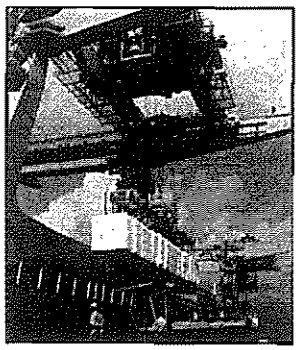
U.S. Department
of Transportation
Maritime
Administration

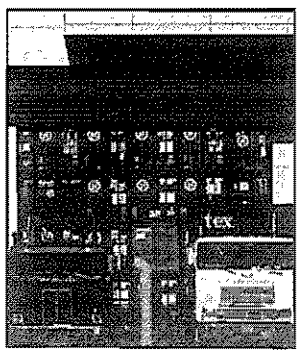
A Report to Congress on the Status

of the Public Ports

of the United States



1996-1997



October 1998

A REPORT TO CONGRESS ON THE STATUS OF THE PUBLIC PORTS OF THE UNITED STATES 1996 - 1997

October 1998

U.S. Department of Transportation

Maritime Administration
Office of Ports and Domestic Shipping

THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

October 1, 1998

The Honorable Albert Gore, Jr.
President of the Senate
Washington, DC 20510

Dear Mr. President:

Enclosed is the Department of Transportation's report titled, "Status of the Public Ports of the United States," for Calendar Years 1996-1997. The report, as required by Title 49, USC, Section 308(c), discusses the economic conditions and issues facing the public ports of the United States.

A copy of the report has also been provided to the Speaker of the House of Representatives.

Sincerely,

Rodney E. Slater

Enclosure

THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

October 1, 1998

The Honorable Newt Gingrich
Speaker of the House of Representatives
Washington, DC 20515

Dear Mr. Speaker:

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Enclosure

HIGHLIGHTS OF THE U.S. PUBLIC PORT INDUSTRY

o ECONOMIC IMPACT (direct, indirect, and induced)

U.S. Port Industry, Public Port Capital Expenditures, and Port Users -

- 13.1 million jobs
- $494.2 billion in personal income
- $1.5 trillion in business sales
- $742.9 billion to the Nation's GDP
- $199.5 billion in taxes (all levels)

o WATERBORNE COMMERCE (Foreign and Domestic Trades)

U.S. Ports -

- Handled over 2 billion metric tons of waterborne cargo (1996)
- Handled 1 billion metric tons of foreign trade valued at $625.6 billion (1997)
- Handled 14.8 million TEUs of foreign container traffic (1997)
- 145 U.S. ports handled over 1 million metric tons of cargo (1996)
- Handled 95% of U.S. waterborne foreign trade tonnage (1997)

o CAPITAL EXPENDITURES

U.S. Public Port Industry -

- Invested $1.3 billion in new and modernized facilities (1996)
- Projected expenditures for 1997 - 2001 are $6.5 billion

o MAJOR ISSUES

U.S. Public Port Industry Concerns Include -

- Port Development Financing and Revenues
- Environmental Regulation
- Dredging and Dredged Material Disposal
- Intermodal Land Transportation Access
- Next Generation Containerships
- Global Shipping Alliances

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INTRODUCTION

This year's *Report to Congress on the Status of the Public Ports of the United States*, covering calendar years 1996 and 1997, discusses the U.S. public port industry's economic activities and the critical issues facing it. The U.S. port system is a vital element in our national transportation system and an important contributor to our national economy and security. U.S. ports handle over 95 percent of the Nation's overseas foreign trade and over two billion tons of foreign and domestic waterborne commerce. The trade that flows through the port system provides significant economic benefits to the U.S. economy at all levels--local, regional, and national.

The first section of this report provides an overview of the U.S. public port industry. It addresses five fundamental areas that provide a picture of this industry's economic importance and current capabilities. The first area describes the industry's national economic impact based on 1996 activity. The second area details the volume and composition of the waterborne commerce handled by our port system. The third area profiles the port facilities that handle the foreign and domestic commerce. The fourth area reviews the industry's capital investments in shoreside infrastructure and the funding sources used to finance this development program. The final area of this section provides a view of the port industry's financial strength.

The second section of this report discusses the key issues facing the U.S. port industry. The most noticeable aspect of this subject is the complexity and broad range of issues. The industry's major concerns focus on financing facility development, new generation of containerships, global shipping alliances, environmental regulation, dredging and dredged material disposal, replacement of the Harbor Maintenance Fee, improving intermodal access to marine terminals, and the passage of the Transportation Equity Act for the 21st Century (TEA-21).

The final section describes several related developments of interest or concern to the port industry. This year's report includes a discussion of the Marine Transportation System initiative, military use of commercial ports and intermodal transportation, intermodal educational initiatives, and the conveyance of surplus Federal property for use by public ports.

The U.S. public port industry's future success lies with its ability to address and resolve the critical issues facing it. The accomplishment of this task will require planning and cooperation by the industry and with those segments of government and industry that regulate, use, and benefit from the port industry's activities.

AN OVERVIEW OF THE U.S. PUBLIC PORT INDUSTRY

ECONOMIC IMPACT OF U.S. PORTS

The ports of the United States play an important role in meeting the demands for water transportation service, which is driven by the producers and consumers of waterborne cargo--both in foreign and domestic commerce. This demand for waterborne cargo initiates a chain of economic activity which contributes to the overall national economy. U.S. ports are a vital link in this economic chain.

This section of the report analyzes the economic impact of the port industry, public port capital expenditures, and port users. The measurement of the direct, indirect, and induced effects are shown in terms of employment, personal income, business sales, Gross Domestic Product (GDP), and taxes.[1]

Port Industry Impacts

The port industry is defined as any economic activity that is directly needed for the movement of waterborne cargo. The main categories include vessel services for pilotage and dockage; trade services for freight forwarders, customs brokers, and insurance; cargo handling and storage activities; and inland transportation.[2]

The port industry's impact on the national economy is summarized in Table 1. The economic impacts are based on the total domestic and foreign waterborne tonnage handled in 1996 by the Nation's deep and shallow draft ports.[3] The benefits shown include direct, indirect, and induced impacts. The latter two impacts result from the multiplier effect of the direct spending associated with port activity. The port industry is responsible for generating over 1.4 million jobs and directly and indirectly responsible for $52.7 billion in personal income and $140.1 billion of sales revenues.

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1 The Maritime Administration's (MARAD) Input-Output model methodology was applied to calculate the direct, indirect, and induced effects. MARAD's model is based on the Department of Commerce's Bureau of Economic Analysis national input-output table. Some of this report's impact numbers are lower than the previous report. This resulted from a change in the manner in which cargo tonnage was distributed in the model. Specifically, tonnage was shifted from the neo-bulk category to dry or liquid bulk. Bulk cargo generates lower economic impacts than neo-bulk.

2 For purposes of the input-output model, inland transportation is defined as transport to the dock from the final shipper or from the dock to the initial consignee. Subsequent moves are not included.

3 For economic impact purposes, the domestic tonnage is counted twice since there is economic benefit at each end of a domestic cargo movement. The economic benefits of the cruise industry were not included.

Table 1
Economic Impact of Port Industry for 1996

	Economic Impact		
	Total Impacts	Direct Impacts	Indirect & Induced Impacts
Employment	1.4 mil	0.4 mil	1.0 mil
Income	$52.7 bil	$16.8 bil	$35.9 bil
Sales	$140.1 bil	$44.1 bil	$96.0 bil
GDP	$74.8 bil	$22.8 bil	$52.0 bil
Taxes - Federal	$14.7 bil	-	-
Taxes - State & Local	$5.5 bil	-	-

Source: Maritime Administration

Capital Expenditure Impacts

Table 2 highlights the national economic impact derived from the public port industry's capital expenditure program for the construction and modernization of the terminal facilities and channel dredging. For 1996, the public port industry's capital expenditures amounted to $1.3 billion. The impacts reflect the short term results produced by the initial capital expenditure but not the long-term benefits. For example, it includes the benefits derived from the construction of a new terminal facility, but not the economic gains that result from future terminal operations. These capital expenditures resulted in 45,600 jobs, $1.7 billion in personal income, and $3.9 billion in sales revenues.

Table 2
Economic Impact of Public Port Capital Expenditures for 1996

	Economic Impact		
	Total Impacts	Direct Impacts	Indirect & Induced Impacts
Employment	45,600	15,400	30,200
Income	$1.7 bil	$688.7 mil	$993.4 mil
Sales	$3.9 bil	$1.2 bil	$2.7 bil
GDP	$2.3 bil	$876.7 mil	$1.4 bil
Taxes - Federal	$455.9 mil	-	-
Taxes - State & Local	$172.9 mil	-	-

Source: Maritime Administration

Port User Impacts

Port users are businesses that make significant use of the waterborne commerce for shipping or receiving goods. The economic impacts shown in Table 3 illustrate the importance of waterborne trade to the national economy. As an example, about 95 percent by weight of all U.S. foreign overseas trade moves through U.S. ports. The total number of jobs generated by port users is 11.7 million with $439.8 billion in personal income and business sales approaching $1.4 trillion.

Table 3
Economic Impact of Port Users for 1996

	Economic Impact		
	Total Impacts	**Direct Impacts**	**Indirect & Induced Impacts**
Employment	11.7 mil	2.1 mil	9.6 mil
Income	$439.8 bil	$105.7 bil	$334.1 bil
Sales	$1,376.5 bil	$442.8 bil	$933.7 bil
GDP	$665.8 bil	$169.9 bil	$495.9 bil
Taxes - Federal	$131.2 bil	-	-
Taxes - State & Local	$47.4 bil	-	-

Source: Maritime Administration

Total Economic Impacts

Table 4 presents a summary of the overall national economic impact of the port industry, capital expenditures, and port users. This includes 13.1 million jobs, income of $494.2 billion, and sales of $1.5 trillion. This impact also contributes $742.9 billion to the Nation's GDP and $146.4 billion in Federal taxes and $53.1 billion in state and local taxes.

Table 4
Summary of the Economic Impacts for 1996

	Total Impacts	Port Industry Impacts	Capital Expenditure Impacts	Port User Impacts
Employment	13.1 mil	1.4 mil	45,600	11.7 mil
Income	$494.2 bil	$52.7 bil	$1.7 bil	$439.8 bil
Sales	$1,520.5 bil	$140.1 bil	$3.9 bil	$1,376.5 bil
GDP	$742.9 bil	$74.8 bil	$2.3 bil	$665.8 bil
Taxes - Federal	$146.4 bil	$14.7 bil	$455.9 mil	$131.2 bil
Taxes - State & Local	$53.1 bil	$5.5 bil	$172.9 mil	$47.4 bil

Source: Maritime Administration

Table 5 shows how the total impacts in Table 4 are distributed within the economy. Specifically, it depicts which industrial sectors of the economy benefit from the movement of waterborne cargo in terms of employment, income, sales, and contribution to Gross Domestic Product. The manufacturing sector remains as the primary beneficiary of port activity across all four impact measures. The services and retail trade sectors are also beneficiaries in terms of employment with services, transportation, and finance among the other principal sectors for income, and the finance and transportation sectors in sales and contributors to GDP.

Table 5
U.S. Port Impacts at the Industrial Sector Level for 1996

Industrial Sector	Employment	Income	Sales	GDP
Agriculture	0.5%	2.2%	3.1%	2.7%
Agric. Services, Forestry, Fishing	1.0%	0.7%	0.5%	0.6%
Mining	1.5%	2.9%	4.7%	5.9%
Construction	2.3%	2.5%	1.0%	1.7%
Manufacturing	25.7%	32.9%	41.9%	29.9%
Transportation/Public Utilities	8.6%	11.9%	10.9%	12.9%
Wholesale	5.6%	6.8%	9.1%	11.4%
Retail Trade	16.6%	9.7%	6.4%	7.8%
Finance, Insurance, Real Estate	9.7%	11.2%	12.0%	13.4%
Services	24.8%	17.3%	9.6%	12.6%
Government	3.7%	1.9%	0.9%	1.2%
Total	100.0%	100.0%	100.0%	100.0%
Total Impacts	13.1 mil	$494.2 bil	$1,520.5 bil	$742.9 bil

Source: Maritime Administration

Table 6
U.S. Waterborne Commerce for 1955 - 1996
(Millions of Metric Tons)

Year	Total	Foreign				Domestic						
		Total	Percent	Imports	Exports	Total	Percent	Coastwise	Lakewise	Internal	Intraport	Intraterritory
1996	2072.0	1073.5	51.8%	664.6	408.9	998.5	48.2%	242.6	104.2	564.3	80.7	6.7
1995	2032.4	1040.8	51.2%	610.2	430.6	991.6	48.8%	241.9	105.3	562.7	75.4	6.1
1994	2008.7	1011.9	50.4%	652.6	359.4	996.8	49.6%	251.2	104.1	560.9	75.2	5.4
1993	1930.3	961.4	49.8%	588.5	373.0	968.9	50.2%	246.4	99.7	550.7	67.5	4.5
1992	1933.8	941.0	48.7%	532.1	408.9	992.8	51.3%	258.6	97.4	563.2	69.7	3.9
1991	1897.5	919.3	48.4%	503.7	415.6	978.2	51.6%	266.6	93.8	545.1	68.6	4.1
1990	1962.6	944.7	48.1%	544.2	400.5	1017.9	51.9%	270.8	100.0	564.7	78.4	4.0
1989	1941.4	941.4	48.5%	534.7	406.7	1000.0	51.5%	273.9	99.0	549.6	72.7	4.8
1988	1893.8	885.4	46.8%	498.8	386.6	1008.4	53.2%	294.9	99.5	533.4	75.9	4.7
1987	1784.5	808.1	45.3%	460.5	347.6	976.4	54.7%	293.4	87.5	516.8	74.3	4.4
1986	1700.1	759.4	44.7%	440.9	318.5	940.7	55.3%	279.4	79.2	508.4	70.2	3.5
1985	1622.1	702.3	43.3%	374.3	328.0	919.8	56.7%	281.0	83.4	484.9	67.4	3.1
1984	1665.2	728.6	43.8%	387.4	341.2	936.6	56.2%	279.0	88.9	492.0	73.6	3.1
1983	1548.9	681.3	44.0%	351.8	329.5	867.6	56.0%	280.8	75.7	441.8	66.3	3.0
1982	1611.5	743.5	46.1%	377.9	365.6	868.0	53.9%	282.1	65.4	449.4	68.6	2.5
1981	1761.0	804.6	45.7%	432.8	371.8	956.4	54.3%	292.0	104.7	472.2	84.6	2.9
1980	1813.0	835.7	46.1%	469.4	366.3	977.3	53.9%	299.0	104.4	485.2	85.4	3.3
1975	1537.4	679.1	44.2%	432.3	246.8	858.3	55.8%	210.4	117.3	457.1	71.0	2.5
1970	1389.2	526.9	37.9%	307.8	219.1	862.3	62.1%	216.3	142.5	428.2	73.9	1.4
1965	1154.6	402.5	34.9%	244.7	157.8	752.1	65.1%	182.8	139.4	335.2	93.3	1.4
1960	997.5	307.7	30.8%	191.7	116.0	689.8	69.2%	189.7	140.7	264.0	94.5	0.9
1955	921.6	245.9	26.7%	138.7	107.2	675.7	73.3%	177.5	167.6	226.5	102.4	1.7

Source: U.S. Army Corps of Engineers

Notes:

1 - Foreign trade figures include tonnage from the Louisiana Offshore Oil Port (LOOP) and additional adjustments made by the Corps of Engineers to the Census foreign trade data

2 - Percent refers to percentage of total waterborne trade

WATERBORNE COMMERCE AT U.S. PORTS (Foreign and Domestic Trades)

In 1996[4], the waterborne commerce of the United States reached record levels for the third straight year--exceeding 2 billion metric tons. The 1996 tonnage increased 1.9 percent over 1995. Foreign trade continued to grow for the fifth consecutive year with volume exceeding the one billion mark for the third year in a row. Domestic tonnage rebounded after a slight decline in 1995 to the highest level since 1990. Table 6 provides a 42-year summary of the U.S. waterborne trade from 1955 to 1996. This table includes a breakdown of the foreign and domestic trade figures by trade segment.

Domestic Waterborne Trade

The 1996 domestic waterborne tonnage increased by .7 percent to 998.5 million metric tons. Domestic trade is comprised of 5 segments. The three principal segments--coastwise, lakewise, and internal--showed minor changes over 1995. Internal or inland waterway tonnage accounts for the major share of the domestic trade with 56.5 percent of the domestic tonnage. Table 7 compares the 1993 through 1996 tonnages for selected inland waterways. As shown,

Table 7
Selected Inland Waterway Tonnage for 1993 - 1996[5]
(Millions of Metric Tons)

Waterway	Tonnage				Percent Change (96 vs. 95)
	1993	1994	1995	1996	
Mississippi River	270.6	285.3	293.0	288.9	-1.4
Ohio River	206.1	214.7	212.3	214.8	1.2
Gulf Intracoastal	104.2	106.7	107.0	107.0	.1
Illinois Waterway	41.4	46.2	43.0	41.9	-2.5
Tennessee River	43.7	44.5	42.1	41.3	-1.9
Monongahela River	30.0	33.5	31.2	33.2	6.4
Columbia/Snake Rivers	16.3	21.9	22.1	21.8	-1.4
Black Warrior River	21.5	21.6	22.4	22.9	2.2
Kanawha River	20.2	20.2	21.0	22.5	7.1
Cumberland River	13.0	12.7	16.1	15.6	-3.1
McClellan-Kerr	8.5	9.7	9.3	9.6	3.2

Source: U.S. Army Corps of Engineers

4 This is the most recent year in which both foreign and domestic trade figures are available.

5 The tonnages shown for an individual waterway represents the cargo that originates, terminates, or flows through that particular waterway segment. Net inland waterway tonnage totals cannot be reconciled by summing the individual waterway figures because of double counting involved in recording in the individual flows.

the Mississippi and Ohio rivers and the Gulf Intracoastal Waterway continue to carry the majority of the inland waterway traffic.

Foreign Waterborne Trade

The Bureau of Census trade data in Table 8 shows that total U.S. foreign trade increased for the sixth straight year. For 1997, traffic totaled just over 1 billion metric tons with a value of $625.6 billion. This represents a 4.6 percent increase in tonnage and a decline of less than one per cent in dollar value over the previous year. For the year, imports increased by 10.8 percent to 693.9 million metric tons with a value of $403.6 billion (up 3.7 percent), while exports fell 5.2 percent to 372.9 million metric tons valued at $222 billion (down 6.8 per cent).

Table 8
U.S. Waterborne Foreign Trade for 1990 to 1997
(Millions of Metric Tons and Billions of Dollars)

Year	Total		Imports		Exports	
	Tonnage	Value	Tonnage	Value	Tonnage	Value
1997	1066.8	$625.6	693.9	$403.6	372.9	$222.0
1996	1019.7	$627.3	626.4	$389.1	393.3	$238.2
1995	980.1	$619.7	570.6	$391.5	409.5	$228.2
1994	937.8	$565.7	598.1	$376.4	339.7	$189.3
1993	893.9	$512.1	538.6	$335.5	355.3	$176.6
1992	878.4	$495.5	486.2	$310.3	392.2	$185.2
1991	848.7	$461.8	454.8	$289.7	393.9	$172.1
1990	876.6	$458.0	501.8	$299.6	374.8	$158.4

Source: Bureau of the Census

Table 9 provides a comparison of foreign trade by coastal region for the period from 1995 to 1997. On a tonnage basis, half of the coastal regions showed increases over 1996 with the Gulf region showing the largest gain--11.6 percent. Only the South Atlantic and Gulf regions showed gains in trade value.

Table 9
U.S. Waterborne Foreign Trade by Coastal Region for 1995 - 1997
(Millions of Metric Tons and Billions of Dollars)

Coastal Region[6]	1995		1996		1997		Percent Change (97 vs. 96)	
	Tonnage	Value	Tonnage	Value	Tonnage	Value	Tonnage	Value
North Atlantic	220.3	$140.9	227.1	$144.1	213.4	$142.1	-6.1	-1.4
South Atlantic	79.5	96.3	82.7	94.9	90.0	95.9	8.8	1.1
Gulf	458.7	99.6	485.5	111.8	542.1	115.4	11.6	3.2
South Pacific	90.9	199.0	92.6	196.9	92.5	195.3	-0.1	-0.8
North Pacific	85.2	78.7	80.0	73.0	76.5	70.5	-4.4	-3.4
Great Lakes	45.5	5.2	51.8	6.6	52.3	6.4	1.0	-3.0
Total	980.1	$619.7	1,019.7	$627.3	1,066.8	$625.6	4.6	-0.3

Source: Bureau of the Census

U.S. Waterborne Trade - Commodities and Trading Partners

Figure 1 illustrates the principal 1996 U.S. waterborne trade commodities on a tonnage basis. For total trade, petroleum products continue as the dominant commodity with nearly 42 percent of the market. Other key commodities include crude materials, such as nonmetallic minerals, ore, and forest products (17 percent), coal (14.4 percent), and food and farm products (12.5 percent). Within the foreign and domestic trade segments, petroleum remains the leading commodity with 47.1 percent and 36.2 percent of the respective trades. Other significant foreign trade commodities are food and farm products (15.8 percent) and crude materials (13.1 percent). On the domestic side, crude materials and coal each account for approximately 21 percent of the domestic sector. Table 10 provides additional commodity information for total trade and each of the foreign and domestic trade components.

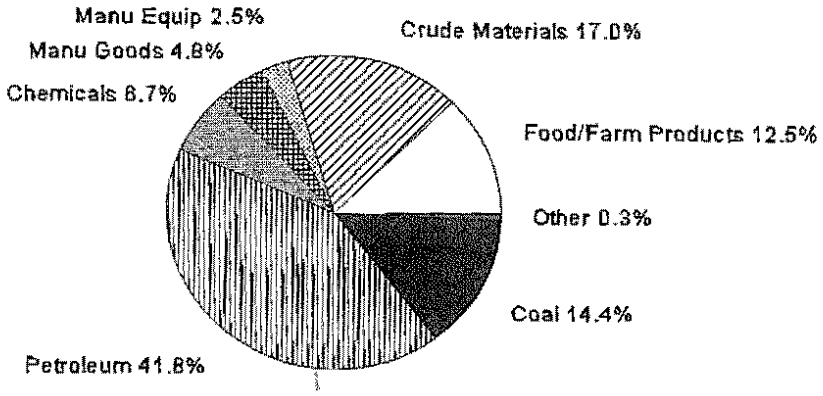
Table 11 highlights the leading U.S. trading partners by tonnage and value and by direction of trade flow for 1997. The U.S. foreign trade remains concentrated both in terms of tonnage and value. The top 5 trading partners account for approximately 42 percent of the tonnage and value. For the top 25 trading partners, the percentages grow to nearly 80 percent in both cases. Venezuela continues as the leading trading partner by tonnage. Japan remains as the dominate trading partner in all trade areas based on value.

[6] Foreign trade figures for Puerto Rico and the U.S. Virgin Islands are included in the South Atlantic region with Hawaii in the South Pacific and Alaska in the North Pacific region.

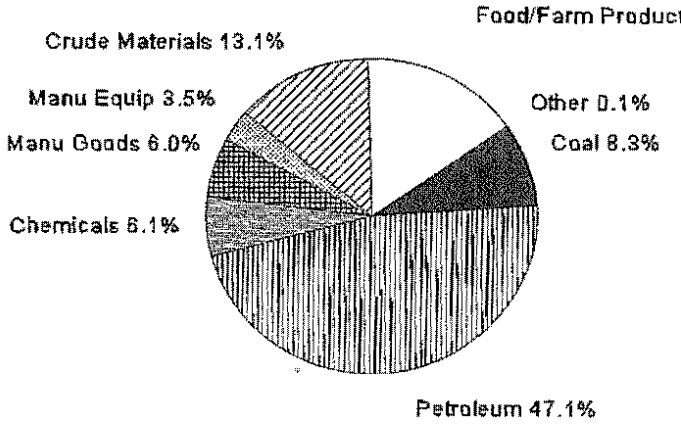
Figure 1

U.S. Waterborne Trade Commodities - 1996

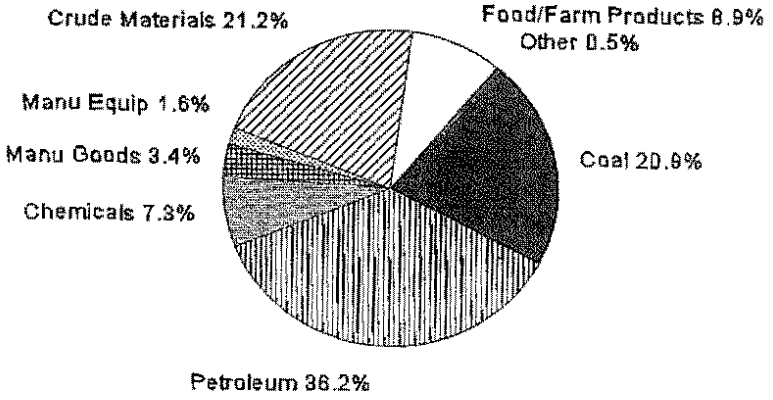
(Tonnage Basis)



Total Trade



Foreign Trade



Domestic Trade

Source: U.S. Army Corps of Engineers

Table 10
Commodity Summary by Waterborne Trade Segment for 1996
(Millions of Metric Tons)

Commodity	Total Trade	Foreign Trade			Domestic Trade					
		Total	Imports	Exports	Total	Coastwise	Lakewise	Internal	Intraport	Intraterritory
Coal	14.4%	8.3%	1.2%	20.0%	20.9%	5.0%	18.5%	28.3%	21.2%	-
Petroleum	41.8%	47.1%	68.3%	12.4%	36.2%	73.7%	1.7%	24.4%	45.8%	94.5%
Chemical & Related Products	6.7%	6.1%	3.4%	10.5%	7.3%	6.1%	0.2%	8.4%	12.9%	2.8%
Crude Materials	17.0%	13.1%	12.2%	14.6%	21.2%	6.7%	76.5%	18.6%	13.0%	Neg.
Manufactured Goods	4.8%	6.0%	7.5%	3.5%	3.4%	2.9%	2.8%	4.1%	1.1%	-
Food and Farm Products	12.5%	15.8%	3.4%	35.9%	8.9%	3.0%	0.3%	14.4%	0.5%	-
Manufactured Equipment	2.5%	5.5%	3.9%	3.0%	1.6%	2.6%	Neg.	1.6%	0.2%	2.7%
Other	0.3%	0.1%	0.1%	0.1%	0.5%	Neg.	Neg.	0.2%	5.3%	Neg.
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Tonnage	2072.0	1073.5	664.6	408.9	998.5	242.6	104.2	564.3	80.7	6.7

Source: U.S. Army Corps of Engineers

Foreign trade figures include tonnage from the Louisiana Offshore Oil Port (LOOP) and additional adjustments made by the Corps of Engineers to the Census foreign trade data.

