DRAFT

ENVIRONMENTAL ASSESSMENT

FOR THE

SAN FRANCISCO BAY AREA SEAPORT PLAN

A REPORT TO THE

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

AND THE

METROPOLITAN TRANSPORTATION COMMISSION

FEBRUARY 16, 1996

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
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February 16, 1996

Prepared by the

Seaport Planning Advisory Committee

and by

The Staff of the
San Francisco Bay Conservation and Development Commission
and the
Metropolitan Transportation Commission

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Part I
Summary

Seaport Plan Description. The *San Francisco Bay Area Seaport Plan* (Seaport Plan) constitutes the maritime element of the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan, and is incorporated into the San Francisco Bay Conservation and Development Commission's (BCDC) *San Francisco Bay Plan* (Bay Plan). The Seaport Plan consists of findings, policies, and port priority use designations that: (1) guide BCDC in its regulatory decisions pursuant to its law, the McAteer-Petris Act (California Government Code Section 66600-66) and the federal Coastal Zone Management Act of 1972, as amended; and (2) guide MTC in its funding of ground transportation improvements.

Seaport Plan Changes. Seaport Plan policies provide that the plan forecasts and marine terminal capacities shall be reviewed and the plan possibly revised under one or more of the following conditions: (1) five years have elapsed since the last review; (2) three consecutive years of waterborne cargo statistics indicate that the cargo forecasts do not correspond to current cargo flow trends; (3) all near-term marine terminal sites have been permitted and active non-container terminals have been converted to container use; (4) there is a proposal to delete a near-term or active site from the plan; or (5) a designated marine terminal site has been unused or little used for a significant period.

Pursuant to the Seaport Plan policies, the Seaport Plan has been reviewed and revisions have been recommended because (1) five years have past since the last major review in 1988; (2) there have been six separate requests to delete either near-term or active sites from the plan; and (3) some marine terminal sites designated in the plan have been unused since originally designated in the plan in 1982. Moreover, recent and pending closure of Bay Area military facilities—where port priority use designations apply at the time the bases are no longer needed by the military, thereby adding a significant amount of shoreline land to the inventory of potential Bay Area port facilities—triggers the review of the Seaport Plan by the BCDC/MTC-appointed Seaport Planning Advisory Committee.

A technical review of the Seaport Plan port priority use areas and marine terminals resulted in a number of proposed policy and port priority use designation changes. These proposed changes, and three alternatives to the proposed changes, are the subject of this Environmental Assessment.

Role of the Environmental Assessment. Under the California Environmental Quality Act (CEQA), a state agency such as BCDC, whose planning and regulatory process is certified by the Secretary of the California Resources Agency as functionally equivalent to the Environmental Impact Report (EIR) required by CEQA, may prepare an Environmental Assessment (EA) in place of an EIR, pursuant to the agency regulations approved by the Secretary. This Environmental Assessment is prepared in conformance with BCDC's regulations (California Code of Regulations, Title 14, Section 11511-11521), which have been certified by the Secretary as functionally equivalent to CEQA.

The substantial environmental impacts of the proposed changes to the Seaport Plan and alternates are summarized in the following tables.

Table 1 Comparison of Proposed Plan and Alternatives					
		Proposed Plan	Minimum Bay Fill	Centralized Container terminals	Baseline Cargo Forecast in 2020
Acres Reserved		2,789	2,919	3,558	
Acres of Bay Fill		240	104	265	
Number of Berths in 2020					
	Container	43	43	54	
	Break Bulk	10	13	8	
	Neo-Bulk	8.6	6.6	3.6	
	Dry Bulk	9.9	9.9	10	
	Liquid Bulk	10.6	10.6	9.6	
	Total	82	83	85	
Throughput Capacity in 2020 (in metric tonnes)					
	Container	30,856,500	31,584,500	34,800,500	32,567,000
	Break Bulk	1,109,200	1,619,200	859,200	1,146,000
	Neo-Bulk	2,481,800	1,909,800	1,795,800	2,217,000
	Dry Bulk	11,100,200	11,100,200	11,100,200	6,902,000
	Liquid Bulk	1,264,000	1,264,000	1,148,000	983,000

TABLE 2A
Summary of Substantial Environmental Impacts Related to Proposed Seaport Plan Designation Changes

PORT SITES

SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Benicia Waterfront west of wharf	Long-term two-berth container terminal development	Remove terminal designation; retain port designation	+ Eliminate 57 acres of Bay fill that would otherwise be required for container terminal development. + Reduction in demand for new dredging to accommodate deeper draft container ships. + Reduction in need for and costs of improvements to road and rail access. + Reduction in traffic and associated air quality impacts related to container terminal operations.	None
Encinal Terminals Terminal 5	Active, 2-berth terminal suitable for near-term container development	Remove port and terminal designations	+ Removal of port priority use designation releases area for alternative development.	• Impacts and required mitigation related to future alternative development at site will be determined with specific project review.
Oakland Bay Bridge Site	Long-term two-berth marine terminal	2-berth future container terminal	- Would require an additional 55 acres of Bay fill compared with current Plan. - Greater surface runoff with paving of filled area.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as requird by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems.
Berths 8, 9, 10	Three active bulk berths	Convert to one or two future container berths	- Displacement of bulk cargo activities. - If wharf area extended from Berth 22 to Berth 9, would require 26 acres of Bay fill. - Greater surface runoff with paving of filled area. + Realignment of rail would create efficiency gains at Oakland Outer Harbor terminals.	• Seaport Plan should reserve sufficient land to accommodate displaced bulk cargo at appropriate sites. • Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems.

+ denotes beneficial impact; - denotes adverse impact

SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Ship Repair Area	Near-term terminal	Remove near-term and port priority use designations	+ Removal of designations releases area for alternative development, such as proposed waterfront park. + Possible increased public access to Bay.	• Impacts and required mitigation related to alternative development will be determined with project review.
Redwood City				
Former Ideal Cement site	1-berth, near-term, non-container marine terminal	Remove port designation from 106-acre area east of Seaport Blvd.	+ Removal of port priority use designation releases area for alternative development, such as R&D business park proposed for site east of Seaport Boulevard.	• Impacts and required mitigation related to alternative development will be determined with project review.
Richmond				
Terminals 5-6-7 (Shipyard and Graving Docks)	Two-berth near-term terminal	Three future container berths	- Would require 18 acres additional Bay fill compared with current Plan. - Greater surface runoff with paving of filled area. - Increased new dredging to accommodate larger ships.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems. • Carry out dredging and disposal in a manner and time of year that minimizes impacts on aquatic resources.
Terminal 2 NW	Near-term container terminal development	Combine Terminals 2 and 3 and areas north and south to create 80-acre four-berth combined container/neo-bulk terminal	- Would require 14 acres Bay fill to extend Terminal 3 South to create 80-acre terminal. - Greater surface runoff with paving of filled area. - Displacement of existing liquid cargo operations at Terminal 2.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems. • Seaport Plan should reserve sufficient land to accommodate displaced liquid bulk cargo at appropriate sites.
Terminal 2	Active liquid bulk terminal			
Terminal 3 South	One-berth near-term terminal suitable for container use			
Ancillary use zone	Port priority use	Remove from port priority use	+ Removal of port priority use designation releases area for alternative development.	• Impacts and required mitigation related to future development will be determined with specific project review.

+ denotes beneficial impact; - denotes adverse impact

SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigation
San Francisco				
Piers 52-64	Two-berth near-term terminal, suitable for container use	Remove port priority use designation from southern edge of Pier 50 to northern edge of Pier 68	+ Removal of port priority use designation releases area for alternative development. Mission Bay plan calls for mixed residential/commercial development. + Increased public access to Bay with proposed waterfront recreation area. + Elimination of substantial Bay fill that would otherwise be required for container terminal development. + Elimination of truck and rail traffic related to container terminal operation.	• Impacts and required mitigation related to alternative development will be determined with project review.
Area inland and between Piers 70-80	Two-berth near-term terminal, suitable for container use	Remove near-term and port priority use designations	+ Removal of port priority use designation releases area for alternative development. + Elimination of substantial Bay fill that would otherwise be required for container terminal development. + Elimination of truck and rail traffic related to container terminal operation.	• Impacts and required mitigation related to alternative development will be determined with project review.
Pier 70	Two-berth active terminal, can be converted to container use	Remove designation from all but 26 acres for two bulk berths	+ Removal of port priority use designation releases area for alternative development. + Elimination of substantial Bay fill that would otherwise be required for container terminal development. + Elimination of truck and rail traffic related to container terminal operation.	• Impacts and required mitigation related to alternative development will be determined with project review.
Pier 80	Active 4-berth container terminal, with 1 near-term site	Two-berth container terminal; remove near-term marine terminal designation	+ Elimination of additional dredging, surface paving, and impacts of marine terminal development.	
Pier 94-96	Active container terminal with 1-berth near-term development at 94 North	Remove port priority use designation from 26 acres	+ Removal of port priority use designation releases area for alternative development.	• Impacts and required mitigation related to alternative development will be determined with project review.
Pier 98	Port priority use	Remove designation	+ No longer needed for future LASH terminal; removal consistent with current open space use.	

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MILITARY BASE SITES

SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Army Terminal, Oakland	Military, to be developed for port and related uses if and when not needed by the Army	One future container berth at Army Terminal 7	- Approximately 17 acres of fill required to create adequate backland for intermodal terminal. - Greater surface runoff with paving of filled area. - Displacement of existing break bulk cargo operations.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems. • Seaport Plan should reserve sufficient land to accommodate displaced break bulk cargo at appropriate sites.
Fleet and Industrial Supply Center, Oakland (FISCO) (Formerly Naval Supply Center)	Military, to be developed for port and related industrial uses if and when not needed by the Navy	Five future container berths	- Development of berths and Joint Intermodal Terminal may require up to 30 acres of Bay fill. - Additional dredging likely required to -48 feet or more to accommodate next generation container ships. + Expanded use of near-dock rail transport of container cargo reduces truck traffic and associated air quality impacts.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Carry out dredging and disposal in a manner and time of year that minimizes impacts on aquatic resources.
Hunters Point Shipyard, San Francisco	Military, to be developed for port and related industrial uses if and when not needed by the Navy	Remove port priority use designation from approximately 450 acres; delete three near-term marine terminal sites. Retain 55 acres for two break bulk berths.	+ Removal of port priority use designation from majority of base releases area for alternative development. San Francisco Redevelopment Agency is planning mix of uses. - Some fill may be required for marginal wharves to accommodate terminal development. - Paving of terminal area will create greater surface runoff. + Removal of deteriorated finger piers.	• Impacts and required mitigation related to alternative development will be determined with review of reuse plan and individual projects. • Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems.

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SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Mare Island Naval Shipyard, Vallejo	Military, first consideration to be given to port and water-related industry when no longer needed by the Navy.	Remove port priority use designation from approximately 1,800 acres; delete four near-term marine terminal sites. Retain 500 acres of active dredge ponds for dredged material rehandling.	+ Removal of port priority use designation from majority of base releases areas for alternative development. Mare Island Reuse Plan includes mix of uses. + Significant reduction in dredging requirements. + Significant reduction in impacts on rail and roadways. - Potential conflict between continued use of dredge ponds and proposed wildlife refuge extension.	• Impacts and required mitigation related to alternative development will be determined with review of reuse plan and individual projects. • Impacts on wildlife from dredged material rehandling activity can be reduced with best management practices.
Naval Air Station, Alameda (NAS Alameda)	Military, to be developed for port and related uses if and when not needed by the Navy	Remove port priority use designation from approximately 1,480 acres; delete two near-term marine terminal sites. Retain 220 acres for future five-berth container terminal.	+ Removal of port priority use designation releases areas for alternative development. Alameda Reuse and Redevelopment Authority's draft reuse plan proposes mix of uses. - Potential release of contaminants during excavation for wharf construction. - Potential conflict between marine terminal development and least tern colony located in runway area. - Level of truck activity related to container terminal operations will exceed existing capacity of Webster and Posey Tubes.	• Impacts and required mitigation related to alternative development will be determined with review of reuse plan and individual projects. • Containment measures, such as excavation and sealing of new shoreline prior to excavation of current shoreline, should be employed. • Southern boundary of port priority use area lies more than one-third mile from least tern colony. Container crane activity at waterfront would occur at a distance of more than one-half mile from colony. Further study needed on how to reduce impacts of port activity on least tern colony. • Construction of alternate road access required or alternate means of transferring containers from Alameda to JIT at Oakland.
Naval Supply Center Annex, Alameda	Military, to be developed for port and related uses if and when not needed by the Navy	Remove port priority use designation; delete one near-term marine terminal site.	+ Removal of port priority use designation releases 150 acres for alternative development.	• Impacts and required mitigation related to alternative development will be determined with project review.

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NON-PORT SITES

SITE	Existing Designation	Proposed Change	Substantial Impacts of Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Alameda				
Alameda Gateway (Former Todd Shipyard)	Port priority use	Remove port priority use designation	+ Removal of port priority use designation releases 50 acres for alternative development.	• Impacts and required mitigation related to alternative development will be determined with specific project review.
Martinez				
Pacheco Creek sites	Port priority use	Remove port priority use designation	+ Removal of port priority use designation releases areas for alternative development. Continuation of water-related industrial land use would result in no change in impacts.	• Impacts and required mitigation related to alternative development will be determined with specific project review.
Vallejo				
Waterfront	Five-berth, near-term terminal suitable for container use	Remove port and terminal designations	+ Removal of port priority use designation releases area for alternative development. + Significant reduction in dredging requirements. + Significant reduction in truck traffic and associated air quality impacts and surface runoff.	• Impacts and required mitigation related to alternative development will be determined with specific project review.

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TABLE 2B
Summary of Substantial Environmental Impacts Related to Minimum Bay Fill Alternative as they Differ from Proposed Changes

PORT SITES

SITE	Existing Designation	Minimum Bay Fill	Substantial Impacts of Minimum Bay Fill Alternative Changes that Differ from Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
Oakland Bay Bridge Site	Long-term two-berth marine terminal	Remove port priority use designation	+ Eliminate 110 acres Bay fill. + Reduce surface runoff from paving of filled area. - Lose throughput of two container berths.	• Alternative site would need be designated or Plan will not accommodate container cargo forecast.
Berths 8, 9, 10	Three active bulk berths	Retain bulk berths	+ Eliminate potential 26 acres of fill in the Bay between Berths 22 and 9 and associated surface runoff. - Eliminate efficiency gains at Outer Harbor Terminals created by rail realignment. - Lose throughput capability of one container berth.	• Alternative site would need be designated or Plan will not accommodate container cargo forecast.
Richmond Terminal 2 NW Terminal 2 Terminal 3 South	Near-term container terminal development. Active liquid bulk terminal. One-berth near-term suitable for container use.	Combine Terminals 2 and 3 as in proposed change, and reinstate port priority use designation on 80 acres east of Harbour Way for 160-acre four-berth container terminal	- Conflicts with City of Richmond plan for Ford Peninsula. - Additional dredging to deepen and maintain channel and berths for larger ships. + Provides substantially more container throughput capability.	• Carry out dredging and disposal in a manner and time of year that minimizes impacts on aquatic resources.
Ford Building and area south Ancillary use zone	Removed from port priority use Port priority use	Reinstate port designation Retain port priority use designation	- Port designation conflicts with City plans that incorporate refurbished historic Ford Building and ancillary use zone. - Port designation conflicts with City plans that incorporate refurbished historic Ford Building and ancillary use zone.	

MILITARY BASE SITES

Naval Supply Center Annex, Alameda	Military, to be developed for port and related uses if and when not needed by the Navy	Retain designation on entire base for two container berths.	- Port designation conflicts with City plans for mixed commercial and residential uses throughout site.	

+ denotes beneficial impact; - denotes adverse impact

TABLE 2C
Summary of Substantial Environmental Impacts Related to Centralized Container Terminals Alternative as they Differ from Proposed Changes

PORT SITES

SITE	Existing Designation	Centralized Container Terminals	Substantial Impacts of Centralized Container Terminals Alternative Changes that Differ from Proposed Changes to Designation in Seaport Plan	Proposed ,Mitigations
Encinal Terminals				
Terminals 1-4	Active, 2-berth terminal	Remove port priority and near-term designations	- Displacement of existing bulk cargo activities. - Removal of port priority use designation releases area for alternative development. No current plans for alternative development.	• Alternative site would need be designated or Plan will not accommodate cargo forecast. • Impacts and required mitigation related to alternative use of site would be determined with project review.
Oakland				
Ship Repair Area	Near-term terminal	Retain port priority use designation. Remove near-term marine terminal designation.	- Provides no additional throughput capability. - No demonstrated need for port use. - Conflicts with City proposed park and public access use.	
Richmond				
Terminal 2 NW Terminal 2 Terminal 3 South	Near-term container terminal development. Active liquid bulk terminal. One-berth near-term suitable for container use.	Combine Terminals 2 and 3 as in proposed change, and reinstate port designation on 80 acres east of Harbour Way for 160-acre four-berth container terminal	- Conflicts with City of Richmond plan for Ford Peninsula. - Additional dredging to deepen and maintain channel and berths for larger ships. + Provides substantially more container throughput capability.	• Carry out dredging and disposal in a manner and time of year that minimizes impacts on aquatic resources.
Ford Building and area south	Removed from port priority use	Reinstate port designation	- Port designation conflicts with City plans that incorporate refurbished historic Ford Building and ancillary use zone.	
Ancillary use zone	Port priority use	Retain port designation	- Port designation conflicts with City plans that incorporate refurbished historic Ford Building and ancillary use zone.	

+ denotes beneficial impact; - denotes adverse impact

SITE	Existing Designation	Centralized Container Terminals	Substantial Impacts of Centralized Container Terminals Alternative Changes that Differ from Proposed Changes to Designation in Seaport Plan	Proposed Mitigations
San Francisco				
Area inland and between Piers 70-80	Two-berth active, can be converted to container use	One-berth container terminal	- Requires substantial Bay fill.	• Primary regulatory agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill.
MILITARY BASE SITES				
Concord Naval Weapons Station	Military, to be considered for port or water-related industrial use	Remove port priority use designation; delete three near-term terminal sites.	- Eliminates possible future non-container port use.	
Hunters Point Shipyard, San Francisco	Military, to be developed for port and related industrial uses if and when not needed by the Navy	Retain designation on entire base for 5 future container berths	- Port designation on entire site conflicts with Redevelopment Agency's proposed reuse plan for mixed residential, commercial, educational, and light industrial uses on majority of base. Historical area at northeast portion of former shipyard. - Some fill required for container terminal development. - Increased surface runoff from paving of terminal areas and trucking activity.	• Primary regulating agencies, BCDC and U.S. Army Corps of Engineers, would require equal amount of Bay restoration, depending on actual impacts of project fill. • Employ best management practices as required by EPA and RWQCB to reduce amount of pollutants entering the Bay from storm water drainage systems.
Naval Supply Center Annex, Alameda	Military, to be developed for port and related uses if and when not needed by the Navy	Retain designation on entire base for two container berths.	- Port designation conflicts with City plans for mixed commercial and residential uses throughout site. + Provide significant increase in capacity.	
NON-PORT SITES				
Alameda				
Alameda Gateway (Former Todd Shipyard)	Port priority use	Retain for one container berth	- Inadequate backland area. - Container terminal development precluded by construction of new Army Corps turning basin to be located directly adjacent to the site.	

+ denotes beneficial impact; - denotes adverse impact

Part II
Introduction

Purpose of San Francisco Bay Area Seaport Plan. The *San Francisco Bay Area Seaport Plan* constitutes the maritime element of the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (RTP), and also serves as the port development policies and land use designations of the San Francisco Bay Conservation and Development Commission's (BCDC) *San Francisco Bay Plan* (Bay Plan). The goals of the Seaport Plan are as follows:

- Ensure the continuation of the San Francisco Bay port system as a major world port and contributor to the economic vitality of the San Francisco Bay region;
- Maintain or improve the environmental quality of San Francisco Bay and its environs;
- Provide for the efficient use of finite physical and fiscal resources consumed in developing and operating marine terminals;
- Provide for integrated and improved surface transportation facilities between San Francisco Bay ports and terminals and other regional transportation systems; and
- Reserve sufficient shoreline areas to accommodate future growth in maritime cargo, thereby minimizing the need for new Bay fill for port development.

The Seaport Plan designates certain lands, referred to as *port priority use areas*,[1] around San Francisco Bay for port facilities and compatible uses. Within port priority use areas, *marine terminals*[2] are identified and reserved specifically for marine terminal uses. The number of marine terminal berths and amount of land needed for marine terminal use are based on a forecast of the Bay Area waterborne cargo volume in the year 2020,[3] and the capability of existing marine terminals to handle the projected cargo. Local governments assist in implementation of the Seaport Plan by protecting the port priority use areas from incompatible development and encroachment by non–maritime related activities through planning and zoning restrictions.

Purpose of Environmental Assessment. Because BCDC will be adopting the Seaport Plan changes as an amendment of its Bay Plan, the plan changes must meet the requirements of BCDC's law, the McAteer–Petris Act, and the Commission's standards for environmental review through an Environmental Assessment, or EA. An EA is the functional equivalent of the Environmental Impact Report (EIR) required by the California Environmental Quality Act (CEQA). BCDC's regulations specify the scope of the environmental impact analysis that must accompany any amendment of the Seaport Plan and Bay Plan.[4] In addition to discussing substantial[5] environmental impacts and mitigation measures, the EA must describe alternatives to the proposed

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[1] *Port priority use areas* include within their premises marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers, employee parking, and marine services.

[2] *Marine terminals* are any public, private, proprietary or military waterfront facility utilized for the receipt or shipment of waterborne cargo. Marine terminals serving an industrial function where the product transferred over the wharf is processed (e.g., crude oil to be refined) are not included in the Seaport Plan. For purposes of the Plan, a marine terminal includes the wharf, storage area, offices, rail and truck facilities, container freight stations, intermodal container transfer facilities, areas for maintenance of containers or container handling equipment, and other functions necessary to the efficient operation of a terminal; it does not include employee parking.

