were any violations encountered at the dredging site?
11	Were any problems encountered at the disposal site?
12	Were any violations encountered at the disposal site?
13	Was there any inspection or monitoring of the dredging site?
14	Was there any inspection or monitoring of the disposal site?
B. The dredging permit application processes were examined and analyzed with regard to previous and/or current permit requirements:	
1	What information did the Federal, State, and local regulatory agencies request?
2	What information was given by the harbor (i.e., dredging volume, dredging area, disposal site, and type of equipment)?
3	How was the information obtained for the harbor?
4	Who gathered the information for the harbor?
5	Was there a cost involved with obtaining the agency-requested information?
6	Was all information given?
7	Was the information gathered in a timely manner?
8	Was there a cost to apply for the permits?
9	What was the cost of agency review and coordination with other agencies?
10	What was the cost of agency inspection of dredging operations or disposal operations?

Table 5. Continued. Investigative Questions

Category 1. Continued. Questions for Harbor Staff and Agency Personnel	
C. The results of the harbor's efforts were examined, analyzed, and evaluated. The following questions about the results of each harbor's dredging permit application processes were addressed:	
1	How many attempts did it take to receive the permits?
2	Were there any problems encountered for each permit required?
3	If problems were encountered for each permit required, what were they?
4	Was there any one permit more difficult to obtain than another and if so, which one?
5	Was there a reason why one permit was more difficult to obtain than another?
6	Was any permit denied because sediments were too contaminated for disposal?
7	Were contaminated sediments disposed at upland locations?
8	What permit application procedures were successful?
9	Were the permits obtained within the expected time frame?
10	Were there any unexpected costs incurred?
11	Does the harbor staff feel that present procedures are adequate?
12	Did any violations occur during the dredging and/or disposal operations?
Category 2. Questions for the Review of the Model Consolidated Checklists.	
Questions were asked to examine, analyze, and evaluate the impact a cooperative checklist would have. The following research questions were asked with regard to the results of the San Francisco Bay Region Dredged Material Management Office's "Consolidated Dredging-Dredged Material Reuse/Disposal Permit Application," Washington State's "Joint Aquatic Resource Permit Application" model consolidated permitting checklists, the process being proposed for harbors bordering the MBNMS, and the three harbor's dredging permit application processes:	
1	Are there similar procedures between the sample consolidated checklists and the proposed procedures?
2	Are there different procedures between the sample joint checklists and the proposed procedures?
3	What is the outcome of similar procedures?
4	What is the outcome of different procedures?
5	Is there a benefit from the outcome of similar procedures?
6	Is there a benefit from the outcome of different procedures?
7	Do the harbors have any recommendations for a consolidated checklist?

Table 5. Continued. Investigative Questions

Category 3. Questions for Agency Personnel	
Each agency was asked the following regulatory questions:	
1	What regulations or guidance do the agencies use to evaluate the permit application?
2	What standards or guidance values are used to determine whether sediment passes or fails permitting regulations or guidance?
3	Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Since this research was designed to examine, analyze, and evaluate each of the harbor's dredging project approval process, certain assumptions were made: (1) the information provided from background information documents, sampling and analysis plans, permit applications, and permits is accurate; (2) any unanswered investigative questions will be provided by knowledgeable harbor staff, agency personnel, and other dredging experts; and (3) the researcher will interpret answers and information correctly.

Data Collection

The following procedures were used to collect data: (1) introductory letters were sent to the harbors and pertinent agencies to inform them about the study; (2) documents were examined (i.e., historical data, sampling and analysis plans, permit applications, permits, dredging volumes, disposal site, etc.) to help answer the investigative questions; (3) harbors and regulatory agencies were consulted via personal interviews, telephone calls, and electronic (e-mail) interviews; and (4) the subject of dredging was researched in university libraries and through access of USEPA and USACE websites.

Two letters (Appendix A) were sent to each of the harbors. The first letter was an introduction that described and explained the study's purpose, objectives, and methods. Confirmation of support from all four harbors was received following the first letter. Pillar Point Harbor was later dropped from the study because they were not planning any dredging projects in 1996-1997. The second letter was a reconfirmation letter expressing the researcher's intent and reliance upon the harbors for the pertinent information. In addition, drafts of the problem statement (i.e., importance, generality, and focus) and objective sections were also sent to reiterate the investigator's commitment and intention.

The data collection process was centered on obtaining answers and information to the investigative questions. Identical questions were asked of each harbor and regulatory agency personnel. In addition, questions asked via the telephone or by e-mail were phrased in a similar manner. These two methods helped to ensure validity, reliability, repeatability, and objectivity.

Analysis

The answers and information provided by the harbors and agency personnel provided the necessary components for analysis. Data (Appendix B) gathered from the research of the three categories of the 46 investigative questions were analyzed and evaluated to fulfill the stated objectives (Table 3). All data from harbor and agency staff, personnel, and documents were utilized to answer the investigative questions as completely and accurately as possible. The information was gathered from the responses of the investigative questions asked about the 1996-1997 dredging activities occurring

from September 1, 1996 through August 31, 1997 at Santa Cruz, Moss Landing, and Monterey Harbors. Data analysis was straightforward and completed qualitatively based on the various information and responses received from those asked and of the documents reviewed. In those instances where the dredging project approval process has been stalled beyond the control of harbor staff or agency personnel, the circumstances have been discussed in hopes of aiding the harbors and others which may encounter similar situations.

The project summaries may be used by the staff of the three harbors in this study, regulatory agency personnel, contractors, harbor community members, and other interested members of the public to: (1) learn about specific dredging permit application projects in the Monterey Bay Area; (2) have each of the three Monterey Bay Area Harbors share and learn from each other's experiences; (3) provide recommendations for the harbors to help complete their dredging project approval processes in a more timely and economically efficient manner; and (4) disseminate and share dredging information with other agencies, organizations, private groups, and local agencies.

IV. SUMMARY AND ANALYSIS OF HARBOR PROJECTS AND FEDERAL, STATE, AND LOCAL AGENCIES

Harbor Projects

Santa Cruz Harbor

The Santa Cruz Harbor dredging projects occurred from December 9, 1996 through April 17, 1997. A total of 122,200 cy of material was dredged by hydraulic suction from areas to maintain safe navigable depths for Santa Cruz Harbor patrons. Approximately 118,200 cy was dredged from the entrance channel and 4,000 cy from the inner harbor (Figures 2a and 2b). Disposal of the clean dredged material via pipelines occurred on and at Twin Lakes State Beach for beach nourishment purposes (Figure 2c) (Foss 1997).

A total of eight Federal, State, and local permits were needed for dredging and disposal including one each from the CCC, CDPR, CSLC, and RWQCB and two each from the USACE and MBAPC (Table 6). The permits for the dredging and disposal operations, with the exception of the CDPR and MBAPC permits, are covered under the terms of previously granted permits for specific lengths of time according to the individual agencies. In addition to the permitting agencies, Santa Cruz Harbor dredging was also reviewed by four other jurisdictional non-permitting agencies that comment to the USACE, CCC, and RWQCB. These agencies include the CDFG, USEPA, FWS, and MBNMS. Santa Cruz Harbor was required to submit current results for physical, chemical, and biological sediment tests for review by each agency.

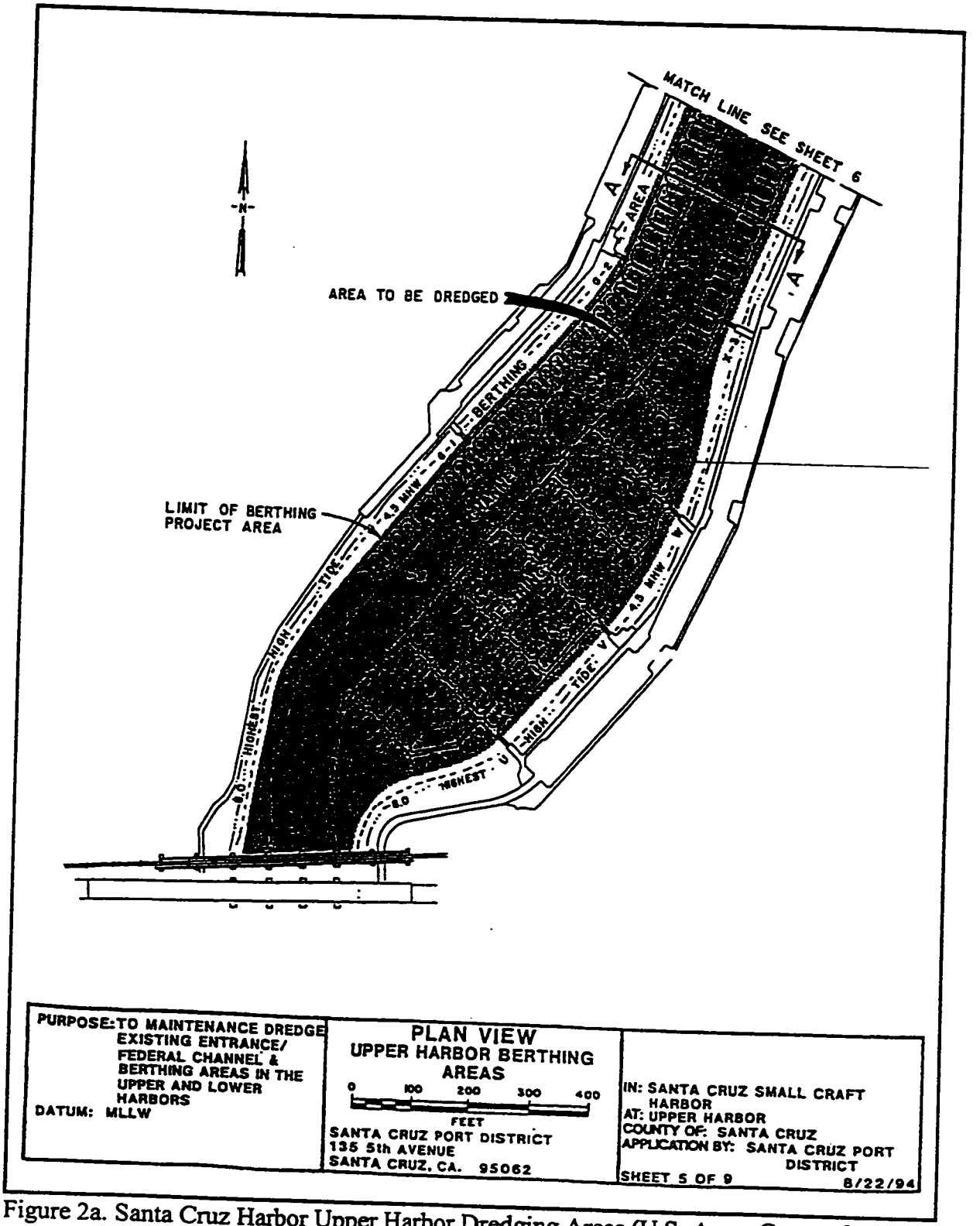

Figure 2a. Santa Cruz Harbor Upper Harbor Dredging Areas (U.S. Army Corps of Engineers, 27 February 1995, Department of the Army Permit, #21056S64).

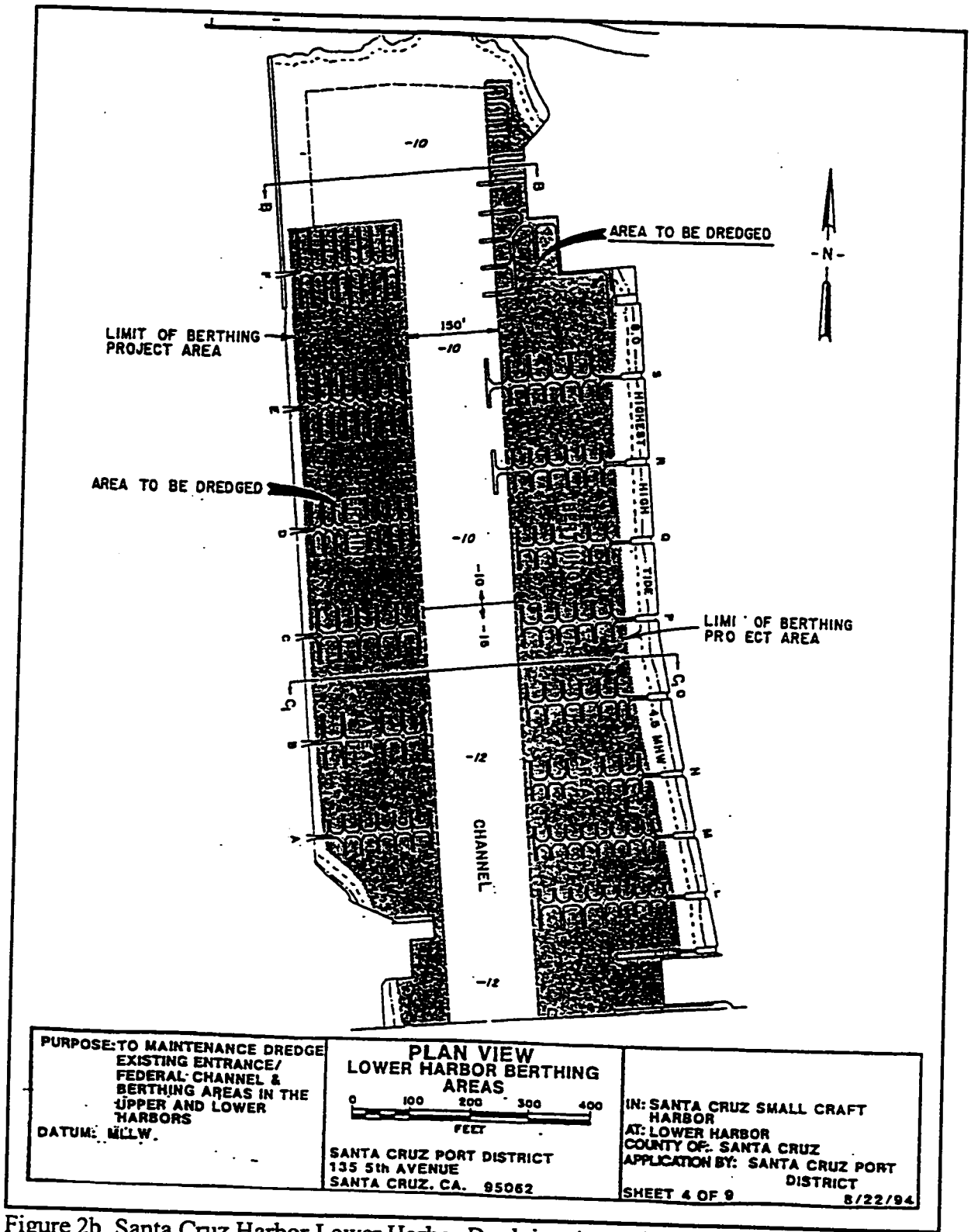

Figure 2b. Santa Cruz Harbor Lower Harbor Dredging Areas (U.S. Army Corps of Engineers, 27 February 1995, Department of the Army Permit, #21056S64).

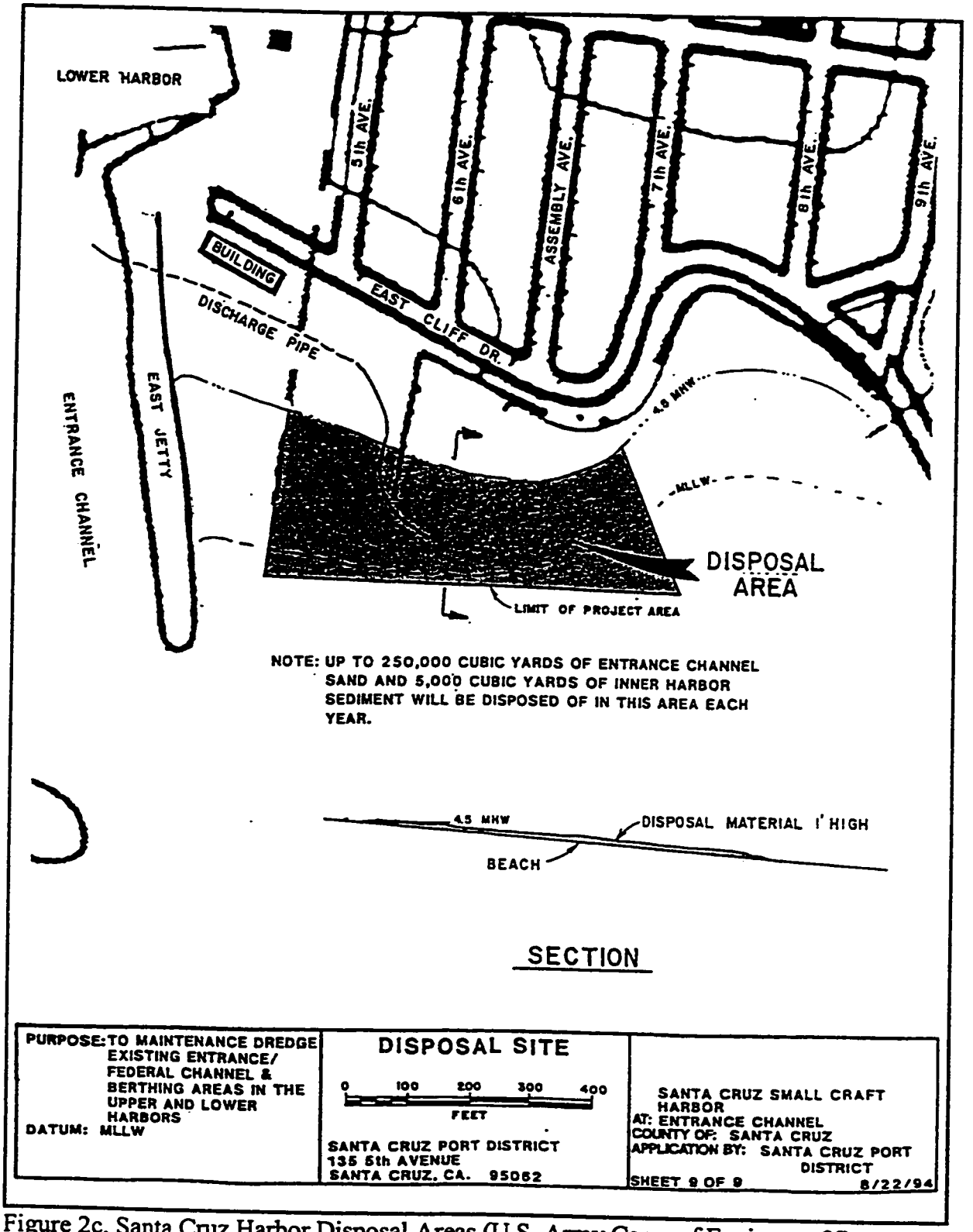

Figure 2c. Santa Cruz Harbor Disposal Areas (U.S. Army Corps of Engineers, 27 February 1995, Department of the Army Permit, #21056S64).

Table 6. Permits Required for Santa Cruz Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
USACE	RHA Section 10	Dredging Entrance Channel and Upper Harbor for a period of five years	8/20/94	3/22/95	USEPA, FWS, MBNMS, CCC, CDFG, RWQCB
USACE	CWA Section 404	Disposal of sediment onto Twin Lakes State Beach for a period of five years	8/20/94	3/22/95	USEPA, FWS, MBNMS, CCC, CDFG, CDPR, RWQCB, MBAPC
CCC	CZMA Section 307(c) and CCA	Disposal of sediment onto Twin Lakes State Beach for a period of ten years	9/22/95	10/13/95	MBNMS, CDFG
CDPR	State of California, Public Resources Code	Use of Twin Lakes State Beach for one year.	11/12/96	11/12/96	Not Applicable
CSLC	State of California, Public Resources Code	Use of State Lands (entrance channel, jetties, and beach replenish-ment) for dredging and disposal for 25 years	Staff does not recall	2/1/87	Not Applicable

Table 6. Continued. Permits Required for Santa Cruz Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
RWQCB	California Water Code	Discharge of dredged sediments onto specified locations indefinitely or unless needs and requirements of permit are changed or are not met	Unknown	6/10/88	MBNMS
MBAPC	Monterey, San Benito, and Santa Cruz Counties; California State Clean Air Act, Federal Clean Air Act	Operation of the dredge *Seabright* for one year	Initial application date: 2/3/87	Initial date of issue: 10/26/87 Revised permit issued: 8/31/93	Not Applicable
MBAPC	Monterey, San Benito, and Santa Cruz Counties; California State Clean Air Act, Federal Clean Air Act	Operation of the dredge *Squirt* for one year.	Initial application: 4/10/90	Initial date of issue: 7/20/90 Revised permit issued: 1/12/98	Not Applicable

Santa Cruz Harbor was bound to standard conditions for their CCC and MBAPC permits by the applicable permitting and commenting agencies (CCC 1995 and Thoits 1998b). Special conditions were assigned by the USACE, CCC, and CDPR (USACE 1995b, Cotter 1997c, CCC 1995, and Roth 1997). These special conditions include the CCC's requirement of submitting specific information to designated agencies and CDPR's limitations on dredging hours respectively.

In general, all information that was required of Santa Cruz Harbor was given to the applicable agencies in a timely manner. Information for Santa Cruz Harbor's permit applications was obtained and gathered primarily by the Harbormaster (also known as the Port Director) and Port District staff (Secretary, Administrative Officer, and Maintenance Services). The Port District staff followed Federal, State, and local agency procedures for guidelines to gather information requested by permitting commenting agencies (Santa Cruz Port District 1997). Time expended on obtaining permits by Port District staff is approximately 88 hours for yearly permits and approximately 287 hours for five-year permits (Bardwell 1998b). These estimated hours do not include the numerous hours spent throughout the year on Port District correspondence regarding compliance with permit conditions. Outside consultants were not necessary for permit coordination due to the Port Director's past 15 years of experience with the dredging project approval process (Foss 1997). For the required biological, chemical, and physical data, contractors were hired for field sampling and laboratory analysis of sediment samples (ToxScan Inc.) and water samples (SCEH).

Santa Cruz Harbor spent an estimated $25,000 on "administrative, permit, and testing" costs for the 1996-1997 project (Santa Cruz Port District 1997). According to staff, of the $25,000, approximately $13,000 was spent on air (odor) testing, $7,000 was spent on sediment and water testing, and $5,000 was spent on administrative costs for the Port Director's time (Santa Cruz Port District 1997). The $13,000 expended on air testing was unexpected and considered an "extraordinary" cost (Santa Cruz Port District 1997). The amount spent is in excess of $6,000 of the harbor's $19,000 budget for "administrative, permit, and testing costs." It is assumed that other costs reported (RWQCB's $500 Annual State Toxics Cleanup Fee and MBAPC's $314 renewal fees for the *Seabright* and *Squirt* dredge) have been accounted for in other budget areas. With the exception of the CSLC and MBAPC, whose permit applications fees were paid when the initial permits were obtained, fees for permit applications were not assessed because the harbor is a public entity (i.e., special district). The CDPR $1,000 permit fee was waived because the disposal (i.e., beach nourishment) was considered a "net overall benefit" to the public (Roth 1997).

Fees were not charged for USACE, USEPA, and MBNMS agency review of permits or coordination with other agencies, though the costs in terms of hours and staff resources spent on reviewing dredging project information could be considered high based on these agencies' comments (Lawrence 1998b, Hoffman 1998b, and Cotter 1997c). For the CSLC and MBAPC, the amount of time and staff resources spent on a project is dependent upon the specifics of each case (Howe 1998b and Thoits 1998a). In addition, the CSLC and MBAPC have recovered their resource costs through initial and

annual application fees ($825 and $314 respectively). CDPR staff spent one day processing Santa Cruz Harbor's 1996-1997 permit without assessing a fee (Roth 1997).

Santa Cruz Harbor did not experience any significant problems that prohibited them from completing their project during the permit process, dredging operations, and/or disposal operations. In addition, Santa Cruz Harbor did not receive any violations during operations at the dredge site, or at the disposal site from any agency that issues and/or reviews permit information. However, there were several issues of concern raised by agencies about operations at dredging and disposal sites by agencies that were addressed prior to the start of the dredging project. Concerns at one potential dredging site included grain-size (USEPA and MBNMS) and high concentrations of contaminants (MBNMS) in some upper harbor sediments. Both the USEPA and MBNMS considered some upper harbor material grain-size too fine for disposal for beach nourishment purposes. This issue was resolved because the Harbor decided to not dredge the fine sediments. Instead, Harbor management decided to wait to see whether the 1996-1997 winter storms will naturally flush out those portions proposed for dredging (Bardwell 1998a). No action occurred regarding the presence of upper harbor contaminants (tributylin [TBT] antifouling paint and polycyclic or polynuclear aromatic hydrocarbons [PAHs]). However, the USEPA and MBNMS have agreed that dredging of contaminated sediments would have to result in disposal at an upland location (Cotter 1997c).

Hydrogen sulfide odor problems at the Twin Lakes State Beach disposal site prompted Santa Cruz Harbor to look for a disposal site in the subtidal area of Twin Lakes State Beach. The MBNMS looked at their request and historical information to see if a

site was there before Sanctuary designation (January 1993). MBNMS staff researched agency files and discovered that there had been a site previous to Sanctuary designation and authorized its use. The harbor sought approval to dispose of sediment to dissipate the hydrogen sulfide odor. The CDFG, USEPA, MBNMS, MBAPC, and SCEH all noted that the surrounding harbor neighborhood made complaints about hydrogen sulfide odors coming from the disposal site. The odors emanating from disposal operations are caused by the dredging of pockets of decomposing organic material such as kelp in anaerobic conditions (Santa Cruz Port District 1997). Santa Cruz Harbor has made conscious efforts to help alleviate the sporadic odors by purchasing and applying enzymes to mask the offending smells and by scheduling and shifting discharge points according to the weather's wind patterns (Santa Cruz Port District 1997). MBNMS staff worked with Santa Cruz Harbor staff to authorize disposal of sediment into the surf zone, the historically used site designated in USACE dredging permits. The RWQCB rescinded its WDR in April 1998 that removed the requirement to discharge entrance channel dredged material above the mean high tide line (Cotter 1997c). Approval of this site will provide the Harbor with a viable way to prevent future odor problems.

According to Santa Cruz Harbor staff, the harbor feels that present dredging project approval procedures are adequate because the public is well-served by the process (Santa Cruz Port District 1997). However, staff has also noted two problems of their own with the process including "numerous dialogues" that stem from interpretation of sediment testing results and the input into the process by the newer non-locally based agency MBNMS. The "numerous dialogues" that occur is one aspect encountered due to

the number of agencies involved with interpretation and also because of the different and varied standards/references that each agency uses. Santa Cruz Harbor contends that the problem it has with the MBNMS is due to the non-local (Washington, D.C.) control of this newer Federal agency that has regional jurisdiction over the Monterey Bay Sanctuary. In addition, since 1993 when the agency became a participant in the permit process, harbor staff feels the amount of time and money spent on dredging project approval procedures has significantly increased (Foss 1997). The increased focus on Santa Cruz Harbor may be possibly due to the newness of both the disposal site odor problems and the designation of the MBNMS. Designation as a marine sanctuary by the Secretary of Commerce mandates coordinated management of Monterey Bay's "ecological, research, recreational, aesthetic, and historical resources" (State of California 1991, 26). Therefore, the additional attention on Santa Cruz Harbor's dredging projects may be measures to safeguard potential harm to Monterey Bay's richness and diversity of species, which include several endangered species.

Santa Cruz Harbor staff recommended two suggestions for a consolidated checklist to improve upon the dredging project approval process including lengthier multi-year permits and more standardized testing guidelines. Lengthier multi-year permits would extend the present valid dates of current permits (Santa Cruz Port District 1997). For example, instead of the USACE and CCC issuing permits on a five-year basis, permits could instead be issued on a ten-year basis. Ten-year permits may be possible if the terms of such an agreement are well prepared and clearly understood by the agencies and the harbor. Terms to be arranged should include acceptable dredging

and disposal project practices based on dredging and disposal site specifics, historical information, and current (regularly updated) testing data. In addition, an agreement should be made on the procedures or resolution of situations when an agency or harbor is in disagreement with the other or where significant modifications to the permit are needed (i.e., location of dredging and/or disposal sites, method of dredging and/or disposal operations, changes in dredging/disposal volume, etc.). More standardized testing would establish regional (i.e., Monterey Bay Area) standards. Such standards would ensure that the correct environment would be used for sediment suitability determinations. A correct environment would include the realistic grain-size distribution at the disposal site, correct species for bioassays, and realistic physical factors (e.g., temperature and salinity) found in that area. Therefore, when comparing the Harbor's sediment test results to the regional standards, conditions of both would be as similar as possible and mismatched parameters would not occur. These two items would reduce the number of hours and the amount of money expended on the process. The time and funds saved may possibly lessen the complexity and duration of the approval process and help the Harbor continue its goal of dredging for patrons.

Moss Landing Harbor

The majority of Moss Landing Harbor's proposed 1996-1997 maintenance dredging project of areas under their jurisdiction (non-Federal) did not occur. As a result, harbor traffic is "seriously impeded" from shoaled sands (CCC 1996a). The amount of sediment proposed for hydraulic suction dredging was approximately 31,000 cy even

though their USACE permit is for 50,000 cy per year. The proposed dredging areas include five different harbor areas: Gravelle's Boat Yard (7,700 cy), Monterey Bay Aquarium Research Institute's (MBARI) berth for the R/V *Western Flyer* (2,963 cy), "A" Dock (15,590 cy), Bay Fresh's berth (980 cy), and Sea Products' berth (3,520 cy) (Figure 3a). Confined disposal at an upland location is needed for much of the materials (CCC 1996a). However, 5,000 cy of sandy sediment from Gravelle's Boat Yard was dredged around July 19, 1996 and disposed offshore for beach nourishment (Huston 1998).