Table 11
Leading U.S. Waterborne Trading Partners by Tonnage and Value for 1997
(Thousands of Metric Tons/Millions of Dollars)

Rank	Country	Tonnage	Percent of U.S. Total
Total			
1	Venezuela	109,369	10.5%
2	Mexico	96,986	9.4%
3	Japan	79,999	7.7%
4	Canada	76,104	7.3%
5	Saudi Arabia	69,082	6.7%
Imports			
1	Venezuela	104,105	15.6%
2	Mexico	82,156	12.3%
3	Saudi Arabia	65,610	9.8%
4	Canada	48,582	7.3%
5	Nigeria	41,498	6.2%
Exports			
1	Japan	68,342	18.5%
2	Canada	27,522	7.4%
3	South Korea	23,079	6.2%
4	Taiwan	17,876	4.8%
5	Netherlands	17,345	4.7%

Rank	Country	Value	Percent of U.S. Total
Total			
1	Japan	$115,880	18.5%
2	China	61,825	9.9%
3	Germany	32,705	5.2%
4	Taiwan	28,791	4.6%
5	South Korea	24,397	3.9%
Imports			
1	Japan	$82,971	20.7%
2	China	53,817	13.4%
3	Germany	24,500	6.1%
4	Taiwan	19,661	4.9%
5	Venezuela	12,995	3.2%
Exports			
1	Japan	$32,909	14.6%
2	South Korea	12,523	5.6%
3	United Kingdom	9,199	4.1%
4	Taiwan	9,130	4.1%
5	Brazil	8,906	4.0%

Source: U.S. Bureau of the Census

Foreign Trade Forecast

The following table provides a forecast of U.S. foreign trade for the period 1998 to 2001. The forecast projects a solid growth rate for this trade annualized at 6.3 percent. A similar growth pattern is expected for both imports and exports.

Table 12
Foreign Trade Forecast 1998 - 2001
(Thousands of Metric Tons)

Year	Total	Annual Change	Imports	Annual Change	Exports	Annual Change
1997	1,066,763	-	693,894	-	372,869	-
1998	1,141,446	6.9%	747,324	7.7	394,122	5.7
1999	1,210,762	6.1%	791,416	5.9	419,346	6.4
2000	1,284,293	6.1%	838,109	5.9	446,184	6.4
2001	1,362,298	6.1%	887,558	5.9	474,740	6.4

Source: DRI/Mcgraw Hill and Mercer Management Consulting - World Sea Trade Service

U.S. Port Tonnages

The movement of waterborne commerce through the U.S. port system continues to be highly concentrated. Table 13 shows that the leading 50 U.S. ports--coastal and inland--handled 89.4 percent of the total waterborne trade in 1996. The top five ports total 27.7 percent and the top 20 account for 52.5 percent. The percentage distribution (based on tonnage) among the top 50 ports remains similar to the results shown in previous reports. In 1996, there were 3 ports that handled over 100 million metric tons. Even with this high degree of concentration, there were 145 ports--or 40 percent of all U.S. ports handling waterborne commerce--that handled over 1 million metric tons of cargo. These figures reflect the broad base that the U.S. port system is built on and the large volume of waterborne trade. Appendix A provides a listing of the 361 ports that handled waterborne cargo in 1996. Appendix B shows the 1996 waterborne tonnage by state.

Table 13
Top 50 U.S. Ports for 1996
Total U.S. Waterborne Commerce
(Metric Tons)

Rank	Port		Total	Domestic	Foreign
1	SOUTH LOUISIANA, PORT OF	LA	172,195,976	96,201,977	75,994,000
2	HOUSTON	TX	134,428,541	55,451,004	78,977,538
3	NEW YORK/NEW JERSEY	NY/NJ	119,386,017	68,143,397	51,242,619
4	NEW ORLEANS	LA	75,954,979	33,396,896	42,558,083
5	BATON ROUGE	LA	73,489,974	41,025,120	32,464,854
6	CORPUS CHRISTI	TX	72,991,783	21,628,934	51,362,849
7	VALDEZ	AK	69,958,509	68,004,158	1,954,351
8	HAMPTON ROADS	VA	67,175,076	14,988,942	52,186,134
9	PLAQUEMINE, PORT OF	LA	60,699,629	41,930,864	18,768,765
10	LONG BEACH	CA	52,974,997	20,291,296	32,683,701
11	TEXAS CITY	TX	51,159,289	19,107,696	32,051,594
12	PITTSBURGH	PA	46,152,208	46,152,208	-
13	MOBILE	AL	46,142,753	23,013,772	23,128,980
14	TAMPA	FL	44,717,307	29,442,604	15,274,703
15	LAKE CHARLES	LA	44,539,204	17,912,710	26,626,494
16	LOS ANGELES	CA	41,448,357	16,266,411	25,181,947
17	BALTIMORE	MD	39,509,826	12,696,214	26,813,613
18	PHILADELPHIA	PA	37,994,694	11,807,197	26,187,497
19	DULUTH/SUPERIOR	MN/WI	37,555,703	27,439,591	10,116,112
20	PORT ARTHUR	TX	33,708,800	5,896,209	27,812,591
21	BEAUMONT	TX	32,390,961	15,318,528	17,072,433
22	ST LOUIS	MO/IL	27,362,277	27,362,277	-
23	PORTLAND	OR	26,974,011	11,961,675	15,012,337
24	PASCAGOULA	MS	26,619,084	8,209,905	18,409,180
25	CHICAGO	IL	25,297,775	21,337,202	3,960,573
26	HUNTINGTON	WV	24,927,687	24,927,687	-
27	PAULSBORO	NJ	22,714,448	9,183,315	13,531,133
28	FREEPORT	TX	22,290,278	4,874,142	17,416,136
29	SEATTLE	WA	21,361,176	5,923,683	15,437,493
30	RICHMOND	CA	19,779,017	14,909,797	4,869,220
31	TACOMA	WA	19,496,009	6,581,425	12,914,584
32	BOSTON	MA	18,237,927	8,540,697	9,697,230
33	PORT EVERGLADES	FL	17,142,591	10,299,921	6,842,670
34	DETROIT	MI	16,876,945	11,167,481	5,709,464
35	SAVANNAH	GA	15,964,907	2,904,156	13,060,750
36	MEMPHIS	TN	15,694,065	15,694,065	-
37	INDIANA HARBOR	IN	15,324,863	14,592,637	732,226
38	JACKSONVILLE	FL	15,183,266	8,404,901	6,778,365
39	CLEVELAND	OH	15,168,809	11,560,456	3,608,353
40	LORAIN	OH	14,494,876	14,384,248	110,628
41	PORTLAND	ME	13,827,965	1,699,661	12,128,304
42	SAN JUAN	PR	13,709,506	9,365,784	4,343,722
43	ANACORTES	WA	12,561,421	10,734,327	1,827,094
44	TOLEDO	OH	11,822,035	6,384,247	5,437,788
45	CINCINNATI	OH	11,614,850	11,614,850	-
46	MARCUS HOOK	PA	11,218,139	6,531,795	4,680,344
47	HONOLULU	HI	10,895,235	9,389,467	1,505,767
48	GALVESTON	TX	10,560,259	3,611,463	6,948,796
49	OAKLAND	CA	10,187,506	2,340,824	7,846,682
50	CHARLESTON	SC	10,053,875	3,863,315	6,190,560
	Total - All U.S. Ports		2,072,058,318		
	Total - Top 5		575,455,488	27.7%	
	Total - Top 10		899,255,481	43.4%	
	Total - Top 20		1,087,427,039	52.5%	
	Total - Top 50		1,851,935,389	89.4%	

Source: U.S. Army Corps of Engineers

Table 14 shows the tonnage distribution for the top 150 U.S. ports handling waterborne commerce in 1996. The port distribution is categorized for each of the three principal trade segments--total, domestic, and foreign. Appendix C provides a more detailed distribution analysis for the 361 ports that handled waterborne cargo in 1996.

Table 14
Tonnage Distribution for Top 150 U.S. Ports for 1996

Port Tonnage Handled	Number of Ports					
	Total Trade	Percent	Domestic Trade	Percent	Foreign Trade	Percent
> 100 Million Tons	3	2.0%	-	-	-	-
50 to <100 Million Tons	7	4.7%	4	2.7%	4	2.7%
25 to <50 Million Tons	15	10.0%	7	4.7%	10	6.7%
10 to <25 Million Tons	26	17.3%	21	14.0%	14	9.3%
5 to <10 Million Tons	24	16.0%	25	16.7%	11	7.3%
1 to <5 Million Tons	70	46.7%	65	43.3%	40	26.7%
<1 Million Tons	5	3.3%	28	18.6%	42	28.0%
No Tonnage Reported	-	-	-	-	29	19.3%
Total	150	100.0%	150	100.0%	150	100.0%

Source: U.S. Army Corps of Engineers

The concentration of activity among the leading U.S. container ports is reflected in Table 15. For 1997, the top 25 ports handled 98.3 percent of U.S. foreign container cargo based on twenty-foot equivalent units (TEUs). The leading 10 ports accounted for 79.7 percent of the total with the Los Angeles-Long Beach port complex handling nearly one-third of all U.S. foreign container traffic. The 1997 container traffic increased by 10.9 percent--1.4 million TEUs--over 1996. The top three ports captured approximately 44 percent of the 1997 total.

Table 15
Top U.S. Container Ports for 1996 and 1997

Rank	1996 Port	TEUs
1	Long Beach, CA	2,357,075
2	Los Angeles, CA	1,873,491
3	New York/New Jersey	1,533,429
4	Seattle, WA	939,321
5	Oakland, CA	803,159
6	Charleston, SC	800,675
7	Hampton Roads, VA	722,913
8	Houston, TX	537,627
9	Tacoma, WA	506,131
10	Miami, FL	504,913
11	Savannah, GA	455,710
12	Port Everglades, FL	422,161
13	Baltimore, MD	275,832
14	Portland, OR	210,193
15	New Orleans, LA	204,320
16	Jacksonville, FL	185,507
17	San Juan, PR	154,420
18	Gulfport, MS	106,776
19	Wilmington, DE	106,080
20	W. Palm Beach, FL	101,451
21	Wilmington, NC	85,650
22	Philadelphia, PA	75,062
23	Boston, MA	54,021
24	Richmond, VA	41,454
25	Chester, PA	35,924
	Total - Top 25 Ports	13,093,295
		98.2%
	Total - All Ports	13,328,532

Rank	1997 Port	TEUs
1	Long Beach, CA	2,673,199
2	Los Angeles, CA	2,084,924
3	New York/New Jersey	1,738,391
4	Charleston, SC	955,488
5	Seattle, WA	953,304
6	Oakland, CA	843,066
7	Hampton Roads, VA	824,818
8	Miami, FL	623,658
9	Houston, TX	609,451
10	Tacoma, WA	551,164
11	Savannah, GA	529,552
12	Port Everglades, FL	453,174
13	Baltimore, MD	260,355
14	New Orleans, LA	231,094
15	Portland, OR	209,923
16	Jacksonville, FL	198,509
17	San Juan, PR	143,187
18	Gulfport, MS	120,809
19	W. Palm Beach, FL	112,409
20	Wilmington, DE	103,326
21	Philadelphia, PA	90,428
22	Wilmington, NC	86,450
23	Boston, MA	62,229
24	Richmond, VA	43,416
25	Honolulu, HI	36,666
	Total - Top 25 Ports	14,538,990
		98.3%
	Total - All Ports	14,794,751

Source: PIERS, Ports Import/Export Reporting Service, Journal of Commerce

Notes:

1 Total includes the 50 states and Puerto Rico
2 Data includes only loaded containers moving in foreign trade
3 Data excludes military cargo as required by law
4 Twenty-foot equivalent units (TEUs) are the number of containers measured in twenty-foot equivalents

MARINE TERMINAL FACILITIES

Deep-Draft Seaport and Great Lakes Port Facilities

Table 16 examines the distribution pattern of the major U.S. seaport facilities by coastal region. As shown, there are a total of 1,914 terminals comprising 3,158 berths. These figures include both privately and publicly owned facilities. Overall, privately owned facilities account for approximately two-thirds of the deep-draft terminals. The distribution of terminals among the four seacoasts remains fairly even with the east coast having the largest share at 32.3 percent. The gulf coast follows at 25.3 percent with the west coast at 24.6 percent, and the Great Lakes at 17.8 percent. The coastal distribution pattern of berths is similar to that for the terminals with the east coast region accounting for 35.1 percent of the total.

Table 16
Summary of U.S. Seaport Terminals and Berths by Coastal Region[1]

Coastal Region	Number of Terminals	Percent of Total	Number of Berths	Percent of Total
North Atlantic	421	22.0%	761	24.1%
South Atlantic[2]	197	10.3%	349	11.0%
Gulf	484	25.3%	786	24.9%
South Pacific[3]	223	11.6%	414	13.1%
North Pacific[4]	249	13.0%	365	11.6%
Great Lakes	340	17.8%	483	15.3%
Total	1,914	100.0%	3,158	100.0%

Source: Maritime Administration

[1] Includes those commercial cargo handling facilities with a minimum depth alongside of 25 feet for coastal ports and 18 feet for Great Lakes ports.
[2] Includes Puerto Rico and the U.S. Virgin Islauds
[3] Includes Hawaii
[4] Includes Alaska

Table 17 provides a comparison of deep-draft facilities at the berth level by type of berth and coastal region. Berth types are grouped into five general classes. Within each class, there are a number of related single-purpose and multipurpose berth types.[7]

7 It should be noted that the multipurpose berths were arbitrarily assigned to one of the general classes since it was not possible to determine the predominate use. Further, container terminals are defined as facilities with specialized handling equipment.

Table 17
U.S. Seaport Terminals by Berth Type and Coastal Region

Berth Type	Berth Total		Coastal Region											
			North Atlantic		South Atlantic		Gulf		South Pacific		North Pacific		Great Lakes	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
GENERAL CARGO BERTHS:	1,185	37.5%	264	34.7%	204	58.5%	264	33.6%	208	50.2%	149	40.8%	96	19.9%
General Cargo	560		135		78		193		63		56		35	
Container	163		46		19		12		66		20		-	
Lash/Seabee	3		-		1		2		-		-		-	
Ro-Ro	35		6		19		3		4		3		-	
Automobile	32		17		4		-		9		2		-	
General/Container	42		16		12		2		1		10		1	
General/Ro-Ro	52		13		9		14		6		6		4	
General/Passenger	21		-		11		4		-		6		-	
General/Dry Bulk	155		19		15		20		26		24		51	
General/Liquid Bulk	77		2		27		11		22		11		4	
Container/Ro-Ro	41		9		8		2		11		11		-	
Container/Dry Bulk	4		1		1		1		-		-		1	
DRY BULK BERTHS:	692	21.9%	96	12.6%	48	13.8%	163	20.7%	51	12.3%	74	20.3%	260	53.8%
Coal	50		11		2		12		-		2		23	
Grain	87		9		1		28		5		10		34	
Ore	58		7		3		6		-		5		37	
Logs	14		-		-		-		1		13		-	
Wood Chips	12		-		-		-		1		11		-	
Cement	46		10		5		7		2		4		18	
Chemical	76		9		6		47		3		4		7	
Dry Bulk - Other	280		39		23		46		23		16		133	
Dry Bulk/Liquid Bulk	69		11		8		17		16		9		8	
LIQUID BULK BERTHS:	610	19.3%	188	24.7%	51	14.6%	182	23.2%	73	17.6%	71	19.5%	45	9.3%
Crude Petroleum	60		8		-		37		10		5		-	
Refined Petroleum	279		109		28		37		31		41		33	
Petroleum - Crude/Refined	161		29		15		64		28		20		5	
LPG	7		1		1		5		-		-		-	
LNG	5		3		-		1		-		1		-	
Liquid Bulk - Other	98		38		7		38		4		4		7	
PASSENGER BERTHS:	87	2.8%	19	2.5%	24	6.9%	10	1.3%	18	4.3%	10	2.7%	6	1.2%
Passenger	66		13		24		10		18		-		1	
Ferry	21		6		-		-		-		10		5	
OTHER BERTHS:	584	18.5%	194	25.5%	22	6.2%	167	21.2%	64	15.6%	61	16.7%	76	15.8%
Barge	354		126		11		133		33		36		15	
Mooring	124		39		7		19		9		20		30	
Inactive	96		29		4		13		14		5		31	
Other	10		-		-		2		8		-		-	
TOTAL	3,158	100.0%	761	100.0%	349	100.0%	786	100.0%	414	100.0%	365	100.0%	483	100.0%

Source: Maritime Administration

The general cargo class represents the largest berth segment with 37.5 percent of the total. Within this class, the predominate single use type is general cargo with 47.3 percent followed by container with 13.7 percent.

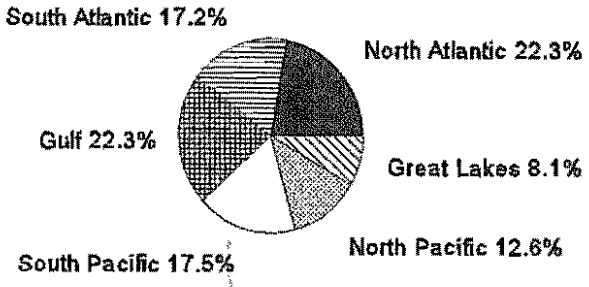
The dry and liquid bulk segments are approximately equal in size with dry bulk accounting for 21.9 percent and liquid bulk for 19.3 percent. The distribution of dry bulk berth types shows a fairly wide distribution pattern among the commodity specific berth types. On the other hand, liquid bulk is highly concentrated with 82 percent of the berths associated with the handling of various types of petroleum products.

Figure 2 depicts the berth distribution by coastal region for general cargo, dry bulk, and liquid bulk facilities. General cargo berths are evenly distributed among the coastal regions with the North Atlantic and Gulf regions leading at 22.3 percent followed by the South Pacific region at 17.5 percent and the South Atlantic region at 17.2 percent. In the dry bulk category, the Great Lakes region accounts for 37.6 percent of this berth segment with the Gulf Coast second at 23.6 percent. Liquid bulk facilities are equally concentrated in the North Atlantic and Gulf regions at 30.8 percent and 29.8 percent, respectively.

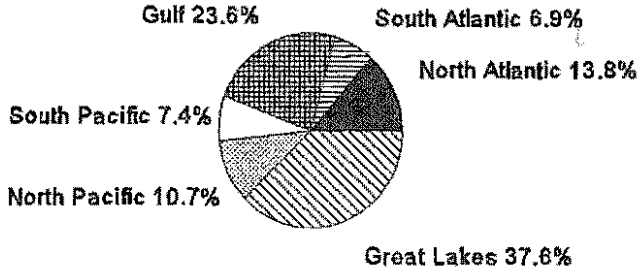
Figure 3 depicts the mix of berth classes within each coastal region. As in previous reports, the general cargo class remains as the predominate type in all regions except the Great Lakes. Dry bulk facilities account for the majority of the Great Lakes facilities.

Figure 2

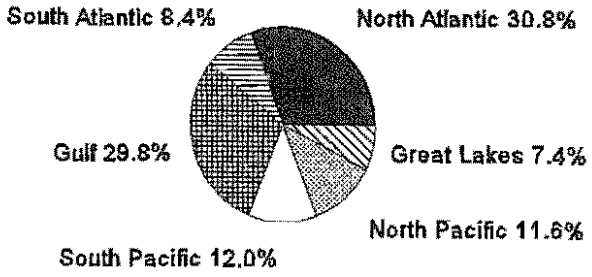
Distribution of Berths by Type



General Cargo



Dry Bulk

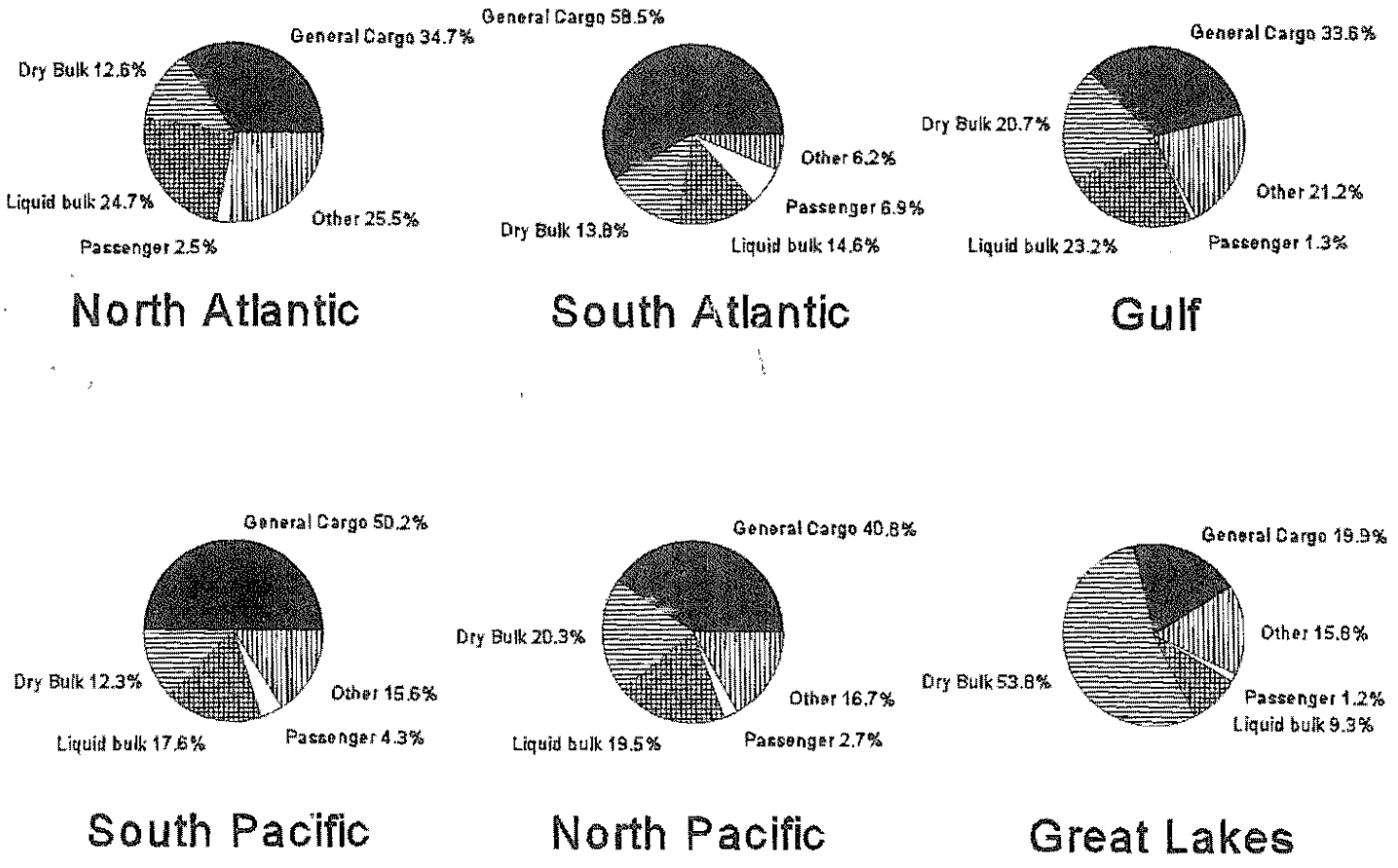


Liquid Bulk

Source: Maritime Administration

Figure 3

Distribution of Berths by Coastal Region



Source: Maritime Administration

Inland River and Intracoastal Waterways Port Facilities

The U.S. inland waterway ports and terminals possess unique characteristics that distinguish them from the coastal seaports. Aside from shallow water depths of 14 feet or less, the inland system is less concentrated geographically and provides almost limitless access points to the waterways. Overall, there are more inland facilities located outside traditional port boundaries than within. Terminal siting on the waterways is less constrained than coastal ports providing greater flexibility to the users in determining the location of plants requiring water access.

Table 18 provides a profile of the terminal facilities located on the U.S. inland waterway system, which consists of over 25,000 miles of navigable inland rivers and intracoastal waterways. The information is categorized by state and terminal type. As shown, there are over 1,800 river terminals located in 21 states. Dry bulk facilities account for the majority with 58.9 percent of the terminals. Within dry bulk, grain and coal terminals are the leading types at 25.4 percent and 22.3 percent, respectively. Liquid bulk terminals are the second largest category comprising 26.7 percent. Within this category, petroleum facilities account for 54.8 percent. Multipurpose and general cargo terminals account for the balance of the terminals with 10.5 percent and 3.9 percent, respectively. Private ownership of inland waterway facilities is more pronounced than the ownership of coastal facilities with 87 percent compared to 66 percent.

Table 18
U.S. Inland/Riverport Terminal Facilities by State

State	Number of Terminals	Number and Type of Facilities								
		General Cargo	Dry Bulk Cargo				Liquid Bulk Cargo			Multi-Purpose
			Grain	Coal	Ore	Other	Petrol	LPG	Other	
Alabama	137	8	16	21	-	41	21	-	15	15
Arkansas	84	2	26	-	-	24	7	-	6	19
Illinois	267	6	64	18	1	70	37	-	42	29
Indiana	60	2	8	14	1	16	9	-	2	8
Iowa	75	-	16	9	-	17	8	-	11	14
Kansas	8	-	4	-	-	1	-	-	2	1
Kentucky	175	3	13	48	-	49	32	1	15	14
Louisiana	66	1	8	2	-	12	19	1	14	9
Minnesota	55	1	10	-	-	20	8	-	7	9
Mississippi	69	1	16	-	-	13	16	1	6	16
Missouri	133	2	22	6	-	59	14	-	18	12
Nebraska	17	1	7	-	-	4	-	-	4	1
Ohio	132	6	7	21	2	43	23	-	19	11
Oklahoma	27	3	5	-	-	9	4	-	2	4
Pennsylvania	145	9	-	41	2	49	18	-	18	8
Tennessee	129	6	21	7	1	47	23	-	12	12
West Virginia	149	9	-	47	1	52	21	1	15	3
Wisconsin	20	1	1	4	-	7	3	-	2	2
Mississippi System Sub-total	**1,748**	**61**	**244**	**238**	**8**	**533**	**263**	**4**	**210**	**187**
Idaho	4	1	2	-	-	1	-	-	-	-
Oregon	24	3	7	-	-	12	-	-	1	1
Washington	36	5	18	-	-	5	2	-	4	2
Columbia/Snake Sub-total	**64**	**9**	**27**	**-**	**-**	**18**	**2**	**-**	**5**	**3**
Total	**1,812**	**70**	**271**	**238**	**8**	**551**	**265**	**4**	**215**	**190**

Source: Maritime Administration

CAPITAL EXPENDITURES AND FUNDING SOURCES FOR U.S. PUBLIC PORT DEVELOPMENT

Capital Expenditures

From 1946 through 1996, the U.S. public port industry has invested $16.8 billion in capital improvements to its port facilities. This investment covers expenditures for the construction of new facilities and the modernization and rehabilitation of existing ones. Table 19 summarizes the historical expenditures by coastal region. During this 51-year period, the industry's expenditures were centered in three regions--South Pacific (28.5%), North Atlantic (20.1%), and the Gulf (18.3%). Appendix D contains a list of the ports that responded to the 1996 AAPA capital expenditure survey.