[3] *San Francisco Bay Area Cargo Forecast to 2020 and the Future Demand for Marine Cargo Terminals.* Manalytics, Inc., October 5, 1988.

[4] California Code of Regulations, Title 14, Sections 11510-11521. The Seaport Plan is incorporated into the Bay Plan, thus for any BCDC action on changes to the Seaport Plan it must follow the same procedures established in the McAteer-Petris Act and its regulations as with a Bay Plan amendment.

[5] Substantial is the term used in BCDC's Environmental Assessment regulations for environmental impacts that are significant.

action that would attain most of the objectives of the project and avoid or substantially lessen one or more substantial effects.

The EA assesses potential substantial impacts to the environment that could result from the proposed changes to the Seaport Plan. Two alternatives to the proposed changes are analyzed in the EA: (1) a plan that minimizes the total amount of fill in the Bay that could result from future port development; and (2) an alternative that would centralize and concentrate Bay Area container terminal development in the central part of San Francisco Bay. In addition, this EA analyzes the effects of a "no change" alternative to the existing Seaport Plan. Because changes to the Seaport Plan represent policy changes to a regional plan, the Environmental Assessment addresses the potential impacts caused by the proposed changes to land use policies and designations rather than specific port development projects. Project-specific environmental analyses will be required for subsequent marine terminal and other port development projects that may occur in a port priority use area or possible non-maritime development in an area removed from port priority use.

How the EA Supplements Previous Seaport Plan EIRs. The Environmental Impact Report (EIR) prepared for the 1982 Seaport Plan[6] summarized the findings of a series of background studies and a final technical report that analyzed existing and potential port sites around the Bay. Sites were evaluated for their suitability for port use and impacts to the environment that would result from their operation and future development as marine terminals. A supplemental EIR was certified in 1991[7], assessing regional impacts that would result from changes made to the 1982 Seaport Plan during the 1988 update. These documents provide extensive background information and analysis related to environmental impacts of the current Seaport Plan findings, policies, priority use and marine terminal designations, and are hereby incorporated by reference.

With the current update of the Seaport Plan, further changes are proposed to existing port findings, policies, and priority use and marine terminal designations. This EA considers effects related to the proposed changes, and to three alternatives to the proposed changes to Seaport Plan policies and designations, and therefore should be considered as a supplement to the earlier environmental documents.

The Proposed Recommended Changes to the Seaport Plan. The current revision to the Seaport Plan differs from the 1982 and the 1988 versions of the plan in a number of ways. First, the revised plan is more comprehensive in that it identifies the region's needs for maritime cargo facilities while taking explicit account of military base closures, economic factors determining marine terminal development, and intermodal transportation trends. Second, the plan is more specific than previous versions because it identifies the types of cargo to be handled at future marine terminals. Third, the plan emphasizes that improvements to the efficiency of existing marine terminals will allow those terminals to absorb much of the future growth in maritime cargo, thereby reducing the number of new terminals (and associated Bay fill) that must be built to accommodate cargo growth. And last, the emphasis on improving the efficiency of existing terminals dictates the release of many acres from port priority use designation, allowing them to be developed for other uses.

Alternatives to Proposed Plan. Reasonable alternatives to the recommended Seaport Plan changes designated by the Seaport Planning Advisory Committee are: (1) a minimum Bay fill alternative; (2) an alternative that clusters container development at the central Bay Ports of Oakland, Richmond, and San Francisco; and (3) a no change alternative.

- **Minimum Bay Fill Alternative.** The minimum Bay fill alternative to the proposed plan seeks to accommodate the expected growth in waterborne cargo volumes in the Bay Area by designating port priority and marine terminal sites in locations requiring the least amount of potential Bay fill

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[6] *Final Environmental Impact Report for the San Francisco Bay Area Seaport Plan and the Seaport Plan Amendments to the Regional Transportation Plan.* ABAG and MTC. October 1982.

[7] *Final Supplemental Environmental Impact Report regarding the 1988 revisions to the San Francisco Bay Area Regional Seaport Plan.* Prepared by Gruen Associates for Metropolitan Transportation Commission. June 1991.

that is feasible for construction of terminal facilities. The Bay Plan, of which the Seaport Plan is an element, allows fill in the Bay for ports and other water-related uses, provided that the fill is the minimum necessary for terminal development. This alternative attempts to minimize fill to meet the future growth of maritime cargo, and therefore retains more land in port priority use than the proposed plan.

- **Centralized Container Terminals Alternative.** The centralized container terminals alternative retains land in port priority use that would be deleted at the Ports of Richmond and San Francisco and at Hunters Point under the proposed plan. This alternative would direct container terminal development to those areas already developed for container operations and to those areas that could serve as large container terminals. Changes to Seaport Plan designations under this alternative emphasize future container terminal development in existing port areas.

- **No Change Alternative.** The no change alternative reflects the policies and port priority use and marine terminals designations as they appear in the 1988 Seaport Plan.

Background on Seaport Plan Changes

Major Issues Affecting Update of Seaport Plan. Generally, additional waterborne cargo can be accommodated at existing marine terminals operating at or near current capacity by either of two means: (1) construct new marine terminals—generally requiring at least some Bay fill—or (2) increase the capability of existing marine terminals with investments in capital or labor. The focus during this revision of the Seaport Plan was to identify improvements in the efficiency of marine terminal berths and determine how such improvements would affect the need for future terminal development. In addition, the closing of several military bases designated for port use required an assessment of the opportunities and constraints at these sites for possible civilian seaport use. Consequently, the review of the Seaport Plan focused on how to provide sufficient marine terminal capacity to meet projected cargo growth in 2020, and the opportunities for future marine terminals presented by the closure of Bay Area naval bases.

Bulk Cargo. Although the cargo forecast and the analysis of the need for maritime facilities prepared for the Seaport Plan update indicate that the Bay Area will need some additional sites for bulk operations by the year 2020, bulk cargo shipping appears to be undergoing a transition. The Ports of San Francisco, Richmond, and Encinal Terminals reported fewer ship calls per year from 1988 to 1993, and have vacant or underused bulk marine terminals. The Port of Oakland also reports fewer break bulk ship calls. At the same time, the total volume of cargo being processed through Bay Area ports has risen, which suggests that either bulk cargoes are now more frequently shipped in containers, that larger ships are being used, or that the cargo forecast overestimated the volume of bulk cargoes. The proposed plan prohibits further deletion of port priority use areas until a cargo monitoring process has been implemented by the Seaport Planning Advisory Committee. Ongoing data collection related to ship calls, tonnage, and berth usage will serve as a mechanism for tracking the region's maritime cargo volumes, and thus provide the information needed to update the Seaport Plan on an as-needed basis.

Container Shipping. Recent trends in the container shipping industry, including consolidation of terminals at or near modern intermodal facilities and increasing capital costs of terminal development, suggest that sites isolated from existing ports or container terminals and intermodal facilities are not practical or attractive for future container development. In reviewing the port priority use areas and marine terminal designations, industry trends and requirements for different types of cargo served as constraints in determining which sites are suitable or necessary for development. Such trends include:

- The increasing size of container vessels (the newest generation of container ships is up to 1,300 feet in length and 150 feet wide, with drafts of 45 to 48 feet);
- The need for deeper channels and berths to accommodate these larger ships;
- The need for larger terminal storage areas to accommodate greater amounts of cargo arriving on larger ships;
- The increasing use of containers for break bulk, bulk, and liquid cargoes—even automobiles are now shipped in containers;
- The different economic conditions and planned developments at each Bay Area port;
- The shipping companies' trend toward consolidation of terminals and the high cost of container terminal development;
- The increasing importance of intermodal transportation of goods, and;
- The importance of access to at least one, preferably two or three, rail lines for competitive pricing.

The above trends suggest that many sites designated for container terminal development in the Seaport Plan are unsuitable for that use. The changes proposed to the Seaport Plan remove these

areas from the plan. As a result, fewer sites are designated for container terminal development and the Bay Area's capacity for handling container cargo falls short of the cargo volume projected for the year 2020. The Bay Area, therefore, may be limited in its ability to handle growth in container/intermodal cargoes.

Cargo Forecast. An evaluation of the 1988 cargo projections reveals that the cargo flow through Bay Area ports in 1990 closely mirrored the forecasts.[8] In January 1994, BCDC and MTC sponsored a Roundtable Discussion on the dynamics and future of the container cargo industry in the Bay Area. Representatives of several container shipping lines and the Southern Pacific Railroad Company agreed that although optimistic, the forecast was reasonably accurate, and reliable for future port planning purposes. Thus, because the cargo trends have corresponded to the forecast, and because there have been no significant changes in the underlying assumptions on which the cargo forecast is based, the Seaport Planning Advisory Committee determined that the forecasts should continue to serve as the basis for determining the need for future marine terminals in the Bay Area.

Changes to Port Capability Methodology

Purpose of Throughput Capability Analysis. The need for additional port facilities is determined by estimating the potential cargo handling capability of existing ports and deducting that total cargo volume from the estimated future waterborne cargo volumes. The remaining volume of cargo represents an incremental demand for port facilities in the Bay Area. That outstanding demand will vary inversely with the estimate of the cargo handling capability of existing facilities.

Determining a marine terminal's capability requires measuring the maximum amount of cargo that can be processed at the six transfer points, or bottlenecks, where cargo is moved from one area of the terminal to another and where terminal operations can become congested. Constraint points were modeled at each terminal in the Bay Area to determine the maximum amount of cargo that could be processed. Because a terminal's cargo throughput is only as high as the maximum amount that can be processed at the most constrained point, the potential throughput at that point reveals the maximum capability of the terminal. This update to the plan revised the method for estimating the maximum cargo throughput capability of existing terminals, with a resulting decrease in the number of new marine terminals that will be needed to meet the forecast growth in waterborne cargo.

Reasons for Modifying Previous Capability Model. To calculate the need for new berths needed by 2020, the throughput methodology used in 1988 was applied, with some modifications, to the baseline cargo forecast from 1988. The factors used to estimate a berth's cargo handling capability were modified to reflect the maximum amount of cargo that could move through a terminal, making assumptions about improvements to facilities and equipment. This approach results in a higher per berth throughput capability based on optimal operating procedures and equipment that could be employed by the year 2020.

The approach used in this update to calculate throughput capability blends theoretical and real capability, which represents a key difference from the approach used in 1988. While this method holds constant normal operating procedures and management practices, such as labor shifts, other variables that can change over time are increased to represent a theoretical cargo handling potential. Factors such as ship calls per year, unload/loading rates, and throughput density of storage were increased above historical levels to represent the productivity that could be achieved at a berth.

Once each port's theoretical throughput capability for each cargo type was known, a spreadsheet program was developed to calculate the total cargo volume that could be handled at each port, given various numbers of berths. Using this spreadsheet, future berths were added or

[8]Letter from John Glover, Port of Oakland to Marc Roddin, MTC, September 30, 1991. In addition, cargo growth rates mirror those compiled for Bay Area ports by the Pacific Maritime Association for 1984-1993.

subtracted from the various ports and military bases until the total Bay Area cargo throughput capability approximated that projected in the forecast for the year 2020.

Changes That Result From New Methodology. According to the revised approach, fewer new port facilities will be needed to meet the forecast growth in waterborne cargo, thereby allowing removal of port priority use and marine terminal designations from a number of sites. The revised method estimates that a higher throughput capability for handling cargo will occur at existing ports, which means the Bay Area ports can absorb significant increases in waterborne cargo without building new port facilities. The estimated need for additional marine terminals is driven by assumptions about marine terminal capability.

The 1988 plan used a method that adjusted certain operating assumptions to more closely reflect the realities of Bay Area port operations. This approach resulted in a higher projection for new container terminals: by 2020 the Bay Area would need 68 container berths, compared with the 24 then in existence. To provide for adequate shoreline areas and backlands, the Seaport Plan reserved large tracts of land throughout the Bay, including several military bases. Comparison of tonnage statistics and historical ship call data reveals that the expected growth in cargo between 1988 and 1995 seems to have occurred; the attendant need for new container facilities, however, has not materialized. Only one new container berth has been built since the last update of the Seaport Plan (Berth 30 at the Port of Oakland), bringing the number of existing container berths to 25. In contrast, the Seaport Plan predicted that 30 new container berths would be needed by 1995.

This would indicate that more cargo is being processed through existing container terminals than was formerly thought possible, and that the 1988 capability analysis underestimated the capacity of existing terminals. By modifying the throughput capability analysis to more closely reflect potential capacity, the proposed plan emphasizes the importance of improving throughput capability at existing ports in order to maximize cargo flow through the Bay Area, minimize Bay fill, and minimize port development costs. With a lower projection of the number of new terminals needed to meet future growth in cargo, less shoreline acreage must be reserved for port use and development, and areas currently reserved for port use can be released from port priority use designation. In addition, a number of locations designated in the 1988 Seaport Plan were found to be no longer suitable for container terminal development, and are proposed to be deleted. If there were no recognition of the increased efficiency of modern container terminals, or of the trend toward large container vessels and terminals, most of the shoreline areas reserved for port development would likely continue to be required to meet the future cargo growth.

Marine Terminal Capability By Cargo Type. The current update departs from the 1988 Seaport Plan by specifying the types of cargoes that would be handled at each berth and terminal. Using the recommended number of terminals of each cargo type, berth capabilities, and the cargo forecast as guidelines, the number of berths needed to meet the projected cargo volumes was calculated. Bay Area average berth capabilities were assumed for Hunters Point and non-port sites. Future container berths at Naval Air Station (NAS) Alameda and Fleet and Industrial Supply Center of Oakland (FISCO) (formerly NSC Oakland) were assumed to have the same capability as container berths at the Port of Oakland because it is expected they will be developed with modern intermodal facilities, near dock rail access, and at least 50 acres of storage area per berth.

Table 3 Expected Throughput Capability Per Port Per Berth
(in thousands of metric tonnes)

Port Name	Container	Break Bulk	Neo-Bulk	Dry Bulk	Liquid Bulk
Port of Oakland	760	170			
Port of San Francisco	749	78	103	1219	
Port of Richmond	209		286		148
Port of Benicia			374	600	
Port of Redwood City		128	853	1293	90
Encinal Terminals			114		116
NAS Alameda	760				
FISCO (NSC Oakland)	760				
Bay Area Average	573	125	346	1037	118

Part III
Proposed Seaport Plan Changes

Summary Of Proposed Changes To Seaport Plan

Summarized below are the proposed changes to policies and port priority use and marine terminal designations in the Seaport Plan. A discussion of the general types of environmental impacts that could result because of the changes proposed follows. Part IV addresses the substantial impacts that could occur as a result of specific changes proposed at individual sites.

Major Policy Changes

1. Modify cargo capability analysis to reflect higher potential cargo throughput.
2. Eliminate the distinction between "long-term" and "near-term" marine terminals and instead use a single designation of "future" marine terminal sites.
3. Prohibit further deletion of sites from port priority use until a cargo monitoring process is implemented.
4. Modify requirements for updating the Seaport Plan.
5. Allow interim uses on port areas to exceed five years.

Changes to Port Priority Use Designations

1. *Port of Benicia*: Remove long–term marine terminal designation.
2. *Encinal Terminals*: Remove port priority use, active-, and near-term marine terminal designation from Terminal 5.
3. *Port of Oakland.* Remove the port priority use designation from a triangular parcel northeast of Interstate 880; remove near-term terminal and port priority use designation from the Ship Repair area; and change the "long-term" marine terminal designation at Bay Bridge site to "two-berth future marine terminal" designation.
4. *Port of Redwood City*: Remove port priority use designation from 106-acre area east of Seaport Boulevard.
5. *Port of Richmond*: Remove port priority use designation from the ancillary use zone.
6. *Port of San Francisco*: Remove all near-term marine terminal designations except for one at Pier 94 North, and remove portions of port priority use area from existing terminals at Piers 48, 50, 52-64, 70, area inland and between Piers 70-80, 80, backland of Piers 94-96 and Pier 98.
7. *Mare Island Naval Shipyard*: Although Mare Island is not needed for seaport purposes, the dredged material disposal ponds should be retained as port priority use areas for upland dredged material disposal, and re-evaluated for continued designation pending the LTMS Comprehensive Managment Plan for dredging. Remove port priority use designation from the remainder of the base.
8. *Naval Air Station (NAS) Alameda*: Remove port priority use designation from all but a 220–acre parcel along the Oakland Inner Harbor, and add 5-berth future marine terminal designation.
9. *Naval Supply Center (NSC) Alameda Annex*: Remove port priority use designation.
10. *Fleet and Industrial Supply Center Oakland (FISCO) (former NSC Oakland):* Retain port priority use designation and add 5-berth future marine terminal designation.

11. *Hunters Point Naval Shipyard*: Remove all but 55-acre port priority use designation on the southeast portion of the Shipyard.
12. *Selby Site*: Remove the port priority use designation from the Unocal property. Retain a 60–acre port priority use area and 5-berth marine terminal designation on the Wickland Oil property.
13. *Vallejo Site*: Remove the port priority use and near–term marine terminal designations from the waterfront.
14. *Martinez (Pacheco Creek Sites)*: Remove port priority use designation from all areas, except the Praxis property.
15. *Alameda Gateway Site (Former Todd Shipyard)*: Remove port priority use designation.

INSERT Figure 1 San Francisco Bay Ports

General Environmental Impacts Associated with Seaport Plan Changes

The following general types of environmental impacts could result from the changes to Seaport Plan policies, port priority use designations, and marine terminal designations described in the proposed plan and alternatives. These general impacts are referenced in the subsequent discussions of the individual sites, which are included in Parts IV and V.

Removal of Port Priority Use Designation

The port priority use designation on a site restricts the use of that site to marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers and marine services. When the port priority use designation is removed, other uses and types of development may occur. Alternative land uses will have their own associated environmental impacts, such as increased automobile traffic or demand for public services including police and fire protection, which would be generated by office or residential development.

Local land use development plans that do not feature maritime elements must be considered when amending or removing port priority use designations. A number of non-maritime developments are proposed at sites designated for port priority use in the 1988 Seaport Plan. A research and development office park is planned adjacent to the Port of Richmond on the Ford Peninsula in an area that includes the port ancillary use zone. A similar development is proposed for much of the former Ideal Cement site at the Port of Redwood City. In addition, planning is underway for naval bases at Mare Island, Hunters Point, and Alameda, in preparation for closure and transfer of the facilities for future civilian use to the cities of Vallejo, San Francisco, and Alameda, respectively. In general, the individual reuse plans being considered for the bases focus on a mix of commercial, residential, light industrial, and open space/recreational uses that would not be allowed under the existing Seaport Plan designations. Proposed future uses of closing Bay Area military bases are included in the discussions of individual sites that follow this section.

Proposed changes to Seaport Plan policies and port and terminal designations reflect developments in shipping operations that have been used to refine the suitability of individual sites for port use, such as the increasing importance of access to intermodal transportation facilities. A number of sites previously reserved for container terminal development are therefore proposed to be deleted. At the same time, the higher throughput resulting from intermodal shipment of containers requires that larger land areas be reserved for new terminals. Because of the specific factors that must be present at a potential location for modern container terminal operation, the number of appropriate sites is much more limited than was previously thought. Absent a certain amount of fill in the Bay to expand shoreline areas to adequately service shipping activities, the forecast growth in waterborne cargo will likely exceed the Bay Area ports capacity.

Bay fill. Under the proposed plan, construction of designated future marine terminals will require approximately 210-240 acres of fill in the Bay. Development of near-term, long-term, and military marine terminal sites reserved in the 1988 plan would have required 460 acres of Bay fill. A significant reduction in potential fill is realized with the removal of the port priority use designation from the majority of military bases around the Bay: development of military facilities for civilian port use was previously estimated to require a total of 225 acres of fill.[1] Proposed

[1] 1988 fill acreage from *Seaport Plan Final EIR,* June 1991. Terminal land requirements adopted by the SPAC in 1995 for container terminal development, which most directly affects future demand for fill in the Bay related to ports, increased between 1988 and the current update, from 25-30 acres for a pure container berth to a minimum of 30 acres per berth. Fifty-five acres per berth are required for a modern container terminal with sufficient land area and channel depth to accommodate the largest container vessels, and is the acreage used by the Port of Oakland in planning for its terminal projects

changes to port priority use designations reduce future fill at the closing bases to 17 acres for a container berth at the Oakland Army Terminal and between zero and 30 acres at FISCO for development of five container berths and the Port of Oakland Joint Intermodal Terminal (JIT).[2] In total, marine terminal development under the proposed changes to Seaport Plan designations will result in a net reduction of approximately 220 acres of Bay fill compared to the existing plan.

Where fill in the Bay is required for marine terminal construction, a project will be limited to the minimum amount of fill that is necessary to achieve an adequate terminal at the site. Additionally, harmful effects to the Bay associated with the fill must be minimized, as provided in Section 66605(c) and (d) of the McAteer-Petris Act.

Land Use

Shoreline areas at existing ports have been substantially altered and developed for shipping operations, therefore, additional terminal development at these locations will not present a substantial impact. However, land use conflicts can arise where port development is proposed for areas not currently in maritime use, such as NAS Alameda and Collinsville. Development of marine terminals at military bases may or may not introduce significant changes in land use, depending on the historic use of the base. Additionally, conflicts may occur when non-industrial uses are proposed adjacent to areas designated for port priority use.

- Measures such as buffer areas or landscaping designed to minimize effects of port activity on nearby non-industrial uses should be considered during specific project development review.

Where military bases are in the process of closing down and being transferred to local ownership, affected local communities are in different stages of developing reuse plans for future non-military use of these facilities. Local reuse plans must be consistent with BCDC's federally-approved coastal management program, which includes the Bay Plan and the Seaport Plan, as well as several other plans. Consistency is required by the federal Coastal Zone Management Act (16 USC 1456(c)(1-3)), which states that federal activities and federally licensed or funded activities must comply with approved coastal management programs. A finding of consistency by BCDC is therefore necessary before the Navy can approve a reuse plan. Where non-maritime uses are considered on closing military bases designated for port priority use, local government reuse planners and BCDC must work together to ensure that reuse plans for military bases are consistent with designated port uses.

