

**ASSEMBLY SELECT COMMITTEE ON PORTS
SENATE TRANSPORTATION AND HOUSING COMMITTEE
SENATE TRANSPORTATION SUBCOMMITTEE ON
CALIFORNIA PORTS AND GOODS MOVEMENT**

Joint Hearing

Wednesday, May 4, 2005

State Capitol, 3:30 p.m., Room 4202

**GOODS MOVEMENT MELTDOWN—WHAT SHOULD BE
THE STATE’S STRATEGY?**

Opening Statements

Tom Torlakson, Chair, Senate Transportation and Housing Committee

Betty Karnette, Chair, Assembly Select Committee on Ports

Alan Lowenthal, Chair, Subcommittee on California Ports and Goods Movement

10 min. (statements)

GOAL: 3:40 p.m.

Panel #1 – Illustrating the Meltdown and the Need for a State Strategy

(Torlakson leads)

Gill Hicks, Chair, California Marine & Intermodal Transportation System
Advisory Council

10 min. (statement) + 10 min. (questions)

GOAL: 4:00 p.m.

Panel #2 – Getting Products to Market – Current and Emerging Realities

(Lowenthal leads)

Rick Gabrielson, Senior Manager – Import Operations, Target Corporation

Marie Robinson, Senior Vice President, Global Logistics, Toys “R” Us

John Isbell, Senior Vice President, Global Logistics, Nike Corporation

15 min. (statements) + 10 min. (questions)

GOAL: 4:25 p.m.

Panel #3 – Ensuring California's Primacy as the Global Gateway to the Nation – The Administration's Plan

(Karnette leads)

Sunne Wright McPeak, Secretary, Business, Transportation and Housing Agency

5 min. (statement) + 10 min. (questions)

GOAL: 4:40 p.m.

Panel #4 – Federal reauthorization: What's in it for California's Goods Movement?

(Torlakson leads)

John Jamian, Interim Administrator, Federal Maritime Administration

5 min. (statement) + 10 min. (questions)

GOAL: 4:55 p.m.

Panel #5 – How do we Maintain Our Competitive Edge?

(Lowenthal leads)

Richard Steinke, Executive Director, Port of Long Beach

Jerry Bridges, Executive Director, Port of Oakland

15 min. (statements) + 10 min. (questions)

GOAL: 5:20 p.m.

Panel #6 – Ports v. People: Does it Have to Be This Way?

(Karnette leads)

Peter Peyton, Secretary, International Longshoremen's & Warehousemen's
Union Local 63 (San Pedro)

Gail Ruderman Feuer, Attorney, Natural Resources Defense Council

Rusty Selix, Legislative Representative, California Association of Councils of
Governments

18 min. (statements) + 10 min. (questions)

GOAL: 5:48 p.m.

Panel 7 – Experiencing the Daily Frustrations of an Outdated Infrastructure

(Torlakson leads)

Rollin D. Bredenberg, Vice President – Service Design & Performance, Burlington
Northern Santa Fe Railway Company

Scott Moore, Assistant Vice President and General Manager of Public Partnership,
Union Pacific Railroad

Kirk Lindsey, President, Brite Transport System, Inc. and
Commissioner, California Transportation Commission

John Geesman, Member, California Energy Commission

18 min. (statements) + 10 min. (questions)

GOAL: 6:13 p.m.

Public Comment

CALIFORNIA LEGISLATURE

OFFICE OF
THE CLERK
OF THE LEGISLATURE

GOODS MOVEMENT WHITE PAPER CALIFORNIA LEGISLATIVE JOINT HEARING MAY 4, 2005

California during the late 1950s and early 1960s built a world-class transportation system to address the freight and people mobility for a fast growing state and national economy, as well as the population. California's transportation system was further enhanced by three Class I railroads (Burlington Northern and Santa Fe, Southern Pacific, and Union Pacific), three major seaports and two international airports. This extensive transportation network was geographically positioned on the Pacific Rim. California's strategic position in the global economy has placed it at the junction of the world's two largest markets—the United States and Asia. And in a post-North American Free Trade Agreement (NAFTA) world, California has become the nexus between Asia and its number one trading partner, Mexico.

The economic significance of this extensive transportation network and strategic geographic position is that California is the single largest trading entity in the United States.

The growth in international trade freight movement, as well as farm-to-market and intra-regional truck trips, is overwhelming California's transportation system. In 2003, \$407 billion worth of U.S. trade (\$293 billion in imports and \$114 billion in exports) went through California's sea, air and land ports. Nearly 80 percent of these exports and imports either originated in or were destined for some other state. The majority of international goods arrive through west coast ports with 40 percent coming from the Los Angeles and Long Beach ports alone.¹

¹ California Transportation Commission, *2004 Annual Report to the California Legislature*, December 2004, p.48.

California's extraordinary rise as a global trade center is the result of two significant changes that took place in the 1960s. "Containerization and air cargo express shipping have revolutionized the global transportation of goods and placed a premium on the capacity, efficiency and ground accessibility of local port and airport facilities.... This innovation changed the appearance and equipment of ports everywhere, rendered entire fleets of cargo ships useless, cut labor costs drastically and reduced ship turnaround time from a week or more to two or three days."²

NAFTA and the passage in 2000 of the Permanent Normal Trading Relations with China Act, as well as China and Taiwan becoming part of the World Trade Organization, has made California the epicenter of trade volume flow and distribution.

In addition to these global trade agreements, information technology, synchronized supply chain management and just-in-time logistical innovation in global trade have created a demand for velocity, predictability and reliability of trade flow through California's gateways and trade corridors.

Table 1

Projected Growth in the Value of U.S. Trade Through 2020						
	Exports			Imports		
	2002	2010	2020	2002	2010	2020
U.S. Total (billion \$)						
Total	671	1,080	1,665	1,115	1,451	2,089
Air	223	384	591	254	306	397
Vessel	190	314	500	536	733	1,131
Other	258	381	574	325	411	561
Percent Increase over 2002						
Total		61	148		30	87
Air		72	165		20	56
Vessel		65	163		37	111
Other		48	122		26	73
California Total (billion \$)						
Total	110	196	316	267	354	482
Air	58	106	167	53	63	74
Vessel	39	68	112	196	266	368
Other	14	22	37	18	25	39
Percent Increase over 2002						
Total		78	187		33	81
Air		83	188		19	40
Vessel		74	187		36	88
Other		57	164		39	117

Sources: Authors' estimates. 2002 data are from U.S., as cited in *California's Global Gateways: Trends and Issues*, Public Policy Institute of California, 2004. Census Bureau, *U.S. Exports/Imports of Merchandise* (2002).