Up to ten permits were needed from Federal, State, and local agencies. These permits were the USACE (two permits: RHA Section 10 and CWA Section 404), CCC, CSLC, RWQCB, MBAPC, MCEH, (Monterey County Planning Department of Planning and Building Inspection (MCPBI), MCPD, and MLHD (Huston 1998) (Table 7). Permits required from the MCEH, MCPBI, and MCPD are contingent upon decanting and disposal locations. Except for the three possible permits needed from, the MCPBI, and MCPD, the other seven permits were previously granted with specific terms and time limits from each issuing agency. In addition, six non-permitting regulatory agencies reviewed and commented on Moss Landing Harbor's proposed project. These agencies include the USEPA, FWS, MBNMS, U.S. Coast Guard (USCG), CDFG, California State Department of Toxic Substance Control (SDTSC), and Monterey County Department of Public Works (MCPW). All of the agencies reviewed their respective applications and/or physical, chemical, and biological sediment test results.

The CCC and MBAPC each assigned standard conditions on their permits (CCC 1996a and Thoits 1998a). Special conditions were given by the USACE, USEPA,

MBNMS, and CCC (USACE 1996c, Hoffman 1998a, Cotter 1997c, and CCC 1996a). USACE special conditions include: (1) notifying the USACE if impacts on wetlands occur throughout the dredging project; (2) providing a map illustrating the areas where heavy metals will be removed; (3) staking containment area boundaries; (4) staff participation in environmental education on the federally-listed brown pelican and southern sea otter; (5) the prohibition of any action that would harm the brown pelican or southern sea otter; (6) daily examination of areas where dredging operations occur to ensure that the brown pelican or the southern sea otter are not present; and (7) notifying the FWS if any sick, injured, or dead brown pelicans or southern sea otters are located. The USEPA required the Harbor to split cores in layers for sediment tests to detect contaminated areas. The MBNMS agreed with the USEPA, USACE, CCC, CDFG, and RWQCB that special conditions should require the upper two feet of sediment to be disposed upland. CCC special conditions include the requirement of submitting specific information reports to designated agencies and the development of the South Sandholdt dredge disposal site and the six-month temporary development of the dry storage boatyard site for use with non-Federal dredged materials.

All information required of Moss Landing Harbor by Federal, State, and local agencies was submitted in a timely manner. Three consultants, Peter Grenell, Michael Cheney, and Land Systems Group, primarily obtained the information needed. Consultants have been used because they are able to devote the necessary time and help to expedite the process (Stilwell 1998). For the most part, the consultants are familiar

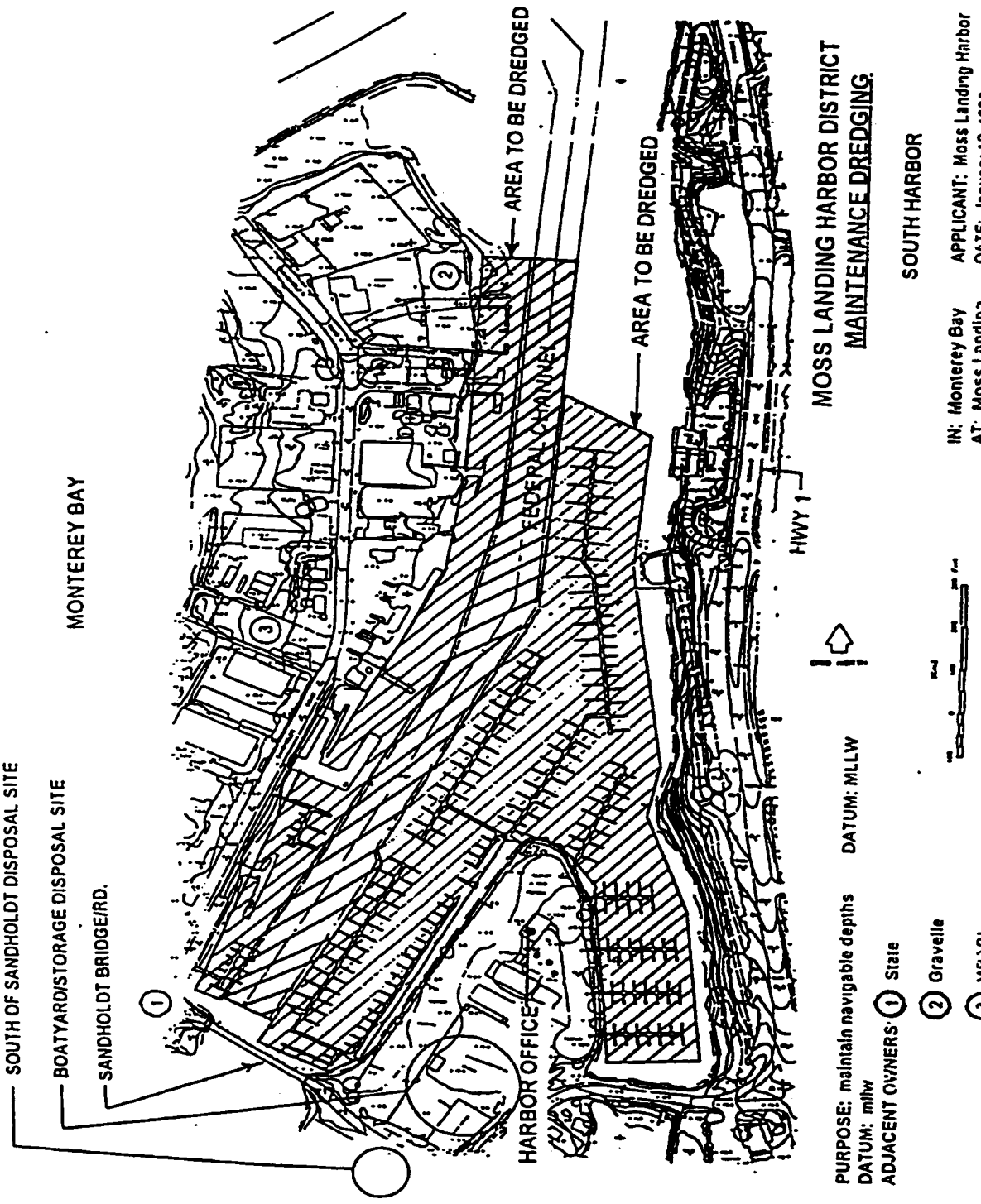

Figure 3a. Moss Landing Harbor-South Harbor Dredging Areas (U.S. Army Corps of Engineers, 26 June 1996. Department of the Army Permit, #22026S27)

Table 7. Permits Required for Moss Landing Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
USACE	RHA Section 10	Dredging of areas ML-1 and ML-2 of the Federal Channel and from selected areas within the North and South Harbor for a period of five years	1/2/96	7/10/96	USEPA, FWS, MBNMS, CCC, CDFG, RWQCB
USACE	CWA Section 404	Disposal of dredged sediments at sites SF-12, beach disposal, and upland disposal depending on sediment testing results for a period of five years	1/2/96	7/10/96	USEPA, FWS, MBNMS, CCC, CDFG, CDPR, RWQCB, MBAPC
CCC	CZMA Section 307(c) and CCA.	Develop-ment and use of disposal sites APN 133-221-01 (temporary) and APN 133-221-09.	4/19/96	5/9/96	MBNMS, CDFG.

Table 7. Continued. Permits Required for Moss Landing Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
CSLC	State of California, Public Resources Code	Use of State Lands for dredging and disposal operation	Staff does not recall	Staff does not recall	Not Applicable
RWQCB	California Water Code	Discharge of dredged material from North Harbor to disposal sites SF-12, SF-14, and three beach replenish-ment areas depending on sediment test results indefinitely or unless needs and requirements of permit are changed or are not met	Unknown	3/9/90	Not Applicable
MBAPC	Monterey, San Benito, and Santa Cruz Counties; California State Clean Air Act; Federal Clean Air Act	Operation of the dredge *#4133*	Initial application date: 5/22/87	Initial date of issue: 6/9/88 Renewal date (for validation purposes): 5/5/97	Not Applicable
MCEH	Monterey County	Permit required depending on location of material			

Table 7. Continued. Permits Required for Moss Landing Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
MCPBI (Planning Division)	Monterey County	Coastal Emergency Permit for dredging of Gravelle Site	Unknown	7/7/97	Not Applicable
MCPBI (Building Division)	Monterey County	Grading permit required depending on decanting location			
MCPD	Monterey County.	Coastal development permit required depending on decanting location			
MLHD	Moss Landing Harbor Board of Commis-sioners	Construction of decanting area	Staff does not recall	4/11/96	Not Applicable

with the agencies involved in the permitting (Stilwell 1998). Although the time spent on the permit process is unknown, one Moss Landing Harbor consultant estimated the number of staff needed. Based on similar experiences, without sediment testing, three staff members are needed and if sediment testing is involved, two additional consultants and their staff are needed. For sediment and water data, several firms were hired including ToxScan Inc., Pacific Treatment Analytical Services, CRG Marine Laboratories, Advanced Biological Testing, Associated Laboratories, and MEC Analytical Systems (Moss Landing Harbor District 1996c). According to a staff memo, Pacific Treatment Analytical Services and CRG Marine Laboratories performed chemical analyses of sediments, MEC Analytical Systems conducted grain-size analyses of

sediments, and Advanced Biological Testing performed project management and bivalve larvae and amphipod bioassays (Moss Landing Harbor District 1996c).

Moss Landing Harbor spent approximately $65,000 on consultant fees from April 30, 1995 through February 2, 1997 (Moss Landing Harbor District 1998). The dates for the consultants begin in 1995 because that is when Moss Landing Harbor began preparing for the 1996-1997 proposed dredging project (Huston 1998). For sediment testing, approximately $58,000 has been spent on sediment and water testing (Moss Landing Harbor District 1996c). Except for the CSLC and MBAPC, all permit application fees were waived because Moss Landing Harbor is a public entity (i.e., special district). The CSLC had charged an initial $825 filing fee and MBAPC's 1996-1997 renewal fee for operation of the dredge they use was $88. In addition, Moss Landing Harbor was not charged for agency review of permits or coordination with other agencies.

Although fees were not charged for agency review of permits or coordination with other agencies by the USACE, USEPA, and MBNMS, the costs in terms of hours and staff resources spent on reviewing dredging project information could be considered high, based on these agencies' comments (Lawrence 1998b, Hoffman 1998b, and Cotter 1997c). However, for the MBAPC, the amount of time and staff resources spent on a project is dependent upon the specifics of each case (Thoits 1998a). In addition, through the annual renewal fee ($88), MBAPC has recovered their resource costs.

One of the main reasons that prevented Moss Landing Harbor from conducting their proposed dredging project was the difficulty in establishing a permanent drying site for contaminated dredged material (Figure 3b) (Hoffman 1998a, Huston 1998, Lawrence

1998a, and Stilwell 1998). Based on the resampling of sediment, almost all of the material would need to be disposed of at a confined site because of contamination levels (CCC 1996a). The USACE, USEPA, and MBNMS also agreed that upland disposal was "necessary for about one-third of the (Moss Landing) Harbor District spoils" (Cotter 1998b). TBT and copper are from anthropocentric sources including anti-fouling paints (Champ and Lowenstein 1987). Agricultural pesticides, including DDT, are received in runoff from the Old Salinas River, Tembladero Slough, Elkhorn Slough, and Moro Cojo Slough (Johnston 1998). The contaminant contained in the runoff is most likely from upstream agricultural sources (Hoffman 1998a). The high levels of pesticides and heavy metals make disposal of contaminated dredged material unsuitable for open-water disposal (Hoffman 1998a).

Of the approximately 31,000 cy of sediments proposed for dredging, 10,000 cy are not suitable for unconfined disposal because they are contaminated with heavy metals and DDT (CCC 1996a and USEPA 1997). Previously in April of 1996, composite sediment test results indicated that the entire amount (31,000 cy) needed to be disposed of at an upland location (USEPA 1996). However, based on newer and better designed tests, the USEPA and USACE determined that 21,000 cy are suitable for aquatic disposal (USEPA 1997). The newer tests were designed to better identify whether newly deposited sediment in selected areas of the inner harbor were acceptable for unconfined disposal or not through full pesticide analysis of composite (upper, middle, and bottom sediment layers of each area) samples (USEPA 1997). According to the USEPA,

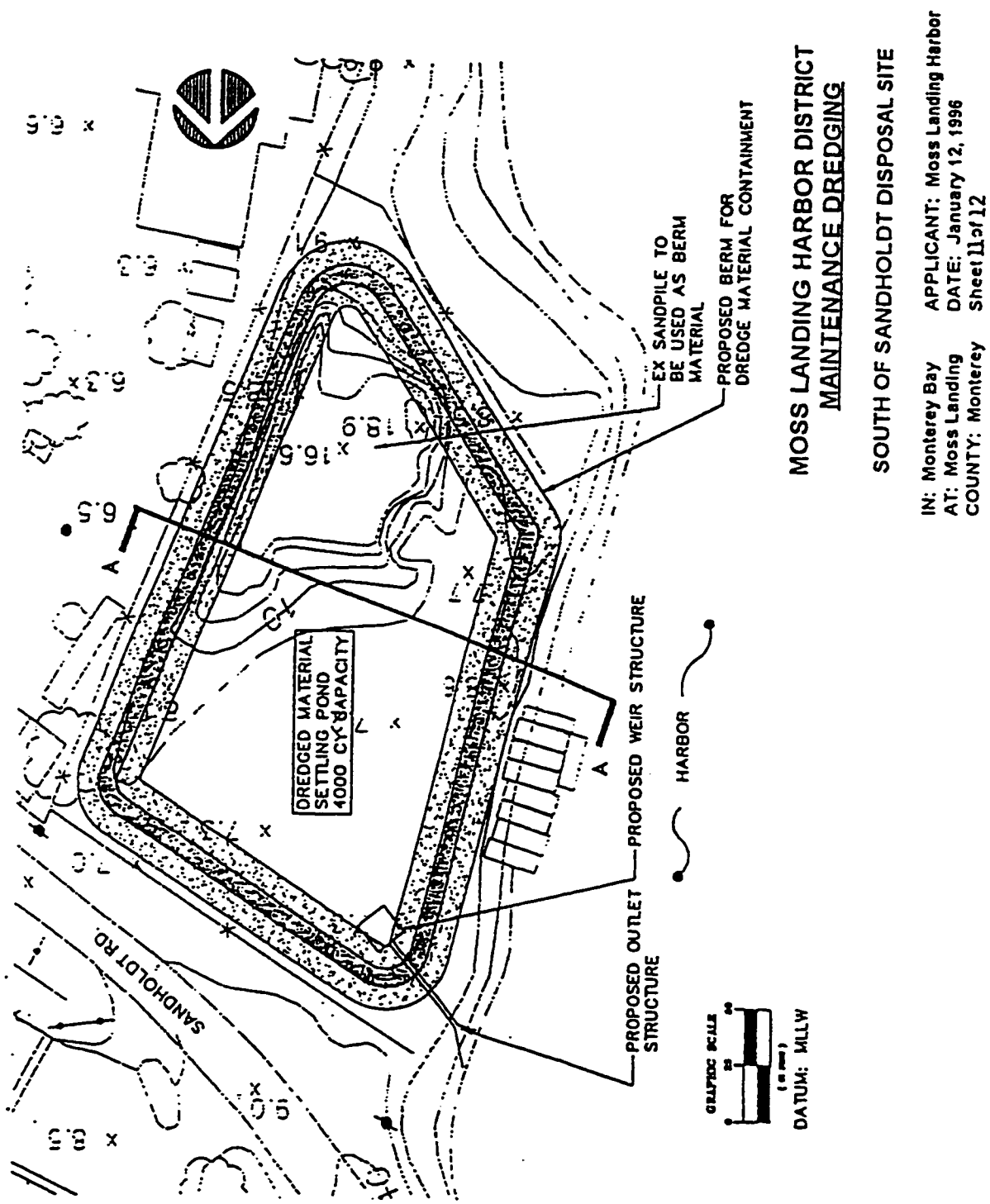

Figure 3b. Moss Landing Harbor-Disposal Containment and Decanting Area (U.S. Army Corps of Engineers, 26 June 1996. Department of the Army Permit, #22026S27)

each composite sample was analyzed "based on the extent and degree of pesticide contamination" (1997, 1).

Moss Landing Harbor's proposal to build the South Sandholdt (4,000 cy) and Boatyard (13,000 cy) dredge disposal decanting ponds have a limited capacity totaling 17,000 cy. In addition, the time needed to process the 24,000 cy of sediment would be approximately 20 months (CCC 1996a). CCC, in cooperation with Monterey County, has granted a development permit for the South Sandholdt decanting site and a short-term development permit for six months for the use of the boatyard drying site (CCC 1996a). The short-term permit does not allow enough time to process the entire amount of materials, and therefore dredging did not proceed as proposed. The CCC and Monterey County approved the Coastal Development Permit for six months for two purposes: harbor channels could be immediately cleared to allow safe passage of commercial and recreational vessels, and Moss Landing Harbor would have additional time to either process a permanent use permit for settling pond sites with Monterey County or find other long-term disposal options (CCC 1996a).

According to USEPA staff, the difficulty of locating an upland drying site has been an issue for several years (Hoffman 1998a). Moss Landing Harbor and Monterey County governmental agencies have not been able to agree on which areas could be used for upland drying sites (Hoffman 1998a). Therefore, the delay in finding a permanent decanting site has prevented Moss Landing Harbor from undertaking their full dredging project.

One issue that has now come to the attention of the new Moss Landing Harbormaster (also known as General Manager) is that the consultants previously hired have not fulfilled Moss Landing Harbor's objective with respect to the ultimate Moss Landing Harbor goals of dredging and establishing a drying site (Stilwell 1998). Because of this, the new General Manager will now use a different consulting firm for future dredging project plans. The new consultants, Harding Lawson Associates, have been chosen because they are actively involved in sampling and analysis on a regional scale, employ a staff of engineers, possess engineering tools, and their affiliated construction firm offered the lowest bid for the Moss Landing Harbor upland disposal site (Stilwell 1998).

Moss Landing Harbor staff have made one recommendation concerning a consolidated dredging permit checklist application (Stilwell 1998). The staff suggestion is for a one-stop shopping permit. However, staff admitted that such a recommendation is unlikely. Such a permit would need to encompass all Federal and State level agencies with each agency still maintaining their regulatory authority. In other words and according to Moss Landing Harbor staff, "each agency should do their own job, and let their fellow agencies do theirs" (Stilwell 1998). Staff made the suggestion based on observations of recent permit approval processes. One observation used as an example in support of the suggestion is that although the MBNMS is not a permitting agency, they become a de facto permitting authority because the USACE will not react to a dredging permit approval until the MBNMS signs off on the plan (Stilwell 1998). However, according to MBNMS staff, this process is required by USACE regulations at 33 CFR

320.4(i) (Cotter 1998a). In addition, the USACE is also required to consult with the MBNMS under Section 304(d) of the National Marine Sanctuaries Act (Cotter 1998a).

Monterey Harbor

The maintenance dredging project at Monterey Harbor occurred over a one-month period from February 5, 1997 through March 5, 1997. A total of 1,000 cy was dredged by hydraulic suction from two areas for the purpose of removing shoaled sands to allow vessels passage without grounding hazards. Approximately 800 cy of material was removed from the D Dock and G Dock areas and another 200 cy from the Yacht Club area (Figure 4a). The predominately (95%) sandy material was decanted on-site and disposed of at an upland location to be stored and later used as road base (Figure 4b) (Scheiblauer 1997).

A total of four permits were needed for Monterey Harbor's dredging and disposal operations from Federal, State, and local agencies (Table 8). Two permits were required from the USACE and one permit from both the CCC and RWQCB. All four permits were previously granted with specific terms and time lengths from each issuing agency. Six other Federal, State, and local agencies, which do not issue permits but have regulatory review and comment authority, also examined and considered Monterey Harbor's dredging and disposal project. These six agencies include the CDFG, USEPA, FWS, MBAPC, MBNMS, and MCEH. In addition, 1996-1997 physical, chemical, and biological sediment data was collected and given to the applicable agencies for review.

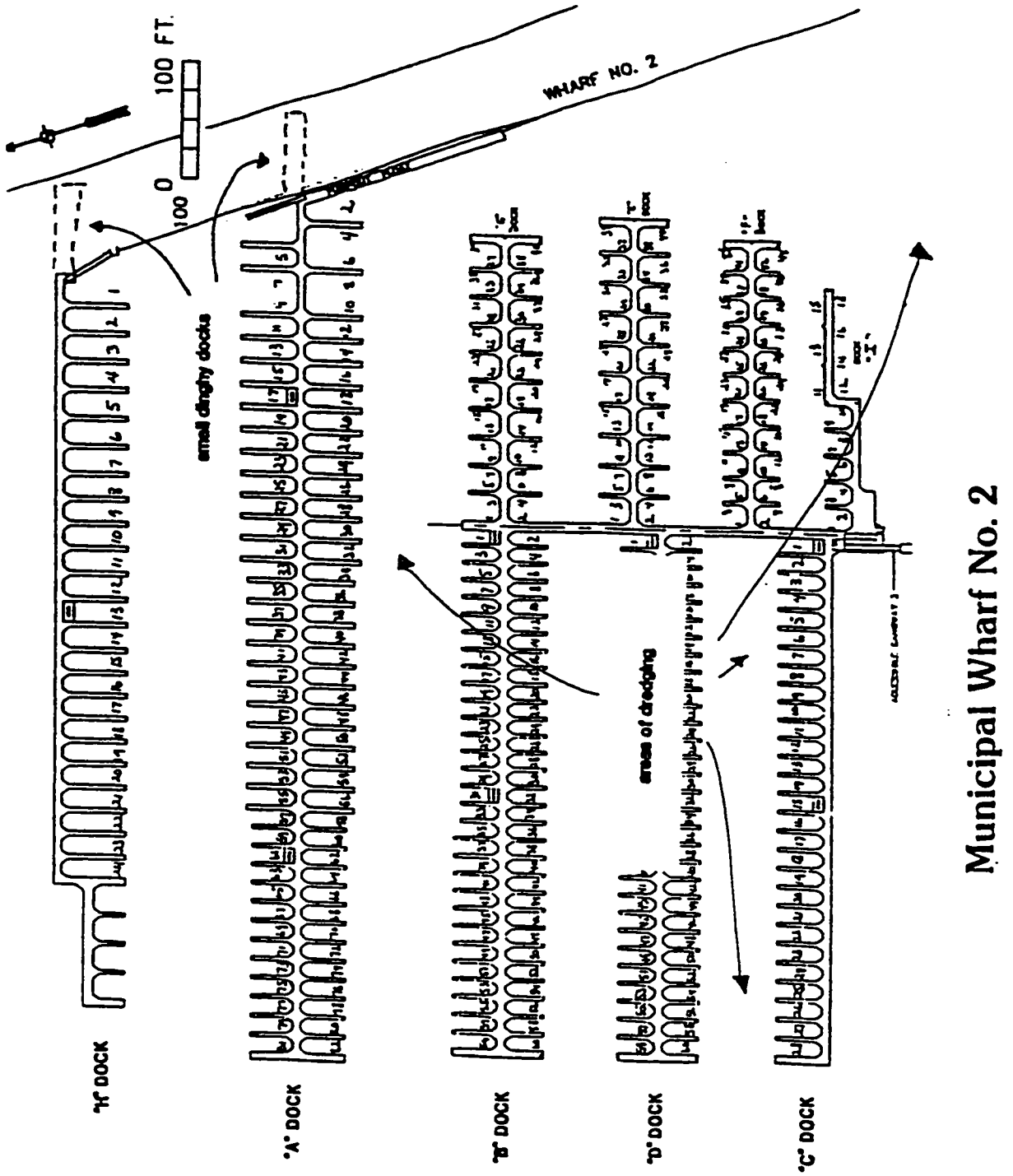

Figure 4a. Monterey Harbor-Overview of Dredging Areas (City of Monterey Harbor 5-Year O & M Program Application for Coastal Development Permit, 31 July 1996)

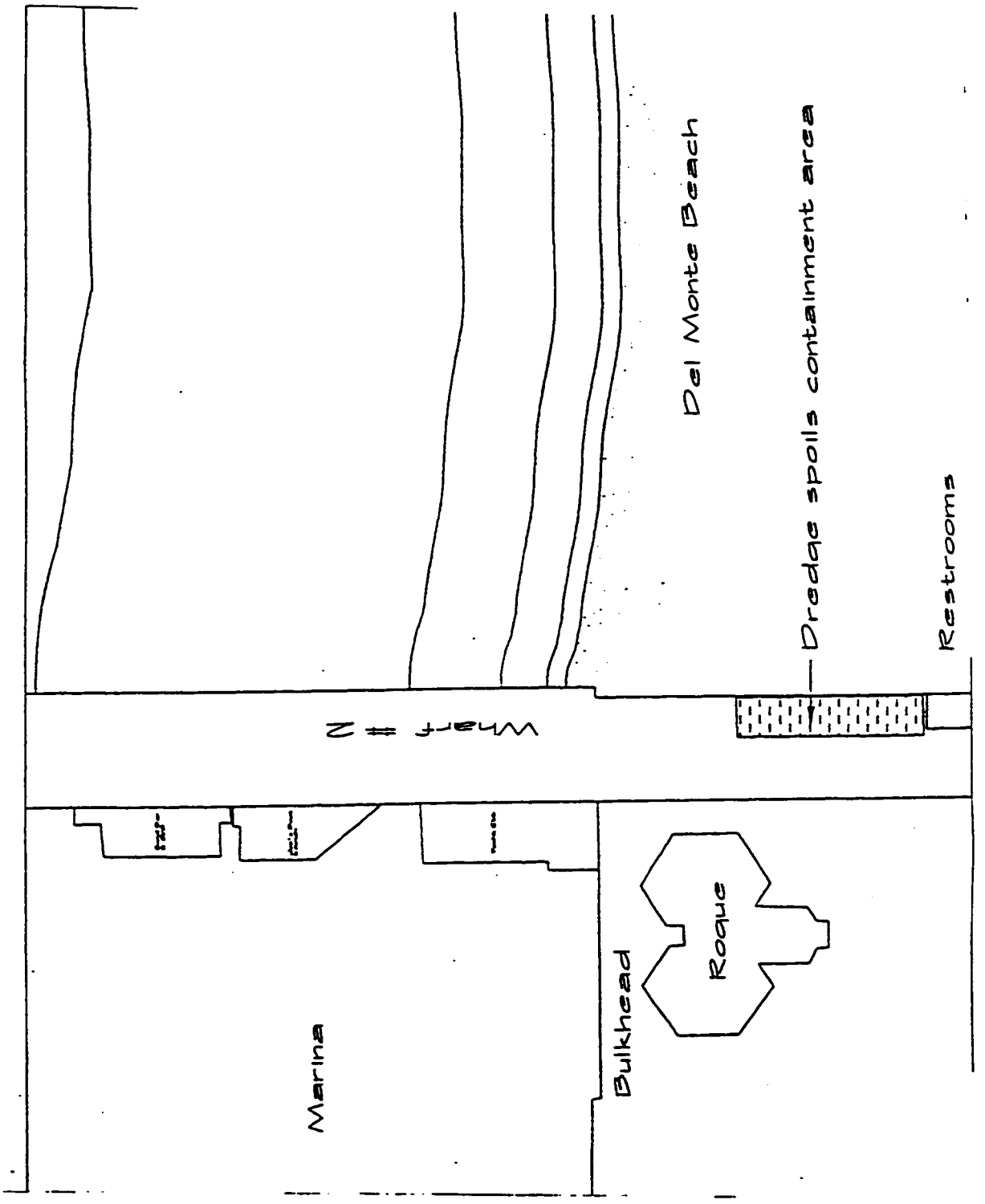

Figure 4b. Monterey Harbor-Dredge Spoils Containment Area (City of Monterey Harbor 5-Year O & M Program Application for Coastal Development Permit, 31 July 1996)

Table 8. Permits Required for Monterey Harbor

Permitting Agency	*Authority*	*Action Permitted*	*Date Applied*	*Date Issued*	*Commenting Agencies*
USACE	RHA Section 10	Maintenance dredging for a period of five years	3/13/92	4/9/93	USEPA, FWS, MBNMS, CCC, CDFG, RWQCB
USACE	CWA Section 404	Disposal of material east of Wharf II or at an upland site for a period of five years	3/13/92	4/9/93	USEPA, FWS, MBNMS, CCC, CDFG, CDPR, RWQCB, MBAPC
CCC	CZMA Section 307(c) and CCA	Five-year operations and maintenance program including dredging	10/4/96	11/14/96	MBNMS, CDFG
RWQCB	California Water Code	Discharge of dredged material from the Monterey Harbor Wharf indefinitely or unless needs and requirements of permit are changed or are not met	Unknown	7/12/91	Not Applicable

Standard conditions were imposed from permitting and commenting agencies on their CCC permit (CCC 1996b, Cotter 1997c, and Hoffman 1998a). Special conditions

were imposed on the permits received from the USACE and CCC including the USACE requirement of confined disposal of the top 12 inches of sediment from designated areas and the CCC's requirement of submitting specific information to designated agencies (USACE 1993a and CCC 1996b).

