SAN FRANCISCO BAY AREA SEAPORT PLAN

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
and
METROPOLITAN TRANSPORTATION COMMISSION

April 18, 1996

as amended through
January 2012

Prepared by the
Seaport Planning Advisory Committee
and
the staffs of the
San Francisco Bay Conservation and Development Commission
and the
Metropolitan Transportation Commission

San Francisco Bay
Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, California 94111
Telephone: (415)352-3600
Fax: (415)352-3606
email: info@bcdc.ca.gov
www.bcdc.ca.gov

Metropolitan Transportation Commission
Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, California 94607
Telephone: (510)464-7700
Fax: (510)464-7848
www.mtc.ca.gov

TABLE OF CONTENTS

INTRODUCTION	1
Approach to Updating the Seaport Plan	2
Marine Terminal Capability Analysis	3
PART I GENERAL POLICIES	5
Cargo Forecast	5
Port Priority Use Areas	8
Marine Terminals	10
Container Terminals	14
Bulk Terminals	15
Dredging and Navigation	16
Ground Transportation	18
PART II DESIGNATIONS	21
Port of Benicia	22
Port of Oakland	24
Port of Redwood City	28
Port of Richmond	31
Port of San Francisco	34
Selby	39
Concord Naval Weapons Reservation	40
PART III IMPLEMENTATION	43
Agency Responsibilities	43
Amending the Seaport Plan	45
Need for Further Studies	45
Responsibilities of Other Agencies	45
Priority Use Boundaries	46
Glossary	50
Background Documents	53
APPENDIX A: TRANSPORTATION PROJECTS	54
ACKNOWLEDGEMENTS	56

TABLE OF CONTENTS (Continued)

LIST OF TABLES

Table 1	2020 Baseline Cargo Forecast	5
Table 2	Vessel Calls per Year	6
Table 3	Approximate Fill Volumes	11
Table 4	Bay Area Throughput Capabilities in 2020	11
Table 5	Expected Throughput Capability per Port per Berth	12
Table 6	Number and Type of Berths at Each Port or Site	13
Table 7	Berth Acreage Requirements for Bulk Terminals	15
Table 8	Port of Benicia Current Facilities	22
Table 9	Port of Benicia Future Facilities	22
Table 10	Port of Oakland Current Facilities	25
Table 11	Port of Oakland Future Facilities	26
Table 12	Port of Redwood City Current Facilities	28
Table 13	Port of Redwood City Future Facilities	29
Table 14	Port of Richmond Current Facilities	31
Table 15	Port of Richmond Future Facilities	32
Table 16	Port of San Francisco Current Facilities	34
Table 16	Port of San Francisco Current Facilities (cont.)	35
Table 17	Port of San Francisco Future Facilities	36
Table 18	Selby Future Facilities	39

LIST OF FIGURES

Figure 1	San Francisco Bay Area Ports and Port Priority Use Areas	8
Figure 2	San Francisco Bay Major Dredging Areas	17
Figure 3	Port of Benicia	23
Figure 4	Port of Oakland	27
Figure 5	Port of Redwood City	30
Figure 6	Port of Richmond	33
Figure 7	Port of San Francisco	37
Figure 8	Port of San Francisco Piers 68-70	38
Figure 9	Port of San Francisco Piers 90-94	38
Figure 10	Selby Port Priority Use Area	39
Figure 11	Concord Naval Reservation Port Priority Use Area	41

INTRODUCTION

The San Francisco Bay Area Seaport Plan is the product of a cooperative planning effort of the Metropolitan Transportation Commission (MTC) and the San Francisco Bay Conservation and Development Commission (BCDC). The Seaport Plan constitutes the maritime element of MTC's Regional Transportation Plan, and is incorporated into BCDC's San Francisco Bay Plan, where it is the basis of the Bay Plan port policies. The MTC uses the Seaport Plan to assist in making project funding decisions and managing the metropolitan transportation system, and BCDC uses the Seaport Plan to help guide its regulatory decisions on permit applications, consistency determinations, and related matters.

The Seaport Plan promotes the following goals:

1. 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;
2. Maintain or improve the environmental quality of San Francisco Bay and its environs;
3. Provide for the efficient use of finite physical and fiscal resources consumed in developing and operating marine terminals through the year 2020;
4. Provide for integrated and improved surface transportation facilities between San Francisco Bay ports and terminals and other regional transportation systems; and
5. Reserve sufficient shoreline areas to accommodate future growth in maritime cargo, thereby minimizing the need for new Bay fill for port development.

To achieve these goals, the Seaport Plan employs land use designations and enforceable policies that MTC and BCDC use in their funding and regulatory decisions, and that local governments use in their land use and regulatory decisions. Areas determined to be necessary for future port development are designated as *port priority use areas* and are reserved for port-related and other uses that will not impede development of the sites for port purposes. Within port priority use areas, *marine terminals* are identified and are reserved specifically for cargo handling operations. The number of marine terminals (measured by marine terminal berths and amount of land needed for marine terminal use) is derived from an analysis of the Bay Area waterborne cargo demand in 2020 and the capability of existing marine terminals to handle the forecast cargo.[1]

The Seaport Planning Advisory Committee (SPAC) oversaw the development of the original plan in 1982 and its subsequent updates in 1988 and 1995. The SPAC is composed of representatives from BCDC, MTC, the Association of Bay Area Governments, the federal

1. Terms are defined in the Glossary in Part III.

Maritime Administration, the five Bay Area ports, Caltrans, and Save San Francisco Bay Association. Because the analyses were conducted over the course of 1994, recent developments, such as the merger of the Union Pacific and Southern Pacific railroads and the closure of the Oakland Army Base are not analyzed.

In developing the land use designations and policies contained in this plan, the SPAC reviewed a series of reports, developed by BCDC staff and MTC's consultants, which considered changes in the maritime industry and military base closures.[2] The reports provided information to assist the Seaport Planning Advisory Committee in achieving the following objectives:

1. Determine the projected growth in waterborne cargo for the San Francisco Bay Area by the year 2020 and the factors affecting this growth;
2. Determine the capability of existing Bay Area marine terminals to handle container and bulk cargoes, and the factors that will affect future changes in marine terminal capability;
3. Determine the potential for closing military bases to be converted to future use as civilian seaports;
4. Determine the number and location of new marine terminals that will be required to handle the projected growth in waterborne cargo;
5. Determine where the new marine terminals can be developed with the fewest adverse environmental impacts;
6. Determine the amount of shoreline acreage that should be reserved for marine terminal development; and
7. Determine the improvements necessary to navigation channels, roads, and railroad lines to facilitate marine terminal development and ground transportation of cargo.

APPROACH TO UPDATING THE SEAPORT PLAN

The need for additional port facilities was determined by estimating the current civilian waterborne cargo handling capability of existing ports and deducting that total cargo volume from the estimated waterborne cargo volumes in the year 2020. The remaining volume of cargo represents an incremental demand for port facilities in the Bay Area.

There are two ways to accommodate growth in waterborne cargo: (1) by constructing new marine terminals—generally requiring at least some Bay fill and dredging—or (2) by increasing the rate and volume of cargo moved through existing marine terminals with investments in capital or labor. This update of the Seaport Plan follows the trends of the maritime industry and focuses more on the latter strategy. Since 1988, when the Seaport Plan was last updated, the volume of cargo coming through the Bay has increased as predicted in the cargo forecast. At the same time, the number of ship calls has declined and only one new container terminal has been built, although the Seaport Plan predicted that six additional container terminals would be needed to handle the cargo growth. Clearly, productivity gains have been achieved by improving the efficiency of existing facilities, and this approach is more cost effective and timely for the maritime industry than building new, capital intensive facilities.

2. Supporting technical documents are listed in Part III.

In reviewing the port priority use areas and marine terminal designations, industry trends and requirements for different types of cargo were used as guidelines for determining which port priority use and marine terminal 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 and wider channels and berths to accommodate these larger ships;
- The increasing use of containers for break bulk, neo-bulk, and liquid cargoes–some automobiles are now shipped in containers;
- The different economic conditions and planned developments at each Bay Area port, closing military base, and port priority use area;
- The shippers' trend toward consolidation of terminals and the high cost of container terminal development;
- The increasing importance of intermodal transportation of cargo, and;
- The importance of access to at least one, and preferably two or three, rail lines for intermodal shipping.

MARINE TERMINAL CAPABILITY ANALYSIS

Determining a marine terminal's capability requires measuring the maximum amount of cargo that can be processed at six transfer points, or constraints, where cargo is moved from one area of the terminal to another and where terminal operations can become congested. The constraint points include: ship size and frequency; ship to apron transfer; apron to storage transfer; storage to inland transfer; storage capability; and gate processing. The 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 constricting point, the volume of cargo at that point reveals the total capability of the terminal.

This approach to calculating throughput capability blends theoretical and real capability, and therein lies a key difference from the approach used in the 1988 update of the Seaport Plan. While this method accounts for normal operating procedures and management practices that are expected to continue over time, other variables that can change over time have been increased to represent a theoretical cargo handling potential. Factors such as ship calls per year, processing cycle, and throughput density were deliberately increased above historical levels to represent the productivity that could be achieved at a berth.

Terminal capability calculations were performed for each Bay Area berth, and totaled according to cargo type to determine the capability of the individual ports for each cargo type. This total capability was divided by each port's actual number of berths of each cargo type to develop a theoretical berth capability for the various cargo types. Similarly, the terminal acreage required for each type of berth was averaged for West Coast ports to estimate the terminal area needed for each type of cargo 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 to or subtracted from the various ports and military bases until the total Bay Area cargo throughput capability approximated the level of cargo forecast for the year 2020.

At the same time, potential marine terminal sites were evaluated for their suitability for marine terminal development. Those sites that did not offer adequate backland, rail and road access, deep water channels, and proximity to an existing port were eliminated, to the greatest extent possible, while still achieving adequate throughput capability to meet the 2020 cargo forecast. Large portions of military bases and port priority use areas were deleted from the plan because they were economically or geographically unsuitable for port development.

The sites designated in the Seaport Plan will provide adequate throughput capability for the region to meet the volume of cargo forecast for the year 2020, given the constraints under which this plan was developed. Those constraints include the high costs of developing marine terminals, local governments' land use plans, and the need to minimize filling the Bay for marine terminal development.

PART I

GENERAL POLICIES

The policies are intended to achieve the goals set forth for the Seaport Plan, and to reflect MTC's and BCDC's shared purpose to enhance economic activity while protecting the environment, making efficient use of all resources, and coordinating development.

A series of studies and background reports prepared during 1994 and 1995 led to the findings and policies contained in this Plan. Part III lists the studies and reports prepared by agency staff and consultants in the update of the Seaport Plan.

CARGO FORECAST

Findings

1. The baseline cargo forecast for the 1988 Seaport Plan update, shown in Table 1, projects the flow of civilian waterborne cargo through Bay Area ports (measured in metric tons) to the year 2020.

Table 1: 2020 Baseline Cargo Forecast (1,000s of metric tons)
(Excludes bulk sugar, crude oil and petroleum products, and Hawaiian molasses)

	2002	2005	2010	2015	2020
Container[a]	14,334[b]	18,282	22,227	26,956	32,567
Break Bulk	270	294	338	389	448
Neo-Bulk	195	228	296	383	497
Dry Bulk	3,324	4,343	5,540	6,175	6,881
Liquid Bulk	331	356	403	455	514
Total	18,454	23,503	28,804	34,358	40,907

a Container cargo based on 1988 baseline cargo forecast.
b 2000 container cargo forecast volume.

2. Growth in container maritime cargo has followed the trend predicted in the forecast of maritime cargo prepared for the 1988 update of the Seaport Plan; however, the bulk cargoes generally have lagged behind in projections. Therefore it was necessary to update the forecast for the non-container, or bulk, cargo types.

3. The cargo forecast does not include the movement of cargo through the ports of Sacramento or Stockton.

4. The baseline forecast indicates that total waterborne cargo for the San Francisco Bay Area will double between 2002 and 2020. Cargo in containers, neo-bulk (automobiles), break bulk, dry bulk, and liquid bulk cargoes are all expected to increase, with container cargo volume more than doubling by the year 2020. The growth rates for bulk cargoes will

be considerably lower.

5. The baseline forecast predicts growth in liquid cargoes, such as vegetable oils. Other liquid bulk commodities are primarily handled at proprietary terminals (such as Chevron's Long Wharf at Richmond), and are not included in this plan. This plan focuses on general cargo ports and terminals.

6. The ports of the Bay Area compete with each other and with other West Coast ports for cargo and the ocean carriers that transport this cargo.

7. Bulk cargoes have traditionally been a large part of the region's cargo activity. However, there are indications that a technological shift has occurred in the way that break bulk, and possibly other bulk[3] cargoes, are transported, with more kinds of goods being transported in containers. For example, some automobiles are now transported in containers, rather than the traditional RO/RO mode. The shift to container shipping of goods will likely increase in the future. Recycling of materials, such as steel scrap and cement, has increased because of state laws requiring local governments to reduce the volume of materials going to landfills, and because of growth in the overseas market for scrap iron and steel. Scrap metal exports are growing at Schnitzer Steel, the Port of Redwood City, and the Port of Richmond.

Table 2: Vessel Calls per Year
SOURCE: Marine Exchange "Golden Gate Ship Traffic Report," 1988 through 1993

	1988	1989	1990	1991	1992	1993
Port of Oakland	1,457	1,369	1,346	1,407	1,422	1,466
Port of San Francisco	654	628	609	602	523	443
Port of Richmond	204	216	242	212	161	129
Port of Benicia	215	231	251	255	255	226
Port of Redwood City	10	14	14	13	25	19
Encinal Terminals	57	37	44	11	16	16
Total	2,597	2,495	2,506	2,500	2,402	2,299

8. While the volume of total cargo coming into the Bay has increased and generally followed the forecast amounts, the number of ship calls has declined, and many bulk cargo berths around the Bay are inactive. To illustrate, the number of ship calls for all cargoes from 1988 to 1993 are shown in Table 2.

9. Significant shifts in the method of transporting forecast cargoes could affect the region's need for bulk terminals to handle forecast cargo volumes. Because of these changes, future needs for bulk terminals and berths may be reduced, thus reducing the need for the number of bulk terminals and berths designated in the Seaport Plan to meet the 2020 cargo forecasts.

10. Monitoring of the container and bulk cargo volumes is needed to provide a basis for ongoing review of the Seaport Plan findings and policies concerning container and bulk cargo marine terminal designations. Data collected through the monitoring process would be used to evaluate requests to convert bulk terminals to container terminals, or to delete bulk or container terminals from the Seaport Plan. Ongoing cargo monitoring would eliminate the need for updating the cargo forecast every five years, and would inform the Committee of emerging trends in bulk and container shipping. Collecting annual data on ship calls, tonnage, berth usage, and numbers of containers moved through the Bay Area's

3. The term "bulk" is used throughout this Plan to refer generally to all non-container cargoes. Break bulk, dry bulk, liquid bulk, and neo-bulk are defined in the Glossary in Part III.

ports will provide the information needed for the Committee to update the Seaport Plan on an as-needed basis, and would indicate if and when a new forecast should be made.

Policies

1. In order to foster economic activity, improvements should be made to the Bay Area port system to handle the forecast growth in waterborne cargo.

2. Proposed marine terminal development should be closely linked to the projected regional need for new facilities based upon reasonable forecasts of waterborne cargo.

3. The Seaport Planning Advisory Committee should monitor the region's maritime cargo volumes, marine terminal use, and ship calls on an ongoing basis. The data collected should be used to determine whether there has been a shift in the method of transporting bulk cargoes and the adequacy of the Seaport Plan marine terminal designations to ensure that the Bay Area has adequate areas reserved to accommodate future port and marine terminal development. No further changes in use or deletions of port priority use areas should be considered until the cargo monitoring process has been implemented.

4. Deletions of the port priority use and marine terminal designations from this plan should not occur unless the person or organization requesting the deletion can demonstrate to the satisfaction of the Seaport Planning Advisory Committee that the deletion does not detract from the regional capability to meet the projected growth in cargo. Requests for deletions of port priority or marine terminal designations should include a justification for the proposed deletion, and should demonstrate that the cargo forecast can be met with existing terminals.