Table 19
U.S. Port Capital Expenditures for 1946 - 1996[8]
(Thousands of Dollars)

Region	Expenditures	Percent
North Atlantic	$3,368,679	20.1%
South Atlantic	2,282,563	13.6%
Gulf	3,079,945	18.3%
South Pacific	4,796,801	28.5%
North Pacific	1,891,752	11.2%
Great Lakes	517,191	3.1%
AK, HI, PR, and VI*	744,740	4.4%
Guam, Saipan	136,834	0.8%
Total	$16,818,505	100.0%

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

Capital Expenditures - 1996

This section analyses the U.S. public port expenditures for 1996. Total expenditures exceeded the one billion-dollar mark for the second consecutive year. The 1996 total of $1.3 billion was down 7.4 percent from last year's record level of $1.4 billion. For the past three years, the public port industry averaged $1.2 billion--nearly double the investment level for the period from 1991 to 1993. This sharp increase in investments reflects the public port industry's

[8] The historical expenditure data in this and all other related expenditure tables are in actual year dollars.

efforts to meet the Nation's growing transportation needs resulting from increasing trade, shipper requirements, and technological improvements.

As shown in Table 20, the South Pacific region continues to lead the Nation with $642.9 million (49.5%) in capital expenditures followed by the North Pacific with $241.2 million (18.5%) and the South Atlantic and Gulf regions with $140.9 (10.8%) and $134.3 (10.3%) million, respectively. The Pacific Coast ports are responsible for nearly 70 percent of the total investment. Since 1994, the Pacific regions have accounted for more than 50 percent of the annual investment with the majority in the South Pacific region. The continued high level of investment in these regions is based on the projected growth in foreign trade, which is expected to double by the year 2010. The rate at which this growth is forecast has forced many ports to accelerate the implementation of their development plans.

Table 20
U.S. Port Capital Expenditures for 1992 - 1996
(Thousands of Dollars)

Region	1992		1993		1994		1995		1996	
	Expenditure	%	Expenditure	%	Expenditure	%	Expenditure	%	Expenditure	%
North Atlantic	$112,190	16.7%	$91,198	14.0%	$70,299	7.6%	$60,948	4.3%	$96,357	7.4%
South Atlantic	123,065	18.3%	148,555	22.7%	124,853	13.4%	172,517	12.3%	140,944	10.8%
Gulf	145,358	21.6%	129,805	19.9%	109,297	11.8%	158,977	11.3%	134,311	10.3%
South Pacific	140,296	20.9%	139,275	21.3%	533,992	57.4%	673,497	48.1%	642,941	49.5%
North Pacific	45,632	6.8%	94,331	14.4%	40,628	4.4%	143,910	10.2%	241,254	18.5%
Great Lakes	3,206	0.5%	22,938	3.5%	754	0.1%	1,970	0.1%	245	-
AK, HI, PR, & V.I.*	102,021	15.2%	27,561	4.2%	35,420	3.8%	192,536	13.7%	45,100	3.5%
Guam, Saipan	-	-	-	-	14,377	1.5%	-	-	-	-
Total	$671,768	100.0%	$653,663	100.0%	$929,620	100.0%	$1,404,355	100.0%	$1,301,152	100.0%

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

Capital Expenditures - by Facility Type

Table 21 provides a break down of capital expenditures by type of facility. Each of the five cargo type categories includes expenditures for the pier or wharf structure, storage facilities, and handling equipment. Infrastructure expenditures cover improvements, either on or off terminal property, such as roadways, rail, sewer, lighting, and parking. Dredging consists of local port expenditures associated with the dredging of Federal and non-Federal channels and berths as well as the local costs for land, easements, rights-of-way, and disposal areas. The

"other" category includes those structures and fixtures not directly related to the movement of cargo, such as maintenance and administrative facilities.

As shown in Table 21, specialized general cargo facilities continue as the leading expenditure category. The investment level increased significantly over 1995, both in relative terms and dollar value. This category accounted for 41 percent of total investments compared to 28.8 percent in 1995 with dollar value increasing by nearly 55 percent. The South Pacific region leads with 63.7 percent of these expenditures followed by the North Pacific region with 23.5 percent.

General cargo investment remained as the second leading cargo category with 14.7 percent of the total expenditures versus 22.2 percent last year. The South Pacific region accounted for 43.7 percent followed by the Gulf region with 20 percent and the South Atlantic region with 16.7 percent. Bulk facilities, dry and liquid, represent 5.9 percent and 0.5 percent, respectively. The Gulf (42.1%) and South Pacific (34.2%) regions were the focus of the dry bulk expenditures with the South Atlantic and Gulf regions accounting for 54.9 and 38 percent of the liquid bulk expenditures. The passenger segment declined slightly to 2.7 percent with

Table 21
U.S. Port Capital Expenditures by Type of Facility for 1996
(Thousands of Dollars)

Region	Type of Facility									
	General Cargo	Specialized General Cargo	Dry Bulk	Liquid Bulk	Passenger	Other	Infrastructure		Dredging	To
							On-Terminal	Off-Terminal		
North Atlantic	$3,027	$13,226	$928	-	$535	$1,956	$37,792	$3,757	$35,136	$
South Atlantic	32,183	29,489	15,298	3,282	26,881	3,430	10,440	4,126	15,815	1
Gulf	38,381	13,503	32,222	2,273	3,559	20,216	12,958	8,433	2,766	1
South Pacific	84,041	340,150	26,220	314	2,278	9,052	60,978	34,287	85,721	6
North Pacific	5,250	125,543	1,845	-	121	26,683	16,984	63,288	1,540	2
Great Lakes	195	-	-	-	-	-	-	-	50	
AK,HI,PR, & VI*	28,821	11,737	-	208	1,366	468	714	593	1,193	
Total	$191,898	$533,648	$76,513	$5,977	$34,740	$61,805	$139,866	$114,484	$142,221	$1,3
Percent by Facility Type	14.7%	41.0%	5.9%	0.5%	2.7%	4.8%	10.7%	8.8%	10.9%	

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

the South Atlantic region totaling 77.2 percent. "Other" expenditures amounted to 4.8 percent with the North Pacific and Gulf regions accounting for 43.2 and 32.7 percent of these investments.

Port infrastructure improvements represent the second largest overall category with 19.5 percent of the 1996 expenditures. The on-terminal segment totaled 55 percent of the infrastructure investments. The South Pacific region accounted for 43.6 percent of the on-terminal expenditures. For off-terminal improvements, the North Pacific region investments accounted for 55.2 percent of the total. Dredging expenditures amounted to 10.9 percent of the total. Dredging activity was concentrated in the South Pacific with 60.3 percent of the expenditures followed by the North Atlantic (24.7%) and the South Atlantic (11.1%) regions.

Capital Expenditures - Distribution Pattern

Table 22 shows the distribution of the 1996 capital expenditures. The table reveals the high degree of concentration in terms of how the expenditures are distributed among the ports responding to the AAPA survey. As shown, three ports (6%) accounted for over half of the public port industry's 1996 expenditures. The top five ports (10%) represented 65.3 percent and the top 11 ports (22%) accounted for 81.9 percent. In general, these ports were involved in developing major container facilities, improving infrastructure, or dredging projects or combinations of these activities.

Table 22
Distribution of 1996 Capital Expenditures

Annual Investment (Millions of Dollars)	Public Ports		Percent of 1996 Expenditures
	No.	Pct.	
>$100	3	6.0%	56.2%
>$50 to <$75	2	4.0%	9.1%
>$25 to <$50	6	12.0%	16.6%
>$10 to <$25	8	16.0%	11.1%
>$5 to <$10	8	16.0%	4.5%
>$1 to <$5	12	24.0%	2.2%
>$0 to <$1	8	16.0%	0.3%
$0	3	6.0%	-
Total	50	100.0%	100.0%

Proposed Capital Expenditures - 1997 to 2001

The 1996 capital expenditure survey also included proposed expenditures for 1997 through 2001. Table 23 summarizes these expenditures by coastal region. During this 5-year period, these expenditures are forecasted to reach a record total of $6.5 billion. Appendix D contains a list of the respondents, who provided information on proposed expenditures.

The South Pacific region continues to lead future investment activity with proposed expenditures of $2.5 billion (38.8%). Four other regions are projecting significant investments--the South Atlantic at $1.2 billion (19.1%), the Gulf at $941.1 million (14.3%), North Atlantic at $787.6 million (12%), and the North Pacific at $746.9 million (11.3%). From a coastwise perspective, the West Coast is projecting to invest over $3.3 billion (50.1%) with East Coast expenditures at $2 billion (31.1%) and the Gulf at $941.1 million (14.3%).

Table 23
U.S. Port Capital Expenditures for 1997 - 2001
(Thousands of Dollars)

Region	Expenditures	Percent
North Atlantic	$787,602	12.0%
South Atlantic	1,258,341	19.1%
Gulf	941,160	14.3%
South Pacific	2,554,149	38.8%
North Pacific	746,966	11.3%
Great Lakes	20,785	0.3%
AK, HI, PR, & VI *	275,235	4.2%
Total	$6,584,238	100.0%

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

Capital Expenditures - by Facility Type

Table 24 shows the proposed expenditures by type of facility. Specialized general cargo remains as the leading category with $2.6 billion (40.3%) of the expenditures. The South Pacific region is expected to capture approximately half (48.8%) of the proposed expenditures in this category with $1.2 billion. The South Atlantic and North Pacific regions follow with $582.1 million (21.9%) and $507 million (19.1%).

General cargo expenditures will account for $861.9 million (13.1%) of the proposed investments with the activity concentrated in the Gulf (32.1%) and South Pacific (27.9%) regions. Dry and liquid bulk facility expenditures represent 3.9 percent of future investments with dry bulk representing 82.9 percent of the bulk category. Dry bulk expenditures are centered in the South Pacific (49.1 %) followed by the South Atlantic (18%) and Gulf (17.8%) regions. The South Pacific will account for 53.4 percent of the proposed $44.6 million investment in liquid bulk facilities. Passenger facility investment is 4.8 percent of the total with the majority of the investment in the South Atlantic (80.4%) region, which includes the world's leading cruise port, Miami.

Table 24
U.S. Port Capital Expenditures by Type of Facility for 1997 - 2001
(Thousands of Dollars)

Region	Type of Facility									
	General Cargo	Specialized General Cargo	Dry Bulk	Liquid Bulk	Passenger	Other	Infrastructure		Dredging	Total[9]
							On-Terminal	Off-Terminal		
North Atlantic	$44,455	$42,073	$1,129	-	$600	$4,209	$507,627	$11,263	$176,246	$787,602
South Atlantic	100,095	582,129	38,804	6,127	251,952	69,629	85,524	15,075	109,006	1,258,341
Gulf	277,011	165,410	38,455	14,758	37,972	56,744	118,727	80,976	151,107	941,160
South Pacific	240,547	1,294,557	105,910	23,810	1,013	122,817	316,169	253,676	194,650	2,553,149
North Pacific	47,432	507,084	17,470	-	-	47,218	92,483	30,400	4,879	746,966
Great Lakes	6,460	-	14,000	-	-	-	-	-	325	20,785
AK,HI,PR, & VI*	145,949	62,000	-	-	21,750	1,000	36,450	-	8,086	275,235
Total	$861,949	$2,653,253	$215,768	$44,695	$313,287	$301,617	$1,156,980	$391,390	$644,299	$6,583,238
Percent by Facility Type	13.1%	40.3%	3.3%	0.6%	4.8%	4.6%	17.6%	5.9%	9.8%	

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

Projected expenditures for infrastructure investments are expected to exceed $1.5 billion (23.5%)--a 48 percent increase over last year's projection for 1996 to 2000. The South Pacific and North Atlantic regions are projected to capture 36.8 percent and 33.5 percent of these investments with the Gulf region at 12.9 percent. On-terminal expenditures will account for nearly three-quarters of the category total. Dredging expenditures represent 9.8 percent of the

[9] Excludes expenditures of $1,000,000 for which there was no breakdown.

total with projected expenditures distributed among the South Pacific (30.2%), North Atlantic (27.4%), Gulf (23.4%) and South Atlantic (16.9%) regions.

Capital Expenditures - Distribution Pattern

Table 25 shows the distribution of the proposed 1997-2001 capital expenditures. Similar to Table 22, the results show a high degree of concentration in terms of how the expenditures are distributed among the ports responding to the AAPA survey. As shown, three ports (6%) accounted for 37.5 percent of the public port industry's proposed expenditures. The top seven ports (14%) represented 59.4 percent and the top 17 ports (34%) 87.5 percent. The proposed investments by these ports are focused on developing major new container facilities, improving infrastructure, or dredging projects or combinations of these activities.

Table 25
Distribution of 1997 - 2001 Capital Expenditures

Annual Investment (Millions of Dollars)	Public Ports		Percent of 1997-2001 Expenditures
	No.	Pct.	
>$1000	1	2.0%	16.4%
>$500 to <$1000	2	4.0%	21.1%
>$250 to <$500	4	8.0%	21.9%
>$100 to <$250	10	20.0%	28.1%
>$50 to <$100	7	14.0%	7.4%
>$25 to <$50	6	12.0%	3.3%
>$10 to <$25	5	10.0%	1.2%
>$1 to <$10	8	16.0%	0.6%
>$0 to <$1	1	2.0%	-
$0	6	12.0%	-
Total	50	100.0%	100.0%

Funding Sources

The 1996 expenditure survey also included information on the methods used by the U.S. public port industry to finance their capital expenditure programs. The survey utilized the following six funding categories to classify the financing sources: port revenues, general obligation bonds (GO bonds), revenue bonds, loans, grants, and other. The "other" funding category includes all financing sources that were not described above, such as state transportation trust funds, state and local appropriations, taxes (property, sales), and lease revenue.

This section describes the financing methods used to fund the 1996 expenditures and the proposed methods for the projected 1997-2001 expenditures. Table 26 provides a basis for comparing the changes in the primary financing methods used by the public port industry. The table highlights the shift in financing methods that occurred between the 1973-1978 and 1979-1989 surveys. The significant change was the decline in the use of GO bonds and the corresponding increase in port revenues. The funding pattern for surveys conducted in the 1990s remains consistent with this shift. In the 1990s, the relative use of "all other" methods has increased steadily. This suggests that ports are seeking funding alternatives or supplements to port revenues through increased usage of loans, grants, special trust funds, and appropriations.

Table 26
Comparison of Financing Methods for 1973 - 1996
(Thousands of Dollars)

Financing Method	1973-1978 Survey	1979-1989 Survey	1990-1996 Surveys
	Percent	Percent	Percent
Port Revenues	26.7%	47.7%	39.6%
GO Bonds	30.6%	14.8%	10.5%
Revenue Bonds	29.1%	27.0%	28.7%
All Other	13.6%	10.5%	21.2%
Total	100.0%	100.0%	100.0%
Total Expenditures[10]	$876,326	$3,992,897	$5,900,764

[10] Excludes expenditures for which there was no information on funding source.
1990/1996 - $409,926,000 1979/1989 - $1,643,175,000

Funding Sources - 1996

Table 27 presents a comparative summary of financing methods used during the 1992-1996 period. The combination of port revenues and revenue bonds continue to account for the majority of 1996 funding with 74.3 percent. During this five-year period, port revenues and revenue bonds ranked either first or second among the six funding methods, except 1994 when revenue bonds fell to fourth. The combined use of port revenues and revenue bonds ranged from a high of 88.3 percent in 1988 (not shown in table) to a low of 50.2 percent in 1994. By comparing the annual percentage fluctuations that occur between and among the various funding types shown in Table 27 with the historical averages shown in Table 26, one can see the variable nature of port expenditure financing.

For 1996, revenue bonds replaced port revenues as the principal funding source accounting for $529 million or 42.6 percent of the public port financing. The relative share increased from 26.9 percent in 1995 and the dollar volume was up 44 percent. For the first time since 1991, port revenues dropped from first to second. Both dollar volume and the relative share had significant declines. It is the only funding source used by all coastal regions. "Other" is the third leading funding source with 12.7 percent. This method is desirable from a port's perspective, because it includes state trust funds, appropriations, and tax revenues. However, these sources are generally limited in amount and availability.

Table 27
U.S. Port Capital Expenditures by Type of Financing Method for 1992 - 1996[11]
(Thousands of Dollars)

Method	1992		1993		1994		1995		1996	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Port Revenues	$196,956	34.0%	$297,925	50.6%	$309,703	35.3%	$621,703	45.6%	$392,408	31.7%
GO Bonds	73,492	12.7%	67,720	11.5%	90,059	10.3%	115,859	8.5%	116,508	9.4%
Revenue Bonds	156,100	26.9%	134,271	22.8%	130,860	14.9%	366,701	26.9%	529,015	42.6%
Loans	21,795	3.8%	4,534	0.8%	140,496	16.0%	12,077	0.9%	13,734	1.1%
Grants	28,957	5.0%	24,781	4.2%	24,142	2.8%	41,078	3.0%	31,383	2.5%
Other	102,283	17.6%	59,978	10.2%	181,175	20.7%	205,369	15.1%	157,485	12.7%
Total	$579,583	100.0%	$589,209	100.0%	$876,435	100.0%	$1,362,787	100.0%	$1,240,533	100.0%

[11] Excludes expenditures for which there was no information on funding source: 1996 - $60,619,000 1995 - $41,568,000 1994 - $53,185,000 1993 - $64,454,000 1992 - $92,185,000

The use of GO bonds rose slightly from 8.5 in 1995 to 9.4 percent with dollar volume virtually unchanged. The use of grants and loans remained largely unchanged from 1995 levels accounting for 2.5 percent and 1.1 percent of the 1996 funding sources.

Table 28 examines the distribution of 1996 funding sources by coastal region. Port revenues were the primary financing method in five coastal regions with revenue bonds leading in the two remaining regions.

The South Pacific region continues to be the principal user of port revenues with $161.4 million (41.2%) followed by the North Pacific region at $84.2 million (21.5%). The North Pacific region was the major user of GO bonds with $80.6 million (69.2%).

Table 28
U.S. Port Capital Expenditures by Type of Financing Method for 1996[12]
(Thousands of Dollars)

Region	Facility Expenditures by Financing Method												
	Port Revenues	Pct.	GO Bonds	Pct.	Revenue Bonds	Pct.	Loans	Pct.	Grants	Pct.	Other	Pct.	Total
North Atlantic	$8,189	2.1%	-	-	$27,549	5.2%	-	-	-	-	-	-	$35,738
South Atlantic	57,181	14.6%	24,593	21.1%	22,625	4.3%	13,734	100.0%	18,591	59.3%	4,220	2.7%	140,944
Gulf	56,686	14.4%	11,155	9.6%	44,083	8.3%	-	-	8,327	26.5%	14,060	8.9%	134,311
South Pacific	161,436	41.2%	-	-	386,380	73.1%	-	-	125	0.4%	95,000	60.3%	642,941
North Pacific	84,263	21.5%	80,690	69.2%	27,756	5.2%	-	-	4,340	13.8%	44,205	28.1%	241,254
Great Lakes	175	-	70	0.1%	-	-	-	-	-	-	-	-	245
AK, HI, PR, VI*	24,478	6.2%	-	-	20,622	3.9%	-	-	-	-	-	-	45,100
Total	$392,408	100.0%	$116,508	100.0%	$529,015	100.0%	$13,734	100.0%	$31,383	100.0%	$157,485	100.0%	$1,240,533
Percent by Funding Source	31.7%		9.4%		42.6%		1.1%		2.5%		12.7%		

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

Revenue bond usage was centered in the South Pacific region with $386.3 million (73.1%). The South Atlantic region accounted for all of the $13.7 million in loan funding. The South

[12] Excludes expenditures of $60,619,000 for which there was no information on funding source.

Atlantic and Gulf regions were the principal grant beneficiaries with $18.5 million (59.3%) and $8.3 million (26.5%). The South Pacific region was the primary user of "other" sources with $95 million (60.3%).

Projected Funding Sources - 1997 to 2001

Table 29 shows the anticipated funding sources for the U.S. public port industry's proposed 1997-2001 capital expenditure program. Revenue bonds and port revenues continue as the chief funding sources accounting for 74.6 percent of the overall funding. Revenue bonds are

Table 29
U.S. Port Capital Expenditures by Type of Financing Method for 1997 - 2001[13]
(Thousands of Dollars)

Region	Facility Expenditures by Financing Method												
	Port Revenues	Pct.	GO Bonds	Pct.	Revenue Bonds	Pct.	Loans	Pct.	Grants	Pct.	Other	Pct.	Total
North Atlantic	$47,301	2.5%	-	-	$241,638	9.1%	-	-	-	-	-	-	$288,9
South Atlantic	326,510	17.3%	90,400	12.3%	425,330	16.1%	25,000	98.3%	259,764	61.8%	131,337	36.3%	1,258,
Gulf	351,564	18.6%	365,477	49.7%	54,400	2.1%	-	-	60,388	14.4%	103,950	28.7%	935,
South Pacific	746,165	39.5%	1,263	0.2%	1,716,425	64.7%	421	1.7%	89,875	21.4%	-	-	2,554,
North Pacific	266,207	14.1%	276,475	37.6%	73,318	2.8%	-	-	4,000	1.0%	126,966	35.0%	746,
Great Lakes	3,925	0.2%	1,160	0.2%	9,812	0.4%	-	-	5,888	1.4%	-	-	20,
AK, HI, PR, VI*	148,035	7.8%	-	-	127,200	4.8%	-	-	-	-	-	-	275
Total	$1,889,707	100.0%	$734,775	100.0%	$2,648,123	100.0%	$25,421	100.0%	$419,915	100.0%	$362,253	100.0%	$6,080
Percent by Funding Source	31.1%		12.1%		43.5%		0.4%		6.9%		6.0%		

* Alaska, Hawaii, Puerto Rico, & Virgin Islands

[13] Excludes expenditures of $504,044,000 for which there was no information on funding source.

the principal source of funding with 43.5 percent followed by port revenues with 31.1 percent. Revenue bonds are projected to be the leading funding source in four coastal regions with GO bonds leading in two and port revenues in one region.

The South Pacific region continues as the projected primary user of port revenues with $746.1 million (39.5%) followed by the Gulf region with $351.5 million (18.6%). The majority of the GO bond financing is in the Gulf and North Pacific regions with $365.4 million (49.7%) and $276.4 million (37.6%), respectively. The South Pacific also accounts for nearly two-thirds of the proposed revenue bond funding with $1,716.4 million (64.7%).

The South Atlantic region accounts for nearly all of the loan category with $25 million (98.3%). The South Atlantic region is the projected leader in the use of grants with $259.7 million (61.8%). The "other" funding category is divided among three regions--South Atlantic with $131.3 million (36.3%), the North Pacific with $126.9 million (35%), and the Gulf with $103.9 million (28.7%).

FINANCIAL STATUS OF U.S. PUBLIC PORTS

Income Statement

Table 30 shows the 1996 consolidated income statement for the U.S. public port industry by coastal region. Appendix E contains the 52 ports responding to the survey.

Table 30
1996 Income Statement for Responding U.S. Ports
(Thousands of Dollars)

	North Atlantic	South Atlantic	Gulf	North Pacific	South Pacific	Great Lakes	
OPERATING REVENUES:							
MARINE TERMINALS	$125,314	$433,988	$211,966	$77,743	$409,006	$1,579	$1
OTHER MARINE REVENUES	$69,940	$61,452	$52,606	$99,098	$128,973	$1,480	
TOTAL OPERATING REVENUE *	$195,254	$495,440	$264,573	$176,841	$537,979	$3,059	$1
OPERATING EXPENSES:							
OPERATING & MAINTENANCE	$114,828	$237,216	$124,914	$84,985	$136,502	$1,642	
SECURITY	$10,611	$18,746	$10,874	$1,652	$11,065	$63	
SALES PROMOTION/ TRADE DEVELOP.	$8,956	$18,762	$7,381	$2,101	$7,023	$1,038	
OTHER ADMINISTRATIVE EXPENSES	$29,587	$66,812	$37,051	$10,332	$76,653	$909	
DEPRECIATION	$50,167	$79,535	$55,112	$45,988	$97,223	$1,032	
TOTAL OPERATING EXPENSES *	$214,149	$421,069	$235,332	$145,058	$328,466	$4,684	$
OPERATING INCOME *	($18,896)	$74,369	$29,240	$31,783	$209,512	($1,625)	
OTHER INCOME (EXPENSES):							
INTEREST EARNED	$533	$16,770	$21,329	$11,690	$19,489	$111	
BOND INTEREST EXPENSE	($33,084)	($43,872)	($30,706)	($16,135)	($68,497)	($141)	(
TAX LEVY	($1,217)	$2,057	$38,460	$51,079	$0	$0	
CONTRIBUTION	$10,052	$21,290	$987	$87	($1,299)	$360	
OTHER	$325	($3,952)	($405)	($1,900)	$5,097	$99	
TOTAL OTHER INCOME (EXPENSES)	($23,391)	($12,706)	$29,665	$44,821	($45,210)	$429	
NET INCOME *	($42,286)	$61,664	$58,905	$76,604	$164,302	($1,196)	
Number of Port Responding	7	11	15	8	9	2	
Net Income to Total Operating Revenue	-21.7%	12.4%	22.3%	43.3%	30.5%	-39.1%	
Operating Ratio (Tot. Op. Exps./Tot. Op. Revs)	109.7%	85.0%	88.9%	82.0%	61.1%	153.1%	
Operating Margin [before Depreciation] (Op. Inc.+Deprec./Tot. Op. Revs)	16.0%	31.1%	31.9%	44.0%	57.0%	-19.4%	
Operating Margin [after Depreciation] (Op. Inc./Tot. Op. Revs)	-9.7%	15.0%	11.1%	18.0%	38.9%	-53.1%	

* Some components do not add to totals - either some ports did not provide a breakdown or there were differences due to rounding.
Source: American Association of Port Authorities

The combined net income for the 52 public ports was $317.9 million. Of that amount, 38.3 percent ($121.9 million) came from tax levies and contributions.

- The two most profitable ports, Los Angeles and Long Beach, accounted for 44 percent ($139.8 million) of the public port industry's combined 1996 net income and 85.1 percent of the South Pacific region's net income. These rankings showed a decline from 1994, when the percentages for the two ports were 76 percent and 96 percent, respectively. When including the third most profitable port, Seattle, these three ports accounted for 57 percent ($181.0 million) of the combined net income.

- The North Pacific ports received the largest portion of the tax levies and contributions at $51.2 million. The Gulf and South Atlantic followed with $39.4 million and $23.3 million, respectively.

Figure 4
1996 Net Income for Responding U.S. Ports by Region

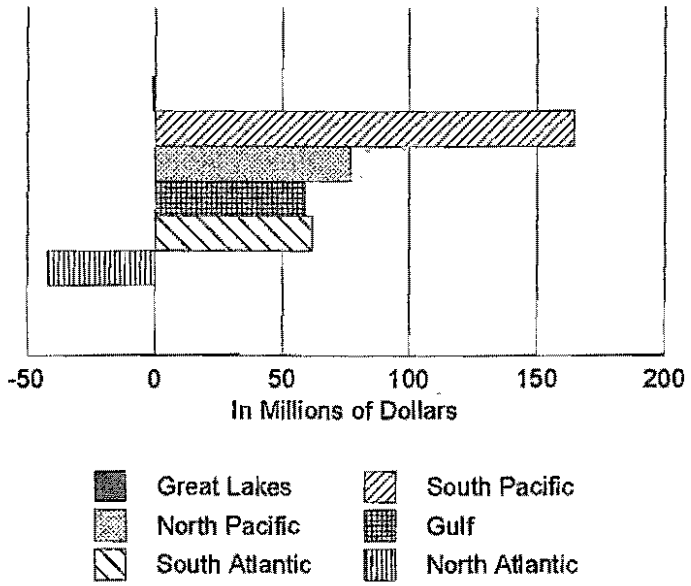


Table 31 compares the distribution of net income for 1994 and 1996. The data reflects the continued narrow profit margins within the public port industry. Table 32 provides more detailed information on the 1996 net income distribution.

