

CALIFORNIA COASTAL COMMISSION

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Staff: CP-LB
Staff Report: 7/21/99
Hearing Date: August 10-13, 1999
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NUMBER: 5-99-228

APPLICANT: City of Long Beach

AGENT: Dennis Eschen, Superintendent of Planning & Development,
City of Long Beach Department of Parks, Recreation & Marine

PROJECT LOCATION: On beach at 1st, 54th and 72nd Places, City of Long Beach, Los Angeles County.

PROJECT DESCRIPTION: Beach nourishment using suitable dredged material from Queensway Bay, Alamitos Bay, and the Alamitos Bay entrance channel.

LOCAL APPROVAL: City of Long Beach Approval in Concept, 6/18/99.

SUMMARY OF STAFF RECOMMENDATION:

This coastal development permit is only for the deposition of suitable dredged material for beach nourishment. The actual dredging activity, although regulated by the U.S. Army Corps of Engineers and the California Regional Water Quality Control Board, is exempt from coastal development permit requirements because it is required for the maintenance of existing navigational channels. Pursuant to Section 30610(c) of the Coastal Act, maintenance dredging done pursuant to a U.S. Army Corps of Engineers permit is exempt from coastal development permit requirements.

A coastal development permit is required from the Commission for the proposed beach nourishment project because it involves development on State Tidelands within the Commission's area of original jurisdiction. Pursuant to Section 30519 of the Coastal Act, any development located within the Commission's area of original jurisdiction requires a coastal development permit from the Commission. The Commission's standard of review for the proposed event is the Chapter 3 policies of the Coastal Act.

Staff is recommending that the Commission grant a coastal development permit for the proposed project with conditions regarding compatibility of the dredged material with the deposition sites, timing of the project, conformance with the requirements of resource agencies, and assumption of risk. The City agrees with the recommendation.

SUBSTANTIVE FILE DOCUMENTS:

1. City of Long Beach Certified Local Coastal Program, 7/22/80.
2. Maintenance Dredging Sediment Sampling & Analysis Plan, City of Long Beach, by Tetra Tech, Inc., File No. 93-33, revised May 24, 1999.
3. U.S. Army Corps of Engineers Permit Application No. 199915256-TJE.
4. California Department of Fish & Game comment letters: 3/30/99 & 4/22/99.
5. U.S. Fish & Wildlife Service comment letter: 4/1/99.
6. U.S. National Marine Fisheries Service comment letter: 4/7/99.
7. Coastal Development Permit P-79-4767 (City of Long Beach).
8. Coastal Development Permit P-80-7188 (City of Long Beach).
9. Coastal Development Permit 5-81-516 (City of Long Beach).
10. Coastal Development Permit 5-94-103 (City of Long Beach).

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions

The Commission hereby **GRANTS** a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, is located between the sea and the first public road nearest the shoreline and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and will not have any significant adverse effects on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

1. Suitability of Materials

Prior to each dredging episode at each individual dredging location, the permittee shall sample the material to be dredged using the sampling methods described in the Maintenance Dredging Sediment Sampling Plan, by Tetra Tech, Inc., File No. 93-33 to determine the chemical and physical characteristics of the material using the standards approved by the EPA and the Regional Water Quality Control Board. The permittee shall provide a qualified expert at the dredge sites determine whether the materials to be dredged will be physically and chemically suitable for beach nourishment using the sediment compatibility criteria contained in the Maintenance Dredging Sediment Sampling Plan, by Tetra Tech, Inc., File No. 93-33.

Prior to commencement of dredging at a sample site, the results of each sampling episode, sediment characterization, and beach nourishment compatibility test shall be submitted for the review and approval of the Executive Director. Dredged material deemed suitable may be deposited at the approved deposition sites only after the Executive Director has concurred with a City determination that the materials to be dredged have been deemed "suitable" using the criteria contained in the sampling plan. All dredged material deemed "unsuitable" shall be disposed of at an approved location according to all federal, state and local regulations. If the disposal site is located in the coastal zone, a separate coastal development permit application shall be

filed for the disposal of the "unsuitable" material. All contracts involving the subject project shall include the above stated condition of approval.

2. Timing of Project

In order to reduce impacts on the grunion and the California least tern during the grunion breeding runs and the least terns' nesting and foraging season, no beach replenishment or sand moving activity shall occur during the period commencing March 15 and ending September 1.

3. Conformance with the Requirements of the Resource Agencies

The permittee shall comply with all permit requirements and mitigation measures of the California Department of Fish and Game, Regional Water Quality Control Board, U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service with respect to preservation and protection of water quality and marine environment. Any change in the approved project which are required by the above-stated agencies shall be submitted to the Executive Director in order to determine if the proposed change shall require a permit amendment pursuant to the requirements of the Coastal Act and the California Code of Regulations.

4. Eelgrass Beds, Kelp Beds and Clam Beds

Prior to placement of any sand or deposition of any dredged material below the mean high tide line (MHTL), the permittee shall:

- a) Survey and map any eelgrass (*Zostera marina*) beds, kelp beds or clam beds which may exist within the proposed deposition area.
- b) Submit the map and survey of each proposed deposition area to the Executive Director and the California Department of Fish and Game to determine whether the proposed deposition would negatively impact any eelgrass (*Zostera marina*) beds, kelp beds or clam beds.

The placement of any sand or deposition of any dredged material below the mean high tide line (MHTL) shall be permitted only with a determination by the Executive Director, in consultation with the California Department of Fish and Game, that there will be no negative impact to eelgrass (*Zostera marina*) beds, kelp beds or clam beds.

5. Beach and Recreational Facility Closures

Beach area closures shall be minimized and limited to areas immediately adjacent to the project area (within 200 feet of the pipeline and deposition area). All beach areas and recreation facilities outside of the 200-foot radius shall remain open and available

for public use during the normal operating hours. The beach bicycle path shall remain open and available for public use during normal operating hours.