- Local reuse plans must be consistent with port priority use designations in the Seaport Plan, as required by the federal Coastal Zone Management Act (16 USC 1456(c)(1-3)).

Water Resources

Impacts related to dredging.[3] Dredging of channels and berths can suspend sediments in the water, thereby increasing turbidity during dredging operations. This can lead to short-term decreases in dissolved oxygen and associated increases in dissolved nutrient levels. Aquatic disposal of dredged materials further adds to the total suspended sediments in the Bay, as well as accumulation of sediments at disposal sites. (See following section for impacts to biological resources.)

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[2]The amount of future fill at FISCO is undetermined because some portion of existing fill will be removed during construction of facilities proposed for the site.

[3] For further discussion of issues related to dredging and disposal of dredged materials, refer to BCDC staff report *Dredging and Navigation Safety*, prepared for the Seaport Planning Advisory Committee, February 1994, and to the *Dredging and Disposal Road Map*, prepared by BCDC and the Army Corps of Engineers, April 1995.

Toxic contaminants buried in bottom sediments can be disturbed and released into surface waters as a result of dredging activities. If dredged materials are contaminated, water runoff from dredging operations can return contaminated water to the Bay.

Improper disposal of contaminated dredged materials can redistribute toxic substances. Contaminants contained in dredged material may harm aquatic organisms, fish, or wildlife when disposed in some environments. If not properly controlled, contaminants in dredged materials that are disposed in upland areas could be released into the environment.

The following measures would reduce impacts to water quality related to dredging and disposal of dredged material:

- Monitor and schedule dredging and disposal activities for turbidity conditions as required by regulating agencies.
- Use equipment and techniques designed to minimize impacts on Bay water quality.
- As required by regulating agencies, prior to initiating dredging, test bottom sediments to determine the nature and extent of potential contamination to ensure that sediments meet established standards for disposal.
- Control flow into the Bay from stockpiled dredged sediment with appropriate measures such as silt fences and containment dikes.
- Dispose of dredged material in accordance with regulating agency standards for volume limits, scheduling, leachate, and runoff control.

Impacts related to Bay fill. Placement of fill in the Bay reduces surface waters and overall water volume, oxygen levels, and tidal flushing necessary to support marine life and to dilute pollutants in Bay waters. Sediment deposit patterns and water circulation may be affected where the bottom surface of the Bay is altered due to the placement of fill. The degree of impact is relative to the amount of fill material deposited.

The following measures would reduce impacts to water quality related to placement of fill in the Bay:

- Restrict the amount of Bay fill for individual port-related development projects to the minimum necessary, consistent with conditions established by regulating agencies.
- Offset loss of water volume and habitat by removal of fill and restoration of tidal or upland habitat elsewhere in the Bay.

Impacts related to terminal development and operation. Construction activities that disturb and resuspend Bay sediments, such as result from pile driving and from placement of rip rap, would produce short-term increases in turbidity. Excavation activities that may be required for terminal development could expose soils containing substances toxic to Bay waters. Additionally, improper open storage of stockpiled materials can release pollutants to the Bay.

The following measures would reduce impacts to water quality related to terminal development:

- Employ preventive measures and monitor construction activities for turbidity conditions as required by regulating agencies.
- Where excavation activities have the potential to release toxic substances into the Bay, employ measures, such as sealing exposed surfaces, to prevent leaching of contaminants into Bay waters.
- Erosion control measures and/or sediment trapping methods should be used where materials such as fill for construction of berths are stockpiled, to minimize their transfer to the Bay by rain or wind.

Increased port operations and trucking activity on paved surfaces in terminal yards and access roadways raise levels of nonpoint source pollutants contained in stormwater runoff. Where a change in seaport designation will result in additional terminal development in an existing port area, runoff from paved surfaces will generally not increase substantially in relation to existing conditions. Potentially significant increases in surface runoff can result where new terminal development is designated in currently undeveloped areas.

The following measures would reduce impacts to water quality related to surface runoff:

- Surface drainage from terminal yards should comply with NPDES (National Pollution Discharge Elimination System) procedures for monitoring and controlling nonpoint pollution discharges to Bay waters.
- Store stockpiles of construction materials or cargo in a manner designed to prevent runoff from carrying sediments to the Bay.

Biological Resources

Impacts on Bay resources. Sediments disturbed by dredging and disposal activities related to port development can temporarily affect Bay resources in the vicinity of a project. Fish and other organisms can be exposed to short-term increases in turbidity, decreases in dissolved oxygen levels, and increased levels of suspended nutrients and sediment-borne toxic materials. Suspended sediments can reduce visibility and impair foraging activities, and can impair oxygen exchange by clogging or lacerating gills in fish. Generally, impacts are temporary and most fish are able to avoid a project area during operations. Some bottom-dwelling, or benthic, organisms such as worms, crustaceans, and shellfish can be displaced or destroyed during dredging and disposal of Bay sediments. Diversity of benthic communities tends to be greater in open water areas of the Bay than in channel and harbor areas that experience less water circulation and regular dredging. In general, dredging affects bottom habitat only temporarily, as recolonization by a benthic community occurs fairly rapidly after an individual dredging episode. Particularly in channel and berth areas, benthic populations are assumed to be adapted to recovery because of regular disturbances associated with dredging. In-Bay disposal of dredged material occurs at designated sites where benthic habitat is also regularly disturbed by disposal activities.

The following measures would reduce impacts of dredging on biological resources in the Bay:

- Adhere to seasonal dredging and disposal volume limits established by regulating agencies to prevent increased turbidity from harming fish during periods of spawning or migration.
- To reduce exposure of contaminants to wildlife, conduct dredging and disposal activities in a manner that will minimize disturbance of toxic sediments.
- Design and implement appropriate project-specific mitigation measures to offset losses to habitat or wildlife, as conditioned by regulating agencies.

Fill associated with development of marine terminals can reduce the supply of open water habitats available to fish and other marine organisms, and can displace wetlands. Dredging or fill activity can disturb or destroy near-shore, shallow water foraging areas used by endangered species such as the Least Tern. Filling buries bottom dwelling organisms in the immediate project area; however, in areas regularly disturbed by dredging activities, the benthic communities are already degraded. Placement of fill at existing ports will generally not cause disturbance to sensitive marine habitat due to an absence of such habitat at developed waterfronts. Where habitat is present, appropriate measures should be undertaken to minimize disturbances created by fill activities.

Resuspension of contaminated sediments that may be contained in fill material can pose health and safety risks to marine organisms, wildlife, and humans, as contaminants are taken up and enter the food chain.

The following measures would reduce impacts of fill on biological resources in the Bay:

- Minimize Bay fill to the least amount necessary for adequate marine terminal development.
- Design and implement habitat restoration or enhancement projects to compensate for displaced habitat, as approved by regulating agencies.
- Where filling activities have the potential to release toxic substances into the Bay, employ measures designed to prevent resuspension of contaminants, such as sealing of exposed surfaces to prevent leaching of contaminants into Bay waters.

Impacts to upland resources. Development of additional terminal areas at existing ports or industrial areas, with a history of industrial use and little habitat value, will not result in adverse impacts to wildlife due to the absence of appropriate habitat, breeding ground, or migratory staging areas needed to sustain wildlife. New port development in previously undeveloped areas could disturb existing habitat during construction, and permanently displace sensitive habitats, adversely affecting wildlife and endangered and threatened species.

The following measures would reduce impacts to biological resources in upland areas:

- Schedule construction activities to reduce disturbances to wildlife.
- Locate terminal facilities as far as is feasible from sensitive habitat and wildlife to reduce impacts of terminal operation.
- Determine project-specific impacts and undertake appropriate mitigation measures, such as creating buffer areas and restoring adjacent habitat, to offset losses to habitat and wildlife, as required by regulating agencies.

Traffic and Circulation[4]

Increases in the amount of waterborne cargo passing through existing marine terminals or through future additional port facilities will affect traffic conditions on Bay Area roadways. The number of rail car, truck, and automobile trips involved in the movement of cargo to and from marine terminals will increase with the forecast growth in cargo. However, future additional road traffic generated by ports will not significantly impact projected traffic and circulation patterns on the Bay Area roadway system. Congested roadways will result primarily from expected growth in general traffic. Regional roadways will experience increased traffic volumes; however, levels of service, while affected, are not expected to be degraded from existing levels. A number of planned highway improvement projects would improve capacity throughout the region generally, including corridors serving area ports.

The following measures would reduce impacts of increased roadway traffic associated with future port operation:

- Implement roadway and operational improvements identified in MTC's Regional Transportation Plan, the Seaport Plan, and by County Congestion Management Agencies.
- Identify and implement specific measures to improve road access adjacent to ports.
- Change cargo delivery schedules to minimize impacts to peak traffic volumes.

Major increases in freight rail volumes will accompany future port development. These increases should be accommodated by existing double-track operations along most mainline rail routes serving the Bay Area and through improvements to rail service planned at a number of ports. Significant operating constraints on movement of cargo are not expected to be presented by

[4]Refer to *Traffic Impact Study for the San Francisco Bay Area Seaport Plan* for discussion of existing conditions and impacts to Bay Area traffic and circulation related to port development, prepared for MTC, September 1995.

passenger rail services that share rail lines with freight trains. Where at-grade rail crossings occur, additional rail operations may further disrupt traffic flows on cross streets.

The following measures would reduce impacts of increased rail activity associated with future port operation:

- Undertake planned improvements to rail service at individual ports.
- Employ modern traffic control techniques to enhance traffic flow at at-grade rail crossings.
- Improve track conditions where needed to allow longer rail cars and double-stacking of containers to enhance movement of intermodal cargo.

Air Quality[5]

Impacts related to traffic. Port development will affect local air quality by changing traffic patterns. Emissions of local pollutants, such as carbon monoxide, will be modified along those portions of the highway system that provide access to port facilities. However, while traffic increases related to port development will cause an incremental increase in concentrations of carbon monoxide and other pollutants, these levels will remain below state and federal standards, and therefore, the impact on local air quality is less than significant. Regional air quality impacts are likewise not expected to be significant, as additional emissions, although substantial, would fall below the Bay Area Air Quality Management District's recommended significance threshold.

Impacts related to terminal construction. Construction activities result in short-term emissions of air pollutants from a variety of sources that include exhausts from construction equipment and vehicles; evaporation of hydrocarbons from curing asphalt, drying paint, solvents and adhesives; and fugitive dust. Fugitive dust presents the most significant source of air pollutants and is emitted during demolition, clearing, and other construction activities, as well as from wind erosion over exposed earth surfaces. The extent of construction dust impacts will vary with individual terminal development projects. Increased dust and locally elevated levels of particulate matter have the potential to create a temporary nuisance downwind of a construction site; however, port facilities are generally not in areas containing sensitive receptors such as children, elderly, or infirm persons.

Where substantial construction of new terminal facilities may occur, there is the potential for temporary impacts to air quality to be locally significant. Related activities could include demolition and removal of existing structures, excavation and filling, and materials handling, which would generate particulate matter.

The following measures would reduce impacts to air quality created by marine terminal construction activities:

- Water exposed or disturbed soil surfaces as necessary to eliminate visible dust plumes.
- Water or cover stockpiles of debris, soil, sand, or other materials that can be carried by wind.
- Suspend earth moving or other dust-producing activities during periods of winds of 15 mph or more when watering cannot eliminate visible dust plumes.
- Limit the speed of construction vehicles to 15 mph while on-site.
- Cover debris, construction materials, or earth being hauled by trucks to prevent dispersion by wind.

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[5]Refer to *Air Quality Impact Analysis for the San Francisco Bay Area Seaport Plan* for background discussion and assessment of impacts to Bay Area air quality related to port development, prepared for MTC, September 1995.

Geology and Seismicity

Impacts related to terminal construction. Grading activities during construction will cause increased wind or water erosion of soils. Subsidence can result when soils settle at different rates, and can damage foundations, underground utilities, and pavement. Construction of port facilities on previously undeveloped areas with weak soils would have greater potential adverse effects than projects that require only modification of existing facilities.

Because the sites proposed for future marine terminal development are relatively level, no major grading is likely to be needed for terminal development. However, the following measures will reduce the risk of slope instability and subsidence where applicable:

- Provide adequate slope drainage to minimize erosion.
- Undertake project design and construction in accordance with engineering recommendations based on site-specific geotechnical investigations.

Impacts related to seismic activity. Because the Bay area is seismically active, all existing and proposed port areas could be subject to seismic ground shaking from earthquakes along any of the major faults that traverse the region, as well as from local smaller faults. Areas underlain by Bay muds are particularly at risk for ground shaking. The majority of port sites are underlain by weak soils and artificial fills, including Bay muds composed of unconsolidated, saturated silts and clays. A loss of load-bearing strength, or liquefaction, can occur when soils are saturated and subjected to seismic shaking.

The following measures would reduce potential impacts related to seismic ground shaking and liquefaction:

- Undertake state-of-the art project design and development in accordance with regulations that address seismic design and engineering.
- Employ construction methods designed to anchor structures and wharf areas to more stable materials beneath liquefiable material, such as the use of concrete piles.

Tsunamis can be created by underwater seismic disturbances. A tsunami wave of the probable maximum size, approximately ten feet above MLLW, is expected to occur in the Bay at 500-year intervals. The following measure would reduce potential impacts related to tsunami inundation:

- Construct terminal and wharf areas above predicted maximum tsunami heights.

Hazards

Impacts related to existing contamination. The presence or release of chemical contamination at sites designated for port-related development can expose construction workers to hazardous materials. Risk of exposure to toxic contamination can occur at sites previously in industrial use and at military bases, where a variety of harmful substances that can include heavy metals have been identified. Due to historic operations and disposal practices, long-term cleanup of toxic contamination is required at closing Bay Area military bases. Additionally, building demolition or renovation may expose workers to toxic materials such as asbestos and lead.

- Prior to beginning terminal construction, an assessment should be conducted to identify the nature and extent of chemical contamination on the site. In consultation with regulating agencies, undertake remediation and construction in a manner designed to prevent further spreading of contaminants and to limit exposure of workers to toxic substances.

Toxic materials released into the Bay during dredging and disposal of contaminated sediments, and when contaminated sediments are used as fill, can increase the total amount of contaminants available for biological uptake by organisms, potentially harming marine life and creating a health hazard when consumed by humans.

- Employ measures designed to prevent resuspension of contaminants into Bay waters during dredging, disposal, and filling activities, as required by regulating agencies.

Impacts related to terminal operation. Release of hazardous materials, fires, or explosions at port facilities or rail transfer points can occur during handling of hazardous materials.

The following measures would reduce risk of exposure to hazardous materials:

- Follow procedures designed to ensure proper handling of hazardous cargo during transfer to and from ships, and employ safety measures to protect workers and the public from accidental exposure to harmful materials.
- Approved emergency response plans developed by individual ports should be implemented if a toxic spill occurs. Port operators are responsible for notifying Coast Guard and local fire authorities of release of hazardous materials.

Noise

Marine terminal construction will elevate noise levels in the vicinity of a port. Intermittently high noise levels can occur adjacent to a site during the various phases of project development, such as dredging, pile driving, and filling. Impacts of construction in existing port areas would be temporary and generally no greater than those of similar past port construction projects.

During terminal construction or operation activities, employees who work with or are in close proximity to equipment and vehicles could be exposed to noise levels that exceed occupational safety standards and that could damage hearing.

Noise from terminal operations and traffic would be ongoing. Additional terminal development in existing port areas would not generate new types or greatly elevated noise levels, and surrounding land uses are often dedicated to similar industrial activities. Port development in areas previously not in maritime or industrial use could increase noise levels over existing conditions, and adjacent non-port activities could experience noise levels greater than those generated by the non-port activity.

The following measures would reduce impacts related to noise:

- Minimize employee exposure to noise through implementation of established occupational safety programs, such as shielding of equipment, use of hearing protection devices, and employee rotation.
- Analyze effects of individual port development projects on non-industrial uses, such as residences, located within close proximity or along access roadways. When noise levels may rise above acceptable levels, install sound barriers or other shielding measures.
- Truck traffic generated by port activities should follow designated truck routes.

Public Services and Utilities

Additional terminal development at operating ports could require that on-site infrastructure be extended or realigned to service new or converted terminal areas. Because no increase in resident population is associated with terminal development, additional demand for expanded public services and utilities, such as fire and police protection, and water and waste treatment, is not significant.

Infrastructure improvements may be necessary where new port development is proposed at former military bases, but where historic uses supported industrial-related activity, and in many cases, resident population housing, port use would not create significant increases over historic demand levels.

Water channels adjacent to sites currently not dredged for port use could require new dredging to accommodate deep water ocean-going vessels, increasing potential impacts related to dredging and disposal of dredged material. Increased maintenance dredging could be required where additional terminal development occurs within existing ports.

The following measures would reduce impacts related to increased demand for public services and utilities:

- Where specific terminal development is determined to require expanded levels of public services, local resources can be supplemented through terminal fees dedicated for such purposes. Expenses related to expansion of utility systems can be accommodated in project development costs.
- Locate new port sites near existing deep water channels to limit the need for significant additional dredging.

Visual Impact, Light and Glare

In general, expansions of existing marine terminals or conversion of existing port facilities would continue cargo-related operations within terminal boundaries in an industrial area, and would not substantially alter existing visual impacts. Where new port development is proposed in undeveloped locations or adjacent to non-industrial areas, view corridors can be obstructed, and light and glare generated by terminal operations can affect adjacent land uses.

The following measures would reduce visual impacts, light and glare created by port development:

- Locate new terminal development within or adjacent to existing maritime or industrial uses where feasible.
- Incorporate siting and design measures that will offset visual impact of terminal development on adjacent non-industrial uses to the greatest extent feasible.
- Incorporate in individual terminal development projects appropriate measures designed to shield adjacent non-industrial uses from lighting and glare.

Recreation and Public Access

Because public recreation facilities cannot be provided in a safe manner in areas where cargo handling operations occur, much of a port area is generally unsuitable for recreation or public access. A port's waterfront location makes it a desirable destination for public recreation activities such as fishing and viewing shipping activities, and although public access cannot be provided on working piers or terminals, in lieu public access can be provided.

The following measure would reduce impacts of port development on recreation opportunities:

- Include public waterfront access as part of terminal development projects, and include plans for site development, signs, and continued maintenance, as deemed appropriate and safe by concerned agencies.

Part IV
Impacts Of Proposed Changes to Seaport Plan

Summary of Substantial Impacts of Proposed Changes to Seaport Plan

The changes proposed to the Seaport Plan will be adopted as an amendment to the Bay Plan, and therefore are required to be reviewed for their potential impacts to the environment. This document focuses on substantial environmental impacts that could occur as a result of changes to Seaport Plan policies and designations. Impacts of existing designations were addressed in previous environmental analyses.[6]

The primary substantial impacts of proposed changes to Seaport Plan port priority use and marine terminal designations include:

- Removal of approximately 8,300 acres from port priority use designation, which will allow alternative development to occur at sites around the Bay that were previously reserved for maritime use. Impacts and necessary mitigation associated with future development of these areas will be addressed with review of specific project proposals. Of the total land area to be released from port priority use, more than 3,800 acres are located on military bases. Where military property is released from port priority use, impacts associated with future development of former military lands will be addressed with environmental review of local reuse plans as well as with subsequent project proposals.
- Placement of between 210-240 acres of fill in the Bay before 2020 if all sites reserved for future marine terminals are developed. This represents a decrease of approximately 220 acres of fill compared with the 1988 Seaport Plan.

Proposed Seaport Plan Policy Changes

The main policy changes proposed in the updated plan are as follows:

1. Modify capability analysis to reflect higher potential cargo throughput, which results in a decrease in the number of new terminals needed to meet the regional forecast.
2. Eliminate the distinction between "long-term" and "near-term" marine terminals and instead use a single designation of "future" marine terminal sites.
3. Prohibit further deletion of sites from port priority use until a cargo monitoring process is implemented.
4. Modify requirements for updating the Seaport Plan.
5. Allow interim uses on port areas to exceed five years.

The most substantial impact of these policy changes is the release of more than 8,000 acres from port priority use designation, which in turns allows the deleted areas to be developed for other types of uses, including commercial, recreational, and residential uses. The particular impacts associated with such developments will be analyzed with review of each specific proposal.

By emphasizing that existing berths have underused capacity to handle cargo, the proposed plan calls for fewer new terminals to be built to accommodate the 2020 baseline cargo forecast. This will result in less terminal construction activity and Bay fill (240 acres compared with 460 called for in the 1988 plan). Associated impacts on water and biological resources and habitat will be reduced, as will surface runoff, noise, and dust.

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[6] *Final Environmental Impact Report for the San Francisco Bay Area Seaport Plan and the Seaport Plan Amendments to the Regional Transportation Plan.* ABAG and MTC. October 1982. *Final Supplemental Environmental Impact Report regarding the 1988 revisions to the San Francisco Bay Area Regional Seaport Plan.* Prepared by Gruen Associates for Metropolitan Transportation Commission. June 1991.

The change from "near–term" and "long–term" to a single designation of "future" marine terminals alters the timing of future marine terminal development. Whereas, in the 1988 plan, long-term berths could only be developed after all near–term berths were constructed (to delay larger Bay fills), this plan allows market forces to direct where and when berths and terminals should be developed. Even in the event that all designated future terminals are developed by the year 2020, this plan will result in less Bay fill than would have occurred under the 1988 plan.

The policies concerning plan revision and amendment call for a cargo monitoring process to be implemented by the Seaport Planning Advisory Committee. The Committee will collect data on waterborne cargo and terminal use in the Bay Area on an ongoing basis, which will allow the Seaport Plan to be updated on an as-needed basis. Under the policies of the 1988 plan, amendments would have to wait for the five-year update to occur. The proposed plan does not impose a requirement that the plan be reviewed every five years, which gives regulatory agencies and local governments greater flexibility to focus staff resources on specific policy issues within the plan.