Table 31
Summary of Net Income Distribution: 1994 vs. 1996

	1994			1996		
	No.	Pct.	Pct. of Total Ports	No.	Pct.	Pct. of Total Ports
Profits	-	-	78%	-	-	77%
Range			*$0 to $92.4M*			*$0 to $73.5M*
Losses	-	-	22%	-	-	23%
Range			*-$213K to -34.5M*			*-$219K to -$26.7M*
Of those with net profits:						
Low range: net income below $1M	16	37%	29%	11	28%	21%
Mid-range: net income between $1M to $5M	15	35%	27%	12	30%	23%
High range: net income greater than $5M	12	28%	22%	17	42%	33%
Sub-total	43	100%	78%	40	100%	77%
Of those with net losses:						
Low range: net loss under $1M	3	25%	5%	6	50%	11%
Mid-range: net loss between $1M to $5M	7	58%	13%	2	17%	4%
High range: net loss greater than $5M	2	17%	4%	4	33%	8%
Sub-total	12	100%	22%	12	100%	23%
Total	55		100%	52		100%

Several interesting trends that can be identified from Table 31:

- o The percentages of profitable and not profitable ports remained virtually unchanged from 1994 to 1996.

- o The distribution of profitable ports shows improvement. Profitable ports reported higher profits in 1996 than in 1994, with percentages dropping in the low- to mid-ranges and jumping from 28 percent to 42 percent in the high range.

- o Unprofitable ports also showed a shift in distribution. A 71 percent drop in the number of mid-range ports (from 7 in 1994 to 2 in 1996), was compensated for by a doubling in the other two ranges. Overall, however, there are a third fewer ports reporting losses greater than $1 million in 1996 (6 ports) than there were in 1994 (9 ports).

Table 32
Distribution of Net Income for 1996

Net Income (Millions of Dollars)	Number of Public Ports	Percent
$-35 to <$-30	-	-
$-30 to <$-25	1	1.9%
$-25 to <$-20	-	-
$-20 to <$-15	1	1.9%
$-15 to <$-10	1	1.9%
$-10 to <$-5	1	1.9%
$-5 to <$-1	2	3.8%
$-1 to <$0	6	11.5%
$0 to $1	11	21.2%
$1+ to $5	12	23.1%
$5+ to $10	7	13.5%
$10+ to $15	1	1.9%
$15+ to $20	4	7.8%
$20+ to $25	2	3.8%
$25+ to $30	-	
$30+ to $35	-	
Over $35	3	5.8%
Total	52	100.0%

Source: American Association of Port Authorities

Balance Sheet

Table 33 displays the 1996 U.S. public port consolidated balance sheet. Appendix E lists the 47 public ports responding to AAPA's survey.

Table 33
1996 Balance Sheet for Responding U.S. Ports
(Thousands of Dollars)

	North Atlantic	South Atlantic	Gulf	North Pacific	South Pacific	Great Lakes	To
ASSETS:							
CASH & INVESTMENT	$8,833	$124,316	$281,310	$133,269	$376,594	$2,501	$9
ACCOUNTS RECEIVABLE, NET	$10,940	$70,237	$36,818	$10,034	$97,747	$1,115	$2
BAD DEBTS	$3,834	$12,993	$3,877	$458	$8,709	$0	$
OTHER CURRENT ASSETS	$6,668	$124,182	$23,349	$11,430	$108,473	$350	$2
TOTAL CURRENT ASSETS *	$26,441	$318,735	$341,476	$154,733	$582,815	$3,966	$1,4
PLANT, PROPERTY & EQUIPMENT:							
LAND	$258,723	$676,491	$315,109	$188,650	$1,646,832	$13,070	$3,0
BUILDINGS	$387,037	$777,980	$677,223	$164,275	$2,701,614	$14,820	$4,7
IMPROVEMENTS	$11,839	$889,353	$703,520	$358,710	$811,497	$23,057	$2,7
EQUIPMENT	$86,479	$507,823	$282,709	$122,808	$200,898	$7,429	$1,2
PLANT, PROPERTY & EQUIPMENT (GROSS) *	$828,948	$2,851,649	$2,159,923	$834,443	$5,360,840	$58,376	$12,(
ACCUMULATED DEPRECIATION	($227,753)	($724,019)	($809,091)	($256,942)	($1,521,780)	($27,321)	($3,5
CONSTRUCTION IN PROGRESS	$56,618	$199,170	$200,705	$30,611	$1,211,917	$112	$1,(
PLANT, PROPERTY & EQUIPMENT (NET) *	$675,176	$2,326,798	$1,627,721	$608,112	$5,050,977	$31,167	$10,:
OTHER ASSETS	$15,704	$211,327	$313,113	$80,376	$889,819	$145	$1,:
TOTAL ASSETS *	$717,321	$2,856,860	$2,282,312	$843,221	$6,523,612	$35,278	$13,:
LIABILITIES & EQUITIES:							
CURRENT LIABILITIES	$22,938	$283,384	$99,701	$29,207	$292,808	$4,206	$
LONG-TERM LIABILITIES	$85,496	$923,800	$700,494	$215,271	$2,370,152	$134	$4,:
TOTAL LIABILITIES *	$108,434	$1,207,184	$800,193	$244,478	$2,662,961	$4,340	$5,:
EQUITY:							
CONTRIBUTIONS: ST./LOCAL/FED'L/OTHER	$39,964	$661,348	$569,054	$38,987	$603,632	$35,768	$1,
RETAINED EARNINGS	$15,318	$629,895	$913,062	$559,756	$3,257,020	($4,830)	$5,
TOTAL EQUITY *	$608,887	$1,649,675	$1,482,115	$598,743	$3,860,651	$30,938	$8,
TOTAL LIABILITIES & EQUITY *	$717,321	$2,856,860	$2,282,311	$843,221	$6,523,612	$35,278	$13,
Number of Ports Responding	5	11	15	5	9	2	
Net Income to Net Plant, Property, & Equipment (PP&E)	-6.3%	2.6%	3.6%	12.6%	3.3%	-3.8%	
Operating Income (before Depreciation) to Net PP&E	4.6%	6.6%	5.2%	12.8%	6.1%	-1.9%	
Operating Income (after Depreciation) to Net PP&E	-2.8%	3.2%	1.8%	5.2%	4.1%	-5.2%	
Net Income plus Bond Interest Exp. to Total Assets	-10.5%	0.4%	1.2%	7.2%	1.5%	-3.8%	

* Some components do not add to totals - either some ports did not provide breakdown or there were differences due to rounding..
Source: American Association of Port Authorities

Port Profitability

The following are the results of a June 1997 MARAD report, *An Analysis of U.S. Public Port Profitability and Self-Sufficiency (1985-1994).*

- With some exceptions, the study (based on annual port finance surveys) finds a steady decline in the average number of profitable ports during the ten years studied (1985-1994). This is not surprising in view of transportation deregulation, vessel sharing agreements, load centering, and the intense competition in pricing port services and facilities.

- Despite the declining trend in profitability, in 1994 there were more self-sufficient U.S. public ports (31) than those not self-sufficient (25) responding to the port finance surveys. It is estimated that tax receipts and other contributions, grants, and subsidies were sufficient to enable all but four of the responding ports to have a positive cash flow.

- In today's economic climate, it is doubtful that there will be any change in the port management philosophy of maximizing economic activity in the region served by the port.

- Many ports will continue to follow past practices of (1) cross-subsidizing marine terminal operations, (2) receiving state or local government assistance for developmental costs, and (3) using the local port ad valorem tax base to obtain new funds for the development of new port facilities and, in some cases, for port operations and maintenance expenses.

- As long as port operations and facility development can be cross-subsidized, funded by state or local governments, or local tax payers, ports having such financial assistance will continue to compete with other regional ports by pricing their services below what they need to cover port costs and produce a reasonable rate of return.

- Each U.S. public port has a state or local constituency. Ports must satisfy their constituents that the economic impact generated by port activities is sufficient to warrant continued legislative or taxpayer support.

- Those ports having tax support or other contributions and subsidies must build and operate facilities to produce a reasonable rate of return in order to justify the continued support by their constituents.

- Effective regional marine terminal conference pricing may be recognized as important, and utilized, if outside financial assistance enjoyed by ports in some regions is reduced or eliminated.

- Financing of new or improved port facilities from a combination of port revenues and revenue bonds will be extremely difficult for all but the most profitable ports. The increasing local costs related to channel dredging and port access represent major financing problems for all U.S. public ports.

PORT ISSUES

The U.S. public port industry is faced with many complex issues. Today's port organizations must address issues ranging from financing current operations and future terminal development to complying with environmental laws and regulations, which impact most port activities. Reliable and secure funding sources are necessary to finance the development programs required to meet future trade growth. To be able to maintain and improve channels and to dispose of contaminated dredged material, ports need a predictable, timely, and efficient dredging process. Our Nation's growing dependence on intermodal transportation requires that landside access to marine terminals be improved and that ports become more involved in the local transportation planning. The port industry's ability to resolve these issues is crucial to both the industry and the Nation, due to the key role ports play in our intermodal transportation system and national defense.

PORT DEVELOPMENT FINANCING AND REVENUES

Financing capital development programs and generating sufficient revenue streams remain two key issues for public ports. With foreign trade expected to double by the year 2010, ports must continue to expand terminal facilities and related infrastructure to accommodate this projected growth. The public port industry's ability to fund the required development programs remains in question. The fiscal sentiment of many local port communities makes raising revenues through increased taxes or appropriations unrealistic. State and local governments, with their own budgetary concerns, continue to focus on their ports becoming more financially self-sufficient.

Financing Capital Expenditures

The importance of funding for facility development can be seen by examining the expenditure levels for the leading ports based on actual and projected expenditures shown in Appendix F. For 1996, the range of annual investments for the ten largest capital programs showed that one port exceeded $407 million with the remaining nine ports ranging from $180 million down to $28 million. In looking at 5-year projections (1997-2001), estimated capital expenditures exceed $1 billion at one port with the other nine ports ranging from a high of $866 million to $222 million. Given the magnitude of these capital programs, the issue of funding is and will continue to be critical to the public port industry's ability to handle the projected growth in waterborne trade.

Ports seeking financial assistance from their governing body or state/local community will face stiff competition for scarce public funds. Ports must be able to demonstrate the economic

benefits of their capital programs to local communities. This task is difficult as many of the economic benefits resulting from port investments extend beyond the local community or region to distant communities where exports are produced and imports consumed. Further, these benefits may be difficult to measure and quantify. Appendix G describes several examples of state-level port development programs that offer financial assistance to ports in the areas of marketing and infrastructure improvements.

The changes in the port industry's funding pattern for capital programs observed in 1994 did not hold true in 1996. The 1996 funding pattern reverted to the more traditional pattern of port revenues and revenue bonds. With the exception of 1994, these two funding sources have been the top two methods of financing port expenditures for the last 20 years. Their combined usage was 74.3 percent in 1996. In 1994, however, this funding pattern changed to port revenues and "other", which includes state transportation trust funds, state and local appropriations, property/sales taxes, and lease revenues, with a combined share of 56 percent. The 1994 funding pattern seems to have been an anomaly. The use of revenue bonds has risen sharply from a low of 14.9 percent in 1994 to the leading funding method in 1996 with 42.6 percent.

Looking at projected funding pattern for 1997-2001, the funding sources are virtually identical in order and magnitude to those used to finance the 1996 expenditures. For this period, the top three funding sources are: revenue bonds (43.5%), port revenues (31.1%), and GO bonds (12.1%). The order of the final three places shift slightly with grants and "other" trading places. If projections are correct and port revenues and revenue bonds continue as the primary funding sources, the crucial question is whether ports can generate sufficient income to support this type of financing.

Prior reports described a unique financial arrangement in California, whereby, state legislation permitted local municipalities to require payments from their local port. The following summarizes the status and impact of this legislation:

- California enacted legislation in 1991 allowing five cities to require payments from their local port's reserves to offset the loss of funds formerly provided by the state.

- During fiscal years 1991-92 and 1992-93, the Ports of Los Angeles and Long Beach gave their cities $69 million and $21 million, respectively.

- In June 1995, the City of Los Angeles released a city commissioned study, which found that the city could charge its port for municipal services, such as police and fire protection, and not violate state laws. Thus, for municipal services rendered during the previous 18 years, the city charged the port almost $90 million.

- Over three fiscal years ('94-95, '95-96, & '96-97), the Port of Los Angeles paid the city $94.1 million. Of that amount $56.7 million was partial payment of the $90 million bill above, and $37.4 million was for current charges incurred since 1995. Prior to the 1995 study, the port paid the city $10 to $12 million annually for city expenditures benefitting the port. The California State Lands Commission is challenging these municipal payments in court and has sued the city to return the payments.

The impact of this legislation continues to affect development plans, cause some uncertainty in credit markets, and upset port users. This situation exists to a lesser degree in other states where port funds have been utilized to finance non-maritime projects.

In another development, six California ports created a joint financing authority in November 1995 to issue bonds on behalf of individual ports. The California Maritime Infrastructure Authority provides ports with conduit financing for issuing bonds when municipal restrictions prevent or delay port plans to float bond issues on their own. The Authority will work with a maritime infrastructure bank created in 1993 (see next paragraph) as a conduit for Federal and state funds to be loaned for port projects. The Authority currently has no debt rating of its own, and member ports are not responsible for the debts of other ports. To date, the Authority funded one airport project and one port project, which financed the local share of the construction cost for a Federal navigation project. State legislation is pending which will use the Authority to channel $17 million in state financial support for Federal navigation projects statewide.

The maritime infrastructure bank mentioned above is called the California Maritime Infrastructure Bank. Its purpose is to promote the growth of international trade flowing through California's port system, as well as state economic growth. Envisioned as a type of credit union for ports, the bank was to finance both public and private port projects. The bank serves as the operating arm of the Authority, but is currently inactive pending capitalization.

Revenue Generation

Two key factors which influence a port's ability to generate revenue are strong national and international competition and excess capacity. Acting together, the two tend to exert downward pressures on both rates charged for port services and, ultimately, port revenue. In addition, port revenues are tied closely to the condition of regional and national economies. Today, there is strong competition among U.S. ports, both in terms of maintaining their existing cargo base and in attracting new business. The introduction of global alliances increases the leverage of carriers in negotiating port leases and services.

The data exhibited in Tables 30 to 32 and Figure 4 summarize the port industry's 1996 net income. These figures show that 77 percent (40 ports) of those surveyed reported net profits, and 23 percent (12 ports) had losses. Although 42 percent of the profitable ports had net incomes above $5 million in 1996 (showing considerable growth in the port industry's profitability compared to 1994), profit margins are still considered low.

The industry's low profit margins are a result, in part, of how public ports view their economic role. This view translates itself into the pricing practices used by public ports for their services, facilities, and equipment. There are two main philosophies on the role of public ports. The majority view is that ports are to promote regional economic development and to create jobs. The minority belief holds that public ports are to be profit-making enterprises. While emphasizing economic development, most ports attempt to combine these two philosophies, with mixed results. Thus, while many ports advocate a pricing policy that both covers their costs and provides an adequate return on investment, very few achieve it.

Focusing on economic development tends to depress price levels and increase service competition, because public ports rely on price and service competition to attract and hold business. Price competition lowers revenue while service competition may increase costs by requiring additional investments in facilities and equipment. One consequence of price/service competition is that many ports rely on state and local subsidies to cover financial shortfalls.

The economic costs of following price/service competition ultimately may force the port industry to reexamine these practices. Six east coast ports[14] are exploring the potential benefits of regional cooperation within the context of the antitrust immunity under the Shipping Act of 1984. The ports have agreed to share information on rates, charges, rules, and conditions of service information, but not to set rates collectively. The Atlantic Coast Public Marine Terminal Agreement, as it is known, is subject to Federal Maritime Commission approval. The agreement may be an attempt by the ports to offset the increasing bargaining strength of shipping lines resulting from the global alliances. With better information, ports will be able to make more informed decisions with respect to retaining existing business and competing for new business.

[14] The six ports are New York-New Jersey, Baltimore, Hampton Roads, Wilmington (NC), Charleston, and Savannah.

CONTAINERSHIP OPERATORS INTRODUCE NEW VESSELS AND CARRIER ALLIANCES

Impact of the Next Generation Containership

During the next few years, U.S. ports again will be faced with the challenge of handling the next generation of containerships (megaships). The first of the large 6,000+TEU containerships, "Regina Maersk," was delivered in January 1996. Worldwide, containership operators will be taking delivery of 35 vessels in the 4,500 to 9,000 TEU range from 1997 through 1999[15] (see Appendix H for details on the containership order book). These new vessels will serve high volume, long distance trades, with many operating as part of vessel sharing agreements or alliances. They will require sophisticated and efficient ports and terminal facilities with excellent landside intermodal connections.

The introduction of these vessels is in response to the changing dynamics in intermodal shipping caused by the reduction in international trade barriers, lower tariffs, and shifting centroids of global manufacturing and consumption. Many new trade gateways are developing which will alter market demand and future cargo forecasts. Trade worldwide is growing, with 55 percent of all general cargo in international liner trade moving in containers. Assuming that adequate port infrastructure is available, by 2010 nearly 33 percent of general cargo tonnage will be transported by ships carrying more than 4,000 TEUs.

Megaships are being constructed with carrying capacity exceeding 4,500 TEUs with fully-loaded design drafts of 40 to 46 feet. Most U.S. ports are currently unable to handle these ships. American ports face the challenge to improve their infrastructure to handle ships of this size. For a port to service these megaships, the entire port structure will have to get bigger and more productive. Each channel, berth, and turning basin must be at least 50 feet in depth, since 40 to 46 feet will be the maximum draft for the fully-loaded megaships. For U.S. ports serving megaships, the surrounding transportation system must be able to respond. For our Nation to preserve and enhance its competitive position in world trade, we must reduce the cost of transportation by eliminating inefficiencies.

Dredging is the paramount issue confronting U.S. ports ability to accommodate megaships. Ports will need to provide channels and berthing areas with minimum depths of 50 feet, in order to handle fully loaded megaships. Table 34 shows the channel and berth depths for the leading U.S. container ports. As shown in the table, only four of the top 10 U.S. container ports, which handle nearly 80 percent of the container traffic, have existing channel depths of 50 feet or more. Many of the leading ports, which lack adequate depths, have projects underway or in the planning stage to increase their channel depths. The crucial question is whether they can complete these projects in time given the problems experienced by many ports in seeking solutions to siltation, dredged material disposal, and contaminated sediments.

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15 Fairplay Newbuildings, March 1996, p.34

While not all ports need the capability to handle these vessels, the failure to provide an adequate number of these channels in a timely manner will seriously impact the efficiency of our intermodal transport system and the competitiveness of our trade.

Table 34
Water Depth for Selected U.S. Container Ports

Port	Channel Depth	Berth Depth	Container Port Ranking[7] (1997)
Boston	40	45	23
New York/New Jersey[1]	40	35-45	3
Philadelphia	40	40	21
Baltimore	50	36-42	13
Hampton Roads	50	32-45	7
Wilmington (NC)	40	40	22
Charleston[1]	42	40	4
Savannah	42	42	11
Jacksonville[2]	38	38	16
Everglades	47	37-44	12
Miami	42	42	8
Gulfport	36	36	18
New Orleans[3]	36 & 45	35	14
Houston[4]	40	38-40	9
Honolulu	45	40	26
Long Beach	76	35-50	1
Los Angeles[5]	45	45	2
Oakland	42	35-42	6
Portland (OR)	40	40	15
Tacoma	40-50	40-50	10
Seattle	175	40-50	5

Notes:
1 - 45' project authorized
2 - 40/44' feasibility study
3 - 36' refers to MRGO
45' refers to Miss. River
4 - 45' project underway
5 - 50' project underway
6 - 50' feasibility study
7- Source: P.I.E.R.S.

Source: AAPA and Containerisation International Yearbook

The economics of these new vessels will mean fewer port calls for many ports and in some cases the elimination of port calls altogether. The situation is similar to the 1980s when carriers first introduced the 3,000 and 4,000 TEU vessels. For some ports, the pressure to

ensure that the required infrastructure is in place will increase. For those ports which stand to lose business, they will need to pursue other market opportunities, such as non-container cargoes, niche markets, or container feeder ports.

Another issue ports must address is the impact of these vessels on terminal facilities. The volume of cargo carried by new vessels will require new or improved terminals. This includes larger cranes, berths, storage yards, and information systems. Landside access will have to be improved to handle the higher peak volumes of rail and truck traffic. Today, congestion is a major problem at many container terminals where trucking delays at terminal gates are increasing. Major improvements will be required in this area before the new vessels enter into service. Many U.S. ports have begun a number of major expansion projects. Most major U.S. container ports are building, expanding, or planning new container facilities, including many with on-dock rail facilities. The cost of a new facility can reach several hundred million dollars. In 1977, the Port of Long Beach completed a 170-acre container terminal at a cost of $277 million and neighboring Los Angeles opened a 230-acre container facility costing $270 million. The Port of Charleston is starting to develop a new container terminal on Daniel Island with first phase costs projected at $300 million and completion in 2004/05.

Appendix I describes the terminal characteristics for a nominal megaship terminal. This information was prepared as part of the background material developed for participants to the Department of Transportation's Megaship Conferences.

Megaship Conferences

In response to the growing attention over the introduction of the large containerships (megaships), the Department of Transportation conducted a series of four regional meetings to address transportation impacts caused by changes in ship design and shipping practices in the intermodal shipping industry. The meetings examined existing transportation infrastructure, market trends, and how transportation planning should consider freight distribution systems that must serve both domestic and global needs. The fundamental issue addressed in these conferences was how improving infrastructure links to ports is a critical prerequisite for transportation to function as a system. Information from the meetings shows that action should be taken now to craft policies to position the U.S. transportation industry to handle the significant increases in international freight movements and the infrastructure demands of the changing trade flows and port calls by larger and faster vessels.

The results of these conferences were published in a USDOT report entitled, *The Impacts of Changes in Ship Design on Transportation Infrastructure and Operations*[16]. The report

[16] This report is available on the internet at www.bts.gov/ntl/data/ShipDesign.PDF.

acknowledged two ongoing USDOT activities that will begin to assess the transportation system's ability to accommodate the projected increases in international intermodal freight. These activities are:

- Marine Transportation System Initiative: This initiative, led by the Maritime Administration and the U.S. Coast Guard, will bring together the many agencies with responsibility for waterways management to coordinate and consolidate the delivery of all Federal services and promote port efficiency. The project will focus on policy coordination at the national level and action at the local port level. Adequate infrastructure, including channel and berth depths, locks, navigation information, port facilities, intermodal connections, and information management to accommodate all classes of marine vessels--from large containerships to inland river barges--are among the waterway issues encompassed within this initiative. (See page 76 for additional information.)

- Assessment of the Conditions and Performance of National Highway System (NHS) Intermodal Connectors: This Federal Highway Administration initiative will compile information on the NHS connectors to major passenger and freight intermodal terminals, including 500 freight terminals. The FHWA will:

  - Evaluate the highway infrastructure condition of NHS connectors to major intermodal terminals.
  - Identify improvements that have been made or are being planned for intermodal connections and identify impediments to making improvements to them.
  - Identify other non-highway infrastructure, regulatory, institutional, and operational impediments to intermodal terminal access.

Impact of Global Shipping Alliances

The formation (September 1994) of the "Global Alliance" by American President Lines, Orient Overseas Container Line, MOL, and Nedlloyd changed the face of container shipping and led to the formation of several competing alliances. Today, global shipping alliances are a fact of life in world trade logistics as carriers seek to reduce costs and increase their return on investment. The economic benefits that have accrued to the early shipping alliance partners have accelerated competition in the shipping trades, resulting in new alliances being organized. As shown in Table 35, it is now common to see shipping alliance partners jump from one alliance coalition to another or form new alliances for purposes of expanding their market share and protecting their capital investments.

Table 35
International Shipping Alliances

1996-97	1998-???
Grand Alliance	**Revised Grand Alliance**
P&O	P&O/Nedlloyd
Hapag-Lloyd	Hapag-Lloyd
Nippon Yusen Kaisha (NYK)	NYK
Global Alliance	**New Unnamed Alliance**
Nedlloyd	Hyundai
MOL	MOL
APL	APL/NOL
OOCL	OOCL ?
Hyundai	"K" Line
"K" Line	Yangming
Yangming	
Hanjin	Hanjin
DSR-Senator	DSR-Senator
Cho Yang	Cho Yang
Maersk/Sea-Land	Maersk/Sea-Land

Source: American Shipper: December 1997

An alliance is a consortium or a sharing agreement among a group of shipping lines serving similar trade areas for their mutual economic benefit. Their common goal is to integrate their vessel operations, facilities, and equipment in order to reduce operating costs. At the same time, they maintain their own individual marketing capability to compete for containerized cargo in the marketplace. As a result alliance members can: 1) expand and improve service; 2) minimize investment costs and risk; and 3) reduce current competition among alliance partners and within the trade.

In addition to the benefits from vessel sharing, alliance members recognize that joint terminal usage is a potential area for significant savings. To date, there has been little in the way of actual terminal consolidation. Among the factors affecting the alliances' ability to move in this direction are the existing long-term leases held by many of the members and the reluctance of some members to lose control over terminal facilities and operations.

Shipping alliances pose a serious challenge for the U.S. public ports. Among the possible outcomes resulting from these carrier alliances are fewer port tenants and a downward pressure on port tariffs and fees. Carrier alliances are likely to have greater leverage with ports than a single carrier in negotiating favorable tariffs, fees, financing, and services. As alliances consolidate port operations, there will be winners and losers, especially among neighboring ports. For some, it will mean the loss of alliance business as a direct port call, because another port was selected to serve a particular coastal range or, at a minimum, a reduction in cargo and vessel calls. If water feeder networks develop around the ports selected to service alliances and/or megaships, neighboring ports may offset the loss of that business by becoming a feeder port.

There will be significant adjustments for ports selected as alliance load centers. Initially, carriers will be consolidating terminal operations within the port area, which may stretch the capabilities of some facilities. For example, one west coast port developed a $90 million plan to accommodate alliance partners serving the port. The plan affected 10 carriers and five terminals. This plan was never executed because of changes within the alliance members. In time, there will be a need to expand existing facilities and/or construct new ones. The added business may lead to increases in landside congestion--highway and rail. While there are many factors, which will determine port selection, those ports with modern facilities, deep channels, good landside transportation access and large local markets will be in a stronger position to negotiate with the carrier alliances.

ENVIRONMENTAL

Issues

To be successful in the global economy, a nation must develop and maintain an integrated transportation system that is competitive, efficient, safe, and environmentally sound. One of the critical challenges confronting the U.S. port industry is meeting the growing demands and diverse needs of waterborne transportation while protecting the environmentally sensitive harbor areas in which ports operate. Protecting the environment and providing an efficient and cost-effective transportation system are critical to the economic future of the United States. Environmental concerns are an integral part of a port's daily operations and its planning process. Environmental protection is a particular concern for dredging and new terminal development, where controversies over dredged material disposal, environmental impacts, and impact mitigation have resulted in delays.