² Steven P. Erie, *Globalizing LA*, Stanford Russ, 2004, 23.

At a time when California should be building on its successful, international trade position, it is faced with an infrastructure crisis that is both substantial and immediate. The governor-appointed California Transportation Commission has underscored the state's goods movement crisis by stating in the introduction of its 2004 annual report, "California's Transportation program is in crisis and on the verge of collapse."³

Table 2

Projected Growth in the Volume of U.S. Trade Through 2020						
	Exports			Imports		
	2002	2010	2020	2002	2010	2020
U.S. Total (billion kg)						
Total	319.5	566.9	1,113.10	816.8	1,499.50	3,155.20
Air	2.3	3.7	5.80	3.5	4.30	5.50
Vessel	317.2	563.2	1,107.40	813.3	1,495.20	3,149.70
Percent Increase over 2002						
Total		77	248		84	286
Air		61	152		23	57
Vessel		78	249		84	287
California Total (billion kg)						
Total	35.9	65.3	125.8	92.0	147.8	276.7
Air	0.4	0.7	1.2	0.6	0.8	1.1
Vessel	35.4	64.6	124.7	91.3	147.0	275.6
Percent Increase over 2002						
Total		82	250		61	201
Air		75	200		33	83
Vessel		82	252		61	202

Sources: Authors' estimates. 2002 data are from U.S. Census Bureau, *U.S. Exports/Imports of Merchandise* (2002), as cited in *California's Global Gateways: Trends and Issues*, Public Policy Institute of California, 2004.

Since mid-2003, \$5.4 billion has been deferred from California transportation improvements and investment. This is further compounded by the fact that the Texas Transportation Institute found the Los Angeles-Long Beach area to be the number one worst congested area in the United States and the San Francisco-Oakland area was number four. Lack of investment in transportation, congestion and lack of capacity in and on California's transportation system can negatively impact the future of California's economy.

In October 2004 at the UCLA Extension Lake Arrowhead Symposium, Gill Hicks, transportation consultant and chairperson of the California Marine and Intermodal Transportation Advisory Council, described California's transportation and goods movement crisis as the "Perfect Storm" in which all of the following have come together:

³ 2004 Annual Report to the California Legislature, California Transportation Commission, December 2004, 3.

- ◆ Cargo growth
- ◆ Population growth
- ◆ Air and noise pollution
- ◆ Traffic congestion
- ◆ Community concerns (“How much is enough?”)
- ◆ Safety and security
- ◆ Capacity constraints
- ◆ Funding limitations
- ◆ Equipment/labor shortages
- ◆ Soaring fuel prices
- ◆ Hours of service rules

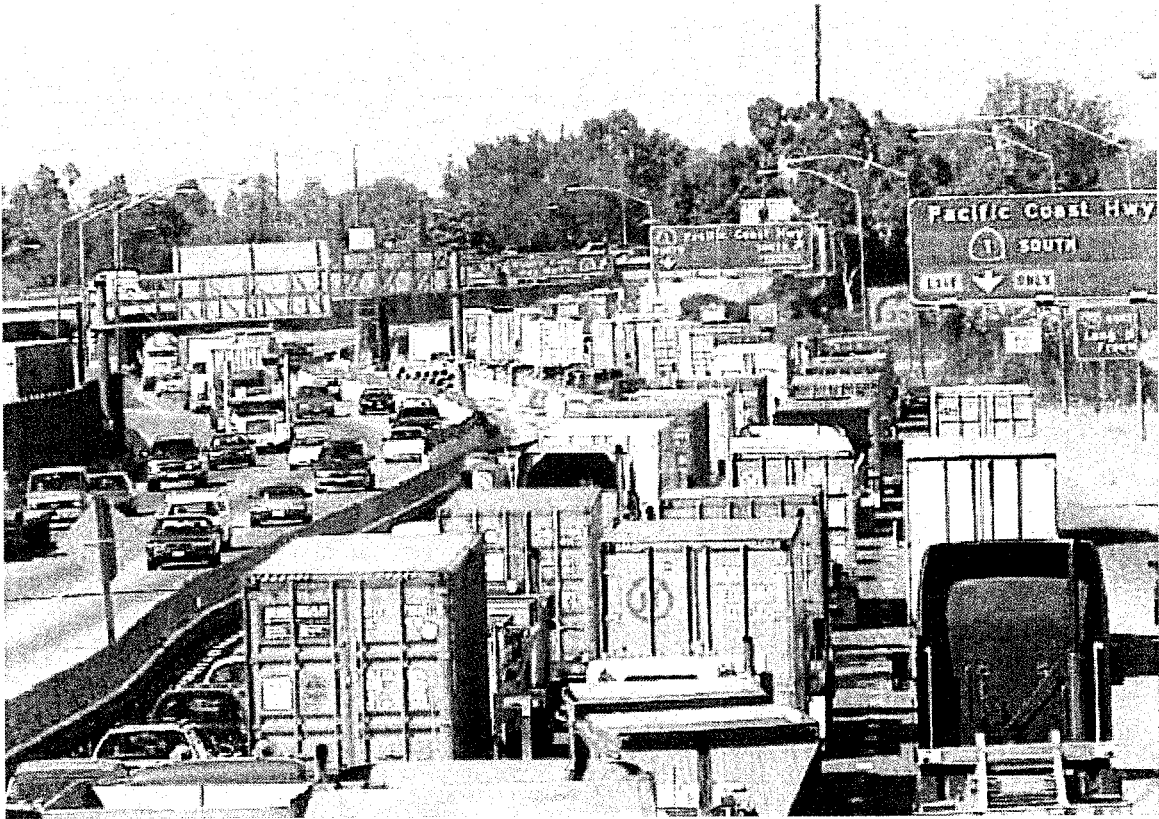
Increased volume in international trade has placed a disproportionate demand on California’s transportation infrastructure, as well as having a dramatic impact on the quality of life, environment and safety of the communities concentrated within proximity to the gateways and along the trade corridors.