6. Assumption of Risk

By acceptance of this permit, the applicants acknowledge and agree: (i) that the site may be subject to hazards from seismic events, liquefaction, storms, waves, floods and erosion; (ii) to assume the risks to the applicants and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

7. Term of Permit Approval

The development authorized by this coastal development permit is limited to beach nourishment using only suitable material dredged pursuant to U.S. Army Corps of Engineers Permit No. 199915256-TJE.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description

The City of Long Beach proposes to nourish its beaches at 1st, 54th and 72nd Places using material dredged from Queensway Bay and Alamitos Bay (Exhibits #1-3). The City's five-year maintenance dredging operation, permitted by U.S. Army Corps of Engineers Permit No. 199915256-TJE, is estimated to yield approximately 10,000 to 60,000 cubic yards of material each year using a hydraulic suction dredge. The U.S. Army Corps of Engineers permits no more than 90,000 cubic yards of material to be dredged in each one-year dredge season which runs from September 1 to March 15. Only dredged material deemed suitable using the sediment compatibility criteria contained in the Maintenance Dredging Sediment Sampling Plan, by Tetra Tech, Inc., File No. 93-33 is proposed to be used for beach nourishment.

This coastal development permit is only for the deposition of suitable dredged material for beach nourishment. The actual dredging activity, which is required for the maintenance of

existing navigational channels, is exempt from coastal development permit requirements. Pursuant to Section 30610(c) of the Coastal Act, maintenance dredging of existing navigational channels done pursuant to an approved U.S. Army Corps of Engineers permit is exempt from coastal development permit requirements. The dredging activities that will provide the beach nourishment material has been permitted by U.S. Army Corps of Engineers Permit No. 199915256-TJE. According to the City, all dredging will be done on an as needed basis.

The Maintenance Dredging Sediment Sampling Plan prepared by the City's marine consultants (Tetra Tech, Inc.) provides a system to sample and analyze the sediments to be dredged on a case-by-case basis in order to determine the suitability of the dredged material for deposition on the approved beaches (Exhibit #4). The sediment sampling and analysis will be performed in accordance with standard procedures promulgated by the U.S. Environmental Protection Agency and the Regional Water Quality Control Board. Only dredged material deemed "suitable" by an expert in the field will be used for beach nourishment.

Suitable material is proposed to be pumped from the hydraulic suction dredge via pipeline to three deposition sites on the City's beach near 1st, 54th and 72nd Places (Exhibits # 1&2). As proposed, suitable dredged material will be deposited for beach nourishment in the near shore area, or above the mean high tide line within a confined disposal facility (Exhibit #1&2, p.2). The sand will be spread mechanically from the deposition sites. The use of suitable dredged material to nourish the City's beaches is proposed to mitigate the loss of beach sand due to ongoing erosion.

The Commission has approved several beach nourishment projects in Long Beach. Most recently, the Commission approved Coastal Development Permit 5-94-103 (City of Long Beach) to permit the use of suitable dredged material for beach nourishment during the 1994-1999 maintenance dredging operation permitted by the extension of U.S. Army Corps of Engineers Permit No. 88-110-KK.

B. Marine Resources and Shoreline Protection

The proposed beach nourishment project includes the placement of dredged material below the mean high tide line (MHTL). The placement of any material below the MHTL is fill as defined by Section 30108.2 of the Coastal Act. Section 30233 of the Coastal Act allows filling of coastal waters or wetlands only where feasible mitigation measures have been provided to minimize adverse environmental effects, and for only the eight uses listed in Section 30233 of the Coastal Act:

- (I) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

- (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
- (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and necessary support service facilities, shall not exceed 25 percent of the degraded wetland.
- (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
- (5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
- (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
- (7) Restoration purposes.
- (8) Nature study, aquaculture, or similar resource dependent activities.

In this case, the proposed fill would result from the restoration of the public beach where erosion has narrowed the prior width of the beach. In regards to beach replenishment, Section 30233(b) of the Coastal Act requires that suitable dredge materials be transported to appropriate beaches for such purposes.

Section 30233(b) of the Coastal Act states:

Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

The proposed use of dredged material for beach nourishment will partially mitigate the ongoing erosion of the City's beaches, helping to protect recreational use of the beach and existing structures along the beach. Section 30233(b) of the Coastal Act encourages the use of dredged material for beach replenishment. The proposed project will not have any adverse impacts on local sand supply. Therefore, the proposed project is consistent with Sections 30230 and 30233 of the Coastal Act.

Section 30230 of the Coastal Act requires that marine resources shall be maintained, enhanced, and where feasible, restored. Section 30230 of the Coastal Act states:

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30230 of the Coastal Act requires that marine resources be protected and that the use of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters. Although the proposed deposition of material will occur above the mean high tide line, the project may impact marine resources. Therefore, mitigation measures are necessary to protect the biological productivity of the coastal waters.

The proposed deposition sites are near grunion spawning areas. The waters in the area may also be used as a feeding area for the endangered California least tern. In order to reduce the proposed development's impacts on spawning grunion and the least tern's feeding area during the birds' nesting season, the permit has been conditioned so that development is not permitted during the period commencing March 15 and ending September 1. The period between March 15 and September 1 is the primary grunion spawning season as well as the least tern's nesting season. The California Department of Fish and Game (Rbt.Tasto, 3/30/99) and the U.S. Army Corps of Engineers (Permit No. 199915256-TJE) have also prohibited beach replenishment activities during these times.

The California Department of Fish and Game states that the dredging and beach nourishment activities could also impact eelgrass beds and clam beds. The U.S. Army Corps of Engineers Permit (No. 199915256-TJE) requires the City to conduct eelgrass surveys prior to dredging, and prohibits dredging activities in all areas where eelgrass is found. The California Department of Fish and Game has recommended that the City submit additional data in order to determine what impacts, if any, the dredging would have on clam beds. The deposition of dredge materials on the beach above the mean high tide line would not impact clam beds.

Therefore, the permit is conditioned to require that the City survey and map the proposed beach nourishment areas located below the MHTL prior to placement of any sand or deposition of any dredged material. The surveys shall determine whether any eelgrass (*Zostera marina*) beds, kelp beds or clam beds exist within the proposed deposition area. The map and survey of each proposed deposition area shall be submitted to the Executive Director and the California Department of Fish and Game to determine whether the proposed deposition would negatively impact any eelgrass (*Zostera marina*) beds, kelp beds or clam beds. The condition of approval states that placement of any sand or deposition of any dredged material below the mean high tide line (MHTL) shall be permitted only with a

determination by the Executive Director, in consultation with the California Department of Fish and Game, that there will be no negative impact to eelgrass (*Zostera marina*) beds, kelp beds or clam beds. Only as conditioned is the proposed project consistent with the marine resource sections of the Coastal Act.