Proposed Designation Changes at Existing Bay Area Ports

The following port priority use and marine terminal designations and current uses apply at existing Bay Area port sites for which a change in designation is indicated in the proposed plan. In addition to general impacts associated with marine terminal development or removal from port priority use previously discussed, substantial environmental impacts that can be expected to result from specific changes proposed at individual ports are identified below.

Port of Benicia

Waterfront site west of wharf

- **Current designation:** Long-term 43-acre site, requiring 10 acres of fill, suitable for two-berth container terminal. No existing port facilities.
- **Proposed change**: Remove terminal designation; retain port priority use designation.
- **Impacts:** Elimination of 57 acres of Bay fill, reduced new dredging, need for road and rail access improvements, and traffic impacts.
- **Discussion:** The marine terminal designation was applied in the 1988 plan as a long-term site suitable for two container berths. Container terminal development is not likely to occur at Benicia, however, because of the trend toward larger, centralized container terminals, inadequate rail access to the site, and isolation from other container ports.

  Retention of the port priority use designation will allow the area to remain available for maritime support activities associated with the port's dry bulk and automobile terminals, and does not represent a change in use. However, because 57 acres of fill would be required to develop a modern, 100-acre two-berth container terminal at Benicia, removal of this designation reduces the need for fill in the Bay to accommodate cargo growth, and thereby lessens impacts to water quality and volume and aquatic habitat, and reduces surface runoff that would result from paving the filled area. Effects related to road and rail transportation improvements, and to increased traffic generation to accommodate movement of container cargo, would likewise be reduced. See Figure 2, map of Port of Benicia.

INSERT Figure 2, Map of Port of Benicia

Encinal Terminals

Terminal 5

- **Current designation:** Active two-berth, 41-acre terminal suitable for near-term container development, requiring 4 acres of fill. No current operations.
- **Proposed change:** Remove two-berth container terminal and port priority use designations.
- **Impacts:** Reduced freight rail and truck traffic, less dredging of berths for cargo operations. Area available for alternative use.
- **Discussion:** Terminal 5 is unsuitable for container terminal development because the Webster and Posey Street tubes restrict dredging the Inner Harbor Channel to depths sufficient to allow deeper draft container ships to berth at Encinal Terminals. Additionally, other factors, including the trend toward centralized container terminals, the inadequacy of the Alameda belt rail line for container shipping activity, and isolation from other operating container ports combine to restrict potential container activity at Encinal Terminals. Current and projected bulk cargo volume can be accommodated at Terminals 1-4. See Figure 3, map of Encinal Terminals.

  Removal of the marine terminal and port priority designations will allow alternative development to occur at the former Terminal 5 site. Non-maritime uses could create impacts that include increased automobile traffic and associated air quality impacts, and greater demand for public services such as fire and police protection. No specific development proposals have been submitted, however, future residential or commercial development would require measures to offset these and other potential impacts of alternative development. To reduce effects of port activity at Terminals 1-4 on future adjacent non-maritime uses, measures such as sound barriers could be required.

INSERT Figure 3, MAP Encinal Terminals

Port of Oakland

In general, terminal development proposed at the Port of Oakland will occur in an area already intensively developed for port use, and where channel and berth areas are routinely dredged to depths sufficient for deep draft vessels. Impacts related to terminal construction and operation, including noise, light and visual impacts, and demand for public utilities and services, would not increase substantially over existing levels. Replacement of the Cypress freeway structure will improve overall access to the Port and reduce impacts of truck traffic on adjacent neighborhoods. See Figure 4, map of Port of Oakland.

1. Bay Bridge Site

- **Current designation:** Long-term marine terminal requiring 55 acres of fill to create a 67-acre two-berth container terminal. No existing terminal.
- **Proposed change**: Replace long-term marine terminal designation with a two-berth future marine terminal designation, which would require an additional 55 acres of Bay fill.
- **Impacts:** An additional 55 acres of Bay fill compared with the current plan, increased surface runoff and truck and rail traffic.
- **Discussion:** The narrow 12-acre Bay Bridge site is largely Oakland Army Base property that extends west from Army Terminal 7, and is composed of dirt and rock, except for a paved roadway (Burma Road). The site supports a Caltrans right-of-way as well as an East Bay Municipal Utility District outfall pipe, which runs the length of the site. Terminal development would be restricted to the area south of Burma Road to maintain clearance for the pipeline.

  Approximately 110 acres of fill in the Bay will be required to develop two 55-acre container berths at the Bay Bridge site. In addition to impacts that would result from marine terminal development at the site, impacts to Bay water quality and marine resources would occur with the placement of fill. Mitigation in the form of Bay restoration for loss of water surface and volume, and for displaced aquatic habitat, will be required. (See previous discussion of environmental impacts to water and biological resources under the General Impacts section.) No wetland or sensitive habitat occur at the site, which is located adjacent to a deep water shipping channel.[7]

  Total surface runoff would increase as the filled area is paved for terminal yards, requiring best management practices to prevent discharge of pollutants into the Bay. Extended utilities and landside access would be required to serve the area if developed. Measures designed to minimize dust during substantial fill and construction activities would need to be implemented.

2. Berths 8, 9, 10

- **Current designation:** Three active bulk berths. Planned renovation has been postponed due to closure of the Oakland Army Base.
- **Proposed change:** Replace active terminal designations with designation for one or two future container berths, which would require 26 acres of Bay fill.
- **Impacts:** 26 acres of Bay fill, increased surface runoff, displacement of three bulk cargo berths. Increased efficient use of backland.
- **Discussion:** If a single container berth is developed, approximately 26 acres of fill would be needed to extend the wharf from Berth 22 northeast toward Berth 9. This would result in a net loss of one container berth, but would reconfigure and increase the efficiency of the storage backland used by the berths in that area. Existing rail and container cranes could be

[7] Telephone communication with Bob Zaleski, Engineering Department, Oakland Army Base, September 1995.

realigned for further efficiency gains. Overall, this configuration would likely increase the throughput efficiency of all berths in the Outer Harbor. The break bulk throughput capability of these berths will be lost. However, sufficient break bulk capability is provided at other ports or sites in the plan.

Impacts to water quality, surface and volume, and to marine resources caused by fill in the Bay, would require mitigation. Surface runoff will increase as the filled area is paved over for terminal yard construction, requiring appropriate measures to prevent discharge of pollutants into the Bay. Measures designed to minimize dust during fill and construction activities would need to be implemented.

3. Ship repair area

- **Current designation**: 28-acre near-term terminal requiring three acres of fill to operate as a one-berth container terminal. Not in operation.
- **Proposed change**: Remove near-term and port priority use designations.
- **Impacts:** Reduced Bay fill, dredging, surface runoff. Area available for alternative use.
- **Discussion:** The former ship repair area is unsuitable for container terminal development because the Webster and Posey Street tubes limit channel depth to -32 MLLW, which is insufficient to allow deeper draft container ships to berth at this location. Removal of the near-term marine terminal and port priority use designations would allow other types of development to occur at the ship repair area. Impacts related to non-maritime use of the area, such as increased automobile traffic and associated air quality impacts, could result. The City of Oakland has initiated a waterfront planning process, and is considering a waterfront park for the area that includes this site. A park would increase recreational and public access opportunities along the Bay. Prior to future development, any hazardous materials left from past ship repair activities would require remediation to acceptable levels to allow public use of the site.

4. Triangular parcel northeast of I-880

- **Current designation:** Port priority use. Leased to private crane repair company.
- **Proposed change:** Remove port priority use designation.
- **Impact:** Insignificant reduction of port priority use area.
- **Discussion:** Removal of this one-acre parcel from port priority use designation would not affect cargo throughput capacity at the Port. Industrial uses, such as truck chassis storage, are likely to continue on the site because of the parcel's location adjacent to the freeway and the Union Pacific rail line. No significant environmental impact will occur as a result of removing the existing port designation.

5. Schnitzer Steel

- **Current designation:** Active two-berth non-container terminal that could be converted to container use if and when no longer used for bulk cargo. Proprietary steel recycling operation.
- **Proposed change:** Modify language of designation to read "Schnitzer Steel is an active, privately owned, dry bulk marine terminal used for recycling scrap steel. Because the site is located on the Inner Harbor Channel within the Port of Oakland, it could be developed into a two-berth container terminal. However, the site should remain designated as a bulk terminal as long as the facility is used as such. At such time as the site is no longer needed for recycling scrap steel or other bulk shipping operations, it should first be considered for conversion to container operations."
- **Impact:** No impact would result from change to policy language.

INSERT Figure 4, MAP Port of Oakland

Port of Redwood City

Former Ideal Cement site

- **Current designation**: One-berth near-term non-container marine terminal.
- **Proposed change**: Remove port priority use designation from 106-acre parcel east of Seaport Boulevard.
- **Impact:** Area available for alternative use.
- **Discussion:** No additional terminal sites beyond those in the existing plan are proposed to be developed at Redwood City. The Port would gain one cargo berth from conversion of a proprietary terminal, and one berth from the inactive former Ideal Cement site. Both of these developments are included in the 1988 Seaport Plan.

  The port priority use designation can be removed from the 106-acre parcel of the Ideal Cement site with no adverse effect on the Port's future cargo throughput capability. Originally, the Ideal Cement parcel was designated as a port priority use area for the eventual development of an automobile or container terminal. But there are a sufficient number of automobile terminals in the Bay to handle the projected increases in neo–bulk automobile cargo. Further, this South Bay location is not suitable for container terminal development because it would require significant additional dredging to deepen the Redwood Creek Channel from -30 MLLW to -35 or -42 MLLW to accommodate the deeper draft container ships. Because of limited rail access, the South Bay location cannot compete with the Ports of Oakland or Richmond for intermodal container cargoes.

  The former Ideal Cement property, now owned by the Illinois State Teachers' Pension Fund, is locally zoned for heavy industrial use. The site is now proposed to be developed as Pacific Shores Center, a research and development park designed to accommodate up to 4,000 employees in a campus setting. The City Council of Redwood City approved the EIR in mid-1995. Among the significant impacts of the proposed project are increased automobile traffic, which would require expanding Seaport Boulevard, and filling of approximately 16 acres of wetlands. To offset the loss of wetland habitat, the project developer proposes to restore tidal wetland and upland habitat on the 140-acre Deepwater Slough Island, located across Redwood Creek Channel from the Port, and to transfer ownership of the entire island to the San Francisco Bay National Wildlife Refuge. This proposed mitigation plan is supported by local government, the Port, and the Fish and Wildlife Service. In addition, a Memorandum of Agreement signed by the Port of Redwood City and the developer of the project provides for the transfer of the 10-acre parcel at the northeast end of the Lonestar Cement property, at the confluence of Westpoint Slough and Redwood Creek, to the Port. This parcel is designated in the Seaport Plan as a future dry bulk cargo berth.

  Several tenants of the Port commented that deletion of the port priority use designation would allow the development of incompatible land uses adjacent to the Port. These tenants believe that the business park tenants would object to the noise, dust, appearance, smells, and truck traffic associated with the marine, chemical, metal recycling, and cement distribution operations at the Port. They believe that the costs of mitigating these problems to the satisfaction of the business park tenants would be significant and lead to the demise of the industrial community at the Port.[8]

  These valid concerns were discussed with the Project Manager of the Pacific Shores Center project. He stated that the developers are willing to work with the Port's tenants to improve both the design of the overall project and conditions along Seaport Boulevard and within each tenant's property to reduce or eliminate the source of the potential problems. An air

[8] Letter from William Montgomery, General Manager of Bell Marine, August 14, 1995.

quality study conducted for the project by Weiss Associates and Donald Ballanti found that the main sources of dust are unpaved roadways, both along Seaport Boulevard and into the tenants' properties. Paving roads, driveways, and stockpile areas, as well as placing gravel in and along the Southern Pacific railroad bed, would significantly reduce, if not eliminate, the dust. A series of Seaport Boulevard improvements have been offered by the developer, including cleanup of unpaved, trash strewn shoulders, road widening, landscaping, and extension of utilities and storm sewers. In addition, the Project Manager stated his willingness to help pay for the cost of covering the aggregate storage piles and industrial operations, which would virtually eliminate noise and dust.[9]

The tenants of the Port were also concerned that the Pacific Shores Center project would disrupt the industrial community by allowing land use changes for non-maritime and non-industrial uses. They are concerned that this would be the first stage in an eventual shift from heavy industry toward more high technology, business park developments, which would squeeze the heavy industries out of their current locations.[10] The port tenants state that they require approximately 25 more acres for existing storage needs, and an additional 25 acres to accommodate future growth of the local aggregate industry.[11] Because of the acreage and rail, truck, and marine transportation requirements of these industries, they believe that no other acceptable locations zoned for heavy industry exist in the immediate region. However, they assert that there are many other areas that are suitable for business park type developments.

The question of incompatible land uses is largely a question to be decided by the local community. The MTC has no land use regulatory authority, while BCDC's land use authority is limited to ensuring that adequate and appropriate shoreline areas are reserved on the Bay for those water-oriented uses that require a waterfront location. In this case, the dry and liquid bulk berth acreage requirements[12] for the expected expansion of the Port of Redwood City (from four to six public berths in 2020) can be met with the Port's existing land, the Cargill Salt Terminal, and the 10-acre parcel at the edge of the Lone Star Cement property that will be transferred to the Port by the project developer.

Port tenants are also concerned about the transportation impacts of the proposed development.[13] In particular, they believe that the deletion of the port priority use designation will allow high density development that, combined with the forecast 50 percent increase in bulk material transport traffic from the Port, will make an already difficult traffic situation many times worse. According to the industrial tenants, truck traffic must now cross over two to four lanes to access or exit any industrial property, and at peak hours, trucks fill the turn lane and the shoulder area. They believe this hazardous condition will be exacerbated by additional entrances to the business park, and that slow moving loaded trucks are incompatible with quickly moving vehicles.

The Pacific Shores Center developer has, in response to these concerns about traffic, developed two alternatives for improving Seaport Boulevard. In one alternative, Seaport Boulevard would be widened into two 27-foot southbound lanes, and two northbound lanes of the same width. The north and south bound traffic would be separated by a 16-foot, landscaped median strip. In the second alternative, Seaport Boulevard would be

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[9]Personal communication with Peter Brandon, Project Manager, Jones Lang Wootton Realty Advisors, September 12, 1995.

[10]Letters from William Montgomery, Mark A. Adams, Manager of Environmental Affairs, SIMS LMC Recyclers, and Earl F. Bouse, Jr., Vice President, Kaiser Cement, August 14, 1995.

[11]Letter from William Montgomery, August 14, 1995.

[12]Dry bulk berths require 13 acres, while liquid bulk berths require 12 acres per berth. See BCDC staff report *Marine Terminals Acreage Requirements*, prepared for the Seaport Planning Advisory Committee, July 29,1994.

[13]Letters from William Montgomery and Mark A. Adams, August 14, 1995.

separated into a frontage road reserved solely for the use of port traffic, which would be buffered by a 22- to 44-foot wide landscaped median, from a four-lane road that would serve Pacific Shores Center directly. This latter alternative would separate slow moving truck traffic from other vehicles, avoiding the congestion and hazardous conditions described by the Port's tenants. Landscaping along the Port's property would be included in both alternatives, which would screen industrial activities, noise, and dust from the proposed project. See Figure 5, map of Port of Redwood City.

INSERT Figure 5, MAP Port of Redwood City

1. Terminals 5-6-7 (Shipyard, Graving Docks, Auto Terminal)

- **Current designation**: Two-berth near-term marine terminal, requiring 15 acres of fill in the graving docks.
- **Proposed change**: Combine Shipyard No. 3, graving docks, and neo-bulk terminal to create a 140-acre three-berth future container terminal, which would require approximately 33 acres of Bay fill.
- **Impact:** An additional 18 acres of Bay fill compared with current plan and associated impacts on aquatic habitat, surface runoff. Rail and road congestion, impacts to air quality. Increased dredging required for deep draft container vessels.
- **Discussion:** To develop a terminal area sufficient for three 40-acre container berths, approximately 33 acres of fill in the Bay would be required. Impacts to aquatic resources would increase, compared with the current plan. Mitigation would be required to offset loss of water volume and habitat. Increased impervious surfaces created by paving the shipyard and graving docks would result in greater surface runoff, requiring best management practices to reduce transport of pollutants to the Bay.

  Hazardous wastes generated by ship building at Shipyard #3 and other industrial activities have contaminated soils in a former scrap yard area at the shipyard. Levels of heavy metals, asbestos, oil, and other toxic substances have been determined not to pose an immediate threat to human health and safety, and will be confined by grading the soil and covering the area with layers of gravel and asphalt.

2. ARCO site

- **Current Designation**: Active proprietary liquid bulk terminal.
- **Proposed Change:** One future combined container/neo-bulk berth.
- **Impacts:** Some fill at wharf area, increased surface runoff, possible increased dredging for deep draft ships.
- **Discussion:** The Harbor Channel would require increased dredging to accommodate deeper draft container ships. Minimal fill would be needed to convert the existing liquid bulk wharf for container/neo-bulk operations. Appropriate safety precautions would be required during removal of petroleum pipelines and storage tanks. In the event that areas currently surfaced with gravel are paved, surface runoff will increase, requiring best management practices to reduce transport of pollutants to the Bay.

3. GATX/UNOCAL (former Unitank Terminal)

- **Current Designation:** One-berth non-container site. Proprietary liquid bulk terminal.
- **Proposed Change**: One liquid bulk berth.
- **Impacts:** None from change in plan designation. The site would remain in use as a liquid bulk terminal. No significant impacts would result from transition to public liquid bulk berth.

4. Santa Fe Channel Northwest

- **Current Designation:** One-berth active that can be converted to container use and one-berth near-term terminal suitable for container use. Currently vacant.
- **Proposed Change**: One dry bulk berth.
- **Impacts:** Use as a dry bulk berth would create no additional substantial impacts.

- **Discussion:** Less fill would be required than for a two-berth container terminal, reducing potential impacts related to fill and runoff. Deeper channel and berth depth would not be required for a dry bulk terminal, as would be needed for a container terminal.

5. Terminal 2-3 Expansion

- **Current Designations:**

  Terminal 2 Northwest: One-berth near-term suitable for container terminal development. No current operation.

  Terminal 2: Active liquid bulk terminal.

  Terminal 3: Active combined container/neo-bulk terminal.

  Terminal 3 South: One berth near-term marine terminal site suitable for container use. No current operation.

- **Proposed Change**: Combine Terminals 2 Northwest, 2, 3, and Terminal 3 South, to create a continuous 80-acre four-berth combined container/neo-bulk cargo terminal.
- **Impacts**: 14 acres of fill, associated impacts on aquatic habitat, surface runoff; rail and road congestion, impacts to air quality.
- **Discussion:** Combining the area northwest of Terminal 2 with Terminals 2 and 3, and the area south of Terminal 3, would form a four-berth continuous combination container/neo-bulk terminal of approximately 80 acres. Terminal 3 is already in use as a combination terminal, but the other terminals would require modifications or new construction. Some fill, approximately 14 acres, would be required south of Terminal 3 to extend the wharf to add another 800-foot long berth and to create the 80-acre terminal. An equivalent area of Bay restoration would be required to offset Bay habitat displaced by filling. Paving the filled area would result in greater surface runoff, requiring best management practices to reduce the amount of pollutants entering the Bay.

  Additional cargo activity in this location will create greater levels of noise, lights, and visual impacts; however, because the activity will occur in an existing terminal area, these changes will not represent a significant increase in relation to existing levels, and appropriate design measures to offset impacts to adjacent non-maritime uses would be considered with specific project development.

6. Ancillary Use Zone

- **Current designation**: Port priority for ancillary use.
- **Proposed change**: Remove from port priority use.
- **Impacts**: Will allow non-port development to proceed.
- **Discussion:** Removal of the port priority use designation from the ancillary use zone reduces the backland available to support marine terminals on the Ford Peninsula. Future marine terminal development is constrained by the small amount of backland area west of Harbour Way, which limits the port to combined container/neo-bulk operations at this location despite the site's other attributes, including rail access and deep water, which suggest that it is suitable for, and competitive for, intermodal container shipping.

  Removal of the port priority use designation will allow alternative development to occur at the ancillary use area. The City of Richmond has initiated plans for this area to include research and development light industrial uses, which would generate increased automobile traffic and associated air quality impacts, and potentially greater demand for public services such as fire and police protection. Adequate measures to buffer impacts of port activity, such as noise, on adjacent non-maritime uses would be considered with specific project development.

In general, because terminal development proposed at the Port of Richmond will occur in an area already developed for port use, impacts related to noise, light and visual impacts, and public utilities and services, would not increase substantially in relation to existing levels. Appropriate measures to buffer impacts of port activity would reduce effects on adjacent non-maritime uses. Improved rail access to terminal areas planned by the Port will enhance landside movement of cargo, and reduce impacts to roadways.

7. National Gypsum

- **Current designation**: Active proprietary 22-acre dry bulk terminal. Not currently identified in Seaport Plan.

8. Levin-Richmond Terminal

- **Current designation**: Active proprietary 25-acre dry bulk terminal. Not currently identified in Seaport Plan.
- **Proposed change**: Include terminals in regional dry bulk cargo throughput capability.
- **Impacts**: Increase existing Bay Area dry bulk cargo throughput. Decrease need for future additional dry bulk berths. Elimination of impacts related to development of new bulk terminals at other locations around Bay.

INSERT Figure 6, MAP Port of Richmond

1. Piers 48-50

- **Current Designation Pier 48**: Active terminal. Pier 48 is currently inactive, but was used for neo–bulk steel.
- **Proposed Change:** Two-berth neo-bulk terminal. Remove some backland from port priority use. Retain 6 acres to create 15-acre terminal at Pier 48.
- **Current Designation Pier 50:** Active terminal.
- **Proposed Change:** Four-berth 24-acre break bulk terminal.
- **Impacts:** None—significant change in designation.