Overall, all required Monterey Harbor agency information was obtained and submitted in suitable time. The Harbormaster and harbor staff were responsible for the majority of information collected and given to the required agencies. Additional permit application support was received by the City of Monterey's Planning Department for the CCC's "Application for Coastal Development Permit" (Scheiblauer 1997). According to Scheiblauer , an estimated 80 to 100 hours of the Harbormaster's time is spent on obtaining the permits (1998). An additional eight hours of the secretary's time is also required for administrative assistance (Scheiblauer 1998). Federal, State, and local agency procedures were followed by Monterey Harbor in order to submit the appropriate information (Scheiblauer 1997). The Harbormaster, experienced in the dredging project approval process, did not hire consultants to assist or lead in the gathering of information. However, one contractor (ToxScan Inc.) was hired to conduct sampling and biological, chemical, and physical analysis of sediment and water.

The 1996-1997 fees Monterey Harbor has spent on the project include $4,000 on sediment and water sampling and analysis, $500 for the RWQCB's Annual State Toxics Cleanup Fund, and an unknown dollar amount for the Harbormaster's and Harbor staff's time (Scheiblauer 1997). All fees for permit applications were waived because Monterey

Harbor is a public entity (i.e., operated by the City of Monterey). In addition, they were not charged for any agency review or coordination with other agencies.

Agency review of permits and coordination with other agencies could be considered high for the USACE, USEPA, and MBNMS based on agency comments (Lawrence 1998b, Hoffman 1998b, and Cotter 1997c). However, Monterey Harbor was not charged a fee by any of the agencies. MCEH staff spent very little time on the disposal site water quality issue (one to two hours) and did not require monetary compensation either (Welch 1998b).

Although several issues were raised about certain aspects of Monterey Harbor's dredging project during the permit process and disposal operations, the harbor was able to proceed and conduct their dredging project as planned. Monterey Harbor also did not receive any violations during the dredging operations or disposal operations. One large multi-agency issue (CCC, CDFG, USACE, MBNMS, MCEH, and RWQCB) is due to the known presence of lead in Monterey Harbor sediment. The source of the lead is a 1920's Southern Pacific Railroad slag (debris) heap that has since contaminated Monterey Harbor area sediment and soils (Scheiblauer 1997). Agency concerns included the impacts of elevated levels of lead in dredge sediment and disposal of the contaminated material close to the beach (Welch 1998a). These concerns plus concerns about concentrations of other contaminants (based on data from State Mussel Watch and Bay Protection Toxic Cleanup Program) materialized into calls from the MBNMS and MCEH for more sampling and analysis before dredging was to begin and dredged material was pumped to a confined upland (Cotter 1998a). The agencies and Monterey Harbor worked

together and addressed the concerns up until the day before dredging began. The additional sediment testing confirmed that although present, concentrations of the heavy metals and other contaminants were not high in the water sample results (Welch 1998a). Dredging occurred as planned and after drying, the materials were subsequently taken to the Marina Landfill for upland disposal. Further testing of the excavated material after dredging reconfirmed high levels of lead were not encountered (Welch 1998a).

One other agency's (MBNMS) issue occurred at the disposal site. The issue was that there was a problem with the decanting basin leaking water and sediment. The problem was addressed as soon as MBNMS staff notified the Harbormaster and the leaks were reduced (Cotter 1997c).

Throughout Monterey Harbor's dredging project approval process one situation occurred that almost jeopardized the project. According to staff, the issue itself, the request of additional sediment testing, was less of a problem for them than the circumstances of how and when the tests were asked for (Scheiblauer 1997). Monterey Harbor was distressed because the tests were requested by the MBNMS one day before dredging operations were to begin, and all arrangements for equipment and dredge project staff had been already finalized. In addition, Monterey Harbor did not feel additional tests were warranted because they had previously determined during the approval process that disposal would be at an upland location. Although MBNMS staff has admitted their request for information was made late, Monterey Harbor had the tests performed (Cotter 1997c). The necessary data was then received and reviewed immediately by the agencies

including the MBNMS and MCEH. The decision was in favor of dredging, and operations began as the Harbor had planned the following day.

According to harbor staff, the present dredging project approval procedures are not completely adequate for their particular situation (Scheiblauer 1997). The harbor gave two reasons why they feel specific conditions at their harbor call for different agency procedures. The first is Monterey Harbor's dredging projects are on a small scale compared to other harbor projects. The second is because their harbor does not, nor does it need to, dredge every year.

Monterey Harbor staff made nine recommendations for a cooperative checklist. The staff based their recommendations on previous and current situations and experiences with the dredging project approval process. The nine recommendations include: (1) the need for coordinated agency timelines; (2) standardized testing guidelines; (3) scientifically-defensible biological, chemical, and physical values; (4) absolute interval deadlines for processing permits; (5) equal weighting of agency comments for decisions; (6) the assumption of no negative concerns of agencies who have not commented within a given time frame; (7) issues raised by commenting agencies should only be made to the permitting agencies; (8) consideration of a system's cycle; and (9) revised procedures for small projects. Coordinated agency timelines would require all commenting agencies of a permit (e.g., CCC, CDFG, USEPA, MBNMS review and comments on USACE CWA Section 404 permits) to address their concerns or opinions at one time, therefore minimizing delays on that particular permit's approval process. Standardized testing guidelines would pre-determine the types of tests needed based on site characteristics

(i.e., grain-size and historical data) specifically for dredging areas within Monterey Harbor. Scientifically defensible biological, chemical, and physical values would decrease the amount of agency speculation now occurring from the interpretation of data and realistically determine if the sampled sediment conditions would harm the environment or not. Absolute interval deadlines for processing permits would end the uncertainty about when permits will either be issued or denied by enforcing strict timelines for making requests for additional information, review periods, and comment periods. The equal weighting of agency comments for decisions would level out the field, thereby making it difficult for one agency's considerations to have more bearing than another and induce decision making by majority rule. The suggestion for assuming agencies that have not commented do not hold negative concerns about proposed projects would end delays in the approval process that occur presently from waiting to hear from the agencies. The recommendation that issues raised by comments from commenting agencies should only be made to the permitting agencies would help in effectuating the most appropriate course of action(s). The consideration of a system's cycle would help to include a harbor's natural input and output processes (e.g., the chemical attraction of silt and heavy metals and the natural flushing of creeks). Revised procedures for small projects could employ a tier concept that would require fewer samples and tests than larger projects.

Agency Roles

Federal Agencies

U.S. Army USACE of Engineers

The USACE issued RHA Section 10 and CWA Section 404 permits to Santa Cruz, Moss Landing, and Monterey Harbors. The RHA Section 10 permit authorizes harbors to navigable waterways. The CWA Section 404, a permit to discharge dredged or fill material into waters of the United States, allows the harbors to undertake disposal operations that will not adversely impact aquatic ecosystems.

In order to obtain their USACE permits, each of the three harbors submitted an "Application for a Department of the Army Permit" and physical, chemical, and biological sediment test results. Although the goal is to issue permits within 60 days, it rarely happens because of delays (e.g., incomplete applications, responses to comments, additional instruction requests) that may occur (Lawrence 1998a). In addition, current sediment test results must be submitted for review every time the harbors propose a dredge project. According to staff, regulations used to evaluate permit applications include the Federal Register regulations for the Department of the Army, USACE of Engineers defined in 33 CFR Parts 320-330, regulations in the Federal Register entitled, Final Notice of Issuance, Resistance, and Modification of Nationwide Permits, and sediment data (Lawrence 1998a).

According to the USACE, one staff member is in charge (subject to a supervisor's approval) with the review and processing of information for dredging permits (Lawrence 1998b). The amount of time spent on the review of permit applications varies with each

project. The length may vary from "as quick as four months to literally years" due to the various complexity of issues raised, workload of other projects, and time spent with the applicant having to supply additional information and/or resolve problems (Lawrence 1998b).

For determining the suitability of sediment, staff uses different references including the USEPA and USACE manuals, Public Notice 93-2, and reference tables (Lawrence 1998a). The two manuals, *Evaluation of Dredged Material Proposed for Ocean Disposal-Testing Manual*, known as the "Green Book" (USEPA and USACE 1991) and the *Inland Testing Manual(Draft)* (USEPA and USACE 1994) contain details for testing. The USACE's Public Notice 93-2, Testing Guidelines for Dredged Material Disposal at San Francisco Bay Sites, contains testing protocols that are presently used in the San Francisco Bay Area (USACE 1993b). For sediment test results, staff compares the applicant's results to several tables of sediment screening levels. Three such reference tables used are "Table 8. Sediment Screening Levels" from *Evaluation of Sediment Toxicity Tests-Draft*, developed by NOAA and the State of Florida (SFRWQCB 1996); SWRCB's "Table 8. Commonly Used Sediment Quality Guidelines" from their *1995 Annual Report* (SFRWQCB 1995); and *Sediment Screening Criteria and Testing Requirements for Wetland Creation and Upland Beneficial Reuse*, by Wolfenden and Carlin (1992).

Staff commented that they inspect dredging and disposal operations if they have the time to (Lawrence 1998a). Inspections are made to ensure that dredging and disposal are being done in the right locations. However, because of the schedules of activities

(e.g., a disposal barge may be on a disposal run), staff usually plan their inspections when all aspects of the operations can be viewed. And when such scheduled inspections occur, the inspectors generally find that dredging and disposal operations are usually within the terms of the permits (Lawrence 1998a).

Special conditions were assigned to all three harbors with the issuance of the permits (USACE 1993a, 1995a, 1996c). The conditions for Monterey Harbor, Moss Landing Harbor, and Santa Cruz Harbor are attached to the end of their permits. The harbors are required to abide by the assigned conditions for the course of their permits.

USACE staff has also commented in favor of a combined application for harbors of Monterey Bay (Lawrence 1998a). As the DMMO lead agency, the USACE staff contends San Francisco Bay Area applications are now processed more quickly as a result of DMMO combined efforts (Lawrence 1998a). Prior to the formation and implementation of the DMMO, agencies and applicants communicated individually with one another through phone calls from which delays often resulted. Postponements have now been reduced due to regularly scheduled bi-monthly meetings with all DMMO member agencies present to jointly discuss pertinent information (i.e., sediment sampling and analysis plans and sediment test results).

USACE staff has also commented on the wish for a single permit. However, staff also admitted that the enactment of a single permit may never happen because various Federal and State agencies do not want to give up any of their authority (Lawrence 1998a).

U.S. Environmental Protection Agency

The USEPA does not issue permits but reviews and comments on applications and sediment data for USACE CWA Section 404 permits. Under the CWA, the USACE can only issue permits with the USEPA concurrence (Hoffman 1998a). Specifically in the Monterey Bay Area, the USEPA is the lead agency in making technical determinations of the suitability of dredged material for unconfined aquatic disposal (Hoffman 1998a).

In accordance with regulations in CWA Section 404(b)1 guidelines, the USEPA evaluates permit applications for disposal of dredged material in inland and ocean waters. Several standards and guidance values are used to determine the suitability of sediment proposed for disposal. The USEPA utilizes several references including the USEPA and USACE's (1994) *Inland Testing* Manual, USEPA's (1993) *Guidance Manual: Bedded Sediment Bioaccumulation Tests*, and USEPA's (1994) *Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods.* Staff also uses background and historical information on the sites and regions under proposal, their best professional judgment, testing results from scientific literature, and other various numerical guidelines (Hoffman 1998a). The different references are employed based on the factors involved. For non-contaminant factors (i.e., grain-size, ammonia, sulfides), the USEPA uses effects-based testing results. For cases regarding the bioavailability of contaminants, staff uses their best professional judgment. In addition, other numerical guidelines based on observed or modeled correlations between toxicity and concentrations of pollutants in sediments and tissues are utilized.

On the average, the USEPA's efforts spent on Santa Cruz, Moss Landing, and Monterey Harbor projects is one staff member at one-quarter time, or ten hours per a 40-hour work week (Hoffman 1998b). However, there are occasions when the projects require more or less staff time and resources (Hoffman 1998b).

USEPA staff conduct informal inspections based on the specifics of each case (Hoffman 1998a). Staff contacted has observed 1996-1997 dredging and disposal operations at Santa Cruz Harbor. However, the staff member contacted did not observe any part of the Monterey Harbor project and could not observe at Moss Landing Harbor because their project did not occur.

Monterey Harbor and Santa Cruz Harbor projects were not subjected to any special conditions outside of those attached by the USACE. However, at Moss Landing Harbor, and in addition to USACE special conditions, the USEPA required specific testing protocol for dredged material samples. The USEPA required core samples to be split into vertical layers to find which areas contain elevated levels of contaminants (Hoffman 1998a).

The USEPA staff has also commented positively on the idea for consolidated procedures (modeled after the DMMO) for Monterey Bay Harbor projects (Hoffman 1998a). Together all agencies would share the responsibilities of educating and guiding the harbors on procedures, testing requirements, and interpretation of test results.

USEPA staff also commented that they recognize there is a need for guidance (Hoffman 1998a). The availability of guidance would help harbors better understand

what information is being asked for. In addition, applicants would also have a better understanding of why and how the information is being evaluated.

U.S. Fish and Wildlife Service

Due to their workload, FWS staff did not have time to respond to questions. The FWS conserves, protects, and enhances fish and wildlife and their habitats (USFWS 1997). They operate by enforcing the Federal Endangered Species Act, insuring compliance with the NEPA, managing and reviewing and commenting on all water resource projects. In addition, the USACE is required to consult with FWS before issuing wetland activity permits (USFWS 1997).

Monterey Bay National Marine Sanctuary

The MBNMS is administered by the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce. Their legal mandate is to protect Sanctuary resources under Title III of the1972 MPRSA, also known as the National Marine Sanctuaries Act (State of California and CCC 1991). According to staff, the MBNMS does not issue permits for dredging at the three harbors but does participate as a commenter on permits issued by the USACE (RHA Section 10 and CWA Section 404), CCC (Coastal Development Permits), and RWQCB (Waste Discharge Requirements) (Cotter 1997c). The MBNMS not only works with the permitting agencies to issue their respective approvals, but also with other commentating agencies (e.g., USEPA and CDFG) and the staff at each harbor.

Together with the other agencies and individually as a staff, the MBNMS reviews each harbor's proposed dredging plans, proposed sediment and analysis plans, and sediment sampling results. The staff uses a variety of different regulations to evaluate permit applications dependent upon the project under proposal (Cotter 1997c). For impacts to Sanctuary resources or qualities, staff uses MBNMS regulation defined at 15 CFR Part, 922 Subparts A through E and Subpart M. For the suitability of sediment proposed for disposal regarding dredging projects regulated by the USACE and USEPA under CWA 404 permits, staff reviews requirements published in the USEPA 404(b)1 Guidelines defined at 40 CFR Section 230. For the suitability of sediment proposed for disposal at unconfined aquatic sites under CWA 404 permits, MBNMS staff consult the USEPA and USACE's (1994) *Inland Testing Manual.*

According to staff, there are no numerical sediment quality standards used to evaluate sediment test results (Cotter 1997c). Staff instead compares the test results to guidance information for consultation on sediment chemistry and physical tests. Several references that are consulted include the Probable Effects Level (PEL) by MacDonald and MacDonald Environmental Services Ltd. (1994), and the Effects Range Median (ERM) developed by Long *et al.* (1995). For the results of bioassay or bioaccumulation results, staff consults *Inland Testing Manual* (USEPA and USACE 1994). For contaminant levels in the liquid phase, staff consults the *California Ocean Plan* (SWRCB 1997) to determine whether contaminant concentrations in the sediment/water slurry of the proposed dredged material would exceed State of California water quality standards and affect water quality.

The MBNMS does not charge the harbors a fee for the review of projects, nor for the coordination with other agencies. According to staff, "staff resources for dredging projects...have been high in terms of hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies" (Cotter 1997c). Staff estimated that approximately 20% of their time is devoted to dredging project reviewing, plus management time (Cotter 1998b). An estimated cost could range from $15,000 to $20,000 per year in staff time and salaries (Cotter 1998b).

The MBNMS agreed all three of the harbors should follow those conditions defined in permits issued by the USACE, CCC, and RWQCB (Cotter 1997c). Special conditions that MBNMS agreed to included mandatory upland disposal for the top two feet of south harbor sediment at Moss Landing Harbor and the allowance for the disposal of sandy entrance channel dredged material into the historical surf zone disposal site at Santa Cruz Harbor (Cotter 1997c).

Staff visited the dredging project sites at Santa Cruz Harbor and Monterey Harbor. At both sites, observations were conducted during normal operating hours to evaluate the progress of each project (Cotter 1997c). Specifically, staff observed the disposal operations of both projects for approximately an hour over a two- to three-day period. Staff at the MBNMS have already taken a step towards improving the dredging project approval process by leading in the preparation of several working documents with other agencies including the USEPA, USACE, CCC, CDFG, and RWQCB. The documents include: "Interim Testing Guidelines for Dredged Material from Santa Cruz, Moss Landing, and Monterey Harbors" ("Monterey Bay Harbor Interim Guidelines");

"Santa Cruz, Moss Landing, and Monterey Harbors Consolidated Dredging and Disposal Permit Application Form and Project Checklist" ("Monterey Bay Harbors Consolidated Application and Checklist"); and "Instructions for Preparing the Santa Cruz, Moss Landing, and Monterey Harbors Consolidated Dredging and Disposal Permit Application Form and Project Checklist" ("Monterey Bay Harbor Instructions"). These draft documents are collective attempts by the agencies to provide guidance specifically to Monterey Bay projects. In addition, comments received directly from Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor staff will be used in the preparation of drafts of the working documents (Cotter 1997b). The other agencies involved in the permitting process have also had the chance to review the documents and submit comments. Further work on these documents has been postponed pending the development of regional dredging guidance by the USEPA and USACE.

State Agencies

California Coastal Commission

The CCC issued their own Coastal Development Permit to all three harbors and examined and commented on permit applications for the USACE (RHA Section 10 and CWA Section 404). Along with the review of proposed USACE and CCC dredge project information contained in each "Application for Coastal Development Permit," CCC staff also considered sediment sampling and analysis results. The CCC's permits are for the approval of disposal aspects of proposed plans (i.e., construction of settlement ponds, disposal via pipeline, beach nourishment), but they are involved with all aspects of the

project (Chase 1997). According to staff, the CCC tries to issue their permits within 60 days from which a complete application is filed (Chase 1997).

The CCC evaluates dredging projects and permit applications for Federal consistency under section 307(c) of the 1972 CZMA and the legal mandate of the California Coastal Act (CCA) of 1976. The CCC grants permits for coastal developments that conform with the provisions of the CCA and will not prejudice the local government's ability to carry out their prescribed Local Coastal Program (CCC 1996a). Their evaluation of proposed plans is consistent with CCC's broader umbrella of protecting coastal resources and ensuring public access to them. CCC relies on other jurisdictional agencies (i.e., USACE, USEPA, CDFG, and RWQCB) to determine the suitability of sediment. However, CCC technical staff review data in cooperation with other Federal and State agencies (Cotter 1998a).

The CCC does not have a "set schedule to monitor," but may do so depending on the conditions of the project (Chase 1997). Staff commented that monitoring is usually performed by the harbors. Monitoring reports are sent to the CCC for review.

The CCC did assign both standard and special conditions to each of the three harbors. The terms of the conditions are within the text of the staff reports. Standard conditions include expiration, compliance, interpretation, and inspection terms. Special conditions include terms of disposal site development, disposal, and the requirement for the submission of reports in relation to the projects at the individual harbors (CCC 1995, CCC 1996a, CCC 1996b).

CCC staff acknowledged several general problems of the dredging project approval process. General problems cited include submitting thorough applications and the lack of an efficient way to organize and coordinate with the harbors (Chase 1997). The CCC also participated in discussions with the MBNMS, USEPA, CCC, and CDFG at the initial meeting to review the working documents, "Monterey Bay Harbor Interim Testing Guidelines," "Monterey Harbor Consolidated Application and Checklist," and "Monterey Bay Harbor Instructions"(Cotter 1997b).

California Department of Fish and Game

The CDFG does not have any permitting authority for dredge activities, but is considered a trustee for State resources and as such, provides input into other permitting agencies review processes (Johnston 1998). For the three harbors, the CDFG reviewed and commented on USACE (RHA Section 10 and CWA Section 404) and CCC (Coastal Development) permits to analyze if proposed activities would affect aquatic resources. Potential toxic effects are reviewed on a short-term and long-term basis.

Comments are based on the review of sediment chemistry, size grain analysis, and bioassay test results. To determine if sediment is appropriate for unconfined aquatic disposal, CDFG staff utilize several standards and guidelines including the USEPA Gold Book (USEPA 1986), NOAA Sediment Screening Guidelines (SFRWQCB 1996), DMMO data files, USEPA Aquire database, FWS Biological Reports Contaminant Hazard Reviews (various reports and dates), (California) State Mussel Watch Program and Bay protection Toxic Cleanup Program data (on-going comprehensive efforts to

regulate toxic pollutants in California's enclosed bays and estuaries, contracted by the SWRCB and CDFG and coordinated by the Bay Protection and Toxic Cleanup Program), and the "Green Book" (USEPA and USACE 1991).

None of the three harbors were subjected to any CDFG conditions. However, CDFG staff has commented "any such conditions would be predicated upon the nature of contamination present in the sediments and the proposed disposal location" (Johnston 1998).

CDFG staff has also mentioned their active participation in the DMMO. Their role in the San Francisco Bay is also advisory in nature. The criteria used by the CDFG for evaluation of sediment toxicity data is the same for both Monterey Bay and San Francisco Bay projects.

California Department of Parks and Recreation

Santa Cruz Harbor was the only harbor requiring a permit from the CDPR for annual permission to use State Park Lands. Specifically, the CDPR one-year temporary use permit allowed for "deposition of dredged sand material removed from Santa Cruz Harbor and for the temporary placement of dredging related equipment over portions of Twin Lakes State Beach" (State of California, Department of Parks and Recreation 1996). The terms of the permit also include compliance with applicable laws, rules, and regulations for State Parks and for the State of California; limitations on the duration, hours, and days when work is permitted; and the waiving of any claims and recourse against the State.

The CDPR does not have a permit application but instead takes verbal and written requests for permission to use State Park Lands (Roth 1997). In Santa Cruz Harbor's request for a CDPR permit, they provided information regarding operation aspects of the project (i.e., time of year, time of day, amount proposed for disposal). CDPR staff evaluates the requests on legal documents including CEQA, NEPA, and USACE Public Notices (Roth 1997). In addition, they also review the previous year's operations and take suggestions and recommendations from on-site staff (i.e., lifeguards and rangers) of the past project (Roth 1997). CDPR staff processed Santa Cruz Harbor's permit for the September 1, 1996 through August 31, 1997 dredging project years in one day (Roth 1997).

CDPR staff has monitored the Santa Cruz Harbor disposal operations at Twin Lakes State Beach. The monitoring is conducted on an informal basis by State Parks lifeguards, rangers, and permitting officers. Staff commented that Santa Cruz Harbor is consistently "excellent" in their conduct of both permitting procedures and disposal operations (Roth 1997).

California State Lands Commission

The CSLC was given the primary responsibility of determining the boundary between public tidelands and private lands (State of California and CCC 1991). According to the State of California and the CCC, public tidelands (tide and submerged lands) seaward of the mean high tideline are owned by the State of California (1991). Permits issued by the CSLC are actually dredging leases that allow for the dredging of

lands under the jurisdiction of the State Lands Commission (California Trade and Commerce Agency 1997). Santa Cruz Harbor and Moss Landing Harbor both require dredging leases from the CSLC. A lease is not required for Monterey Harbor because the city was granted tidelands for eternity in 1868 (Scheiblauer 1997).

CSLC staff processes permit requests from information given in their "Application for Lease of State Lands." The applications are evaluated based on California Code of Regulations, CEQA, and the Public Resources Code. For the suitability determination of sediments, CSLC staff rely on the comments and findings of the USEPA, CCC, and RWQCB (Howe 1998a).

According to staff, "time spent on a project depends on the complexity and issues concerning the project" (Howe 1998b). In addition, an $825 deposit is required for staff time and processing costs (Howe 1998b). Applications are handled by one staff member with support from the Environmental Unit.

The CSLC does not conduct any monitoring of dredging sites or disposal operations. Instead, they rely on harbor-produced quarterly reports that summarize the volume dredged (Howe 1998a). In addition, CSLC staff did not apply any special conditions for the dredging projects at Santa Cruz Harbor or Moss Landing Harbor.

CSLC staff also mentioned their role as a DMMO member agency (Howe 1998a). Staff pointed out that although only one application is completed and the evaluation of dredging projects is done at the same time, approval by each agency still happens (Howe 1998a).

Regional Water Quality Control Board

Due to their workload, RWQCB staff did not have time to respond to questions. The RWQCB issued Waste Discharge Requirements (WDR) for 1996-1997 dredging projects at Santa Cruz, Moss Landing, and Monterey. The RWQCB also issues CWA Section 401 Water Quality Certifications for dredging projects and any discharges from confined disposal.

Local Agencies

Monterey Bay Air Pollution Control District

Permits from the MBAPC regulate local Monterey Bay Regions sources (i.e., Monterey, San Benito, and Santa Cruz Counties) of air pollution (MBAPC 1996). Dredge equipment at Santa Cruz Harbor and Moss Landing Harbor both require an annual "Permit to Operate." Santa Cruz Harbor has two permits, one for the larger *Seabright* dredge engine used for entrance channel dredging and one for the smaller *Squirt* dredge engine that is used for inner harbor dredging. Although they did not dredge, Moss Landing Harbor renewed their annual permit in 1997 to keep the permit current and valid. A permit for Monterey Harbor is not required for the dredge Monterey Harbor rents from the Port of San Luis because it is electrically powered.

The MBAPC issues and renews permits based on information submitted in MBAPC permit applications and on the operation aspects of the equipment (i.e., operating hours, fuel content, fuel type used, amount of fuel consumed) (Thoits 1998b). In addition, the MBAPC's rules and regulations including permit issuance and

prohibitory rules are used in evaluating project applications and emission outputs (Thoits 1998b). Fees assessed for initial application processing and for permit renewals are dependent on the operational aspects. These fees also cover application review and monitoring costs.

The recovering of resources spent by MBAPC staff on processing applications varies with each permit (Thoits 1998b). Costs for processing equipment applications (i.e., dredges) are recovered with the issuance of the permit. However, the recovery of resources for an environmental review of a new project involving already permitted equipment in terms of staff time are not recovered (Thoits 1998b). For example, many staff hours have been expended on Moss Landing Harbor's dredging project since February 1996. But because previously permitted dredging equipment is being used, the MBAPC will not be reimbursed for their time (Thoits 1998b).

The MBAPC set forth conditions that must not be exceeded by each dredge engine permitted. For any condition of operations exceeded, fees are cited. Operations at Santa Cruz Harbor this past year did not result in any such fees. In addition, the assessing of fees was not possible at Moss Landing Harbor since the proposed project was not undertaken.

Monterey County Department of Environmental Health

The MCEH did not issue any permits for dredging, but was involved with the project at Monterey Harbor due to concerns about lead levels in the dredging sediment (Welch 1998a). The MCEH would have become involved with site cleanup if high levels

were encountered (Welch 1998a). However, a review of pre- and post-sediment test results confirmed high levels were not found. According to staff, the standards and guidance values used in review of sediment data are those contained in the California Safety and Health Codes, Title 23 of the California Code of Regulations (Hazardous Waste Classifications) (Welch 1998a).

Because the MCEH does not issue dredging permits, an application was not necessary. According to staff, the MCEH normally charges $75 per hour for site mitigation and review work (Welch 1998b). However, a bill was not assessed for Monterey Harbor because the time spent on Monterey Harbor's case was minimal (one to two hours) and staff did not have jurisdiction (Welch 1998b). In addition, MCEH staff did not subject Monterey Harbor to any special conditions, but did monitor at the disposal site (Welch 1998a).

Santa Cruz County Department of Environmental Health

According to staff, Santa Cruz Harbor gave sediment data to SCEH for a courtesy review (Bardwell 1998a). The information was for a community service in case members of the public contacted SCEH about Santa Cruz Harbor dredging. In addition, the Harbor contracts SCEH to conduct water testing (Bardwell 1998a).

Impacts of Consolidated Checklists

To ascertain the impact a cooperative checklist would have in comparison with current Monterey Bay individual permitting procedures two model checklists, the DMMO's "Consolidated Application for Dredging-Dredged Material Reuse/Disposal Permit Application" and Washington State's "Joint Aquatic Resource Permit Application" (JARPA), performance results were examined. From the reviews of the checklists by their sponsoring agencies (i.e., the San Francisco District of the USACE and Washington State), several similar and different procedures exist between general individual permitting procedures and the joint checklists with outcomes from each.

The use of similar procedures for individual and joint checklists result in common outcomes with benefits from the common outcomes (Table 9). The outcomes of similar procedures include the maintenance of environmental protection, the necessity for agency interpretation of test results, agency staff may only make a recommendation if they have regulatory authority on the matter, and the agencies continue to follow their own individual notification and comment procedures. The benefits from the outcome of similar procedures include that the individual agencies continue to meet their statutory requirements, the existing public and applicant comment procedures remain, and the authority and processes of all agencies remain in full effect.