Among the principal environmental concerns affecting the port industry are: (1) dredging navigation channels and managing the disposal or beneficial use of dredged material in a timely, cost-effective, and environmentally sound manner; (2) managing the wastes generated by facilities and ships in a safe and environmentally sound manner; (3) providing prompt and

adequate response to spills of oil and hazardous substances; (4) controlling air polluting emissions from vessels and port operations; (5) preventing water pollution; (6) providing for the safe handling of hazardous cargo; (7) redeveloping old industrial properties that may be contaminated; (8) complying with wetland and endangered species regulations; and (9) dealing with the various legal, liability, and financial obligations associated with environmental regulations.

Recent Regulatory Activities

Ports must comply with environmental laws and regulations from all levels of government--Federal, state, and local. Major Federal laws affecting the port industry include:

Act to Prevent Pollution from Ships (APPA) (33 USC 1901-1911)
Asbestos Hazard Emergency Response Act (15 USC 2641-2656)
Clean Air Act (CAA) (42 USC 2071-2297)
Clean Water Act (CWA) (33 USC 1251-1387)
Coastal Zone Management Act (CZMA) (16 USC 1451-1465)
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (including the Superfund Amendments and Reauthorization Act of 1986) (42 USC 9601-9675)
Emergency Planning and Community-Right-To-Know Act (EPCRA) (42 USC 11001-11050)
Endangered Species Act (ESA) (16 USC 1531-1543)
Federal Insecticide, Fungicide and Rodenticide Act (7 USC 1362-1364)
Fish and Wildlife Coordination Act (FWCA) (16 USC 661-666c)
Marine Protection Research and Sanctuaries Act (MPRSA) (33 USC 1402-1445)
Medical Waste Tracking Act (42 USC 6903)
National Environmental Policy Act (NEPA) (42 USC 4321-4370d)
Nonindigenous Aquatic Nuisance Prevention and Control Act (16 USC 4701-4751)
Occupational Safety and Health Act of 1970 (OSHA) (29 USC 651-678)
Oil Pollution Act of 1990 (OPA) (42 USC 2701-2761)
Pollution Prevention Act of 1990 (42 USC 13101-13109)
Ports and Waterways Safety Act (PWSA) (33 USC 1221-1232)
Resource Conservation and Recovery Act (RCRA) (42 USC 6901-6992k)
Rivers and Harbors Act (RHA) (33 USC 407-426p)
Toxic Substances Control Act (15 USC 2601-2629)
Water Resources Development Acts (WRDAs) (Biennial)

Among recent Federal rulemakings, published in the Federal Register (FR), of particular interest to ports and shipping are:

- On January 12, 1996 (61 FR 1051), and February 29, 1996 (61 FR 7889), the Coast Guard (USCG), U.S. Department of Transportation, issued rules adopting with some changes, as final, the interim final rules that establish regulations requiring vessel and facility response plans in order to minimize the environmental impact of spilled oil.

- On April 12, 1996 (61 FR 16289), the U.S. Environmental Protection Agency (EPA) published a final rule concerning the control of international movements of wastes destined for recovery operations.

- On May 23, 1996 (61 FR 25983), the USCG issued a final rule that modifies its regulations for both inspected and uninspected commercial vessels by removing or revising obsolete and unnecessary provisions and incorporating industry standards and practices.

- On June 20, 1996 (61 FR 31667), the EPA promulgated regulations under the Clean Air Act to prevent accidental releases of regulated substances and reduce the severity of those releases that do occur.

- On July 3, 1996 (61 FR 35063), the USCG issued a final rule that requires that towing vessels carry and properly use navigation safety equipment.

- On July 18, 1996 (61 FR 37648), the USCG issued an interim final rule for the security of passenger vessels and passenger terminals.

- On September 30, 1996 (61 FR 51195), the EPA issued a final rule clarifying portions of the Agency's ocean dumping regulations regarding the number of species to be used in bioassay testing of the solid phase.

- On March 17, 1997 (62 FR 12539), the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, issued a final rule that amends its ocean and coastal resource management regulations.

- On May 6, 1997 (62 FR 24689), the Research and Special Programs Administration (RSPA), U.S. Department of Transportation, issued a final rule that amends the Hazardous Materials Regulations to maintain alignment with corresponding provisions of international standards.

- On May 8, 1997 (62 FR 25115), the USCG issued final regulations that set qualifications for tankermen, and for persons in charge of, and assisting in, the handling, transfer, and transport of oil and certain hazardous liquid cargoes in bulk on board vessels.

- On July 18, 1997 (62 FR 38651), the EPA issued final rules to revise the national ambient air quality standards for particulate matter and for ozone.

- On July 25, 1997 (62 FR 40141), the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, issued a final rule that revises its safety and health regulations for longshoring and those parallel sections of its marine terminals standard.

- On December 24, 1997 (62 FR 67491), the USCG published a final rule concerning implementation of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management (ISM) Code).

Ports recognize the need to deal with environmental issues in a timely fashion and have developed strategies to address potential delays and costs associated with environmental regulations. They understand the need to develop long-term plans to meet environmental concerns. Recognizing the need to identify environmental implications from the outset, the industry is proactively working with regulators and interest groups to improve the permit process, to clarify rules, and to develop consistent standards. Ports, various stakeholders, and regulatory agencies are working in a more cooperative framework in the search for solutions to complex problems that affect the Nation's environment, economic growth, and transportation services.

DREDGING AND DREDGED MATERIAL DISPOSAL

One of the primary goals of the U.S. transportation system is to facilitate the safe and secure movement of people and cargo in domestic and international waterborne commerce in order to promote the Nation's economic growth and international competitiveness in a safe and healthy environment. To accomplish this, the Nation's ports and harbors need to be maintained and improved. However, the continued development and maintenance of U.S. ports has become an increasing challenge, particularly in the area of dredging and dredged material management. The past three decades have witnessed increasing environmental awareness and mounting environmental problems affecting coastal areas and ocean waters. During the same time, increasing world trade and rapid evolution of shipping practices and technology, including containerization and intermodalism, have increased the need for port and harbor development.

Besides being the gateways for domestic and international trade, ports also play an important role in U.S. national security by handling essential cargoes for military operations. The critical role of the U.S. ports makes it essential that harbors and channels be maintained and improved. Since most of the Nation's harbors and channels are not naturally deep enough to accommodate modern vessels, dredging becomes essential. The maintenance and improvement process becomes more difficult because ports are located in or near some of the Nation's most environmentally sensitive areas such as valuable wetlands, estuaries, and associated fisheries.

Dredging and Disposal of Dredged Materials

The United States Army Corps of Engineers (Corps) is the Federal agency responsible for managing the program that directs dredging and disposal of dredged material from Congressionally-authorized navigation improvement and maintenance projects. Appendix J provides a summary of the Corps annual dredging program in terms of cost and volume of dredged material. Over the last several years, the Corps has dredged 275 million cubic yards (mcy) annually using its own and private industry dredgers at an annual cost of $440 million. In addition, permit applicants (e.g., port authorities, terminal owners, industries, and private individuals) dredge an additional 100 mcy annually for navigation projects (i.e., ports, berths, and marinas). The Corps reviews projects and issues permits for dredging and dredged material disposal in accordance with the Rivers and Harbors Act (RHA), the Clean Water Act (CWA), and the Marine Protection Research and Sanctuaries Act (MPRSA). Under the CWA and MPRSA, the Environmental Protection Agency is responsible for developing, in cooperation with the Corps, the environmental criteria used by the Corps to evaluate proposed discharges of dredged material and for providing environmental oversight. Several other project development and environmental compliance statutes, regulations, and policies at the Federal, state, and local level also apply to typical dredging projects. When dredged sediments are disposed of in ocean, inland, or near-coastal waters, a Corps permit is required. For the dumping of dredged material in the ocean, including the territorial sea, the applicable statutory provision is Section 103 of the MPRSA. If the discharge is in waters of the United States, excluding the territorial sea, then Section 404 of the CWA is the applicable provision.

Ideally, dredging permit applicants submit complete and technically adequate project applications to the Corps and other review agencies for prompt review and decision. Dredged material testing results provide information to assess the environmental impacts of dredged material disposal at the proposed disposal site and to evaluate the risks and uncertainties associated with the proposed project. Information is then shared readily among all relevant stakeholders, from Federal and state agencies to the general public, and Congress expeditiously reviews, authorizes, and funds essential new Federal navigation projects. However, for a broad range of reasons, dredging projects can become stalled in the review process. The problems which slow down the dredging process can be categorized into the following areas: planning, the project review process, scientific uncertainties, and inconsistent funding allocations.

In some coastal ports, the main concern is the presence of contaminated sediments and the lack or shortage of disposal capacity for contaminated dredged materials. Historically, contaminated sediments accounted for about 5 percent of the annual volume of dredged material. As a result of new testing requirements, the volume of sediments classified as contaminated has increased. Uncertainties related to implementation of these revised testing protocols coupled with the shortage or lack of disposal options have contributed to delays in dredging harbors and channels.

Dredging Harbors and Channels and Protecting the Environment

Issues that complicate disposal of dredged material include: (1) inadequate planning by Federal, state, and local entities; (2) insufficient information exchange and coordination among all involved stakeholders; and (3) uncertainties regarding the scientific ability to evaluate risks to human and ecological health associated with dredged material and the disposal alternatives (e.g., open ocean disposal, confined disposal along shorelines, contained aquatic disposal, treatment processes (chemical, physical, biological, and thermal), landfills, and beneficial uses). It should be recognized, however, that timely and effective dredging and dredged material disposal are possible, while assuring protection of ecological resources and human health. The importance of navigational dredging must be acknowledged and understood, as should the environmental concerns and scientific uncertainties associated with dredging. In addition, as many ports are publicly-owned state or local entities with limited budgets to support dredging activities, economic issues must also be resolved.

The National Dredging Team (NDT) was established in 1995 to facilitate communication, coordination, and resolution of dredging issues among participating Federal agencies and to assure that dredging of U.S. harbors and channels is conducted in a timely and cost-effective manner, while ensuring environmental protection. It seeks to promote national and regional consistency on dredging issues and to provide a forum for conflict resolution and information exchange. The NDT serves as a forum for promoting implementation of the National Dredging Policy (Figure 5) and the 18 recommendations for improving the dredging process that were published in the December 1994 *Report to the Secretary of Transportation: The Dredging Process in the United States: An Action Plan for Improvement*[17]. The NDT is co-chaired by the EPA and the Corps, and includes the U.S. Fish and Wildlife Service, the U.S. Maritime Administration, and the U.S. National Oceanic and Atmospheric Administration (the Office of Ocean and Coastal Resource Management and the National Marine Fisheries Service). Regional Dredging Teams (RDTs) have been created around the country to provide forums for local and regional issue resolution, to foster information exchange with stakeholders, and to provide liaison with Local Planning Groups. Appendix K provides an example of how a Regional Dredging Team addresses local concerns.

Other major initiatives for achieving timely and effective dredging and dredged material management, while protecting the environment, include:

- Dredged material management planning (DMMP) has been initiated using a consensus-based approach to develop long-term plans for environmentally sound and cost-effective management of dredged material. Stakeholders, e.g., port authorities, government officials, natural resource agencies, public interest and environmental groups, the scientific

[17] This report can be found on the internet at http://www.epa.gov/owow/oceans/ndt/report.html.

research community, recreational marine interests, shipping and business interests, and private citizens, are invited to work together in Local Planning Groups, co-chaired by the Corps with port authorities or states, to develop the plans. The Local Planning Groups use a watershed approach in developing their plans, since much of the contamination found in dredged sediments comes from sources of pollution located far from the affected ports and harbors. Watershed planning to reduce contamination and sediments entering waterways will reduce the need for port and harbor dredging and the amounts of contaminated sediments that are encountered when dredging is required.

- Scientific uncertainties in evaluation of risks of dredged material disposal are being recognized and addressed. To protect human and ecological health, dredged materials are tested under a strict regime jointly developed by the EPA and the Corps to identify potential contaminants and risks. While the required tests take the complexities of sediment chemistry and toxicity and the environmental conditions specific to each disposal site into account, uncertainties in scientific evaluations will always exist. Additional efforts to reduce these uncertainties include development of additional sediment toxicity testing methods and a biological effects data base for bioaccumulative contaminants, and a comprehensive review, conducted by the EPA and Corps, of the dredged material testing requirements to ensure that they reflect sound science and sound policy. Improving the understanding of the science involved in dredged material management is important because this information assists risk managers in making practicable decisions that protect ecological resources and human health.

- Technological advances are being pursued. Many promising and improved technologies and management techniques are emerging to improve disposal and management of contaminated dredged materials, including capping/contained aquatic disposal, the use of geotextile bags, confined disposal facilities, and treatment/decontamination processes.

- Port and harbor management practices are being reviewed. Although port and port-related harbor activities contribute relatively little to sediment contamination (compared to upstream sources), there is a joint industry-Federal government initiative underway by the American Association of Port Authorities and the EPA to identify best management practices for ports to ensure that problems are addressed before they become pollution sources.

- Dredged material is a resource that can be used beneficially. Beneficial use of dredged material can offer tremendous opportunities and is becoming a popular alternative to traditional disposal methods. Beneficial uses include beach nourishment; creation or restoration of marshes and wetlands; creation of islands that serve as habitat for birds, fish, shellfish, and other marine life; and fill for industrial and urban development. While usually costing more than traditional disposal methods, these beneficial uses offer many environmentally and economically beneficial ways to address the continuing need for

placement of dredged material. Key to further increasing the opportunities for beneficial use is public and private recognition and acceptance of these potential opportunities.

Figure 5

National Dredging Policy

- A network of ports and harbors is essential to the United States' economy, affecting its competitiveness in world trade and national security. Port facilities serve as a key link in the intermodal transportation chain and can realize their full potential as magnets for shipping and commerce only if dredging occurs in a timely and cost-effective manner.

- The nation's coastal, ocean, and freshwater resources are critical assets which must be protected, conserved, and restored. These resources are equally important to the United States by providing numerous economic and environmental benefits.

- Consistent and integrated application of existing environmental statutes can protect the environment and can allow for sustainable economic growth.

- Close coordination and planning at all governmental levels, and with all aspects of the private sector, are essential to developing and maintaining the nation's ports and harbors in a manner that will increase economic growth and protect, conserve, and restore coastal resources.

- Planning for the development and maintenance of the nation's ports and harbors should occur in the context of broad transportation and environmental planning efforts such as the National Transportation System and the ecosystem/watershed management approach.

- The regulatory process must be timely, efficient, and predictable, to the maximum extent possible.

- Advanced dredged material management planning must be conducted on a port or regional scale by a partnership that includes the Federal government, the port authorities, state and local governments, natural resource agencies, public interest groups, the maritime industry, and private citizens. To be effective, this planning must be done prior to individual Federal or non-Federal dredging project proponents seeking individual project approval.

- Dredged material managers must become more involved in watershed planning to emphasize the importance of point and non-point source pollution controls to reduce harbor sediment contamination.

- Dredged material is a resource, and environmentally-sound beneficial use of dredged material for such projects as wetlands creation, beach nourishment, and development projects must be encouraged.

WATER RESOURCES DEVELOPMENT AND FEDERAL USER CHARGES

Water Resources Development Legislation

On October 12, 1996, President Clinton signed into law the Water Resources Development Act of 1996 (Pub. L. 104-303). The passage of this law reestablished the biennial process begun in 1986 for enacting legislation authorizing water resource projects.

The 1996 Act authorized 12 new navigation projects[18]: ten deep-draft and two shallow-draft. The specific projects and their costs are contained in Appendix L. The authorized expenditures for these 12 projects amounted to $1.38 billion. The ten deep-draft projects accounted for $758.3 million with Federal funding representing 63.8 percent. The funding for the $622.7 million in shallow-draft projects is split 50 percent from Federal general funds and 50 percent from the Inland Waterway Trust Fund. Under the Act, dredged material disposal facilities for operations and maintenance (O&M) will now be considered a general navigation feature and cost shared in accordance with Title I of 1986 Water Resources Development Act (WRDA 86) (Pub. L. 99-662).

Status of Water Resource Trust Funds

The following series of tables provides the financial status of the two water resource trust funds. Table 36 presents a summary of the Harbor Maintenance Fee collections by

Table 36
Harbor Maintenance Fee and Trust Fund Collections by Source
FY 1992 through FY 1997
(Thousands of Dollars)

Source	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Imports	$342,402	$361,678	$391,679	$418,858	$409,708	$434,037
Exports	142,916	169,141	168,241	214,821	209,217	214,017
Foreign Trade Zones	16,974	20,959	21,895	14,548	27,982	48,976
Domestic	28,451	31,858	34,558	20,241	26,788	34,516
Passenger	3,275	4,748	4,811	2,792	3,179	3,988
Net Collections	$534,018	$588,384	$621,184	$671,260	$676,874	$735,534

Source: Office of Inspection and Control, U.S. Customs Service, Department of the Treasury
Note: HMF collections will differ from deposits into the HMTF due to reporting time and estimating error.

[18] There were an additional six navigation projects conditionally authorized contingent upon successful completion of Corps of Engineers final report by December 31, 1996.

source for fiscal years 1992 through 1997. Imports continue to represent the largest source of revenue for the Harbor Maintenance Trust Fund (HMTF). For FY 1997, import fees accounted for 59 percent of the annual collections with exports at 29.1 percent and domestic trade with 4.7 percent.

Table 37 provides a summary of the Harbor Maintenance Trust Fund revenue and transfer activity over the last 6 fiscal years. For FY 1997, the trust fund received $735.5 million from the Harbor Maintenance Fee (HMF), an increase of 8.7 percent over FY 1996. The expenditures for dredging purposes totaled $546.3 million--up 11.1 percent--leaving a balance in the trust fund of $1.1 billion, an increase of $240.2 million.

Table 37
Harbor Maintenance Trust Fund for FY 1992 - FY 1997
Revenues and Transfers
(Thousands of Dollars)

	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
Beginning Balance:	$72,795	$120,931	$303,277	$451,385	$621,194	$866,063
Revenues:						
Harbor Maintenance Fee	$505,827	$628,462	$622,253	$670,532	$698,267	$735,534
Toll Receipts	8,733	8,739	11,112	173	-	-
Interest[1]	16,520	13,521	12,826	30,186	40,870	53,632
Net Revenues	$531,080	$650,722	$646,191	$700,891	$739,137	$789,166
Net Available:	$603,875	$771,653	$949,468	$1,152,276	$1,360,331	$1,655,230
Transfers:						
Corps of Engineers	$462,229	$446,434	$476,620	$519,196	$482,126	$535,987
St. Lawrence Seaway	10,950	13,584	10,765	10,193	9,539	10,322
SLS Toll Rebates	9,565	8,074	9,546	1,512	-	-
Dept. of Transportation	16	160	175	181	169	193
Administrative Costs	184	124	-	-	3,000	3,000
Net Expenditures:	$482,944	$468,376	$497,106	$531,082	$494,834	$549,502
Surplus/Deficit	$120,931	$303,277	$452,362	$621,194	$865,497	$1,105,728

Source: Funds Accounting Branch, Financial Management Service, Department of the Treasury
1- Does not include $1.5 million (in FY 97) of "Interest Income-Discount which is not available for obligation.

Table 38 represents the FY 1997 income statement for the Inland Waterway Trust Fund. The trust fund is funded by the proceeds from a tax on fuel used in commercial transportation on the inland waterways. The fuel tax was increased to 20 cents per gallon in 1995, which is the maximum tax rate called for when the tax schedule was amended by WRDA 86. During FY 1997, the trust fund received over $113 million from the fuel tax and investment interest and transferred approximately $89 million to the Corps for project improvements. The balance in the trust fund at the end of FY 1997 was $304.5 million.

Table 38
Inland Waterway Trust Fund - FY 1997
(Thousands of Dollars)

RECEIPTS:	
Excise Taxes	$96,420
Interest on Investments	18,474
Interest on Investments - Accrued	(1,441)
TOTAL RECEIPTS:	$113,453
NONEXPENDITURE TRANSFERS:	
Transfers to Corps of Engineers	($89,453)
NET INCREASE/(DECREASE)	$24,000

Source: U.S. Army Corps of Engineers

Table 39 identifies the specific waterway projects--new construction and major rehabilitation--for which the Corps expended funds during fiscal year 1997. For each project, the table shows the amount of trust fund expended in FY 1997 and the total allocated through FY 1996. The table also includes the total project cost, which is financed equally from the trust fund and general revenues.

Table 39
Inland Waterway Trust Fund
Corps of Engineers Project Disbursements for FY 1997
(Millions of Dollars)

Authorized Projects	Allocation Through FY 1996	Allocation For FY 1997	Total Cost (Est.)
Construction Projects			
Olmsted Lock & Dam - IL & KY	$86.2	$35.5	$1,020.0
Kentucky Lock & Dam - KY	3.3	1.3	533.0
McAlpine Locks & Dams - KY & IN	4.9	2.0	268.0
Grays Landing Lock & Dam - PA	86.9	0.1	181.0
Monongahela River Locks & Dams 2,3,4 - PA	13.1	8.1	695.0
GIWW, Sargent Beach, TX	17.2	8.6	58.8
Marmet Locks & Dam, WV	4.0	1.0	282.2
Robert C. Byrd Locks & Dam, WV & OH	159.8	10.3	373.0
Winfield Lock & Dam, WV	86.2	14.6	221.6
Sub-Total	$461.6	$81.5	$3,632.6
Major Rehabilitation Projects			
Lock & Dam 14, Mississippi River, IA	$0.4	$1.2	$20.9
Lock & Dam 24, Mississippi River, IL & MO	0.4	1.4	25.7
Lock & Dam 25, Mississippi River, IL & MO	2.8	1.6	22.9
Lock & Dam 3, Mississippi River, MN	0.0	0.0	12.4
Sub-Total	$3.6	$4.2	$81.9
Total	$465.2	$85.7	$3,714.5

Source: U.S. Army Corps of Engineers

Harbor Maintenance Fee on Exports Ruled Unconstitutional by the U.S. Supreme Court

On March 31, 1998, the Supreme Court, in a unanimous decision, ruled that the harbor maintenance fee (HMF) was an unconstitutional tax on exports (United States Shoe Corp. v. United States, -U.S.-,118 S.Ct. 683 (1998). The decision came after oral arguments were heard on March 4. In its opinion, the Court held, "that the tax, which is imposed on an ad valorem basis, is not a fair approximation of services, facilities, or benefits furnished to exporters, and therefore does not qualify as a permissible user fee."

This ruling will result in refunds to exporters of the fees paid. The issue concerning the number years eligible for the refund is before the U.S. Court of International Trade. At a minimum, these refunds could total several hundred million dollars. Another consequence of this decision could lead to a challenge of the fee on imports under the General Agreement on Tariffs and Trade (GATT). A tax or fee, which is applied to only exports or imports, can be considered as discriminatory with respect to the GATT. Based on past experience, if the application of the HMF were limited to just the domestic traffic, the annual HMTF revenues would decrease by approximately 90 percent.

The Supreme Court's action was a result of a case brought before the U.S. Court of International Trade (CIT) by an exporter, United States Shoe. On October 25, 1995, the CIT agreed with shippers (United States Shoe Corp. v. U. S., 907 F. Supp. 408 (Ct. Int'l Trade 1995)) that the harbor maintenance fee as applied to exports is unconstitutional. The trade court concluded that the fee violated the Constitution's "Export Clause," which bans taxes or duties on any U.S. exports. The court rejected the government's argument that the HMF was a user charge and not a tax. In its ruling, the court indicated that, to be constitutional, the main purpose of the underlying law should be regulation and the revenue raised should be to only to recover the cost of services provided. Specifically, the ad valorem basis of the HMF is not a "fair approximation" of the benefits received. For example, large deep-draft bulk carriers could benefit more but pay less than smaller vessels carrying high valued cargo. Further, the fact that the trust fund has been running a surplus was an indication that the HMF was imposed to raise revenue.

The Justice Department filed (February 1, 1997) a notice of appeal to the U.S. Court of International Trade decision before the U.S. Court of Appeals for the Federal Circuit. On June 3, 1997, in a 5-1 decision, the U.S. Court of Appeals upheld the CIT ruling that the HMF on exports was unconstitutional (United States Shoe Corp. v. United States, 114 F.3d 1564 (Fed. Cir. 1997)). This decision was appealed to the Supreme Court, as discussed above.

The U.S. port industry is concerned over the court decision because of the impact it will have on the funding mechanism for operations and maintenance dredging of Federal navigation channels at public ports. The American Association of Port Authorities "urges that legislation be enacted as soon as possible to establish an alternative funding mechanism for maintaining our Federal navigation channels. It's critical to our Nation's competitiveness that there be no lapse in funding for channel maintenance."

The Administration believes that a healthy port system plays an important role in ensuring a strong national economy. A number of alternative financing mechanisms for operations and maintenance activities are being studied. The general structure of the fee will continue to have the users be responsible for the costs of maintaining the system. The replacement fee will be

formulated on a nationwide basis that does not significantly alter the existing competitive balance among U.S. ports. In addition to the existing activities funded by the Harbor Maintenance Trust Fund, the Administration believes that the fee should support the Federal share of Corps of Engineer's construction activities for port and harbor deepening projects. The inclusion of the Corps' construction projects recognizes that a competitive port system requires an adequate investment in new construction.

The Administration also supports establishing a clear link between the amount of Federal revenue collected annually from the replacement fee and the amount of annual appropriations. To address these budgetary issues, the Administration proposes to allow the new user-fee receipts to be available to finance appropriated spending without affecting the overall budget picture--including Pay-As-You-GO and spending caps. Under this favorable budgetary arrangement, Congress would be able to appropriate in a fiscal year an amount up to the total level of annual receipts without affecting the discretionary caps.

INTERMODAL TRANSPORTATION ACCESS

The Nation's economy, international competitiveness, and national security are becoming more dependent on the effectiveness of our intermodal transportation system. The benefits of an integrated intermodal system can only be achieved by cost effectively linking the various modes of transportation. Good intermodal access is a vital aspect for the continued development of U.S. ports. Today, U.S. ports are focusing on adequate waterside and landside transportation infrastructure as a prerequisite to support the growing demand in freight transportation. In addition, ports are exploring further development into information and technology infrastructure. This is considered necessary as U.S. ports of the future will also play a greater role as centers for information and data communication flows.