The resource agencies may require further mitigation measures to minimize or avoid impacts to marine resources. Therefore, a condition of approval requires the permittee to comply with all permit requirements and mitigation measures of the California Department of Fish and Game, Regional Water Quality Control Board, U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service with respect to preservation and protection of water quality and marine environment. Any change in the approved project which are required by the above-stated agencies shall be submitted to the Executive Director in order to determine if the proposed changes shall require a permit amendment pursuant to the requirements of the Coastal Act and the California Code of Regulations.

The marine environment will also be protected by conditioning the permit to ensure that all dredged material is physically and chemically suitable for the beach and compatible with the existing beach sand at the deposition sites. A qualified expert is required to inspect the dredged material to determine if the material is suitable for deposition at the approved beaches. Dredged material deemed suitable may be deposited at the approved deposition sites only after the Executive Director has concurred with a City determination that the materials to be dredged have been deemed "suitable" using the criteria contained in the sampling plan. The expert is required to use the sediment compatibility criteria contained in the Maintenance Dredging Sediment Sampling Plan, by Tetra Tech, Inc., File No. 93-33 when determining the suitability of the dredged material (Exhibit #4).

Therefore, only as conditioned to mitigate and avoid impacts to marine resources does the Commission find the proposed project to be consistent with Sections 30230, 30233 and 30235 of the Coastal Act.

C. Recreation and Public Access

The proposed project is consistent with the following Coastal Act policies which encourage public access and recreational use of coastal areas.

Section 30210 of the Coastal Act states:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30213 of the Coastal Act states:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.

Section 30221 of the Coastal Act states:

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

The proposed project will partially mitigate beach erosion and provide for the continuing and increased recreational use of the City beaches by the public. The proposed beach replenishment will increase the size of the beach and will provide a larger area for recreational use.

The project will temporarily impact the use of some portions of the beach during the deposition of the dredged material. However, because the permit is conditioned to prohibit replenishment during the least tern nesting season and grunion spawning season (March 15-Sept.1), public access and recreation will not be impacted during the peak summer season. When the proposed work on the beach is permitted to occur, a condition of the permit requires the City to minimize beach area closures by limiting closed beach areas to an area not to exceed 200 feet from the pipeline and deposition area.

The long-term benefits of beach nourishment offset the temporary reduction in beach use by providing a larger, more stable beach for public recreation. Further, as conditioned, the impacts of the proposed development on access and recreation have been minimized. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Sections 30210, 30213 and 30221 of the Coastal Act.

D. Local Coastal Program

Section 30604(a) of the Coastal Act provides that the Commission shall issue a Coastal Permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act:

- (a) Prior to certification of the Local Coastal Program, a Coastal Development Permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government

to prepare a Local Coastal Program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200). A denial of a Coastal Development Permit on grounds it would prejudice the ability of the local government to prepare a Local Coastal Program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200) shall be accompanied by a specific finding which sets forth the basis for such conclusion.

The City of Long Beach Local Coastal Program was certified by the Commission on July 22, 1980. The certified Local Coastal Program requires the City to repair beach erosion and develop a sand management plan (LCP, p. 63). The City has prepared a sand management plan which includes the replenishment of beach sand with dredged material. The proposed project complies with the policies of the certified LCP. However, because the project is located seaward of the former mean high tide line, in the Commission's area of original jurisdiction, the LCP is advisory in nature and may provide guidance. The standard of review for this project is the Coastal Act.

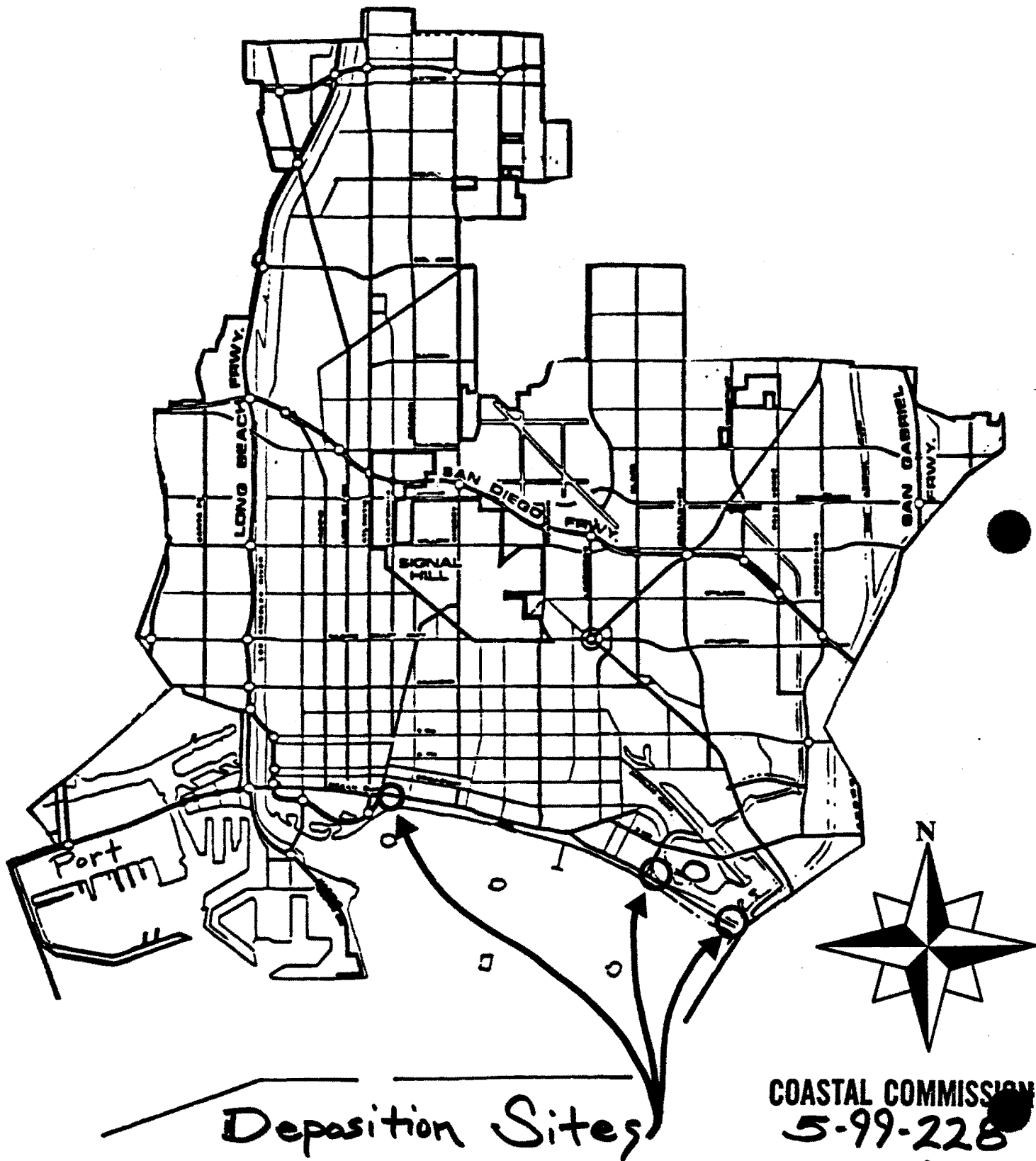
Approval of the project cannot prejudice the local government's ability to prepare a certifiable LCP because the City of Long Beach LCP was certified in 1980. The proposed project, as conditioned, is consistent with the policies of Chapter 3 of the Coastal Act, as required by Section 30604(a).