2. Piers 52 to 64

- **Current Designation:** Near-term two-berth marine terminal suitable for container use. In the 1988 Seaport Plan, the marine terminal and port priority use designations for the berths and associated backland were to be deleted upon fulfillment of several requirements, including adoption by the Port and BCDC of a strategy for ensuring that port priority use areas are reserved for port purposes consistent with the Seaport Plan.[14]
- **Proposed Change:** Delete near-term terminal designation and port priority use designation from the southern edge of Pier 50 to the northern edge of Pier 68.
- **Impacts:** Allows alternative development. Increased automobile traffic and associated air quality impacts, demand for public services such as police and fire protection, and other impacts will accompany commercial/light industrial/residential uses for proposed Mission Bay development, and will require appropriate mitigation measures. Water-related recreation and ancillary services planned for waterfront will increase public access to the Bay and will result in a public benefit.
- **Discussion:** Piers 52–64 are adjacent to the site of the Mission Bay project. The 1988 Seaport Plan provided for deletion of the marine terminal designation and port priority use area inland of the pier area if an equivalent area near Piers 70–80 was reserved for future marine terminal development. The plan provided that the near-term marine terminal designation for the Piers 52-64 area of the San Francisco waterfront should be retained until: (1) all of the former Western Pacific property at Warm Water Cove is transferred from the Catellus Development Corporation to the Port of San Francisco; and (2) the Port and the City and County of San Francisco develop a strategy, to be reviewed and approved by or on behalf of BCDC, to assure that the port priority use areas are reserved for port purposes consistent with the Seaport Plan, and the non-port-priority areas needed for marine terminal uses at the Piers 70 to 80 area are available to the Port. The transfer of land is expected in the near future, and with the proposed Seaport Plan changes, the port priority use designation west of Terry A. François Boulevard from its origin to Mariposa Street is proposed to be removed. The port priority use designation between Third Street, Illinois Street, Mission Rock, and Mariposa Streets was previously deleted.[15] This complicated process was predicated on the need to reserve adequate backland near Piers 70-80 to develop that 28-acre site for container operations.

  Since the last update of the Seaport Plan, however, maritime cargo operations have declined at the Port of San Francisco. As discussed in Part One of the proposed plan, changes in the maritime shipping industry have shifted container cargo toward those

[14] 1988 Seaport Plan, pp. 31-32.

[15] Resolution No. 93-11 and Bay Plan Amendment No. 2-93, San Francisco Bay Conservation and Development Commission.

facilities in the Bay Area that offer intermodal rail services, leaving the Port's container terminals virtually without tenants. However, these terminals are retained in this update of the Seaport Plan, as is the designation for one future container berth at Pier 94 North, because Bay Area container cargo volumes are expected to double by the year 2020, and this container capacity will be needed. Although most intermodal cargoes will be handled at Oakland or Richmond, the Port of San Francisco's container facilities will likely handle cargoes destined for San Francisco or the Peninsula, or other northern California destinations. The port's bulk facilities are also retained in the plan for the same reason: although currently vacant, the cargo forecast indicates that these facilities will be needed by the year 2020 to handle the growth in break bulk, neo-bulk, dry, and liquid bulk cargoes.

Additionally, mixed commercial, light industrial, and residential uses are planned at the Mission Bay development, encompassing a 325-acre area adjacent to Piers 52-68. Water-related recreation, and ancillary services that include a public boat launch and open space, are proposed along this area of the waterfront, with residential and retail development west of the open space. Increased access to the waterfront would result in a public benefit. Increased automobile traffic and associated air quality impacts, demand for public services such as police and fire protection, and other impacts will accompany commercial and residential development, and will require that appropriate mitigations be undertaken.[16]

3. Pier 70

- **Current Designation:** Active marine terminal that can be converted to container use. Adjacent to the San Francisco Dry Dock facility at Pier 68, Pier 70 was formerly an automobile terminal. It is now leased to City Tow, and cars are stored on the backland area. Existing ship repair facilities.
- **Proposed Change:** Two–berth break bulk terminal and ship repair area.
- **Impacts:** Reduced fill in the Bay, impacts to aquatic habitat, and surface runoff.

4. Area inland and between Piers 70 and 80

- **Current Designation:** Two-berth near-term terminal suitable for container use.
- **Proposed Change:** Delete near–term terminal and port priority use designation from southern edge of Pier 70 to Pier 80, as shown on Figure 8.
- **Impacts:** Reduced Bay fill, impacts to aquatic habitat, surface runoff; reduced road and rail congestion and associated air quality impacts.
- **Discussion:** A PG&E power plant occupies half of the area, and much of the remaining area is divided into privately held parcels. Substantial Bay fill and acquisition of private property would be required for container terminal development, which is not supported by market forces.

5. Pier 80

- **Current Designation:** Active container terminal with four berths. One near-term marine terminal suitable for container use is designated at the southwest corner of the pier.
- **Proposed Change:** Two-berth container terminal with 65 acres of storage area. Delete near-term container terminal designation.
- **Impacts:** Reduced Bay fill, impacts to aquatic habitat, and surface runoff; elimination of additional dredging; reduced road and rail congestion and associated air quality impacts

[16]Refer to Final Mission Bay EIR. August 1990. SCH# 86070113.

6. Piers 90-92

- **Current Designation:** Active dry bulk terminal.
- **Proposed Change:** One dry bulk berth and one liquid bulk berth on 25-acre terminal area.
- **Impacts:** Recognizes existing liquid bulk use. No substantial change or impacts.

7. Pier 94-96

- **Current Designation:** Active container terminal with Pier 94 North suitable for one-berth near-term container terminal development.
- **Proposed Change:** Remove port priority use designation from 36 acres. Retain 120 acres in port priority use.
- **Impacts:** Allows alternative development in parcel between ICTF and Piers 90-92.
- **Discussion:** A cogeneration energy plant is proposed to be constructed at the Port on Cargo Way. While the port priority use designation is to be removed from 36 acres of backland at Piers 94-96 that includes the proposed 10-acre plant site, this action would not affect potential siting of the plant at the Port. Power plants are an allowable use under the existing port priority use designation, therefore the effects that could be caused by the construction and operation of the plant would occur without the removal of the port designation.

8. Pier 98

- **Current Designation:** Port priority use; no terminal designation.
- **Proposed Change:** Remove port priority use designation.
- **Impacts:** No impact. No change in use—removal of port designation consistent with current open space use.
- **Discussion:** Most of the changes proposed at the Port of San Francisco either remove future container terminal designations or delete existing port priority use areas, and therefore, would not result in additional port development beyond the future single container berth currently designated at Pier 94 North. The areas proposed for removal from port designation do not support maritime facilities, but are designated in the 1988 Seaport Plan as backlands for developing additional container terminals.

  The areas proposed for removal from port priority use were reserved in the 1988 Seaport Plan for near-term development of five container berths. The potential annual throughput capability that would have resulted if all the designated terminals had been developed has been retained in the proposed plan within existing and proposed container terminal designations at other locations around the Bay. The 1988 Seaport Plan assumed that approximately 24 acres of fill in the Bay would be needed to develop five near-term berths on 121 acres. Based on revised terminal requirements, even greater amounts of fill would be required to provide adequate acreage for new container terminals at the Port. Deleting these marine terminal and port priority use area designations from the plan reduces the amount of fill required at San Francisco, and the associated impacts to water quality and habitat, to just those impacts that will result from constructing one container berth at Pier 94 North.

  Because no new sites or terminals are to be added to port priority use designation, potential impacts to the environment and to land use resulting from the proposed changes are limited to the effects of non-maritime developments in the areas deleted from port priority use. Exactly what types of alternative developments might occur in these areas is unknown at this time. The Port is nearing the end of a planning effort for the entire waterfront, which

produced a draft Waterfront Plan in November 1994. The Port Commission adopted the draft plan, and the EIR is scheduled to be completed in 1996. General types of maritime and non-maritime uses that could be considered for those areas of port property available for alternative development are listed in the draft plan, and more specific design elements and public access plans are to be incorporated in the final version. See Figures 7 and 8, maps of the Port of San Francisco.

INSERT Figure 7, MAP Port of San Francisco

Insert Figure 8, SF San Francisco Inset

Proposed Designation Changes at Bay Area Military Bases

The Seaport Plan reserves a number of military bases on the Bay for seaport use when and if they are no longer needed by the military. Bases so reserved and scheduled to close include the Alameda Naval Air Station, Hunters Point Shipyard, Mare Island Shipyard, Naval Supply Center Annex Alameda, the Oakland Army Base, and FISCO. Affected local communities are in different stages of developing reuse plans for future non-military development of these facilities after they are transferred to the local communities. Local reuse plans must be consistent with BCDC's federally-approved coastal management program, which includes the Bay Plan and the Seaport Plan, among others. Consistency is required by the federal Coastal Zone Management Act (16 USC 1456(c)(1-3)), which states that federal activities and federally licensed or funded activities are to be consistent with approved coastal management programs. A finding of consistency by BCDC is therefore necessary before the Navy or Army can approve a reuse plan.

The following port priority use designations and current uses apply at existing Bay Area military bases for which a change in designation is indicated in the proposed plan. In addition to general impacts associated with marine terminal development or removal from port priority use discussed previously, potentially substantial environmental impacts that can be expected from specific changes proposed at individual bases are discussed below.

Army Terminal, Oakland

- **Current Designation:** Military, to be developed for port and related uses if and when not needed by the Army.
- **Proposed Change:** 30-acre future container berth at Army Terminal 7, which would require 17 acres of Bay fill.
- **Impacts:** 17 acres of fill to convert to container uses, increased surface runoff.
- **Discussion:** Located on the Bay Bridge side of the Outer Harbor at the Port of Oakland, Army Terminal 7 handles break bulk and roll-on/roll-off cargo for Military Sealift Command vessels. The pier underwent seismic repair and upgrading following the 1989 Loma Prieta earthquake. An existing rail line extends to the wharf and to the backland area.

  Approximately 17 acres of fill would be required to convert Terminal 7 to a container terminal, requiring mitigation for lost aquatic habitat. Measures designed to minimize dust from fill and construction activities will be required. Expansion of the existing terminal area to support container activities would increase the total area paved at the site, increasing surface runoff and potential transport of pollutants to the Bay. Because of the recent recommendation for closure by the Base Closure and Realignment Commission, investigation for contamination will be initiated throughout the entire base.[17] No significant presence of toxic contamination is expected at Terminal 7, however, which has been in continuous use as a military shipping terminal. See Figure 4, map of Port of Oakland.

[17]In July 1995, the Base Closure and Realignment Commission recommended that the Oakland Army Base be closed, and the recommendation was confirmed by Congress in September. The City of Oakland has planning authority over future use of the base. Because it is located within Port boundaries, the property could offer opportunities for increased waterfront and landside capacity at the Port.

Fleet and Industrial Supply Center, Oakland (FISCO)

- **Current Designation:** Military, to be developed for port and related industrial uses if and when not needed by the Navy.
- **Proposed Change:** Retain port priority use designation on the entire base for future development of five container berths and JIT.
- **Impacts:** May require up to 30 acres of Bay fill; additional dredging to -48 feet; reduced truck trips and associated air quality impacts.
- **Discussion:** Formerly the Naval Supply Center, the Fleet and Industrial Supply Center, Oakland (FISCO), is the Navy's largest supply center on the west coast. Located within the Port of Oakland on the Oakland Inner Harbor Channel, the 500-acre facility is bounded by Seventh Street on the north, the Southern Pacific rail yard on the east, and the Union Pacific rail yard on the south. See Figure 4, map of Port of Oakland.

  The facility was constructed in 1940-41 by filling 500 acres of marsh with material dredged from the Bay. The location was selected because of its waterfront location and proximity to surface transportation. Existing facilities include two piers and a marginal wharf for berthing Navy and Military Sealift Command vessels, nearly 8 million square feet of warehouse space, and three units of family housing.

  Little manufacturing or industrial activity occurs at FISCO, and hazardous materials are removed on a regular basis. No active or inactive landfills or treatment facilities are located on the property. In general, no major sources of contamination have been identified in the soil or groundwater, and investigations indicate that little or no human health risk exists for future industrial use of the site. Environmental investigations and cleanup activities are currently being undertaken by the Navy, which is responsible for removal of all identified sources of toxic contamination at the facility.

  The Port has proposed a near-dock joint intermodal terminal (JIT) on 220 acres of FISCO property that have been leased to the Port. Lease of an additional 200 acres from the Navy will allow development along the Inner Harbor Channel of a 6,000 foot wharf to accommodate five 1,200 foot container berths. The project will expand the Port's capability to serve the growing demand for rail transport of double-stacked container cargo.[18] The project area is located in a section of the Port that includes the Union Pacific rail yard and is adjacent to the American President Lines container terminal and Southern Pacific rail yard. Impacts related to development of the proposed facilities would therefore derive from the expansion of existing industrial uses in the project area. The channel currently is authorized to be dredged to -42 MLLW, and future deepening of the Oakland harbors to -45 MLLW, anticipated within five to seven years, will allow berthing of larger container ships.

  Effects of placing up to 30 acres of fill in the Bay are expected to be offset by shoreline area that will be cut back to provide necessary clearance for ship berthing in the Inner Harbor. Further dredging to -48 MLLW is likely to be needed in the future to accommodate the next generation of container ships. Development of a joint intermodal terminal at Oakland, involving the Santa Fe, Union Pacific, and Southern Pacific railroads has the potential to eliminate 300-400 daily truck trips between Richmond and Oakland, reducing impacts to roadways and air quality.

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[18] In July 1995, the Base Closure and Realignment Commission recommended that FISCO be closed, and the recommendation was confirmed by Congress in September. The Port of Oakland has planning authority over the future use of the base. The availability of the entire facility may provide opportunity for further improvements to cargo transport operations.

Hunters Point Naval Shipyard, San Francisco (Hunters Point Annex)

- **Current Designation:** Military, to be developed for port and related uses if and when not needed by the Navy.
- **Proposed Change:** Remove port priority use designation from 450 acres. Retain a 55-acre parcel adjacent to the southeastern waterfront for two future break bulk berths.
- **Impacts:** Majority of base available for alternative use. Some fill for marginal wharves; increased surface runoff with paving of terminal areas; removal of deteriorated finger piers.
- **Discussion:** The former Naval Shipyard covers more than 500 acres along the southeast San Francisco waterfront, and includes industrial ship repair facilities and associated buildings. The facility contains approximately 150 buildings, most of which are slated to be demolished due to disrepair, six drydocks, and approximately 16,000 linear feet of berthing area.

  The Navy's use of the shipyard at Hunters Point ended in 1974, and an interim lease to a private ship repair firm expired in 1986. There has been little use of the property since that time, and most of the structures on the base have deteriorated. Except for a few buildings used by the Navy for warehousing and temporary leases to artists and small businesses, the shipyard is largely unused. Some berthing areas are used for military ships, and Drydock 4 has been leased to a private ship dismantling firm.

  High levels of toxic contamination occur throughout Hunters Point from historical ship repair and on-site waste disposal practices, resulting in the facility being declared a Superfund site in 1989. The Navy has been carrying out remedial investigation and cleanup operations since that time. Base closure procedures require the Navy to clean the former shipyard to standards adequate for intended future use prior to transfer to the City.

  The Department of Defense listed Hunters Point Annex for closure in 1991, and in June 1994, the Mayor's Citizen's Advisory Committee, working with the City's Office of Military Base Conversion, selected a preferred plan for reuse of the facility. The plan emphasizes the existing artist community at the shipyard, and includes educational uses such as job training centers, public schools and conference facilities. Residential, research/development, and industrial uses also are featured in the proposed plan.

  Removal of the port priority use designation from the majority of the base will allow alternative development such as that proposed in the reuse plan. Impacts related to the mix of uses proposed include increased automobile traffic and associated air quality impacts, and increased demand for public services such as police and fire protection.

  General impacts related to marine terminal development would occur with construction of the two proposed break bulk berths at Hunters Point. Measures designed to minimize dust and noise from construction activities would need to be implemented. Although fronting on deep water, initial dredging would be required to remove sediment accumulated since maintenance dredging was suspended by the Navy. Planned improvements to widen Army Street and reduce curvature on freeway ramps would facilitate truck access to the Port as well as to Hunters Point. Adjacent road access would require upgrade for truck traffic generated by industrial and port uses at the former shipyard.

  While some fill may be required to construct marginal wharves, removal of deteriorated finger piers could provide an equivalent area of restored Bay habitat. Best management practices would be required to reduce pollutants entering the Bay from surface runoff. See Figure 9, map of Hunters Point.

INSERT Figure 9, MAP of Hunters Point Shipyard

Mare Island Naval Shipyard, Vallejo

- **Current Designation:** Military, first consideration to be given to port and water-related industry when no longer needed by the Navy. San Francisco Bay Plan Map 15 note further states that port use should be limited to shallow draft shipping unless the channels serving the site can be maintained at a cost that is reasonable in relation to other regional dredging needs.
- **Proposed Change:** Remove port priority use designation from approximately 1,800 acres. Retain 500 acres of active dredge disposal ponds in port priority use for regional disposal or rehandling facility.
- **Impacts:** Majority of base available for alternative use. Reduced dredging requirements and impacts to rail and roadways. Potential conflict with proposed wildlife refuge expansion.
- **Discussion:** The Mare Island Shipyard has been in use by the Navy as a repair and docking facility since 1854, and became a building and overhaul yard for submarines in the 1950s. Because of its significant role in naval history, the shipyard was designated a National Historic Landmark in 1975. The facility comprises approximately 960 buildings housing a mix of industrial, office, residential, commercial, educational, and recreational uses. The majority of industrial activities are located in the eastern portion of the island along Mare Island Strait, where construction and repair of Navy ships and submarines occur. The waterfront in this area includes four drydocks, two shipbuilding ways, 19 berths, and three finger piers.

  Regular dredging of Mare Island Strait is required to maintain a depth of -36 MLLW to accommodate Navy vessels; a maximum depth of -25 MLLW is expected to be maintained by the Army Corps of Engineers in the strait after the Navy ceases operations at the island. Currently, sediment dredged by the Navy at the waterfront is pumped to disposal ponds on the west side of the island via a network of pipelines and pumps.

  As a result of long-term industrial activities on the island, a wide range of hazardous materials including petroleum products, radiological materials, industrial solvents, and heavy metals have been identified as potential environmental contaminants. In addition, large areas at the base have been contaminated due to ordnance disposal. The level of contamination at Mare Island will require extensive remediation by the Navy.

  Removal of the port priority use designation from the majority of the base will allow non-maritime development to occur. However, most of the uses proposed in the City of Vallejo's reuse plan already occur on the island, and in general the level of impact would not increase significantly over existing use. Where necessary, measures designed to offset impacts of development on adjacent uses will be considered with review of individual projects. The final reuse plan developed for the shipyard calls for a mix of uses including light and heavy industry, education and office uses, residential development, and an historic district. A marina, golf course, and open space are also included in planned future use of the island. A draft EIS/EIR prepared for the reuse plan discusses potential impacts of future development of Mare Island.[19]

  In addition to 1,650 acres of dry uplands, the base includes approximately 1,450 acres of tidal and non-tidal wetlands that include the dredged material disposal ponds. The ponds provide habitat for sensitive species on the island, including the endangered salt marsh harvest mouse. Other sensitive species known to exist on the island are the California black rail, clapper rail, and salt marsh common yellow throat.

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[19]Draft EIS/EIR for Mare Island Shipyard Disposal and Reuse Plan. August 1995. SCH# 94093029.

The U.S. Fish and Wildlife Service (FWS) has requested 670 acres of the tidal and non-tidal wetlands for habitat for migratory birds and endangered species. In conjunction with a public education and interpretive center to be located in a former navy building, the acquisition would extend the existing San Pablo Bay National Wildlife Refuge. The LTMS has identified the Mare Island dredge disposal ponds as a primary potential regional disposal or rehandling facility for sediment dredged from Bay shipping channels and ports. Three of the ponds proposed for regional disposal use, ponds 1, 3E, and 3W, are included in the FWS request. FWS believes that active use of dredge spoil ponds on a National Wildlife Refuge would have negative effects on migratory birds, due to long drying periods required for the deposited material, operation of heavy equipment, and the potential for contaminated sediments to be deposited.[20]

Placement of dredged materials in the ponds would continue by way of existing barge docking and pipeline facilities. Approved confinement practices would be required for disposal of dredged material unsuitable for open water disposal. If rehandling operations are initiated, measures to minimize potential impacts to the environment that would result primarily from dust would be required. Best management practices, which could include limiting harvesting activities to those times when dredged material is of a specified moisture content and when winds are less than a specified velocity, would be employed. Because rehandling activities prepare dredged material for future uses, sediments accepted for rehandling must be deemed treatable for future use. Potential impacts to wildlife due to noise associated with rehandling activities are expected to be insignificant; however, noise-generating activities could be scheduled during non-nesting season in ponds adjacent to known nesting sites.[21] See Figure 10, map of Mare Island.

[20]Letter from Betty Radtke, U.S. Fish and Wildlife Service to BCDC, October 20, 1994.

[21]Refer to *Volume II: Feasibility Analyses of Four Sites*, prepared by Gahagan & Bryant Associates, Inc. for the Long Term Management Strategy, November 1994. Also, Chapter 5, as revised, January 26, 1995.

INSERT Figure 10, MAP of Mare Island

Naval Air Station, Alameda (NAS Alameda)

- **Current Designation:** Military, to be developed for port and related uses if and when not needed by the Navy.
- **Proposed Change:** Remove port priority use designation from approximately 1,500 acres. Retain 220 acres fronting on the Oakland Inner Harbor Channel for a future five-berth container terminal.
- **Impacts:** Removal of the port priority use designation from nearly 1,500 acres of the naval air station will allow alternative development to occur throughout most of the former base. Increased automobile traffic congestion and associated air quality impacts, and demand for public services such as police and fire protection, could accompany mixed use development. Lower intensity use would occur in the runway area with development of a wildlife refuge. Measures designed to offset impacts of potential incompatible uses, such as buffer areas, will be considered with review of the reuse plan and will need to be included with specific project development.