California’s explosive international trade growth has had a serious negative impact on the velocity, reliability and predictability of the flow of goods to the rest of the nation and throughout the state.

CALIFORNIA MARINE TRANSPORTATION SYSTEM INFRASTRUCTURE NEEDS

March 11, 2003

Updated November 28, 2003



Prepared By:

California Marine and Intermodal Transportation System Advisory Council
Northern California Marine Transportation System Advisory Council
Southern California Marine Transportation System Advisory Council

CALIFORNIA MARINE TRANSPORTATION SYSTEM INFRASTRUCTURE NEEDS

Executive Summary

The prosperity of the United States depends on the *Marine Transportation System (MTS)*, a maritime transportation network that includes ports, railroads, highways and other facilities and services that move freight to and from our nation's harbors. Unfortunately, cargo movement is now hampered at the very point in time when American trading activities are growing rapidly and becoming an ever-larger portion of the U.S. economy. Cargo movement via California ports is projected to increase dramatically well into the next decade. However, the capabilities of critical cargo handling facilities and intermodal links are being stretched well beyond their capacities.

This white paper, entitled *California Marine Transportation System Infrastructure Needs*, focuses on the economic significance of the ports and supporting inland transport systems in California. The report identifies critical MTS infrastructure projects required to maintain economic growth, protect the environment and to promote homeland security. The document represents a collaborative effort of the Northern California Marine Transportation System Advisory Council (NORCAL-MTSAC), the Southern California Marine Transportation System Advisory Council (SOCAL-MTSAC), and the California Marine and Intermodal Transportation System Advisory Council (CALMITSAC).

California is the single largest trading entity in the United States. Waterborne commerce through California's ports accounts for 40% of the national total. Three of the four largest container ports (based on volume) in the country are located in California (Los Angeles, Long Beach and Oakland). The value of trade through the Los Angeles, San Francisco and San Diego Customs Districts was \$392 billion in the year 2000. The ability to move cargo efficiently through the ports of California is crucial to the overall economic vitality of the state and the nation. The rest of the U.S. depends on this network, particularly for access to the Pacific Rim. For example, 60 percent of the imported cargo consumed in the Chicago area flows through the Ports of Los Angeles and Long Beach. Approximately 35% of all U.S. waterborne containers move through the San Pedro Bay Ports, with an estimated cargo value of nearly \$200 billion.

The inherent trade advantages enjoyed by California, and by extension the United States, could be negated if we do not make a concerted statewide effort to maintain, enhance, modernize and expand the base of port facilities and services at California ports.

The importance of maritime commerce was dramatically illustrated by the 10-day lock-out of west coast ports in September and October of 2002. It has been estimated that the combined 10-day lockout and 23-day backlog disrupted trade valued at \$6.28 billion just at the Ports of Long Beach/Los Angeles. Severe terminal, highway or railway capacity constraints can have the same economic effects as the lockout we just experienced.

Transport delays will impact the cost of doing business, the environment, and our nation's ability to compete internationally.

The MTS community in California urges Congress and the Administration to acknowledge the vital role played by goods movement in general and the MTS in particular. In 2003, Congress will establish successor legislation to the Transportation Equity Act for the 21st Century (TEA-21). This report will serve as a framework for dialogue with state and federal agencies, the state Legislature and Congress, with the objective of establishing project funding for MTS infrastructure and security in the new legislation (hereinafter referred to as TEA-3). ***At the very least, TEA-3 should affirm a national policy, backed up with a commensurate commitment of resources, to enhance the physical infrastructure and operational efficiencies that support the MTS.***

As national assets, MTS projects should be entitled to receive direct program funding from dedicated sources that is made available in TEA-3 legislation. **The U.S. Government should establish specific programs and mechanisms to meet the needs of the MTS. These programs should be considered investments, not simply grants.**

While the economic impacts of ports are positive and widespread, the negative aspects of port operations (e.g. port-generated traffic, noise, wear on local streets, environmental degradation, etc.) are felt locally. **TEA-3 should include a “good neighbor policy” that articulates sensitivity to adverse impacts on nearby communities, environmental systems, waterfront access, and quality of life.** TEA-3 should provide additional funding earmarked to help local agencies mitigate adverse local impacts derived from MTS project expansion and increases in global trade.

The events of September 11, 2001 highlighted a need to be able to respond quickly to national emergencies. **The TEA-3 legislation should affirm by policy that improving access to ports is in the national interest and is the highest-priority transportation objective consistent with goals of assuring safety and national security.**

This report identifies recommended MTS infrastructure projects in California. The total magnitude of need in California is **\$23.7 billion** (\$7.2 billion in Northern California and \$16.5 billion in Southern California.) It should be emphasized that these are *needs*. The figure does not represent the amount of federal funding requested. The detailed projects listed in the appendices of the report cover a broad range of modes and facilities serving California's MTS. There are four categories of projects included in the lists: planning, waterside, terminal, and land-side access projects, and are organized by near-term (0 to 5 years), mid-term (5 to 10 years), and long-term needs (greater than 10 years). Of the projects included in the appendices, high-priority projects by region are identified in Tables I and II, below.

Funding

Without adequate funding for MTS infrastructure projects, economic growth, environmental quality, and homeland security are threatened. Therefore, consideration

should be given to establishing a **dedicated funding source for the MTS**. Additional funding recommendations are listed below.

1. Reauthorize the firewalls provided for in TEA-21 to ensure that the funds collected are used for their dedicated purpose and not for deficit reduction,¹ and make every effort to spend down existing balances in the Highway Trust Fund and assure that future funds are spent in a timely fashion.
2. Dedicate funds for National Highway System connectors to intermodal freight facilities.*
3. Significantly increase funds for an expanded corridor/border and gateway program. *
4. Increase funding and promote the use of the Congestion Mitigation and Air Quality Improvement Program (CMAQ) for freight projects that reduce congestion and improve air quality.*
5. Continue the Transportation Security Administration Ports Security Program on an annual basis with a sufficient amount of funds from the General Fund.
6. Increase funding for the Commercial Vehicle Operations Program.
7. Restore equal taxation of gasohol with that of gasoline and redirect gasohol tax revenues to the Highway Trust Fund with some portion dedicated to goods movement improvements.
8. Credit all interest earned on the fund balances in the Highway Trust Fund directly to the trust fund.
9. Increase funding for the Section 130 grade crossing program.
10. Increase funding for the Railroad Rehabilitation and Improvement Financing (RRIF) program and remove overly restrictive regulatory requirements that have hindered program implementation.