E. California Environmental Quality Act (CEQA)

Section 13096 of the California Code of Regulations requires Commission approval of coastal development permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The proposed project has been conditioned in order to be found consistent with the Chapter 3 policies of the Coastal Act. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, is the least environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

City of Long Beach



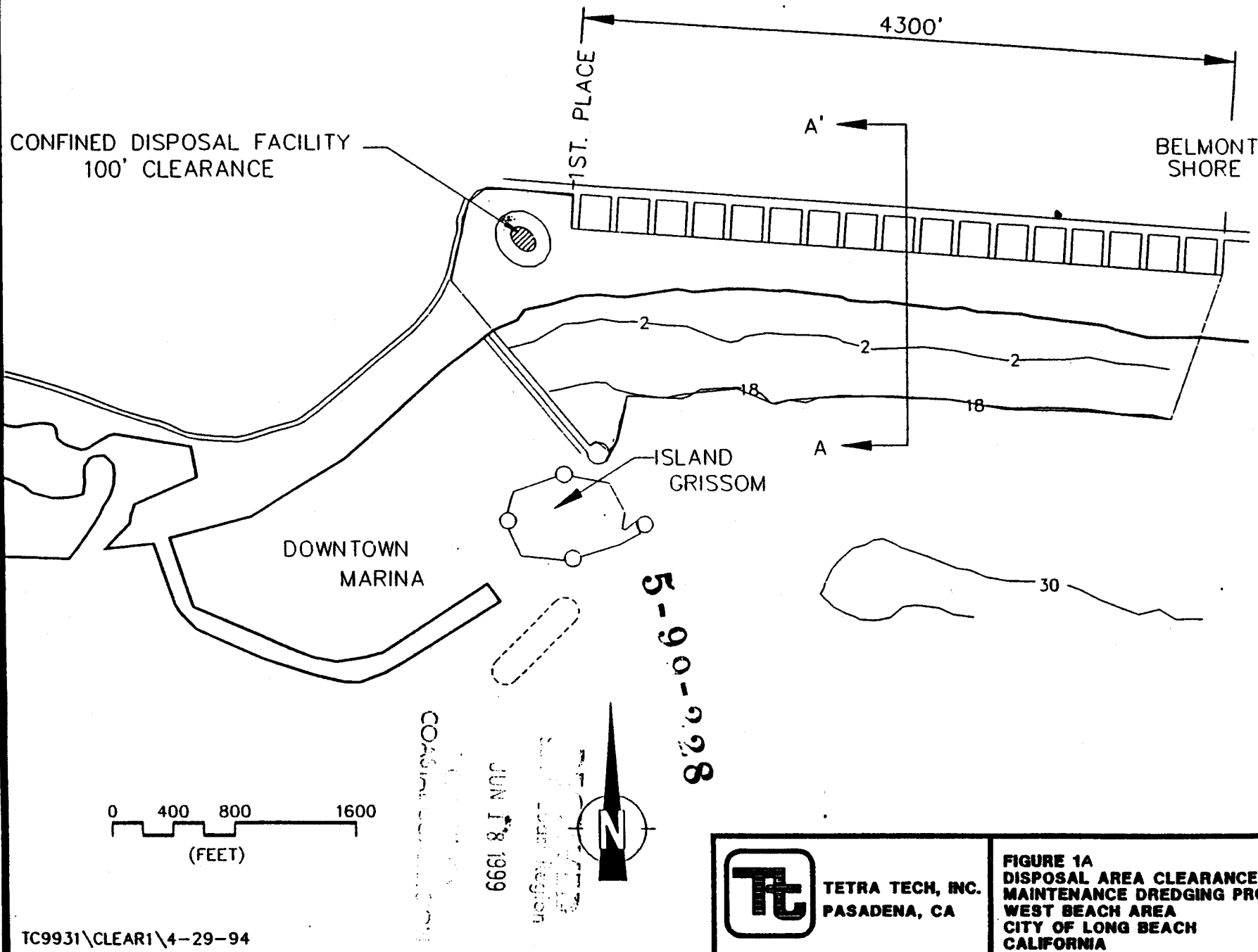
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EXHIBIT # 1
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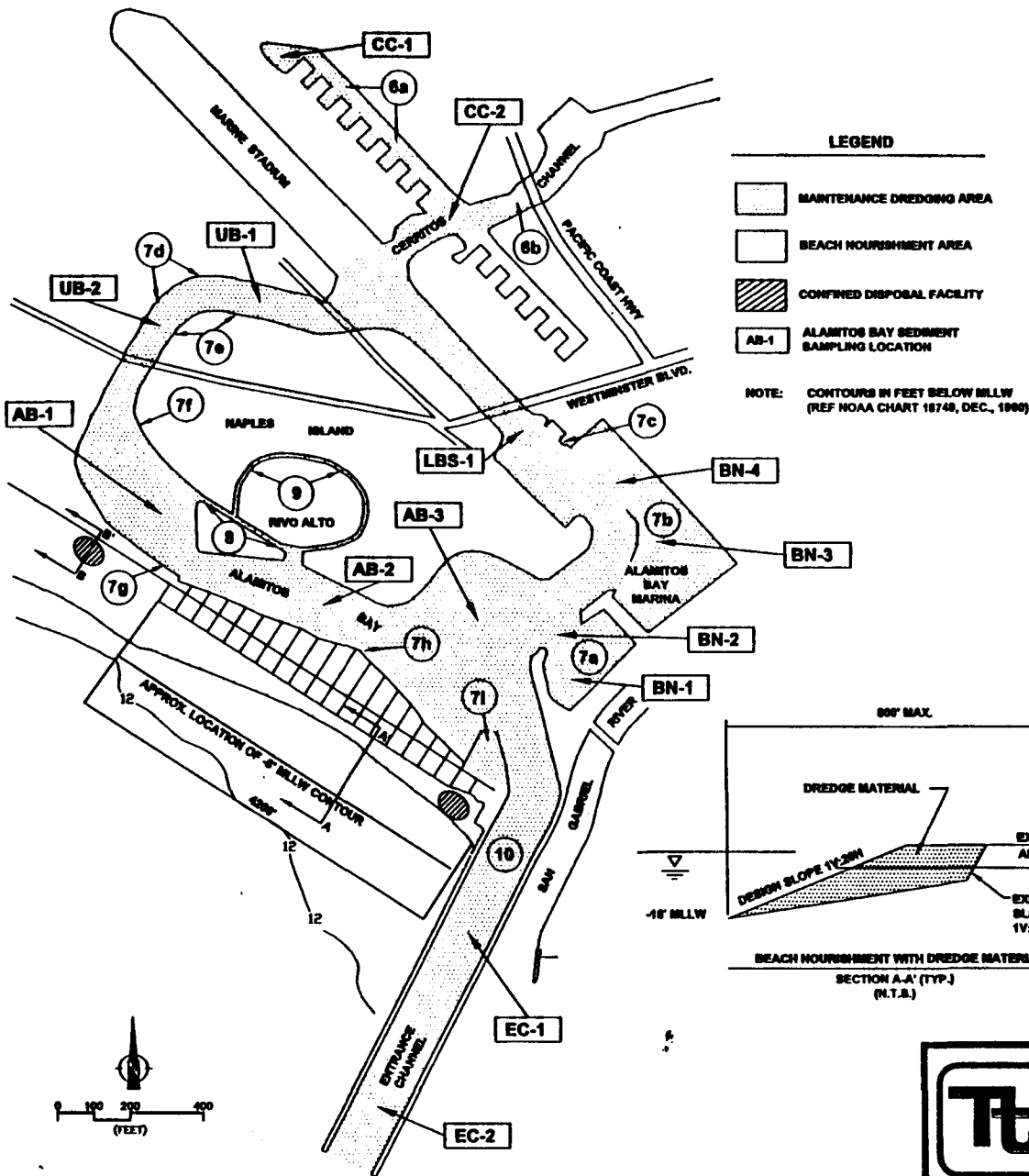