Landside Access

Landside access is a major challenge that most U.S. ports face. Intermodal connections between the transportation modes are typically the weakest links in the Nation's transportation system. U.S. ports and terminals, as the land/water transportation interface, are the pivotal links for the movement of our Nation's international trade. Ninety-five percent of overseas international trade, by volume, passes through the U.S. ports. Between 1970 and 1995, U.S. international waterborne freight nearly doubled. In 1996, U.S. ports handled nearly 1.1 billion tons of freight at a value of $625.6 billion. It is forecasted that international waterborne freight volume will triple by year 2020. This unprecedented growth in international freight poses an enormous challenge for U.S. ports and their landside access connections. The Ports of Long Beach and Los Angeles handle 20,000 truck and 30 train movements per day. By 2020, these figures are projected to grow to 50,000 trucks and 100

trains. The $1.8 billion Alameda Corridor project is designed accommodate this growth by consolidating rail movements into a high-speed rail corridor with adjacent highway improvements. The movement of international freight in today's trading environment requires a competitive logistics system that emphasizes quality service and total cost. The importance of such a system lies in the strategic value of its operation, in which freight moves through an integrated origin-to-destination "pipeline" that supports Just-In-Time production, reduces inventory levels, and decreases warehousing needs. Inefficiencies at any point in the pipeline can disrupt the total system, resulting in reduced productivity and profitability for transport providers and, ultimately, added costs for shippers and consumers. This point is best illustrated by last fall's situation in Southern California, when peak holiday cargo flows and a port labor shortage were coupled with Union Pacific's merger problems and railcar shortages leading to near gridlock and extension cargo delays. Issues of landside access have proven to be problematic for ports and terminals of all types, but are particularly acute for those handling cargoes that move intermodally.

Landside Access Impediments

Landside access is often impeded by inadequate highway and rail access from the port or marine terminal to the distribution centers. Improving landside access is, however, restrained partly due to limited planning and funding. A key to landside access improvements was the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Pub. L. 102-240). Under ISTEA, Metropolitan Planning Organizations (MPOs) and state departments of transportation follow mandatory planning considerations and evaluate projects to meet particular transportation needs. The MPO is responsible for developing a final set of approved projects based upon the needs of the local community, both commercial and public. While landside access improvements have been gaining planning and funding considerations at the local level, ports believe additional priority and funding must be given to freight access improvements. At the national level, the Federal government, through the U.S. Department of Transportation (USDOT), has strengthened policy provisions by instituting the National Freight Transportation Policy and the reauthorization of ISTEA. Additionally, a number of comprehensive studies have been initiated to call the attention to the critical issue of landside access to U.S. ports and terminals and encourage strategies that would assist in improving accessibility issues.

In 1991, the Maritime Administration led a nationwide USDOT investigation of landside access to ports and marine terminals. This study revealed that frequently, the final few miles of rail and road nearest to the port or terminal cause major delays. The final report, titled "Landside Access to U.S. Ports," examined access impediments in four categories, including infrastructure, land use, environmental, and institutional. Table 40, taken from the final report, profiles access impediments identified by deep draft coastal ports in a 1991 American Association of Port Authorities survey.

The 1991 survey identified three key infrastructure inadequacies faced by ports and marine terminals. They were: (1) traffic congestion on major truck routes surfaced as the major infrastructure problem identified by half of the respondents and nearly two-thirds of container ports; (2) at-grade rail crossings were identified by approximately half of the respondents as major access impediments; and, (3) bridge and tunnel clearances were identified by one-third of the container ports as insufficient to accommodate growing double-stack train services.

Table 40
Landside Access Impediments - 1991 Survey

Impediment	Container Ports (25 Ports)		All Ports (54 Ports)	
	Number	Percent	Number	Percent
Truck routes usually or always congested	16	64	27	50
Numerous at-grade rail-highway crossings	14	56	25	46
Inadequate clearances for high-cube double stacks	9	36	12	22
Competition increasing for available land	21	84	40	74
Restricted access improvements due to lack of land	11	44	17	31
Regulations restrict truck or rail operations	4	16	5	9
Access improvements impeded by wetland regulations				
Usually or always	6	24	11	20
Sometimes	8	32	16	30
State DOT coordination with port				
Usually or always	10	40	22	41
Sometimes	9	36	13	24
Rarely or never	5	20	10	19

Source: AAPA 1991 Survey Results from Transportation Research Board's 1993 Report on "Landside Access To U.S. Ports"

In 1997, as the reauthorization process of the ISTEA was in progress, MARAD initiated an effort to update the status of landside access to U.S. ports and marine terminals. As in 1991, AAPA surveyed its member ports. The focal point this time was the status of physical infrastructure impediments that still linger in the Nation's ports and marine terminals. A summary of the results is presented in Table 41.

MARAD analyzed the responses from 58 ports, including 31 container ports, and identified the following key infrastructure impediments: (1) over half of all respondents including the container ports identified traffic impediments on local truck routes as the major infrastructure problem ; (2) half of all respondents experience limited availability and location of turning lanes and multiple access routes; (3) half of all container ports lack near dock rail terminals that would ease transfer of containers from rail to vessel; and, (4) nearly half of container

ports and over a third of all ports reported bridge impediments pertaining to highway access and load bearing capacity.

Table 41
Updated Status on Landside Access Impediments - 1997 Survey

Impediment	Container Ports (31 Ports)		All Ports (58 Ports)	
	Number	Percent	Number	Percent
Road Access:				
Interstate	10	32	17	29
State	12	39	27	47
Local	17	55	34	59
Bridges	14	45	24	41
Rail Access:				
Bridges	11	35	18	31
Near-Dock	15	48	22	38
On-Dock	12	39	17	29
Truck Access:				
Availability & location of street signs	10	32	21	36
Turning radii	15	48	25	43
Availability & location of turning lanes	12	39	29	50
Availability & location of lanes	11	35	24	41
Availability & location of multiple access routes	12	39	29	50
Availability of designated truck routes	12	39	23	40
Existing highway weight regulations	13	42	22	38
Highway & bridge load bearing capacity	14	45	24	41

Source: AAPA 1997 Survey Results

The results of these recent surveys indicate that landside access to U.S. ports and marine terminals showed some improvement during the six-year period, from 1991 to 1997. However, there are still significant landside access impediments that persist affecting the movement of freight and ultimately the Nation's global competitiveness. Over a third of ports still experience major truck access impediments. Rail access impediments due to bridge clearances or distance from terminals still affect nearly a third of all survey respondents. Overall, one-third of all U.S. coastal ports still experience infrastructure impediments in rail and truck access.

National Highway System Designation Act of 1995 (NHS)

The importance of major intermodal marine linkages or connections to surface transportation was recognized in the National Highway System Designation Act of 1995 (Pub. L. 104-59), signed by President Clinton on November 28, 1995. This Act directed the Secretary, not later than 180 days after the date of enactment, to submit for approval to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives modifications to the NHS. These modifications consisted of connections to major ports, airports, international border crossings, public transportation and transit facilities, interstate bus terminals, and rail and other intermodal transportation facilities. The Act also established interim eligibility for improvements to proposed connections with NHS funds if they are consistent with the criteria being used for identifying connections for submission to Congress. These interim guidelines will remain in effect until Congress approves the connection modifications and additions.

On May 24, 1996, the Secretary of Transportation forwarded to Congress for approval the Department's recommendations on the NHS connections to major intermodal terminals. They were developed in consultation with the USDOT operating administrations, State transportation agencies, national organizations, and public interest groups. The identification process was based on criteria with two major components, i.e., volumes or activity levels by terminal type and a more subjective approach relative to the importance of the terminal to the State. The package submitted to Congress identified nearly 1,407 major intermodal passenger and freight terminal connections, which included links to 247 major port facilities that handle 99 percent of total waterborne cargo.

Improving highway access to major intermodal terminals became a priority objective for the Federal Highway Administration in 1998. FHWA is directing a USDOT study to evaluate the condition and performance of 1,407 terminals identified in the National Highway System. The initial focus of the study will be on the 500 freight terminals (port, rail, and pipeline facilities). MARAD's updated landside access impediments initiative complimented the study and provided background information to screen major port access impediment issues.

Transportation Equity Act for the 21st Century (TEA-21) - ISTEA Reauthorization

On June 9, 1998, President Clinton signed the $217.5 billion Transportation Equity Act for the 21st Century (Pub. L. 105-178), which authorizes highway, highway safety, transit, and other surface transportation programs for the next 6 years. TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which was the last major authorizing legislation for surface transportation. This new Act combines the continuation and improvement of current programs with new initiatives to meet the challenges of improving safety, protecting and enhancing communities and the natural

environment, and advancing America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

Within TEA-21, there are a number of programs that could potentially benefit port industry access concerns. While these programs do not earmark specific funds for port related projects, these projects may meet the program eligibility requirements. Since the decision process is driven at the local and state level, it is critical that port agencies become more involved in the local and state transportation planning processes through their metropolitan planning organizations and state DOTs.

The following highlights some of the TEA-21 programs and studies of interest to the port industry:

- Construction of Ferry Boats and Ferry Terminal Facilities (Section 1207) - authorizes $220 million over the 6-year period of the Act for construction of ferry boats and ferry terminal facilities. Of this amount, for each year from FYs 1999-2003, $10 million shall be made available to Alaska, $5 million to New Jersey, and $5 million to Washington. In addition, the Act calls for the Secretary to conduct a study of ferry transportation in the United States and its possessions. Under the transit portion of the Act (Section 3009 (g)), $14 million for FYs 1999-2003 is available to Alaska and Hawaii for ferry boats and facilities.

- The Congestion Mitigation and Air Quality Improvement Program (Section 1110) - provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available for areas that do not meet the National Ambient Air Quality Standards (nonattainment areas), as well as former nonattainment areas that are now in compliance (maintenance areas). Under ISTEA, only nonattainment areas were included in the funding formula. Further, greater weight is given to carbon monoxide nonattainment and maintenance areas.

- National Corridor Planning and Development Program (Section 1118) - establishes a program to make allocations to States and metropolitan planning organizations for coordinated planning, design, and construction of corridors of national significance, economic growth, and international or interregional trade. A State or metropolitan planning organization may apply to the Secretary for allocations under this section.

- Coordinated Border Infrastructure Program (Section 1119) - establishes a coordinated border infrastructure program under which the Secretary may make allocations to border States and metropolitan planning organizations for areas within the boundaries of one or more border States for projects to improve the safe movement of people and goods at or across the border between the United States and Canada and the border between the United States and Mexico.

- State Infrastructure Banks (Section 1511) - establishes a new State Infrastructure Bank (SIB) pilot program under which four States--California, Florida, Missouri, and Rhode Island--are authorized to enter into cooperative agreements with the Secretary to set up infrastructure revolving funds eligible to be capitalized with Federal transportation funds authorized for the FY 1998-2003 period.

  This new SIB program gives States the capacity to increase the efficiency of their transportation investment and significantly leverage Federal resources by attracting non-Federal public and private investment. The program provides greater flexibility to the States by allowing other types of project assistance in addition to the traditional reimbursable grant.

- Railroad Rehabilitation and Improvement Financing Program (Section 7203) - authorizes a new program to provide credit assistance, in the form of direct loans and loan guarantees, to public or private sponsors of intermodal and rail projects. The Act does not provide budget authority, but authorizes future appropriations and contributions from potential borrowers and other non-Federal sources to fund the credit assistance. The aggregate amount of outstanding loans and guarantees made under this program is limited to $3.5 billion, with $1 billion reserved for projects primarily benefiting freight railroads other than Class I carriers. Eligible projects include the acquisition, development, improvement, or rehabilitation of intermodal or rail equipment or facilities, including track, bridges, yards, buildings, and shops.

- The Railway-Highway Crossing Program (Section 1103 (c)(2)) - continues a program initiated in ISTEA for eliminating hazards of railway-highway crossings in certain designated high speed rail corridors. The funds will be expended on improvements in five existing corridors and six new corridors (three specified in the Act and three to be selected by the Secretary in accordance with specific criteria).

- Bridge Replacement and Rehabilitation (Section 1109) - provides funds to assist the States in their programs to replace or rehabilitate deficient highway bridges and to seismic retrofit bridges located on any public road.

- Intermodal Freight Connectors Study (Section 1106 (d)) - Not later than 2 years after the date of enactment of this Act, the Secretary shall review the condition of and improvements made, since the designation of the National Highway System, to connectors on the National Highway System that serve seaports, airports, and other intermodal freight transportation facilities, and report to Congress on the results of such review. If the Secretary determines on the basis of the review that there are impediments to improving the connectors serving intermodal facilities, the Secretary shall identify such impediments and make any appropriate recommendations as part of the Secretary's report to Congress.

- Vehicle Weight Enforcement Study (Section 1213 (h)) - Not later than 2 years after the date of enactment of this Act, the Secretary shall conduct a study of State laws (including regulations) relating to penalties for violation of State commercial motor vehicle weight laws. The purpose of the study shall be to determine the effectiveness of State penalties as a deterrent to illegally overweight trucking operations. The study shall evaluate fine structures, innovative roadside enforcement techniques, and a State's ability to penalize shippers and carriers as well as drivers and shall examine the effectiveness of administrative and judicial procedures utilized to enforce vehicle weight laws.

RELATED DEVELOPMENTS

U. S. MARINE TRANSPORTATION SYSTEM: WATERWAYS, PORTS, & THEIR INTERMODAL CONNECTIONS

The U. S. Department of Transportation in conjunction with other Federal agencies is sponsoring a series of regional listening sessions and a national conference to improve the marine portion of the national transportation system. The objective of this effort is to support a safe and environmentally sound world-class waterways system that improves our global competitiveness and national security. Marine transportation is now characterized by many diverse organizations engaged in a complex environment, often working independently and for the accomplishment of different goals. This initiative will address the future needs of the Nation by improving the coordination and cooperation among all stakeholders.

The Maritime Administration and the U. S. Coast Guard have joined efforts to bring together stakeholders, other USDOT and Federal entities, state governments, industry, and state/local port authorities. Cooperating Federal entities include the U.S. Army Corps of Engineers, Environmental Protection Agency, National Oceanic and Atmospheric Administration, Minerals Management Service, National Imagery and Mapping Agency, and the U.S. Customs Service.

During the summer of 1998, seven Federally-sponsored, two-day regional listening sessions were held to gather information[19]. The first day of each regional listening session was an open forum to receive the views and opinions from the public concerning the current state and future needs of our marine transportation system. The second day of each session was a structured focus group discussion. A representative cross section from the region's ports, terminals, stevedores, pilots, vessel operators, railroads, truckers, environmental community, and others were selected to provide their expertise on the current state and future needs of our marine transportation system. A summary from each regional listening session will be placed in the public docket and will be available for public review and comment. The regional listening sessions built upon information from other Department of Transportation led outreach activities that identified issues of significance to the marine transportation system. For example, workshops in 1997 addressed the impact of larger container ships; in 1994, outreach sessions led to an action plan to improve the dredging process in the United States; and, in 1993, port visits identified landside intermodal access impediments.

The Secretary of Transportation will host a national conference to be held in Washington, DC, on November 17-19, 1998. This conference will address key issues identified in the regional

[19] The regional sessions were held in New Orleans, Oakland, New York, Cleveland, St. Louis, Charleston, and Portland (OR).

listening sessions and other outreach efforts. The purpose of the national conference is to develop potential solutions to these problems and explore various strategies to implement these solutions.

SUPPORT OF DEFENSE INTERMODAL TRANSPORTATION

MARAD is required by law to act as the intermediary between the commercial sector and the military on container issues in connection with deployment of U.S. Armed Forces, or other national defense requirements. Under 46 CFR Part 340, the Maritime Administrator is to identify container and/or chassis suppliers that can furnish DOD with the required equipment needed for a contingency and to minimize the disruption of the commercial sector.

The commercial transportation sector invests in new equipment and technology to become more competitive and reduce overall costs. These transportation advantages can be put to use in the defense sector. With recent changes in the national defense strategy and the downsizing of the U.S. military establishment, an increased emphasis is placed on the need for a more effective deployment of forces in times of national emergency using the commercial intermodal transportation system. The benefits that the military can derive from containerization and intermodal transportation are the same as in the commercial sector: lower costs, decreased transit times, and lower rates of damage.

MARAD has increased its coordination with the commercial and military sectors to explore ways that the existing system can be used for military purposes. Programs such as the U.S. Transportation Command's Center for the Commercial Deployment of Transportation Technology (CCDoTT) are reviewing existing and emerging technologies that may be of benefit to military deployments. MARAD's Voluntary Intermodal Sealift Agreement has been established to prepare the commercial shipping industry for possible future deployment contingencies. The Cargo Handling Cooperative Program assists member companies to explore ways to increase productivity and enhance competitiveness.

DOD's vision for deployment is to use the commercial transportation system to assist it in the rapid deployment of large amounts of materiel on short notice with well-planned, maintained, and sufficient transportation facilities. New directives within the DOD reinforce the concepts of intermodalism and containerization. A recent Joint Chiefs of Staff publication entitled, *Joint Tactics, Techniques and Procedures for Use of Intermodal Containers in Joint Operations*, states "Intermodal transportation that is flexible and fast is used by the Department of Defense to prepare, deploy, support, and sustain forces assigned or committed to a theater of operations or objective area." Other directives within DOD specify minimum containerization requirements for certain military cargoes.

Cargo Handling Cooperative Program

Since its inception in 1983, the goal of the Cargo Handling Cooperative Program (CHCP) has been to increase the productivity of marine freight transportation companies through cargo handling research and development. The CHCP, conceived as a public-private partnership, was designed to foster research and technology development among U.S.-flag ocean carriers. The membership actively pursued innovative cargo handling developments to increase the productivity and cost effectiveness of cargo operations. The organization undertook initiatives that led to international recognition. This included playing a key role in two standards development efforts for automatic equipment identification. As the leader of one effort, the program organized representatives from all areas of the U.S. transportation industry and government. Drawing on input from maritime, trucking, rail, and air industries, as well as Department of Defense, port authorities, Federal and state highway departments, and vendor organizations, program members formulated standard requirements and alternatives for automatic equipment identification. In the second effort, CHCP collaborated with the technical committees and working groups of the American National Standard Institute and the International Standards Organization (ISO) on the establishment of the international standard for automatic identification of freight containers (ISO 10374). Recognition of the international standard for automatic equipment identification, and commercial acceptance and implementation of this technology in member terminals, represents ultimate success of one of the most ambitious initiatives of the program.

Other significant projects included the prototype equipment location system which effectively showed that a mobile inventory vehicle can accurately identify and locate containers and chassis to within one slot of their true positions 99.4 percent of the time. Another project, hand-held computer technology, was successfully demonstrated to allow shipside equipment-transaction data collected during vessel loading and discharge operations to be recorded and transmitted to mainframe databases in real-time. There was also a video container recognition system that was used to track tagged and non-tagged containers in and out of a marine terminal.

The new focus of the Cargo Handling Cooperative Program is industry-driven technology priorities. This focus is critical to develop a more integrated transportation system for the movement of international and domestic freight, based on advanced technologies in (1) infrastructure design, (2) seamless international transportation networks, and (3) more efficient communication and information flows. Initiatives to enhance such a transportation system should be based on a system-level approach to freight transportation from origin to destination. This allows for the development of a framework wherein segments of technologically advanced transportation networks are developed in relation to total system requirements. Key to this concept are advances in water and surface transportation technology and infrastructure requirements, including intermodal transfer points. On the terminal side, this will require advances in design and operating systems that complement advances in ship design and

operations. Surface transportation networks, in addition to infrastructure needs, will require advances in modal networks and interfaces, handling systems, communications, and information systems.

Center for the Commercial Deployment of Transportation Technology

The United States Transportation Command (USTRANSCOM), the City of Long Beach, and California State University Long Beach (CSULB) established a Memorandum of Understanding in 1995 for CSULB to operate the Center for the Commercial Deployment of Transportation Technologies (CCDoTT).

On June 20, 1997, USTRANSCOM and MARAD entered into a Memorandum of Agreement to jointly continue the CCDoTT program as a cooperative effort utilizing funds provided by DOD. USTRANSCOM and MARAD share in the technical management of the program. In addition, MARAD has the responsibility of administering the MOU of June 20. On September 4, 1997 MARAD entered into a cooperative agreement with CSULB Foundation on behalf of CCDoTT.

The purpose of CCDoTT is to improve the overall commercial/defense transportation system by combining their relevant capabilities, resources, and technologies. This is accomplished through a strong government, industry, and academic partnership. Specifically, the areas examined are: (1) ports, terminals, intermodal transfer, and intransit visibility and transportation technologies, (2) high speed sealift ship system configurations, and (3) rapid deployment technologies. These areas are consistent with the Congressional language on "...prototyping of agile port facilities operating in combination with high speed sealift and related rapid deployment technologies, and the enhancement of capabilities for cargo and personnel movement tracking and total asset visibility." CCDoTT works to increase system performance, to speed the integrated movement of commercial and military cargoes, and to enhance the U.S. global rapid response capabilities.

The program is funded on a yearly basis. Funding is broken down into individual research projects or tasks based on the innovation and scientific merit of the proposed projects. These projects are reviewed by a Working and Steering Group and recommended for approval. MARAD, USTRANSCOM and USCLB negotiate the recommended tasks. Final approval is made by USTRANSCOM and MARAD.

Freight Identification Systems - Tagging and Tracking

The use of freight identifications systems is expanding in both the private and government sectors. Imaging systems and RF (radio frequency) tag systems are in use at the modal

(terminal) interfaces. Customized systems for freight and asset management are successfully deployed for use within the terminal and during transportation between terminals and customers. The Department of Defense is testing its own freight identification system. The long term goal is to advance and thus improve the United States competitiveness by creating a seamless, intermodal freight movement system. The intermodal freight movement community is clearly at a technology crossroads. MARAD, ITS America, CCDoTT, and FHWA sponsored (June/98) a workshop to bring together leaders from the public and private sectors to collaboratively set an action agenda to address interoperability issues in intermodal freight location and identification systems. The workshop invited members from intermodal carriers, shippers, port and terminal operators, motor carriers, railroads, associations, and the Departments of Defense, Treasury, and Transportation. Industry and Government attendees discussed their current systems and future requirements for freight identification and location (containers, trailers, etc.) across the modes and international borders. The goal was to engage the attendees in a dialogue that will lead them to: (1) identify potential benefits of greater harmonization across freight communities in using freight identification technologies, (2) identify candidate projects that will help to achieve the desired benefits, (3) draft an action agenda to achieve these benefits, and (4) identify organization(s) willing to lead and actively participate in the resulting agenda initiatives. Proceedings of the workshop were published in September 1998.

INTERMODAL EDUCATIONAL INITIATIVES

MARAD, FHWA, and the Research and Special Programs Administration (RSPA) developed a proposal to pursue a more formal relationship with respect to cooperative freight transportation education and training initiatives. A primary objective of these initiatives is to expand the logistics and intermodal programs at the U.S. Merchant Marine Academy (USMMA) through coordination with the National Highway Institute (NHI) of FHWA and the University Transportation Centers Programs (UTCP) managed by RSPA. The motivations driving the proposed cooperative effort are: (1) the need for coverage of international intermodal transportation under RSPA's university program structure, (2) the expansion of NHI's coverage of logistics and intermodal freight transportation topics, (3) the current development of a logistics and transportation major at the USMMA, and (4) the broader objective of the Department to establish a national transportation education and training policy. An Interagency Working Group composed of representatives from the three agencies is investigating areas of mutual interest and cooperation. Key areas include:

Identification of Existing Courses - Both NHI and the USMMA offer courses that could be used to enhance each other's existing educational and training programs. The objective is to evaluate existing courses relevant to logistics and intermodal transportation for their potential application in the respective programs of each organization and to plan for the transfer of course materials or the development of joint program initiatives as appropriate.

Development of New Course Materials - The objective is to fill any gaps in course offerings by each organization and to expand the coverage of logistics and intermodal freight transportation within the context of the Department's National Freight Transportation Policy statement.

Enhanced Departmental Coverage of Intermodal Transportation - The primary objective is to integrate the USMMA more fully into the broader spectrum of the Department's university programs pertaining to domestic and international intermodal transportation.

Administrative and Financial Issues - The objective is to identify areas of cooperation regarding program management (e.g., course maintenance and staffing) and financial resource allocation (e.g., expenditures for travel and module software).

Joint Program Development - The long-term objective is to explore the potential of comprehensive joint programs that can be administered by either two or all three participating organizations.

MARITIME ADVANTAGE INTERMODAL INITIATIVE

The Maritime Advantage Intermodal Initiative (MAII), developed by the Maritime Administration's Central Region, seeks to integrate the region's maritime transportation community into the respective states' intermodal transportation planning process and to enhance their participation in Federal programs. A better understanding of regional transportation problems and trade opportunities will facilitate multi-state and multi-modal cooperation. Because of the MAII region's unique natural and developed maritime resources, such cooperation can be a distinct advantage in meeting the inevitable challenges posed by the expansion of domestic and international trade. For example, of the many ports located on the U.S. Gulf Coast, six rank among the Nation's top ten. In addition to the rail and highway network, these ports are linked by a highly developed inland waterway system with over 1,000 marine deep or shallow water terminals. No other combination of states has this magnitude of maritime infrastructure.

MAII will emphasize the goal of facilitating local government and planning organization initiatives aimed at coordinating economic investments in intermodal facilities that impact regional commerce. Fostering local/state/Federal partnerships to improve the delivery, efficiency, and connectivity of infrastructure investments will also be a priority.

Specifically, MAII will participate in the Latin America Trade and Transportation Study (LATTS), to increase the awareness of trade opportunities with Latin America. This participation will assist the Gulf Coast region effectively plan, invest, and develop strategies to increase their market share of this expanding trade area.

MAII has begun the Freight Interface Educational Laboratory Demonstration (FIELD) project to increase the understanding of intermodal freight by sponsoring a series of technical field tours of intermodal facilities for regional transportation planners and managers. The tours will be conducted by USDOT regional representatives.

The Federal Data Partnership program is intended to provide an opportunity for MAII state DOTs and MPOs to gain knowledge of and access to USDOT data resources by surveying their information needs and developing a program to describe these data resources.

The Inland Public Port Connectivity Inventory will conduct a comprehensive needs assessment of the region's inland ports. This effort will help to ensure that these ports are capable of meeting future waterborne commerce demands.

MAII participants include the state DOTs of Alabama, Arkansas, Florida, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas; three state maritime agencies, Federal transportation agencies, and maritime industry representatives.

NATIONAL DEFENSE - NATIONAL PORT READINESS NETWORK (NPRN)

The National Port Readiness Network was formed in 1984 and was composed of six Federal agencies involved in port activities during a military deployment. The number of agencies in the Network has grown over time and it is now composed of nine agencies. In addition to the Maritime Administration, the current members are U.S. Army Forces Command (FORSCOM), U.S. Transportation Command, U.S. Army Military Traffic Management Command, U.S. Navy Military Sealift Command, U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Atlantic Command, and Commands of the Maritime Defense Zone. MARAD is the permanent chair of the National Port Readiness Network Steering Group and the National Port Readiness Network Working Group. As Chair, MARAD has the lead in the development of new initiatives to ensure port readiness.

For the past several years, selected ports, which the military plans to use during a deployment, have been issued planning orders. These are non-binding letters of intent which provide the ports with deployment information for planning purposes. Planning orders are now issued for only a one year period in another effort to encourage communication among ports, terminal operators, and the military. The Network instituted a program of semi-annual visits to ports with planning orders to improve the deployment process. Efforts are being made to have ports participate in FORSCOM's Key Asset Protection Program.

The Network is encouraging the exchange of deployment data between the military personnel responsible for the logistics of a unit move and the unit itself. This information can be used to identify and discuss lift requirements, port capabilities, and commercial disruption impacts.

The identification of industrial property near ports which could be used as cargo staging areas is being examined as a means to alleviate potential problems associated with surge movements of military cargo through commercial port facilities. Other initiatives include increasing the emphasis and support of local Port Readiness Committees, enhancing port readiness exercises, and updating of various publications.