5. Proposed changes in port use of designated marine terminals, e.g., from bulk to container use, should be reviewed by the Seaport Planning Advisory Committee, and should be permitted without an amendment of the Seaport Plan as long as the change in use does not detract from the regional capability to meet the projected growth in cargo.

PORT PRIORITY USE AREAS

Findings

1. Ports require a flat, expansive waterfront location on navigable, deep water channels with excellent ground transportation access and services. Such sites around San Francisco Bay are limited, and are a regional economic resource that should be protected and reserved for port priority uses, such as marine terminals and directly related ancillary activities, ship repair, supporting ground transportation facilities, and directly related marine service facilities. Figure 1 depicts the ports and port priority use areas around San Francisco Bay.

2. "Port Priority Use Areas" are reserved for regional maritime port use and include within their premises marine terminals and directly related ancillary activities such as container

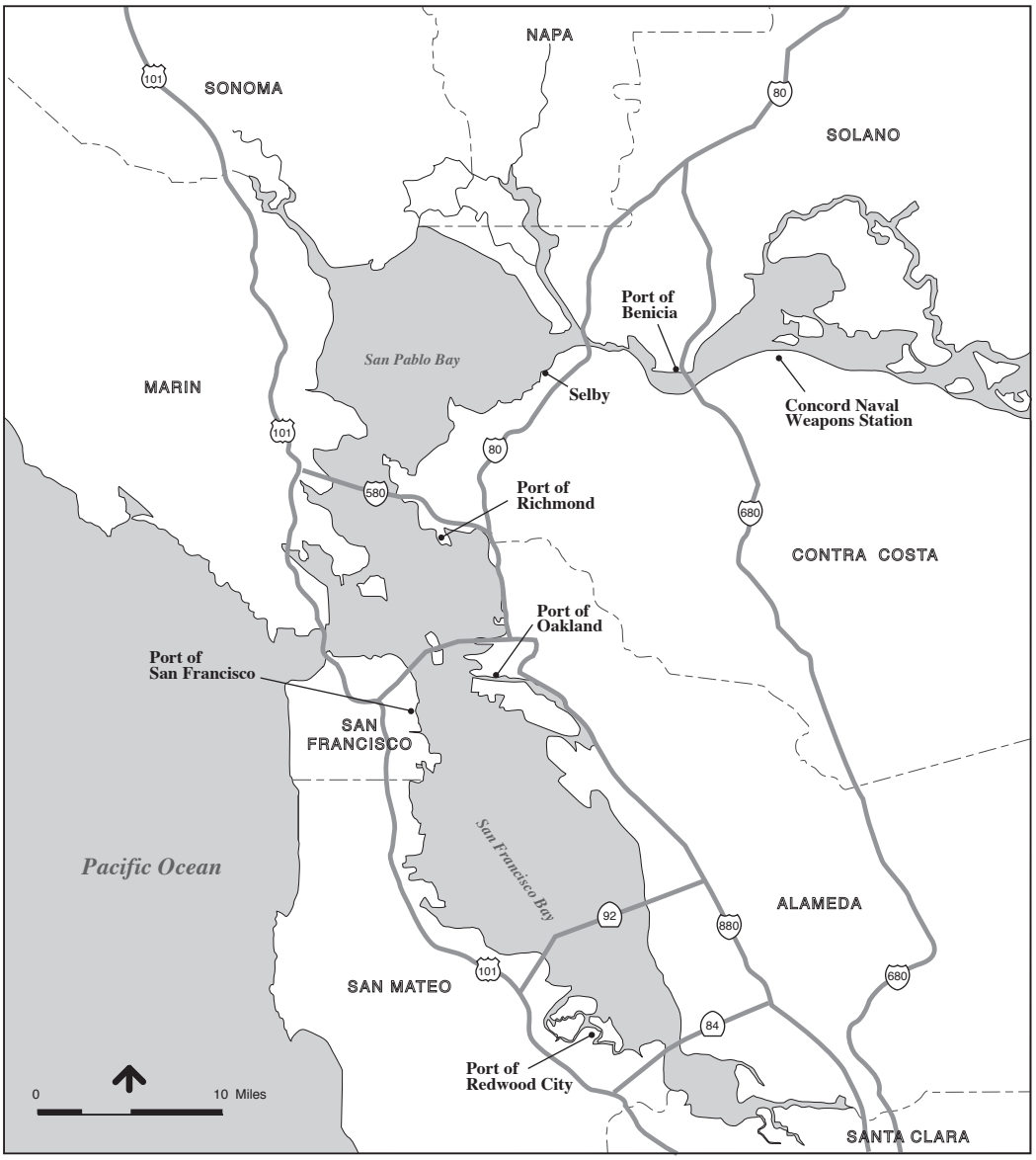


Figure 1: San Francisco Bay Area Ports and Port Priority Use Areas

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.

3. Land reserved for port priority use will not be developed for marine terminals at once, but over a period of years.

4. Some port priority use areas and existing marine terminals, such as San Francisco's container berths, are inactive or underused, but they are expected to be needed to meet the Bay Area 2020 cargo forecast.

5. Commercial recreation is defined in the San Francisco Bay Plan as facilities specifically designed to attract large numbers of people to enjoy the Bay and shoreline, such as restaurants, specialty shops, and hotels. In certain port priority use areas, small-scale commercial recreational establishments may not significantly impair the efficient use of a port priority use area for port purposes, and could serve as a source of revenue to the port or landowner and provide a public benefit until such time as the area is developed as a marine terminal.

6. Passenger ferry service may increase in the Bay Area as one means of alleviating growing traffic congestion. Some port priority use areas may offer locations considered appropriate for the development of ferry terminals. Ferry terminals and ancillary uses, such as parking and transit stop facilities, in port areas require careful planning and design to ensure that ferry use is safe and does not interfere with existing or potential port-related uses.

Policies

1. Local governments and the Bay Area ports should protect port priority use areas for marine terminals and other directly related port activities through their land use planning and regulatory authority.

2. Within port priority use areas, non-port uses such as public access and commercial recreation development may be allowed provided that the use would not impair existing or future use of the area for port purposes.

3. Within port priority use areas, passenger ferry terminals and ancillary uses may be allowed, provided the development and operations of the ferry facilities do not interfere with ongoing or future port-related uses, and navigational and passenger safety can be assured.

4. Uses that would impair the future use of a port priority use area that is not currently used for port purposes may be allowed only on a finite, interim basis. Interim uses should be of a nature that allow the site to be converted to port use when it is needed for marine terminal development or other port priority use. The length of the interim use period should be determined on a case-by-case basis for each site and proposed use. Factors to be considered in determining the length of the interim use should include, but are not limited to: (1) the amortization period of investments associated with the proposed use; (2) the lead time necessary to convert the site to the designated marine terminal or port use; and (3) the need for the site as measured by the Bay Area volume of the cargo type specified to be handled at that site and the available capacity at other ports in the Bay Area to accept the specified cargo.

5. No Bay fill should be authorized for interim uses that are not water-oriented.

MARINE TERMINALS

Findings

1. There are two ways to accommodate growth in waterborne cargo: (1) by constructing new marine terminals—generally requiring at least some Bay fill and dredging—or (2) by increasing the rate and volume of cargo moved through existing marine terminals with investments in capital or labor.

2. "Marine Terminal" includes 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., sugar and crude oil refineries) are not included in this plan. For purposes of this 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. Marine terminal throughput capability has increased since the 1988 update of the Seaport Plan, and this trend will continue, especially in container shipping. Between 1988 and 1993, the number of vessel calls at Bay Area ports declined from 2,597 to 2,299,[4] while the volume of cargo handled during that period rose from 19.9 million short tons to 22.2 million short tons.[5]

4. Technical improvements at marine terminals, such as electronic cargo inventory and tracking systems (which eliminate the need for paper processing at gates), faster cranes, changes to the ships themselves, such as self-loading and unloading dry bulk ships, and larger container ships, have increased the volume of cargo that Bay Area marine terminals can handle.

5. The 1988 Seaport Plan used the cargo throughput capability method developed in 1986 for the federal Maritime Administration to calculate the need for future marine terminals. That analysis concluded that the Bay Area would need 44 more berths to meet the volume of container cargo forecast for the year 2020.

6. The method used in the 1995 update of the Seaport Plan modifies the 1988 method for calculating throughput capabilities by calculating port-specific and Bay Area-average cargo throughput capabilities that reflect the trend toward more intermodal marine terminals with higher cargo throughput capabilities. This method blends theoretical terminal efficiency and real constraints (such as backland) to develop estimated throughput capabilities for each port, by type of cargo, as they would likely operate in the year 2020. This method results in higher throughput capabilities for existing marine terminals in the year 2020, bringing them closer to, but still considerably less than, the throughput capabilities at very intensively used ports, such as Hong Kong. Assuming higher throughput capabilities means that fewer new terminals will be required to meet forecast growth in maritime cargo.

7. If ports invest in improvements to their existing terminals that will result in greater efficiency, then less shoreline acreage must be reserved throughout the region to meet the future need for marine terminals. Moreover, because fewer terminals will be needed to meet the 2020 cargo forecast, less Bay fill will be needed to construct new marine terminals.

4. Marine Exchange, Golden Gate Ship Traffic Report, 1988-1993.

5. Pacific Maritime Association, Annual Reports, 1988-1993. Includes sugar.

8. The amount of Bay fill required to develop the sites designated as future marine terminals will depend on the specific project. Estimates of fill volumes are shown in Table 3.

9. Bay fill is only one of several factors that must be considered in determining the appropriate number and location of marine terminal and port priority use area designations around San Francisco Bay. Other factors that must be considered include a site's access or proximity to highways and railroad lines, proximity to existing marine terminals, impacts of terminal development on aquatic and upland habitat, economic and market factors, local land use plans, and the local government or private entity's interest in operating a port. Although some Bay fill is required to meet the cargo projections for the year 2020, the fill volumes and designated sites are those that, on balance, will result in the fewest adverse environmental impacts while providing the maximum amount of civilian maritime cargo capacity.

Table 3: Approximate Fill Volumes

Port	Terminal or Berth	Designation	Net Fill Acres
San Francisco	Pier 94 N	1 berth	10
Oakland	New Berth 21	1 berth	29
	FISCO	5 berths	0-30[6]
Richmond	Terminals 5-6-7	3 berths	33
	Terminal 3 South	1 berth	14
		Total	86-116

6. The development of the Joint Intermodal Terminal and five new container berths at the Fleet and Industrial Supply Center Oakland will result in 0-30 acres of net fill. The amount is undetermined at this time because although some new fill will be placed, some portion of existing fill will be removed.

10. The cargo forecast for 2020 can be accommodated through complete implementation of this plan, including development of the designated future sites, conversion of existing sites to their designated future uses, and attainment of optimal throughput capabilities at the marine terminals. The plan includes some excess throughput capability for bulk cargo commodities, but this is appropriate because some terminals will be unable to attain the optimal throughput efficiency specified. Container cargo throughput capability falls slightly short of the forecast volume. No additional marine terminals are designated to meet the total forecast of container cargo because no other potential terminal sites meet the criteria for container terminal development.

11. This plan would result in the number of berths, terminal acreage, and cargo throughput capabilities shown in Table 4. The 2020 baseline cargo forecast is provided for comparison.

Table 4: Bay Area Throughput Capabilites in 2020
(Throughput and Forecast are in metric tons)

	Acres	Berths	Throughput	2020 Baseline Forecast
Container	1,375	30.5	31,824,500	32,567,000
Break Bulk	29	4.4	363,000	448,198
Neo-Bulk	254	7.6	2,367,800	497,035
Dry Bulk	158	8.9	9,807,200	6,881,390
Liquid Bulk	106	8.6	1,000,000	514,494

12. The higher throughput capabilities developed for this plan show that the Bay Area can absorb significant increases in waterborne cargo without building new port facilities. The throughput capabilities shown in Table 5 were estimated for each port and cargo type, and were used to determine the number of additional berths that will be needed to meet the expected growth in cargo by the year 2020.

13. The Joint Intermodal Facility (JIT), which is under construction at the former Naval Fleet and Industrial Supply Center Oakland (FISCO), will significantly increase the Port's container cargo throughput capability and handling efficiency. Upon closure and transfer of certain portions of the Oakland Army Base (OAB) to the Port of Oakland, the Port will relocate the JIT to yet a more efficient location and layout in the near future. The new location will be on OAB property east of Maritime Street and parallel to Interstate 880. Relocation of the JIT will allow the Port to significantly expand its container terminals and substantially increase its container cargo throughput capacity.

Table 5: Expected Throughput Capability per Port per Berth
(in thousands of metric tons)

Port	Container	Break Bulk	Neo-Bulk	Dry Bulk	Liquid Bulk
Benicia	-	-	374	600	-
Oakland					
Outer Harbor	1,447	-	-	-	-
Seventh Street Harbor	1,005	-	-	-	-
Middle Harbor					
FISCO	1,619	-	-	-	-
APL	1,484	-	-	-	-
Inner Harbor	601	-	-	-	-
Redwood City	-	128	853	1,293	90
Richmond	510	-	286	1,037	-
San Francisco	749	78	103	1,219	118
Bay Area Average	1,043	103	404	1,037	104

14. Relocation of the JIT and expansion of the Port of Oakland's marine terminals will result in berths that are 1,200 feet in length, with terminal areas ranging from 49 to 305 acres per terminal. These larger terminals will have throughputs that depend on the amount of backland and the number of berths at each terminal area.

15. Future berths at non-port sites are assumed to have regional average throughput capabilities.

16. Actual berth and terminal capacities will vary with actual cargo volumes, access to road and rail, the type of cargo handled at the facility, the financial capability of the port to make capital investments in efficiency improvements, and the technological changes in the maritime shipping industry.

Policies

1. Bay fill authorized for development of any marine terminal must be the minimum necessary to achieve a functional terminal at the site. Marine terminal development projects must meet the criteria for Bay fill projects specified in Section 66605(c) and (d) of the McAteer-Petris Act,[7] which are: (1) that public benefits of fill must exceed the public detriment from the loss of water area; (2) that there is no alternative upland location; (3) that the proposed fill is the minimum necessary to achieve the purpose of the fill; (4) that the nature, location, and extent of any fill must minimize harmful effects to the Bay Area, such as reduc-

7. California Government Code Sections 66600 through 66682.

tion or impairment of the volume, surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources; (5) that the fill be constructed in accordance with sound safety standards; (6) that fill should establish a permanent shoreline; and (7) that the project applicant has valid title to the properties in question.

2. Future marine terminals should be developed for the type of cargo specified in Part II of this plan at each port and port priority use area. If a port or terminal operator proposes to use a terminal for a cargo other than that designated in the Seaport Plan, the project proponent must demonstrate to the Seaport Planning Advisory Committee that the proposed project does not prevent Bay Area ports from achieving adequate cargo throughput capability to meet the 2020 projections. In reviewing such requests, the Seaport Planning Advisory Committee should make use of the cargo monitoring data that will be collected as part of the implementation of this plan (see Responsibilities of Other Agencies in Part III of this plan).

3. Conversion of existing marine terminals from bulk to container terminals should not occur unless other terminals are available in the region to accommodate both the existing terminal's cargo throughput capability and the current cargo operations that would be displaced by the conversion. In reviewing such requests, the Seaport Planning Advisory Committee should make use of the cargo monitoring data that will be collected as part of the implementation of this plan (see Responsibilities of Other Agencies in Part III of this plan).

4. New marine terminals requiring large volumes of Bay fill should only be developed when all existing terminals are operating at maximum feasible capacity, and should involve the least possible amount of Bay fill.

5. The estimates of throughput capability and the number of new berths needed to meet the 2020 cargo forecast should be used only as an approximate guide.

6. To achieve the capacity needed to handle the cargo volume forecast for 2020, each port and port priority use area should have the number of berths shown in Table 6.