Other new sources of funding should be seriously considered and evaluated with respect to their impacts on the goods movement industry, including:

- The Transportation Finance Corporation proposed by AASTHO
- The federal gas tax increase proposed by ARTBA
- The Railroad Trust Fund proposed by Congressman William Lipinski

¹ Policy endorsed by the Freight Stakeholders Coalition

- The Freight and Intermodal Transportation Fund proposed by California State Senator Betty Karnette

SUMMARY

Three core messages from this document should be conveyed to California’s legislative delegation in Washington, D.C.

1. The flow of goods to and from California ports and along associated inland transportation corridors must be recognized for the huge economic benefit it brings to the producers, manufacturers, transporters and consumers of those goods throughout the entire nation.
2. Given the magnitude of this flow of goods, Congress must establish viable funding sources that will allow the goods movement infrastructure to keep pace with the steadily increasing growth of this sector. This may entail the creation of new sources of funds given that existing funding programs are already oversubscribed and/or dedicated.
3. The funding needs of the MTS in California are great and cover a broad range of modes and facilities. The total funding need for the recommended MTS projects in California is **\$23.7 billion** (\$7.2 billion in Northern California and \$16.5 billion in Southern California.) As shown in Tables I and II, within this comprehensive infrastructure program, the MTS Advisory Councils in Northern California and Southern California have identified *high-priority* projects costing \$716 million and \$3,850 million, respectively.

Table I: Northern California High-Priority MTS Infrastructure Needs

PROJECT LOCATION/ DESCRIPTION	<u>COST ESTIMATE</u> (S000)
Metropolitan Community Portal	\$10,000
Physical Oceanographic Real Time System (PORTS)	\$700
Bay Area Transportation Plan Update: Goods Movement Study	\$750
LTMS Environmental Windows Study	\$2,700
Oakland Harbor Improvements -50’ Channel Deepening 1 Associated berth deepening & wharf upgrades	\$293,000

Port of Oakland Maritime Security Worker ID System, Terminal Traffic controls, Surveillance & Monitoring, Utility upgrades, Security lighting	\$55,000
Port of Oakland Street Improvements Maritime St. Realignment 7 th St. grade separation Air cargo access road	\$10,000
Oakland-Stockton Inland Port rail shuttle (CIRIS) Capital Expenses Operating expense (6 yrs)	\$36,000 \$12,000
Port of San Francisco Security Improvements	\$72,000
Port of San Francisco Terminal & Pier Improvements Pier 45 Truck Access Improvements Pier 35 Seismic Strengthening and shed upgrades	\$5,000 \$22,000
Port of San Francisco Road & Rail Improvements Illinois St. Bridge and Port Rail Improvements Amador St. Transportation Corridor Improvements	\$32,000 \$30,000
Port of Stockton Multiple Terminal Renovations Port of Stockton Channel Deepening	\$52,000 \$68,000
Port of Sacramento Southport Road Reconstruction Port of Sacramento Container Barge Feasibility Study	\$11,000 \$600
Port of Richmond Multiple Terminals Renovations and Seismic Retrofits	\$3,000
TOTAL – NORTHERN CALIFORNIA HIGH-PRIORITY PROJECTS	\$715,750

Table II: Southern California High-Priority MTS Infrastructure Needs

PROJECT LOCATION/ DESCRIPTION	COST ESTIMATE (S000)
Gerald Desmond Bridge Replacement/I-710 Corridor Project	\$605,000
I-710 Corridor/Gerald Desmond Bridge Gateway Program: Interchanges with I-5, I-405, SR 91 & Arterial Streets	\$1,609,000
Near- and off-dock Rail Yard Expansion	\$400,000
Port of Hueneme Security Enhancements	\$660
Ports of Los Angeles and Long Beach Security Programs	\$70,000
POLB Alameda Corridor/Pier B Street Railyard Expansion	\$67,000
POLB Alameda Corridor Terminus/Port Rail Mainline System	\$19,400
Port of San Diego TAMD Intermodal Viaduct	\$138,000
Port of San Diego 28 th Street Intermodal Access	\$22,000
Alameda Corridor-East Construction Authority Phase I Grade Separations	\$401,200
OnTrac: Grade Separations of Melrose Street and Placentia Avenue and closure of Bradford Street	\$40,500
OnTrac: Orange County Gateway Project (8 grade separations or trench)	\$477,200
TOTAL – SOUTHERN CALIFORNIA HIGH-PRIORITY PROJECTS	\$3,849,960