PORT FACILITY CONVEYANCE PROGRAM

The National Defense Authorization Act for Fiscal Year 1994 (Pub. L. 103-160) authorized the Secretary of Transportation to convey needed surplus Federal real property to non-Federal public entities without monetary compensation for use in the development or operation of a port facility. This authority was subsequently delegated to the MARAD.

The program requires MARAD to receive, evaluate, and approve applications after consultation with the Departments of Labor and Commerce and recommend assignment of surplus property to MARAD for final conveyance to an applicant. Final assignment decisions are made by a disposal agency--military service or General Services Administration. All conveyances are in perpetuity by a MARAD Quitclaim Deed which contains the terms, conditions, reservations, and restrictions of the conveyance.

MARAD is responsible for enforcing compliance with the provisions in the deed. The program is designed to create jobs, encourage economic development, and assure adequate port capacity to meet future trade and national defense needs.

MARAD has received eight applications since the inception of the program. The highlights of the applications are as follows:

- Port of Benton, Richland, WA - In September 1996, MARAD conveyed approximately 71 acres of the former Department of Energy Hanford 3000 Area to the port for development into a foreign trade zone and industrial park. The property complements the port which is located on the Columbia River.

- Oxnard Harbor District, Port Hueneme, CA - Approximately 33 acres of the former Naval Civil Engineering Laboratory were conveyed to the port in March 1997. The port is developing the property into cargo staging area, improving terminal access, and expanding cold storage facilities.

- Port of Los Angeles, Los Angeles, CA - The application to convey approximately 26 acres of the former Long Beach Naval Station located in the City of Los Angeles has been tentatively approved. The principal use of the property is to provide rail access and a

Seaside Avenue/Navy Way grade separation for cargo terminals on Terminal Island (Pier 300 and 400) and the dry bulk terminal.

- Rhode Island Economic Development Corporation, North Kingstown, RI - The application and requested assignment of approximately 259 acres of property located at the former Naval Construction Battalion Center in North Kingstown, RI, has been approved. The property will be used for industrial and maritime terminal support uses.

- Port of Long Beach, Long Beach, CA - Two applications are under review by MARAD. The port is interested in acquiring the former Long Beach Naval Station including the Navy mole. The port and the community are evaluating re-use alternatives.

- Port of Stockton, Stockton, CA - The port has requested conveyance of approximately 1,450 acres known as "Rough and Ready Island" for development into a commercial port facility using existing warehouses and facilities. The property is adjacent to the current port.

- Village of Harrisonburg, Harrisonburg, LA - The Village has requested conveyance of the former Harrisonburg Lock and Dam No. 2 for development into a port facility. The property is located on the Ouachita River.

CONRAIL ACQUISITION

CSX and Norfolk Southern (NS) announced (April 8, 1997) a $10.3 billion agreement to divide the routes and assets of Consolidated Rail Corporation (Conrail) in a transaction. On June 23, 1997, CSX, NS, and Conrail filed an application with the Surface Transportation Board (STB) jointly seeking authority for NS and CSX to acquire control of Conrail and for the subsequent division of Conrail's assets. The proposed transaction involves over 44,000 miles of rail lines and related facilities covering a large portion of the eastern United States. The applicants anticipate that the proposed transaction would provide for benefits that include: reduced energy usage, enhanced safety, reduced highway congestion, reduced system-wide air pollutant emissions, expanded competition, and a more efficient rail transportation system. In a filing in late April, CSX and NS asked the STB to review the joint application on an expedited basis, requesting a 255-day schedule. The STB adopted a 350-day procedural schedule for the proposed transaction proceeding and determined that preparation of an environmental impact statement (EIS), in accordance with the National Environmental Policy Act of 1969, was warranted in this case.[20]

[20] The draft EIS was issued by the STB in December, 1997, and the final EIS was issued on May 29, 1998.

On June 8, 1998, the STB approved the transaction[21] and adopted the Merger Team's Final Recommendations, Broad Issues.[22] A written STB decision was published on July 23, 1998. In its decision, the Board noted that the transaction, as enhanced by the conditions it is imposing, will result in a procompetitive restructuring of rail transportation throughout much of the Eastern United States.

The STB's statutory function in reviewing rail mergers is to balance the benefits of the merger against any competitive harm that cannot be mitigated by conditions. The STB found that the benefits of this merger were substantial. The transaction will create two strong competitors in the East that will provide improved rail service opportunities throughout the Northeast and South. Through the development of shared assets and joint access areas, it will bring competition back to many areas that had lost options through the creation of Conrail.

The STB has the authority to impose conditions to mitigate harm that a merger would produce. Here, the applicants themselves structured the merger so as to improve the circumstances of shippers and localities throughout the East. Additionally, the applicants responded to the concerns of many affected parties by modifying the proposal through private-sector settlements that further improved the circumstances of a number of shippers and localities.

The conditions that the STB voted to impose, while extensive, recognize the operational and competitive integrity of the proposal and the importance of preserving and promoting privately negotiated agreements. The STB's conditions require 5 years of oversight, along with substantial operational monitoring and reporting to ensure that the merger is successfully implemented; mitigation of potential adverse impacts on the environment and on safety; recognition of employee interests, including a reaffirmation of the negotiation and arbitration process as the proper way to resolve important issues relating to employee rights; and several conditions that recognize the vital role of smaller railroads and that assist regions such as New York State, New York City, and New England. As an example of the various deals and agreements which compose the transaction, New York State and New England shippers could gain new rail competition *via* a number of conditions, as NS was given trackage rights affecting service in Buffalo and Rochester, and Canadian Pacific received access from Queens to Albany (Selkirk).

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[21] *Generally, see* CSX/NS/Conrail Voting Conference, STB Chairman's Closing Statement and Vote (June 8, 1998) and Statement and Vote, Gus A. Owen, Vice-chairman, Surface Transportation Board, Finance Docket No. 33388, CSX/NS/Conrail Merger (June 8, 1998), both at *ULR://www.stb.dot.gov/newsrel.nsf*

[22] *See* Surface Transportation Board, STB Finance Docket No. 33388 - CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company --Control and Operating Leases/Agreements --Conrail Inc. and Consolidated Rail Corporation – Merger Team's Final Recommendations Broad Issues (June 8, 1998), on *ULR://www.stb.dot.gov/newsrel.nsf*

Upon Federal approval, CSX will become a 23,000 route-mile system serving 23 states, the District of Columbia, and the Canadian provinces of Ontario and Quebec. NS would enlarge its system to 20,000 route miles in 21 states.

All told, the restructuring of the rail system in the East will provide intermodal shippers with the benefits of rail competition to and within the eastern United States. The restructuring should ensure competition from two comparably sized balanced eastern railroads, and will introduce competitive services to major markets such as New York and New Jersey that critics claim have not had rail competition for more than two decades.

As to more specifics concerning the increased competition involving the New York market, currently, rail carriers other than Conrail attempt to compete in the New York intermodal market. However, they must use Conrail tracks and lack the right to build adequate terminals, which prevents them from competing effectively. The restructured eastern rail system will provide direct competitive rail service to the Port of New York and New Jersey, now served solely by Conrail.

Further, the transaction promised to bring a balanced market share for long term competitive service by two railroads similar in size, market access, and financial strength by providing competitive, owned routes between New York and Chicago, the Nation's intermodal hub. It also pledges competitive, owned routes between New York and the Southeast, as well as two rail carrier competition at the Ports of Baltimore and Philadelphia.

Another sample of an advantage to the New England market is the April 1998 agreement whereby NS and Guilford Rail System agreed on the creation of competitive new intermodal service for that area. Beginning in mid-1998, New England Thoroughbred Intermodal Service will link Guilford Rail's newly-constructed terminals at Devens Commerce Center in Ayer, Massachusetts, and at Waterville, Maine, with NS's network of 34 intermodal terminals.

Based on the anticipated benefits from the acquisition, the applicants believe that the rail improvements will encourage manufacturers and other shippers to switch from trucks to railroads, alleviating road congestion, highway maintenance spending, and taxpayer costs. Within three years of the transaction being approved, more than 1.1 million truckloads of freight per year could be diverted from eastern and mid-western highways to the rails, saving 120 million gallons of diesel fuel annually and reducing levels of toxic air emissions. For example, this could lead to a reduction of more than 12.6 million truck miles on New York highways and save the state more than $1.5 million annually in highway maintenance costs due to reduced truck traffic.[23]

[23] *Generally, see, ULR: http://www.csx.com/med/acq_pressreleases.htm*

AMERICAN HERITAGE RIVERS INITIATIVE

In his 1997 State of the Union Address, President Clinton announced the American Heritage Rivers initiative to help communities revitalize their rivers and the banks along them--the streets, the historic buildings, the natural habitats, the parks--to help celebrate their history and their heritage. According to the needs they identify, communities along these rivers will receive special assistance. American Heritage Rivers is an umbrella initiative designed to more effectively use the Federal government's many resources. Environmental, economic, and social concerns will be addressed through a plan that is designed and driven by the local community.

On July 30, 1998, President Clinton designated 14 "American Heritage Rivers" assuring that communities along these rivers will get help implementing their plans for restoring and protecting the environmental, economic, and cultural values of their rivers and riverfronts.

Vice President Gore stated that, "the message of this initiative is clear: there is nothing more powerful than water as a catalyst for economic revitalization and cultural renewal. Working together as partners, we can clean up America's rivers, create new jobs, and strengthen the communities that surround them for generations to come."

The 14 rivers designated include:

- Blackstone and Woonasquatucket Rivers (MA, RI)
- Connecticut River (CT, VT, NH, MA)
- Cuyahoga River (OH)
- Detroit River (MI)
- Hanalei River (HI)
- Hudson River (NY)
- New River (NC, VA, WV)
- Rio Grande (TX)
- Potomac River (DC, MD, PA, VA, WV)
- St. Johns River (FL)
- Upper Mississippi River (IA, IL, MN, MO, WI)
- Lower Mississippi River (LA, TN)
- Upper Susquehanna and Lackawanna Rivers (PA)
- Willamette River (OR).

The objectives of American Heritage Rivers Initiative include:

- It will focus on economic revitalization, natural resource and environmental protection, and historic and cultural preservation. Once a community is chosen, a single contact, called a "River Navigator," will be available to help citizens identify Federal assistance to

complement existing project resources, helping them achieve the goals of their self-designed plan.

- In addition to providing the River Navigator, Federal agencies will make existing field staff available to each American Heritage River to help match community needs with available resources from current programs. For example, the River Navigator could work with the community to address pollution problems, attract local entrepreneurs and small businesses, improve flood protection, protect agricultural land, and watersheds, rebuild historic docks and buildings, restore eroded stream banks, and seek out economic opportunities.

- Communities along American Heritage Rivers will receive improved access to technical and financial assistance from Federal agencies. These agencies will work with community members to make the community aware of Federal actions in the area and coordinate these activities with community goals.

ASIA-PACIFIC ECONOMIC COOPERATION (APEC) - Dredging Needs Study

MARAD, working in cooperation with the APEC Port Experts Group, is undertaking a dredging needs study of the APEC economies, including the United States. This effort will identify the major dredging issues facing APEC ports. The study is scheduled for completion by the end of 1998. MARAD is also working on a related project with the APEC Port Experts Group which will develop an Environmental Code of Practice (ECP) for APEC ports. The development of an ECP will provide a set of guidelines for best environmental protection management practices in APEC ports. The guidelines will be based on common environmental management and program practices, objectives, and elements that can be identified to assist APEC member economies in addressing the complex issues associated with port activities in estuarine environments.

1996 Waterborne Tonnage (Foreign and Domestic) by Port
(Metric Tons)

RANK	PORT NAME	TOTAL
1	South Louisiana, LA, Port of	172,195,976
2	Houston, TX	134,428,541
3	New York, NY & NJ	119,386,017
4	New Orleans, LA	75,954,979
5	Baton Rouge, LA	73,489,974
6	Corpus Christi, TX	72,991,783
7	Valdez, AK	69,958,509
8	Hampton Roads, VA	67,175,076
9	Plaquemines, LA, Port of	60,699,629
10	Long Beach, CA	52,974,997
11	Texas City, TX	51,159,289
12	Pittsburgh, PA	46,152,208
13	Mobile, AL	46,142,753
14	Tampa, FL	44,717,307
15	Lake Charles, LA	44,539,204
16	Los Angeles, CA	41,448,857
17	Baltimore, MD	39,509,826
18	Philadelphia, PA	37,994,694
19	Duluth-Superior, MN & WI	37,555,703
20	Port Arthur, TX	33,708,800
21	Beaumont, TX	32,390,961
22	St. Louis, MO & IL	27,362,277
23	Portland, OR	26,974,011
24	Pascagoula, MS	26,619,084
25	Chicago, IL	25,297,775
26	Huntington, WV	24,927,687
27	Paulsboro, NJ	22,714,448
28	Freeport, TX	22,290,275
29	Seattle, WA	21,361,176
30	Richmond, CA	19,779,017
31	Tacoma, WA	19,496,069
32	Boston, MA	18,237,927
33	Port Everglades, FL	17,142,591
34	Detroit, MI	16,876,945
35	Savannah, GA	15,964,907
36	Memphis, TN	15,694,065
37	Indiana Harbor, IN	15,324,863
38	Jacksonville, FL	15,183,266
39	Cleveland, OH	15,168,809
40	Lorain, OH	14,494,876
41	Portland, ME	13,827,965
42	San Juan, PR	13,709,506
43	Anacortes, WA	12,558,700
44	Toledo, OH	11,822,035
45	Cincinnati, OH	11,614,850
46	Marcus Hook, PA	11,218,139
47	Honolulu, HI	10,895,235
48	Galveston, TX	10,560,259
49	Oakland, CA	10,187,506
50	Charleston, SC	10,053,875
51	Two Harbors, MN	9,672,040
52	Burns Waterway Harbor, IN	8,933,793
53	Ashtabula, OH	8,639,208
54	New Castle, DE	8,506,699
55	Escanaba, MI	8,394,801
56	Matagorda Ship Channel, TX	8,302,012
57	Presque Isle, MI	8,127,404
58	Gary, IN	8,057,722
59	New Haven, CT	8,017,741
60	Louisville, KY	7,964,443
61	Barbers Point, Oahu, HI	7,933,324
62	Calcite, MI	7,864,694
63	Taconite, MN	7,627,701
64	Kalama, WA	7,459,668
65	Stoneport, MI	7,247,960
66	Providence, RI	7,078,525
67	Vancouver, WA	6,968,654
68	Wilmington, NC	6,878,105
69	Mount Vernon, IN	6,337,134
70	Albany, NY	5,232,349
71	Camden-Gloucester, NJ	5,230,129
72	Miami, FL	5,188,259
73	Conneaut, OH	5,183,991
74	Morehead City, NC	5,026,472
75	St. Clair, MI	4,922,871
76	Silver Bay, MN	4,755,984
77	Longview, WA	4,683,438
78	Port Inland, MI	4,592,801
79	Nikishka, AK	4,581,153
80	Bridgeport, CT	4,410,723
81	St. Paul, MN	4,314,335
82	Vicksburg, MS	4,289,543
83	Victoria, TX	3,947,181
84	Wilmington, DE	3,922,523
85	Marine City, MI	3,734,145
86	Everett, WA	3,635,286
87	Nashville, TN	3,427,194
88	Portsmouth, NH	3,363,977
89	Port Canaveral, FL	3,235,575
90	Sandusky, OH	3,091,995
91	Anchorage, AK	3,084,927
92	Coos Bay, OR	3,013,850
93	Port Dolomite, MI	3,010,423
94	Fall River, MA	2,885,037
95	Panama City, FL	2,833,977
96	Kansas City, MO	2,730,595
97	Port Jefferson, NY	2,710,758
98	Milwaukee, WI	2,592,930
99	Kahului, Maui, HI	2,565,329
100	Marblehead, OH	2,555,109

RANK	PORT NAME	TOTAL
101	Port Angeles, WA	2,522,034
102	Fairport Harbor, OH	2,513,139
103	Chattanooga, TN	2,465,364
104	Guntersville, AL	2,356,636
105	Greenville, MS	2,307,305
106	Chester, PA	2,179,492
107	Brownsville, TX	2,178,393
108	Alpena, MI	2,127,377
109	Palm Beach, FL	2,080,722
110	Helena, AR	2,073,485
111	Biloxi, MS	2,056,048
112	Green Bay, WI	1,974,198
113	Muskegon, MI	1,970,463
114	Gulfport, MS	1,926,552
115	Brunswick, GA	1,871,864
116	Grays Harbor, WA	1,805,358
117	San Francisco, CA	1,798,162
118	Tulsa, Port of Catoosa, OK	1,732,327
119	Olympia, WA	1,717,318
120	Buffalo, NY	1,691,216
121	San Diego, CA	1,671,062
122	Monroe, MI	1,627,785
123	Drummond Island, MI	1,525,786
124	Charlevoix, MI	1,511,239
125	Marquette, MI	1,449,787
126	Minneapolis, MN	1,421,984
127	Richmond, VA	1,360,061
128	Hilo, HI	1,307,706
129	Erie, PA	1,300,647
130	Searsport, ME	1,299,939
131	Salem, MA	1,298,874
132	Bellingham, WA	1,287,522
133	Hopewell, VA	1,265,429
134	Georgetown, SC	1,251,371
135	Pensacola, FL	1,250,975
136	Ketchikan, AK	1,216,174
137	Hempstead, NY	1,205,991
138	Weedon Island, FL	1,179,867
139	Buffington, IN	1,127,191
140	Sacramento, CA	1,124,774
141	Ludington, MI	1,122,031
142	Nawiliwili, Kauai, HI	1,091,588
143	Humboldt, CA	1,085,709
144	Stockton, CA	1,036,551
145	Marysville, MI	968,671
146	Stamford, CT	940,556
147	Bucksport, ME	933,611
148	Huron, OH	910,654
149	Redwood City, CA	893,928
150	Grand Haven, MI	880,535

RANK	PORT NAME	TOTAL
151	Kawaihae Harbor, HI	878,854
152	Port Hueneme, CA	855,121
153	Kivilina, AK	823,316
154	Penn Manor, PA	817,911
155	Seward, AK	795,731
156	Trenton, NJ	764,044
157	Charlotte, FL	755,822
158	Ponce, PR	723,481
159	Kodiak, AK	695,104
160	Washington, DC	677,406
161	Klawock, AK	636,116
162	Skagway, AK	589,694
163	Fernandina Beach, FL	588,130
164	Rosedale, MS	535,425
165	New London, CT	574,354
166	Orange, TX	558,638
167	Natchez, MS	556,050
168	Port Huron, MI	526,945
169	Port Washington, WI	495,443
170	Lake Providence, LA	480,451
171	New Bedford, MA	468,437
172	St. Thomas, VI	464,668
173	Oswego, NY	463,190
174	Alabaster, MI	450,495
175	Norwalk, CT	448,682
176	Waukegan, IL	425,858
177	Juneau, AK	421,997
178	Port Gypsum, MI	421,369
179	Port Townsend, WA	421,195
180	Manistee, MI	417,722
181	St. Joseph, MI	405,404
182	Holland, MI	369,259
183	Dunkirk, NY	360,845
184	Homer, AK	360,410
185	Mayaguez, PR	358,515
186	Kelleys Island, OH	336,877
187	Madison Parish, LA, Port of	316,003
188	Astoria, OR	293,510
189	Manitowoc, WI	282,907
190	Traverse City, MI	269,456
191	Christiansted, St Croix, VI	269,090
192	Fajardo, PR	267,321
193	Cheboygan, MI	249,987
194	Metlakatla, AK	243,705
195	Ellwood, CA	236,722
196	Ontonagon, MI	228,809
197	Hoonah, AK	218,119
198	Tarrytown, NY	210,917
199	Knoxville, TN	203,083
200	Whittier, AK	196,185

RANK	PORT NAME	TOTAL
201	Eastport, ME	189,015
202	Guanica, PR	187,809
203	Kaunakakai, Molokai, HI	185,604
204	Newport, RI	174,943
205	Menominee, MI & WI	173,021
206	Pearl Harbor, Oahu, HI	171,345
207	Bethel, AK	166,779
208	Hydaburgm AK	165,397
209	Rochester, NY	151,362
210	Ogdensburg, NY	150,437
211	Sabine Pass, TX	122,576
212	Fort Pierce, FL	119,102
213	Cape Charles, VA	116,680
214	St. Joe Harbor, FL	104,367
215	Port Isabel, TX	103,136
216	Kaumalapau Lanai, HI	78,652
217	Vineyard Haven, MA	75,355
218	Ashland, WI	74,888
219	Port Royal, SC	71,068
220	Key West, FL	69,856
221	Gloucester, MA	67,446
222	Haines, AK	63,768
223	Nantucket, MA	63,461
224	Alexandria, VA	61,708
225	Edenton, NC	59,802
226	Kake, AK	59,072
227	Harbor Beach, MI	56,113
228	Wrangell, AK	53,328
229	Petersburg, AK	53,036
230	Sitka, AK	51,433
231	Gladstone, MI	48,687
232	Frankfort, MI	48,400
233	Beaufort, NC	41,814
234	Barrow, AK	38,507
235	Munising, MI	38,337
236	Aransas Pass, TX	35,155
237	Rondout, NY	32,339
238	False Pass, AK	32,261
239	Port Graham, AK	28,025
240	Ventura, CA	27,830
241	Northeast Harbor, ME	26,754
242	Nome, AK	24,738
243	Bayfield, WI	24,724
244	Point Hope, AK	22,877
245	Cedarville, MI	22,720
246	Craig, AK	22,422
247	Dillingham, AK	20,305
248	St. Petersburg, FL	19,946
249	Sault Ste Marie, MI	19,560
250	Wanchese, NC	19,338

RANK	PORT NAME	TOTAL
251	Arecibo, PR	18,516
252	Sturgeon Bay, WI	17,788
253	La Pointe, WI	16,151
254	Belhaven, NC	15,897
255	Cordova, AK	14,665
256	Ocean City, MD	13,161
257	Sheboygan, WI	12,413
258	Crescent City, CA	11,940
259	Humboldt, AK	11,858
260	Moss Landing, CA	11,333
261	Crisfield, MD	11,283
262	Rockland, ME	9,700
263	Northport, WI	9,441
264	Monterey Harbor, CA	9,027
265	Wainwright, AK	7,910
266	Wickford, RI	7,609
267	St. James, MI	7,411
268	Pentwater, MI	5,163
269	Santa Barbara, CA	4,899
270	King Cove, AK	4,732
271	Yakutat, AK	4,519
272	Melbourne, FL	4,323
273	Mackinac, MI	4,167
274	Stonington, ME	3,753
275	Brevig Mission, AK	3,713
276	Chatham, MA	3,439
277	Put-In-Bay, OH	3,216
278	Port Moller, AK	3,060
279	Hooper Bay, AK	3,058
280	St. Ignace, MI	3,000
281	Lahaina, Maui, HI	2,923
282	Blaine, WA	2,769
283	Neah Bay, WA	2,436
284	Morro Bay, CA	2,428
285	South Bristol, ME	2,305
286	Bodega Bay, CA	2,070
287	Hay, NY	1,983
288	Greenport, NY	1,623
289	Fort Myers Beach, FL	1,563
290	Pelican, AK	1,488
291	Cambridge, MD	1,476
292	Beverly, MA	1,458
293	Port Orford, OR	1,458
294	Seldovia, AK	1,386
295	Belfast, ME	1,328
296	Corea Harbor, ME	1,190
297	Mackinaw City, MI	1,167
298	Cedar Key, FL	1,160
299	Boothbay Harbor, ME	1,110
300	Willapa, WA	1,104

RANK	PORT NAME	TOTAL
301	Teller, AK	1,090
302	Racine, WI	1,089
303	St. Augustine, FL	1,068
304	Rockport, TX	998
305	Provincetown, MA	990
306	Carvers Harbor, ME	880
307	Tin City, AK	849
308	Pass Christian, MS	839
309	Santa Cruz, CA	813
310	Manistique, MI	805
311	Washington, MI	801
312	Scituate, MA	786
313	Falmouth, MA	773
314	Alexandria Bay, NY	736
315	Mission Bay, CA	582
316	Kaktovik, AK	572
317	Plymouth, MA	487
318	St. Michaels Harbor, MD	479
319	Avon, NC	468
320	Hampton, NH	454
321	Port Gamble, WA	454
322	Southwest Harbor, ME	452
323	Cuttyhunk Harbor, MA	448
324	Carrabelle, FL	428
325	Matinicus, ME	406
326	Annapolis, MD	381
327	Port Lions, AK	378
328	Lynn, MA	350
329	Port Heiden, AK	195
330	Rockport, MA	192
331	Wales, AK	186
332	Edgartown, MA	186
333	Cohasset, MA	181
334	Beluga, AK	181
335	Old Harbor, AK	172
336	Washburn, WI	163
337	Marblehead, MA	152
338	Chincoteague, VA	134
339	Nimilchik, AK	132
340	Newport Bay Harbor, CA	126
341	Santa Monica, CA	122
342	Tilghman Island, MD	91
343	Redondo Beach, CA	83
344	Manchester, MA	76
345	Northport, NY	67
346	Pacific City, OR	44
347	Duxbury, MA	34
348	Dauphin Island, AL	34
349	Berkeley, CA	31
350	Newburyport, MA	29

RANK	PORT NAME	TOTAL
351	Horn Harbor, VA	28
352	Bourne, MA	26
353	Rockport, ME	22
354	Mattapoisett, MA	20
355	Wellfleet, MA	13
356	Sackets Harbor, NY	10
357	Wareham, MA	5
358	Greenwich, CT	3
359	Mattituck, NY	2
360	Winter Harbor, VA	1
361	Green Harbor, MA	1