7. If cargo capacity shortfalls occur, fill for additional marine terminals not designated in this plan should not be approved by BCDC unless the project proponent can demonstrate to the satisfaction of BCDC and the Seaport Planning Advisory Committee: (1) that existing berths and terminals have reached their capacity; (2) that no other feasible alternative to construction of new terminals exists; (3) and that net Bay fill included in the proposed terminal is the minimum necessary and that no alternative upland location exists.

Table 6: Number and Type of Berths at Each Port or Site [8]

Port	Container	Break Bulk	Neo-Bulk	Dry Bulk	Liquid Bulk	**Total**
Benicia	-	-	2.5	0.5	-	3.0
Oakland	19.0	-	-	2.0	-	21.0
Redwood City	-	0.4	0.6	2.4	1.6	5.0
Richmond	5.5	-	2.5	3.0	1.0	12.0
San Francisco	6.0	4.0	2.0	1.0	1.0	14.0
Selby	-	-	-	-	5.0	5.0
Bay Area Total	30.5	4.4	7.6	8.9	8.6	60.0

8. Fractions of berths indicate that a single berth is used for more than one cargo type. The fraction indicates the percentage of time for which the berth is used for that cargo type.

CONTAINER TERMINALS

Findings

1. Nationally and internationally, there is a growing emphasis on "intermodal" transportation, which is defined as the convenient, rapid, efficient, and safe transfer of goods from one mode to another to provide the highest quality and most comprehensive transportation service for its cost. In terms of container cargo, intermodal transportation means the movement of freight containers using some combination of ship, truck, and rail.

2. Manufacturers and shippers rely increasingly on "just in time" deliveries of raw materials and finished goods to reduce inventory costs.

3. The expansion of intermodal shipping and just in time delivery has resulted in the convergence of shipping lines, trucking companies, and railroad lines at ports. Container shipping companies are relying more on larger centralized terminals, from which containers can be placed directly on double-stacked rail cars or truck chassis, and sent to their final destinations.

4. Most major container ports in the United States will increase their throughput by two to three times by the year or 2020, by improved intermodal connections and operating efficiencies, not through land expansions.[9]

5. Container shipping continues to grow, in terms of the types and volumes of commodities being shipped in containers, in the size and technology of ships, and the speed with which goods reach their destinations. "Post-Panamax" ships, which are too large to pass through the Panama Canal, are common in the Asia-West Coast trade. These ships carry up to 5,000 containers, with drafts of - 45 to - 48 feet, and reach up to 1,300 feet in length.

6. The rapid pace of technological innovation in the container shipping industry will continue to alter the design, operations, and costs of marine terminals.

7. Container terminals are costly to construct and all the container terminals designated in the Seaport Plan are expected to be developed over a period of years in reaction to market forces. Some bulk cargo and combined bulk and container cargo use is expected to occur at some designated container terminals until market demand for just container use of the terminal is achieved.

Policies

1. Container terminal development projects for land-constrained sites should have at least 30 acres per berth of backland. Projects with intermodal service, such as the FISCO site and other terminal expansions at the Port of Oakland, should have 55 acres per berth to accommodate the higher cargo capacity of the larger ships that will be calling at those terminals.

2. Projects for combined container/neo-bulk terminals should ideally have 30 acres per berth, but must have at least 20 acres per berth.

3. Container terminal projects, especially intermodal terminals, should have the following four characteristics: (1) deep water channels and berths (at least -35 feet); (2) access to at least one railroad, but preferably two, and an interstate highway; (3) adequate flat backland

9. National Highway Institute, *Landside Access for Intermodal Facilities,* Participant Workbook, June 1995.

(a minimum of 30 acres, and as much as 55 acres per berth for intermodal terminals); and (4) an agency or entity with the ability and willingness to raise the funds to build and operate the terminal. In addition, the sites should be adjacent to existing container terminals.

4. Container terminals may be used for bulk cargo or combined bulk and container cargo until the terminal is needed for container cargo shipping, provided the non-container cargo use would not impair the current or future use of the terminal for container shipping.

BULK TERMINALS

Findings

1. Bay Area ports currently have a surplus of civilian break bulk, dry, liquid, and neo-bulk cargo berths, as measured by vacant berths. However, although these facilities appear to be surplus today, the cargo forecast indicates that seven new bulk cargo berths will be needed by the year 2020 to accommodate expected growth in bulk cargoes.

2. Bulk cargo shipping is undergoing a transition. The Ports of San Francisco and Richmond report fewer ship calls than in past years, and have vacant or underused bulk cargo terminals. At the same time, the total volume of bulk cargo processed through Bay Area ports has increased, suggesting that: (1) the forecast overestimated the volume of bulk cargoes because bulk cargoes are now more frequently shipped in containers; (2) larger ships are being used for bulk cargoes; or (3) that bulk terminals are operating more efficiently.

3. Some bulk cargo berths are suitable for future conversion to container terminals. These berths include military, public, and proprietary terminals, whose existing operations would be displaced by converting the facilities to container berths.

Policies

1. The Seaport Planning Advisory Committee should monitor the region's maritime cargo volumes, marine terminal use, and ship calls on an ongoing basis. The data collected should be used to determine whether there has been a shift in the method of transporting bulk cargoes and the adequacy of the Seaport Plan marine terminal designations to ensure that the Bay Area has sufficient areas reserved to accommodate future port and marine terminal development.

2. Proposed changes in port use of designated marine terminals, e.g., from bulk to container use, should be reviewed by the Seaport Planning Advisory Committee, and should be permitted without an amendment of the Seaport Plan as long as the change in use does not detract from the regional capability to meet the projected growth in cargo.

3. In developing new bulk cargo terminals, the minimum amounts of backland shown in Table 7 should be provided for each berth.

Table 7: Berth Acreage Requirements for Bulk Terminals

Break Bulk	Neo-Bulk *Steel & Newsprint*	Neo-Bulk *Autos*	Dry Bulk	Liquid Bulk
20 acres	13 acres	175 acres	13 acres	12 acres

DREDGING AND NAVIGATION

Findings

1. Sufficiently deep, wide, and well maintained navigation channels are essential to the operation of Bay Area ports. Ocean-going vessels require shipping lanes of adequate depth and width to safely access marine terminals.

2. Maintenance dredging is required to keep excavated channels, turning basins, and ship berths at the proper depth for safe navigation and mooring. In addition, channels, basins and berths can require deepening to accommodate newer, larger ships that are calling on Bay ports. This need is particularly true in the container shipping business, where larger ships with deeper drafts are standard.

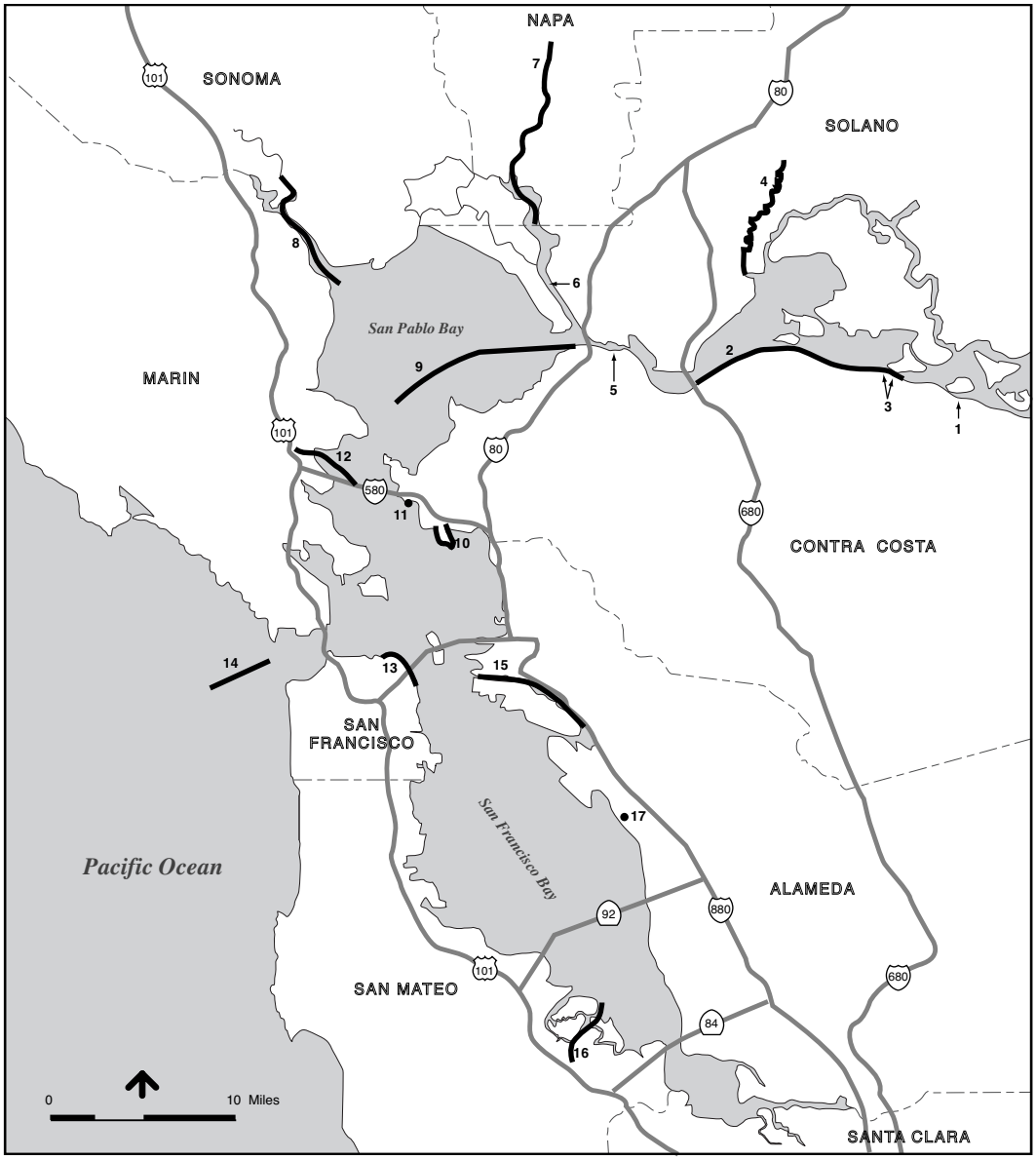
3. The San Francisco Bar Channel, located outside the Bay five miles west of the Golden Gate and currently maintained to a depth of -55 feet, limits the size of vessels that can enter San Francisco Bay. Deepening the interior channels to handle vessels that cannot transit the Bar Channel is unnecessary.

4. Gains in container terminal berth throughput capability can be achieved by increasing the number of containers carried on wider vessels with a deeper draft than the current generation of container ships calling on the Bay Area container ports. Deeper and wider ship channels will likely be required to accommodate the new generation of container ships.

5. Channels leading to some portions of the Port of San Francisco are naturally deep and do not require any significant dredging, although the container terminals will likely require channel and berth deepening to accommodate major container ship activity. At present, the Oakland Outer and Middle Harbor channels are being dredged to a depth of -42 feet to accommodate deeper draft container ships. However, the Inner Harbor Channel east of the Webster and Posey Tubes is at its maximum depth of -35 feet because it is constrained by these tunnels. The Richmond Outer Harbor Channel includes the -45-foot-deep Southampton Shoal Channel. The Richmond Inner Harbor Channel is maintained to a depth of -35 feet. Figure 2 shows the main San Francisco Bay shipping channels.

6. Historically, sediments excavated from the Bay to either maintain or deepen navigation channels, ship berths and turning basins were disposed in the Bay. However, federal and state agencies that regulate dredging—the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board, San Francisco Bay Conservation and Development Commission, and the State Lands Commission—have significantly limited the locations, amount, and timing of Bay dredging and disposal of dredged material in the Bay. The volume of sediment scheduled to be dredged in the future to deepen and maintain existing navigation channels, turning basins, and ship berths, even with the closure of Bay naval facilities, may exceed the annual sediment disposal volume limits currently set by these state and federal regulatory agencies.

7. The joint-agency Long Term Management Strategy (LTMS) was established in 1990 to develop a long-range dredging and dredged material disposal management plan and implementation program for the Bay for the next 50 years. When completed in 1996, the dredging program will identify alternative Bay and upland sites for the disposal of dredged material, in combination with the U.S. Environmental Protection Agency's deep ocean disposal site off the Golden Gate. Several of the sites identified in LTMS technical studies as potential upland disposal or rehandling locations are reserved in this plan as port priority use areas, pending the outcome of the LTMS program.



1 New York Slough
2 Suisun Bay Channel
3 Concord NWS
4 Suisun (Slough) Channel
5 Exxon-Benicia
6 Mare Island Strait
7 Napa River
8 Petaluma River
9 Pinole Shoal
10 Richmond Harbor
11 Chevron-Richmond
12 San Rafael Creek
13 Port of San Francisco
14 San Francisco Bar
15 Oakland Harbor
16 Redwood City
17 San Leandro Marina

Figure 2: San Francisco Bay Major Dredging Areas

8. Some of the dredged sediments can be disposed at upland locations where the material can be used to create additional regional public benefits such as restoration of wetland and wildlife habitat, or levee maintenance and repair. The cost of disposing of dredged sediments at either the deep ocean site or most upland sites will exceed the cost of in-Bay disposal because of higher transportation and handling costs. The use of dredged material for beneficial uses at upland sites is a relatively new concept, which must overcome several impediments, including higher costs, institutional barriers, and fear of potential environmen-

tal effects of such projects. Nonetheless, alternatives to disposal of dredged materials in the Bay are essential to lessen the impact of disposal on water quality and aquatic habitats. A range of disposal options, in addition to limited Bay disposal, should be available to accommodate necessary dredging to maintain, and where necessary, deepen, Bay navigation channels and berths.

9. The overall cost to the region of dredging can be reduced if the total volume of dredging is kept to the minimum necessary.

10. Using port priority use areas as dredged material disposal sites can help to reduce the need for in-bay disposal.

Policies

1. Deepening or widening of San Francisco Bay Channels, including the San Francisco Bar Channel, should proceed only if economically justified or if needed for national defense, and if such deepening or widening accomplishes the objectives of the Seaport Plan and conforms to State and national environmental law and policies. The interior channels of San Francisco Bay should not be deeper than the San Francisco Bar Channel.

2. Ship channels should be deepened and widened to accommodate larger ships with greater cargo capacity that will call on Bay Area container terminals if economically justified or if needed for national defense, and if such deepening or widening conforms to State and national environmental law and policies.

3. Ship channels, turning basins, and berths should be maintained to the depths and widths necessary to safely accommodate the kinds of ships docking at the Bay Area marine terminals if economically justified or if needed for national defense, and if such deepening or widening conforms to State and national environmental law and policies.

4. Adequate capacity for disposal of dredged material should be provided to accommodate necessary dredging of channel and berth areas designated in the plan. Pending completion of the Long Term Management Strategy (LTMS) for dredging, sites designated as port priority use areas on Mare Island that are currently being used for the disposal of dredged materials should be retained as port priority use areas and evaluated for continued designation when the recommendations of the LTMS are complete. Similarly, the Praxis site should be reserved for port priority use pending the recommendations of the LTMS concerning the site's use as a regional disposal or rehandling facility.

5. BCDC should request the LTMS Management Committee to re-evaluate the projected dredging volumes in the region and the need for upland disposal and rehandling, and report its findings to BCDC within one year from the adoption of the Seaport Plan.

GROUND TRANSPORTATION

Findings

1. The results of the roadway level of service analyses conducted as part of the traffic impact study for the Seaport Plan indicate that expected congestion on roadways will mainly be caused by the anticipated increase in general traffic volume. Therefore, future seaport growth will not cause a significant impact on the region's roadways.

2. The rail infrastructure and services analysis conducted as part of the traffic study for the Seaport Plan also shows that future seaport growth will not cause a significant adverse impact on the region's rail system. With the anticipated improvements to rail infrastructure,

and with double-tracks on most mainline rail routes leading to and from Bay Area ports, the anticipated rail system should be able to accommodate the projected level of train trips associated with port growth.

3. Port transportation projects must compete with other proposed projects for local or regionwide transportation funds. Such funds are becoming increasingly scarce.