Table 9. Benefits of Similar Joint and Individual Application Procedures

Requirement	*DMMO*	*JARPA*	*Individual Permit Procedures*
1. Sediment sampling and analysis plans	Yes	Yes	Yes
2. Application forms	Yes	Yes	Yes
3. Associated drawings	Yes	Yes	Yes
4. Sediment testing data	Yes	Yes	Yes
5. Applicability to non-USACE (non-Federal) maintenance dredging projects	Yes	Yes	Yes
6. Applicability to non-USACE (non-Federal) new work dredging projects	Yes	Yes	Yes
7. Applying for all necessary permits	Yes	Yes	Yes
8. Review of process of applications begins only when they are considered complete and technically adequate	Yes	Yes	Yes
9. Applicant is notified by the agency when additional information is needed	Yes	Yes	Yes
10. Laws and policies of individual agencies are represented by their respective staff	Yes	Yes	Yes
11. Advisory agencies are invited to comment	Yes	Yes	Yes
12. Current commenting procedures are used	Yes	Yes	Yes
13. Existing budgets are used	Yes	Yes	Yes
14. Present laws are used	Yes	Yes	Yes
15. Present regulations are used	Yes	Yes	Yes
16. Present policies are used	Yes	Yes	Yes

Table 9. Continued. Benefits of Similar Joint and Individual Application Procedures

Requirement	*DMMO*	*JARPA*	*Individual Permit Procedures*
17. Agency interpretation of sediment	Yes	Yes	Yes
18. Full processing of applications	Yes	Yes	Yes
19. All applicable Federal agencies issue and approve permits	Yes	Yes	Yes
20. All applicable State agencies issue and approve permits	Yes	Yes	Yes
21. All applicable local agencies issue and approve permits	Yes	Yes	Yes

The use of different procedures for individual and joint checklists results in outcomes that are beneficial to the harbor applicants (Table 10). The benefits are effects resulting from the modifications of individual procedures to consolidated procedures. The beneficial outcomes of different procedures include a decrease in overall information redundancy; an increase in application processing efficiency; the fostering of consensus decision-making among agency staff; coordinated review of information; the instillation of a cooperation between Federal, State, and local agencies; and the recommendations of and for the critique of joint checklist procedures.

Table 10. Benefits of Different Joint and Individual Application Procedures

Requirement	*DMMO*	*JARPA*	*Individual Permit Procedures*
1. Usage of a cooperative permitting framework	Yes	Yes	No
2. Applicant fills out only one application form	Yes	Yes	No
3. One application combines all applicable Federal, State, and local application forms	Yes	Yes	No
4. The one application is distributed simultaneously to all necessary agencies	Yes	Yes	No
5. The additional information (i.e., sediment sampling and analysis plans, application form, associated drawings, and testing data) are distributed simultaneously to all necessary agencies	Yes	Yes	No
6. A standard dialogue has been established	Yes	Yes	No
7. Joint agency meetings to review projects and test data are scheduled regularly	Yes	Yes	No
8. Establishment and updating of an electronic application status and other activity information database	Yes	Yes	No
9. Each agency is required to comment on sediment suitability	Yes	Yes	No

The positive effects that have increased efficiency in the dredging project approval process of those projects that have used a streamlined approach is largely due to the organizational aspects of the agencies involved. Therefore, in order for a consolidated checklist specifically for Monterey Bay Harbors to be really effective, it must have a strong and well-planned foundation of goals and operating principles. The researcher has recommended goals and operating principles (Recommendation #6 of Objective #5) and a sample consolidated checklist/permit (Recommendation #7 of Objective #5), both modeled on the DMMO's "General Operating Principles" (DMMO 1995) and "Consolidated Application for Dredging-Dredged Material Reuse/Disposal Permit Application" (USACE *et al.* 1996b).

V. DISCUSSION OF GUIDING QUESTIONS AND OBJECTIVES

Guiding Questions

Introduction

The investigative questions are based on the summary and analysis of the harbor projects, agency roles, and impacts of consolidated checklists. These questions applied only to permit application procedures. The reasons as to why episodic project approvals were not considered are discussed in the conclusion. The goal of this research was to look at the process as it occurs for the individual permit applications.

Guiding Question #1: Have applications for proposed dredging projects been approved within the harbors' intended time frames?

In general, the applications proposed for 1996-1997 dredging projects were approved within the harbors' time frames. Harbor staff, including harbor representatives (i.e., consultants), are familiar with the permit application processes. In the cases of Santa Cruz Harbor and Monterey Harbor, the Port Director and Harbormaster are very experienced and familiar with the procedures. The Moss Landing Harbor consultants also have experience in port dredging projects. For example, one of their consultants, Michael Cheney, a civil engineer with over 25 years experience in developing dredging projects (Cheney 1998). The familiarity and experience of the harbor staff have helped them in their most recent applications for permits covering the 1996-1997 dredging projects, regardless whether the project occurred or not.

Harbor staff are wise and do not set forth in the dredging project approval process blindly. All harbors engage in correspondence with agencies regarding their applications

and other project concerns. For example, the Monterey Harbormaster sent a letter to the CCC regarding their 1997 dredging project when their CCC permit was still being processed. The purpose of the letter was to inform CCC staff of project aspects (i.e., amount to be dredged, disposal site, disposal method, and sediment test results).

Guiding Question #2: Is all information required for dredging permit applications obtained and reported sufficiently?

Information is obtained and reported sufficiently to the best ability of each harbor. The Santa Cruz Port Director, Moss Landing Harbor General Manager and consultants, and Monterey Harbormaster submitted the pertinent information needed to process the required permits. In those cases where applications were not considered complete, agency staff notified the harbor as to the information still needed for approval consideration. For example, the USACE and USEPA staff both commented that for permit applications, processing can only begin once all pertinent information is received (Lawrence 1998a and Hoffman 1998a). Therefore, pressure is placed on the harbors to develop adequate sampling and testing plans, define dredging plans, and submit complete and correct test results for review before authorization can be given to dredge and dispose of sediment.

The harbors followed agency application directions and/or agency instructions for permits and/or authority to undertake their proposed projects. In addition, each harbor is well aware of the specific agency concerns at their harbor (Santa Cruz Harbor: fine sediment and potentially contaminated sediment; Moss Landing Harbor: DDT and TBT

bioassay failures, Monterey Harbor: lead and other sediment contaminants) and has sediment tests performed accordingly. For example, following the USEPA special instructions, Moss Landing Harbor had layered sediment tests performed especially for the purpose of locating contaminated areas (Hoffman 1998a).

Guiding Question #3: Can Federal, State, and local agencies assist the harbors of the MBNMS to improve upon their dredging permit application procedures?

Responses from harbors and agencies indicate that there is a need for the agencies to revise current procedures to increase applicability and efficiency. Santa Cruz Harbor and Monterey Harbor made suggestions including a need for more standardized testing guidelines in regards to specific concerns and conditions for Monterey Bay Harbor projects (Foss 1997 and Scheiblauer 1997). More standardized testing guidelines would provide regional guidance on testing parameters (e.g., grain-size, species, temperature, salinity, etc.) as opposed to national guidance. Regional guidance will increase the applicability of test results to standards, guidance, and reference values agreed to by all agencies. Using these standards, guidance, and reference values will produce a more correct picture of potential sediment effects based on local variables.

Several agencies, including the USACE, USEPA, MBNMS, CCC, CDFG, and CSLC have recognized that the dredging project approval process for Monterey Bay Harbors can be improved. The USACE (Lawrence 1998a), USEPA (Hoffman 1998a), and CSLC (Howe 1998a) have all cited their participation in the DMMO and the positive results stemming from the implementation of multi-agency coordinated efforts. USACE staff (Lawrence 1998a) has said that processing times for applications have decreased

with the initiation of combined efforts (i.e., regularly scheduled joint discussion meetings). USEPA staff strongly supports the idea for consolidated permit procedures similar to the San Francisco Bay Area DMMO because all applicable agencies would share responsibilities of guiding applicants on procedures, testing requirements, and sediment data interpretation (Hoffman 1998a). CSLC staff noted that even though permit application and evaluation are collective in nature, agency approval continues on an individual basis (Howe 1998a).

The USEPA, MBNMS, CCC, and CDFG have taken steps to improve the dredging project approval process in the Monterey Bay. Each of these agencies have attended meetings and/or contributed to the working documents, "Monterey Bay Harbor Interim Testing Guidelines," "Monterey Harbor Consolidated Application and Checklist," and "Monterey Bay Harbor Instructions." The documents were drafted to streamline the dredging project approval process especially for Santa Cruz, Moss Landing, and Monterey Harbors. The draft documents were put on hold because the new Inland Testing Manual (USEPA and USACE 1998) would have significant national changes to the CWA 404 program. All agencies agreed to wait on the development of regional testing agreements until the new ITM was published.

One of the results of this thesis project is recommended goals, objectives, and general operating procedures (Recommendation #6 of Objective #5) and recommended information to be included for a consolidated dredging permit application (Recommendation #7 of Objective #5) for use by the Monterey Bay Harbors. This consolidated approach is based on the "General Operating Principles" (DMMO 1995) and

format of the DMMO's "Consolidated Dredging and Dredged Material Reuse/Disposal Permit Application" (USACE *et al.* 1996b). The adoption of joint procedures would probably be similar to the working document "Monterey Bay Harbors Consolidated Application and Checklist," and would also aid in streamlining the individual agency permit application procedures presently used.

Objectives

Introduction

The discussion of thesis objectives has been based on the examination and analysis of the procedures that the harbors undertook for their 1996-1997 dredging projects. Information for the discussion of objectives has been derived from harbor and agency responses to the investigative questions. The purpose of the objectives was to examine and ascertain strengths and weaknesses of the dredging events as they occurred under individual permitting and approval procedures.

Objective #1: Identification of each harbor's effective and sufficient permit application efforts

Overall, Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor's permit application efforts have been effective and sufficient, based on the fact that for each permit applied, the permit was received. In addition, for the 1996-1997 projects, the required agency approvals were received to conduct proposed dredging projects.

The experience of Santa Cruz Harbor's Port Director enabled him to obtain and submit the majority of information needed on his own to the agencies (Foss 1997). According to staff, the only information not gathered by the Port Director was sediment data (Foss 1997). This in-house approach has saved the harbor money that would have been spent on consultant fees.

Santa Cruz Harbor also effectively and sufficiently resolved concerns that could have stalled or ceased their dredging project operations. For example, certain amounts of

fine-grain upper harbor sediments are considered unsuitable for beach nourishment which was the 1996-1997 disposal method used. Therefore, Santa Cruz Harbor decided not to dredge the sediments. Instead the harbor decided to wait for the 1997-1998 winter weather patterns in hopes that the accumulated sediment would naturally cycle out to sea (Bardwell 1998a).

Santa Cruz Harbor has also partially resolved the surrounding neighborhood's concerns about the unpleasant hydrogen sulfide odors present during disposal operations. The odors are dissipated in the surf zone where the disposal site is about 100 feet offshore. Because of the numerous complaints received about the smells, the harbor conducts dredging operations according to wind patterns. Working with MBNMS staff, the harbor obtained permission to place their disposal pipeline into the surf zone off Twin Lakes State Beach. For example, if the wind is blowing landward towards the neighborhood, disposal is routed into the surf zone to dissipate hydrogen sulfide in the surf zone (Foss 1997).

Moss Landing Harbor's consultants effectively and sufficiently obtained and submitted the pertinent information for permit applications and other approvals needed. Along with hired firms and laboratories, the three Moss Landing Harbor consultants' professional expertise aided them in obtaining the required permits and approval for short-term sediment drying sites. As an example, consultant Land Systems Group was hired for and was successful at helping Moss Landing Harbor complete their USACE application (Huston 1998). The accredited firms and labs hired were contracted to sample and analyze sediment and water.

The Monterey Harbormaster's familiarity and understanding of the dredging project approval process definitely helped Monterey Harbor's permit application efforts. According to staff, the Harbormaster is responsible for gathering and submitting most of the information needed by the agencies for review and comment (Scheiblauer 1997). Additional support in assembling information was received from the City of Monterey's Planning Department and a private laboratory. The City's Planning Department helped with the compilation of information for the CCC's Coastal Development Permit Application. The private laboratory, ToxScan Inc., was hired to conduct sediment and water testing. The utilization of the Harbormaster and the City's Planning Department eliminated the need to negotiate a contract with a dredging consultant.

Monterey Harbor also effectively and sufficiently worked with various agency staff to resolve issues that could have potentially delayed or terminated their 1996-1997 dredge project. For example, Monterey Harbor was asked to perform additional lead tests only one day prior to the start of operations so that their proposed project would not be endangered (Scheiblauer 1997). They were asked to perform additional sediment tests very late in the permitting process.

Monterey Harbor also effectively and sufficiently resolved issues that occurred during the disposal operations. Specifically, the MBNMS was concerned about sediment and water leaking from the dewatering impoundment. However, once the MBNMS staff informed Monterey's Harbormaster about the leaks, they were immediately reduced (Cotter 1997c).

Objective #2: Identification of each harbor's ineffective, insufficient, redundant, and costly procedures

Based on their 1996-1997 dredging project approval process, Santa Cruz Harbor and Moss Landing Harbor have engaged in costly and ineffective procedures. These procedures have stemmed from specific conditions at each of the harbors and were, for the most part, out of Santa Cruz Harbor's and Moss Landing Harbor's control. These situations would have occurred regardless of the dredging project approval process used (i.e., individual permitting procedures vs. consolidated checklist).

For Santa Cruz Harbor, the recent odor problem at the Twin Lakes State Beach disposal site was costly. The hydrogen sulfide smells required attention because of public and the subsequent agency comments and concerns. Due to some surrounding neighborhood's complaints, Santa Cruz Harbor was obligated to conduct air testing and purchase odor-masking enzymes. For the 1996-1997 dredging event, Santa Cruz Harbor spent approximately $13,000 on the testing and enzymes. Harbor staff considered the amount incurred unexpected and "extraordinary" (Santa Cruz Port District 1997). Unfortunately, the odor problem is a sporadic and naturally occurring biological process that cannot be suppressed. Unless a way is found to significantly decrease or eliminate odors, Santa Cruz Harbor will need to continue to address them as they arise.

At Moss Landing Harbor, the ineffective, insufficient, and costly procedures stem from the use of three consultants and numerous sediment testing. Granted the consultants did succeed at obtaining the required permits, they failed to establish a long-term sediment drying site necessary to accommodate Moss Landing Harbor dredging volumes

of contaminated materials (Stilwell 1998). Each of the consultants was hired previous to the current Moss Landing Harbor General Manager. Although each consultant was hired for various reasons (i.e., handling upland disposal alternatives, environmental consulting, handling permit issue with Monterey County and CCC, familiarity with required agencies and agency processes), they have proven costly ($65,000) because Moss Landing Harbor was not able to conduct their dredging and disposal operations in 1996-1997.

Likewise, the choice and number of laboratories and firms hired to sample and test sediment have been costly ($58,000). And although each lab was hired for specific reasons (i.e., grain-size analyses, bioassays, chemical tests) and Moss Landing Harbor's situation is unique (i.e., agricultural pesticides), the amount expended is far more than the amount spent by both Santa Cruz Harbor ($7,000) and Monterey Harbor ($4,000).

Unfortunately for Moss Landing Harbor, past expenses for inefficient consultants and costly sediment tests cannot be recovered. However, future expenses to be spent on the dredging project approval process may prove to be more productive. New staff has taken a more active role regarding decisions of the consultants and testing firms hired and what each will need to accomplish.

An inefficient task all three harbors have engaged in is due to the present system of individually filing applications. The majority of the same permit information (i.e., project description, location, dredging methods, disposal methods, etc.) is submitted to each of the different agencies. This inefficient and time-consuming practice may fortunately end if the "Monterey Bay Harbor Consolidated Application and Checklist" is adopted by Federal, State, and local agencies managing dredging projects.

A consolidated approach would streamline the application process thereby saving the harbors time and money.

Objective #3: Critique of each harbor's efforts in order to consolidate and/or gather the necessary information that will comprise a complete and technically adequate project application under the structure of the cooperative dredging permitting framework

Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor's current efforts in obtaining permits and approvals from the agencies are sufficiently complete and technically adequate for use with a cooperative dredging permit framework. The information obtained for each respective agency for permits and/or comment is done so under the instructions of Federal, State, and local agencies. Based on the sample checklists, JARPA, and the DMMO's consolidated dredging permit application, the information currently submitted for individual agency permits could easily be submitted as the information required for use with a cooperative dredging permit framework. This is because the majority of the information required is the same for individual and joint permit applications.

Each permit, whether individual or joint, has seven main components including: (1) applicant information (i.e., name, address, telephone number); (2) representative information (i.e., name, address, telephone number); (3) description of project/activity (i.e., type, purpose, duration, location, proposed depths to be dredged, proposed volume to be dredged, cost, other agency approvals needed, disposal method, disposal location); (4) environmental approvals (e.g., EIR and/or EIS); (5) drawings (i.e., vicinity map, plan

view, cross section view); (6) sediment sampling and analysis plan; and (7) sediment test results.

Therefore, if a consolidated permit application were used for the Monterey Bay Harbors, the effort in obtaining and gathering information would be the same. However, the process would be more time-efficient and less redundant than present procedures. With a consolidated checklist, application information would only need to be completed once per dredging event or as required by the agencies in order to ensure that environmental protection is maintained.

Objective #4: Critique of the agencies' efforts in providing guidance, assistance, and information in a timely and helpful manner

Based on the dredging project approval process for the 1996-1997 Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor dredging projects, the agencies performed their duties effectively considering that each agency that needed to issue or approve of permits did so. However, there is still room for improvement. As a result, the harbors and agencies have made many suggestions on ways the dredging project approval process could be improved. Each of these suggestions is summarized in the individual harbor and agency sections.

Because the entire dredging project approval process is a lengthy but fragmented procedure, one very large area that has been commonly identified and recognized by the agencies, harbors, and researcher is the need for better overall guidelines. For example, the USEPA and CCC staff have commented that there is room for improvement in

educating, guidance, information availability, organization, and coordination between the harbors and the agencies (Hoffman 1998b and Chase 1997). Additional Federal and State agencies (USACE, MBNMS, and CDFG) have also recognized similar needs as they participated in collaborating on working documents, "Monterey Bay Harbor Interim Guidelines," "Monterey Bay Harbors Consolidated Application and Checklist," "Monterey Bay Harbor Instructions." The need for better pathways of information exchange is echoed in the recommendations of the harbors and researcher (Objective #5). Recommendations by the harbors and researcher seek to improve the dredging project approval process in a more efficient and localized manner. The recommendations would improve the permit process by reducing processing delays, differences in agency interpretation of sediment testing results, and the number of times the harbor must engage in the approval process from the defining of timelines, agency roles, and values used in the dredging project approval process. Overall guidelines would include background information as to what, when, why, and how permit details are to be collected and evaluated specific to the three harbors' dredging projects. Overall guidelines would help harbor applicants and agency reviewers because both groups would have a definitive understanding of permit requirements and procedures that must be followed.

Objective #5: Recommendation of changes to streamline the application process and reduce costs

Changes recommended to help streamline the agency permit application process and reduce costs include those that have been suggested by the harbors, agencies, and the

researcher. The recommendations are based on the experiences and observations of agency personnel, harbor staff, and the researcher of the examined dredging project year and previous dredging projects.

Recommendations that have been suggested by the harbors and the agencies include the following:

- *Recommendation #1: Issue Longer Multi-Year Permits*

Longer multi-year permits would extend the number of years a permit is valid. However, each dredging episode would be subjected to a standard per project sediment testing. Issuance of longer multi-year permits would also need to be based on agency permitting policies. Agency permitting policies to be considered include (i.e., acceptable dredging and disposal project practices) and procedures on the resolution of situations when there is disagreement or where significant permit modifications are needed (i.e., location of dredging and/or disposal sites, method of dredging and/or disposal operations, changes in dredging/disposal volume, etc.).

- *Recommendation #2: Standardized Testing Guidelines*

Standardized testing guidelines would utilize local requirements and review parameters (vs. national values) to better determine the suitability of sediments proposed for disposal. Local parameters to use include Monterey Bay Area grain-size distribution, acceptable species for bioassay testing, temperature, and salinity measurements

- *Recommendation #3: One-Stop Shopping Permits*

The suggestion for a one-stop shopping permit is a recommendation for one permit. Such a permit application would be used by all applicable Federal, State, and

local agencies to determine whether a project was acceptable. However, the permit may be difficult to actualize because it would need to include each agency's respective regulatory authority.

- *Recommendation #4: Coordinated Agency Timelines*

Coordinated agency review timelines would decrease review delays now experienced by requiring all applicable commenting agencies to develop and forward their comments to permitting agencies at a designated time. Agencies would coordinate with the USACE, whom would be the principal permitting agency.

- *Recommendation #5: Scientifically Defensible Biological, Chemical, and Physical Values*

Scientifically defensible biological, chemical, and physical values would establish strict guidelines for sediment testing data to determine if sediment proposed for disposal is harmful or not. In addition, strict guidelines would also improve agency interpretation of data.

- *Recommendation #6: Absolute Interval Deadlines for Processing Permits*

Absolute interval deadlines would aid applicants by establishing stringent agency timelines for requests of additional information, review periods, and comment periods.

- *Recommendation #7: Equal Weighting of Agency Comments for Decisions*

The equal weighting of agency comments for decisions would make each agency's comments equivalent in value and induce decision making by majority rule.

- *Recommendation #8: The Assumption of No Negative Concerns of Agencies that have not Commented Within a Given Time Frame*

The suggestion assumes that agencies that have not commented by an agreed upon deadline do not have negative concerns about a proposed project. In addition, this recommendation would help to decrease delays in the review process by eliminating the need to allow additional time for an agency to develop their comment(s).

- *Recommendation #9: Issues Raised by Commenting Agencies Should Only Be Made to the Permitting Agencies*

The recommendation that issues raised by commenting agencies should only be made to the permitting agencies (i.e., USACE, CCC, and RWQCB) would help to decrease the sometimes confusing dialogue between the harbors and commenting agencies. In addition, final approval decisions would be determined and delivered to the harbors by the permitting agencies.

- *Recommendation #10: Consideration of a System's Cycle*

The consideration of a system's cycle would include natural weather patterns (e.g., the natural flushing of creeks) as part of the decision process regarding disposal aspects (i.e., disposal site locations).

- *Recommendation #11: Revised Procedures for Small Project*

Revised procedures for small projects would require fewer samples and tests than that of larger projects. This recommendation would require a minimum number of tests based on the volume proposed for dredging.

Recommendations by agency staff to help the approval process include the idea of implementing a consolidated checklist specifically for Monterey Bay Harbor dredging

projects. Such an approach would place all applicable agencies jointly responsible for advising Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor on procedures, testing requirements, and interpretation of sediment test results. These recommendations are currently being acted upon by several agencies for use with Monterey Bay Harbors.

In addition to the recommendations made by the harbors and agencies, the researcher recommends seven other changes to streamline the application and reduce costs. Recommendations that have been suggested by the researcher include the following:

- *Recommendation #1: Bi-Annual Depth Surveys*

Bi-annual depth surveys could be performed after the rainy season ends to plan next year's dredging. By characterizing the harbor ground, areas with high sediment would be located. The harbors would then begin sediment sampling plans and seek agency approvals. Also, if problems arise, there would be time to develop solutions. In addition, the harbors could collectively hire the same contractor to do hydrographic/bathymetric surveys. The hiring of the same contractor to perform the surveys at the same time would also reduce mobilization and demobilization costs.

- *Recommendation #2: Use Of City and/or County Resources*

Use of city and/or county resources for sediment testing could decrease the amount expended currently on private laboratory testing. The harbors could approach city and/or county labs to have their sediment testing performed in-kind or at a less than normal fee rate due to the status of each as public entities. Two possible county

departments to approach include the MCEH and SCEH. Santa Cruz Harbor already has a contract with SCEH to perform water testing (Santa Cruz Port District 1997).

- *Recommendation #3: Individual Pre-Dredging Consultations With Permitting Agencies*

Individual pre-dredging consultations with applicable permitting agencies would also help the harbors better prepare and reduce any unexpected requests from either the applicant and/or the approval agency. In essence, pre-dredging consultations would help to forge conversation between all parties and identify any pressing matters while there is time to make revisions. However, based on annual depth surveys after the rainy season ends, pre-dredging consultations would require the harbors to provide proposed dredging project information to the commenting agencies so that they have enough time to develop their comments and forward them to the permitting agencies. Pre-dredging consultations could be just between the applicant and permitting agencies with the permitting agencies responsible for reporting any commenting agency concerns. If the matters between the harbors and the commenting agency are too expansive for the permitting agency, then the harbor and commenting agency would meet. Several agencies already offer pre-dredging consultations including the permitting agency, USACE and the commenting agency, CDFG (USACE 1986 and Johnston 1998). Increasing the number of agencies that offer consultations should expand and implement an option currently in place.

- *Recommendation #4: Pre-Dredging Joint Agency Consultations*

Pre-dredging joint agency consultations would entail a staff representative from each applicable permitting and commenting agency and harbor staff. This

recommendation would be one of the final steps before actual dredging is authorized. The purpose of this multi-agency meeting would be to present everyone involved with an in-depth overview of the proposed dredging project. Topics covered would include a summary of the project (i.e., location of areas to be dredged, duration, disposal sites, method of dredging, etc.), review of sediment and water testing results, and any individual agency concerns and the resolutions of the concerns. This type of joint meeting would be similar to the interagency meeting on "Moss Landing Harbor Dredging" that occurred on April 18, 1997. The meeting was hosted by Congressman Sam Farr and attended by representatives from the USACE, USEPA, MBNMS, CCC, CDFG, and RWQCB (Farr 1997).

- *Recommendation #5: Development Working Relationship Among the Monterey Bay Harbors*

The development of a working relationship among the Monterey Bay Harbors is simply a suggestion for mentorship and advice. This recommendation would foster a partnership between the harbors and serve as a source of information should one harbor have a question about the dredging project approval process. For example, if Moss Landing Harbor's General Manager decided not to use consultants in the future and to undertake the dredging project approval process on his own, he could call upon Santa Cruz's Port Director or Monterey's Harbormaster and ask for advice on which lab conducts the highest quality work at the most cost-effective rates. The three harbors would work especially well together since they are common geographically in location and by agency regulation. A working relationship could also lead to the joint sharing of

contractors (for sediment testing) and also the use of a common disposal site for clean sand (i.e., clean sand that is too fine for beach nourishment).

- *Recommendation #6: Establish General Operating Principles*

The following general operating principles have been adapted from the DMMO's "General Operating Principles" (DMMO 1995). These suggested goals and operating principles (Table 11) for the Monterey Bay Harbors seek to include a consolidated application form and anticipate the entire dredging project approval process with the formation of mandated principles including multi-agency participation, framework for scheduling and running meetings, the strict use of timelines, methods to expand agency technical knowledge, and pathways to resolve conflicts between agencies.

Table 11. Suggested General Operating Principles

1. Goals:

- Establish a consolidated joint permit application framework.
- Decrease unnecessary delays and redundancy in the processing of permits.
- Foster consensus decision-making among agencies involved.
- Assure the policies and regulations of individual member agencies will be met.
- Assure that public participation will remain an open process.
- Consider environmental and economical aspects in the decision of projects.

2. Objectives:

- Establish a consolidated joint application form for maintenance dredging projects.
- Coordinate agency review of permit applications.
- Prepare joint agency recommendations on sediment sampling and analysis plans, sediment disposal suitability, and approval or non-approval of permits and project information.
- Increase the use of dredged sediment for beneficial reuse purposes.
- Establish and maintain a common database containing current dredging project information (i.e., disposal location, schedule, test results, etc.).

3. General Operating Principles:

- Individual agencies will process the consolidated joint applications in accordance with their respective regulations and policies.
- Through consensus, member agencies will approve sediment sampling and analysis plans and sediment disposal suitability cooperatively.
- Through consensus, member agencies will work together in an effort to produce one recommendation in regards to dredging project information (i.e., disposal location, schedule, etc.).
- Through consensus, establish definitions for dialogue commonly used (e.g., "Host Agency," "Member Agencies," "Navigable Waters," etc.).

Table 11. Continued. Suggested General Operating Principles

- Consensus decisions will be supported by all member agencies within their jurisdictions.
- Revisions and modifications will be made as necessary to improve the consolidated joint application framework and form.
- Policies and decisions made on a consensus basis by member agencies will be, when feasible, the basis for this consolidated joint application framework.
- Through consensus, member agencies will define the administrative process of the review of dredging project applications.
- Public input on proposed dredging projects will continue.
- The public will be invited to comment on the consolidated joint application framework and form.
- Policies and decisions made by consensus of member agencies with comment from the public will be implemented.
- A "Host Agency" will be designated for the purposes of providing a single contact for dredging project applicants and logistical support (i.e., coordinating meetings; preparing meeting sites, agendas, and minutes; distributing information to other member agencies, applicants, and other interested parties; and maintaining files and the information database) for the other member agencies.
- Establish and maintain a public-accessible dredging project information database (i.e., disposal location, schedule, sediment testing results, etc.) with input from all member agencies.

- *Recommendation #7: Information to be Obtained for a Consolidated Joint Permit Checklist Application*

The information to be obtained for a consolidated joint permit checklist application for the Monterey Bay Harbors (Table 12) is based on the format of the DMMO's "Consolidated Dredging and Dredged Material Reuse/Disposal Permit Application" (USACE *et al.* 1996b).