January 2002

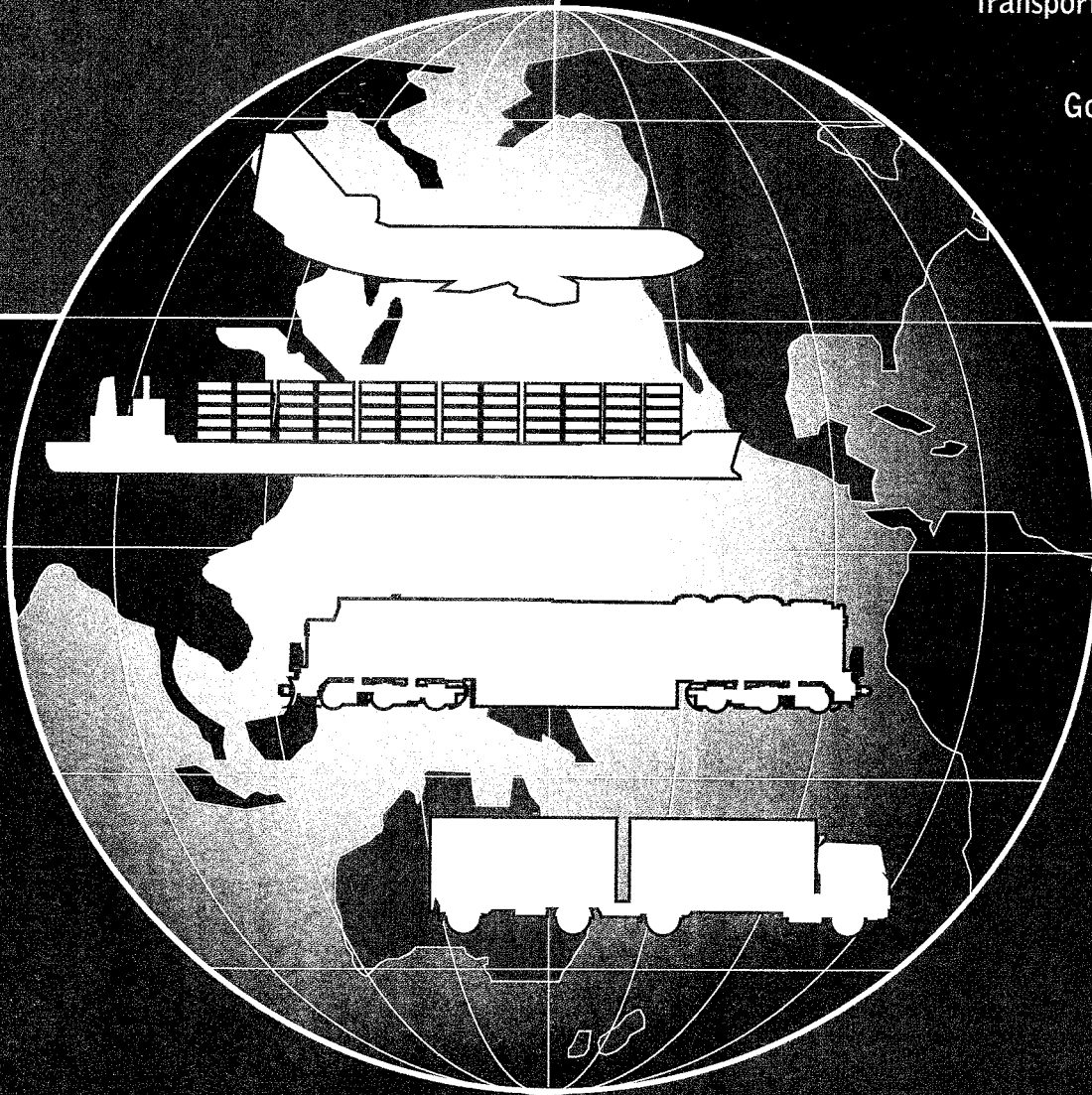
State of California

Business, Transportation
& Housing Agency

California Department
of Transportation

Division of
Transportation Planning

Office of
Goods Movement



GLOBAL GATEWAYS DEVELOPMENT PROGRAM



EXECUTIVE SUMMARY

The Global Gateways Development Program (GGDP) report is a reflection of stakeholder perspectives on the urgency and options to facilitate the movement of goods in California. The report suggests that goods movement is an economic and transportation priority that requires concerted action . . . now.

Goods movement and California's place in the global economy have become high priorities for decision-makers at both the State and national levels. Early in his administration, Governor Gray Davis launched an initiative to solidify the Golden State's position as the West Coast gateway for goods entering or leaving the United States from or to the Pacific Rim. Governor Davis spearheaded the development and implementation of the Traffic Congestion Relief Program (TCRP), a nearly \$8 billion investment effort to upgrade California's infrastructure to ease congestion and improve mobility. The TCRP represented the single largest investment in transportation infrastructure improvements in the State's history. Among the projects to receive funding under the TCRP were grade crossing improvements to the Alameda East Corridor, the gateway to the Ports of Los Angeles and Long Beach, and for freeway access to the Otay Mesa Border Crossing at the California/Mexico border. Over \$160 million in projects benefiting goods movement were also included in the interregional portion of the 2000 State Transportation Improvement Program (STIP).

Building upon the momentum of the Governor's transportation initiative, Senate Concurrent Resolution (SCR 96) by Senator Betty Karnette (D-Long Beach) was enacted. Under SCR 96, the California Department of Transportation (Department) and other cooperating agencies were requested to develop a proposal for a Global Gateways Development Program (GGDP). As developed with extensive input from goods movement industry representatives and other stakeholders, this report provides an outline of policy options and technical background for further discussion of actions to enhance the capacity and improve the efficiency of California's global goods movement system. It focuses on facilities with the highest freight volumes and greatest transportation challenges including: international airports, seaports, trade corridors (rail lines and highways), border crossings, major intermodal transfer facilities and goods movement distribution centers. As outlined, it is a basis for seeking additional federal, State, regional, local and private sector funding for goods movement improvements that would bring about the greatest transportation, economic, community, and environmental benefits.

The report is designed to generate discussion among policy makers, so that the State's most pressing transportation and community livability problems can be solved. Successfully addressing infrastructure capacity and associated environmental issues through cooperative efforts by the Administration, the Legislature, regional and local agencies, and private interests is crucial if California is to continue to function as a major global gateway, and continue to reap the economic, technological, and quality of life benefits as a major player in the global economy.

The Importance of Goods Movement: Improving goods movement is critical to the California economy, where more than 1 in 7 jobs are tied to trade and the value of international trade exceeds \$350 billion annually. Goods movement improvements reduce congestion and delays for California businesses, carriers, and shippers and provide more reliable access to international and

domestic markets. The results are lower transportation and inventory costs, and enhanced productivity, profits, growth, and competitiveness. Improvements to the goods movement system will also benefit California consumers by lowering insurance costs, reducing congestion, improving safety, and enhancing community livability and the environment through reduced air pollution, noise and energy consumption.

The benefits of goods movement improvements extend nationwide. California's global gateways, such as the Ports of Los Angeles, Long Beach, and Oakland, international airports at Los Angeles, San Francisco and Oakland, and its trade corridor highways, rail lines and border crossings, represent the largest trade transportation complex in the United States. The rest of the nation heavily relies upon this system, particularly for access to the Pacific Rim. For example, 60 percent of the imported goods shipped into the Chicago area pass through the Ports of Los Angeles and Long Beach. Millions of jobs nationwide depend on California's transportation network.