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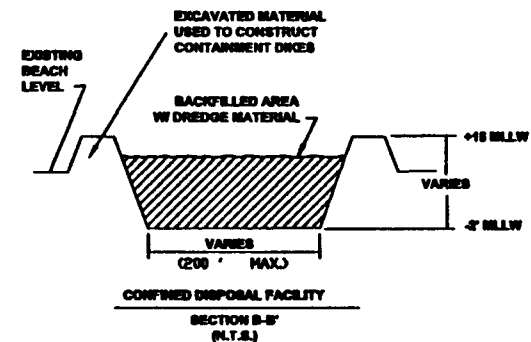
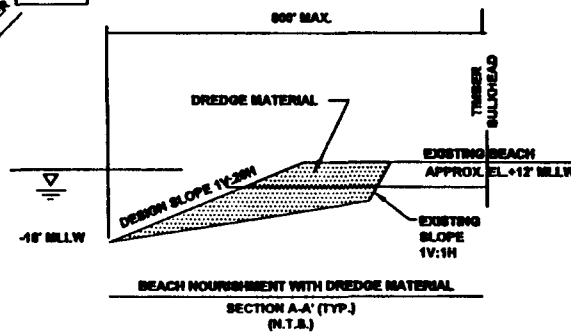
EXHIBIT # 2
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EAST BEACH / ALAMITOS BAY DREDGING AREA	Frequency of Dredging (years)	Estimated Quantity (cubic yards)	Dredging Depth (MLLW)
6. Cerritos Channel			
a. Spinnaker Cove	5	4,000	-8.0
b. Basins 6 & 8	5	10,000	-10.0
7. Alamitos Bay			
a. Basin 1	3	4,000	-15.0
b. Basin 2	5	3,000	-10.0
c. Long Beach Marina Shipyard	5	2,000	-15.0
d. Bayshore	5	10,000	-10.0
e. Sorrento Drive	5	7,500	-10.0
f. The Toledo	5	10,000	-10.0
g. Basin 7	5	10,000	-15.0
h. Bayshore Walk	3	3,000	-15.0
i. Basin 5	5	10,000	-15.0
8. Naples Canal	5	3,000	-8.0
9. Rivo Alto	5	8,000	-8.0
10. Alamitos Bay Entrance Channel	2	10,000	-20.0



Tt TETRA TECH, INC.
PASADENA, CA
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FIGURE 2
MAINTENANCE DREDGING PROGRAM
EAST BEACH AREA
CITY OF LONG BEACH
CALIFORNIA
1999 - 2004

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EXHIBIT # 3
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100' CLEARANCE

ALAMITOS

ALAMITOS
BAY
MARINA

BAY

APPROX. LOCATION OF -8' MLLW CONTOUR

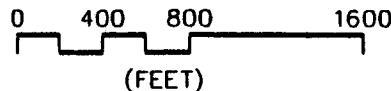
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4200'

A

100' CLEARANCE

SAN
GABRIEL
RIVER



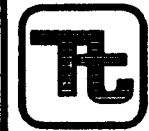
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CALIFORNIA
MARITIME COMMISSION

JUN 18 1999

COAST GUARD



TETRA TECH, INC.
PASADENA, CA

FIGURE 2A
DISPOSAL AREAS CLEARANCE
MAINTENANCE DREDGING PROGRAM
EAST BEACH AREA
CITY OF LONG BEACH
CALIFORNIA

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**MAINTENANCE DREDGING
SEDIMENT SAMPLING AND ANALYSIS PLAN
CITY OF LONG BEACH, CALIFORNIA
FILE NO. 93-33**

(Revised May 24, 1999)

1.0 PROJECT DESCRIPTION

The City of Long Beach (City) has been involved in maintenance dredging activities since the late 1950's, maintaining navigable waters within the West Beach area (near Queensway Bay and the Downtown Marina) and the East Beach area (Alamitos Bay, Cerritos Channel, etc.)