4. The sites recommended for marine terminal development represent those sites which can be developed with the minimum investment in new ground transportation facilities.

5. Rail service, and transcontinental rail service in particular, is critical to the movement of waterborne cargo through the Bay Area.

6. Several types of actions can improve the efficiency of the ground transportation system:

- The development of rail car loading/unloading facilities at container terminals;
- The transportation of cargo to and from marine terminals during the night, if increased terminal operating costs are offset by reduced congestion;
- Where port access roads are congested, the relocation of container freight stations to off-terminal sites where congestion is minimal; and
- Provision of dedicated and separated roadways for drayage between marine terminals and rail yards.

7. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires development of an intermodal transportation management system that includes an inventory of facilities, development of performance measures, and monitoring of performance. To comply with this requirement, MTC's Regional Transportation Plan (RTP) includes freight transportation elements to convey maritime cargo between civilian seaport facilities and inland destinations by road and rail.

8. Congestion Management Program (CMP) legislation was adopted in 1990, and requires urban counties to monitor traffic congestion on major roadways and to implement programs and projects to mitigate deficient links in regional transportation systems. Congestion management programs focus on handling traffic during peak commuting periods, but do not necessarily address freight movements.

9. Appendix A lists transportation improvement projects that will benefit port operations.

Policies

1. Local, state and federal government actions, such as land use decisions, public works projects, or rail abandonments, should not impede access to the marine terminal sites identified in the Seaport Plan. Funding for a transportation project affecting ports or port sites should be approved or endorsed by MTC only if the project is consistent with the policies of the Seaport Plan unless there are overriding regional considerations.

2. The Bay Area ports, local governments and marine terminal operators should take steps to make the best possible use of existing ground transportation facilities, and should employ measures to mitigate any significant adverse environmental effects of increased traffic at existing and proposed marine terminal facilities.

3. Local and regional transportation planning and funding priorities should facilitate the efficient movement of goods by rail and truck to and from the Bay Area ports.

4. Ground transportation improvements needed primarily to serve existing or proposed marine terminals should be included in Congestion Management Agency transportation funding priorities only if such improvements and the development they serve are consistent with the policies of the Seaport Plan.

5. If funding agencies must choose between marine terminal-related ground transportation projects, highest priority should be given to projects that:

- Best use existing port and transportation facilities; and
- Best enhance the movement of Bay Area waterborne cargo.

PART II
DESIGNATIONS

Application of the findings and policies described in the General Policies Section results in the following site-specific port priority use areas and marine terminal designations to achieve the goals of the Seaport Plan. By ensuring that these sites are reserved for future maritime development, the Seaport Plan will facilitate regional economic development, help to make efficient use of limited fiscal and geographic resources, and protect San Francisco Bay and its natural resources.

PORT OF BENICIA

The Benicia Port and Terminal Company operates a 3-berth marine terminal on Carquinez Strait, west of the Benicia-Martinez Bridge. The Port imports automobiles and petrocoke at its three berths, and has approximately 750 acres of open storage area. The terminal serves the Exxon refinery as well.

Findings

1. Much of the Port's property consists of upland hills, and although there is good freeway and rail access, there is insufficient flat backland for container terminal development.

2. The Port has sufficient acreage for bulk cargo operations and storage, and has recently proposed developing additional petrocoke storage facilities.

3. The Port's facilities and operations as of 1994 are shown in Table 8.

Policies

1. By the year 2020, the Port of Benicia should have the facilities and annual cargo throughput capabilities shown in Table 9.

2. The Port is designated as an active, 3-berth marine terminal. Figure 3 depicts the Benicia port priority use area.

Table 8: Port of Benicia Current Facilities

	AUTO TERMINAL (Berths 1,2,3)	PETROCOKE (Berth 3)
Terminal Operator	Benicia Port Terminal Co.	Benicia Port Terminal Co.
Cargoes Handled	GM, Ford, Chrysler, Mazda, Toyota automobiles	petrocoke
Total Terminal Area (acres)	225	25*
Length of Berths (feet)	2400	800
Wharf Area (acres)	5.5	5.5
Open Storage Area (acres)	750	N/A
Depth of Water (ft. MLLW)	38	38
Transit Shed Area (acres)	N/A	N/A
Ship Calls in 1993	215	11
Special Equipment/Facilities	vehicle ramps	conveyor 2 storage silos

* Included within auto terminal acreage.

Table 9: Port of Benicia Future Facilities

TERMINAL	DESIGNATION	TERMINAL ACRES	CARGO TYPE	EFFECTIVE NO. OF BERTHS	EXPECTED THROUGHPUT CAPABILITY*	TOTAL THROUGHPUT
Berths 1-3	Active	200 25	Neo-bulk Dry bulk	2.5 0.5	374,000 600,000	935,000 300,000
Totals		225		3.0		

* Denotes optimal annual throughput capability, in metric tons.

Figure 3: Port of Benicia Port Priority Use Area

PORT OF OAKLAND

The Port of Oakland is the third largest container port, by volume, on the West Coast, occupying more than 680 acres of marine terminal facilities on the Oakland waterfront. There are 21 deep water berths, and 30 container cranes, nine of which are of the Post-Panamax type. Two railroads serve the Port: the Union Pacific and Burlington Northern Santa Fe lines. Interstate routes 80, 880, 980, and 580 are easily accessed from the Port.

Findings

1. Several planned projects will increase the Port's container cargo handling capabilities and efficiency in the near future, including: (1) deepening of the Middle and Outer Harbor Channels to -50 feet, to be completed in 2002; (2) construction of a Joint Intermodal Terminal (JIT) serving the Union Pacific and Burlington Northern Santa Fe (BNSF) railroads; and (3) construction of 6,000 feet of marginal wharf on land formerly known as the U.S. Navy's Fleet and Industrial Supply Center Oakland (FISCO), which will accommodate five additional berths on the Middle Harbor.

2. The closure of the Oakland Army Base (OARB) creates an opportunity for the Port to increase its container cargo throughput without significant Bay fill. When the Army completes the disposal and transfer of OARB, the Port will receive 184 acres of OARB and Army Reserve property east of Maritime Street. This property will allow the Port to relocate the Joint Intermodal Terminal to a more efficient layout adjacent to Interstate 880, with improved connections to the Burlington Northern yard and Union Pacific Intermodal Yard. By relocating the JIT, the Port will be able to undertake a phased development program to expand and reconfigure its Outer Harbor, Seventh Street Harbor, Middle Harbor (including the Vision 2000 terminals at FISCO), and Inner Harbor terminals. These changes will substantially increase the Port's container cargo throughput capacity, without filling the Bay at the Bay Bridge or Army Terminal sites.

3. In the Bay Area, the growth of intermodal cargo movement has focused on the Port of Oakland. The Union Pacific merged with the Southern Pacific railroad and consolidated all operations at the former Southern Pacific yard located between Interstate 880 and Middle Harbor Road. The Union Pacific recently completed an intermodal yard at the Port. The Burlington Northern railroad merged with the AT Santa Fe, becoming the Burlington Northern Santa Fe railroad (BNSF), which has an intermodal yard 12 miles to the north in Richmond.

4. Container shipping lines have moved to Oakland from San Francisco to acquire access to better intermodal transportation facilities and services.

5. The area encompassing Terminals 20-26 could be reconfigured with some Bay fill to create a longer, straight wharf with cranes running the entire length. This project would improve the Port's efficiency and capability because the backland for all terminals in that area could then be realigned to provide better access to rail and trucks.

6. Schnitzer Steel is an active, privately-owned, dry bulk marine terminal used for recycling and exporting 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 if and when not needed for its present use.

7. The Port's facilities and operations as of 1994 are shown in Table 10.

Table 10: Port of Oakland Current Facilities

	SEA-LAND (Berths 20-22)	YUSEN (Berth 23)	MAERSK LINE (Berth 24)	TRANSBAY (Berths 25,26)	MITSUI (Berth 30)	MATSON (Berths 32-34)
Terminal Operator	Sea-Land Service	Yusen Terminals	Maersk	TransBay Container	Mitsui	Matson Terminal
Cargoes Handled	Containers	Containers	Containers	Containers	Containers	Containers, Break bulk, roll-on/roll-off
Total Terminal Area (acres)	71	42	38	31	38	66
Length of Berths (feet)	2,056	900	1,046	1,353	1,100	2,252
Wharf Area (acres)	–	–	–	–	–	–
Open Storage Area (acres)	48.5	32	32	21	28	46
Depth of Water (ft. MLLW)	40	40	42	38	42	38
Transit Shed Area (acres)	–	–	–	–	–	–
Ship Calls in 1993	157	209	116	101	3	125
Special Equipment/Facilities	4 cranes 36 hostlers	2 cranes 12 hostlers	3 cranes 27 hostlers	3 cranes 16 hostlers	2 cranes 15 hostlers	3 cranes 30 stradlers/hostlers

	TRAPAC (Berth 35)	7th STREET (Berths 37, 38)	A.P.L. (Berths 60-63)	HOWARD (Berths 67-69)	9th AVENUE (Berths 82-84)	BAY BRIDGE (Berths 8-10)
Terminal Operator	TransPacific Containers	Marine Terminals Corp.	American President Lines	Stevedoring Services of America	Marine Terminals Corp.	not in use due to earthquake damage
Cargoes Handled	Containers	Containers	Containers	Containers, break bulk and Steel	Break bulk	Break bulk
Total Terminal Area (acres)	20	36	82	53	31	62
Length of Berths (feet)	900	1,944	2,742	1,712	2,066	3,039
Wharf Area (acres)	–	–	–	4.5	5	12.9
Open Storage Area (acres)	9.5	28	62.3	35.61	13.13	43.09
Depth of Water (ft. MLLW)	42	42	40	40	35	35
Transit Shed Area (acres)	–	–	–	0	4.84	3.35
Ship Calls in 1993	78	156	271	196	43	13
Special Equipment/Facilities	2 cranes 16 hostlers	4 cranes 35 top/hostlers	5 cranes 42 hostlers	3 cranes 15 hostlers	30 forklifts	30 forklifts

Policies

1. By the year 2020, the Port of Oakland should have the annual cargo throughput capabilities shown in Table 11.

2. Development of the Joint Intermodal Terminal and Vision 2000 berths at the former Fleet and Industrial Supply Center Oakland (FISCO), along with the planned relocation of the Joint Intermodal Terminal and subsequent expansion of the Port's container terminal areas, will accomodate the Port's projected growth in container cargo shipping through the year 2020 without significant Bay fill.

Table 11: Port of Oakland Future Facilities

TERMINAL	DESIGNATION	TERMINAL ACRES	CARGO TYPE	EFFECTIVE NO. OF BERTHS	AVERAGE PER BERTH THROUGHPUT CAPACITY*	TOTAL THROUGHPUT*
Outer Harbor Terminal Area	Active (assumes 29 acres of fill)	295	Container	5	1,446,975	7,234,875
Seventh Street Harbor Terminal Area	Active	205	Container	5	1,005,525	5,027,625
Middle Harbor Terminal Area						
FISCO	Future (under construction)	330	Container	5	1,618,650	8,093,250
APL	Active	121	Container	2	1,483,763	2,967,525
Inner Harbor Area	Active	49	Container	2	600,863	1,201,725
Schnitzer Steel	Active	60	Dry Bulk	2	1,037,000	2,074,000
TOTALS		1,060		21		N/A
Container		1,000		19		24,525,000
Dry Bulk		60		2		2,074,000

* In annual metric tons.

3. Schnitzer Steel is and should remain designated as an active dry bulk terminal as long as the facility is used for this purpose. 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 a container terminal. If Schnitzer Steel is converted to a container terminal, it should have an expected annual throughput capability of 1,520,000 metric tons.

4. Approximately 29 acres of Bay fill will be needed at Berths 20-21 to create a longer linear wharf and backland for efficient terminal operations at the Outer Harbor. This project will be implemented as part of the Port's phased program of relocating the JIT and expanding its container terminal areas.

5. Figure 4 depicts the port priority use area at the Port of Oakland.

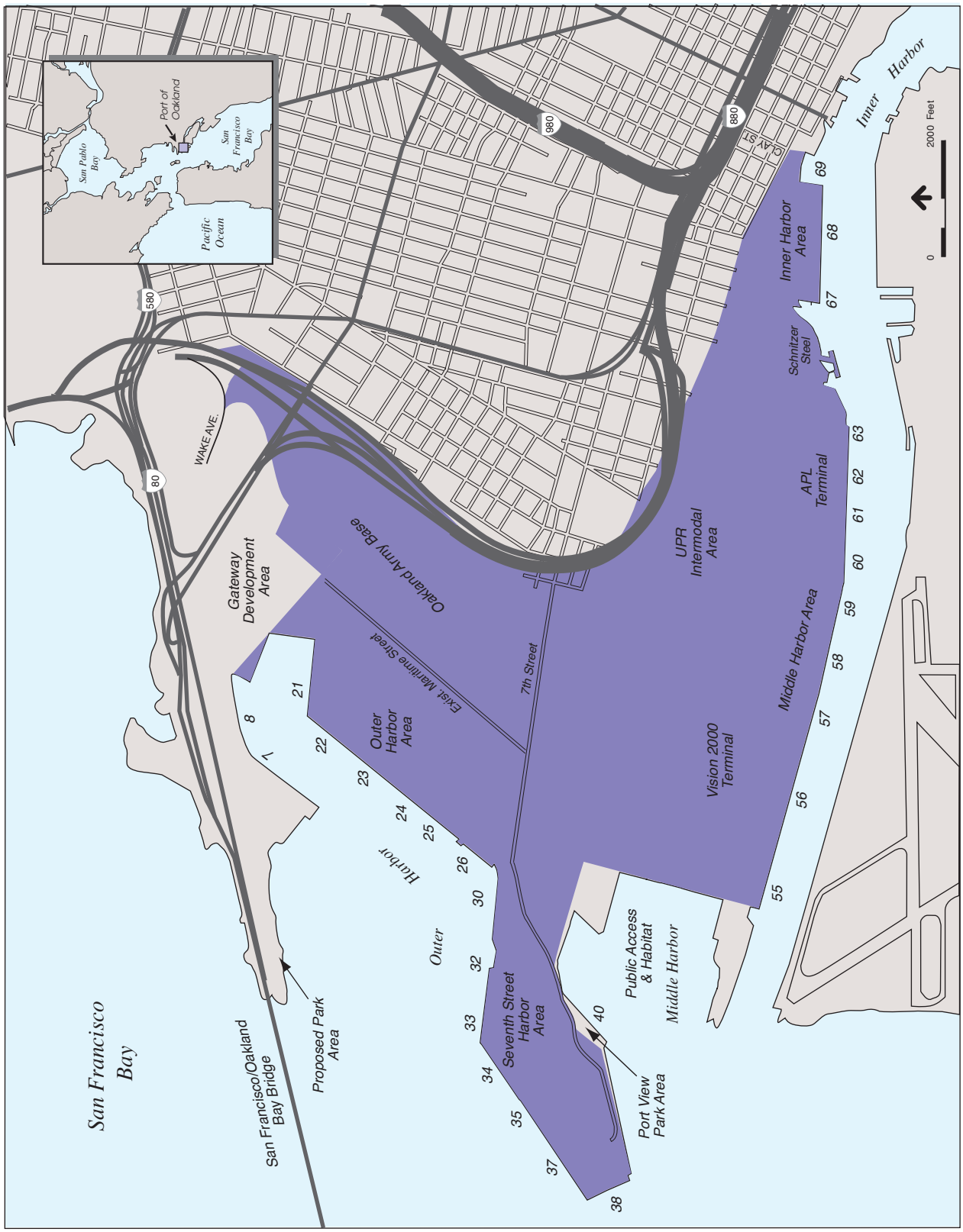


Figure 4: Port of Oakland Port Priority Use Area

PORT OF REDWOOD CITY

The Port of Redwood City consists of four deep water berths along the Redwood Creek Channel, and handles mainly dry bulk and neo-bulk cargoes.