Table 12. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist Application for Monterey Bay Harbors

Section 1. General Information:

1. Applicant Information

a. Status: ☐ Individual ☐ Legal Entity ☐ Government ☐ Non-profit

b. Address and Phone Number:

Applicant Name: _____

Mailing Address: _____

Phone Number: _____

c. Applicant Business Type and Description:

☐ Sole Proprietorship ☐ Partnership ☐ Corporation ☐ Government Agency

☐ Other Association

Description:

_____

_____

_____

2. Representative Information

a. Applicant's Authorized Agent, Point of Contact and/or Representative:

Name, Title: _____

Organization: _____

Mailing Address: _____

Phone Number: _____

b. Authorization for Representation:

Name: _____

Authorized by: _____

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Permit Checklist Application For Monterey Bay Harbors

Section 2. Project Information:

3. Dredging Project

a. Project Name or Title: _____

b. Type of Project: ☐ New Work ☐ Maintenance

c. Project Description:

_____

_____

_____

d. Project Need and/or Purpose:

_____

_____

_____

e. Timeline:

Month and year work is proposed to begin: _____

Month and year work is proposed to end: _____

f. Estimated Total Project Cost: _____

g. Project Location:

County: _____ Nearest City: _____

Latitude: _____ Longitude: _____ Waterway: _____

h. Type of Equipment to be Used: _____

i. Will the project result in the construction of temporary or permanent structures other than normal dredging equipment?

☐ Yes, with Description ☐ No

_____

_____

_____

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist Application for Monterey Bay Harbors

j. Depth of dredging based on Mean Lower Low Water datum (MLLW):

Design Depth: _____ft.

Over/depth Tolerance: _____ft. Total Depth: _____ft.

k. Volume of Material to be Dredged in Cubic Yards: _____cy

l. Area of dredging in square feet: _____ sq. ft.

m. Type(s) of substrate being dredged: ☐ Sub-tidal Bottom ☐ Mudflat ☐ Wetlands

☐ Other, with explanation:

_____

_____

_____

n. Agency and identification numbers of any previous permits for this activity:

_____

_____

_____

Section 3. Disposal Site Information:

4. Directions

a. Does the project involve unconfined aquatic disposal?

☐ Yes, go to #5 ☐ No

b. Does the project involve upland, wetland, or reuse disposal?

☐ Yes, go to #6 ☐ No

5. Aquatic Disposal

a. Site Location:

If the site has an identification (i.e. number or name), identify and describe:

_____

_____

_____

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist Application for Monterey Bay Harbors

6. *Proposed Upland, Wetland, or Reuse Disposal Site Information*

a. Site Location:

Site Name: _____

Site Description:

_____

_____

Site Address (Please include: Latitude, Longitude, Zoning):

_____

_____

Owner's Name and Mailing Address:

_____

_____

Phone Number: _____

b. Does the project affect jurisdictional wetlands? ☐ No

☐ Yes, give name and permit number of approved wetland project where material will be placed:

_____

_____

c. Is this an existing site that regularly receives dredged material?

☐ Yes ☐ No

d. Year the site was last used for dredged material disposal: _____

e. Will the dredged material be sold or used for private purposes?

☐ Yes, annual income received or projected: _____ ☐ No

f. Anticipated volume of dredged to be disposed in cubic yards: _____cy

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist for Monterey Bay Harbors

g. Will the disposal result in the construction of temporary or permanent structures or use other than normal dredged material disposal equipment?

☐ Yes, describe: ☐ No

_____

_____

_____

h. Will the proposed disposal affect existing public access or public recreational facilities?

☐ Yes, describe how impacts would be mitigated: ☐ No

_____

_____

_____

Section 4. Other Required Information:

8. Environmental Approvals

a. Has an EIR or an EIS been prepared for the project?

☐ Yes ☐ No

b. Is the project categorically exempt from the need for any environmental documentation?

☐ Yes, attach a statement from the lead agency supporting this categorical exemption

☐ No

c. Was an EA prepared for previous dredging at this site?

☐ Yes ☐ No

d. If 8(a) is No, will an EIR or an EIS be prepared?

☐ Yes ☐ No

e. If 8(d) is No, has a negative declaration been prepared (or is one being prepared)?

☐ Yes ☐ No

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist Application for Monterey Bay Harbors

f. If 8(d) or 8(e) is Yes, answer the following:

Who will prepare the EIR or negative declaration? _____

When is the approximate date of completion? _____

g. Provide a copy of the project environmental documentation with the application.

9. Other Approvals: Provide a copy of permit/approvals from the following agencies (if applicable):

a. Federal Agencies (USACE, USEPA, MBNMS)

b. State Agencies (CCC, CDPR, CSLC, RWQCB)

c. Local Agencies (MBUAPC, MCEH, SCEH, MCPBI, SCPBI, MCPD, SCPD, etc.)

d. Other Agencies

10. Disclosure of Campaign Contributions

Disclose any campaign contributions in excess of $250 to officials of the agencies using this application form, including to whom the contribution was made, who the contribution was made by, and the date of the contribution

_____

_____

_____

11. Adjoining Property Owners

Provide Addresses of property owners, lessees, etc., whose property adjoins the projected disposal site:

_____

_____

_____

Table 12. Continued. Suggested Information to be Obtained for a Consolidated Joint Permit Checklist Application for Monterey Bay Harbors

12. Checklist of Additional Information Attached or to be Submitted

- ☐ Sampling and Analysis Plan
- ☐ Testing Data
- ☐ Calculations
- ☐ Organizational Document
- ☐ Environmental Documents
- ☐ Drawings and Maps
- ☐ Proof of Legal Interest
- ☐ Statement of Consistency
- ☐ Fees

13. Certification of Accuracy of Information

Signature of Applicant or Applicant's Representative:

_____

_____ (date)

VI. CONCLUSION

The main goals of this study were to: (1) examine the 1996-1997 dredging project approval process of Santa Cruz, Moss Landing, and Monterey Harbors; (2) examine two model consolidated checklists; (3) compare the differences and outcomes of each harbor's permit approval process to highlight methods to achieve and obtain greater efficiency and decrease redundancy and costs, and (4) recommend a consolidated permit checklist framework for consideration. What has been discovered through the research is that the dredging project approval process is a complex and gigantic series of actions that entails: multi-year permits; episodic approvals; numerous Federal, State, and local agencies; commitment of harbor staff, money, patience, time, and the need for more attention to the overall process. Each of the above points are vital to Santa Cruz, Moss Landing, and Monterey Harbor's ability to operate. In addition, the findings of the IWGDP (USDOT 1994), discussed in Chapter I, were prompted by the same complexity and intricacies of the dredging project approval process the three harbors face each time they individually wish to undertake a dredging project.

The dredging project approval process is more than applying for and receiving permits from the USACE, CCC, CDPR, CSLC, and RWQCB. It is also a process that requires coordination with other Federal, State, and local agencies (e.g., USEPA, FWS, MBNMS, CDFG, MCEH) with regulatory authority specific to a harbor project that is needed each time the understudied harbors propose to dredge and dispose. Therefore, agency approval is not only needed when the harbors are trying to obtain permits, their approvals are also needed every time Santa Cruz, Moss Landing, and Monterey Harbors

propose an episodic dredging project. As it stands now, the harbors seek approval when applying for the necessary permits on an individual agency basis and also submit current sediment data each time thereafter with the request for dredging projects. The harbors must expend limited funds to gather and obtain the same required information each time they propose a project for each agency permit and approval needed. These time-consuming and expensive procedures ensure environmental protection but place the harbors through inefficient planning and permit review procedures every time.

The numerous Federal, State, and local agencies involved include at least four mandatory Federal (i.e., USACE, USEPA, MBNMS, FWS) and four mandatory State agencies (i.e., CCC, CDFG, CSLC, RWQCB) with other agencies involved on a case-by-case basis. Each of the agencies has their own regulatory jurisdiction and objective(s) to meet. Additionally, each agency has specific ways in which they proceed in fulfilling their own required objectives. One example that illustrates an agency's procedures is the USACE's CWA 404 process. Before the USACE can issue their permit, all State agencies (that comment on USACE permits) must issue their authorization before the USACE can issue their permit (Huston 1998). They also must have the USEPA approval before they can issue a permit. If they want to issue a permit to dispose of dredged sediment in the MBNMS, they must consult with the Sanctuary. These review and comment procedures can be lengthy and time-consuming. Although several agencies have goals of issuing permits within 60 days, often delays occur for many reasons; such as incomplete project information, incorrect sampling, significant chemical contaminants, bioassay failure, or significant bioaccumulation of contaminants.

Both harbor staff and agency personnel have commented on the shortcomings of current procedures and have expressed a need for revised methods. However, it must be realized that the whole process is affected by the overall requirements of the national dredging project approval process. The dredging project approval process is an operation of many regulatory agencies in which the review process seems as if it has been pieced together to accommodate each agency requirement. A thorough regional plan is needed to coordinate Federal, State, and local agency review and integration for the Monterey Bay Harbors.

Specific recommendations have been made by several of the agencies, the three harbors, and the researcher to improve the current procedures (Tables 13 and 14). Each of the recommendations is based on experiences from the present and previous dredging project approval process. The recommendations are summarized as follows:

Table 13. Summary of Harbor Staff and Agency Personnel Recommendations

- Issue longer multi-year permits
- Standardized testing guidelines
- One-stop shopping (i.e., single) permits
- Coordinated agency timelines
- Scientifically defensible biological, chemical, and physical values
- Absolute interval deadlines for processing permits
- Equal weighting of agency comments for decisions
- The assumption of no negative concerns of agencies that have not commented within a given time frame
- Issues raised by commenting agencies should only be made to the permitting agencies
- Consideration of a system's cycle
- Revised procedures for small projects
- Implementing a consolidated checklist specifically for Monterey Bay Harbors

Table 14. Summary of Researcher Recommendations

- Bi-annual depth testing
- Use of city and/or county resources for physical, chemical, and biological sediment testing
- Pre-dredging individual agency consultations
- Pre-dredging joint agency consultations
- The development of a working relationship among Monterey Bay Harbors
- Establish General Operating Principles
- Use of a Consolidated Permit Checklist Application

Because several agencies have recognized that changes in the current procedures are needed for Monterey Bay Harbor projects, many of these recommendations may come soon. The USACE's efforts by the USEPA, MBNMS, CCC, and CDFG on the working documents regarding testing guidelines, a Monterey Bay Harbor consolidated checklist, and instructions for preparing the checklist address harbor and agency concerns. The concerns addressed in the documents include the need for more agency guidance, background information, and efficient methods to improve present procedures.

While the working documents may incorporate several of the recommendations, not all will become part of the process. Specifically, the recommendations for single permit application, equal weighting of comments, and the assumption of no negative concerns for non-commenting agencies, may not be feasible because each agency has a mandated role that most are unwilling to give up (Lawrence 1998a). In other words, some harbor recommendations asked for may be more than the agencies are willing to relinquish or volunteer. However, the new USEPA and USACE Inland Testing Manual (USEPA and USACE 1998) will provide a framework for new local agreements on sediment testing.

The examination of the two model consolidated checklists and their results gives hope that the joint agency guidance, background information, and a consolidated permit application designed specifically for Monterey Bay Harbors, will improve many dredging program management areas. Performance evaluations of the DMMO and JARPA checklist procedures have been overwhelmingly positive due to the general improvements in more efficient application processing; coordinated information dissemination; reduced paperwork; reduced information redundancy; and the collaboration of Federal, State, and local agencies. However, for a coordinated and consolidated approach to work with Monterey Bay Harbors and agencies, the agencies must set forth an overall approach that also includes operating principles (i.e., agency roles, responsibilities, and commitment) and logistical aspects (i.e., scheduling of meetings, timelines, and conflict resolution) and rigidly adhere to them. The agencies must also consider Santa Cruz, Moss Landing, and Monterey Harbor's situations and requests. In addition, the agencies may also consider this researcher's recommendations.

Each of the harbors' dredging project approval processes for the 1996-1997 dredging year were successful with the required permits and approval received. This success was due to the experience and familiarity of Santa Cruz, Moss Landing, and Monterey Harbor staff. While the Monterey Bay Harbors undertake in relatively small dredging projects in comparison with those in the San Francisco Bay Area or elsewhere in the U.S., it is important to realize that Santa Cruz Harbor, Moss Landing Harbor, and Monterey Harbor face the same dredging project approval process as any other harbor or port. And for these harbors, the procedures are lengthy and expensive and marked with

identified weaknesses. It is therefore hopeful and likely that such weaknesses will be strengthened with the efforts the agencies regulating Monterey Bay Harbor projects are placing in improving the dredging project approval process.

The participation of the harbor staff and agency personnel reflect a dynamic process in which all involved are committed and/or adhere to environmental protection. The preservation of natural resources and environmental quality of Monterey Bay Area ecology can only improve with the prospect of new procedures (i.e., the working documents) and continued communication with each other. The present system of applying for, reviewing, and receiving dredging and disposal permits is not in need of total renovation, but rather refinement in specific areas (i.e., background information, guidance, consolidated of permit application, etc.). If a consolidated approach is adopted for the Monterey Bay Harbors of Santa Cruz, Moss Landing, and Monterey, they will undertake dredging projects with continued consideration for the environment in a more cooperative and efficient manner.

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Appendix A

Letters of Permission

Anneliese Rawlings-Delziet
Moss Landing Harbor
P.O. Box 10
Moss Landing, CA 95039

February 19, 1997

Dear Ms. Rawlings-Delziet,

I would like to take this opportunity to thank you for the dredging information you have provided thus far. The material has been extremely helpful.

As you may recall, I am a graduate student at San Jose State University working on a thesis for the Masters of Science in Environmental Studies program. The topic of the thesis is on dredging practices and projects of harbors within the Monterey Bay region. Although I am still in the preliminary stages of the thesis process; writing the thesis proposal, I am focusing on a comparative analysis of the dredging practices of each harbor. Such an analysis will possibly include the following:

- a comparison of testing procedures of each harbor with EPA/Corps documents (i.e. Inland Testing Manual and possibly Public Notice 93-2)
- a cost effectiveness analysis of sampling, testing, reporting, dredging, and disposal.
- a case history of each harbor that would include sampling, testing, dredging and disposal of dredged material at each harbor: including all permits from applicable agencies.
- an analysis of contaminant(s), if applicable, through data from the State Mussel Watch Program, Bay Protection Toxic Cleanup, and NOAA's National Status and Trends Program.

The objectives of this study include:

- to highlight and possible correct inefficient and inappropriate practices (i.e. multiple sediment samplings, non-site specific bioassays, and non uniform toxicity values)
- to provide those harbors that have incidentally undertaken appropriate/suggested steps of the guideline(s) thus far the directions(s) they should next follow
- to provide an evaluation of the individual harbors projects with pertinent policy guidelines

Therefore, at this time I would like to ask for further information concerning the dredging practices at your harbor. Specifically, the permits, sampling history, and financial information pertaining to the costs for each aspect of dredging since the construction of the harbor in 1946. By no means does this mean I am asking for an insurmountable paper trail, but rather an annotated list of the information requested. I am very willing to obtain

this information in anyway possible; setting up a meeting, reviewing the documents in your presence, or through any measure you deem plausible.

I have enclosed a response card for your convenience. Please responds as soon as possible (March 5th) so I may ascertain the direction I should next follow. I understand how busy it is at your respective harbor, however, any assistance and material will be extremely appreciated. It is my intention to complete a thorough study that will provide beneficial information for governmental agencies, the San Jose State University's Environmental Studies Department, the interested public, as well as your harbor staff and patrons.

Thanks for your valuable time.
Monica Wong

Santa Cruz Harbor

Please check the following accordingly:

✓ Yes, we are willing to help obtain the requested information

___ No, we are not willing to help obtain the requested information

If "yes" has been marked, please comment on how your office would like to proceed:

MONICA: You have taken on a complex subject. It will be a real enlightening to have such comparative studies. I certainly will share costs, methods, etc of our testing criteria

A Big issue Right now with most Landy & Santa Cruz is upland or Aquatic or Beach Disposal alternatives

If "no" has been marked, please suggest some pathways or other alternatives where the information can be obtained:

FOR SAND, silt clay.

Moss Landing Harbor

Please check the following accordingly:

_X_ Yes, we are willing to help obtain the requested information

___ No, we are not willing to help obtain the requested information

If "yes" has been marked, please comment on how your office would like to proceed:

Please call or come to see us to review our records and meet our new Manager, James Stilwell.

Our phone number is 408 633-2461

If "no" has been marked, please suggest some pathways or other alternatives where the information can be obtained:

City of Monterey Harbor

Please check the following accordingly:

X Yes, we are willing to help obtain the requested information

___ No, we are not willing to help obtain the requested information

If "yes" has been marked, please comment on how your office would like to proceed:

Please let me know in advance what info you need – then we should meet to go over it

Steve Scheiflauer

If "no" has been marked, please suggest some pathways or other alternatives where the information can be obtained:

Appendix B

Data

DATA

The data have been collected from the responses and information received from harbor staff, agency personnel, and from the documents regarding the two model consolidated checklists. The information received from harbor staff and agency personnel are the responses from categories 1 and 3 of investigative questions regarding the 1996-1997 dredging activities from September 1, 1996 through August 31, 1997 at Santa Cruz, Moss Landing, and Monterey Harbors. The information received from information and agency review documents of the two model joint checklists has been used for the investigative questions of category 2.

Category 1. Questions for Harbor Staff and Agency Personnel

A. Historical Information Questions:

1. When was the harbor constructed?

Harbor	Year constructed
Santa Cruz	1963
Moss Landing	1946
Monterey	1934 - Breakwaters completed. 1960 - Basin constructed. 1996 - 100% marina reconstructed.

2. What types of dredging permits have been applied for: maintenance dredging or new work construction dredging?

Harbor	Maintenance dredging	New work construction dredging
Santa Cruz	x	
Moss Landing	x	
Monterey	x	

3. What procedures were followed in an effort to obtain permits?

Harbor	Federal Agencies Procedures	State Agencies Procedures	Local Agencies Procedures	Other
Santa Cruz	x	x	x	
Moss Landing	x	x	x	
Monterey	x	x	x	

4. What permits were required for the 1996-1997 dredging project?

Harbor	Federal Agencies		
	USACE of Engineers		
	RHA Section 10	*MPRSA Section 103*	*CWA Section 404*
Santa Cruz	Permit #21056S64 Valid 3/22/95-3/31/00 • Authorized to dredge approximately 255,000 cy (250,000 cy from the entrance and 5,000 cy from the inner harbor) of material annually for a period of five years. • Dredging allowed to the depth of -20 feet (MLLW) in the harbor entrance and -8 feet (MLLW) in the inner harbor.	Permit not required.	Permit #21056S64 Valid 3/22/95-3/31/00 • Authorized to dredge approximately 255,000 cy (250,000 cy from the entrance and 5,000 cy from the inner harbor) of material annually for a period of five years. • Disposal of dredged material authorized for on a one-acre section of beach adjacent to the east Santa Cruz Harbor jetty.
Moss Landing	Permit #22026S27 Valid 7/10/96-6/30/01 • Authorized to dredge up to 50,000 cy annually for five years from areas ML-1 and ML-2 of the Federal Channel and from selected areas within the North and South Harbor.	Permit not required.	Permit #22026S27 Valid 7/10/96-6/30/01 • Authorized to dredge up to 50,000 cy annually for five years from areas ML-1 and ML-2 of the Federal Channel and from selected areas within the North and South Harbor. • Disposal sites (SF-12, beach disposal, and upland disposal) to be determined by results of sediment testing.
Monterey	Permit # 19630S25 Valid 4/9/93-4/1/98 • Authorized to perform maintenance dredging using an underwater auger hydraulic dredge on an annual basis for a period of five years. • Amount allowed to be dredged the first year is 3,900 cy and the subsequent four years is 1,500 annually.	Permit not required.	Permit # 19630S25 Valid 4/9/93-4/1/98 • Authorized to perform maintenance dredging using an underwater auger hydraulic dredge on an annual basis for a period of five years. • Amount allowed to be dredged the first year is 3,900 cy and the subsequent four years is 1,500 annually. • Disposal authorized east of Wharf II or to an upland site.

4. Continued. What permits were required for the 1996-1997 dredging event project?

Harbor	State Agencies			
	CCC	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Permit # 3-95-67 Valid: 10/13/95-11/1/05 • Authorizes a five year (11/1/95-3/31/00) dredge and dredge disposal operation. • Dredging limited annually to 5,000 cy from the inner harbor and 250,000 cy from the harbor channel. • Disposal authorized via a permanent pipeline.	Temporary Use Permit Granted 11/12/96 Valid: 11/15/96-5/1/97 • Grants the use of Twin Lakes State Beach for the purpose of permitting the deposition of dredged sand material onto Twin Lakes State Beach. • Work conducted must be consistent with CCC permit 5-95-67. • Work limited to the hours of 7 a.m. To 10 p.m. Monday through Thursday in the valid months. • The conduction of the operation on Fridays is only permitted during the months of January and February and limited to the hours of 4 p.m. To 10 p.m. • Work is not allowed to occur during the week before and after Easter Sunday (3/22/97-4/6/97).	Lease PRC 2836.9 Granted 2/1/87 for 25 years.	Order # 88-68 Adopted 6/10/88 Revised 9/30/94- Rescinded 3/98, authority given to USACE • Authorizes discharge at locations based on most recent information concerning availability of sites and data on ocean currents. • Discharge of materials not meeting USEPA's current guidelines for dredge spoil disposal cannot be disposed to the ocean. • Dredge operations cannot be conducted from the Friday before Good Friday through the Sunday following Easter Day each year, nor during unseasonably warm weekends and holidays. • Discharge to the beach limited to between 10/1 and 5/31 of each year. • Discharge to the beach is limited to above MHWL and graded daily to obtain natural beach contour. • Beach disposal of inner harbor dredge spoils deemed clean may occur between 12/1 and 2/28, but not during unseasonably warm weather.

4. Continued. What permits were required for the 1996-1997 dredging event project?

Harbor	State Agencies			
	CCC	*CDPR*	*CSLC*	*RWQCB*
Moss Landing	Permit #3-96-020 Valid: 5/9/96-7/3/98 • Authorizes the development of Dredge Disposal Site APN 133-221-09, for the temporary development and use of Dredge Disposal Site APN 133-173-01, and the disposal of 31,000 cy of non-Federal channel dredged sediment at the developed sites.	N/A; State Park Lands are not used.	Present permit needs to be amended for a larger disposal volume; maintenance dredging lease prepared and a standard reimbursement agreement has been prepared.	Order #90-21 Valid: 3/9/90-indefinitely* • Authorizes the discharge of approximately 100,000 cy of dredged material from North Harbor to disposal sites SF-12, SF-14, and three beach replenishment areas (providing compliance is met with stated provisions). • Discharge of dredge spoils not meeting USEPA's current guidelines is prohibited.
Monterey	Permit #3-96-089 Valid: 11/14/96-11/15/01 • Authorizes a five-year operations and maintenance program including dredging 1,500 cy per year (7,500 cy over the five year period).	N/A; State Park Lands are not used.	Permit not required; State tidelands granted to the City of Monterey in 1868 for eternity.	Order #91-60 Valid: 7/12/91-indefinitely* • Authorizes for the discharge of (limited to 10,000 cy or less annually) dredge spoils from the Monterey Harbor wharf. • Average weighted lead concentration limited to 25mg/kg or less. • Discharge to the beach limited to through October 1 and May 31.

*RWQCB: indefinitely = (until or unless needs and requirements of permit are changed or are not met).

4. Continued. What Permits were required for the 1996-1997 dredging event project?

Harbor	Local Agencies								
	MBAPC	*MCEH*	*SCEH*	*MCPBI*	*SCPBI*	*MCPD*	*SCPD*	*MLHD*	*Other*
Santa Cruz	Permit to Operate *Seabright* Dredge #3815A Valid 8/31/93- indefinitely* Annual dredge equipment permits renewed: *Seabright* (9/96) and *Squirt* (7/96).	N/A; not in jurisdiction.	Permit not required.	N/A; not in jurisdiction.	N/A; not in jurisdiction.	N/A; not in jurisdiction.	Permit not required.	N/A; not in jurisdiction.	
Moss Landing	Permit to Operate Dredge #4133 Valid 6/9/89 -indefinitely* Annual dredge equipment permit Renewed 6/97 (to keep permit valid).	Permit requirement is dependent upon the disposal location for the material.	N/A; not in jurisdiction.	Grading permit requirement is dependent upon the location of decanting basin.	N/A; not in jurisdiction.	Coastal Development Permit requirement is dependent upon the location of decanting basin.	N/A; not in jurisdiction.	Construction permit issued.	DTSC: required review of material tests and determined that the materials were exempt from permit requirement.
Monterey	N/A; harbor uses electric dredge.	Permit not required.	N/A; not in jurisdiction.	Permit not required.	N/A; not in jurisdiction.	Permit not required.	N/A; not in jurisdiction.	N/A; not in jurisdiction.	

*MBAPC: indefinitely = (until or unless needs and requirements of permit are changed or are not met).

5. What agencies were contacted regarding the 1996-1997 dredging project year?

Harbor	Federal Agencies			
	USACE San Francisco District	*FWS*	*USEPA Region IX*	*MBNMS*
Santa Cruz	Application submitted 8/20/94. Sediment data given every year prior to dredging event.	Indirectly contacted: Reviews and comments to USACE during permit review.	Indirectly contacted: Reviews and comments to USACE during permit review.	Indirectly contacted: Reviews and comments to the USACE, CCC, and RWQCB during their permit processes. Indirectly contacted: works with the USEPA and CDFG. In 1996 received proposed sediment sampling plan and waste discharge. Agency directly contacted Port Director to ask specific questions.
Moss Landing	Application submitted 1/12/96. Sediment data given every year prior to dredging event.	Indirectly contacted: Reviews and comments to USACE during permit review.	Indirectly contacted: Reviews and comments to USACE during permit review.	Indirectly contacted: Reviews and comments to the USACE, CCC, and RWQCB during permit review. Indirectly contacted: Works with the USEPA and CDFG. Agency directly contacted Harbor Master to ask specific questions.
Monterey	Application submitted 4/29/92. Sediment data given every year prior to dredging event.	Indirectly contacted: Reviews and comments to USACE during permit review.	Indirectly contacted: Reviews and comments to USACE during permit review.	In 1996 agency received proposed sediment sampling plan from Monterey. Agency directly contacted Harbormaster to ask specific questions. Indirectly contacted: Reviews and comments to the USACE, CCC, and RWQCB during permit reviews. Indirectly contacted: Works with the USEPA and CDFG.

5. Continued. **What agencies were contacted regarding the 1996-1997 dredging project year?**

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Application filed 9/22/95. Sediment data given every year prior to dredging event.	Indirectly contacted: Reviews and comments to CCC and USACE during permit review.	Yes	Yes	Order # 88-68 adopted 6/10/88 revised 9/30/94 Rescinded 4/98. authority given to the USACE. Sediment data given every year prior to dredging event.
Moss Landing	Application filed 4/19/96. Sediment data given every year prior to dredging event.	Indirectly contacted: Reviews and comments to CCC and USACE during permit review.	N/A: State Park Lands are not used.	CSLC staff contacted Moss Landing Harbor to inform the District that they needed to amend the present lease for additional volume.	Order #90-21 adopted 3/9/90. Sediment data given every year prior to dredging event.
Monterey	Application filed 10/04/96. Sediment data given every year prior to dredging event.	Directly contacted by Harbormaster regarding potential upland disposal locations for sediment containing lead. Indirectly contacted: Reviews and comments to CCC and USACE during permit review.	N/A: State Park Lands are not used.	Yes	Order #91-60 adopted 7/12/91. Sediment data given every year prior to dredging event.

5. Continued. What agencies were contacted regarding the 1996-1997 dredging project year?

Harbor	Local Agencies						
	MBAPC	*MCEH*	*SCEH*	*MCPBI*	*MCPD*	*MLHD*	*Other*
Santa Cruz	Yes	N/A: not in jurisdiction.	SC Port District notified SCEH of their dredging and disposal project as a courtesy. SC Port District also as a courtesy gives their sediment testing data to SCEH so that the information is available if/when the public asks. SCEH also performs water testing for the SC Port District under contract.	N/A: not in jurisdiction.	N/A: not in jurisdiction.	N/A; not in juris-iction.	
Moss Landing	Yes	Yes	N/A: not in jurisdiction	Yes	Yes	Yes	*MCPW, CASCOT, OPR, USDOT, MRWMD, MCWRA.*
Monterey	N/A: Harbor uses electric dredge.	The harbor staff notified MCEH of their dredging and disposal project. MCEH was only concerned about any high levels of lead in the dredged material (and subsequent disposal), but sediment testing before and after dredging showed high levels were not encountered.	N/A: not in jurisdiction.	Not contacted by harbor.	The harbor staff contacted MCPD to get administrative assistance from the City's Planning Services Manager for the preparation of applications.	N/A: not in juris-diction.	

6. What data were used to make permitting decisions?

Harbor	Tier I	Tier II	Tier III
Santa Cruz	x For entrance channel material.	x For inner harbor materials.	
Moss Landing		x	x
Monterey		x	

Harbor	Tier I *Previous sediment tests exempts samples from analysis*
Santa Cruz	Surface sediment samples testing.
Moss Landing	
Monterey	

Harbor	Tier II									
	Composite sediment samples				*Individual sediment/water samples*					
	physical	*chemical*	*biological*		*physical*		*chemical*		*biological*	
			SPP	*SPA*	sed	H_2O	sed	H_2O	*SPP*	*SPA*
Santa Cruz					Core: grain-size.		Core: heavy metals.		x	x
Moss Landing	x	x	x	x	x	x	x	x	x	x
Monterey					x		x	Lead.		