The City has always operated under the required permits, and has developed and implemented Standard Operating Procedures for Maintenance Dredging Activities, which includes this Maintenance Dredging Sediment Sampling and Analysis Plan (SAP). As part of the City of Long Beach Maintenance Dredging Program (Program), the City renews the required permits and modifies the SAP to incorporate new regulations and discharge requirements. The City has been providing the California Regional Water Quality Control Board (RWQCB) and other appropriate regulatory agencies (e.g., U.S. Army Corps of Engineers [USACE] and U.S. Environmental Protection Agency [USEPA]) the results of sediment chemical and physical analyses, water quality data during dredging activities (as required by the Waste Discharge Requirements), as well as bathymetric and eelgrass survey information pertinent to the areas proposed for dredging during the Program. These records are available for review at the City's depository, as well as at the U.S. Army Corps of Engineers, Los Angeles District office, and the Los Angeles County Regional Water Quality Control Board.

The sediment sampling and analyses proposed herein will be performed in accordance with standard procedures promulgated by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. These publications are listed in the reference section of this

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MAINTENANCE DREDGING SAMPLING AND ANALYSIS PLAN
DEPARTMENT OF PARKS, RECREATION AND MARINE

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sampling plan.

Based on previous analytical results, the sediments dredged within Alamitos Bay Entrance Channel were deemed physically and chemically suitable for beach nourishment on East Beach during the last 5-year permit period (RWQCB, 1994). A physical compatibility analysis was conducted per U.S. Army Corps of Engineers criteria to demonstrate the material's suitability for beach nourishment. However, the proposed criteria to evaluate the physical compatibility of the dredge material for beach nourishment will be the criteria typically stipulated by the RWQCB in their Waste Discharge Requirements (i.e., 91% or greater of the material is retained by the Standard U.S. Sieve Size No. 200).

1.1 Historical Synopsis

During the past five years, maintenance dredging activities have been primarily focused on Alamitos Bay (i.e., Entrance Channel, and the entrance of Basin 1). Quantities of dredged material have been reported on a yearly basis after the conclusion of each dredging season, and have ranged from 10,000 cubic yards (cy) to 60,000 cy. Historically, the material dredged from East Beach has been placed on the seaward shoreline of Alamitos Peninsula (also referred to as East Beach). During the 1980's the discharge line was placed along the north side of the Peninsula and across Ocean Boulevard, and discharged into an upland beach disposal facility on the beach, above mean high tide. The material was mechanically conditioned and spread for upland nourishment.

Although not common, the West Beach Area (also commonly known as Queensway Bay area) has been historically dredged to mitigate shoaling which occurs near the entrance of the former launch facility of Golden Shore Launch Ramp (recently converted into a mitigation site named Golden Shore Marine Reserve), and near the entrance channel of the Catalina Cruises Basin. This dredged material was placed in a nearshore disposal facility located near the stern of the Queen Mary (Disposal Site "D"). This disposal alternative has been discontinued since the last permit renewal in 1994. If the sediments to be dredged are not suitable for beach nourishment, they may be disposed at an open ocean disposal site such as LA-2 (as approved by

USEPA/USACE). The City has not historically used this open ocean disposal site. However, all alternative disposal areas for dredged materials from the West Beach Area will require the coordination and approval of the USACE, USEPA and other regulatory agencies.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The sampling and analyses of sediments dredged during operations within the City's maintenance program will be performed on an as-needed basis. The sites and quantities presented in Figures 1 and 2 have been selected and identified, respectively, from historical dredging requirements and current navigational/berthing demands. The majority of the dredging activities are expected to be in the East Beach area, with some minor dredging requirements outside the Federal channel in West Beach to supplement USACE navigational maintenance dredging activities.

Most of the sites, which are within close proximity and of similar sediment characteristics, will be sampled collectively prior to mobilization of dredging equipment to the site. The chemical and physical analytical results, together with pre-dredging bathymetric and eelgrass survey data will be collected and reported to the pertinent agencies prior to initiating dredging activities. The number of samples, sampling stations, sampling methods and equipment, sample preservation methods, chemical and physical analyses, and documentation and reporting requirements are included in this SAP.

The City of Long Beach Department of Parks, Recreation and Marine is responsible for managing the Maintenance Dredging Program. The City owns an 8-inch hydraulic dredge (1,425 hp) specifically designed and commissioned in 1993 to satisfy the operation requirements of the Program. The City has a dedicated Program staff, who are briefed and instructed about dredging operations and sampling objectives, and has contracted the scientific and engineering support services to Tetra Tech, Inc.

3.0 SCOPE AND OBJECTIVES

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The purpose of this SAP is to present the proposed chemical and physical sampling and analysis approach necessary to objectively evaluate the suitability of dredge material for disposal above the mean high tide line in areas designated as upland beach disposal facilities, and to evaluate its suitability for local beach nourishment. This plan was developed based on historical information, sediment characteristics, geophysical configuration, depth of cut, sampling and dredging limitations, and known or suspected contaminant concentrations.

4.0 FIELD ACTIVITIES

4.1 RATIONALE

The sampling stations have been selected within the each dredging area, or in areas that best represent the surrounding dredging sites. These areas are shown in Figures 1 and 2. Typically two samples are analyzed at each dredging site (two samples per 10,000 cy and one sample for every additional 10,000 cy), however, due to the high cost of the physical and chemical analyses relative to the volume of dredge material at each site, the City plans to limit the number of samples analyzed at sites in which dredging volumes are relatively small, or sites which are known to have similar sediment, hydrodynamic and biologic characteristics. If sediment characteristics appear to be visually heterogeneous within each group of dredging sites, samples will be collected and analyzed separately to insure a discrete aliquot representation of the sediments at a given site. Sampling depths will be limited to sub-surface sediments (i.e. top 2 feet of sediments), however, the City will follow regulatory requirements and guidance should deeper samples are required.

Additional sediment samples will be obtained at -8 feet mean lower low water (mlw), at +3 feet mlw, and at +7 feet mlw at East Beach to establish baseline physical characteristics of the receiving or nourished beach. This physical characterization will be utilized in the analysis and suitability evaluation of the dredge material for beach nourishment.

4.1.1 WEST BEACH

Five potential dredging sites have been identified in the West Beach area, also referred to as Queensway Bay (see Figure 1 and Table 1.) Due to the highly dynamic characteristics of these sites, sampling and analyses will be conducted immediately prior to any dredging activity. This will insure that the material sampled is representative of the material to be dredged.