Goods Movement Challenge: The California goods movement challenge is both substantial and immediate. Congestion and delays are mounting. The development of the State's gateway facilities and freight transportation infrastructure has not kept pace with economic and trade growth. As a result, congestion, delays, accidents, and freight transportation costs have increased. This transportation deficiency, if not remedied, threatens to grow much worse as the shift to just-in-time production and inventory, the growth in research, manufacturing and retailing industries, and the expanded role of e-commerce increases goods movement demand. Port container traffic and air cargo volumes are expected to triple by 2020, while overall goods movement volume is projected to jump 56 percent, between 1996 and 2016. Failure to address the growing demand could have dire impacts on the State's ability to remain competitive economically and could drastically hamper California's ability to create new jobs and retain existing businesses.

Although there was agreement on many issues, the stakeholders did not reach consensus on every issue. Key stakeholders included shippers and receivers, carriers (truck, rail, air, and maritime), seaports and airports, academics, joint powers authorities, Metropolitan Planning Organizations (MPOs), Regional Transportation Planning Agencies (RTPAs), county transportation commissions and the Business, Transportation and Housing Agency, Department and California Transportation Commission. Bringing together public and private perspectives in a collaborative approach, this report provides important information for consideration by decision makers in building a coordinated California approach to the reauthorization of the Transportation Equity Act for the 21st Century (TEA-21). Its reauthorization, beginning in 2003, will enable California to seek additional federal funding for its goods movement investment strategy and priority projects.

Priority Gateways and Improvement Needs: Among California's top priority global gateways are six ports (Long Beach, Los Angeles, Oakland, Hueneme, Sacramento and Stockton); five international airports (Los Angeles, San Francisco, Oakland, Ontario, and San Diego); and two border crossings (Otay Mesa and Calexico). Key international trade corridors identified includes eight interstate highways (5, 15, 40, 80, 405, 238, 805, 880), as well as substantial portions of seven others (8, 10, 105, 205, 380, 580, 710). Four U.S./State Routes (11, 60, 152, 905) and sections of eleven others (7, 50, 58, 78, 86, 94, 99, 101, 111, 120, 125), as well as the main lines of the Burlington Northern Santa Fe (BNSF) Railway and the Union Pacific (UP) Railroad are also identified. These support the key gateways in the origin and receipt of international trade,

including the Los Angeles, San Francisco, Central Valley, and California/Mexico International Border regions.

For the State's seaports, the most serious landside transportation problem is truck delays. Congestion, terminal wait and turnaround delays, limited warehouse pickup and delivery schedules, hours of operation restrictions, and inadequate parking cause severe and growing problems for the trucking industry. Valuable time is lost, and idling trucks generate pollution. Channel depths and harbor dredging are also significant problems for some ports.

For the international airports, truck access is a critical problem, especially at Los Angeles, Oakland, and Ontario airports. San Diego also has operating constraints, and runway and land-use limitations. Expansion of California's largest airports is hindered by urbanization, ground access limitations, air quality restrictions and local opposition. Sufficient air transport capacity needs must be addressed, which balances mobility needs, security concerns, and community impacts in providing an integrated system of airports in California.

Both the BNSF and UP railroads also face capacity, environmental and community-related problems. Capacity constraints are most acute in single-track passes and near the Ports of Long Beach and Los Angeles, where space for intermodal transfers and equipment storage is scarce. Railroad grade crossings pose challenges such as congestion, emergency access, safety, noise and air pollution.

At the Mexican border, goods movement traffic has increased dramatically since passage of the North American Free Trade Agreement (NAFTA). Mexico is the United States' second largest trading partner and California's first largest trading partner. Moreover, 98 percent of California's trade with Mexico is transported by truck. In 2000, more than two million trucks crossed the border. By 2020 cross-border truck and auto trips are projected to double, potentially resulting in even more delays unless action is taken.

On California's highways congestion is becoming a major challenge for commuters and truck drivers alike. Many stakeholders believe the I-710 corridor between the Ports of Long Beach and Los Angeles, and the intermodal yards near downtown Los Angeles, is the number one gateway corridor needing immediate attention. Another priority identified is the Port of Oakland/Bay Area I-580 gateway corridor to the Central Valley, which has experienced significant traffic growth. Upgrades to State Route 99, and maintenance and improvement of Interstate 5 through the Central Valley, are also key to California maintaining its place in the movement of domestic and international trade. This system must be maintained and expanded, and its operational efficiency must be improved, if congestion problems are to be mitigated.

Funding Strategies: Most stakeholders believe that funding to improve California's gateways and goods movement system will need to come from both innovative public-private partnerships programs, and modifications of existing State and federal programs. The State of California provides ongoing funding through the STIP, the State Highway Operation and Protection Program (SHOPP), and the California Aid to Airports Program (CAAP). The State also has a number of innovative financing programs including the TCRP, State Highway Account (SHA) Short-Term Loans, Grant Anticipation Revenue Vehicles (GARVEE), the Transportation Finance Bank (TFB), and the California Infrastructure and Economic Development Bank (CIEDB). However, these

programs need to be modified to be fruitful funding sources. For example, the 25 percent portion of the STIP for interregional system improvements is not sufficient to address statewide transportation needs, including essential goods movement improvement projects. Increases in regional funding participation in the funding of major goods movement projects must also occur to a much larger degree. There also has been little interest in SHA loans because the interest rate is non-competitive. Finally, with limited capitalization (only \$3 million), the TFB has effectively been unavailable to support goods movement or other transportation projects.

The federal government, through TEA-21, provides funding that can be used for goods movement projects. This includes the National Highway System (NHS) Program, Surface Transportation Program (STP), and the Congestion Mitigation and Air Quality (CMAQ) Program. However, in practice only very limited amounts of these funds have been used specifically for goods movement projects. TEA-21 contained two new credit programs, the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Rail Revitalization and Improvement Funding (RRIF) Program. It also provided two related discretionary grant programs called the National Corridor Planning and Development Program (NCPD) and the Coordinated Border Infrastructure (CBI) Program. However, Federal programs often feature restrictive eligibility requirements, rules, and other limitations. For example, funds from the Airport and Airway Trust Fund cannot be used for projects outside of the airport property, such as for airport access improvements for cargo transport. Passenger Facility Charges (PFCs) are similarly restricted. Matching fund requirements are also a hurdle.