SPP = Suspended Particulate Phase Bioassay. sed = Sediment.
SPA = Solid Phase Acute Bioassay. H_2O = Water.

Harbor	Tier III				
	Special Evaluations				
	Intensive Sediment Sampling	*Bioaccumulation Testing*	*Bioassays with More Species than Routinely Required*	*Field Surveys*	*Other*
Santa Cruz					
Moss Landing	x	x	x	x	
Monterey					

7. How much material was dredged?

Harbor	Amount Proposed	Amount Dredged in 1997
Santa Cruz	255.000 cy/year: Entrance Channel = 250.000 cy Inner Harbor = 5.000 cy.	122.200 cy: Entrance Channel = 118.200 cy Inner Harbor = 4.000 cy.
Moss Landing	31.000 cy /year.	0 cy.
Monterey	1.500 cy/year.	1.000 cy: D Dock & G Dock areas = +/- 800 cy Yacht Club area = +/- 200 cy.

8. Where was the material disposed?

Harbor	Proposed Disposal Site(s)	Permitted Disposal Site	Actual Disposal Site
Santa Cruz	*Application for Department of Army Permit* (Santa Cruz Port District 1994): • On to the beach 300 ft to 500 ft east of Santa Cruz Harbor entrance-surf-zone disposal (beach nourishment). *CCC Project Description Information Staff Report* (CCC 1995): • Dredged material from inner harbor and harbor channel to be disposed of into the intertidal zone and sandy beach area of Santa Cruz Port District Beach and Twin Lakes State Park Beach.	*USACE Permit #21056S64* (USACE 1995a): • Disposal Site is a one-acre section of beach adjacent to the east Santa Cruz Harbor jetty, between Seventh Avenue and Seabright (beach nourishment). *CCC Coastal Development Permit #3-95-67 Staff Report* (CCC 1995): • Spoils disposal in the intertidal zone and beach area downcoast of the harbor channel on the Port District beach and disposal on to Twin Lakes State Beach. *CDPR Temporary Use Permit* (State of California, CDPR 1996): • Disposal on portions of Twin Lakes State Beach.	Twin Lakes State Beach (beach nourishment) above mean highwater line.

8. Continued. Where was the material disposed?

Harbor	Proposed Disposal Site(s)	Permitted Disposal Site	Actual Disposal Site
Moss Landing	*Public notice USACE #22026S27* (USACE 1996A): • Three proposed upland disposal sites under evaluation include: 1. Moss Landing Harbor District boat storage yard south of the District office. 2. An area located south of Sandholdt Road and east of the Sandholdt bridge capacity of both sites is approximately 17,000 cy. 3. A 22-acre site located south of Jetty Road and between Highway 1 and North Moss Landing Harbor. *CCC Coastal Development Permit Application* (MLHD 1996b): For non-Federal dredging areas, two temporary dewatering sites: • Moss Landing Harbor District Boat Storage yard, (capacity 13,000 cy). • Moss Landing Harbor District property south of Sandholdt Road, (capacity 4,000 cy) with final disposal at Marina Regional Landfill (confined upland disposal). *RWQCB Waste Discharge Requirements Information* (MLHD 1996a): For non-Federal dredging areas disposal sites include: • A 260,000 sq. ft upland location of Vierra Property located east of PG&E and south of Elkhorn Slough main channel (confined upland disposal) capacity +/-49,500 cy. • A 53,650 sq. ft District boat storage area located in the South Harbor next to and south of the District office (confined upland disposal) capacity +/- 6,400 cy. • A 6,000 sq. ft District storage area located at the east end of the Sandholdt bridge (confined upland disposal) capacity 711 cy.	*USACE Permit #22026S27* (USACE 1996C): Disposal locations, dependent upon results of sediment analysis sampling conducted on an episodic basis, could include: • SF-12 located off Sandholdt Pier (unconfined open-water disposal). • Beach disposal north of Sandholdt Pier (beach nourishment). • Upland disposal (confined upland disposal). *CCC Coastal Development Permit #3-96-020 Staff Report* (CCC 1996a): For non-Federal dredging areas disposal sites include (total capacity of both is approximately 17,000cy): • Six-month temporary construction of a dry storage pond (decanting basin), Dredge Disposal Site APN 133-173-01, and then to permanent placement at Marina Regional Landfill (confined upland disposal). • Development of a decanting basin, Dredge Disposal Site APN 133-221-09, and then to permanent placement at Marina Regional Landfill (confined upland disposal). *RWQCB WDR #90-21* (RWQCB 1990): Dependent upon meeting current USEPA guidelines for dredge spoil disposal, sites include: • SF-12 located offshore of Sandholdt Pier (unconfined open-water disposal). • SF-14 located 1.3 nautical miles from shore (unconfined open-water disposal). • Beach replenishment areas: 1. Area between Sandholdt Pier and south entrance jetty. 2. Area near north entrance jetty. 3. Area between Jetty Road tide gate and Zmudowski State Beach.	N/A; dredging did not occur.

8. Continued. Where was the material disposed?

Harbor	Proposed Disposal Site(s)	Permitted Disposal Site	Actual Disposal Site
Monterey	*Application for Department of Army Permit* (City of Monterey 1992): • Upland site (confined upland disposal). • East of Wharf II (beach nourishment). *CCC Application for Coastal Development Permit* (City of Monterey 19/96): • Marina Regional Landfill (confined upland disposal). *Report of Waste Discharge) for RWQCB #91-60* (City of Monterey 1990): • On beach east of Wharf No. 2 (beach nourishment).	*USACE Permit #19630S25* (USACE 1993a): • Upland site (confined upland disposal). • East of Wharf II (beach nourishment). *CCC Coastal Development Permit #3-96-089 Staff Report* (CCC 1996b): • Marina Regional Landfill (confined upland disposal). *RWQCB #91-60* (RWQCB 1991): • East of Wharf No. 2 (beach nourishment).	• Ryan Ranch-City of Monterey Property, an upland site (confined upland disposal); stored to be used as road base (beneficial reuse).

9. Were any problems encountered at the dredging site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	No	Agency information not provided.	Some inner harbor sediments are too fine (i.e., grain-size) for beach nourishment. Some sediments are contaminated with TBT and PAHs so they are also unsuitable for beach nourishment.	Some inner harbor sediments are too fine (i.e., grain-size) for beach nourishment. Some sediments are contaminated with TBT and PAHs so they are also unsuitable for beach nourishment.
Moss Landing	At the proposed dredging site, contaminants in sediment have been encountered contributing to the problems of locating an upland site.	Agency information not provided.	At the proposed dredging site, the top two-foot layer of some sediment in non-Federal north and south harbor areas is contaminated with various pesticides.	At the proposed dredging site, (in concurrence with EPA's determination), MBNMS concluded some of the upper sediments at the proposed dredging sites were too toxic for unconfined open water disposal-Federal agencies (USACE, USEPA, MBNMS) and State agencies (RWQCB, CCC, CDFG) agreed that the upper two feet of sediment would have to be dredged and disposed upland and the lower sediments to the proposed project depth plus a one-foot overdredge depth could be disposed at the SF-12 disposal site in about 50 feet of water off the end of Sandholdt Pier.
Monterey	No	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	No

9. Continued. Were any problems encountered at the dredging site?

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No	No problems for entrance channel dredging.	No	No	Staff contacted made general comment that each harbor in their region faces similar problems to Moss Landing.
Moss Landing	No at the proposed dredging site.	At the proposed dredging site, sediment received from Old Salinas River and the Tembladero, Elkhorn, and Moro Cojo Sloughs are contaminated with agricultural pesticides. Also some sediments are contaminated with elevated levels of copper and TBT.	N/A: State Park Lands are not used.	No at the proposed dredging site.	At the proposed dredging site, varying levels of pesticides make material unsuitable for unconfined aquatic disposal.
Monterey	Agency information not provided.	Elevated lead problems were present in sediment resulting from a former Southern Pacific Railroad slag heap. Cleanup was restricted to upland locations and contaminated sediments were not removed.	N/A: State Park Lands are not used.	N/A: staff confirmed that the City of Monterey was granted tidelands in 1868 forever.	Staff contacted made general comment that each harbor in their region faces similar problems to Moss Landing.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	No	
Moss Landing	N/A: staff reported dredging did not occur because of unrelated problems.	
Monterey	N/A: harbor uses electric dredge.	*MCEH:* The harbor staff notified MCEH of their dredging and disposal project. MCEH was only concerned about any high levels of lead in the dredged material (and subsequent disposal). Sediment testing before and after dredging showed high levels were not encountered.

9. Continued. Were any problems encountered at the dredging site?

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	None reported because they did not dredge.
Monterey	None reported.

Harbor	Harbor Comments
Santa Cruz	No problems with any agencies regarding the dredging site.
Moss Landing	No problems at the dredging site because they did not dredge.
Monterey	No problems with any agencies regarding the dredging site.

10. Were any violations encountered at the dredging site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	No	Agency information not provided.	No	No
Moss Landing	N/A; dredging did not occur.	Agency information not provided.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	No	Agency information not provided.	Staff contacted was not involved with 1996-1997 Monterey Harbor dredging project.	No

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No	No	No	No	Agency information not provided.
Moss Landing	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	Agency information not provided.	No	N/A; State Park Lands are not used.	N/A; staff confirmed that the City of Monterey was granted tidelands in 1868 forever.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	No	None reported.
Moss Landing	N/A; dredging did not occur.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	None reported.
Monterey	None reported.

Harbor	Harbor Comments
Santa Cruz	No violations from any agency regarding the dredging site.
Moss Landing	N/A; because they did not dredge.
Monterey	No violations from any agency regarding the dredging site.

11. Were any problems encountered at the disposal site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	No	Agency information not provided.	No	Staff commented on the hydrogen sulfide smell that was an issue with local residents and the air board. Staff worked with the Port District to have NOAA approval (approved 10/97 by NOAA) for a historical surf zone disposal site for entrance channel dredging.
Moss Landing	N/A; dredging did not occur.	Agency information not provided.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	No	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	K-rail containment area (decanting basin) leaked water and dredged material onto the road. After notifying the Harbormaster, the leaks were addressed and reduced.

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No	No, but staff noted an "aesthetic problem with odor."	No	No	Agency information not provided.
Moss Landing	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	Agency information not provided.
Monterey	Agency information not provided.	No, problem(s) avoided because the harbor chose to dewater the dredge spoils and deposit the sediments at an upland site.	N/A; State Park Lands are not used.	N/A; staff confirmed that the City of Monterey was granted tidelands in 1868 forever.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	Received public complaints about odors emanating from disposal area.	*SCEH:* Investigated odor complaints from public.
Moss Landing	N/A; dredging did not occur.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

11. Continued. Were any problems encountered at the disposal site?

Harbor	Other (not agencies)
Santa Cruz	*Harbor Neighborhood*: The surrounding neighborhoods had complaints about odors emanating from the disposal area.
Moss Landing	N/A; dredging/disposal did not occur.
Monterey	None reported.

Harbor	Harbor Comments
Santa Cruz	Received complaints from neighbors about odors.
Moss Landing	N/A; because they did not dredge.
Monterey	Problems with Federal agencies (NOAA/MBNMS) were in the nature of timing concerns. The day before dredging at the harbor was to begin, the harbor staff was notified by MBNMS due to some concerns they had with lead levels. MBNMS staff wanted more time and testing performed on the decanting water for the heavy metal. The levels sampled and analyzed by ToxScan Inc. labs reported 30 mg/kg. The RWQCB's Waste Discharge Requirement Order #91-60 requires that a discharge with an average total lead concentration greater than 30 mg/kg must be discharged at a RWQCB approved located. The harbor staff was distressed for two reasons. The first reason was because the harbor staff was notified just one day before the dredging project was to begin. The harbor staff would have gladly agreed to additional testing if they were notified beforehand. However, the equipment and staff were scheduled and ready to begin. The second reason was because the dredged material was to be taken to an upland location, the harbor staff was under the assumption that no further testing was required. The issue of further testing was resolved the same day with a conference call including staff from the CCC, CDFG, MBNMS, RWQCB, and harbor staff. It was concluded that additional testing was not needed and dredging began the next day as planned.

12. Were any violations encountered at the disposal site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	No	Agency information not provided.	No	No
Moss Landing	N/A; dredging did not occur.	Agency information not provided.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	No	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	No

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No	No	No	No	Agency information not provided.
Moss Landing	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	Agency information not provided.	No	N/A; State Park Lands are not used.	N/A; staff confirmed that the City of Monterey was granted tidelands in 1868 forever.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	No	None reported.
Moss Landing	N/A; dredging did not occur.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	N/A; dredging did not occur.
Monterey	None reported.

Harbor	Harbor Comments
Santa Cruz	No violations occurred in regards to disposal operations or at the disposal site.
Moss Landing	N/A; because they did not dredge.
Monterey	No violations occurred in regards to disposal operations or at the disposal site.

13. Was there any inspection or monitoring of the dredging site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	Staff made general comment that if there is time, inspections are made to make sure dredging is in the right location.	Agency information not provided.	Staff made general comment USEPA inspects informally based on the specifics of the case.	Staff observed and visited the dredging site periodically to evaluate progress of project.
Moss Landing	N/A; dredging did not occur.	Agency information not provided.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	Staff made general comment that if there is time, inspection are made to make sure dredging is in the right location.	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	Staff observed and visited the dredging site periodically to evaluate progress of project.

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Staff may informally monitor based on conditions of permit.	No	No	Staff made general comment that quarterly reports of dredging volume are submitted by applicants.	Agency information not provided.
Moss Landing	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	Agency information not provided.
Monterey	Agency information not provided.	Staff did not observe.	N/A; State Park Lands are not used.	Staff made general comment that quarterly reports of dredging volume are submitted by applicants.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	Staff inspects to see if operations are within permit details.	None reported.
Moss Landing	N/A; dredging did not occur.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	N/A; dredging did not occur.
Monterey	None reported.

13. Continued: Was there any inspection or monitoring of the dredging site?

Harbor	Harbor Comments
Santa Cruz	A port district employee monitors dredging at all times during the dredging project.
Moss Landing	N/A; dredging did not occur.
Monterey	A city employee is present at the dredging site at all times during operations.

14. Was there any inspection or monitoring of the disposal site?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	Staff made general comment that if there is time, staff will inspect to make sure disposal is in the right location.	Agency information not provided.	Staff made general comment USEPA inspects informally based on the specifics of the case.	Staff observed and visited the disposal site periodically to evaluate progress of project.
Moss Landing	N/A; dredging did not occur.	Agency information not provided.	N/A; dredging did not occur.	N/A; dredging did not occur.
Monterey	Staff made general comment that if there is time, staff will inspect to make sure disposal is in the right location.	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	Staff observed and visited the disposal site periodically to evaluate progress of project.

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Staff may informally monitor based on conditions of permit.	No	Rangers and Lifeguards monitored disposal pipe placement and operations at Twin Lakes State Beach.	Staff made general comment that quarterly reports are submitted by applicant to report volume dredged.	Agency information not provided.
Moss Landing	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	N/A; dredging did not occur.	Agency information not provided.
Monterey	Agency information not provided.	Staff did not observe.	N/A; State Park Lands are not used.	Staff made general comment that quarterly reports are submitted by applicant to report volume dredged.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	N/A; agency permit does not pertain to disposal operations.	None reported.
Moss Landing	N/A; dredging did not occur.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	N/A; dredging did not occur.
Monterey	None reported.

14. Continued: Was there any inspection or monitoring of the disposal site?

Harbor	Harbor Comments
Santa Cruz	A port district employee monitors disposal at all times during the dredging and disposal project.
Moss Landing	N/A; dredging did not occur.
Monterey	A city employee is present at the decantment and disposal site at all times during operations.

B. The dredging permit application processes were examined and analyzed with regard to previous and/or current permit details:

1. What information did the Federal, State, and local regulatory agencies request?

USACE:

A. Application for a Department of the Army Permit (Form 4345).
- Application number (assigned by the USACE).
- Name, address, and telephone number of applicant.
- Name, address, and title of authorized agent.
- Detailed description of proposed activity:
  a. Activity.
  b. Purpose.
  c. Discharge of dredge or fill material.
- Names and addresses of adjoining property owners, leasees, etc., whose property also adjoin the waterway.
- Waterbody and location on waterbody where activity exists or is proposed.
- Location on land where activity exists or is proposed.
- Information regarding if work has already been completed without authorization.
- Approvals, certifications, and denials from other Federal, Interstate, State, local agencies for any structures, construction, discharges, or other activities described in application.
- Signature of applicant.
- Drawings:
  a. Vicinity map.
  b. Plan view.
  c. Elevation and/or cross section view.

B. Environmental Data (i.e., sediment sampling test results).

USEPA:

N/A; USEPA reviews USACE dredging and disposal permits under two regulatory acts (CWA 404 and MPRSA 103). Under CWA 404(b) 1 guidelines, USEPA reviews USACE permits applications for the disposal of dredged material in inland and ocean waters in accordance with the Act's criteria (developed by USEPA). Under MPRSA, USEPA reviews the dredging and disposal permits so that the placement of dredged material into ocean waters complies with the Act's criteria.

FWS:

Agency information not provided.

MBNMS:

Staff routinely requests two articles of information; a proposed dredging plan (i.e., drawings/illustrations of areas proposed for dredging including toe and top of all side slopes, proposed project depth, and overdredge depth) and a proposed sediment sampling and analysis plan (including any known or suspected sources of contamination). In addition, if staff does not have historical information, it will be requested for the purpose of evaluating the proposed dredged material. Staff also receives a copy of a harbor's sediment sampling and analysis results before they comment on unconfined aquatic disposal of dredged material. Other applicable Federal and State agencies are also consulted with to evaluate the dredging project and proposed dredged material before MBNMS makes a decision.

CCC:

A. Coastal Development Permit.

Section I. Applicant Information:
- Applicant information (i.e., name, mailing address, telephone number).
- Applicant's representatives information (i.e., name, mailing address, telephone number).

Section II. Proposed Development Information:
- Project location.
- Detailed description of proposed development.
- Estimated cost of development.
- Project height dimensions.
- Total number of floors in structure.
- Gross floor area.
- Lot area.

- Grading dimensions.
- Parking information.
- Utility extensions information.
- Presence of vegetation/trees information.

Section III. Additional Information:

- Present use of property information.
- Will any Development Agreement(s) govern development?
- Has any previous applications for development been submitted to the California Coastal Zone Conservation or the CCC?
- Is the development is between the first public road and the sea and if public access is present?
- Will development involves diking, filling, draining, dredging, or placing structures in open coastal waters, wetlands, estuaries, or lakes?
- Will the development extend onto or adjoin any beach, tidelands, submerged lands, or public trust lands?
- Will development protect lower-cost visitor and recreational facilities and provide pubic or private recreational opportunities?
- Information regarding if development will convert agricultural land to another use
- Is the development is in or near sensitive habitat areas; areas of State or Federally-listed rare, threatened, or endangered species; 100-year floodplain; and /or park or recreation area?
- Is the development is visible from State Highway 1; park, beach, or recreation area; and/or harbor area?
- Does the development site contain any historic resources, archaeological resources, and/or paleontological resources?
- Will a stream or spring will be diverted?

Section IV. Required Attachments:

- Proof of applicant's legal interest in property.
- Assessor's parcel map(s) showing the applicant's property, and all other properties within 100 feet of the property lines of project site.
- Copies of required local approvals.
- Stamped envelopes with addresses of adjoining property owners and occupants within 100 feet of the property lines of the project site.
- Stamped envelopes with the addresses of all known parties with an interest in the development
- Vicinity/location map.
- Copy(s) of project plans (i.e., site plans, floor plans, elevations, grading and drainage plans, landscape plans, and septic system plans).
- If septic systems are involved, evidence of county or RWQCB approval.
- A copy of any Draft or Final Negative Declaration, Environmental Impact Report, or Environmental Impact Statement.
- Verification of all other permits, permissions, or approval applied for or granted by public agencies
- Information (e.g., geology and soils reports) if development is on a bluff face, bluff top, or in any area of high geologic risk.

Section V. Notice to Applicants:

- Notice that additional material may be requested.

Section VI. Communication with Commissioners:

- Advisement that permit applicants and interested parties and their representatives should not discuss with commissioners any matters relating to a permit outside the pubic hearing.

Section VII. Certification (via applicant signature):

- To certify that the applicant will post a public notice regarding the pending application.
- To certify that the application information is, to the best of the applicant's knowledge, true.
- Authorization for the CCC to conduct site inspections.

Section VIII. Authorization of Agent:

- Authorization of representative.

Appendix A. Declaration of Campaign Contributions.

Appendix B. Local Agency Review Form.

B. Water Quality data.

C. Sediment Data.

D. Proof of disposal permission at approved sites.

CDFG:

N/A; staff reviews all sediment chemistry, size grain analysis, and bioassay test results. In addition, and if requested, staff will provide consultation on California State listed threatened and endangered species in compliance with the California Endangered Species Act. Staff will also comment on monitoring requirements if required.

CDPR:

Staff receives verbal and written requests for permits on the logistics of the dredging and disposal project(s).

CSLC:

Application for Lease of State Lands;

Part I. Generai Data.

Section A: Identification of applicant:

- Applicant's name, address, and telephone number.
- Applicant's authorized agent or representative name, address, and telephone number.

Section B: Legal status of applicant: (i.e., individual(s), corporation, partnership, public agency, other).

Section C: Type of project and authorization: (i.e., commercial, industrial, right of way, public agency use, private recreational pier, non-income producing uses, protective structure, grazing or other agricultural use, dredging permit, sand and gravel extraction, salvage permit, other).

Section D: Project location: (i.e., county; city; nearest city; waterway; township, range, section, and reference meridian; upland owner's name, upland owner's address; telephone number; upland address; subdivision, block, and lot number).

Section E: Project description:

- Submit a copy of current vesting document for property lying landward of and adjacent to State Lands proposed for use.
- Submit a detailed plan or plot of proposed lease areas.
- Submit a vicinity map showing general area and the project site in relation to the shoreline, major roadways, and other landmarks.
- Submit a legal description of the area to be leased.

Section F: Other governmental jurisdiction:

- Identify other public agencies having approval authority over the proposed project.
- If applicable, submit a USACE Public notice, notice number, or letter of approval for project.
- If applicable, submit the number assigned to the project from the RWQCB.
- If applicable, submit copies of any other existing approvals.

Part II. Specific Project Information.

Section A: Existing conditions:

- Describe existing activities, uses and improvements at proposed project site, both on water covered lands and on adjacent uplands.
- Provide construction dates, aerial or ground photographs of existing improvements.
- Indicate if facilities are temporary or permanent.
- Describe existing public use of the water body and adjacent uplands, type and frequency of public use, and any existing public access to the water body across the project site.
- Provide maps and/or aerial or ground photographs which delineate existing vegetation at the proposed project site and along the shore of the waterbody upon which the project is to be located within one-half mile radius of the proposed project site.
- Identify the type and location of any known habitat of rare, threatened, or endangered species of plant or animal within a one mile radius of the proposed project site.
- If the project involves a marina, list and describe (and including a site map):
  a. Existing or proposed marina facilities.
  b. Public and private boat launching and storage facilities.
  c. Public fishing access and parking availability.
  d. Other recreational facilities open to the public which are used for swimming, sunbathing, sightseeing, picnicking, etc.

Section B: Project description.

1. All projects:
   a. Provide a project development plan which clearly shows:
      - A scale drawing of proposed improvements that shows existing topographic features, and dimensions of the area to be occupied within any water body.
      - The nature and location of significant project features including the number, size, and design of berths, boat ramps, or launches; the type, dimensions and location of any associated commercial facilities, utilities, parking, public access, and marine services; and any other

proposed exterior lighting or other security measures.
- The type and location of any existing vegetation which will be preserved, any existing vegetation proposed for removal, and any planned restoration of vegetation or other landscaping.
- The size of the proposed project relative to any other improvements or facilities within 100 ft upstream or downstream of the proposed project site, including facilities on the opposite bank.

b. If the project will involve construction, describe the construction methods and equipment which will be used and the anticipated time frame for construction activities.
c. Describe how the project will affect any levees in project area.
d. Identify existing ecological and/or habitat features along the levee and any proposed alterations or modifications.
e. Identify any project features which will avoid or mitigate any effects of moving vessels on the proposed facility or shore of the waterbody.

1. Specific Projects.
   a. Marina or other multiple berthing facility.
   b. Launch ramp or other launching facility.
   c. Dredging or dredged material disposal:
      - An estimate of the amount and description of the method of dredging necessary to complete construction of the proposed project.
      - An estimate of the amount and frequency and a description of the method of any maintenance dredging anticipated for operation and maintenance of the project.
      - Identification and estimate of amounts and persistence of contaminants which may be released from the sediments during dredging, and during construction and operation and maintenance of the proposed projects.
      - The method and location of disposal of dredged materials.
      - Information regarding if turbidity will result from dredging operations.
      - A description of how the need to dredged has been minimized or avoided.
      - Information regarding if siting has been planned near current permitted public areas for the disposal of dredged materials.
   d. Projects involving grazing:
      - Project siting and feasibility.
      - Public benefit.
      - Description of any statewide or regional benefits of the proposed project.

Part III. Project Environmental Setting.

Section A: Environmental setting:
- Description of present site.
- Description of surrounding properties.
- Description of the disposal methods necessary for the protection and preservation of existing land and water uses.

Section B: Assessment of environmental impacts; replies required for the following questions:
- Will the project involve a change in existing features of any bays, tidelands, beaches, lakes, or hills, or substantial alteration of ground contours?
- Will the project involve a change in scenic view from existing residential areas or public lands or roads?
- Will the project involve a change in patter, scale, or character of the land use at or in the general area of the project?
- Will the project involve impacts to plants or animals?
- Will the project involve significant amounts of solid waste or litter?
- Will the project involve generation or additional, dust, smoke, fumes, or odors in the vicinity?
- Will the project involve a change in ocean, bay, lake, stream, or ground water quality or quantity, or an altering of existing drainage patterns?
- Will the project involve a change in existing noise or vibration levels in the vicinity?
- Will the project involve construction on filled land or on a slope of 10% or more?
- Will the project involve use or disposal of potentially hazardous materials such as flammable, toxic, or radioactive substances, or explosives?
- Will the project involve a change in demand for municipal services?
- Will the project involve increases in fossil fuel consumption?
- Will the project involve a larger project or a series of projects?
- Will the project involve historic structures and/or archeological sites?

Section C: State Lands Commission as a responsible agency; should CSLC be determined is a responsible agency under CEQA, the applicant must submit the following:

- A copy of the project's environmental documents.
- A copy of any environmental mitigation monitoring program.
- A copy of "findings" made by the Lead Agency relative to potential environmental impacts.
- A copy of the notice of Determination filed with the Office of Planning and Research.

Part IV. Submittal of Fees.

Section A: Filing fee - $ 25.00.

Section B: Minimum expense deposits for processing fees:
Dredging permit- $800.00.

Part V. Signature and certification.

RWQCB:

A. Report of Waste Discharge (Form 200).

I. Facility information:
- Facility name, address, and telephone number.
- Legal owner name, address, and telephone number.
- Business operating facility name, address, and telephone number.
- Type of business operating facility.
- Owner(s) of business operating facility name, address, and telephone number.

II. Reason for filing.
III. Type of operation.
IV. Type of waste.
V. Site design capacity.
VI. Quantity of wastes.
VII. Location of point of disposal or operation.
VIII. Source of water supply.
IX. Environmental impact report.
X. Certification.

B. Project Description (Form 200 Appendix) - including drawings:

I. Project description:
- Project purpose.
- Location.
- Size of area impacted.
- Water bodies potentially affected.
- Type of discharge (dredge or fill).
- Estimated quantity.
- Water dependency.

II. Dewatering operations (describe method).

a. Discharge to surface waters:
- Name of receiving water.
- Estimated volume and flow rate.
- Management measures proposed.

b. Discharge to retention ponds:
- Location (on-site or off-site).
- Control measures.

III. Wastewater discharge:
- Nature.
- Location.
- Proposed method for treatment and disposal.

IV. Army USACE permit:
- Type.
- Conditions.
- Practical alternatives.

V. Erosion control:
- Measures proposed.
- NPDES permit applicability.

VI. Wetlands impacted:
- Location.
- Size (including functions and values).
- Replacement.
- Mitigation:
  a. Success criteria.
  b. Maintenance time period.
  c. Remedial action plan.

VII. Beneficial use impacts:
- Replacement.
- Mitigation.
- Downstream impacts:
  a. Downstream delineation.
  b. Hydrograph analysis.

VIII. Fish and Game agreement conditions:
- Notification number.
- Date signed.
- Operator's name.

IX. California Environmental Quality Act/ mitigation measures.

A. CEQA document:
- Type of document.
- Certifying agency.
- Date certified.

B. Mitigation measures required relating to:
- Biological resources.
- Septic systems.
- Soil erosion/grading.
- Water supply/groundwater.
- Water quality.
- Wetland/riparian.
- Wildlife.