1996 Waterborne Tonnage By State
(Thousands of Metric Tons)

State	Total	Shipping To		Receiving From		Intrastate
		Domestic	Foreign	Domestic	Foreign	
Alabama	67,070	9,522	11,220	17,847	11,916	16,566
Alaska	87,103	69,948	9,281	2,871	780	4,222
Arkansas	12,424	5,396	-	4,619	-	2,409
California	164,349	6,150	42,569	47,264	43,613	24,752
Connecticut	16,623	1,375	161	11,422	2,311	1,354
Delaware	23,404	12,487	477	1,363	6,806	2,272
District of Columbia	678	-	-	678	-	-
Florida	106,530	12,445	16,635	52,936	20,916	3,600
Georgia	18,125	689	7,198	2,492	7,566	179
Guam	396	24	-	372	-	-
Hawaii	19,278	1,134	862	5,559	5,705	6,016
Idaho	1,221	692	-	11	-	519
Illinois	103,362	71,971	748	16,922	3,211	10,509
Indiana	72,884	19,578	503	47,484	2,416	2,903
Iowa	13,347	9,312	-	3,368	-	667
Kansas	675	608	-	67	-	-
Kentucky	74,030	40,467	-	21,811	-	11,753
Louisiana	448,373	90,150	103,977	121,163	94,974	38,108
Maine	16,622	67	306	2,494	13,549	206
Maryland	43,440	4,703	13,843	8,329	12,984	3,582
Massachusetts	23,550	1,025	622	8,533	11,278	2,093
Michigan	72,855	24,924	5,651	21,221	7,243	13,816
Minnesota	47,350	34,446	4,945	5,404	907	1,647
Mississippi	41,891	12,355	3,289	8,298	17,009	939
Missouri	26,147	12,223	-	6,817	-	7,107
Nebraska	407	238	-	161	-	8
New Hampshire	3,365	59	116	779	2,404	6
New Jersey	89,797	23,446	5,409	24,126	32,879	3,939
New York	86,375	17,824	3,445	19,659	30,825	14,620
North Carolina	12,685	371	3,230	2,970	3,276	2,837
Ohio	112,000	21,996	12,279	55,513	5,227	16,984
Oklahoma	3,063	1,852	-	1,176	-	34
Oregon	33,332	3,181	15,006	6,925	2,907	5,315
Other	54,036	7,300	-	8,413	38,189	134
Pacific Islands	105	11	-	95	-	-
Pennsylvania	98,122	13,251	877	35,392	32,417	16184
Puerto Rico	27,177	1,974	1,328	7,088	12,269	4519
Rhode Island	7,484	210	379	3,745	3,084	65
South Carolina	14,828	233	5,345	3,722	5,438	91
Tennessee	39,882	6,887	-	29,826	-	3169
Texas	349,795	44,028	48,775	21,721	189,923	45348
Trans-Shipment	2,140	999	-	1,141	-	-
Vermont	-	-	-	-	-	-
Virgin Islands	38,522	17,601	1,016	2,624	16,885	396
Virginia	77,921	11,171	45,907	3,777	9,886	7,179
Washington	106,077	11,587	39,109	27,375	14,201	13,806
West Virginia	75,228	48,519	-	14,819	-	11,890
Wisconsin	34,442	22,025	4,411	6,063	1,601	311
Total[1]	2,072,056	690,456	408,951	696,456	664,593	302,056

Source: U.S. Army Corps of Engineers

[1] Total figure excludes domestic duplication

1966 U.S. Ports Tonnage Distribution

Port Tonnage Handled	Total Trade				Domestic Trade				Foreign Trade			
	No. of Ports	Tonnage (000 MT)	Percent of*		No. of Ports	Tonnage (000 MT)	Percent of*		No. of Ports	Tonnage (000 MT)	Percent of *	
			Ports	Trade			Ports	Trade			Ports	Trade
> 100 Million Tons	3	426,010	0.8%	19.1%	-	-	-	-	-	-	-	-
75 to <100 Million Tons	1	75,954	0.3%	3.4%	1	96,201	0.3%	7.8%	2	154,971	1.2%	15.8%
50 to <75 Million Tons	7	448,449	2.0%	20.1%	3	191,598	0.8%	15.4%	3	154,792	1.7%	15.8%
25 to <50 Million Tons	14	510,413	3.9%	23.0%	7	246,749	2.0%	19.8%	9	272,380	5.2%	27.8%
10 to <25 Million Tons	25	391,105	6.9%	17.6%	22	346,213	6.2%	26.6%	13	202,271	7.6%	20.6%
5 to <10 Million Tons	24	175,892	6.6%	7.9%	23	170,252	6.4%	14.9%	11	73,135	6.4%	7.5%
1 to <5 Million Tons	70	165,257	19.4%	7.4%	66	158,283	18.2%	12.7%	40	98,122	23.3%	10.0%
500,000 to <1 Million Tons	24	17,930	6.6%	0.8%	25	18,769	7.0%	1.5%	22	15,997	12.8%	1.6%
250,000 to <500,000 Tons	24	9,269	6.6%	0.4%	28	10,498	7.8%	0.8%	11	4,258	6.4%	0.4%
100,000 to <250,000 Tons	23	4,069	6.4%	0.2%	26	4,154	7.3%	0.3%	25	4,174	14.5%	0.4%
50,000 to <100,000 Tons	15	958	4.2%	neg	13	924	3.6%	0.1%	11	801	6.4%	0.1%
25,000 to <50,000 Tons	11	398	3.0%	neg	18	666	5.0%	0.1%	9	344	5.2%	neg
1,000 to <25,000 Tons	62	491	17.2%	neg	66	504	18.5%	neg	12	129	7.0%	neg
< 1,000 Tons	58	18	16.1%	neg	60	18	16.8%	neg	4	2	2.3%	neg
No Tonnage Reported	-	-	-	-	4	-	n/a	n/a	189	-	n/a	n/a
Total	361	2,226,213	100.0%	100.0%	361	1,244,829	100.0%	100.0%	361	981,376	100.0%	100.0%

Source: U.S. Army Corps of Engineers

* Percentages based on the number of ports and tonnage cargo in that category.

Note: The domestic tonnage figure includes some cargo that is handled in two U.S. ports. Domestic inland waterway cargo that is handled outside traditional port boundaries is not included.

1996 AAPA Capital Expenditure Survey Respondents

Respondent	1996 Survey	1997-2001 Survey
North Atlantic	(5)	(5)
Albany Port District Commission	X	X
Maryland Port Administration	X	X
Massachusetts Port Authority	X	X
The Port Authority of New York & New Jersey	X	X
Philadelphia Regional Port Authority	-	-
Port of Richmond (VA)	X	X
South Jersey Port Corporation	-	-
South Atlantic	(8)	(8)
Canaveral Port Authority	X	X
Georgia Ports Authority	X	X
Port of Miami	X	X
North Carolina State Ports Authority	X	X
Port Everglades Authority	X	X
Port of Palm Beach	X	X
South Carolina State Ports Authority	X	X
Virginia Port Authority	X	X
Gulf	(14)	(14)
Alabama State Docks Department	X	X
Greater Baton Rouge Port Commission	X	X
Port of Beaumont	X	X
Port of Corpus Christi Authority	X	X
Port of Freeport	X	X
Port of Galveston	X	X
Greater Lafourche Port Commission	X	X
Mississippi State Port Authority at Gulfport	X	X
Port of Houston Authority	X	X
Port of New Orleans	X	X
Port of Pascagoula	X	X
Port of Pensacola	X	X
Port of Port Arthur	X	X
Tampa Port Authority	X	X
St. Bernard Port, Harbor & Terminal District	-	-
South Pacific	(8)	(7)
Port of Long Beach	X	X
Port of Los Angeles	X	X
Port of Oakland	X	X
Port of Redwood City	X	X
Port of Sacramento	X	X
San Diego Unified Port District	X	X
Port of San Francisco	X	-
Port of Stockton	X	X

Respondent	1996 Survey	1997-2001 Survey
North Pacific	(8)	(6)
Port of Bellingham	X	-
Port of Everett	X	X
Port of Longview	X	X
Port of Olympia	X	X
Port of Portland	X	X
Port of Seattle	X	X
Port of Tacoma	X	X
Port of Vancouver	X	-
Great Lakes	(2)	(2)
Port of Milwaukee	X	X
Seaway Port Authority of Duluth	X	X
Non-Contiguous	(2)	(2)
Hawaii Department of Transportation	X	X
Puerto Rico Ports Authority	X	X
Total	47	44

(-) Indicates no expenditures or data not provided

1996 AAPA Finance Survey Respondents

Respondent	Income Statement	Balance Sheet
North Atlantic	(7)	(5)
Albany Port District Commission	X	X
Maryland Port Administration	X	X
Massachusetts Port Authority	X	
The Port Authority of New York & New Jersey	X	
Philadelphia Regional Port Authority	X	X
Port of Richmond (VA)	X	X
South Jersey Port Corporation	X	X
South Atlantic	(11)	(11)
Canaveral Port Authority	X	X
Georgia Ports Authority	X	X
Jacksonville Port Authority	X	X
Port of Miami	X	X
North Carolina State Ports Authority	X	X
Port of Palm Beach District	X	X
Port Everglades Authority	X	X
South Carolina State Ports Authority	X	X
Virginia Port Authority	X	X
Port of Ponce	X	X
Puerto Rico Ports Authority	X	X
Gulf	(15)	(15)
Alabama State Docks Department	X	X
Greater Baton Rouge Port Commission	X	X
Port of Beaumont	X	X
Port of Corpus Christi Authority	X	X
Port of Freeport	X	X
Port of Galveston	X	X
Port of Houston Authority	X	X
Greater Lafourche Port Commission	X	X
Mississippi State Port Authority at Gulfport	X	X
Port of New Orleans	X	X
Port of Pascagoula	X	X
Pensacola	X	X
Port of Port Arthur	X	X
St. Bernard Port, Harbor, & Terminal District	X	X
Tampa Port Authority	X	X
South Pacific	(9)	(9)
Hawaii Department of Transportation	X	X
Port of Long Beach	X	X
Port of Los Angeles	X	X
Port of Oakland	X	X
Port of Redwood City	X	X
Port of Sacramento	X	X
San Diego Unified Port District	X	X
Port of San Francisco	X	X
Port of Stockton	X	X

Respondent	Income Statement	Balance Sheet
North Pacific	(8)	(5)
Port of Anchorage	X	X
Port of Bellingham	X	-
Port of Everett	X	X
Port of Longview	X	X
Port of Olympia	X	-
Port of Seattle	X	-
Port of Tacoma	X	X
Port of Vancouver (USA)	X	X
Great Lakes	(2)	(2)
Port of Milwaukee	X	X
Seaway Port Authority of Duluth	X	X
Total	**52**	**47**

- Indicates data not provided or incomplete.

Capital Expenditures by Leading Port Authorities for 1996
(Thousands of Dollars)

Rank	Port Authority	Expenditures
1	Port of Los Angeles	$407,099
2	Port of Long Beach	179,690
3	Port of Seattle	144,817
4	Port Authority of New York/New Jersey	60,619
5	Port of Tacoma	57,625
6	Alabama State Docks	46,842
7	Port of Oakland	45,269
8	Port of Miami	37,120
9	Hawaii DOT	32,222
10	Georgia Ports Authority	27,659
	Total Top Ten Ports	$1,038,962
	Total Expenditures	$1,301,152
	Percent of Total	79.8%

Capital Expenditures by Leading Port Authorities for 1997 - 2001
(Thousands of Dollars)

Rank	Port Authority	Expenditures
1	Port of Los Angeles	$1,079,182
2	Port of Long Beach	866,200
3	Port of Oakland	520,000
4	Port Authority of New York/New Jersey	498,663
5	Port of Seattle	391,483
6	Port of Houston	291,628
7	Georgia Ports Authority	263,840
8	Maryland Port Administration	237,147
9	Port of New Orleans	226,260
10	Port of Tacoma	221,798
	Total Top Ten Ports	$4,596,201
	Total Expenditures	$6,584,238
	Percent of Total	69.8%

Comparison of Selected State Port Development Programs

Program	Type of Funding	Port Eligibility Within State	Project Eligibility	Local Matching Fund Requirement	Funding Source	Amount Available
Port Financing Programs						
Wisconsin Harbor Assistance Program (HAP)	Grant	Great Lakes or Mississippi River harbors where vessels take on or discharge over 10,000 tons of commercial cargo annually, where vessels are built, where commercial fishing vessels are unloaded, or where vehicle ferries operate	Dockwall and disposal facility construction, rehab, repair, or maintenance. Maintenance dredging. New dredging. Disposal of dredged materials. Other physical improvements to increase commercial capability.	20% (local share can increase to 50% on some Federal projects)	Monies sent biennially to a separate state fund and general-purpose bonds serviced by this fund	Limited only by state allocation to fund and prioritization criteria of projects. Maximum grant to date has been $3.6 million. The smallest has been $20,000.
Minnesota Port Development Assistance Program (PDAP)	Grant and Loan	Any political sub division or port authority which owns a commercial navigation facility	Loan: Expedites or improves movement; or enhances commercial vessel construction and repair Grant: Meets at least one of the loan criteria and promotes economic development at ports	20%	Port development revolving fund in state treasury	A maximum is not specified. The Mn/DOT commissioner sets the amount on a case-by-case basis.
Oregon Port Revolving Fund (OPRF)	Loan	The 23 legally formed port districts along the Pacific coast and the Columbia River	Business development projects. Port development projects. Flexible manufacturing space projects.	None	Originally state general fund. Now funded by lottery proceeds and interest earned on past loans.	A maximum of $700,000 per project is available. No more than $1.4 million to any port in one year. The maximum allowed for outstanding loans by any port is $2 million.
Oregon Marine Navigation Improvement Fund (MNIF)	Grant	The 23 legally formed port districts along the Pacific coast and the Columbia River	Funding is approved only for federally authorized studies, dredging, and construction of new navigation improvement projects.	N/A	Allocations to separate fund from lottery proceeds or legislative action.	No maximum amount is set.
Louisiana Port Construction and Development Priority Program (LPCDPP)	Grant	All publicly owned ports	Construction, improvement, capital facility rehabilitation, or expansion of publicly owned facilities and marine-related infrastructure such as wharves, cargo handling equipment, utilities, railroads, access roads, and buildings	10%	Annual allocation from state Capital Outlay Bill	Each port may receive no more than 20% of the annual allocation. Presently this is $# million per year based on a total annual allocation of $15 million.
Florida Seaport Transportation and Economic Development Funding Program (FSTED)	Grant	All publicly owned ports	Transportation facilities Dredging Construction or rehab of facilities and equipment Acquisition of mechanized equipment Land Acquisition Required environmental projects	50%	Annual allocations from State Transportation Trust Fund or bonds serviced by such funds	Each port may receive up to $7 million in matching funds during one year. No more then $30 million in any five-year period. Total available statewide through bonding is $222,320,000 million. Bond money is not subject to above yearly restrictions.
California Maritime Infrastructure Bank (CMIB)	Low-interest loans and bonds	Participating ports and harbor districts	Port infrastructure improvements	N/A	Maritime Infrastructure Bank Fund	Unknown at this time

Program	Type of Funding	Port Eligibility Within State	Project Eligibility	Local Matching Fund Requirement	Funding Source	Amount Available
Planning/Marketing Programs						
Florida Trade Data Center (FTDC)	N/A	Services available to in-state and out of state clients including both ports and businesses	Access to a variety of trade information including agent lists, import/export data, and market and industry reports	N/A	Yearly grant from state legislature and profits earned	N/A
Oregon Port Planning and Marketing Fund Grant Program (PPMP)	Grant	The 23 legally formed port districts along the Pacific coast and the Columbia River	Accounting and financial assistance on port operations. Site developmeot planning. Marketing studies/plans. Specific project consultation. Regional coordination. Strategic business planning.	25%	Appropriated funds from the legislative assembly and grants/transfers from the OPRF	The grant will not exceed $25,000 or 75% of the total cost of the project (whichever is the lesser amount

Source: State Programs for Financing Port Development, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin, Special Project Report, 1997

Worldwide Containership Orders

Vessel Size (in TEUs)	Number	Percent of Orders	Year of Delivery*		
			1997	1998	1999
Less than 1,000	110	26.1%			
1,000 to 1,999	134	31.8%			
2,000 to 2,999	93	22.0%			
3,000 to 3,999	28	6.6%			
4,000 to 4,499	22	5.2%	6	13	3
4,500 to 4,999	9	2.1%	3	6	
5,000 to 5,499	10	2.4%		1	9
5,500 to 5,999	4	1.0%	1	3	
6,500 to 6,999	4	1.0%		4	
8,500 to 8,999	8	1.8%	1	4	3
Total	422	100.0%	11	31	15

* Applies to vessels over 4,000 TEUs

Source: Fairplay Solutions, Jan., 1998

Characteristics of a Megaship Terminal

Category	Characteristic
Acres	150
Berths	2 - 1,250' for Megaships 3 - 1,000' for Mixed Vessel Sizes
Cranes	6-10 Beyond Post-Panamax Cranes
Water Depth	50' Channel/Berth 800' - 1,00' Channel Width 1,430' - 1,650' Turning Basin
Projected Yearly Throughput*	450,000 TEUs/Yr. Minimum (3,000 TEUs/Acre) 900,000 TEUs/Yr. Maximum (6,000 TEUs/Acre)
Rail Connections	On-Dock or Adjacent Intermodal Railyard 2-4 Unit Train Calls/Day (Assumes 40% by Rail)
Truck Traffic (Daily)	1,730 - 3,460 Trips/Day (Assumes 40% by Rail) 2,880 - 5,770 Trips/Day (Assumes 0% by Rail)
* Through the gate - excludes possible transhipment	
Source: VZM/TranSystems	

U.S. Army Corps of Engineers Dredging Program
Summary of Corps and Industry Activities: 1970 - 1997
(Dollars and Cubic Yards in Millions)

	Corps of Engineers						Industry						Corps of Engineers and Industry					
	Dollars			Cubic Yards						Cubic Yards								
FY	Maint	New Work	Total	Maint	New Work	Total	Maint	New Work	Total	Maint	New Work	Total	Maint	New Work	Total	Maint	New Work	Total
1970	$43.0	$6.0	$49.0	143.0	13.0	156.0	$49.0	$30.0	$79.0	160.0	76.0	236.0	$92.0	$36.0	$128.0	303.0	89.0	392.0
1971	46.0	6.0	52.0	145.0	13.0	158.0	47.0	42.0	89.0	133.0	66.0	199.0	93.0	48.0	141.0	278.0	79.0	357.0
1972	49.0	6.0	55.0	145.0	13.0	158.0	49.0	37.0	86.0	111.0	46.0	157.0	98.0	43.0	141.0	256.0	59.0	315.0
1973	50.0	6.0	56.0	145.0	8.0	153.0	62.0	39.0	101.0	131.0	28.0	159.0	112.0	45.0	157.0	276.0	36.0	312.0
1974	63.0	7.0	70.0	183.0	7.0	190.0	77.0	29.0	106.0	155.0	41.0	196.0	140.0	36.0	176.0	338.0	48.0	386.0
1975	75.0	7.0	82.0	157.0	7.0	164.0	71.0	54.0	125.0	118.0	50.0	168.0	146.0	61.0	207.0	267.0	65.0	332.0
1976	86.0	4.0	90.0	132.0	3.0	135.0	87.0	68.0	155.0	123.0	43.0	166.0	173.0	72.0	245.0	255.0	46.0	301.0
1977	85.0	1.0	86.0	127.0	1.0	128.0	90.0	56.0	146.0	126.0	43.0	169.0	175.0	57.0	232.0	253.0	44.0	297.0
1978	90.0	2.0	92.0	92.0	3.0	95.0	124.0	91.0	215.0	118.0	68.0	186.0	214.0	93.0	307.0	210.0	71.0	281.0
1979	87.0	8.0	95.0	87.0	3.0	90.0	154.0	75.0	229.0	147.0	45.0	192.0	241.0	83.0	324.0	234.0	48.0	282.0
1980	92.0	3.0	95.0	81.0	1.0	82.0	213.0	95.0	308.0	162.0	53.0	215.0	305.0	98.0	403.0	243.0	54.0	297.0
1981	104.0	-	104.0	88.0	-	88.0	240.0	115.0	355.0	174.0	97.0	271.0	344.0	115.0	459.0	262.0	97.0	359.0
1982	76.0	-	76.0	60.0	-	60.0	234.0	135.0	369.0	157.0	55.0	212.0	310.0	135.0	445.0	217.0	55.0	272.0
1983	64.0	1.0	65.0	48.0	1.0	49.0	291.0	88.0	379.0	206.0	32.0	238.0	355.0	89.0	444.0	254.0	33.0	287.0
1984	80.0	1.0	81.0	49.0	-	49.0	376.0	93.0	469.0	245.0	52.0	297.0	456.0	94.0	550.0	294.0	52.0	346.0
1985	73.0	-	73.0	65.0	-	65.0	313.0	63.0	376.0	208.0	30.0	238.0	386.0	63.0	449.0	273.0	30.0	303.0
1986	80.0	-	80.0	64.0	-	64.0	242.0	64.0	306.0	218.0	33.0	251.0	322.0	64.0	386.0	282.0	33.0	315.0
1987	66.0	0.3	66.3	47.7	0.3	48.0	222.5	98.9	321.2	167.4	42.8	210.2	288.3	99.2	387.5	215.1	43.1	258.2
1988	73.4	-	73.4	58.2	0.1	58.3	222.0	177.9	399.9	154.6	73.0	227.6	295.4	177.9	473.3	212.8	73.1	285.9
1989	68.5	-	68.5	58.7	-	58.7	249.6	164.0	413.6	222.4	52.7	275.1	318.1	164.0	482.1	281.1	52.7	333.8
1990	61.8	-	61.8	35.0	-	35.0	244.2	187.0	431.2	174.7	63.3	238.0	306.0	187.0	493.0	209.7	63.3	273.0
1991	99.6	-	99.6	62.4	-	62.4	325.4	89.4	412.8	209.2	28.4	237.6	423.1	89.4	512.5	271.6	28.4	300.0
1992	89.2	-	89.2	52.4	-	52.4	280.3	116.2	396.5	164.0	27.8	191.8	369.5	116.2	485.7	216.3	27.8	244.1
1993	75.1	0.7	75.8	38.3	0.1	38.4	335.2	103.9	439.1	197.2	33.4	230.6	410.2	104.7	514.9	235.5	33.5	269.0
1994	84.3	-	84.3	52.5	0.0	52.5	342.4	100.8	443.2	212.2	37.0	249.2	426.7	100.8	527.5	264.7	37.0	301.7
1995	88.8	6.5	95.3	53.8	7.9	61.7	319.4	116.3	435.7	168.4	26.1	189.5	408.2	122.9	531.0	217.1	34.0	251.1
1996	85.4	0.0	85.4	52.5	0.0	52.5	359.6	89.7	429.3	181.8	24.4	206.2	425.0	89.7	514.7	234.3	24.4	258.7
1997	95.9	0.2	96.1	67.8	0.0	67.8	398.5	127.3	525.8	185.0	32.2	217.2	494.5	127.5	622.0	252.7	32.2	284.9

Source: U.S. Army Corps of Engineers, Navigation Data Center

Great Lakes Dredging Team

All Great Lakes ports are concerned with the frontline issue of dredging. The Great Lakes Dredging Team (GLDT) was formed to contribute to the national goal of assuring that the dredging of U.S. harbors and channels is conducted in a timely and cost effective manner, while meeting environmental protection, restoration, and enhancement goals. The primary functions are to facilitate the resolution of local and regional dredging issues among the participating Federal and state officials. There are many dredging-related concerns in the Great Lakes: stagnated dredging due to contaminated sediment questions, limited and nearly filled confined disposal facilities (CDF), questions of liability, and inconsistent state and Federal regulations. Soil erosion, contaminated sediments, and dredged material uses are just some of the areas being worked on by the ports.

The GLDT was established in 1997 and membership includes representatives from the eight Great Lakes states, six Federal agencies, and the Great lakes Commission. The Team has been focusing on the issue of dredged material disposal because a number of Great Lakes states prohibit open-water disposal, which can create an impasse with Corps of Engineers (Corps) disposal policy. The Team is also preparing a white paper to highlight the complicated nature of the dredging decision process. Another priority area is public outreach in the form of case studies, educational information, and public involvement.

On behalf of the GLDT, MARAD's Great Lakes Region staff initiated a "case study" of Waukegan Harbor, IL, in March 1997. After participating in several Waukegan Citizen Advisory Group (WCAG) meetings, it became apparent that a special review of the harbor's 29-year history of dredging problems could provide an opportunity to resolve the concerns and provide new direction to WCAG and the Corps.

The case study provided the Corps with an update of lake vessels serving the port and a profile of port users with an economic impact in a surrounding five state area. Also, the Port's shallow draft of 17 feet is extremely restrictive for vessel operators. Since the water level for Lake Michigan is presently 31 inches above low water datum, commercial traffic is possible, but vessels have a 60 percent reduced capacity. If the Lake level drops, commercial navigation may be halted and cause extensive local unemployment for five port connected industries.

MARAD technical assistance included publishing a case study and slide presentation which have been shown at numerous meetings. The case study status brought new attention to Waukegan and the Corps on a national level, since the venture was presented to the National and Regional Dredging Team along with the International Joint Commission. In addition, the project was presented at a special workshop of local, state, and Federal regulatory agency representatives to gain acceptance for the project.

The Corps is presently examining two confined disposal facility sites, one in Lake and one upland at the Johns Manville Super Fund site. The Corps provided guidance in determining a "share in kind" service that can offset up to 18 percent of the local sponsor's cost. Members of WCAG, both regulatory, and local businesses are supportive of "doing as much as we can to reduce the local sponsors cost share of the project."

MARAD assistance in finding an upland CDF at a Super Fund site is expected to save at least $2 million in project cost. In addition, the study identified other business opportunities to the Port District including a Foreign Trade Zone, passenger vessel service, and coordinated a ONE-DOT project with the USCG and Federal Transit for harbor improvements and a downtown transit center tying the harbor to the downtown district. During the case study, the Waukegan Port District purchased two harbor-side properties from the EJE Railroad in order to improve the Port's long term revenue flow and the management of the harbor. The Corps Feasibility Study is expected to be completed by the end of FY 1999 with construction starting early in year 2001.

The Waukegan Harbor Dredging Case Study has provided new direction to a once stalled project. A number of additional benefits for recreation and environmental enhancement for wildlife are being included in the project to broaden public support, find additional funding sources, and benefit the local community.

Water Resources Development Act of 1996 - Project Authorizations

Project Authorizations	Total Cost	Funding	
		Federal Share	Non-Federal Share
Deep-Draft Projects			
Humboldt Harbor and Bay, CA	$15,180,000	$10,000,000	$5,180,000
Port of Long Beach, CA	37,288,000	14,318,000	22,970,000
Santa Barbara Harbor, CA	5,840,000	4,670,000	1,170,000
Atlantic Intracoastal Waterway, St. Johns County, FL	15,881,000	15,881,000	-
Port Fourchon, Lafourche Parish, LA	4,440,000	2,300,000	2,140,000
Cape Fear, Northeast (Cape Fear) Rivers, NC	221,735,000	132,936,000	88,799,000
Wilmington Harbor, Cape Fear River, NC	23,953,000	15,572,000	8,381,000
Charleston Harbor, SC	116,639,000	71,940,000	44,699,000
GIWW, Aransas National Wildlife Refuge, TX (Nav/Env)	18,283,000	18,283,000	-
Houston-Galveston Navigation Channels, TX (Nav/Env)	298,334,000	197,237,000	101,097,000
(Ave annual cost for environmental restoration over 50-year life)	786,000	590,000	196,000
Sub-total	**$758,359,000**	**$483,727,000**	**$274,632,000**
Chignik, AK*	10,365,000	4,282,000	6,083,000
Cook Inlet, AK*	5,700,000	3,700,000	2,000,000
St. Paul Island Harbor, St. Paul, AK*	18,981,000	12,239,000	6,742,000
Lake Worth Inlet, FL (Nav/Shoreline Protection)*	3,915,000	3,915,000	
Miami Harbor Channel, FL*	3,221,000	1,800,000	1,421,000
Chesapeake and Delaware Canal, MD/DE*	82,800,000	53,852,000	28,948,000
Sub-total	**$124,982,000**	**$79,788,000**	**$45,194,000**
Inland Waterway Projects			
Kentucky Lock and Dam, Tennessee River, KY	$393,200,000	$196,600,000	$196,600,000
Marmet Lock, Kanawha River, WV	229,581,000	114,790,500	114,790,500
Sub-total	**$622,781,000**	**$311,390,500**	**$311,390,500**
Total	**$1,506,122,000**	**$874,905,500**	**$631,216,500**

* Authorization subject to completion of COE final report by 12/31/96