TABLE 1. SEDIMENT SAMPLING SCHEDULE

DREDGING AREA	Estimated Quantity (cubic yards)	Sampling Station Designation	Minimum Number of Samples	Minimum Number Analyzed
WEST BEACH / QUEENSWAY BAY				
1. Entrance to Golden Shore Marine Reserve	2,000	QB-1	2	1
2. Los Angeles River Access Channel to Queensway Landing	8,000	QB-2	2	1
3. Queensway Bay	10,000	QB-3	2	1
4. Queensway Landing, Catalina Cruises	5,000	QB-4	2	1
5. Downtown Shoreline Marina	10,000	QB-5	2	1
EAST BEACH / ALAMITOS BAY				
6. Cerritos Channel				
a. Spinnaker Cove	4,000	CC-1	2	1
b. Basins 6 & 8	10,000	CC-2	2	1
7. Alamitos Bay				
a. Basin 1	4,000	BN-1/BN-2	4	2
b. Basin 2	3,000	BN-3/BN-4	4	2
c. Long Beach Marina Shipyard	2,000	LBS-1	2	1
d. Bayshore	10,000	UB-1/UB-2	2	1
e. Sorrento Drive	7,500	UB-1/UB-2	2	1
f. The Toledo	10,000	AB-1	2	1
g. Basin 7	10,000	AB-1	2	1
h. Bayshore Walk	3,000	AB-2	2	1
i. Basin 5	10,000	AB-3	2	1
8. Naples Canal	3,000	AB-1/AB-2	4	2
9. Rivo Alto	8,000	AB-1/AB-2	4	2
10 Alamitos Bay Entrance Channel	10,000	EC-1/EC-2	4	2

A minimum of two samples will be collected at each site for the first 10,000 cy and, if needed, one sample will be collected for every additional 10,000 cy of dredged material. Only one grab sample per site will be analyzed for the constituents specified in sub-Section 4.2.3 - Physical

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and Chemical Sediment Characterization. The additional sample collected will be archived for verification analysis if required, and will be held by the laboratory for the recommended period of time. Hence, based on the estimated dredging quantities, a total of 5 samples will be analyzed at the West Beach dredging sites. However, initially the City intends to sample only three of the sampling stations as the remaining two may not require dredging within the next five years. Should the excluded sites require dredging, sampling and analysis will be conducted and the results will be forwarded to the appropriate agencies. In addition, if the dredge material is suitable for beach nourishment or a nearby upland confined disposal facility is the selected disposal alternative, the receiving sites will also be sampled and analyzed to demonstrate the physical compatibility of the sediments. If the material is not suitable for local disposal, additional analyses may be required for ocean disposal (i.e., LA-2) as required (USEPA, 1990).

Based on recent sampling results conducted by the U.S. Army Corps of Engineers in the Queensway Bay area, two discrete samples will be obtained and one sample analyzed from Stations QB-1, QB-2, and QB-3 respectively (USEPA, 1999). The second sample from each location will be either archived or sent to the USACE laboratory as a Quality Assurance sample on the selected laboratory. If dredging is required in any of these sites, the City will coordinate with the USACE, USEPA and the Los Angeles Region Contaminated Sediment Task Force (CSTF) Interim Advisory Committee to address the disposal alternatives for these materials.

The sites of Catalina Cruises Terminal (Station QB-4) and Downtown Marina (Station QB-5), will also be sampled and analyzed on an as-needed basis. If dredging is required at these sites, two samples will be collected at each station. One sample from each station will be analyzed and the remaining two samples will be archived.

4.1.2 EAST BEACH

In the area of East Beach (also referred to as Alamitos Bay), seven main dredging areas have been identified (See Figure 2 and Table 1.) Each dredging area has been divided into more specific dredging locations, according to the known characteristics and history of the area. The

Southern California Edison generating station (on Studebaker Road) intakes enough cooling water from Alamitos Bay to empty the bay twice in one day, and sometimes three times during a summer day (Personal Communication 1). This exchange in bay water, together with the natural tidal prism, provide good flushing and water quality characteristics throughout the bay, and typically causes the suspended sediments to be uniformly settled (both horizontally and vertically).

Since the original dredging of Alamitos Bay channels and basins in 1956, the City has conducted maintenance dredging on a yearly basis. These regular dredging activities support the opinion that the sediments on the bay are horizontally uniform. Finally, since the average dredging cut depth does not exceed 3 feet, this material is expected to be vertically uniform. For these reasons, the City proposes to limit the number of samples to be collected and analyzed at each specific dredging site. These grab samples will be analyzed for the constituents specified in sub-Section 4.2.3 - Physical and Chemical Sediment Characterization.

The City proposes to collect at least two samples from each of the 14 sampling stations indicated in Figure 2. Cerritos Channel, area 6, will be represented by two sampling stations. This area was recently developed and maintenance dredging has been discontinuous over the past decade. At least two samples will be collected at each sampling station (CC-1 and CC-2) and one from each station will be analyzed. The remaining samples will be archived separately. In Alamitos Bay Marina, Basin 1 and Basin 2, four samples will be collected from two stations in each basin. Samples BN-1 and BN-2 will be collected from Basin 1 and Samples BN-3 and BN-4 will be collected from Basin 2. One sample representing each basin will be analyzed and the remaining four samples will be archived.

Site 7c, the Long Beach Marina Shipyard, was last dredged over 15 years ago, hence it will be sampled separately. Two samples will be collected at this site, one of which will be analyzed (LBS-1). In areas 7a and 7b, in upper Alamitos Bay, two sampling stations have been designated (UB-1 and UB-2) to represent the area. Two samples will be collected from each station and one will be analyzed. The remaining two samples will be archived.

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The southwest portion of Alamitos Bay will be represented by three sampling stations denoted AB-1, AB-2, and AB-3. Two samples will be collected at each station, and one sample will be analyzed. The second sample from each sampling station will be archived. Finally, the Entrance Channel will be sampled at two stations (EC-1 and EC-2). One of the two samples collected at each station will be analyzed and the remaining two samples will be archived. Should the dredging volume exceed the estimated quantities for any dredging site, additional sampling and analyses will be performed. Table 1 summarizes number of samples based on the estimated dredging quantities, sampling stations and number of samples.