C. Alternative analysis.

X. Proposed water quality sampling:
- Proposed parameters, methods.
- Stations.

XI. Other Federal, State, local, or other agency required:
- Permits.
- Conditions.
- Restrictions.

C. A copy of a completed USACE permit (if applicable).

D. A signed and final CDFG stream alteration agreement (if applicable).

MBAPC:

A. Application for Authority to Construct and Permit to Operate (APCD #1).

Part A. For permits to construct or operate new or modified sources emitting air pollutants:

I. Name:
- Business license name.
- Nature of business.
- Name, address, and phone number of person to contact .
- Type of entitlement (own, rent, lease).
- Estimated construction dates and estimated completion dates.

II. Type of Application:

a. Original application.

b. Revised application.
- New facility.
- Modification.
- Existing facility not previously permitted.

III. CEQA Documentation:
- For projects which require a CEQA document, provide status.
- For projects which do not require a CEQA document, provide a copy of the Use Permit, or other land use entitlement showing project approval.

IV. Description of Facility:
a. Location
- Street address.
- Scaled and dimensioned plot plan of facility which shows and identifies the location of:
  1. Public and private streets.
  2. Property lines.
  3. Existing and proposed buildings.
  4. Adjacent property owners and uses.
  5. Storage areas for fuel, materials, and products.
  6. Basic, control, and air monitoring equipment.
  7. Piping and ducts for carrying fuels, products, and possible sources of air pollutants.
  8. Identify points of emissions.

b. Describe the general purpose of facility.

V. Description of Process:
a. General description of each process line.
b. For facilities with more than one process line:
- Block flow diagram.
- Drawing containing the transfer of materials, products, and possible sources of air pollutants between process lines, buildings, and storage areas.

c. Basic control equipment descriptions (make, function, model, size, type, maximum capacity, horsepower).
d. Operating schedule (Number of hours per day, days per week, weeks per year).
e. Maximum monthly, hourly, and daily production rates and raw material usage rates.
f. Total average annual production rates and raw material usage rates.
g. Information regarding equipment:
- Equipment identification number.
- Inlet and outlet temperatures.
- Emission points and ventilation area.
- Type of material entering and leaving equipment.
- Energy consumption (kilowatts per hour).
- Whether operation is continuous or intermittent.

h. Control equipment descriptions, calculations, and drawings of equipment:
- Schematic and description of overall control equipment.
- Control equipment identification number.
- Inlet and outlet concentrations.
- Control efficiency (calculations, manufacturer's specifications, source test).
- Points of emission of each piece of equipment.
- Particulate matter size distribution and chemical nature of emissions.
- Energy consumption (kilowatts per hour).

i. Location and emission amount descriptions:
- Emission points.
- Height of outlet.
- Size and shape of outlet.
- Flow rate of exhaust gases.
- Outlet temperature.
- Quantity of each pollutant emitted:
  1. Total suspended particulates, carbon monoxide, organic gases, nitrogen oxides, and sulfur oxides.

j. Description of emissions of a fugitive nature.
k. Copies of previous calculations.

VI. Fuel burning equipment and fuel:

a. Burner descriptions:

- Equipment identification number, manufacturer's name and model, size, number of burners, minimum and maximum ratings per burner, and burner type.
- Burner mode of control (manual, automatic on-off).
- Air compressor data, manufacturer's name and model, drive motor horsepower, compressor rating, and operating pressure.
- Firing type.
- Type of fuels and the percentage of combustion air.

b. Description of all fuels used; type, grades, consumption rates; pretreatment fuel; and ash, sulfur, moisture, H_2S, and nitrogen contents:

- Oil preheaters; type and temperature of oil.
- Whether unit is to be used to incinerate waste gas or liquid steam, if so, submit drawing.
- Amount of each fuel used per year (gallons per year for liquids, million cubic feet per hour for gaseous and tons per year for solid); and standby fuels.
- Maximum consumption rate of fuel in any one-hour and any twenty-four hour period.

c. Heat input rate or thermal efficiency for combustion facilities.

VI. Description of storage facilities:

- Size, model, type, and make of storage facilities.
- Properties or characteristics of materials and products being stored.
- Control procedures and equipment utilized on storage facilities.
- Conditions under which storage exists.

Part B: New Source Review:

I. Information required for air quality impact analysis:

- Information regarding any monitoring station that may be installed.
- Data regarding impact analysis from all emission points and fugitive emissions to demonstrate compliance with Ambient air Quality Standards and consumption of air quality increments.
- Meteorological data.
- Topographic data.
- Air quality data.
- Computer modeling data.

II. Compliance certification:

- Identification and certification that compliance status of all major sources.

III. Power consumption of facility:

- Total amount of electrical power to be consumed by the new facility or the increase of amount.
- Percentage of electrical power provided by off-site generating facilities, identify source.

IV. Cargo carriers:

- Describe frequency of visits, type and sizes.

V. Offsets:

- If trade-offs from another source apply, provide information regarding emissions reductions.

VI. List proposed mitigating measures:

- Air pollution control equipment proposed.
- Process changes or operations utilized to reduce emissions.
- Actual operating parameters for the three consecutive years preceding the application.

VII. Best available control technology (BACT):

- Identify all air pollution control equipment .

Trade Secrets.

If applicable, submit the following information:

- A claim that the material is trade secret as defined in Section 6254.7 of Government code.
- A separate claim identifying each specific type or part of the information which is claimed trade secret.
- A factual statement indicating the basis for considering the information to be trade secret.

MCEH:

N/A; agency does not issue a permit, but reviews material test results.

2. What information was given by the harbors (i.e. dredging volume, dredging area, disposal site, and type of equipment)?

Harbor	Dredging Volume	Dredging Area	Disposal Site	Equipment Type
Santa Cruz	255,000 cy total; Entrance Channel = 250,000 cy Inner Harbor = 5,000 cy.	360 ft x 1600 ft approximately 13 acres.	Twin Lakes State Beach (beach nourishment).	*Seabright* • Hydraulic diesel dredge used for Entrance Channel. *Squirt* • Hydraulic diesel dredge used for Inner Harbor.
Moss Landing	31,000 cy.	23.20 acres.	Marina Landfill (confined upland disposal).	Hydraulic diesel dredge.
Monterey	1,100 cy total; G Dock and D Dock Areas = +/- 800 cy Yacht= +/- 200 cy.	G Dock and D Dock Areas = 45 ft x 150 ft Yacht = 20 ft x 30 ft.	Marina Landfill (confined upland disposal).	Hydraulic electric dredge.

3. How was the information obtained for the harbors?

Harbor	Information from Previous Dredging Events	Field Surveys	Lab Sampling and Analysis	Other
Santa Cruz	x		x	Historical data; including testing results.
Moss Landing	x	x	x	Historical data, "Draft Sediment Sampling and Analysis Southern A-Dock and MBARI Dock" by Harding Lawson Associates (4/14/97), "Sediment Sampling and Analysis" by Advanced Biological Testing, Inc (2,3,4/96).
Monterey	x	x	x	Past sediment history evaluations by the USACE.

4. Who gathered the information for the harbor?

Harbor	Harbor Staff	Consultant	Contractor	Federal Agencies	State Agencies	Local Agencies	Resource Agencies
Santa Cruz	Port Director and harbor staff.		SCEH: contracted water analysis. ToxScan Inc.: sediment and water analysis.			SCEH: contracted water analysis.	
Moss Landing	General Manger and harbor staff.	Peter Grenell. Mike Cheney. Land Systems Inc.	Advanced Biological Testing: sediment testing. AG Surveys: channel monitoring. Assuaged and Associates: North Harbor biotic survey. Harding Lawson Associates: Sediment Sampling and Analysis. Mesiti Miller Engineering: illustrations of disposal site. Pacific Aerial Surveys. Sea Surveyors: hydrological survey. ToxScan Inc.: sediment and water analysis.				
Monterey	Harbor-master and harbor staff.		ToxScan Inc.: sediment and water analysis.			City of Monterey Planning Department.	

5. **Was there a cost involved with obtaining the agency-requested information?**

Harbor	Contractor Fees for Sediment and Water Sampling and Analysis	Consultant Fees	Contractor Fees for Other Services than Sediment and Water Analysis	Document Fabrication Fees	Other
Santa Cruz	$7,000.				$5,000 Administrative costs of Port Director's time.
Moss Landing		Peter Grenell (4/30/95-5/31/96): = $21,217.36. Mike Cheney (6/1/95-8/31/96): = $34,787.50. Land Systems Inc. (2/6/96-2/2/97): = $ 9,202.00.	$34,116 for ToxScan Inc., Pacific Treatment Analytical Services, and CRG Marine Laboratories. $23,533 for Advanced Biological Testing, Associated Laboratories, and MEC Analytical Systems.		
Monterey	+/- $4,000.				Administrative costs of City of Monterey (harbor staff and Planning Department staff) not included as an actual dollar amount.

6. Was all information given?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	Yes (for final processing).	Agency information not provided.	Yes (for final processing).	Yes
Moss Landing	Yes (for final processing).	Agency information not provided.	Yes (for final processing).	Yes
Monterey	Yes (for final processing).	Agency information not provided.	Yes (for final processing).	Yes

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Yes	Yes	Yes	Yes	
Moss Landing	Yes	Yes	N/A; State Park Lands are not used.	Agreement needs amendment in regards to volume to be dredged.	Agency information not provided.
Monterey	Agency information not provided.	Yes	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	N/A; same information used as previous year.	None reported.
Moss Landing	N/A; same information used as previous year.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Other (not agencies)
Santa Cruz	None reported.
Moss Landing	N/A; dredging did not occur.
Monterey	None reported.

Harbor	Harbor Comments
Santa Cruz	All information requested was given.
Moss Landing	All information requested was given.
Monterey	All information requested was given.

7. Was the information gathered in a timely manner?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	Yes	Agency information not provided.	Technically yes, staff made general comment that the submittal of correct information is often delayed due to misunderstandings between agency/applicant/ laboratories.	Yes
Moss Landing	Yes	Agency information not provided.	Technically yes, staff made general comment that the submittal of correct information is often delayed due to misunderstandings between agency/applicant/ laboratories.	Yes
Monterey	Questionable, staff made comment that the time between when application was submitted until when it was issued (3/13/92-4/9/93) suggests that there may have been some delays due to insufficient information.	Agency information not provided.	Staff contacted not involved with 1996-1997 Monterey Harbor dredging project.	Staff observed and visited the dredging site periodically to evaluate progress of project.

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	Yes	Yes	Yes	Yes	Agency information not provided.
Moss Landing	Yes	Yes	N/A; State Park Lands are not used.	Yes	Agency information not provided.
Monterey	Agency information not provided.	Yes	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	N/A; same information used as previous year.	None reported.
Moss Landing	N/A; same information used as previous year.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

7. Continued. Was the information gathered in a timely manner?

Harbor	Harbor Comments
Santa Cruz	Yes, information was gathered in a timely manner for the respective agencies.
Moss Landing	Yes, information was gathered in a timely manner for the respective agencies.
Monterey	Yes, information was gathered in a timely manner for the respective agencies.

8. Was there a cost to apply for the permits?

Harbor	Federal Agencies	
	USACE of Engineers	*USACE of Engineers*
	RHA Section 10	*CWA Section 404*
Santa Cruz	No; the fee was waived because the harbor is a public entity.	No; the fee was waived because the harbor is a public entity.
Moss Landing	No; the fee was waived because the harbor is a public entity.	No; the fee was waived because the harbor is a public entity.
Monterey	No; the fee was waived because the harbor is a public entity.	No; the fee was waived because the harbor is a public entity.

Harbor	State Agencies			
	CCC	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No; the fee was waived because the harbor is a public entity. No annual fee.	No; $1,000 Administration fee waived because disposal of dredged sediments was seen as an net overall benefit to State Park Lands and the public: beach replenishment.	Initial filing fee (1987): $825.00. No annual fee.	No; the fee was waived because the harbor is a public entity. $500 annual fee for the State Water Resources Board State Toxic Cleanup Fund.
Moss Landing	No; the fee was waived because the harbor is a public entity.	N/A; State Park Lands are not used.	Initial filing fee (prior to 1996-1997 proposed dredging project): $825.00. No annual fee.	No; the fee was waived because the harbor is a public entity.
Monterey	No; the fee was waived because the harbor is a public entity.	N/A; State Park Lands are not used.	No; the fee was waived because the harbor is a public entity.	No; the fee was waived because the harbor is a public entity. $500 annual fee for the State Water Resources Board State Toxic Cleanup Fund.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	1996-1997 Renewal Fees = $314 total; *Seabright* dredge = $226 *Squirt* dredge = $88.	None reported.
Moss Landing	1996-1997 Renewal Fees = $88.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

9. What was the cost of agency review and coordination with other agencies?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. Review of permit application can be from "four months to years."	Agency information not provided.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. On average, ten hours in a 40-hour work week.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Staff made general comment that staff resources for dredging projects are high in terms of hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.
Moss Landing	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. Review of permit application can be from "four months to years."	Agency information not provided.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. On average, ten hours in a 40-hour work week.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Staff made general comment that staff resources for dredging projects are high in terms of hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.
Monterey	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. Review of permit application can be from "four months to years."	Agency information not provided.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Resources expended (i.e., staff time) varies with the project. On average, ten hours in a 40-hour work week.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Staff made general comment that staff resources for dredging projects are high in terms of hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.

9. Continued. What was the cost of agency review and coordination with other agencies?

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review of permit applications.	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review of permit applications.	$0 charged; harbor does not have to pay for the review or coordination of agencies. Permit processing took one day.	Processing resources (i.e., application review and staff time) are covered in filing fee ($825).	Agency information not provided.
Moss Landing	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review of permit applications.	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review of permit applications.	N/A; State Park Lands are not used.	Processing resources (i.e., application review and staff time) are covered in filing fee ($825).	Agency information not provided.
Monterey	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review of permit applications.	$0 charged; harbor does not have to pay for the review or coordination of agencies. It is assumed numerous hours are spent on the review permit applications.	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	Processing resources (i.e., application review and staff time are covered in annual renewal fee ($314).	None reported.
Moss Landing	Processing resources (i.e., application review and staff time are covered in annual renewal fee ($88).	None reported.
Monterey	N/A; harbor uses electric dredge.	*MCEH:* $0 charged; because time spent on Monterey Harbor water quality issue was only one to two hours and agency does not have jurisdiction.

10. What was the cost of agency inspection of dredging operations or disposal operations?

Harbor	Federal Agencies			
	USACE	*FWS*	*USEPA*	*MBNMS*
Santa Cruz	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	Agency information not provided.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff made general comment that resources for dredging projects are high in hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.
Moss Landing	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	Agency information not provided.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff made general comment that resources for dredging projects are high in hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.
Monterey	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	Agency information not provided.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Resources expended (i.e., staff time) varies with the project.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff made general comment that resources for dredging projects are high in hours spent reviewing documents, attending meetings, and coordinating with other Federal and State agencies.

10. Continued. What was the cost of agency inspection of dredging operations or disposal operations?

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff informally monitor and rely on harbor reports.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Lifeguards and Rangers informally monitor on a regular basis (daily).	Agency does not monitor or inspect dredging and disposal operations, but instead relies on quarterly reports submitted by harbor.	Agency information not provided.
Moss Landing	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff informally monitor and rely on harbor reports.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations.	N/A; State Park Lands are not used.	Agency does not monitor or inspect dredging and disposal operations, but instead relies on quarterly reports submitted by harbor.	Agency information not provided.
Monterey	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations. Staff informally monitor and rely on harbor reports.	$0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations.	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	Covered in annual renewal fee ($314).	None reported.
Moss Landing	Covered in annual renewal fee ($88).	None reported.
Monterey	N/A; harbor uses electric dredge.	*MCEH*: $0 charged; harbor does not have to pay for agency inspection of dredging or disposal operations.

C. The results of the harbor's efforts were examined, analyzed, and evaluated. The following questions about the results of each harbor's dredging permit application processes were addressed:

1. How many attempts did it take to receive the permits?

Harbor	Federal Agencies	
	USACE of Engineers	*USACE of Engineers*
	RHA Section 10	*CWA Section 404*
Santa Cruz	7 months and 2 days Applied: 8/20/94 Issued: 3/22/95.	7 months and 2 days Applied: 8/20/94 Issued: 3/22/95.
Moss Landing	6 months and 29 days Applied: 1/2/96 Issued: 7/10/96.	6 months and 29 days Applied: 1/2/96 Issued: 7/10/96.
Monterey	1 year, 1 month, and 27 days Applied: 3/13/92 Issued: 4/9/93.	1 year, 1 month, and 27 days Applied: 3/13/92 Issued: 4/9/93.

Harbor	State Agencies			
	CCC	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	21 days Filed: 9/22/95 Approved: 10/13/95.	One day.	Staff does not recall.	Adopted: 9/13/94.
Moss Landing	15 days Filed: 4/19/96 Approved: 5/9/96.	N/A; State Park Lands are not used.	3 months.	Adopted: 3/9/90.
Monterey	1 month and 14 days Filed: 10/4/96 Approved: 11/14/96.	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Adopted: 7/12/91.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	*Seabright*: Application submitted: 5/26/86 "Permit to Construct" issued: 2/3/87 "Permit to Operate" issued: 10/26/87 revised "Permit to Operate" issued: 8/31/93. *Squirt*: Application submitted: 4/16/90 "Permit to Operate" issued: 7/20/90.	None reported.
Moss Landing	Application submitted: 5/22/87 "Permit to Operated" issued: 6/9/88 Staff contacted did not know why there was a delay between application submission and permit issuance.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

2. Were there any problems encountered for each permit required?

Harbor	Federal Agencies			
	USACE	*USEPA*	*FWS*	*MBNMS*
Santa Cruz	No	Yes*	Agency information not provided.	Yes*
Moss Landing	Yes*	Yes*	Agency information not provided.	Yes*
Monterey	Yes*	Staff contacted was not involved with 1996-1997 project at Monterey.	Agency information not provided.	Yes*

* = see comments in 3c

Harbor	State Agencies				
	CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
Santa Cruz	No	No	No	No	Agency information not provided.
Moss Landing	No	Yes*	N/A; State Park Lands are not used.	Yes	Agency information not provided.
Monterey	No	Yes*	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

* see comments in 3c.

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	No	None reported.
Moss Landing	No	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

* = see comments in 3c.

Harbor	Harbor Comments
Santa Cruz	Yes
Moss Landing	No
Monterey	Yes

3. If problems were encountered in regards to each permit required, what were they?

Harbor	Federal Agencies			
	USACE	*USEPA*	*FWS*	*MBNMS*
Santa Cruz	No problems.	Staff commented regarding grain-size and odor; the grain-size of some sediments are too fine for beach nourishment purposes and odor associated with organic material in entrance channel may lessen if disposal occurs in surf zone.	Agency information not provided.	Staff commented that specific fine sediment from the Upper Harbor is unsuitable for unconfined aquatic disposal and must be disposed upland.
Moss Landing	Staff commented about the difficulty of locating an upland disposal site for contaminated dredge sediments.	Staff commented about to the difficulty of locating an upland disposal site for contaminated dredge sediments.	Agency information not provided.	Staff commented that upland disposal would be required for the top two feet of South Harbor sediments.
Monterey	Staff commented about the review of sediments by CDFG; CDFG was concerned about lead levels in dredging sediments, required special testing and upland disposal of contaminated materials.	Staff contacted was not involved with 1996-1997 project at Monterey.	Agency information not provided.	Initial concerns about water quality answered by decant water analysis tests for contaminants based on historical data.

Harbor	State Agencies				
			CDPR	*CSLC*	*RWQCB*
Santa Cruz	No problems.	No problems.	No problems.	No problems.	Agency information not provided.
Moss Landing	No problems.	Staff commented about sediments contaminated with agricultural pesticides from the Old Salinas River, and the Tembladero, Elkhorn, and Moro Cojo Sloughs.	N/A; State Park Lands are not used.	Permit needs amendment regarding the volume of sediments to be dredged.	Agency information not provided.
Monterey	No problems.	Staff concerned about lead levels, required upland disposal of contaminated materials.	N/A; State Park Lands are not used.	N/A; State tidelands granted to the City of Monterey for eternity.	Agency information not provided.

3. Continued. If problems were encountered in regards to each permit required, what were they?

Harbor	Local Agencies	
	MBAPC	*Other Local Agencies*
Santa Cruz	No problems.	None reported.
Moss Landing	No problems.	None reported.
Monterey	N/A; harbor uses electric dredge.	None reported.

Harbor	Harbor Comments
Santa Cruz	A general statement was made by the Port District that reflects and includes all permitting and review/commentating agencies: "Interpretation of testing results means numerous dialogue between harbor and agencies."
Moss Landing	Problems with establishing a drying site for dredging sediments.
Monterey	Timing concerns of when additional tests from MBNMS regarding lead was asked.

4. Was there any one permit more difficult to obtain than another and if so, which one?

Harbor	Harbor Comments
Santa Cruz	The Port District Staff feels that permits with MBNMS commenting on are more difficult to obtain.
Moss Landing	No
Monterey	No

5. Was there a reason why one permit was more difficult to obtain than another?

Harbor	Harbor Comments
Santa Cruz	The newer and non-locally headquartered MBNMS.
Moss Landing	No
Monterey	No

6. Was any one permit denied because sediments were too contaminated for disposal?

Harbor	Harbor Comments
Santa Cruz	No
Moss Landing	USEPA and MBNMS agreed upper two-feet was too contaminated for disposal at SF-12.
Monterey	No

7. Were contaminated sediments disposed at upland locations?

Harbor	No Toxic Sediments Present	Yes	No	Did not Dredge
Santa Cruz	x			
Moss Landing				x
Monterey		x		

8. What permit application procedures were successful?

Harbor	Federal Agencies Procedures	StateAgencies Procedures	Local Agencies Procedures	Other
Santa Cruz	x	x	x	
Moss Landing	x	x	x	
Monterey	x	x	x	

9. Were the permits obtained within the expected time frame?

Harbor	Harbor Comments
Santa Cruz	Yes, the Port District answered this question with a "Yes" for all permitting/review agencies involved because of their long-time experience with the dredging project approval process. The Harbor Master and harbor staff have completed the permit processes many times.
Moss Landing	Yes
Monterey	Yes

10. Were there any unexpected costs incurred?

Harbor	Sediment Sampling	Sediment Analysis	Consultant Fees	Document Fabrication Fees	Permit Application Fees	Other
Santa Cruz						$13,000 for odor sample and analysis and enzymes to mask odor.
Moss Landing	x Continual sampling.	x Continual analysis.				
Monterey	x	x				

11. Does the harbor staff feel that the present procedures are adequate?

Harbor	Harbor Comments
Santa Cruz	Yes, Port District believes that the public is well-served by the current process.
Moss Landing	No, Harbor staff would like the process to become more efficient (i.e., one permit application).
Monterey	No, Harbor staff would like the process to become more standardized (i.e., standardized testing guidelines, equal weighting of agency comments, issues raised by commenting agencies should only be made to the permitting agencies, consideration of a system's cycle, revised procedures for small projects) and efficient (i.e., coordinated agency timelines, absolute interval deadlines for processing permits, one permit application, the assumption of no negative concerns of agencies who have not commented within a given time frame).

12. Does the harbor staff feel that the present procedures are adequate?

Harbor	Yes	No
Santa Cruz		x
Moss Landing		x
Monterey		x

Category 2. Questions for the review of the Model Consolidated Checklists

1. Are there similar procedures between the sample consolidated checklists and the individual procedures?

DMMO	JARPA
• Applies to non-USACE maintenance and new work dredging projects within a specific region.[1] • Dredging permit applications, sediment sampling and analysis plans are required.[1] • The permit processes of individual agencies begins only when application is deemed complete.[1] • If permit application is incomplete, the applicant will be informed as to what additional information is needed.[1] • Copies of sediment sampling and analysis plans, applications, associated drawings, and testing data may be submitted directly to member agencies.[1] • Agency staff work on the same projects.[2] • Agencies represent the laws and policies of their own agencies.[2] • Advisory agencies (FWS, National Marine Fisheries, and CDFG) are still invited for comment.[2,3] • Existing comment procedure preserved.[2] • If desired, agencies can process applications under their jurisdiction (out of DMMO guidelines).[2] • Regarding the completeness of an application, member agencies will respond to applicants within 30 days after application is submitted.[2] • Public notices or staff reports will be issued concerning pending applications within 30 days once an application is deemed complete.[2] • Under existing budgets and authorities.[3] • Uses existing law, regulations, and policy.[3] • All Federal and State agencies still issue permits and/or approval.[3] • Agency interpretation required of physical, chemical, and biological characteristics of tests for suitability of sediment.[3] • Full processing of applications is still performed.[3]	• All necessary permits are covered.[4] • All applicable agencies reviews the same information (i.e., project description, site plans, maps, etc.).[4] • Responsibility of applicants to determine which permits they need.[4]

2. Are there different procedures between the sample joint checklists and the proposed procedures?

DMMO	JARPA
• Cooperative permitting framework used.[1] • Consolidated dredging and dredge material.[1] • Reuse/disposal permit application has been developed.[1] • Six copies of sediment sampling and analysis plans, applications, associated drawings, and testing data can be submitted to the lead agency for distribution to member agencies.[1] • Draws upon the fact that the permit process can be lengthy and complex.[2] • Establishment of the DMMO pilot coordinated checklist.[1, 2, 3] • After each of two six-month phases process and application form will be reported on.[1] • USACE is host agency initially.[1] • Standard definitions/language established.[2, 3] • Member agencies contribute to the suitability determination process.[2] • Member agencies are required to have staff available for scheduled DMMO meetings.[2] • Staff work together in a cooperative approach as outlined in a set of instructions ("General Operating Principles.[2] • Member agencies may be required to provide electronic updates to the database.[2] • Host agency provides information on status of permit applications and other activities based on a applicant and public accessible electronic database.[2] • Pending and newly approved 401 and 404 permits issued in region to be available on-line from RWQCB.[2] • Written comments on pending applications will be distributed to member agencies at meetings.[2] • First 15 minutes of DMMO meeting reserved for scheduled public/applicant comments/presentation.[2] • Annual review conducted to report on dredging projects, permit issues, disposal site monitoring, and other concerns of the year.[2] • Presentations on a needed basis of technical issues or any studies and research regarding the management of regional dredging and disposal acts will be made.[2] • Conflicts on issues that cannot be resolved by DMMO staff resolution will be sought by mediation of the Dredging Management Committee (DMC).[2] • Applicant submittals will be placed on the next DMMO meeting agenda if received at least one week before meeting.[2] • Host agency will distribute application submittals to member agencies within five days of receipt.[2] • Each member agency is required to submit sediment Suitability recommendation letters.[2]	• Consolidated permit application form-seven permits application forms from Federal, State, and local agencies into one.[4] • Formation of JARPA.[4] • Application is sent simultaneously to the appropriate agencies.[4] • Improved information provided outfront.[4] • "No Permit Needed" letters are sent if applicable.[4]

3. What is the outcome of similar procedures?

DMMO	JARPA
• Suitability for the disposal of dredged material requires agency interpretation of an extensive battery of tests which characterize physical, chemical, and biological nature of the sediment proposed for dredging.[2] • Staff representatives can only make a recommendation only if they have regulatory authority for that site.[2] • Member agencies continue to follow their existing and notification comment procedures on pending applications (i.e., circulation of staff reports, public notices, response letters).[2] • Existing agency procedures will be applied to a project if the DMC cannot resolve conflicts.[2]	• Environmental protection still maintained.[4]

4. What is the outcome of different procedures?

DMMO	JARPA
• Reduces redundancy.[1, 2] • Expedites processing of applications.[1, 2, 3] • Fosters consensus-decision making among agency staff.[1] • A timeline flowchart has been established.[1, 3] • Coordinated review and recommendations of projects by all agencies.[1] • Relies on a partnership between Federal and State agencies.[2] • Joint staff recommendations will be made on the approval, modification, or denial of sampling and testing plans, results of testing pursuant to the approved plans, consolidated permit application completeness, and material suitability for disposal at existing sites.[2] • Agency staff will recommend general permit conditions (i.e., length of permit, bathymetric surveys) and special permit conditions (i.e., timing of dredging operations and turbidity controls).[2] • Agency staff shall support the consensus recommendations made through the process.[2] • Recommendations will be documented in the minutes of the meetings and through member agency correspondence.[2, 3] • Host agency will provide logistical support, agenda preparation and distribution, mutually agreeable schedule of meetings, preparation of meeting minutes and their distribution, provide staff knowledgeable of DMMO projects and actions to act as the initial point of contact to field questions from applicants and the public, maintain current files, coordinate processing of emergency dredging requests, prepare and mail joint Public notices on DMMO matters, and maintain an electronic data base for DMMO data containing status of dredging and disposal applications.[2, 3] • A written summary of the agency's position and questions regarding a proposed project must be submitted if a representative of that agency cannot attend the scheduled DMMO meeting.[2] • A written report of disagreement issues will be prepared to inform all agencies.[2] • DMMO has two-week time limit to respond to applications of sampling plans, sampling results, and/or other items.[2] • Provides Federal, State, and local agencies with recommendations for implementing a cooperative permit process for authorizing dredging activities.[3] • Consensus is supported by member agencies through the project review process.[3] • Each member agency required to summarize their issues and concerns regarding the coordination and consolidated checklist and suggest changes.[3]	• Only one application form needed.[4] • All agencies review the same project description, site plans, maps, etc.[4] • More details at the outset.[4] • The application is sent out simultaneously.[4] • All agencies receive consistent information at the same time.[4]

5. Is there a benefit from the outcome of similar procedures?

DMMO	JARPA
• Individual agencies continue to meet their statutory requirements.[1] • The preservation of existing comment procedures will continue to allow for public comments.[2] • All applicable regulatory authority and processes of member agencies remain in full force and effect.[3] • The opportunity for public input and involvement in the dredging permit review and granting processes are not altered.[3]	

6. Is there a benefit from the outcome of different procedures?

DMMO	JARPA
• The process will be evaluated for performance.[1] • The application will be evaluated for adequacy.[1] • Public input will be sought and considered.[1] • Applicant input will be sought and considered.[1] • Permits are streamlined.[2] • Common knowledge base created from coordinated exchange of technical information among staff.[2] • Common knowledge base from coordination of information insures permit actions are taken in a consistent and timely manner.[2] • The requirement of each member agency to provide staff ensures representation of all DMMO member agencies at meetings.[2] • Proceedings of annual meeting will be documented for applicants and the public.[2] • DMC will try to mutually satisfy members on conflicts of issues.[2] • Responses for public or applicant inquiries are required within two days by phone and within one week for a written response.[2] • Fosters a comprehensive, consolidated approach to handling dredged material management issues.[3] • Reduces redundancy and delays in processing dredging permit applications.[3] • Encourages better coordination between agencies.[3] • Shortens the application process for dredging and disposal projects.[3] • Improves the dredging permit process.[3] • The dredging permit process is coordinated.[3] • The use of standard language insures findings are consistently and clearly communicated to applicants and public.[3] • Assists applicants and consultants with the preparation of sediment sampling and analysis plans.[3]	• Simplifies the permit process for application proposing construction, fill placement, public access impingements, and other development activities in or near aquatic environments and wetlands.[4] • Reduced paperwork.[4] • Reduced processing time.[4] • Improved information received by agencies and local government staff.[4] • Reduction in time for receipts of permits.[4] • The permit process will start more quickly for each permit.[4] • The need for agencies to request additional information will be reduced.[4] • Reduced violations.[4] • Increased coordination between agencies.[4] • Encourages early agency coordination on projects.[4] • Reduction for the need for permit revisions.[4] • The potential for regulatory reform of agency permit sequencing and inconsistencies of various aquatic resource-related permits.[4]

[1] Public notice 96-3 (USACE 1996c).
[2] Memorandum of Understanding (USACE 1997b).
[3] Phase I Pilot Review (USACE 1997c).
[4] JARPA Pilot Test Summary and Recommendations (JARPA Pilot Workgroup 1996).