Findings

1. In the last two years, the Port has seen an increase in exports of recycled scrap metal, cement, and rock, as well as increased imports of gypsum. The majority of the growth in exports has been in scrap metal, which rose from 182,500 to 253,400 tons between 1993 and 1995.

2. The tenants at the Port of Redwood City require additional storage for current operations, and expect to see a higher proportion of materials imported by ship to their sites. Additional acreage for open storage may be available to the Port at the Lonestar Cement property. Approximately 17 acres are unused between the Lonestar plant and the eastern boundary of the Port's property. The Port or its tenants may be able to lease this area from Lonestar to expand open storage of aggregate materials.

3. The property formerly owned by the Ideal Cement Company consists of approximately 106 acres located east of the Port, across Seaport Boulevard, and 10 acres located north of the Port at the junction of Redwood Creek and Westpoint Slough. The current owners are proposing to develop a business park on the eastern portion of the property, and have signed a Memorandum of Agreement with the Port to transfer the 10-acre parcel to the Port upon deletion of the port priority use designation on the eastern portion of the property. This 10-acre parcel is designated for storage, and could be developed as a dry bulk cargo berth.

4. The Port's facilities and operations as of 1994 are shown in Table 12.

Table 12: Port of Redwood City Current Facilities

	WHARVES 1 AND 2	WHARVES 3 AND 4	WHARF 5
Terminal Operator	Kaiser-Lonestar	LMC-Pabco-Romic	Pilot Petroleum
Cargoes Handled	cement, sand and gravel	scrap metal, gypsum and bauxite	ballast water and oil slops
Total Terminal Area (acres)	10	16	13
Length of Berths (feet)	855	450	500
Wharf Area (acres)	8	16	5
Open Storage Area (acres)	4	3	4
Depth of Water (ft. MLLW)	32	32	32
Transit Shed Area (acres)	0.69	N/A	N/A
Ship Calls in 1993	0	14	–
Special Equipment/Facilities	conveyor pneumatic pipe hoppers cement pipeline	conveyor 300 tons/hr additional berthing of 280 feet with dolphins	petroleum pipeline storage tanks 2 forklifts

Policies

1. By the year 2020, the Port of Redwood City should have the annual cargo throughput capabilities shown in Table 13.

Table 13: Port of Redwood City Future Facilities

TERMINAL	DESIGNATION	TERMINAL ACRES	CARGO TYPE	EFFECTIVE NO. OF BERTHS	EXPECTED THROUGHPUT CAPABILITY*	TOTAL THROUGHPUT*
Wharves 1-2	Active	6	Dry Bulk	1.0	1,293,000	1,293,000
Wharf 3	Active	5 5	Neo Bulk Dry Bulk	0.6 0.4	853,000 1,293,000	511,800 517,200
Wharf 4	Active	6	Liquid Bulk	1.0	90,000	90,000
Wharf 5	Active	15	Liquid Bulk Break Bulk	0.6 0.4	90,000 128,000	54,000 51,200
Ideal Cement	Future	10	Dry Bulk	1.0	1,293,000	1,293,000
Totals		47		5.0		
	Break Bulk	5		0.4		51,200
	Neo-Bulk	5		0.6		511,800
	Dry Bulk	16		2.4		3,103,200
	Liquid Bulk	21		1.6		144,000

* Denotes optimal annual throughput capability, in metric tons.

2. The U.S. Geological Survey research berth at Wharf 4 is not currently used for cargo, but could be an active cargo berth if and when the U.S.G.S. should leave the site.

3. The Port should reallocate the land within its jurisdiction to obtain the most efficient storage and maximum maritime cargo throughput. All of the land within the port priority use designation should be used for maritime activities, consistent with the definition of port priority use areas. The port priority use area at the Port of Redwood City is shown in Figure 5.

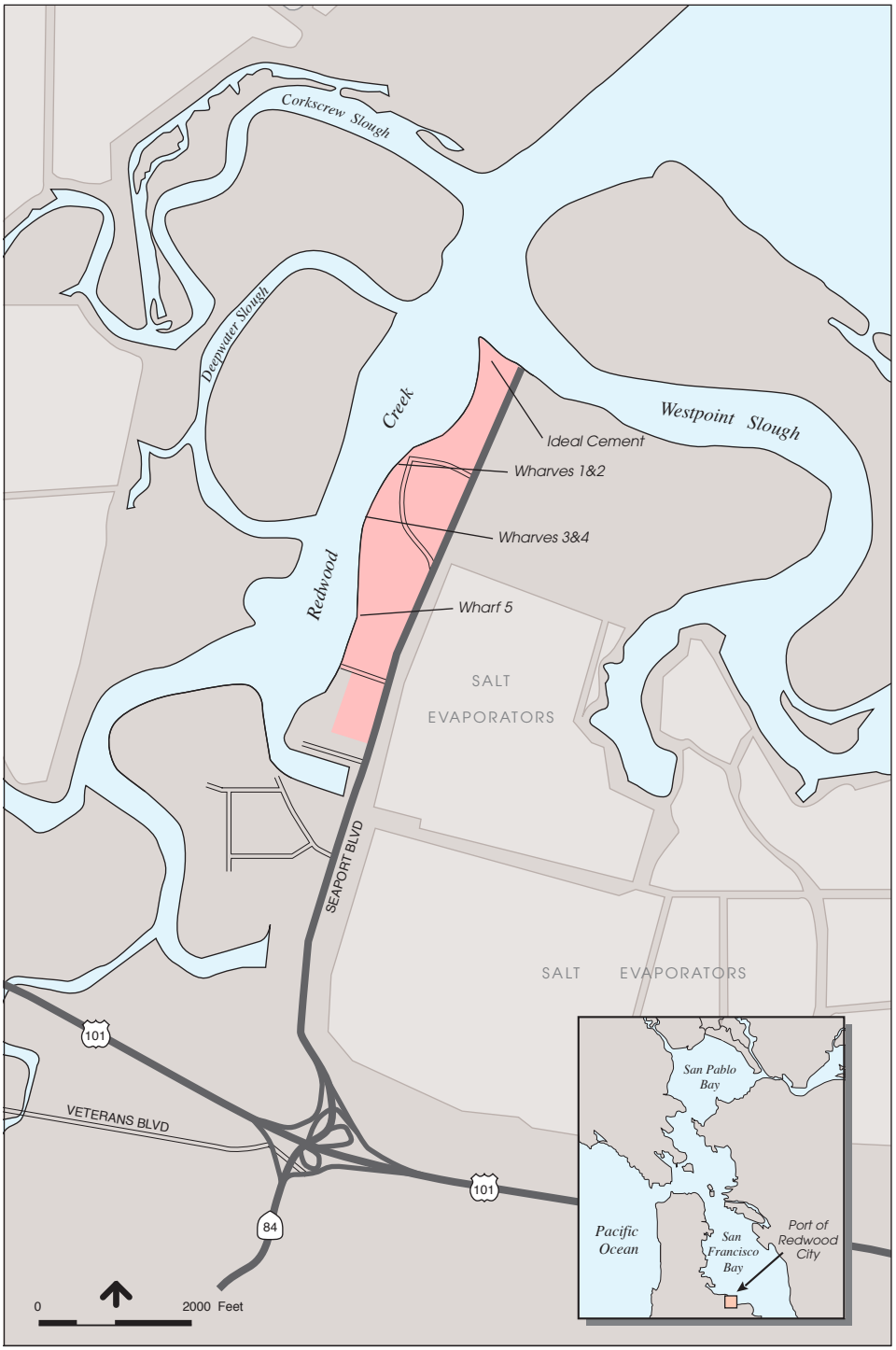


Figure 5: Port of Redwood City Port Priority Use Area

PORT OF RICHMOND

The Port of Richmond serves a variety of shippers at its seven city-owned terminals, and also encompasses nine privately-owned terminals within its 32 miles of shoreline.

Findings

1. The Port's facilities and operations as of 1994 are shown in Table 14.

Table 14: Port of Richmond Current Facilities

	TERMINAL 2	TERMINAL 3	TERMINAL 4	TERMINAL 7 (Berths 6c and 7)
Terminal Operator	California Oils	Stevedoring Services of America	Paktank	The Pasha Group
Cargoes Handled	vegetable oils	steel, lumber, heavy machinery, containers	vegetable oil, petrochemical, petroleum products, molasses, tallow	automobiles, earth moving and road making equipment
Total Terminal Area (acres)	8	19	17	119
Length of Berths (feet)	720	1,009	1,065	1,615
Wharf Area (acres)	N/A	2.43	N/A	4.52
Open Storage Area (acres)	N/A	13.57	N/A	110
Depth of Water (ft. MLLW)	35	35	35	35
Transit Shed Area (acres)	N/A	0.92	N/A	N/A
Ship Calls in 1993	23	21	36	56
Special Equipment/Facilities	pipeline storage tanks- 8,000,000 barrels capacity	2 yard cranes 2 portainers bollard and dolphin	pipeline storage tanks- 504,00 barrels capacity dolphin	

2. Congress has authorized deepening the Richmond Harbor from -35 to -38 feet MLLW, which will allow the Port to serve larger tankers, bulk cargo ships, and container ships. The deepening project is scheduled to begin in late 1996.

3. The Port of Richmond is served by both the Santa Fe and Southern Pacific railroads, and is working with the Santa Fe railroad to extend tracks onto the Point Potrero auto terminal. This extension would facilitate growth of intermodal service at the Port. The Port is considering an expansion of the existing tracks on the east side of the Harbor Channel into Terminals 2 and 3. Finally, the Port may develop a new rail yard west of Harbour Way.

4. In the early 1980s, the City planned to develop a four-berth container terminal on the Ford Peninsula. The City now plans instead to develop the Ford Peninsula with mixed commercial, recreational, and residential projects, and is negotiating for federal Emergency Management Agency funding to restore the earthquake-damaged Ford Building, which will be an integral part of the proposed development.

5. The Ford Peninsula project planned by the City will be incompatible with any significant expansion of Terminal 3, which currently consists of a two-berth container/neo-bulk terminal with 19 acres of backland. To expand the container operations at Terminal 3, addi-

tional backland would be needed on the east side of Harbour Way. Expansion of the combined container/neo-bulk terminal would be possible using acreage west of Harbour Way. Terminal 3 could be combined with Terminal 2, as well as acreage both north and south of those terminals, to create an 80-acre terminal with four berths. Some fill might be needed on the south end of the Ford Peninsula to build the marginal wharf.

6. Since 1995, the Port has acquired new tenants as some container shipping lines have moved to Richmond from San Francisco.

7. ARCO's terminal, north of the automobile terminal, accommodates 900-foot long ships carrying gasoline from southern California refineries. Although the Harbor Channel is designated as a -35-foot MLLW channel, ARCO will require -38 feet to accommodate the larger tankers expected in the near future. If adequate dredging cannot be obtained, ARCO may cease operations at this terminal.

8. Terminal 7 is currently an active neo-bulk automobile terminal with an annual throughput capability of 572,000 metric tonnes. It chould be developed as a 3-berth container terminal with near-dock intermodal rail facilities. A 140-acre container terminal would require 15 acres of fill in the Graving Docks (Terminal 6), and 18 acres of fill at Terminal 5, and would have an annual throughput capability of 2,280,000 metric tons of container cargo.

Policies

1. By the year 2020, the Port of Richmond should have the annual cargo throughput capabilities shown in Table 15.

2. The ARCO Terminal is designated as an active proprietary liquid bulk terminal, with the potential to be converted to a one-berth container/neo-bulk terminal if and when no longer needed by ARCO for its present use.

Table 15: Port of Richmond Future Facilities

TERMINAL	DESIGNATION	TERMINAL ACRES	CARGO TYPE	EFFECTIVE NO. OF BERTHS	EXPECTED THROUGHPUT CAPABILITY*	TOTAL THROUGHPUT*
Terminal 2-3 *Includes area NW and S of Terminals 2 and 3*	Future	80	Container Neo-Bulk	2.0 2.0	209,000 286,000	418,000 572,000
Terminals 5-6-7 *Assumes 33 acres of fill and near-dock intermodal rail facilities*	Future	140	Container	3.0	760,000	2,280,000
ARCO Terminal	Future	20	Container Neo-Bulk	0.5 0.5	209,000 286,000	104,500 143,000
Kinder-Morgan	Active	12	Liquid Bulk	1.0	148,000	148,000
Santa Fe NW	Future	13	Dry Bulk	1.0	1,037,000	1,037,000
National Gypsum	Active	22	Dry Bulk	1.0	1,037,000	1,037,000
Levin–Richmond	Active	25	Dry Bulk	1.0 [b]	1,037,000	1,037,000
Totals	Container [a] Neo-Bulk Dry Bulk Liquid Bulk	190 50 60 12		5.5 2.5 3.0 1.0		2,802,500 715,000 3,111,000 148,000

[a] Includes combined container/neo-bulk terminal acreage.

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

*Denotes optimal annual throughput capability, in metric tons.

3. The vacant Santa Fe dock, Terminal 12 on the Santa Fe Channel, is designated as a future one-berth dry bulk terminal.

4. The Kinder-Morgan berth, on the Santa Fe Channel, is designated as an active one-berth liquid bulk terminal.

5. The National Gypsum and Levin-Richmond terminals are designated as active proprietary terminals that handle dry bulk cargoes.

6. Terminals 5-6-7 should be combined into a 3-berth container terminal with near-dock inter-modal rail facilities. The 140-acre container terminal would require 15 acres of fill in the Graving Docks (Terminal 6), and 18 acres of fill at Terminal 5.

7. Figure 6 depicts the port priority use area at the Port of Richmond.

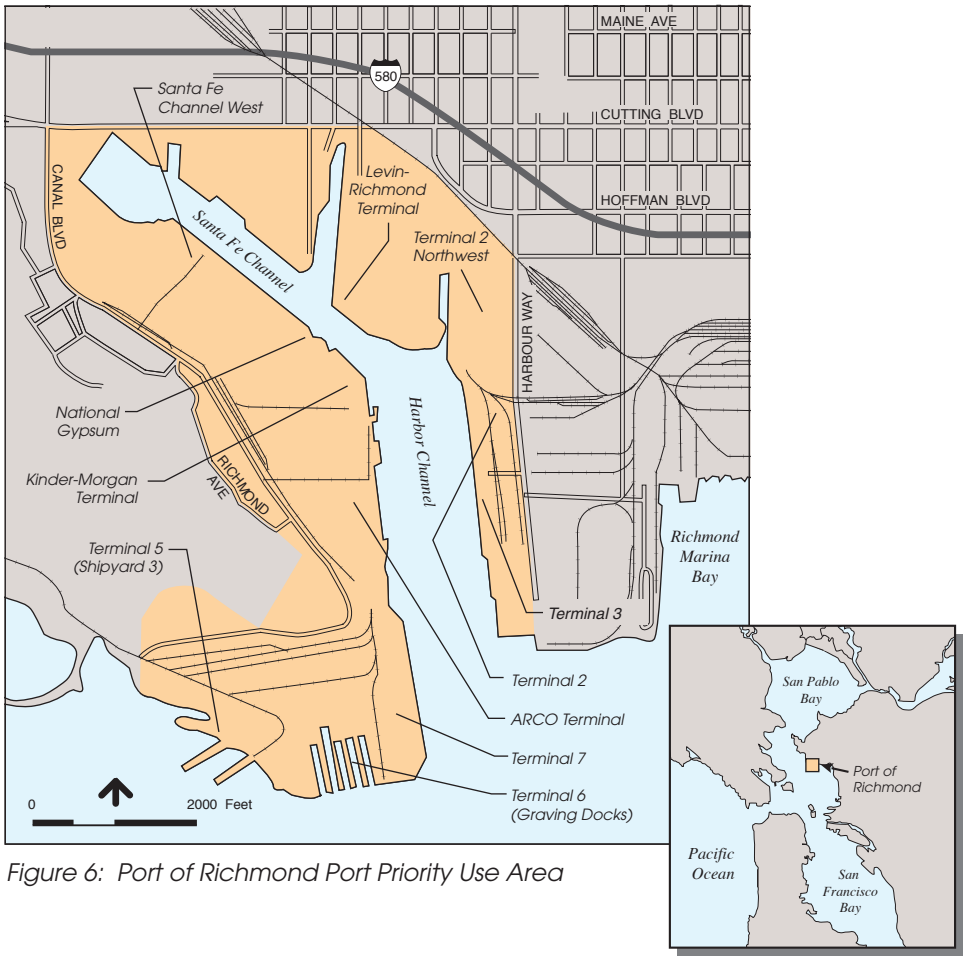


Figure 6: Port of Richmond Port Priority Use Area

PORT OF SAN FRANCISCO

The Port of San Francisco has jurisdiction over seven and one-half miles of waterfront, extending generally from the Hyde Street Pier to India Basin. The port priority use area, and most of the cargo shipping activity, is located south of China Basin.