Stakeholder Options for Goods Movement Improvements: The stakeholders, both through committee meeting discussions and survey responses, offered the following options for policy makers to consider to improve the flow of goods movement through California's gateways:

The State, RTPAs and other local agencies should take an aggressive role in planning, funding, developing, operating and maintaining critical public portions of the goods movement transportation system. In the proposed 2002 STIP, the Governor has nominated 23 projects totaling over \$225 million to improve goods movement in the State. RTPAs and other local agencies should also financially support needed freight projects with regional and local funds. Super-regional airport authorities, with the ability to plan for more efficient and balanced use of existing and new airport capacity, should be developed to bring about a more integrated system of airports in California. Finally, strategies and performance measures should be developed to ensure the full consideration of goods movement projects in the federal, state and regional transportation planning and programming.

The State should take the lead in securing federal cooperation in meeting California's goods movement needs. During the TEA-21 reauthorization process in 2003, the State should seek a stronger goods movement emphasis and greater funding flexibility in the use of traditional federal transportation funding programs. The State should lobby the federal government to allow the use of Airport and Airway Trust Fund monies and Passenger Facility Charges for ground-access projects beyond airport boundaries. Finally, to compete effectively for goods movement funding, a statewide coalition of Davis Administration, state legislative representatives, regional, local and private stakeholders should be created, modeled similar to the Washington State's Freight Mobility Strategic Investment Board (FMSIB). The coalition should work closely with California's congressional delegation, the National Freight Partnership, the U.S. Department of

Transportation and its FHWA Office of Freight Management and Operations in seeking the necessary policy, program, and funding changes to improve goods movement in California for both state and national mobility, economic and quality-of-life benefits.

The State should actively pursue improving the operating efficiency of the State's major gateways. California should actively pursue the implementation of Intelligent Transportation System (ITS) applications and should also work as a leader, negotiator, broker, and partner to bring about other efficiency improvements. This includes the promotion and facilitation of expanded seaport operating hours and shipper/receiver dock hours to balance the truck traffic flow on congested access routes.

The State should provide greater flexibility in the use of state funds. A portion of the State sales tax on jet fuel could be redirected to air cargo access projects. The Transportation Finance Bank could be capitalized with federal or other funds at a much higher level. Finally, goods movement projects on or off the state highway system could be made eligible to receive below market rate loans for projects that provide significant mobility, economic, community, and environmental benefits.



TRADE AND TRANSPORTATION

A Study of North American Port and Intermodal Systems

By the National Chamber Foundation of the U.S. Chamber of Commerce

March 2003

TRADE & TRANSPORTATION

Executive Summary

EXECUTIVE SUMMARY

The United States is the world's largest importer and exporter, accounting for 1 billion metric tons or nearly 20% of the annual world ocean-borne trade. All freight moving in, out, and within the U.S. amounts to about 15 billion tons and has a value of \$9.1 trillion. Although the vast majority of freight moves domestically, international trade amounts to \$2.0 trillion, almost half of which is containerized, manufactured

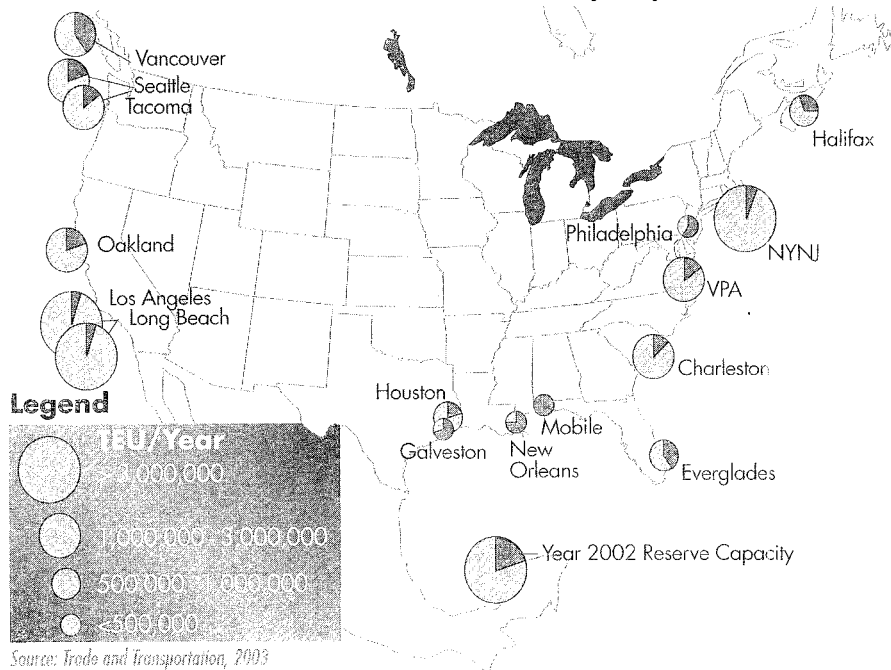
goods. This figure represents almost 27% of the entire Gross Domestic Product (GDP) that is totally dependent on international trade.