7. Do the harbors have any recommendations for a consolidated checklist?

Santa Cruz	*Moss Landing*	*Monterey*
• Lengthier multi-year permits. • More standardized testing requirements.	• One-stop shopping permits.	• Coordinated agency timelines. • Standardized testing guidelines. • Scientifically-defensible biological, chemical, and physical values. • Absolute interval deadlines for processing permits. • Equal weighting of agency comments for decisions. • The assumption of no negative concerns of agencies who have not commented within a given time frame. • Issues raised by commenting agencies should only be made to the permitting agencies. • Consideration of a system's cycle. • Revised procedures for small projects.

Category 3. Questions for Agency Personnel

2. What regulations or guidance do the agencies use to evaluate permit applications?

Federal Agencies			
USACE	*FWS*	*USEPA*	*MBNMS*
• "Federal Register, Regulatory Programs of the USACE of Engineers; Final Rule, 33 CFR Parts 320-330," (USACE 1986). • Federal Register, "Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits; Notice," (USACE 1996d).	Agency information not provided.	• "Evaluation of Dredged Material Proposed for Discharge in Waters of the United States-Testing Manual (Draft)" (known as the 'Inland Testing Manual'), (USEPA and USACE 1994). • "Guidance Manual: Bedded Sediment Bioaccumulation Tests" Office of Research and Development, (USEPA 1993). • "Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods," (USEPA 1994).	For impacts to Sanctuary resources or qualities: • MBNMS regulations defined at 15 CFR Part 922, Subparts A through E and Subpart M. For the suitability of sediment proposed for disposal regarding dredging projects regulated by USACE and USEPA under CWA 404 permits: • USEPA 404(b)1 Guidelines defined at CFR Section 23. For the suitability of sediment proposed for disposal at unconfined aquatic sites under CWA. 404 permits: • "Evaluation of Dredged Material Proposed for Discharge in Waters of the United States-Testing Manual (Draft)" (known as the 'Inland Testing Manual'), (USEPA and USACE 1994).

State Agencies				
CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
• California Coastal Act.	N/A; does not evaluate permit applications.	• CEQA. • NEPA. • Public notices.	• California Code of Regulations. • CEQA. • Public Resources Code.	Agency information not provided.

Local Agencies	
MBAPC	*Other Local Agencies*
• MBAPC Rules and Regulations (Rule 207 Issuance of Permits and Prohibitory Rules; Regulations IV and X).	None reported.

2. What standards or guidance values are used to determine whether sediment passes or fails permitting regulations or guidance?

Federal Agencies			
USACE	*FWS*	*USEPA*	*MBNMS*
• "Evaluation of Dredged Material Proposed for Ocean Disposal-Testing Manual" (known as the 'Green Book'), (USEPA and USACE 1991). • "Inland Testing Manual" (USEPA and USACE 1994). • Table 8. Sediment Screening Levels from "Evaluation of Sediment Toxicity Tests-(Draft). developed by NOAA and the State of Florida (SFRWQCB 1996). • Table 8. Commonly Used Sediment Quality Guidelines from the *1995 Annual Report-San Francisco Regional Monitoring Program* (SFRWQCB 1995). • "Sediment Screening Criteria and Testing Requirements for Wetland Creation and Upland Beneficial Reuse" by John D. Wolfenden and Michael P. Carlin, December 1992.	Agency information not provided.	For non-contaminant factors (i.e. grain-size, ammonia, sulfides): • Effects-based testing results. For cases regarding the bioavailability of contaminants: • Staff uses their best professional judgment. • Testing results from scientific literature. • Various numerical guidelines that have been developed based on observed or modeled correlations between toxicity and concentrations of pollutants in sediments and tissues. • Background and historical information of a particular site and/or region.	• Staff commented that there are no numerical sediment quality standards used to evaluate sediment chemistry test results. For sediment physical and chemical tests, results are compared to: • Guidance information (e.g. Probable Effects Level [PEL], MacDonald and MacDonald Environmental Services Ltd., 1994). For sediment physical and chemical tests, results are compared to: • Guidance information; (e.g. Effects Range Median [ERM] developed by Long *et al.* 1995). For bioassay or bioaccumulation test results, staff consults: • "Inland Testing Manual" (USEPA and USACE 1994). For water quality information, staff consults: • The "1990 California Ocean Plan" (revised July 1997) to determine whether the concentration of contaminants in the liquid phase of the proposed dredged material would exceed State of California water quality standards. • Staff commented they closely participate with other Federal and State agencies in the review of sediment physical, chemical, and biological testing data to determine whether proposed dredged material is suitable for unconfined aquatic disposal.

2. Continued. What standards or guidance values are used to determine whether sediment passes or fails permitting regulations or guidance?

State Agencies				
CCC	*CDFG*	*CDPR*	*CSLC*	*RWQCB*
• Staff relies on other agencies (USACE, RWQCB, CDFG) for scientific data interpretation.	• USEPA Gold Book (USEPA 1986). • NOAA Sediment Screening Guidelines. • DMMO data files. • USEPA Aquire database. • FWS Biological Reports (various reports and dates), Contaminant Hazard Reviews (various reports and dates). • State Mussel Watch data (on-going study). • USACE "Green Book." (USEPA and USACE 1991).	• Staff relies on other agencies (USACE, RWQCB, CDFG) for scientific data interpretation.	• Staff relies on other agencies (USEPA and RWQCB) for scientific data interpretation.	Agency information not provided.

Local Agencies		
MBAPC	*MCEH*	*Other Local Agencies*
• MBAPC Rules and Regulations (Rule 207 Issuance of Permits and Prohibitory Rules; Regulations IVXX).	• Hazardous Waste Classifications; California Safety and Health Codes: Title 23. • Tier II individual physical sediment samples.	None reported.

3. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*USACE*
Santa Cruz	• Special conditions attached to USACE permit #21056S64; 1. Provide project manager's name and telephone number, size and placement of any floating construction equipment, radio telephone frequencies and call signs of any marine equipment, and work start and completion data. 2. Allow possible modifications required by the Coast Guard Captain of the Port of San Francisco Bay. 3. Provide the following reports for review and comment to Chief, Construction-Operations Division of the USACE: a. Dredged material analysis. b. Dredging operation plan. c. Before dredging survey. d. Post-dredging survey. 4. Upon direction of the USACE, allowance for the modification of disposal schedules and/or monthly disposal quantities for particular dredging episodes. 5. Upon request by USACE staff, allowance of inspection of the dredging area and equipment. 6. Obtain a letter of water quality certification or waiver from the RWQCB for each dredging episode. 7. Provide a copy of the dredge material analysis to USEPA, FWS, NMFS, and CDFG.
Moss Landing	• Special conditions attached to USACE permit #22026S27; 1. Notify USACE should impact on wetlands occur prior to, during, and after construction of the containment area. 2. Provide the USACE with a map illustrating the areas within Gravelle's Boat Yard contaminated with heavy metals that will be removed by clamshell dredged, placed into trucks, and hauled to the Marina Landfill. 3. Staking containment area boundaries. 4. Participate in an education program on the subject of federally listed species in the project area, specifically the southern sea otter and brown pelican. 5. Cease any action that could result in injury or mortality to the southern sea otter or brown pelican. 6. Examine the immediate area prior to daily dredging operations to ensure that the southern sea otter or brown pelican are not within 50 meters of the project site. 7. Notify the FWS should any dead, injured, or sick southern sea otters or brown pelicans be found. 8. Provide project manager's name and telephone number, size and placement of any floating construction equipment, radio telephone frequencies and call signs of any marine equipment, and work start and completion data. 9. Allow possible modifications required by the Coast Guard Captain of the Port of San Francisco Bay 10. provide the following reports for review and comment to Chief, Construction-Operations Division of the USACE: a. Dredged material analysis. b. Dredging operation plan. c. Before dredging survey. d. Post-dredging survey. e. Disposal site verification log. f. Solid debris management plan. g. Overflow requirements. 11. Upon direction of the USACE, allowance for the modification of disposal schedules and/or monthly disposal quantities for particular dredging episodes. 12. Upon request by USACE staff, allowance of inspection of the dredging area and equipment. 13. Obtain a letter of water quality certification or waiver from the RWQCB for each dredging episode. 14. Provide a copy of the dredge material analysis to USEPA, FWS, NMFS, and CDFG. 15. Evaluate disposal alternatives if a land, ocean, or other aquatic disposal site becomes available within this five-year permit period.

3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*USACE*
Monterey	• Special conditions attached to USACE permit #19630S25; 1. The top 12-inches of sediments dredged from areas A, B, and C must be discharged to a surface. impoundment, de-watered, and disposed at a site outside of USACE jurisdiction 2. Provide project manager's name and telephone number, size and placement of any floating construction equipment, radio telephone frequencies and call signs of any marine equipment, and work start and completion data. 3. Allow possible modifications required by the Coast Guard Captain of the Port of San Francisco Bay. 4. Provide the following reports for review and comment to Chief, Construction-Operations Division of the USACE: a. Dredged material analysis. b. Dredging operation plan. c. Before dredging survey. d. Post-dredging survey. e. Disposal site verification log. f. Solid debris management plan. g. Upon request by USACE staff, allowance of inspection of the dredging area and equipment.

Harbor	*FWS*
Santa Cruz	Agency information not provided.
Moss Landing	Agency information not provided.
Monterey	Agency information not provided.

Harbor	*USEPA*
Santa Cruz	• Same as USACE permits.
Moss Landing	• Same as USACE permits. • Testing of dredged material; core samples were split (i.e. different vertical layers) in order to find the hot spots of contaminants.
Monterey	• Same as USACE permits.

Harbor	*MBNMS*
Santa Cruz	• Same as USACE permits. • Same as RWQCB Waste Discharge Requirements. • Same as CCC's Coastal Development Permit conditions. • Allowance for the disposal of sandy dredged material from the entrance channel at the surf zone, a designated historical disposal site.
Moss Landing	• Same as USACE permits. • Same as RWQCB Waste Discharge Requirements. • Same as CCC's Coastal Development Permit conditions. • For the dredging project in southern Moss Landing Harbor outside the Federal Channel, the top two feet of sediment should be dredged and disposed at an upland site before the lower sediment is dredged and disposed at site SF-12 (also approved by USEPA and other agencies).
Monterey	• Same as USACE permits. • Same as RWQCB Waste Discharge Requirements. • Same as CCC's Coastal Development Permit conditions.

3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*CCC*
Santa Cruz	• Standard conditions; 1. Notice of receipt and acknowledgment- the permit is not valid and the development shall not commence until a copy of the permit signed by the permittee is returned to the CCC. 2. Expiration- if development has not commenced, the permit will expire two years from the date the CCC voted on the application. 3. Compliance- all development must occur in strict compliance with the proposal within the application 4. Interpretation- any questions of intent or interpretation will be resolved by the Executive Director of the CCC. 5. Inspections- CCC staff shall be allowed to inspect the site and the development during construction. 6. Assignment- the permit may be assigned to any qualified person, provided assignee files with the CCC an affidavit accepting all terms and conditions of the permit. 7. Terms and conditions run with the land- the terms and conditions are perpetual and all future owners and possessors of the subject property are bound to the terms and conditions. • Special conditions; 1. The permit authorizes a five-year period (November 1, 1995 to March 31, 2000) for dredge disposal operations, needs to be consistent with the Santa Cruz Port District Dredge Operation Manual and shall be limited annually to 5,000 cy inner harbor and 250,000 in the harbor channel, needs to be consistent with RWQCB and USEPA Clean Water Act beach disposal standards. 2. The end of each dredging episode, the Santa Cruz Port District is required to submit; A. Pursuant to the USACE Permit #21056S64: a. Dredge Material Analysis (chemical and physical), sampling and testing information, and RWQCB water quality certification or waiver for disposal of material. b. Dredging Operation Plan. c. Before Dredging Survey. d. Post-Dredging Survey. B. Authorization from the MBNMS for disposal of spoils or tailing water to Sanctuary receiving waters. C. State Lands: a. Evidence that not State lands are involved in the development; or b. State lands are involved in the development and all permits required have been obtained; or c. State lands may be involved in the development, but pending a final determination an agreement has been made with CSLC for the project to proceed without prejudice to the determination. D. California State Parks: a current Annual Temporary Use Permit and/or other approval. E. Other Local Permits: evidence that no local permits are required from the City of Santa Cruz and the County of Santa Cruz or documentation that required permits have been issued. 3. The Port District is to continue to follow the Dredge Operation Manual, the submission to the Executive Director a report outlining compliance with the operational manual provisions at least once every three years. 4. Submit evidence to the FWS and CDFG that no endangered tidewater goby are present or, if present, will not be disturbed by proposed dredging operations. 5. Submit a site plan to the Executive Director; the placement of a 100 foot setback line to prevent encroachment on environmentally sensitive habitat; and the removal of any unpermitted equipment, materials, junk, or debris from specific areas. 6. The allowance for application for a Coastal Development Permit or amendment for the existing trailer used for housing the dredge crew.

3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*CCC*
Moss Landing	• Standard conditions; 1. Notice of receipt and acknowledgment- the permit is not valid and the development shall not commence until a copy of the permit signed by the permittee is returned to the CCC. 2. Expiration- if development has not commenced, the permit will expire two years from the date the CCC voted on the application. 3. Compliance- all development must occur in strict compliance with the proposal within the application 4. Interpretation- any questions of intent or interpretation will be resolved by the Executive Director of the CCC. 5. Inspections- CCC staff shall be allowed to inspect the site and the development during construction. 6. Assignment- the permit may be assigned to any qualified person, provided assignee files with the CCC an affidavit accepting all terms and conditions of the permit. 7. Terms and conditions run with the land- the terms and conditions are perpetual and all future owners and possessors of the subject property are bound to the terms and conditions. • Special conditions; 1. The permit is for the development of the South Sandholdt Dredge Disposal Site and for the temporary (six-months) development and use of the Boatyard Site, the Boatyard Site must be restored to its pre-use conditions after the six-months from when the first batch has been processed have concluded, required notification of the Executive Director of the initiation of the first batch, or submit evidence that Monterey County has issued a continued use permit for the site, the non-allowance for dredge disposal of Federal Channel materials. 2. a. The requirement of the submission to the Executive Director final plans for upland disposal site and all new or modified pipelines. b. The requirement of the submission to the Executive Director estimated dredge and haul schedule and program including hours of hauling, size of trucks, restrictions of Air Pollution Control Agency. c. Identification of equipment to be used for dredging and disposal of the Gravelle Boat Repair Facility site contaminated with metals. 3. For discharges not covered under RWQCB's Order 90-21, the submission to the Executive Director a Waste Discharge Permit or a Waiver of waste discharge requirements, the prohibition of discharge outside of the September 1 to June 1 period unless authorized by the Executive Officer of the RWQCB, submission of evidence that the CDFG has reviewed and approved the monitoring program for discharge waters from the upland disposal sites. 4. Submission to the Executive Director conformation that: a. A qualified biologist or botanist will survey the project construction site for special status species prior to construction. b. A qualified biologist or revegetation specialist will mark areas of native vegetation to be protected. 5. A. State Lands: a. Evidence that no State lands are involved in the development; or b. State lands are involved in the development and all permits required have been obtained; or c. State lands may be involved in the development, but pending a final determination an agreement has been made with CSLC for the project to proceed without prejudice to the determination. B. Monterey County: evidence that the dredge program has been reviewed and approved by the Monterey County Environmental Health Division, Hazardous Materials Branch, and the Planning/Public Works Department. C. Monterey Bay Unified Air Pollution Control District: submission of their conditions of their permit for the purpose of Coastal Commission filing. 6. The submission to the Executive Director for review: A. A copy of the USACE permit, letter of permission, or evidence that a USACE permit is not necessary and concurrence with USEPA for disposal of dredge spoils. B. A copy of the MBNMS written authorization for disposal of spoils or tailing waters to Sanctuary receiving waters. 7. Submission of information (i.e. name, address, telephone number, and qualifications) of an environmental and condition monitor who will report two times per year.

3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*CCC*
Monterey	• Standard conditions; 1. Notice of receipt and acknowledgment- the permit is not valid and the development shall not commence until a copy of the permit signed by the permittee is returned to the CCC. 2. Expiration- if development has not commenced, the permit will expire two years from the date the CCC voted on the application. 3. Compliance- all development must occur in strict compliance with the proposal within the application 4. Interpretation- any questions of intent or interpretation will be resolved by the Executive Director of the CCC. 5. Inspections- CCC staff shall be allowed to inspect the site and the development during construction. 6. Assignment- the permit may be assigned to any qualified person, provided assignee files with the CCC an affidavit accepting all terms and conditions of the permit. 7. Terms and conditions run with the land- the terms and conditions are perpetual and all future owners and possessors of the subject property are bound to the terms and conditions. • Special conditions; The submission of final project plans (i.e., exact design and location of development, materials to be used and the disposal area for removed or demolished materials)to the Executive Director for review and approval. 2. The permit includes approval for a five-year program of harbor maintenance dredging and sediment disposal through 11/14/01; dredge material (at least 80% sand) can be deposited above the mean high tide line of Del Monte Beach for beach nourishment purposes, dredge spoils not suitable for beach disposal must be disposed at an upland location; and provide for the Executive Director details (i.e., dredging plan, maps identifying areas to be dredged, project depths, overdredge depths, volume to be dredged) and written evidence that approval has been received or is not needed from the USACE, MBNMS, RWQCB, CDFG, and MLHD. 3. Containment requirements-does not pertain to dredging. 4. Piling installation requirements-does not pertain to dredging. 5. Procedures for concrete work-does not pertain to dredging. 6. The requirement for the obtainment of any necessary approvals from the RWQCB, and that the RWQCB has reviewed the proposed work and has made a determination that disturbances from dredging will not cause lead pollutants to become significantly bioavailable or a water quality monitoring program, acceptable to the RWQCB and CDFG, has been prepared. 7. The submission to the Executive Director for review and approval a written determination from the CSLC that the proposed activities comply with the tidelands grant issued to the City of Monterey by the CSLC. 8. The submission to the Executive Director for review and approval documentation from the USACE that the project has been reviewed for Federal agency (USACE, USCG, MBNMS) requirements and has the necessary permits or does not need permits from the USACE, USCG, or MBNMS). 9. Additional harbor improvements-does not pertain to dredging.

Harbor	*CDFG*
Santa Cruz	Special conditions for each harbor are predicted based on the nature of the contaminant present in sediment and the proposed disposal location.
Moss Landing	Special conditions for each harbor are predicted based on the nature of the contaminant present in sediment and the proposed disposal location.
Monterey	Special conditions for each harbor are predicted based on the nature of the contaminant present in sediment and the proposed disposal location.

Harbor	*CDPR*
Santa Cruz	Limited operating hours.
Moss Landing	N/A; State Park Lands are not used.
Monterey	N/A; State Park Lands are not used.

3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

Harbor	*CSLC*
Santa Cruz	No
Moss Landing	No
Monterey	N/A; State Lands leased to Monterey in 1868 for eternity.

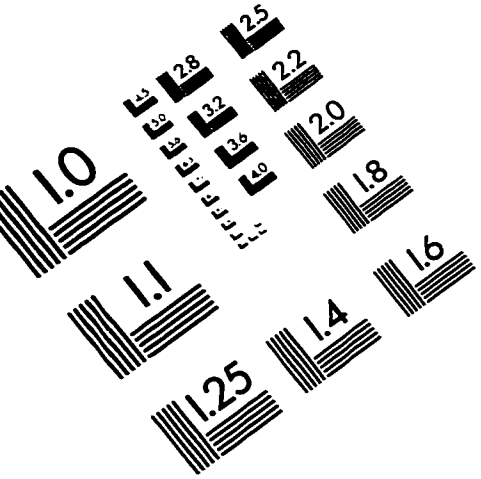
Harbor	*RWQCB*
Santa Cruz	A. Prohibitions. • Dredge materials not meeting USEPA's current guidelines for dredge spoil disposal shall not be discharged to the ocean. • Dredge operations shall not be conducted from the Friday before Good Friday through the Sunday following Easter Day each year, nor during unseasonably warm weekends and holidays. B. Discharge Limitations. • Location for disposal of unpolluted dredged material is not specified but will be based on most recent information concerning availability of sites and data on ocean currents. • Discharge to the beach shall be limited to the interval between October 1, through May 31, each year. • Discharge to the beach shall be above Mean High Water (MHW) level and graded daily to obtain near natural beach contours. • The discharge shall not cause excessive discoloration of ocean waters. • Beach disposal of inner harbor dredge spoils, which have been determined unpolluted, may taken place between December 1, and February 28, only; but not during unseasonably warm weather.
Moss Landing	A. Provisions. • Discharge to areas other than designated disposal or beach replenishment sites is prohibited. • Discharge of any wastes, including overflow, bypass, or leakage from the dredging, transport, or disposal system to Moss Landing Harbor, adjacent drainageways, or adjacent properties is prohibited. • Discharge of dredge materials not meeting USEPA's current guidelines for dredge spoil disposal is prohibited. • Discharge of dredge spoils which cause odors or undesirable coloration at the beach sites or at the beach adjacent to the offshore site is prohibited. B. Discharge Specifications. • Prior to discharge of dredge spoils, written approval for the project must be received from the Executive Officer. The disposal site will be chosen based on the monitoring data submitted for the material to be dredged according to the criteria: a. Dredge material composed essentially of clean coarse sand (no more than 20% passing No. 200 sieve) shall be discharged at one of the beach replenishment sites. b. Dredge material not meeting the above but, complying with current USEPA guidelines for dredge spoil disposal may be discharged to SF-14. Use of SF-12 is dependent upon results of testing specified in the monitoring program. To use SF-12, test results must show that the material will not adversely affect marine communities in the disposal area or in Elkhorn Slough. c. Disposal of unpolluted inner harbor dredge spoils, with more than 20% passing through a No. 200 sieve, may be discharged only between September 1 and June 1, unless authorization from the Executive Officer or his representative. • Disposal of dredge spoils to the beach replenishment sites shall be conducted in a manner which will not cause a nuisance to beach users. The discharger shall notify mariculture operators in Moss Landing Harbor and Elkhorn Slough at least 15 days in advance of discharge of dredged materials at SF-12 or the beach replenishment sites. Should mariculture operators experience excessive culture mortality or difficulties in removing increased turbidity as a result of the discharge, the Executive Officer may modify or suspend use of SF-12 and/or the beach replenishment sites and specify use of the offshore site (SF-14) for future projects.

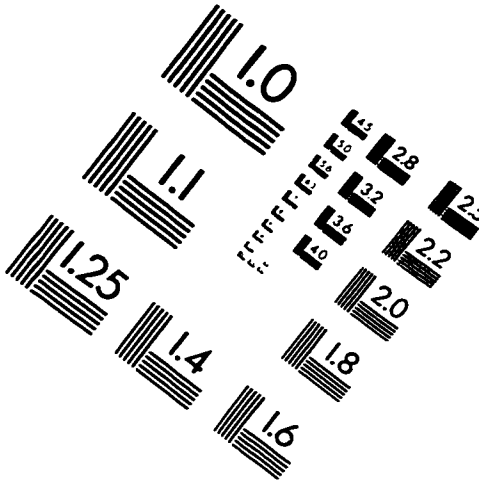
3. Continued. Were there any special conditions for dredging or dredged material disposal for a specific harbor?

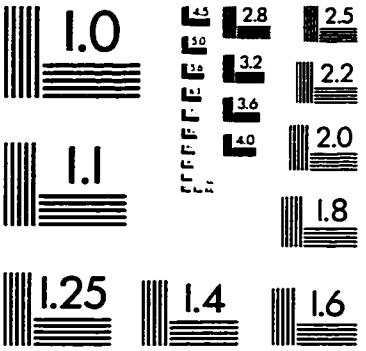
Harbor	*RWQCB*
Monterey	A. Provisions. • Discharge of dredge spoils to others than specified spoils disposal areas is prohibited. • Discharge of wastes, including overflow, bypass, or leakage from the dredging, transport or disposal system to areas other than the spoils disposal area, adjacent drainageways or adjacent properties is prohibited. • Discharge of dredge spoils which cause odors or undesirable coloration at the beach site is prohibited. B. Discharge Specifications. • Discharge of dredged materials shall be limited to no more than 10,000 cubic yards per calendar year. • Only dredged material with a weighted average total lead concentration of less than 25 mg/kg may be discharged to the designated disposal area. Dredged material with a weighted average total lead concentration greater than 25mg/kg shall be disposed of at a location approved by the Executive Officer. • Disposal of dredge spoils shall be conducted in a manner which will not cause a nuisance to beach users. • Discharge to the beach shall be limited to the interval between October 1 and May 31.

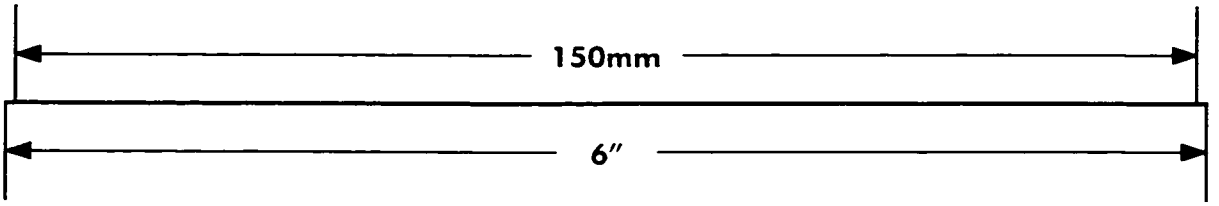
Harbor	*MBAPC*
Santa Cruz	No
Moss Landing	No
Monterey	N/A; harbor uses electric dredge.

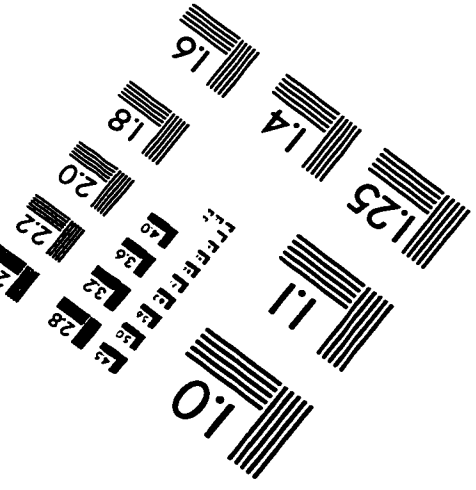
IMAGE EVALUATION
TEST TARGET (QA-3)

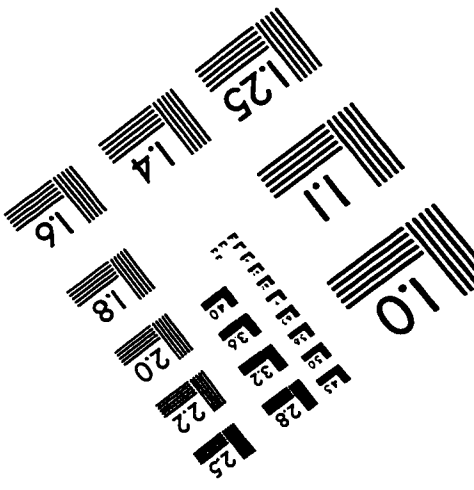












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