  Excavation of the shoreline at the Inner Harbor Channel for construction of marine terminals will potentially release contaminants. Increased traffic in tunnels, bridges and associated air quality impacts. Noise, lights, visual impacts of port activities on adjacent non-maritime uses.
- **Discussion:** NAS Alameda is scheduled to close in Spring of 1997. The Alameda Reuse and Redevelopment Authority (ARRA)[22] adopted a reuse plan for NAS in January 1996 that features a mix of uses including office and R&D business park development, light industry, residential, and open space. Light industry and R&D development, a hotel conference site, and a golf course are proposed for the area of the base to be retained in port priority use. The ARRA has expressed its concern that a port designation on the 220-acre parcel will conflict with a U.S. Fish and Wildlife requirement for least tern habitat at the airfield. The ARRA also believes that the port designation will impede their ability to develop interim uses on the 220-acre parcel.

  An airfield and aviation repair facilities are operated by the Navy on the 1,700 acre base, which was formed by filling Bay and marsh areas with material dredged from the Bay. Major structures include seven aircraft hangars, warehouses, family housing, industrial repair shops, and an oil refinery. The airfield includes two runways and taxiways. A fire training area, storage sheds, fuel lines, and other smaller buildings are adjacent to the Oakland Inner Harbor. Waterfront facilities on the south side of the island include piers for berthing aircraft carriers. The Navy will continue to maintain the base until cleanup of toxic contamination found on the base can be completed and the property transferred to the City of Alameda.

  The airfield portion of the base is home to over 100 bird species, including at least three species of regional and national significance: the endangered California least tern, the Caspian tern, and the brown pelican. The site provides nesting habitat for the only successful northern California colony of the least tern, as well as for the California clapper rail, and for the largest Pacific coast colony of the Caspian tern. A breakwater located adjacent to the southern portion of the island provides important aquatic habitat and roosting area for the brown pelican, and is a protected haul-out area for harbor seals.[23]

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[22]ARRA is a joint powers commission established by the City of Alameda and Alameda County to oversee reuse planning for closing military facilities in Alameda.

[23]For further discussion of biological resources at NAS Alameda, refer to proceedings of the symposium on Alameda Naval Air Station's Natural Resources and Base Closure, presented by the Golden Gate Audubon Society and College of Alameda, March 12, 1994, and *Characteristics of California Least Tern Nesting Sites Associated with*

The U.S. Fish and Wildlife Service (FWS) has proposed to establish the Alameda National Wildlife Refuge on the airfield portion of the base. The wildlife refuge would occupy 595 acres of land on the western end of the island, and would encompass 140 acres of grassland and 55 acres of existing wetlands, in addition to 375 acres of adjacent open water. Discussions have been ongoing between the ARRA and the FWS to determine future uses of the base that will be compatible with wildlife management. FWS has recommended low intensity uses adjacent to the proposed refuge and limiting building heights so as to eliminate potential perching areas, which could expose least tern chicks to raptors. To date, FWS has not commented on the proposed Seaport Plan designation at NAS Alameda.

The proposed Seaport Plan would remove the port priority use designation from nearly 1,500 acres of the base, including the runway area where the least tern colony is located. The remaining 220 acres would be retained for future port development on the northernmost portion of the base, extending 6,000 feet along the waterfront and 1,600 feet inland. An area one-third mile wide would serve as a buffer between port activity and the five-acre least tern colony. More than one-half mile distance would remain between container cranes positioned at the waterfront and the least tern site.[24],[25] (See Figure 11, map of Alameda.) The port priority use area would partially overlap with the refuge area.

The Navy will cease maintenance dredging of a deep water channel and berthing areas at the southern waterfront when the base closes, and future dredging for marine terminal use will not be required, due to removal of the port priority use designation from that portion of the facility. The Oakland Inner Harbor at the northern waterfront is currently authorized to be dredged to -42 MLLW. Consequently, no additional dredging other than berth areas will be required to accommodate terminal facilities in the proposed port priority use area.

Construction of berths on the northern waterfront will require cutting back the shoreline along the Oakland Inner Harbor Channel to widen it sufficiently for two-way vessel traffic. Contamination will be released from a former Navy landfill partially located in the area to be excavated, and containment measures would be required at the time of construction to ensure that toxic substances that include heavy metals and PCBs are not released into the air or into the Bay. Other general impacts of marine terminal development, such as noise, dust, and increased surface runoff will occur with development of a five-berth container terminal.

Transportation and air quality impacts of terminal operation will depend on the method used to move containers from the NAS Alameda terminal to the rail lines and highway access at the Port of Oakland. Existing road access to the west end of the island is via the Webster and Posey tunnels, which operate at or near capacity during peak weekday traffic periods. The Alameda Belt Line Railroad would require substantial upgrade to serve marine terminals, under current container terminal operating systems. A high level bridge crossing, estimated to cost more than $120 million, has been discussed as one option to increase vehicular access that could serve both future maritime and non-maritime development on Alameda, and which could be aligned with the road and rail system at the Port of Oakland to facilitate intermodal movement of cargo. The need to build additional tunnel or bridge

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Breeding Success or Failure, with Special Reference to the Site at the Naval Air Station, Alameda, prepared for Naval Facilities Engineering Command, Western Division, Department of the Navy, August 26, 1995.

[24]An estimated minimum distance of one-quarter mile would likely provide a sufficient buffer for the least tern colony from raptors that may alight in the vicinity of the airfield. Resident birds, such as harriers and kestrals, are considered to present threats to the least terns at least equal to those from raptors such as the red tail hawk. Telephone communication with Carl Wilcox, CA Department of Fish and Game, September 13, 1995.

[25]No sightings of raptors other than occasional incidences of seagulls alighting on container cranes have been reported by crane maintenance personnel at the Port of Oakland, located across the Inner Harbor Channel from NAS. The high level of activity associated with container cranes deters birds from resting on them. Telephone communication with James Putz, Port of Oakland, September 28, 1995.

access to serve port needs on Alameda may be obviated by technological innovation in intermodal shipping, which has occurred at a rapid pace. Transportation improvements may be needed to support non-maritime uses proposed in the reuse plan. In the event a new bridge or tunnel access is proposed for Alameda, it should be designed to accommodate container movements to the Port of Oakland JIT.

An historic district encompassing 85 Navy buildings constructed in the early 1940s is located approximately one-fifth mile east of the proposed boundary of the port priority use area. Development of the marine terminal would not involve alteration of any of these structures.

INSERT Figure 11, MAP of NAS Alameda.

Naval Supply Center Annex, Alameda

- **Current Designation:** Military, to be developed for port and related industrial uses if and when not needed by the Navy.
- **Proposed Change:** Remove port priority use designation from entire base.
- **Impacts:** Will allow alternative development on the 150-acre site, as proposed in ARRA reuse plan.
- **Discussion:** The Alameda Annex, a facility of FISCO that also has been recommended for closure, comprises 150 acres approximately one-half mile east of NAS Alameda, along the Oakland Inner Harbor. Existing land uses include military operations and base housing. Commercial and industrial properties lie to the east of the facility. The area to the south consists of residential developments, including military housing, and a number of schools.

  Prior to the 1920s, major industrial operations in the area, including an oil refinery and manufacturing activities, are believed to have used and stored hazardous materials in marsh areas along the former shoreline, which were subsequently filled with sand and clay during the 1920s. The property was acquired by the Navy between 1951 and 1956. Seven sites at the Annex, including a scrap yard and an abandoned underground gasoline storage tank, have been identified by DTSC as potentially contaminated as a result of Navy activities. The Navy is responsible for remediation of existing toxic contamination before future development can be undertaken.

  Removal of the port priority use designation will allow alternative, non-maritime development to occur, which could have various impacts related to the specific project proposed. The Mariner Square development is adjacent to the site, and the City of Alameda is developing plans for similar commercial and residential uses of the former Navy property. Increased automobile traffic and associated air quality impacts, and increased demand for public services such as police and fire protection could occur. Measures designed to offset effects created by development will be considered at the time of specific project review.

  The Annex lies just east of the former Todd Shipyard, which was designated as a port priority use area in the 1988 plan and is now proposed for removal from port priority use designation (see discussion of Todd Shipyard in the following section on non-port sites). Consequently, any container terminal development at the Annex, where the waterfront area could accommodate a maximum two container berths, would be separated by non-maritime uses from future terminals at NAS Alameda, and would not be part of a continuous terminal area. Costs for necessary improvements would likely be prohibitive for such limited port development. See Figure 11, map of Alameda.

Proposed Changes At Non-Port Sites

The following changes are proposed to port priority use and marine terminal designations at Bay Area sites that currently are not operating as seaports, but are designated in the Seaport Plan as providing future locations for port development. In addition to general impacts associated with marine terminal development or removal from port priority use described previously, potentially significant environmental impacts that can be expected to result from specific changes proposed at individual non-port sites are discussed below.

Martinez (Praxis Property)

- **Current designation**: Port priority use.
- **Proposed change**: Remove port designation from approximately 3,500 acres at Pacheco Creek sites, except for Praxis property.
- **Impacts:** Water-related industrial uses are likely to continue in areas released from port priority use—no change in impacts. If Praxis property is used for dredged material rehandling, marsh habitat and wildlife could be disturbed. Widening of existing access road for increased truck traffic would displace some adjacent wetlands.
- **Discussion:** Because the majority of the Martinez sites currently designated for port priority use are comprised of hills surrounded by lowlands underlain by weak soils, and are adjacent to tidal wetlands, they are not suitable for marine terminal development. The dominant existing land use is oil refining and other industrial uses that involve the transport of materials to and from the waterfront via pipeline. Continued use of the area for water-related industry would create no new types of impacts.

  The Praxis property is retained in port priority use as a potential dredged material disposal site that would serve the regional maritime industry by accepting sediment dredged from Bay Area ports and shipping channels. The LTMS has identified the Praxis property as a potential upland site for confined disposal of dredged material or for dredged material rehandling. The designation would apply to approximately 165 acres of former brackish marsh that were previously diked and filled with dredged material. Eighty-five acres of marsh remain at the perimeter of the site. Pending the outcome of the LTMS Comprehensive Management Program for dredging, the Praxis site will be retained in port priority use. See Figure 12, map of the Martinez area.

  Current use of the Praxis site is limited to a sand harvesting operation on 20 acres in the northwest corner of the property, which involves transferring sand ashore by hydraulic pump and removal of the dried sand by truck. A levee setback will be required to prevent deposited material from damaging an existing Contra Costa Sanitary District sewer outfall pipe and encroaching on a 30-foot wide easement that bisects the site north to south.

  Measures designed to minimize erosion of levees and dikes constructed for containment of dredged spoils, such as silt fencing and seeding, will be required to prevent release of dredged material to the surrounding area. Testing of dredged material for contaminants will be conducted prior to disposal, and approved confinement practices put in place for material found unsuitable for open water disposal. If rehandling operations are initiated, measures to minimize potential impacts to the environment that would result primarily from dust will be required. Best management practices, which could include limiting harvesting activities to those times when dredged material is of a specified moisture content and when winds are less than a specified velocity, would be employed. Because rehandling activities prepare dredged material for future uses, sediments accepted for rehandling must be approved for treatment for future use.

Disposal operations entail transporting dredged sediments by pipeline, and would be unlikely to disturb wildlife sited in the marsh areas outside the existing levees. A buffer area between disposal areas and the surrounding marsh would provide upland refuge during episodes of high tide or flooding for the salt marsh harvest mouse, which inhabits the marsh areas outside the perimeter levees. A buffer area would further distance disposal activities from marsh birdlife.

Development of a rehandling facility would generate increased truck traffic and associated impacts to air quality, and likely require widening or upgrading of an existing access road. Mitigation measures to offset the loss of some wetland adjacent to the roadway would be required.[26]

Future development will occur if and when the site is released from port priority use. Development of a business and industrial park, as proposed by the property owner, would require appropriate mitigation measures for increased automobile traffic and associated air quality impacts, as well as demand for utility systems and public services, generated by such development.

[26]Refer to *Engineering Elements of Dredged Material Rehandling Facilities*, prepared by Gahagan & Bryant Associates, Inc., for the Long Term Management Strategy, November 12, 1993.

Insert Figure 12, map of Martinez Area Sites

Selby (Unocal and Wickland Properties)

- **Current designation:** Near-term terminal development.
- **Proposed change**: Remove port priority use designation from Unocal property. Retain five-berth liquid bulk terminal designation on Wickland Oil Company property.
- **Impacts:** Unocal property currently in water-related industrial use—no change in impacts. No change in designation on Wickland site.
- **Discussion:** The hilly 570-acre Unocal property is not suited for port development due to insufficient flat waterfront area; however, the site is appropriate for existing water-related industry that involves transporting petroleum products via pipelines from a long wharf to upland storage tanks. This use will continue to be allowed under the existing water-related industry designation at the site, and, therefore no change to existing environmental impacts will result from deleting the port priority use designation.

  The level 60-acre Wickland site is undeveloped and adjacent to a deep water ship channel, the Southern Pacific railroad mainline, and Interstate 80. See Figure 13, map of Selby. Development of a five-berth liquid bulk terminal would create general impacts associated with terminal construction. Paving of an unsurfaced area would require measures to minimize increased surface runoff and potential transport of pollutants to the Bay. Increased truck traffic and associated air quality impacts would accompany the introduction of marine terminal activity at a currently undeveloped site. In the event potentially hazardous materials are handled at the terminal, such as petroleum products, appropriate safety measures would be implemented with specific project development.

Insert Figure 13, Map of Selby

Former Todd Shipyard, Alameda (Alameda Gateway)

- **Current designation**: Port priority use.
- **Proposed change**: Remove port priority use designation.
- **Impacts:** Allow alternative development.
- **Discussion:** Alameda Gateway is not in maritime operation, and does not offer an adequate backland area for marine terminal operations. Additionally, a site in the Inner Harbor Channel adjacent to the 50-acre former shipyard has been designated by the Army Corps of Engineers for a new vessel turning basin. Development of the 1,200 foot diameter basin will abut the Alameda Gateway waterfront, requiring partial removal of existing finger piers, thereby precluding construction and operation of a marine terminal at this site.[27] See Figure 11, map of Alameda.

  Removal of the designation from the site will allow alternative development to occur. Proposed development would include office use, which would increase automobile traffic and associated air quality impacts, and increase demand for public services such as police and fire protection. Measures designed to offset impacts related to alternative development of the site would be considered with specific project review.

Vallejo Waterfront

- **Current designation**: Five-berth, 100-acre near-term container terminal requiring 4 acres of fill.
- **Proposed change**: Remove marine terminal and port priority use designations.
- **Impacts:** Allow alternative development. Reduced dredging requirements. Less truck and rail impacts.
- **Discussion:** The Vallejo site is not suitable for container terminal development primarily due to the restricted depth of Mare Island Channel and isolation from other commercial ports. Removal of the site from port priority use will reduce demand for dredging of Mare Island Strait, which is expected to be maintained to a depth of -25 feet MLLW after the Navy vacates Mare Island Shipyard. Impacts related to removal of the port priority use designation will result from alternative development that could occur on the site. Increased automobile traffic and associated air quality impacts could result, as well as increased demand for public services such as police and fire protection, if commercial or residential development occurs. Measures designed to offset impacts related to alternative development of the site would be considered with specific project review. See Figure 14, map of Vallejo.

[27]Telephone communication with Rob Andrews, Engineering Division Port of Oakland, September 19, 1995.

Insert Figure 14, Map of Vallejo Waterfront

Part V
Alternatives

Alternatives to the proposed Seaport Plan changes are intended to illustrate how the majority of the plan objectives, including meeting the cargo forecast, would be met while avoiding or substantially reducing one or more significant effects to the environment. The "Minimum Bay Fill" and "Consolidated Container Terminals" alternatives are described below. An additional alternative, in which no changes would be made to the existing Seaport Plan, is also discussed.

The same general impacts to the environment described in Part III would also apply to the types of development that could result from the following alternatives. Issues of particular concern at specific sites that could occur under the alternatives are described for the individual sites.

Appendix A includes tables for each alternative showing the assignment of berths, acreage, and throughput capacity.

Minimum Bay Fill Alternative

The Minimum Bay Fill alternative seeks to accommodate expected growth in waterborne cargo volumes in the Bay Area by locating future marine terminal development at locations that will require the least amount of Bay fill. The Bay Plan, of which the Seaport Plan is an element, allows fill in the Bay for ports provided the fill is consistent with the policies of the Seaport Plan (Bay Plan Ports policy 2). The McAteer-Petris Act (Government Code Sections 66600 et. seq.) allows the Commission to authorize Bay fill for ports and water-oriented uses provided that the fill meets the criteria listed in Section 66605, which include:

- Public benefits from the proposed fill must exceed public detriment;
- There is no alternative upland location available;
- The fill is the minimum necessary to achieve the purpose of the fill and will be such that it minimizes harmful effects to the Bay; and
- The fill is constructed in accordance with sound safety standards.

Future fill in the Bay for terminal development under the minimum Bay fill alternative would amount to 74-104 acres, compared to 210-240 acres under the proposed plan. Future port and marine terminal development under this alternative would retain one more bulk berths, and provide 510,000 metric tonnes additional break bulk capacity, than the proposed plan. This alternative would result in the same number of container berths as with the proposed plan. Table One on page two displays summary statistics comparing each of the three alternatives to the proposed plan changes.

The reduced amount of Bay fill in this alternative results from removal of future container terminal designations at two locations within the Port of Oakland, which eliminates 136 acres of fill in the Bay, compared to the proposed changes. To compensate for the loss of two container berths at Oakland, this alternative calls for expanding the area designated for port priority use on the Ford Peninsula at the Port of Richmond, and retaining the ancillary use zone in port priority use. The Port of Richmond would have the capacity for an additional 2.6 million metric tonnes of container cargo under the minimum Bay fill alternative, due to the larger terminal on the Ford Peninsula. However, this scenario conflicts with the City of Richmond's Ford Peninsula development plan. The City has expressed strong concern that this scenario would severely impede the City's ability to proceed with their plan for the Ford Peninsula.

The Naval Supply Center Alameda Annex would be retained in port priority use, to be developed into a two-berth terminal. This scenario would conflict with the Alameda Reuse Authority's reuse plans for the Annex. Additionally, the container terminal would not be contiguous to the proposed 5-berth terminal on NAS Alameda.

Changes to port priority use and marine terminal designations under the Minimum Bay Fill alternative differ from the proposed plan at the following sites:

1. *Oakland*: Remove port priority use and two-berth marine terminal designation at the Bay Bridge site. This reduces Bay fill by 110 acres, compared to the proposed plan. Retain three break bulk berths at Berths 8, 9, 10. Retain existing container designation at Berths 20, 21. This reduces Bay fill by 26 acres, compared to the proposed plan. Container cargo throughput would be reduced by a minimum 1,520,000 metric tonnes, not including any differences in operating efficiencies.
2. *Richmond*: Retain port priority use designation on ancillary use zone. Reinstate port priority use designation to Ford Peninsula that was deleted in the 1988 plan, sufficient for four-berth 160-acre container terminal on Ford Peninsula.
3. *Naval Supply Center (NSC) Alameda Annex*: Retain entire base for two future container berths. This would result in 1,146,000 metric tonnes of additional container cargo throughput capability compared to the proposed plan.

Centralized Container Terminals Alternative

The Centralized Container Terminals alternative recognizes the trend in the container shipping industry toward consolidating terminal operations to realize economies of scale and to locate new terminals adjacent to intermodal rail facilities. This alternative seeks to concentrate future marine terminal development in areas where maritime-related infrastructure is already located, focusing on the Ports of Oakland, San Francisco, and Richmond.

Future port and marine terminal development under the Centralized Container Terminals alternative would result in eleven more container berths than the proposed plan. The Bay Area's annual capacity for container cargo would increase by approximately 4 million metric tonnes. Development of eight fewer bulk berths would slightly reduce the regional capacity for dry, liquid, and neo-bulk cargoes, but capacity would still be above the forecast volumes for the year 2020.

This alternative increases the number of container berths and associated capacity, but at the expense of consistency with local plans. An estimated 25 additional acres of fill would be required to construct a 40-acre container terminal between Piers 70-80 at San Francisco under this alternative. Reinstatement and retention of port priority use designations on the Port of Richmond's Ford Peninsula, in addition to the three berths proposed for Terminals 5-6-7, would increase substantially the capacity at the Port of Richmond to handle container cargo. This alternative calls for a five-berth container terminal to be developed at the Hunters Point Shipyard, a two-berth container terminal at the Alameda Naval Annex, and one berth at the Alameda Gateway site. Most of these designations conflict with local land use plans and call for container terminal development in unsuitable locations.

Changes to port priority use and marine terminal designations under the Centralized Container Terminals alternative differ from the proposed plan in the following ways:

1. *Encinal Terminals*: Remove port priority use, active- and near-term marine terminal designations from Terminals 1-4.
2. *Oakland*: Retain port priority use designation on the Ship Repair area. Retain port priority use designation on triangular parcel northeast of I-880.
3. *Richmond*: Retain port priority use designation on ancillary use zone. Reinstate port priority use designation on Ford Peninsula. Add backland to form continuous four-berth 160-acre container terminal on Ford Peninsula. This would result in 2,622,000 metric tonnes more throughput than the proposed plan.

4. *San Francisco*: Retain area between Piers 70-80 for future one-berth container terminal. This would require a minimum of 25 more acres of Bay fill, and create 749,000 metric tonnes more throughput than the proposed plan.

5. *Hunters Point Naval Shipyard*: Retain port priority use designation on entire base for future five-berth container terminal. Create additional 2,865,000 metric tonnes of throughput. Some fill would likely be required for container berths, as well as road and rail improvements.