Findings

1. The Port's facilities and operations as of 1994 are shown in Table 16 (piers 30-32, 31, 33, 27-29, 15-17, and 35 are outside of the port priority use area but are included to fully describe the Port's maritime facilities).

Table 16: Port of San Francisco Current Facilities

	PIER 94, 96	PIER 92	PIER 90	PIER 80	PIER 70
Terminal Operator	Stevedoring Services of America	Metropolitan California Stevedore (Fishmeal) Baker Commodities (Tallow)	None	None	None
Cargoes Handled	containers	fishmeal, tallow	none	containers	none
Total Terminal Area (acres)	80	13	12	65	25
Length of Berths (feet)	2,400	700	900	5,010	2,700
Wharf Area (acres)	3	0.6	1	6	2
Open Storage Area (acres)	60	4	3	40	26
Depth of Water (ft. MLLW)	40	38	40	40	40
Transit Shed Area (acres)	4	1	0	9	none
Ship Calls in 1993	153	28	0	183	1
Special Equipment/Facilities	4 cranes	conveyor pipeline	grain silo	4 cranes; vacant since Metropolitan Stevedore Services ceased operations	previously auto terminal; ship repair in central basin

2. San Francisco's location has made the Port unattractive for intermodal container shipping, whereby shippers seek to minimize transportation costs and reduce the length of time their cargo is in transit. Transferring east-bound containers by rail from San Francisco to freight yards in the East Bay can take as long as two days because there is insufficient demand to warrant more frequent service. This is a great disadvantage because shipping lines can instead call at Oakland and avoid this delay.

3. The container shipping industry is consolidating, with fewer shippers using ever larger ships and terminals located at ports with access to multiple railroad lines. Although San Francisco has naturally deep channels, and the lowest dredging costs in the Bay, it cannot compete with the Port of Oakland for access to rail service. Even these relative advantages are less important as ships with greater depths now require dredging even at the Port of San Francisco. The Port's modern container terminals at Pier 94-96 and Pier 80, in which the Port invested millions of dollars, are now almost unused for shipping. Currently, a few smaller shipping lines call at the terminal, but it is operating at only five percent of its capacity.

Table 16: Port of San Francisco Current Facilities, continued

	PIER 50	PIER 48	PIER 30, 32	PIER 33	PIER 31
Terminal Operator	Service Engineering, Western Rim	None	None	None	Crent Company
Cargoes Handled	general	none; warehouse	none	currently non-cargo	under lease to a paper products company
Total Terminal Area (acres)	21	6	13	3	3
Length of Berths (feet)	2,388	1,246	2,400	1,400	1,222
Wharf Area (acres)	3	1.0	0.5	0.5	0.4
Open Storage Area (acres)	24	6	12.5	0	0.4
Depth of Water (ft. MLLW)	35	35	35	35	35
Transit Shed Area (acres)	8	4.1	0	2.0	3
Ship Calls in 1993	5	0	0	0	0
Special Equipment/Facilities	ship repair in southern area warehousing in northern area		storage for waterfront transportation project equipment and materials	under lease to a variety of tenants	used as a distribution warehouse

	PIER 27, 29	PIER 26	PIER 15, 17	PIER 45	PIER 35
Terminal Operator	Marine Terminals Corp.	None	Non-cago	Currently being renovated for fish handling businesses	Metropolitan California Stevedore
Cargoes Handled	newsprint	Currently non-cargo	cotton	none currently and no cargo will be handled in future	pasengers
Total Terminal Area (acres)	11	3.5	9		2.8
Length of Berths (feet)	2,150	600	697		1,560
Wharf Area (acres)	0.6	0.4	0.7		0.8
Open Storage Area (acres)	3.4	0	2		0
Depth of Water (ft. MLLW)	35	30	35		35
Transit Shed Area (acres)	7	3	6		2.0
Ship Calls in 1993	36	0	0	2	34
Special Equipment/Facilities	none	currently used as a warehouse	currently used as a warehouse and transloading facility		

4. The Port's Intermodal Container Transportation Facility connects Pier 94-96 to the Southern Pacific railroad line. The railroad tunnels connecting the Port to Southern Pacific's main line cannot accommodate double-stacked container cars, and tight curves along the connecting rail line limit the length of cars and trains.

5. The Port of San Francisco has canceled its $12 million project to improve the Southern Pacific Tunnel connecting the Port to the Southern Pacific main line. The project would have created a gauntlet track through the tunnel that would effectively raise the tunnel height to accommodate double-stacked container cars.

6. The Port of San Francisco's financial situation precludes significant investment in maritime facilities in the foreseeable future. Until such time as there is a demand for the Port's unused facilities for maritime cargo operations, the Port must be able to lease the properties for interim uses and generate revenues to keep the facilities in good repair. Interim uses must not inhibit the eventual use of the facilities for maritime cargo shipping, and the length of the interim use should be determined on a case-by-case basis. In determining the appropriate length of the interim use, the cost and a reasonable amortization period for the proposed interim use should be considered. The Port's Waterfront Land Use Plan will include more specific interim use policies intended to guide the Port in its interim leasing actions.

7. Active maritime cargo shipping occurs at Piers 27, 92, and 94-96. The remainder of the Port's piers are either vacant, used for other maritime purposes (such as tugboat berthing, cruise ships, lay berthing, ferries, etc.), or used for non-maritime purposes such as storage or parking, or are in disrepair.

Policies

1. The Port of San Francisco should have the annual throughput capabilities shown in Table 17.

2. Although the Port's container terminals and Intermodal Container Transfer Facility are unused or underused now, in the longer term they are expected to be needed to serve container shippers with cargoes destined for Northern California. Therefore, the Port's container facilities and sufficient backland to create another container berth at Pier 94N, as well as the Intermodal Container Transfer Facility, should be reserved in port priority use to accommodate future container cargo growth.

Table 17: Port of San Francisco Future Facilities

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 Assumes 10 acres of fill	Future	40	Container	1	749,000	749,000
Pier 80	Inactive	65	Container	2	749,000	1,498,000
Pier 90-92	Inactive Active	12 13	Dry Bulk Liquid Bulk	1 1	1,219,000 118,000	1,219,000 118,000
Pier 70	Ship Repair	16	-	-	-	-
Pier 50	Inactive	24	Break Bulk	4	78,000	312,000
Pier 48	Inactive	9	Neo-Bulk	2	103,000	206,000
Totals	Container Break bulk Neo-bulk Dry Bulk Liquid Bulk	185 24 9 12 13		6 4 2 1 1		4,494,000 312,000 206,000 1,219,000 118,000

*Denotes optimal annual throughput capability, in metric tons.

3. Figure 7 shows the port priority use areas at the Port of San Francisco. Figures 8 and 9 provide greater detail of the boundaries of the port priority use areas at Piers 68-70 and Piers 90-96.

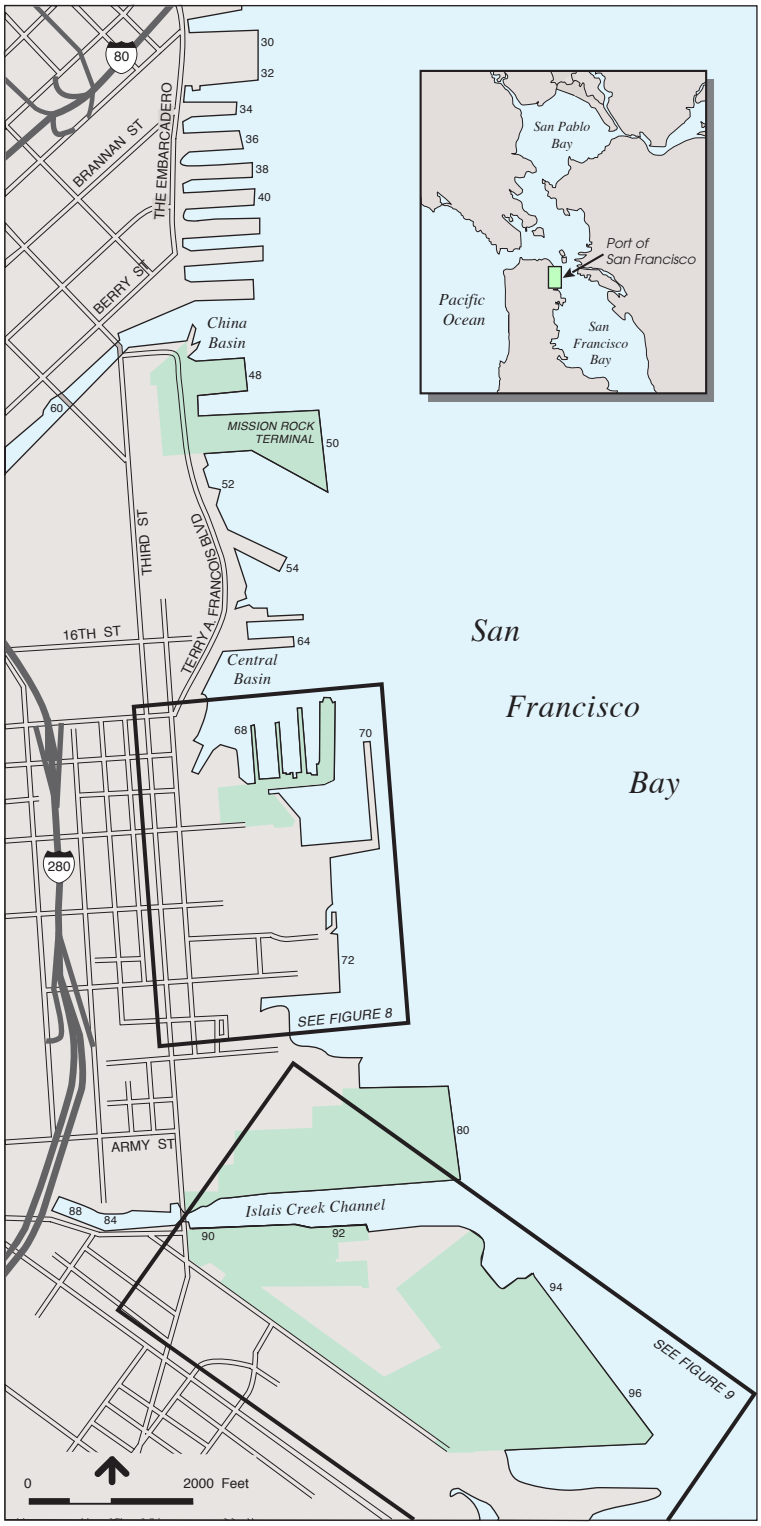


Figure 7: Port of San Francisco Port Priority Use Area

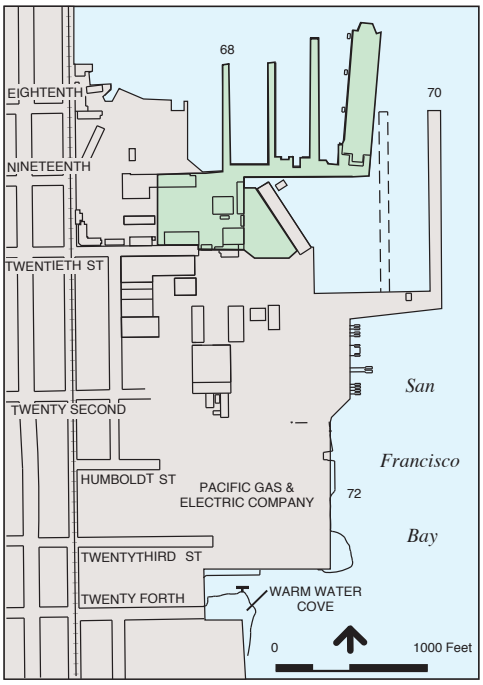


Figure 8: Port of San Francisco Piers 68 - 70

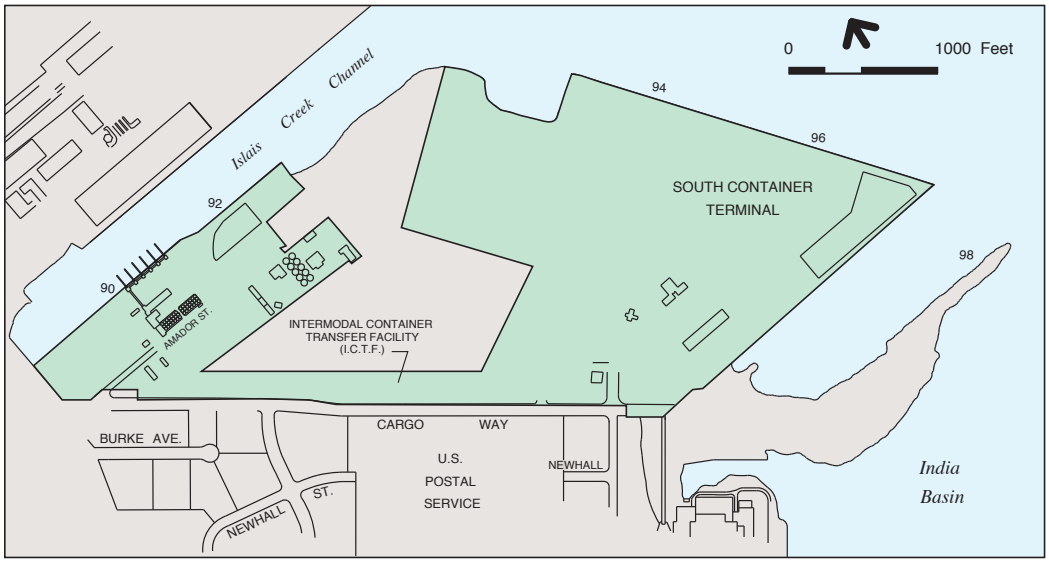


Figure 9: Port of San Francisco Piers 90 - 96

SELBY

Findings

1. The Selby site, located on Davis Point just north of Rodeo in Contra Costa County, consists of a 60-acre, largely undeveloped, parcel of flat land owned by the Wickland Oil Company, with good access to the Southern Pacific railroad main line and Interstate 80.

2. The Selby site is a good location for all bulk cargo operations. With its flat land and access to rail and freeways, it should be developed into a five-berth bulk terminal. For the purposes of achieving the regional cargo forecast, the Selby site is designated as liquid bulk, but it could be developed for other types of bulk cargo.

Policies

1. The Selby site should be reserved for developing the facilities and annual cargo throughput shown in Table 18.

Table 18: Selby Future Facilities

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		590,000

* Denotes optimal annual throughput capability, in metric tons.