Whenever dredge material is intended to be used for beach nourishment, a minimum of two samples will be collected and analyzed for grain size distribution and beach nourishment compatibility criteria. The material in the receiving site will be compared to the dredge material to demonstrate physical compatibility, per RWQCB compatibility criteria. If the dredge material is found to be physically incompatible with the receiving site, the dredge material will be disposed at the upland beach disposal facilities shown in Figures 1 and 2.

No offsite upland disposal facility will be proposed for these dredging activities.

4.2 PROCEDURES

4.2.1 SAMPLING METHODS, EQUIPMENT AND PRESERVATION

The sample collection will be performed by experienced scientific divers and engineers, supported by a non-contaminating sampling apparatus capable of obtaining relatively undisturbed and representative sediment samples.

Typically, grab samples are adequate when the dredging cut depth is shallow (i.e., 3 feet) and the sediments are known to be vertically uniform. Cross-contamination of sediment samples during collection and handling will be avoided. Stainless steel sample sleeves will be used to collect the grab samples from 18 to 24 inches below the sediment surface. Once shipboard,

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samples will be immediately transferred into 1-liter amber jars. In order to prevent potential contamination of trace metals the collection sleeves will be used only once.

The sampling sleeves are 6 inches in length, and the sample will be obtained from the center foot of the 3-foot sampler. Sand catchers will be placed at the end of the sampler to retain the sampled sediments. The sampler will be brought to the surface and each sample will be immediately capped (PTFE-lined) and labeled. The labels will be waterproof, and will identify the sample number, sampling location (coordinates based on differential Global Positioning System), sediment sampling depth, water depth at each sampling site (adjusted to mean lower low water), tidal cycle, time and date of sampling, chemical and physical analyses, and the name of the person obtaining the sample. The samples will then be secured in a chilled container and delivered directly to the analytical laboratory within 24 hours. A map will be prepared indicating the locations, with State plane coordinates, at which the samples were obtained. The map will be incorporated into the field log, which also documents the sampling information (sample numbers, location, time, date, etc.), and other relevant field observations such as environmental and weather conditions, equipment, and any deviation from the SAP. Collection and preservation of sediment samples will be in accordance with the recommended procedures specified in EPA SW-846.

4.2.2 PHYSICAL AND CHEMICAL SEDIMENT CHARACTERIZATION

The collected samples will be physically and chemically characterized per EPA standards and Regional Water Quality Control Board requirements. The physical characterization will consist of grain size distribution. The chemical characterization will be comprised of metals, petroleum compounds, semi-volatile organic compounds, PCB's, Phenols, Polynuclear Aromatic Hydrocarbons, Phthalates, Organotin Compounds, and Hexachlorocyclohexane. These chemical analyses will be performed to satisfy the detection limits specified in Table 2, and will be reported in milligrams per kilogram (parts per million). The laboratory results will be analyzed, interpreted, and forwarded to the pertinent regulatory agencies prior to the commencement of dredging activities.

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The analytical results will indicate the suitability of the dredge material for beach nourishment, confined disposal facilities, or other upland disposal alternatives (i.e., approved landfill). The recommended action will be transmitted to the regulatory agencies for comments and approval.

TABLE 2. CHEMICAL ANALYSES DETECTION LIMITS

**PHYSICAL CHARACTERIZATION
ANALYSES**

ANALYSES	DETECTION LIMITS	METHODS
1) Grain Size Analysis	(0.1% phi and mm)	ASTM 422, ASTM 1140

SEDIMENT CHEMISTRY TESTING

1) METALS (EPA PP-13)		EPA 6010/7000 SERIES
a) Arsenic	(0.1 mg/kg)	
b) Cadmium	(0.1 mg/kg)	
c) Chromium	(0.1 mg/kg)	
d) Copper	(0.1 mg/kg)	
e) Lead	(0.1 mg/kg)	
f) Mercury	(0.02 mg/kg)	
g) Nickel	(0.1 mg/kg)	
h) Selenium	(0.1 mg/kg) (California Only)	
i) Silver	(0.1 mg/kg)	
j) Zinc	(2.0 mg/kg)	
2) GENERAL CHEMISTRY AND MISCELLANEOUS		
a) Total Sulfides	(0.1 mg/kg)	EPA 376.2
b) Total Organic Carbon	(0.1%)	EPA 415.1
3) PETROLEUM COMPOUNDS		
a) Oil and Grease	[20.0 µg/kg (wet weight)]	EPA 413.2
b) Total Recoverable Petroleum Hydrocarbons	(20.0 µg/kg)	EPA 418.1
3) SEMI-VOLATILE ORGANICS		
a) PESTICIDES		EPA 8080
Aldrin	(0.5-2.0 µg/kg)	
Chlordane and Deriv.	(5.0-25.0 µg/kg)	
Dieldrin	(0.5-2.0 µg/kg)	
DDT and Derivatives	(0.5-2.0 µg/kg)	
Endrin and Derivatives	(0.5-2.0 µg/kg)	
Endosulfan I	(2.0-10.0 µg/kg)	
Endosulfan II	(0.5-2.0 µg/kg)	
Endosulfan Sulfate	(10.0-25.0 µg/kg)	
Toxaphene	(30.0 µg/kg)	

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SEDIMENT CHEMISTRY TESTING (Cont.)

ANALYSES	DETECTION LIMITS	METHODS
b) POLYCHLORINATED BIPHENYLS		EPA 8080
Total PCBs	(20.0 µg/kg)	
Individual Aroclors		
1242, 1254, 1260	(20.0 µg/kg)	
c) PHENOLS	(20.0-100.0 µg/kg)	EPA 8270
d) POLYNUCLEAR AROMATIC HYDROCARBONS		EPA 8270
For each PAH	(20.0 µg/kg)	
Acenaphthene		
Acenaphthylene		
Anthracene		
Benzo(a)anthracene		
Benzo(a,e)pyrene		
Benzo(g,h,f)perylene		
Benzo(k)fluoranthene		
Benzo(b)fluoranthene		
Chrysene		
Dibenzo(a,h)anthracene		
Fluoranthene		
Fluorene		
Indeno(1,2,3,-c,d)pyrene		
Naphthalene		
Phenanthrene		
Pyrene		
e) PHTHALATES	(10.0 µg/kg)	EPA 8270
f) ORGANOTIN COMPOUNDS:		PENTYL DERIVATIZATION
Mono-, Di-,		
and Tributyltin	(1.0 µg/kg)	reported individually
g) HEXACHLOROCYCLOHEXANE	(HCH)	EPA 8080
AND DERIVATIVES	(0.5-2.0 µg/kg)	

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