6. *Naval Supply Center (NSC) Alameda Annex*: Retain entire base for two future container berths. This would result in 1,146,000 metric tonnes of additional container cargo throughput capability compared to the proposed plan and two additional container berths.

7. *Concord Naval Weapons Station*. Remove port priority use designation.

8. *Former Todd Shipyard (Alameda Gateway)*. Retain port priority use designation for one future container berth. Create 573,000 metric tonnes more throughput and one additional container berth.

No Change Alternative

The No Change alternative to the proposed plan is represented by the 1988 Seaport Plan. No changes would be made to the policies and port priority and marine terminals designations as they appear in the existing plan.

The 1988 plan did not assign fill volumes, cargo types and future capacity to specific sites; therefore, it is not possible to directly compare berths, capacity, and fill volumes to the proposed plan. However, the 1988 plan called for a total of 113 berths by the year 2020 to meet the cargo forecast, whereas the proposed plan calls for a total of 82 berths.

Potential fill in the Bay for terminal development under this alternative would total approximately 460 acres, compared with 210-240 acres in the proposed plan.

Traffic and air quality impacts of the 1988 plan were addressed in the 1991 Supplemental Environmental Impact Report (SEIR). The same baseline cargo forecast was used to develop the proposed changes to the Seaport Plan, therefore traffic and associated air quality impacts should be roughly equivalent, since the same volumes of cargo are being moved on Bay Area roads and railroads. Impacts may be less under the proposed plan due to higher capacity intermodal shipping. which makes use of double-stacked rail cars and more train movements, and fewer truck trips, to get cargo to its ultimate destination.

Comparison of Alternatives at Bay Area ports

Alternative changes to port priority use designations at existing ports, and associated environmental impacts, differ from the proposed plan changes as described below.

Port of Benicia

<u>Minimum Bay Fill and Centralized Container Terminals alternatives</u>

- Changes to designation are the same as for the proposed plan, which calls for no additional terminal development at the Port of Benicia.

<u>No Change alternative</u>

- Retain the waterfront west of the existing wharf as a long-term site for future container terminal development.

Mitigation would be required for impacts to water quality and marine resources that would occur with 57 acres of Bay fill for a container terminal. Impacts related to marine terminal development, as well as to increased trucking activity for transport of containers and associated air quality impacts and surface runoff, would occur.

Encinal Terminals

Minimum Bay Fill alternative

- Changes to designation are the same as for the proposed plan, which calls for deletion of the port priority and marine terminal designation at Terminal 5.

Centralized Container Terminals alternative

- Remove the port priority use, active- and near-term marine terminal designations from Terminals 1-4.

  Cargo throughout capacity at this currently active two-berth neo-bulk and liquid bulk terminal would be removed from the plan. Impacts related to alternative development that could occur at the site would depend on the type of non-maritime development that would be proposed. Increased automobile traffic and associated air quality impacts, as well as increased demand for public services such as police and fire protection, could occur.

No Change alternative

- Terminal 5 would continue to be designated for future container terminal development.

  Such development is prohibited by the Webster and Posey Street tubes, which prevent dredging of the Oakland Inner Harbor east of the tubes to depths that will accommodate deep draft container ships. Further, without significant volumes of freight, the road and rail improvements necessary to efficiently operate a container terminal in this location and to connect Alameda with Interstate 880 would be prohibitively expensive.

Port of Oakland

Minimum Bay Fill alternative

- Four fewer container berths would be developed at the Port of Oakland, and two existing bulk berths would continue to handle break bulk cargo, instead of being converted to container operations and combined with adjacent container terminals.

  The Bay Bridge site would be removed from port priority use, thereby eliminating the potential placement of 110 acres of fill in the Bay to develop two future container berths. Impacts to water quality and marine habitat caused by fill at this location on the Oakland Outer Harbor would be avoided. Potential increases in surface runoff and transport of pollutants to the Bay associated with new terminal development would be eliminated at this site. There would be a loss of 1,520,000 metric tonnes container cargo throughput.

  Break bulk cargo activity would continue at Berths 8, 9, and 10, and container operations would continue at Berths 20 and 21. Approximately 26 acres of fill that would be needed to convert this area to construct a two-berth container terminal would be eliminated, as would increases in surface runoff and transport of pollutants to the Bay associated with paving the filled area. Potential gains in container throughput due to the higher efficiency created by the realignment of Berths 20 and 21 under the proposed plan would not be realized.

Centralized Container Terminals alternative

- The same number of container and break bulk berths would result at the Port as in the proposed plan, with the same proposed realignment of Berths 20 and 21.

Although the port priority use designation would be retained at the Ship Repair Area, the near-term designation would be removed. This action would maintain the site for maritime-related activity, but would recognize limitations to deep draft shipping imposed by the Webster and Posey Street tubes. Retention of the port priority use designation at the triangular parcel northeast of I-880 under this alternative would not affect cargo throughput or traffic impacts.

No Change alternative

- According to the 1988 Seaport Plan, development of a two-berth container terminal at the Bay Bridge site would require 55 acres of fill in the Bay. This would result in considerably less throughput capacity than would occur under the proposed plan, which is based on updated terminal acreage requirements and calls for 110 acres of fill for two 55-acre berths with intermodal rail service. Break bulk cargo activity would continue at Berths 8, 9, and 10, and container operations would continue at Berths 20 and 21, thereby eliminating the placement of approximately 26 acres of fill to convert this area to a two-berth container terminal. Potential gains in container throughput due to the higher efficiency created by the realignment of Berths 20 and 21 under the proposed plan would not be realized.

  The port priority use and marine terminal designations would be retained at the Ship Repair Area; however, deep draft terminal development in the Inner Harbor is prohibited by the Webster and Posey Street tubes. Retention of the port priority use designation at the triangular parcel northeast of I-880 would not affect cargo throughput or traffic impacts.

Port of Redwood City

Minimum Bay Fill and Centralized Container Terminals alternatives

- Changes to designation are the same as for the proposed plan.

No Change alternative

- Entire 116-acre former Ideal Cement site would remain in port priority use. Otherwise, this alternative is identical to the proposed plan.

  Future potential impacts to the environment would be those associated with expanded marine terminal development and increased maritime-related industrial activity that could occur east of Seaport Boulevard. Increased truck traffic and associated air quality impacts would accompany such development. Existing wetlands at the site could be displaced, requiring mitigation measures to offset lost habitat values.

Port of Richmond

Minimum Bay Fill and Centralized Container Terminals alternatives

- The port priority use designation would be retained on the ancillary use zone, and reinstated on the Ford Peninsula to the extent of the port priority use boundary in the 1982 Seaport Plan, thereby adding sufficient backland to create a 160-acre four-berth container terminal. 2,050,000 metric tonnes of added throughput could be realized with larger terminals on the Ford Peninsula compared with the proposed plan.

  These alternatives would conflict with the City's adopted Ford Peninsula Redevelopment Plan by restricting the area proposed for redevelopment to port use only. The City has begun planning for a research and development office park that will include a refurbished Ford Building, and which is intended to serve as a transition area between the Port and existing residential areas in the Marina Bay development east of Harbour Way South. Impacts related to such light industrial development would include increased automobile traffic and associated air quality impacts, and demand for public services such as police and

fire protection. Measures designed to reduce effects of heavy industrial activities located at the port such as noise and dust would be considered with specific project review.

No Change alternative

- The 1988 plan stated that 15 acres of fill at the graving docks were required to accommodate construction of a two-berth container terminal at Terminals 5 and 6, adjacent to the automobile terminal (Terminal 7). Current terminal acreage requirements indicate 33 acres of fill in the Bay would be necessary at Terminals 5-6-7 for development of three container berths with near-dock rail facilities. Container cargo throughput at the Port would decline by 760,000 metric tonnes compared to the proposed plan, with development of one less container berth.

  Under the no change alternative, the ARCO Terminal would not be reserved for a future container/neo-bulk terminal, resulting in lost throughput of 104,500 metric tonnes of container cargo and 143,000 tonnes of neo-bulk. The Santa Fe dock was previously reserved for a future container terminal; however, water depths in the upper channel are insufficient for deep draft container shipping.

  Non-maritime development and associated impacts on the Ford Peninsula would occur at a reduced scale due to the restriction on the ancillary use zone for port priority use.

Port of San Francisco

Minimum Bay Fill alternative

- Changes to designations are the same as for the proposed plan.

Centralized Container Terminals alternative

- The area inland of and between Piers 70 and 80 would be retained in port priority use to accommodate the development of a one-berth container terminal, which would require approximately 25 acres of fill in the Bay. Approximately 749,000 metric tonnes of throughput capability would be added. The majority of this area is privately held by a number of different entities, with a PG&E power plant occupying roughly half the site. Consequently, this area would prove difficult to develop for terminal operations.

No Change alternative

- According to 1988 plan figures, 24 acres of Bay fill would be needed to develop five additional container berths at the Port. However, revised terminal requirements would necessitate substantial fill for development of this magnitude at the Port, with accompanying increases in truck traffic, air quality impacts, and surface runoff. The deletion of the port priority use designation, as proposed in the 1988 plan, would eliminate some backland and container terminal operations. However, the 1988 plan would still exceed the acreage and number of marine terminals designated in the proposed plan.

Comparison of Alternatives at military bases

Alternative changes to port priority use designations at military bases, and associated environmental impacts, differ from the proposed plan changes as described below.

Concord Naval Weapons Station

Minimum Bay Fill and No Change alternatives

- Change to designation is the same as for the proposed plan: retain port priority use designation. No current marine terminal designation. Site could be developed for non-container cargoes.

Centralized Container Terminals alternative

- Remove port priority use designation.

  Because the location is isolated from other port development, and there are extensive wetlands present, the site is not suitable for civilian container terminal development. The Department of Defense has not indicated any plans to close the site, therefore military use is expected to continue. Future alternative non-maritime development could occur at such time the Navy chooses to vacate the property. Impacts related to alternative development would be considered with specific project review.

Fleet and Industrial Supply Center, Oakland (FISCO)

Minimum Bay Fill, Centralized Container Terminals and No Change alternatives

- Changes to designation under the first two alternatives are the same as for the proposed plan: retain site for five container berths. The 1988 Seaport Plan designates the entire site for port priority use, which represents no practical difference from the proposed plan. Because the site is likely to be developed in the same manner as the proposed plan, no change in impacts would under the no change alternative.

Hunters Point Naval Shipyard, San Francisco

Minimum Bay Fill alternative

- Changes to designation are the same as for the proposed plan: remove port priority use designation from more than 400 acres; retain 55 acres for two break bulk berths.

Centralized Container Terminals and No Change alternatives

- Retain port priority use designation on the entire site, for future development of five-berth container terminal.

  The San Francisco Redevelopment Agency has proposed a reuse plan for the former shipyard that includes mixed residential, commercial, and light industrial uses. The majority of the former shipyard is proposed for alternative, non-maritime development, which would conflict with a port priority use designation encompassing the entire site. The reuse plan could therefore not be found consistent with BCDC's federal coastal zone management program.

  These alternatives would add 2,865,000 metric tonnes of capability for containers. Container terminal development would require upgrade of road and rail access to Hunters Point. There is no access to intermodal facilities, and double-stacking of containers on rail cars is prohibited by existing tunnel clearance.

Naval Air Station, Alameda

Minimum Bay Fill and Centralized Container Terminals alternatives

- Changes to designation are the same as for the proposed plan: remove port priority use designation from more than 1,400 acres; retain 220 acres for five-berth container terminal.

No Change alternative

- Retain port priority use designation on entire base.

  The ARRA has approved a citizen's reuse plan that calls for mixed use development at the base, which would conflict with the port priority use designation remaining on the entire site. This would cause the reuse plan to be inconsistent with BCDC's federal coastal zone management program. This alternative also would conflict with the U.S. Fish and Wildlife Service wildlife refuge that is proposed for the runway area.

In addition, port development along the western and southern waterfront areas has been shown to be infeasible, primarily due to shallow water depths and the presence of sensitive wildlife and habitat.

Naval Supply Center Annex, Alameda

Minimum Bay Fill, Centralized Container Terminals and No Change alternatives

- Retain port priority use designation on entire base for future development of two container berths.

  Existing wharves would have to be reinforced to handle heavier loads associated with civilian port use. Non-maritime uses are currently planned for the site, and retention of the port designation would result in conflicting land use proposals. The reuse plan could therefore not be found consistent with BCDC's federal coastal zone management program. The ARRA proposed reuse plan for the Annex calls for a mix of office and residential uses, which will generate increased automobile traffic and associated air quality impacts, and require greater levels of public services such as police and fire protection. Measures to reduce impacts related to port development and terminal operations on adjacent non-maritime uses, such as buffers to shield noise, would be considered with specific project review.

Comparison of Alternatives at non-port sites

Alternative changes to port designations at non-port sites, and associated environmental impacts, differ from the proposed plan changes as described below.

Former Todd Shipyard, Alameda (Alameda Gateway)

Minimum Bay Fill alternative

- Changes to designation are the same as for the proposed plan: remove port priority use designation.

Centralized Container Terminals and No Change alternatives

- Retain port priority use designation for future development of one container berth.

  An additional 573,000 metric tonnes of container throughput could be processed. Under the Centralized Container Terminals alternative, development of this site would extend the terminal area on the northern shoreline of Alameda to include eight berths: five container berths at NAS would combine with one future berth at Alameda Gateway, and two future container berths at the Naval Supply Center Annex to the east.

  The Army Corps of Engineers is constructing a 1,200 foot diameter turning basin in the harbor adjacent to the Alameda Gateway property that will require removal of existing finger piers, thereby precluding container terminal development at the site. Additionally, mixed use non-maritime development is currently proposed for the site.

TABLE 4
Proposed Plan Changes and Alternatives: Designations and Throughput Capability

SITE	EXISTING DESIGNATION [NO CHANGE ALTERNATIVE] 1988 Seaport Plan (a)	PROPOSED DESIGNATION		MINIMUM BAY FILL ALTERNATIVE		CENTRALIZED CONTAINER TERMINALS ALTERNATIVE	
		Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)
San Francisco							
Piers 48-50	Active terminals	2 neo-bulk berths/ 4 break bulk berths	206,000 neo-bulk/ 312,000 break bulk	2 neo-bulk berths/ 4 break bulk berths	206,000 neo-bulk/ 312,000 break bulk	2 neo-bulk berths/ 4 break bulk berths	206,000 neo-bulk/ 312,000 break bulk
Area inland and between Piers 52-64, including piers	2-berth, near- term, suitable for containers	Remove port priority use designation	None	Remove port priority use designation	None	Remove port priority use designation	None
Pier 70	2-berth active, can be converted to container use	2 bulk berths	156,000	2 bulk berths	156,000	2 bulk berths	156,000
Area inland and between Piers 70-80, including Western Pacific property	2-berth, near-term, suitable for containers	Remove port priority use designation	None	Remove port priority use designation	None	1 container berth	749,000
Pier 80	4-berth active container terminal with 1 near-term berth at SW corner of pier	2-berth container terminal, remove near-term designation	1,489,000	2-berth container terminal, remove near-term designation	1,489,000	2-berth container terminal, remove near-term designation	1,489,000
Piers 90-92	Active dry bulk terminal	1 dry bulk berth/ 1 liquid bulk berth	1,219,000 dry bulk/ 118,000 liquid	1 dry bulk berth/ 1 liquid bulk berth	1,219,000 dry bulk/ 118,000 liquid	1 dry bulk berth/ 1 liquid bulk berth	1,219,000 dry bulk/ 118,000 liquid
Pier 94-96	Active container terminal with 1-berth near-term development at Pier 94 North	3-berth container terminal plus 1 future container berth. Remove port designation from 26 acres	2,996,000	3-berth container terminal plus 1 future container berth	2,996,000	3-berth container terminal plus 1 future container berth	2,996,000

(a) 1988 Seaport Plan did not assign cargo throughput values to designated berths and terminals.

SITE	EXISTING DESIGNATION [NO CHANGE ALTERNATIVE] 1988 Seaport Plan (a)	PROPOSED DESIGNATION		MINIMUM BAY FILL ALTERNATIVE		CENTRALIZED CONTAINER TERMINALS ALTERNATIVE	
		Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)
Pier 98	Port priority use	Remove port priority use designation	None	Remove port priority use designation	None	Remove port priority use designation	None
Hunters Point Shipyard	Military - if and when not needed by Navy, should be developed for port and related uses	Retain 2 break bulk berths on 55 acres in port priority use; release majority of base	156,000	Retain 2 break bulk berths on 55 acres in port priority use; release majority of base	156,000	Retain entire base in port priority use for 5-berth container terminal	2,865,000
Oakland							
Bay Bridge Site	Long-term 2-berth marine terminal	2-berth future container terminal	1,520,000	Remove port designation	None	2-berth future container terminal	1,520,000
Berths 8, 9, 10	Active bulk berths (3)	Convert to 2 future container berths	1,520,000 <510,000 bulk>(b)	3 break bulk berths	510,000 bulk	Convert to 2 future container berths	1,520,000 <510,000 bulk>(b)
Army Terminal	Military	1 future container berth	760,000	1 future container berth	760,000	1 future container berth	760,000
FISCO	Military, 1 future container berth	5 container berths	3,800,000	5 container berths	3,800,000	5 container berths	3,800,000
Ship Repair Area	Near-term terminal	Remove near-term and port priority use designations	None	Remove near-term and port priority use designations	None	Remove near-term designation, retain port designation	None
Triangle NE of I-880	Port priority use	Remove port designation	None	Remove port designation	None	Retain port designation	None
Schnitzer Steel, Oakland	Active 2-berth, non-container terminal that could be converted to container use	Modify language of designation to reflect use as dry bulk terminal	2,074,000	Modify language of designation to reflect use as dry bulk terminal	2,074,000	Modify language of designation to reflect use as dry bulk terminal	2,074,000

(a) 1988 Seaport Plan did not assign cargo throughput values to designated berths and terminals.
(b) Reflects loss of bulk cargo capability due to conversion of bulk berths to container berths.

SITE	EXISTING DESIGNATION [NO CHANGE ALTERNATIVE] 1988 Seaport Plan (a)	PROPOSED DESIGNATION		MINIMUM BAY FILL ALTERNATIVE		CENTRALIZED CONTAINER TERMINALS ALTERNATIVE	
		Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)
Alameda							
Encinal Terminals							
Terminal 5	Active, 2-berth terminal suitable for near-term container develop.	Remove port and terminal designations	None (No longer in operation)	Remove port and terminal designations	None (No longer in operation)	Remove port and terminal designations	None (No longer in operation)
Terminals 1-4	Active, 2-berth terminal	2-berth neo- and liquid bulk terminal	114,000 neo-bulk/ 116,000 liquid bulk	2-berth neo- and liquid bulk terminal	114,000 neo-bulk/ 116,000 liquid bulk	Remove port and terminal . designations	Lose capacity: <114,000 neo-bulk/ 116,000 liquid bulk>
NAS Alameda	Military - if and when not needed by Navy, should be developed for port and related uses	Retain 5 container berths on 220 acres; release majority of base	3,800,000	Retain 5 container berths on 220 acres; release majority of base	3,800,000	Retain 5 container berths on 220 acres; release majority of base	3,800,000
Naval Supply Center Annex	Military	Remove port designation	None	Retain for 2 container berths	1,146,000	Retain for 2 container berths	1,146,000
Former Todd Shipyard	Port priority use	Remove port use designation	None	Remove port use designation	None	Retain for 1 container berth	573,000
Redwood City							
Cargill Salt Terminal	Active, 1-berth, non-container terminal site	1 future dry bulk berth	1,293,000	1 future dry bulk berth	1,293,000	1 future dry bulk berth	1,293,000
Former Ideal Cement site	1-berth, near-term, non-container marine terminal	1 dry bulk berth; remove designation from 106-acre area east of Seaport Blvd.	1,293,000	1 dry bulk berth; remove designation from 106-acre area east of Seaport Blvd.	1,293,000	1 dry bulk berth; remove designation from 106-acre area east of Seaport Blvd.	1,293,000

(a) 1988 Seaport Plan did not assign cargo throughput values to designated berths and terminals.

SITE	EXISTING DESIGNATION [NO CHANGE ALTERNATIVE] 1988 Seaport Plan (a)	PROPOSED DESIGNATION		MINIMUM BAY FILL ALTERNATIVE		CENTRALIZED CONTAINER TERMINALS ALTERNATIVE	
		Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)	Designation	Estimated 2020 Capability (metric ton/yr.)
Richmond							
Terminals 5-6-7	2-berth near-term terminal + 2-berth active terminal	3 future container berths	2,228,000 <572,000 neo-bulk>	3 future container berths	2,228,000 <572,000 neo-bulk>	3 future container berths	2,228,000 <572,000 neo-bulk>
ARCO site	Proprietary liquid bulk terminal	1 future combined container/neo-bulk berth	104,500 container/ 143,000 neo-bulk(c)	1 future combined container/neo-bulk berth	104,500 container/ 143,000 neo-bulk(c)	1 future combined container/neo-bulk berth	104,500 container/ 143,000 neo-bulk(c)
Santa Fe Channel NW	1-berth active that can be converted to container use and 1-berth near-term suitable for container use	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000
National Gypsum	Proprietary terminal	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000
GATX/Unocal	1-berth non-container site	1 liquid bulk berth	148,000	1 liquid bulk berth	148,000	1 liquid bulk berth	148,000
Levin-Richmond	Proprietary term.	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000	1 dry bulk berth	1,037,000
Ford Peninsula							
Terminal 2 NW	1-berth near-term container terminal development	Continuous 4-berth container or combined bulk/ container terminal with 80 acres	418,000 container/ 572,000 neo-bulk(c)	Continuous 4-berth container terminal; add backland to create 160-acre terminal	3,040,000	Continuous 4-berth container terminal; add backland to create 160-acre terminal	3,040,000
Terminal 2	Active, liquid bulk terminal		<148,000 liquid bulk capability>		<148,000 liquid bulk capability>		<148,000 liquid bulk capability>
Terminal 3	Active						
Terminal 3 South	1-berth, near-term suitable for container use						
Ford Building and area south	Removed from port priority use	Continues to be deleted	None	Return to port priority use	Increase backland area for continuous 160-acre terminal	Return to port priority use	Increase backland area for continuous 160-acre terminal
Ancillary use zone	Port priority use	Remove port designation	None	Retain port priority use designation		Retain port priority use designation	

(a) 1988 Seaport Plan did not assign cargo throughput values to designated berths and terminals. (c) Combined terminal capability based on 50-50 split container/neo-bulk.