2. Figure 10 shows the port priority use area at Selby.

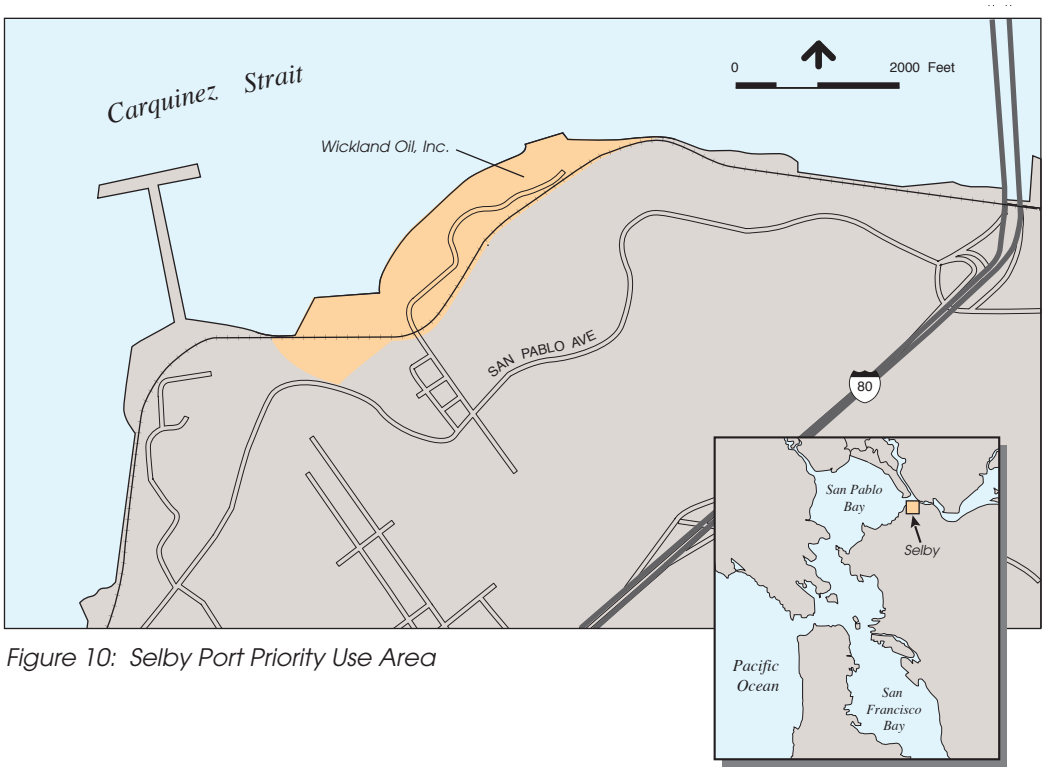


Figure 10: Selby Port Priority Use Area

CONCORD NAVAL WEAPONS RESERVATION

Findings

1. The Concord Naval Weapons Reservation consists of 1,500 acres used for munitions storage, testing, and shipping. The Navy has no plans to close the base at this time, and is installing several container cranes for use in its munitions shipping and storage operations.

2. The site is located on a deep water channel, and is served by the Southern Pacific and Atchison Topeka & Santa Fe railroads, as well as Highway 4.

3. Large portions of the site are tidal marsh, rendering it unstable for development as a container port, although it could be developed as a liquid bulk or other type of bulk terminal.

4. Military shipping activities taking place at the Oakland Army Base will be moved to the Concord Naval Weapons Station when the Oakland base is closed.

Policies

1. The Concord Naval Weapons Reservation should be reserved as a port priority use area to be considered for bulk cargo marine terminal development if and when the Navy ceases its munitions operations.

2. Figure 11 depicts the Concord Naval Weapons Reservation port priority use area.

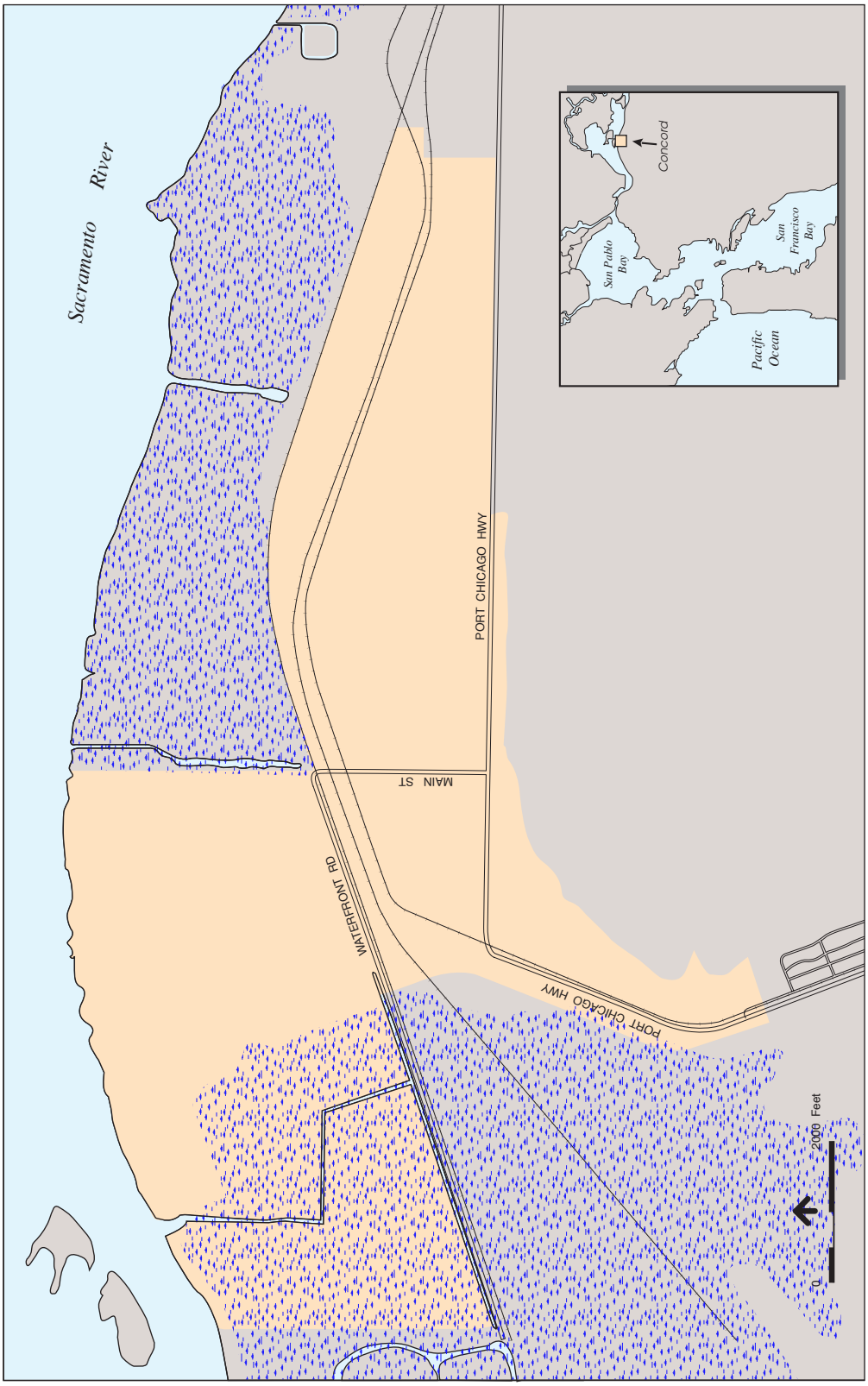


Figure 11: Concord Naval Reservation Port Priority Use Area

PART III
IMPLEMENTATION

This Plan provides MTC with policies for reviewing environmental documents and applications for transportation project funding, and provides BCDC with policies to be used when reviewing permit applications for seaport development projects, environmental documents, and federal actions affecting the Bay. The Plan also calls for the ongoing involvement of the Seaport Planning Advisory Committee in monitoring Bay Area maritime cargo volumes and terminal use, monitoring trends in the maritime shipping industry, and in the review of proposed changes to this Seaport Plan. To assist in carrying out the Plan's provisions, city and county governments have instituted, and should continue, land use protections for the port priority use areas. The ports have and should continue to coordinate marine terminal development projects through their voluntary organization, the Golden Gate Ports Association (GGPA), or through specific agreements. The primary responsibility for implementing the policies of the Seaport Plan is therefore a shared responsibility of MTC, BCDC, local governments, and the ports.

AGENCY RESPONSIBILITIES

San Francisco Bay Conservation and Development Commission

BCDC is the state agency designated to preserve and enhance San Francisco Bay and to encourage appropriate development of its shoreline. The Legislature created BCDC in 1965 and charged it with preparing a comprehensive plan for the Bay. In 1969, through the McAteer-Petris Act, the Legislature expressly recognized the San Francisco Bay Plan prepared by BCDC and gave BCDC the authority to implement the Plan. Under the McAteer-Petris Act, approval must be obtained from BCDC for all filling and dredging in the Bay and for all development, including changes in use, within 100 feet of the shoreline.

BCDC's Bay Plan is an integral part of the federally approved coastal zone management program for San Francisco Bay, and BCDC is the agency responsible for administration of that program. Under the federal Coastal Zone Management Act of 1972, federal agencies are generally required to carry out their activities and programs in a manner consistent with the Commission's coastal management program. To implement this provision, federal agencies make consistency determinations on their proposed activities, and applicants for federal permits, licenses, other authorization, or federal financial assistance make consistency certifications. The Commission then has the opportunity to review the consistency determination and certifications and to either concur with them or object to them. The Commission's decisions on federal consistency matters are governed by the provisions of the Coastal Zone Management Act and the Department of Commerce regulations.

BCDC's federal consistency determination authority applies to federally funded or licensed projects and, in particular, reuse plans developed for closed military bases bearing priority use designations. Prior to disposing the bases, the Department of Defense must comply with the consistency provisions of the Coastal Zone Management Act. Thus, community reuse plans for Hunters Point Shipyard, Naval Air Station Alameda, the Fleet and Industrial Supply Center Oakland, the Oakland Army Terminal, the Alameda Annex for FISCO, and Mare Island must be consistent with the Seaport Plan.

One of the major objectives of BCDC is to ensure that all filling of the Bay is limited to the six high priority, water-oriented uses identified in the McAteer-Petris Act, one of which is ports. In order to provide sufficient shoreline sites to accommodate these high-priority uses with the minimum fill necessary, the Bay Plan provides that shoreline sites especially well-suited for these priority uses be reserved for such uses. In the case of ports, BCDC has designated numerous sites around the Bay for port priority use.

Although a proposed fill may be for a priority use and is proposed to be located within a designated priority use area, the BCDC law still requires that the fill proposed be the minimum fill necessary. Together with other sections of the McAteer-Petris Act, this means two tests must be met: (1) the total Bay fill for all port development in the region must be the minimum necessary; and (2) each project must be designed and constructed so that it avoids unnecessary fill. The former issue is answered by this Plan; the latter issue can usually be addressed in a permit proceeding.

Interim projects located in port priority use areas and within BCDC's shoreline jurisdiction must be permitted by BCDC. The process for obtaining a permit for an interim use is the same as that required for a permanent use, and is described in BCDC's regulations (California Code of Regulations, Title 14, Division 5, Chapter 3).

Metropolitan Transportation Commission

MTC is the Regional Transportation Planning Agency (RTPA) for the Bay Area. It is responsible for comprehensive transportation planning and financial programming. The Metropolitan Transportation Commission Act of 1970, which created MTC, provides that:

Any application to the federal or state government for any grant of money, whether an outright or matching grant, by any county, city and county, city, or transportation district within the region shall, if it contains a transportation element, first be submitted to the Commission for review as to its compatibility with the regional transportation plan. The Commission shall approve and forward only those applications that are compatible with the plan.

The Act also required MTC to study harbor accessibility in the region and report to the Legislature. In subsequent legislation (AB 69 and AB 402, Government Code 65080), all RTPAs in California were required to prepare:

> *...a regional transportation plan and a regional transportation improvement program directed at the achievement of a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, and aviation facilities and services.*

MTC also receives environmental documents for review and comment if the project includes a transportation element.

AMENDING THE SEAPORT PLAN

The BCDC and MTC should consider amending the Seaport Plan when:

- Waterborne cargo statistics collected over a period of time by the Seaport Planning Advisory Committee, ports or maritime organizations indicate that actual cargo volumes deviate significantly from the forecast amounts, and that therefore, the forecast does not represent actual trends in the maritime cargo industry;
- A property owner, local government, or government agency requests an amendment to the Seaport Plan; or
- BCDC or MTC initiates an amendment of the Plan.

Amendments of the Seaport Plan must be made in a manner consistent with the provisions in the McAteer-Petris Act (Government Code Sections 66600-66682) for amending the Bay Plan and BCDC's regulations concerning Bay Plan amendments. Amendments must also be consistent with MTC's rules for amending the Regional Transportation Plan. Proposed amendments to the Seaport Plan should be reviewed first by the Seaport Planning Advisory Committee, which should then forward its recommendations to BCDC and MTC.

NEED FOR FURTHER STUDIES

The Seaport Planning Advisory Committee should form a working subcommittee to develop and implement an ongoing waterborne cargo and terminal use monitoring program. Data collected through the monitoring process should be used to review requests for conversion of bulk terminals to container terminals, or for deletion of any terminal or port priority use area from the Seaport Plan. Ongoing cargo monitoring will provide the data to allow the Seaport Plan to be updated on an as-needed basis, and will inform the Committee of emerging trends in bulk and container shipping that could affect the adequacy of the Seaport Plan designations. Data collected by the Committee should include, but not be limited to: cargo volumes, numbers of ship calls, berths used, and numbers of containers. No further changes in use or deletions of port priority use areas should be considered until the cargo monitoring process has been implemented.

RESPONSIBILITIES OF OTHER AGENCIES

- The ports should coordinate the use and development of marine terminals to achieve the most efficient operations at existing marine terminals, and avoid building unnecessary facilities. Such coordination should take place by strengthening their existing associations or through other agreements among the ports.
- Local governments that have not given land use control to port authorities should actively protect areas designated for port priority uses and marine terminal sites. Special zoning for port facilities to restrict these areas to port-related uses and limited interim uses is necessary because: (1) BCDC does not have full control over uses more than 100 feet inland from the Bay; (2) there is no regional port management in the Bay Area to assure that port priority use areas and marine terminal sites are reserved; (3) there may be pressure to use these areas for non-port purposes; and (4) the loss of port priority use areas and marine terminal sites could result either in fill in the Bay at less suitable locations to meet future demand for port facilities, or loss of trade that otherwise might contribute to the regional economy.

- The Seaport Planning Advisory Committee should develop and implement the ongoing cargo monitoring process described in Part I and above in the section titled "Need for Further Studies". The Committee should also review requests for interim use permits within port priority use areas, changes in use, or deletions of marine terminals or port priority use areas from the Seaport Plan. The Committee should forward its recommendations on such requests to BCDC and MTC.
- Mitigation policy for port development should be coordinated among the responsible federal, state and local agencies.
- The policies of the Comprehensive Management Plan for dredging, which will be developed by the joint agency Long Term Management Strategy, should be implemented by agencies with jurisdiction over dredging in San Francisco Bay, including the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the San Francisco Bay Regional Water Quality Control Board, and BCDC.
- The significant forecast increase in road and rail traffic generated by regional seaports suggests that projects to improve traffic flows should be formally considered in the development of local and regional capital improvement programs. These analyses should consider not only the potential for reducing congestion for overall traffic flows but specifically for freight movements.
- Local and regional government agencies can respond to changes in seaport access conditions if they have current data. Although annual changes may not necessarily indicate a continuing trend, seaport traffic should be monitored on an annual basis as is done with traffic for other modes. MTC should take the lead in compiling seaport traffic data, with the assistance of ports, railroads, and trucking companies.

PRIORITY USE BOUNDARIES

Benicia

1. **Benicia Waterfront**

East Boundary: Southwest line of the Benicia-Martinez Bridge (Interstate 680).

North Boundary: Southwest line of the Benicia-Martinez Bridge (Interstate 680) westerly along Interstate 780 to intersection with a line extended from western end of Oak Road to 780; hence southerly to south side of pipeline right-of-way, then easterly along right-of-way to intersection with Parcel No. 80-140-10; hence westerly along parcel line (Washington Street), then southerly along parcel line to intersection with Parcel No. 80-140-14 at Tyler Street; hence westerly along Tyler then southerly along Polk Street (following parcel line) to intersection with Parcel No. 80-140-45 at Lincoln Street; hence westerly then southwesterly (at east side of elevated pipeline right-of-way) along parcel line; hence southeasterly along boundary of Parcel No. 80-140-43 (to exclude sub-area A) to intersection with Parcel No. 80-140-25; hence westerly along parcel line to west side of elevated pipeline right-of-way then southerly along right-of-way to shoreline.

West Boundary: West side of the elevated pipeline right-of-way to shoreline.