SITE	EXISTING DESIGNATION [NO CHANGE ALTERNATIVE] 1988 Seaport Plan (a)	PROPOSED DESIGNATION Designation	PROPOSED DESIGNATION Estimated 2020 Capability (metric ton/yr.)	MINIMUM BAY FILL ALTERNATIVE Designation	MINIMUM BAY FILL ALTERNATIVE Estimated 2020 Capability (metric ton/yr.)	CENTRALIZED CONTAINER TERMINALS ALTERNATIVE Designation	CENTRALIZED CONTAINER TERMINALS ALTERNATIVE Estimated 2020 Capability (metric ton/yr.)
Benicia							
Waterfront west of wharf	Long-term development (container use)	Remove terminal designation, retain port designation	None	Remove terminal designation, retain port designation	None	Remove terminal designation, retain port designation	None
Vallejo							
Waterfront	5-berth, near-term terminal suitable for container use	Remove terminal, port designations	None	Remove terminal, port designations	None	Remove terminal, port designations	None
Mare Island	Military—if and when not needed by Navy, should be developed for port and related uses	Retain active dredge ponds for handling of dredged material; release majority of base	No cargo operations	Retain active dredge ponds for handling of dredged material; release majority of base	No cargo operations	Retain active dredge ponds for handling of dredged material; release majority of base	No cargo operations
Martinez							
Pacheco Creek sites	Port priority use	Remove port designation	None	Remove port designation	None	Remove port designation	None
Praxis property	Port priority use	Retain in port designation pending completion of LTMS	No cargo operations	Retain in port designation pending completion of LTMS	No cargo operations	Retain in port designation pending completion of LTMS	No cargo operations
Selby							
Unocal property	Near-term terminal development	Remove port priority use designation	None	Remove port priority use designation	None	Remove port priority use designation	None
Wickland property		5-berth liquid bulk terminal	590,000	5-berth liquid bulk terminal	590,000	5-berth liquid bulk terminal	590,000
Concord							
Naval Weapons Station	Military—if and when not needed by Navy, give first consideration to port or water-related use. Restrict such use so as not to adversely affect marshes.	Retain designation	None	Retain designation	None	Remove designation	None

(a) 1988 Seaport Plan did not assign cargo throughput values to designated berths and terminals.

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APPENDIX A

SUMMARY TABLES FOR THE PROPOSED SEAPORT PLAN AND ALTERNATIVES

	Acres	Berths	Thruput	Forecast	
Container	1,497	43	30,856,500	32,567,000	
Break Bulk	141	10	1,109,200	1,146,000	
Neo–bulk	582	8.6	2,481,800	2,217,000	
Dry Bulk	428	9.9	11,100,200	6,902,000	dry bulk includes scrap metal
Liquid Bulk	141	10.6	1,264,000	983,000	
Totals	***2,789***	***82***	***46,811,700***	***43,815,000***	

Port of Richmond: 2020 Throughput Capability (metric tonnes)

Terminal	Designation	Terminal Acres	Cargo Type	Effective No. of Berths	Expected Throughput Capability*	Total Throughput
Terminal 2-3	Future	80	Container	2	209,000	418,000
			Neo–Bulk	2	286,000	572,000
Includes area NW and S of Terminals 2 and 3 and 14 acres of fill						
Terminals 5-6-7	Future	140	Container	3	760,000	2,280,000
Assumes 33 acres of fill and near–dock intermodal rail facilities						
ARCO Terminal	Future	20	Container/	0.5	209,000	104,500
			Neo–Bulk	0.5	286,000	143,000
Terminal 4	Active	17	Liquid Bulk	1	148,000	148,000
GATX/Unocal	Active	12	Liquid Bulk	1	148,000	148,000
Santa Fe NW	Future	13	Dry Bulk	1	1,037,000	1,037,000
National Gypsum	Active	22	Dry Bulk	1	1,037,000	1,037,000
Levin-Richmond*	Active	25	Dry Bulk	1	1,037,000	1,037,000
Totals						
	Container	190		5.5		**2,802,500**
	Neo–Bulk	50		2.5		**715,000**
	Dry Bulk	60		3		**3,111,000**
	Liquid Bulk	29		2		**296,000**

* Although the Levin-Richmond Terminal has three berths, the effective capacity is equal to one berth.

Port of San Francisco: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Pier 94-96	Active	80	Container	3	749,000	2,247,000
Pier 94N	Future	40	Container	1	749,000	749,000
Assumes 10 acres of fill						
Pier 80	Active	65	Container	2	749,000	1,498,000
Pier 90-92						
	Inactive	12	Dry Bulk	1	1,219,000	1,219,000
	Active	13	Liquid Bulk	1	118,000	118,000
Pier 70	Inactive	26	Break Bulk	2	78,000	156,000
Pier 50	Inactive	24	Break Bulk	4	78,000	312,000
Pier 48	Inactive	9	Neo–Bulk	2	103,000	206,000
Totals						
	Container	185		6		**4,494,000**
	Break Bulk	50		6		**468,000**
	Neo–bulk	9		2		**206,000**
	Dry Bulk	12		1		**1,219,000**
	Liquid Bulk	13		1		**118,000**

* Denotes optimal throughput goal for each berth.

Port of Oakland: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Bay Bridge (Berths 8, 9, 10) *Assumes 26 acres of fill*	Future	62	Container	2	760,000	1,520,000
Sea-Land (Berths 20, 21, 22)	Active	71	Container	2	760,000	1,520,000
Yusen (Berth 23)	Active	42	Container	1	760,000	760,000
Maersk (Berth 24)	Active	38	Container	1	760,000	760,000
TransBay (Berths 25, 26)	Active	31	Container	1	760,000	760,000
TraPac (Berth 30)	Active	20	Container	1	760,000	760,000
Matson (Berths 32, 33, 34)	Active	66	Container	2	760,000	1,520,000
7th Street (Berths 35, 37, 38)	Active	57	Container	3	760,000	2,280,000
APL (Berths 60 - 63)	Active	82	Container	3	760,000	2,280,000
Howard (Berths 67, 68, 69)	Active	53	Container	2	760,000	1,520,000
Ninth Ave. (Berths 82, 83, 84)	Active	31	Break Bulk	2	170,000	340,000

FISCO	Future	250	Container	5	760,000	3,800,000
Assumes 0 - 30 acres of fill						
Schnitzer Steel	Active	60	Dry Bulk	2	1,037,000	2,074,000
Army Terminal	Future	30	Container	1	760,000	760,000
Assumes 17 acres of fill						
Bay Bridge Site	Future	100	Container	2	760,000	1,520,000
Assumes 110 acres of fill						
Totals						
Container		**902**		**26**		**19,760,000**
Break Bulk		**31**		**2**		**340,000**
Dry Bulk		**60**		**2**		**2,074,000**

* Denotes optimal throughput goal for each berth.

Port of Redwood City: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Wharves 1-2	Active	6	Dry Bulk	1	1,293,000	1,293,000
Wharf 3	Active	5	Neo-Bulk	0.6	853,000	511,800
		5	Dry Bulk	0.4	1,293,000	517,200
Wharf 4	Active	6	Liquid Bulk	1	90,000	90,000
Wharf 5	Active	15	Liquid Bulk	0.6	90,000	54,000
			Break Bulk	0.4	128,000	51,200
Ideal Cement	Future	10	Dry Bulk	1	1,293,000	1,293,000
Cargill Salt	Active	30	Dry Bulk	1	1,293,000	1,293,000
Totals		77		6		
	Break Bulk	5		0.4		51,200
	Neo–Bulk	5		0.6		511,800
	Dry Bulk	46		3.4		4,396,200
	Liquid Bulk	21		1.6		144,000

* Denotes optimal throughput goal for each berth.

Port of Benicia: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-3	Active	500	Neo-bulk	2.5	374,000	935,000
		250	Dry Bulk	0.5	600,000	300,000
Totals		**750**		**3**		

Encinal Terminals: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-4	Active	18	Neo-Bulk	1	114,000	114,000
		18	Liquid Bulk	1	116,000	116,000
Totals		**36**		**2**		

* Denotes optimal throughput goal for each berth.

NAS Alameda: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	220	Container	5	760,000	3,800,000
Totals		**220**		**5**		

Hunters Point: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-2	Future	55	Break Bulk	2	125,000	250,000
Totals		**55**		**2**		

Selby: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	60	Liquid Bulk	5	118,000	590,000
Totals		**60**		**5**		

* Denotes optimal throughput goal for each berth in metric tonnes.

Minimum Bay Fill

Container	1,605	43	31,584,500	32,567,000	
Break Bulk	203	13	1,619,200	1,146,000	
Neo–bulk	542	6.6	1,909,800	2,217,000	
Dry Bulk	428	9.9	11,100,200	6,902,000	dry bulk includes scrap metal
Liquid Bulk	141	10.6	1,264,000	983,000	
Totals	***2,919***	***83***	***47,477,700***	***43,815,000***	

Port of Richmond: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Terminal 2-3	Future	160	Container	4	760,000	3,040,000
Includes area NW and S of Terminals 2 and 3 and 14 acres of fill						
Terminals 5-6-7	Future	140	Container	3	760,000	2,280,000
Assumes 33 acres of fill and near-dock intermodal rail facilities						
ARCO Terminal	Future	20	Container/	0.5	209,000	104,500
			Neo–Bulk	0.5	286,000	143,000
Terminal 4	Active	17	Liquid Bulk	1	148,000	148,000
GATX/Unocal	Future	12	Liquid Bulk	1	148,000	148,000
Santa Fe NW	Future	13	Dry Bulk	1	1,037,000	1,037,000
National Gypsum	Active	22	Dry Bulk	1	1,037,000	1,037,000
Levin-Richmond*	Active	25	Dry Bulk	1	1,037,000	1,037,000
Totals						
	Container	310		7.5		**5,424,500**
	Neo–Bulk	10		0.5		**143,000**
	Dry Bulk	60		3		**3,111,000**
	Liquid Bulk	29		2		**296,000**

* Although the Levin-Richmond Terminal has three berths, the effective capacity is equal to one berth

Port of San Francisco: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Pier 94-96	Active	80	Container	3	749,000	2,247,000
Pier 94N	Future	40	Container	1	749,000	749,000
Assumes 10 acres of fill						
Pier 80	Active	65	Container	2	749,000	1,498,000
Pier 90-92						
	Inactive	12	Dry Bulk	1	1,219,000	1,219,000
	Active	13	Liquid Bulk	1	118,000	118,000
Pier 70	Inactive	26	Break Bulk	2	78,000	156,000
Pier 50	Inactive	24	Break Bulk	4	78,000	312,000
Pier 48	Inactive	9	Neo–Bulk	2	103,000	206,000
Totals						
	Container	185		6		**4,494,000**
	Break Bulk	50		6		**468,000**
	Neo–bulk	9		2		**206,000**
	Dry Bulk	12		1		**1,219,000**
	Liquid Bulk	13		1		**118,000**

* Denotes optimal throughput goal for each berth.

Port of San Francisco: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Pier 94-96	Active	80	Container	3	749,000	2,247,000
Pier 94N	Future	40	Container	1	749,000	749,000
Assumes 10 acres of fill						
Pier 80	Active	65	Container	2	749,000	1,498,000
Pier 90-92						
	Inactive	12	Dry Bulk	1	1,219,000	1,219,000
	Active	13	Liquid Bulk	1	118,000	118,000
Pier 70	Inactive	26	Break Bulk	2	78,000	156,000
Pier 50	Inactive	24	Break Bulk	4	78,000	312,000
Pier 48	Inactive	9	Neo–Bulk	2	103,000	206,000
Totals						
	Container	185		6		**4,494,000**
	Break Bulk	50		6		**468,000**
	Neo–bulk	9		2		**206,000**
	Dry Bulk	12		1		**1,219,000**
	Liquid Bulk	13		1		**118,000**

* Denotes optimal throughput goal for each berth.

Port of Oakland: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Bay Bridge (Berths 8, 9, 10)	Active	62	Break Bulk	3	170,000	510,000
Sea-Land (Berths 20, 21, 22)	Active	71	Container	2	760,000	1,520,000
Yusen (Berth 23)	Active	42	Container	1	760,000	760,000
Maersk (Berth 24)	Active	38	Container	1	760,000	760,000
TransBay (Berths 25, 26)	Active	31	Container	1	760,000	760,000
TraPac (Berth 30)	Active	20	Container	1	760,000	760,000
Matson (Berths 32, 33, 34)	Active	66	Container	2	760,000	1,520,000
7th Street (Berths 35, 37, 38)	Active	57	Container	3	760,000	2,280,000
APL (Berths 60 - 63)	Active	82	Container	3	760,000	2,280,000
Howard (Berths 67, 68, 69)	Active	53	Container	2	760,000	1,520,000
Ninth Ave. (Berths 82, 83, 84)	Active	31	Break Bulk	2	170,000	340,000

FISCO	Future	250	Container	5	760,000	3,800,000
Assumes 0-30 acres of fill						
Schnitzer Steel	Active	60	Dry Bulk	2	1,037,000	2,074,000
Army Terminal	Future	30	Container	1	760,000	760,000
Assumes 17 acres of fill						
Totals						
Container		**740**		**22**		**16,720,000**
Break Bulk		**93**		**5**		**850,000**
Dry Bulk		**60**		**2**		**2,074,000**

* Denotes optimal throughput goal for each berth.

Port of Redwood City: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Wharves 1-2	Active	6	Dry Bulk	1	1,293,000	1,293,000
Wharf 3	Active	5	Neo-Bulk	0.6	853,000	511,800
		5	Dry Bulk	0.4	1,293,000	517,200
Wharf 4	Active	6	Liquid Bulk	1	90,000	90,000
Wharf 5	Active	15	Liquid Bulk	0.6	90,000	54,000
			Break Bulk	0.4	128,000	51,200
Ideal Cement	Future	10	Dry Bulk	1	1,293,000	1,293,000
Cargill Salt	Future	30	Dry Bulk	1	1,293,000	1,293,000
Totals		77		6		
	Break Bulk	5		0.4		51,200
	Neo–Bulk	5		0.6		511,800
	Dry Bulk	46		3.4		4,396,200
	Liquid Bulk	21		1.6		144,000

* Denotes optimal throughput goal for each berth

Port of Benicia: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-3	Active	500	Neo-bulk	2.5	374,000	935,000
		250	Dry Bulk	0.5	600,000	300,000
Totals		**750**		**3**		

Encinal Terminals: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-4	Active	18	Neo-Bulk	1	114,000	114,000
		18	Liquid Bulk	1	116,000	116,000
Totals		**36**		**2**		

* Denotes optimal throughput goal for each berth.

NAS Alameda: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	220	Container	5	760,000	3,800,000
Totals		**220**		**5**		

Hunters Point: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-3	Future	55	Break Bulk	2	125,000	250,000
Totals		**55**		**2**		

Selby: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	60	Liquid Bulk	5	118,000	590,000
Totals		**60**		**5**		

* Denotes optimal throughput goal for each berth in metric tonnes.

Alameda Supply Annex: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-2	Future	150	Container	2	573,000	1,146,000
Totals		**150**		**2**		

Centralized Container Terminal

	Acres	Berths	Thruput	Forecast	
Container	2,397	54	34,800,500	32,567,000	
Break Bulk	86	8	859,200	1,146,000	
Neo–bulk	524	3.6	1,795,800	2,217,000	
Dry Bulk	428	10	11,100,200	6,902,000	dry bulk includes scrap metal
Liquid Bulk	123	9.6	1,148,000	983,000	
Totals	***3,558***	***85***	***49,703,700***	***43,815,000***	

Port of Richmond: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Terminal 2-3	Future	160	Container	4	760,000	3,040,000
Includes area NW and S of Terminals 2 and 3 and 14 acres of fill						
Terminals 5-6-7	Future	140	Container	3	760,000	2,280,000
Assumes 33 acres of fill and near-dock intermodal rail facilities						
ARCO Terminal	Future	20	Container/	0.5	209,000	104,500
			Neo–Bulk	0.5	286,000	143,000
Terminal 4	Active	17	Liquid Bulk	1	148,000	148,000
GATX/Unocal	Future	12	Liquid Bulk	1	148,000	148,000
Santa Fe NW	Future	13	Dry Bulk	1	1,037,000	1,037,000
National Gypsum	Active	22	Dry Bulk	1	1,037,000	1,037,000
Levin-Richmond*	Active	25	Dry Bulk	1	1,037,000	1,037,000
Totals						
	Container	310		7.5		**5,424,500**
	Neo–Bulk	10		0.5		**143,000**
	Dry Bulk	60		3		**3,111,000**
	Liquid Bulk	29		2		**296,000**

* Although the Levin-Richmond Terminal has three berths, the effective capacity is equal to one berth

Port of San Francisco: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Pier 94-96	Active	80	Container	3	749,000	2,247,000
Pier 94N	Future	40	Container	1	749,000	749,000
Assumes 10 acres of fill						
Pier 80	Active	65	Container	2	749,000	1,498,000
Pier 70-80	Future	40	Container	1	749,000	749,000
Assumes 25 acres of fill						
Pier 90-92						
	Inactive	12	Dry Bulk	1	1,219,000	1,219,000
	Active	13	Liquid Bulk	1	118,000	118,000
Pier 70	Inactive	26	Break Bulk	2	78,000	156,000
Pier 50	Inactive	24	Break Bulk	4	78,000	312,000
Pier 48	Inactive	9	Neo–Bulk	2	103,000	206,000
Totals						
	Container	225		7		**5,243,000**
	Break Bulk	50		6		**468,000**
	Neo–bulk	9		2		**206,000**
	Dry Bulk	12		1		**1,219,000**
	Liquid Bulk	13		1		**118,000**

* Denotes optimal throughput goal for each berth.

Port of Oakland: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Bay Bridge (Berths 8, 9, 10) *Assumes 26 acres of fill*	Future	62	Container	2	760,000	1,520,000
Sea-Land (Berths 20, 21, 22)	Active	71	Container	2	760,000	1,520,000
Yusen (Berth 23)	Active	42	Container	1	760,000	760,000
Maersk (Berth 24)	Active	38	Container	1	760,000	760,000
TransBay (Berths 25, 26)	Active	31	Container	1	760,000	760,000
TraPac (Berth 30)	Active	20	Container	1	760,000	760,000
Matson (Berths 32, 33, 34)	Active	66	Container	2	760,000	1,520,000
7th Street (Berths 35, 37, 38)	Active	57	Container	3	760,000	2,280,000
APL (Berths 60 - 63)	Active	82	Container	3	760,000	2,280,000
Howard (Berths 67, 68, 69)	Active	53	Container	2	760,000	1,520,000
Ninth Ave. (Berths 82, 83, 84)	Active	31	Break Bulk	2	170,000	340,000

FISCO	Future	250	Container	5	760,000	3,800,000
Assumes 0 - 30 acres of fill						
Schnitzer Steel	Active	60	Dry Bulk	2	1,037,000	2,074,000
Army Terminal	Future	30	Container	1	760,000	760,000
Assumes 17 acres of fill						
Bay Bridge Site	Future	100	Container	2	760,000	1,520,000
Assumes 110 acres of fill						
Totals						
Container		**902**		**26**		**19,760,000**
Break Bulk		**31**		**2**		**340,000**
Dry Bulk		**60**		**2**		**2,074,000**

* Denotes optimal throughput goal for each berth.

Port of Redwood City: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Wharves 1-2	Active	6	Dry Bulk	1	1,293,000	1,293,000
Wharf 3	Active	5	Neo-Bulk	0.6	853,000	511,800
		5	Dry Bulk	0.4	1,293,000	517,200
Wharf 4	Active	6	Liquid Bulk	1	90,000	90,000
Wharf 5	Active	15	Liquid Bulk	0.6	90,000	54,000
			Break Bulk	0.4	128,000	51,200
Ideal Cement	Future	10	Dry Bulk	1	1,293,000	1,293,000
Cargill Salt	Future	30	Dry Bulk	1	1,293,000	1,293,000
Totals		77		6		
	Break Bulk	5		0.4		51,200
	Neo–Bulk	5		0.6		511,800
	Dry Bulk	46		3.4		4,396,200
	Liquid Bulk	21		1.6		144,000

* Denotes optimal throughput goal for each berth.

Port of Benicia: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-3	Active	500	Neo-bulk	2.5	374,000	935,000
		250	Dry Bulk	0.5	600,000	300,000
Totals		**750**		**3**		

Encinal Terminals: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-4	Active	0	Neo-Bulk	0	114,000	0
		0	Liquid Bulk	0	116,000	0
Totals		**0**		**0**		

* Denotes optimal throughput goal for each berth.

NAS Alameda: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	220	Container	5	760,000	3,800,000
Totals		**220**		**5**		

Hunters Point: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	500	Container	5	573,000	2,865,000
		0	Dry Bulk	0	1,037,000	0
Totals		**500**		**5**		

Selby: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-5	Future	60	Liquid Bulk	5	118,000	590,000
Totals		**60**		**5**		

* Denotes optimal throughput goal for each berth in metric tonnes.

Alameda Supply Annex: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berths 1-2	Future	150	Container	2	573,000	1,146,000
Totals		**150**		**2**		

Alameda Gateway: 2020 Throughput Capability (metric tonnes)

Terminal	*Designation*	*Terminal Acres*	*Cargo Type*	*Effective No. of Berths*	*Expected Throughput Capability**	*Total Throughput*
Berth 1	Future	90	Container	1	573,000	573,000
Totals		**90**		**1**		