2. **Benicia Industries**

South Boundary: Northeast line of Benicia-Martinez Bridge (Interstate 680).

North Boundary: South line of Southern Pacific Railroad right-of-way south of Bayshore Road to intersection with Benicia City Limit as of April 1996.

Northeast Boundary: Northeasterly line of Solano County Assessor's Parcel No. 78-24-1 (Benicia City Limit as of April 1996).

Oakland

North Boundary: Wake Avenue from the east side of its intersection with Engineer Road and extended to the east side of the Interstate 880 right-of-way; hence north along the east side of the Interstate 880 right-of-way to Surryhne Street; hence easterly along Surryhne Street to Wood Street.

East Boundary: Wood Avenue south to 20th Street; hence southerly along the Interstate Highway 880 right of way until the intersection with the Union Pacific railroad tracks; hence southerly along the railroad tracks until the intersection of the tracks with Clay Street.

South Boundary: Clay Street, extended to the shoreline.

Redwood City

Northeast Boundary: Easterly line of San Mateo County Assessor's Parcel No. 54-3-38 (shoreline at Westpoint Slough).

Eastern Boundary: West line of Seaport Boulevard at the shoreline of Westpoint Slough southerly to intersection with west boundary of the Pilot Petroleum facility; hence northerly to the point that line turns easterly; hence easterly along the north property line of the Pilot Petroleum facility to the southern edge of Henry Beeger Road; hence northerly along Henry Beeger Road to the shoreline.

Southwest Boundary: Southern edge of Henry Beeger Road extended to the shoreline.

Richmond

West Boundary: West line of parcel 560-320-10 (west of Point Potrero on Richmond Harbor Channel).

North Boundary: Northerly to 60 foot contour line; hence along contour to Richmond Avenue; hence northwesterly along Richmond Avenue to intersection with Canal Boulevard; hence northerly along Canal Boulevard to intersection with West Cutting Boulevard; hence easterly along West Cutting Boulevard to intersection with the Southern Pacific rail line; hence southeasterly along the rail line to the intersection with Harbour Way South.

East Boundary: Harbour Way South extended to the shoreline.

San Francisco

North Boundary of Piers 48-50: Southern line of China Basin Street extended to the shoreline.

West Boundary of Piers 48-50: East boundary of area zoned by City for open space bayward of Illinois Street at Seawall Lot 337, extended southerly to southern line of Mission Rock Street.

South Boundary of Piers 48-50: Southern line of Mission Rock Street extended to the south line of Pier 50.

North Boundary of Piers 68-70: North side of Pier 3.

Northwest Boundary of Piers 68-70: North side of Pier 3 hence westerly along 19th Street extended to intersection with line extended southerly to eastern face of the most easterly of the three Union Iron Works buildings sited on 20th Street (Port buildings 101, 102, 104); hence southerly to intersection with 20th Street; hence easterly along 20th Street extended to west face of Bldg. 6, then continue along west face extended northwesterly to 19th Street extended.

South Boundary of Piers 68-70: South side of 19th Street extended to the Bay.

North Boundary of Pier 80 to Piers 90-92: Northern edge of Pier 80.

West Boundary of Pier 80: West boundary of Pier 80.

West Boundary of Piers 90-92: South line of Islais Creek Channel at Third Street; hence southerly along Third Street to Cargo Way; hence southeasterly along Cargo Way to northern boundary of ICTF; hence easterly along boundary of Piers 90-92 to point east of tallow facility where boundary of Pier 92 turns north; hence northerly along eastern edge of Pier 92 to shoreline.

South Boundary of Pier 80 to Piers 90-92: Eastern edge of Pier 92.

North Boundary of Pier 94-96: Northerly edge of Pier 94 East.

West Boundary: Northerly edge of Pier 94 East extended to point where Pier 94 East boundary turns southeasterly to intersection with boundary of Pier 96; hence westerly along north boundary of Pier 96 to intersection with northern edge of ICTF; hence northwesterly to intersection of ICTF with Cargo Way; hence southwesterly along southern edge of ICTF to Cargo Way to southern edge of Pier 96 extended.

South Boundary of Pier 94-96: Southern edge of Pier 96 extended to Cargo Way.

Selby

Northeast Boundary: East line of parcel 355-040-007-5, projected northerly.

East Boundary: East line of Southern Pacific right-of way extended along east line of Southern Pacific pipeline corridor.

Southwest Boundary: West line of parcel 355-040-002-6.

Concord Naval Weapons Reservation

West Boundary: West boundary of Concord Naval Weapons Reservation.

South Boundary: Southerly along west boundary of Concord Naval Weapons Reservation intersection with Kilburn Street; hence easterly to Contra Costa Canal; hence northeasterly along canal to east line of Section 7, R1W, T2N (Vine Hill Quadrangle, USGS 7.5 Minute Series - Topographic); hence due north to Port Chicago Highway; hence easterly to Nichols Road; hence due north to Southern Pacific rail line; hence westerly along rail line to intersection with Main Street.

East Boundary: Main Street extended due north to shoreline.

GLOSSARY

Active Terminal Sites means those existing marine terminal facilities that are currently, and are expected to remain active for the foreseeable future.

Bay Area Ports means the ports of Benicia, Oakland, Redwood City, Richmond, and San Francisco.

Break Bulk Cargo means cargo handled in individually packaged units.

Capacity Estimates or Region's Capacity means the estimated cumulative capacity of the Bay Area's marine terminals existing as of the date of this plan.

Cargo Forecast means projected flow of waterborne cargo through Bay Area ports (measured in metric tons).

Containerized Cargo means general cargo packed in standard size weather tight boxes. Standard container length is twenty feet and height is either nine or nine and one-half feet. Containers are commonly called TEUs, shorthand for twenty-foot equivalent units. Cargo remains in container from origin to destination.

Demand Estimates means projected need for future marine terminal development (measured as a number of berths).

Drayage means transportation of containers by truck between a container yard and other site, such as a rail yard.

Dry Bulk Cargo means cargo loaded or unloaded in conveyor belts, spouts or scoops, and not placed individually; flowing cargoes such as rice, grain, various ores, etc.; stored loose.

Dry Cargo means all break bulk, containerized, neo-bulk, and dry bulk cargoes.

Fill means earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks (Government Code Section 66632(a)).

Future Marine Terminal means those berths that are expected to be developed by the year 2020 to meet forecast growth in waterborne cargo.

Intermodal Transportation means the convenient, rapid, efficient, and safe transfer of people or goods from one mode to another during a single journey to provide the highest quality and most comprehensive transportation service for its cost.

Liquid Bulk Cargo means liquid cargo, such as petroleum or vegetable oil, that is shipped in tanks rather than small individual units.

Marine Terminal Berth means a wharf and other marine terminal facilities necessary to support a single ship berth.

Marine Terminal Capacity means the maximum capability of a marine terminal to handle cargo measured in metric tons per year.

Marine Terminal means 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 refineries) are not included in this plan. For purposes of this 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.

Metric Ton means 2,205 lbs. or 1.102 short tons.

Military Sites means those shoreline sites within military installations that have potential for marine terminal use, if and when the military no longer needs them.

Neo-Bulk Cargo means cargo generally shipped in large quantities and having some characteristics of bulk commodities. Neo-bulk cargoes in the Bay Area are generally automobiles, steel products, and newsprint.

Port Priority Use Areas means shoreline sites needed for regional maritime port use that 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 and marine services, and employee parking.

Productivity means the per berth capacity of marine terminals.

Regional Transportation System means the network of railroads, highways, pipelines, airways, waterways, and related facilities and services, and terminal areas, public or private, serving the San Francisco Bay Area.

Roll-on/Roll-off (RO/RO) means a method of ocean transport which permits wheeled vehicles (e.g., autos, trucks, forklifts) to drive on and off the vessel under their own power.

San Francisco Bay Area means the City and County of San Francisco and the counties of Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano and Sonoma.

San Francisco Bay means the four interconnected bays of South San Francisco Bay, Central San Francisco Bay, San Pablo Bay, and Suisun Bay; and all areas subject to tidal action from the south end of South San Francisco Bay to the Golden Gate to the eastern end of Suisun Bay (Grizzly Bay and Honker Bay). In practice, the eastern boundary of the study area is defined to include the Contra Costa County shoreline to the Antioch Bridge and the Solano County shoreline to the extent of the BCDC jurisdiction near Collinsville.

Short Ton means 2,000 pounds or 0.907 metric tons.

Shoreline Sites means the shoreline lands or uplands bordering the San Francisco Bay.

Waterborne Cargo means receipts and shipments of foreign and domestic cargoes shipped in vessels or barges.

BCDC means the San Francisco Bay Conservation and Development Commission

EIR means Environmental Impact Report, a document required by the California Environmental Quality Act, to analyze the environmental consequences of development projects and plans.

EIS means Environmental Impact Statement, required by the federal National Environmental Protection Act.

FISCO means the Naval Fleet and Industrial Supply Center, Oakland, formerly known as the Naval Supply Center Oakland.

GGPA means the Golden Gate Ports Association, a voluntary organization of the Bay Area's ports.

LTMS means the Long Term Management Strategy for dredging, which will develop coordinated policies for dredging and dredging regulation throughout San Francisco Bay.

MLLW means Mean Lower Low Water, a tidal datum that describes the arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year cycle.

MTC means the Metropolitan Transportation Commission.

NAS Alameda means the Naval Air Station at Alameda.

NSC Alameda means the Naval Supply Center Annex at Alameda.

RTP means the Regional Transportation Plan, prepared and implemented by the MTC.

TEU means one container, or one twenty-foot equivalent unit.

BACKGROUND DOCUMENTS

The following reports comprise the Supplement to the Seaport Plan:

Ballenti, Donald, *Air Quality Impact Analysis for the San Francisco Bay Area Seaport Plan,* September 1995.

Multitrans Transportation Consultants, *Final Draft Intermodal Report,* September, 1994.

Multitrans Transportation Consultants, *Traffic Impact Study: San Francisco Bay Area Seaport Plan Update,* September 1995.

San Francisco Bay Conservation and Development Commission, *Dredging and Navigation Safety,* February 1, 1994.

San Francisco Bay Conservation and Development Commission, *Future Marine Terminal Requirements: Proposed Approach for the 1994 Update of the Seaport Plan,* May 3, 1994.

San Francisco Bay Conservation and Development Commission, *Review of Port Priority Use Areas and Marine Terminal Designations in the San Francisco Bay Area Seaport Plan,* June 3, 1994.

San Francisco Bay Conservation and Development Commission, *Report on Need for Additional Automobile Terminals,* July 5, 1994.

San Francisco Bay Conservation and Development Commission, *Review of Port Priority Use Designations on Non-Port Sites,* July 5, 1994.

San Francisco Bay Conservation and Development Commission, *Marine Terminal Acreage Requirements,* July 29, 1994.

San Francisco Bay Conservation and Development Commission, *Recommended Changes to Port Priority Use and Marine Terminal Designations in the San Francisco Bay Area Seaport Plan,* October 28, 1994, as revised November 8, 1994.

San Francisco Bay Conservation and Development Commission, *Environmental Assessment for the San Francisco Bay Area Seaport Plan,* November 14, 1995, revised February 16, 1996.

The Tioga Group, Inc. and DRI-WEFA, *Seaport Plan Waterborne Bulk Cargo Forecast Update,* December 12, 2002.

APPENDIX A: TRANSPORTATION PROJECTS

The following intermodal transportation improvement projects should be undertaken as funding becomes available. Some of these, as noted, are included in MTC's 1994 Regional Transportation Plan (RTP) that defines the region's investment priorities for the next 20 years. Other projects may be considered in future RTP updates, or may be implemented through other means. The projects have been separated into road and rail projects. Minor projects, such as intersection improvements, have not been specifically included.

ROAD PROJECTS

- **I-580 at I-205 auto-truck separation lane:** This project is designed to improve safety and capacity for trucks approaching the Port of Oakland at I-580 westbound from I-205. This project is contained in the RTP.
- **I-880/I-80/Bay Bridge connection:** This project, currently under construction, will replace the Cypress structure that was destroyed in the Loma Prieta earthquake. The project improves access to the Port of Oakland and reduces truck impacts to adjacent neighborhoods, especially along Seventh Street. This project is contained in the RTP.
- **I-80 widening/HOV lane:** Currently under construction, this project will increase capacity in the highly congested section of I-80 north of the Bay Bridge. The number of lanes available to trucks will not increase but the additional capacity should reduce travel time for trucks as well as other vehicles. This project is contained in the RTP.
- **Widen 238 from 4 to 6 lanes between I-80 and I-580:** Highway 238 is the major connector between the Port of Oakland and the major north-south roadways in the Central Valley, I-5 and Highway 99. Thus, it carries a significant amount of truck traffic; and this project will help reduce travel time in this corridor, especially in the vicinity of major interchanges. This project is contained in the RTP.
- **Implementation Automatic Vehicle Identification at toll booths:** Automatic Vehicle Identification (AVI) can significantly reduce waiting times at bridge toll booths. Commercial vehicles are expected to use the technology, especially if systems used are compatible with systems that are used for tracking of commercial freight movements. Plans are also to integrate AVI at weigh scale stations.
- **Alameda High Level Bridge Crossing:** This project, estimated to cost a minimum of $120 million, would connect seaport development on what is now Naval Air Station Alameda to the Port of Oakland road system. This project is the only major road access project required for the development of new seaport sites It is a low priority at present, as no specific plans exist for the development of the seaport. Additional studies will be required to establish the precise location and design of approaches on both the Oakland and Alameda sides. Although the project is considered to be feasible based on seaport needs, it is likely that other traffic generated by redevelopment of the Naval Air Station would also utilize the facility and help to pay for it. Construction, if it occurs, likely would be after 2005.

RAIL PROJECTS

- **Port of Oakland Intermodal Terminal:** Construction of this terminal will allow for the development of new container berths on the Inner Harbor Channel and, if the Santa Fe Railroad participates, also has the potential for eliminating approximately 300-400 daily truck trips between Richmond and Oakland on I-80. This project is contained in the RTP.
- **Islais Creek Bridge:** This project will improve the movement of rail cars to and from the Port of San Francisco and will allow for the removal of some track. The project is not as yet programmed but will be considered in the future as funding permits. This project is contained in the RTP.
- **Remove Oakland 3rd Street Union Pacific Tracks:** This project would move Union Pacific operations on Third Street to the existing Embarcadero tracks. The project would eliminate an existing intersection of the two lines and approximately 40 grade crossings in Oakland, and would provide improved safety for vehicle operations on Third Street. The project is being funded by the Union Pacific.
- **Provide Additional Rail Access in Richmond:** The Port of Richmond has plans to provide for rail access to its terminals on both the east and west sides of the Harbor Channel. Funding will be provided by both the railroads and the port. The project will provide more efficient movement of cargo shipped by rail and will generate additional revenue for the port.

ACKNOWLEDGEMENTS

The Metropolitan Transportation Commission and the San Francisco Bay Conservation and Development Commission would like to acknowledge the members of the Seaport Planning Advisory Committee for their valued assistance in revising the Seaport Plan in 1995:

Robert R. Tufts, Chair
San Franicsco Bay Conservation and Development Commission

Honorable Elihu Harris, First Vice Chair
Mayor, Oakland, California

Michael Powers, Second Vice Chair
Port of Richmond

Gary Adams
Caltrans, District 4

Honorable Ralph Appezzato
Mayor, Alameda, California

Joseph Gaidsick
Benicia Port Terminal Company

Michael Giari
Port of Redwood City

John Glover
Port of Oakland

Honorable Anthony Intintoli
Mayor, Vallejo, California
(represented by Marc Fontes, City of Vallejo Economic Department)

Ruy E. Kern
Maritime Administration

Kari Kilstrom
Port of San Francisco

Captain Tom Marnane
Matson Navigation Company

Angelo Siracusa
Metropolitan Transportation Commission and
San Francisco Bay Conservation and Development Commission

Lt. Col. Michael Walsh
U.S. Army Corps of Engineers

Peter Wang
Encinal Terminals, Inc.

Nancy Wakeman
Save San Francisco Bay Association