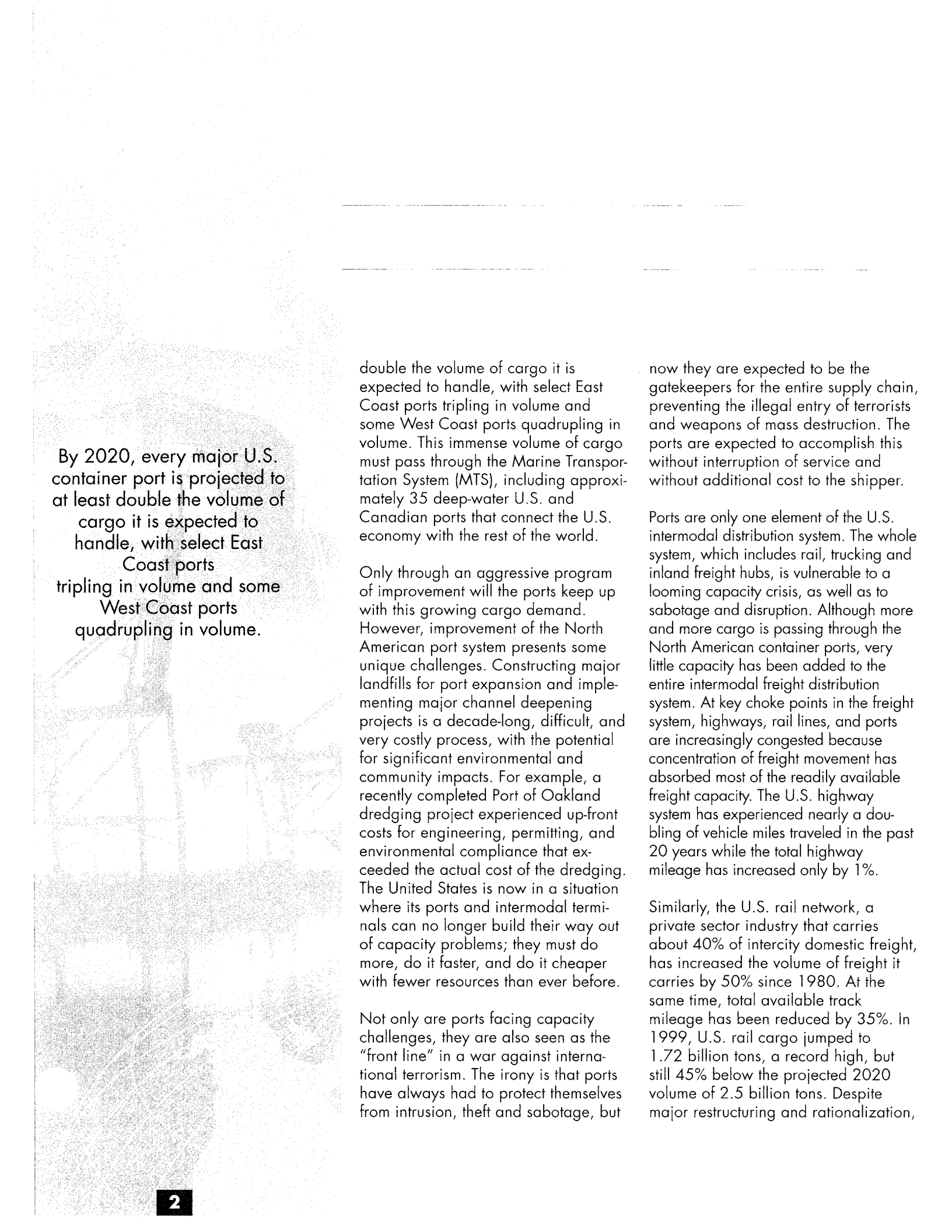
By the year 2020, even at moderate rates of economic growth, the total domestic tonnage of freight carried by all U.S. freight systems will increase by approximately 67%, while international trade will nearly double. In this same time interval, every major U.S. container port is projected to at least

"The nation's transportation system is the lifeblood of our economy. Without additional investment in our infrastructure, our system of commerce is impaired, our mobility is restricted, our safety is threatened, our environment is endangered, and our way of life is compromised."

Thomas J. Donohue
President and CEO,
U.S. Chamber of
Commerce and President,
National Chamber
Foundation

Current Container Port Utilization and Reserve Capacity





By 2020, every major U.S. container port is projected to at least double the volume of cargo it is expected to handle, with select East Coast ports tripling in volume and some West Coast ports quadrupling in volume.

double the volume of cargo it is expected to handle, with select East Coast ports tripling in volume and some West Coast ports quadrupling in volume. This immense volume of cargo must pass through the Marine Transportation System (MTS), including approximately 35 deep-water U.S. and Canadian ports that connect the U.S. economy with the rest of the world.

Only through an aggressive program of improvement will the ports keep up with this growing cargo demand. However, improvement of the North American port system presents some unique challenges. Constructing major landfills for port expansion and implementing major channel deepening projects is a decade-long, difficult, and very costly process, with the potential for significant environmental and community impacts. For example, a recently completed Port of Oakland dredging project experienced up-front costs for engineering, permitting, and environmental compliance that exceeded the actual cost of the dredging. The United States is now in a situation where its ports and intermodal terminals can no longer build their way out of capacity problems; they must do more, do it faster, and do it cheaper with fewer resources than ever before.

Not only are ports facing capacity challenges, they are also seen as the "front line" in a war against international terrorism. The irony is that ports have always had to protect themselves from intrusion, theft and sabotage, but

now they are expected to be the gatekeepers for the entire supply chain, preventing the illegal entry of terrorists and weapons of mass destruction. The ports are expected to accomplish this without interruption of service and without additional cost to the shipper.

Ports are only one element of the U.S. intermodal distribution system. The whole system, which includes rail, trucking and inland freight hubs, is vulnerable to a looming capacity crisis, as well as to sabotage and disruption. Although more and more cargo is passing through the North American container ports, very little capacity has been added to the entire intermodal freight distribution system. At key choke points in the freight system, highways, rail lines, and ports are increasingly congested because concentration of freight movement has absorbed most of the readily available freight capacity. The U.S. highway system has experienced nearly a doubling of vehicle miles traveled in the past 20 years while the total highway mileage has increased only by 1%.

Similarly, the U.S. rail network, a private sector industry that carries about 40% of intercity domestic freight, has increased the volume of freight it carries by 50% since 1980. At the same time, total available track mileage has been reduced by 35%. In 1999, U.S. rail cargo jumped to 1.72 billion tons, a record high, but still 45% below the projected 2020 volume of 2.5 billion tons. Despite major restructuring and rationalization,

the rail industry now finds itself short of capacity in certain congested metropolitan areas, most predominantly Chicago, and along key mainlines.

Of total domestic freight, about 9% is carried by the MTS on its network of inland waterways and by coastal feeder barges. Yet funding for channel, lock, and levee improvements has, in fact, decreased over the past 20 years.

This study concludes that the U.S. port and intermodal freight transportation system is now being operated in many areas at the limits of its maximum capacity. Should any component of the system break down, more than one-fourth of the national economy will be crippled. Such breakdowns have partially occurred in the past, and will most certainly occur in the future. The paradox is that the United States has significant reserve capacity in its freight transportation system; it is simply located in the wrong place to relieve the most critical choke points. The U.S. lacks a national program for freight transportation planning and development to focus critical scarce resources on the choke points at key gateways and corridors.

Further, this study concludes that there is no coordinated approach to an "intermodal system" as such. Rather, transportation planning takes place at the Metropolitan Planning Organization (MPO) level with little regard for national transportation priorities. Moreover, this intermodal system is

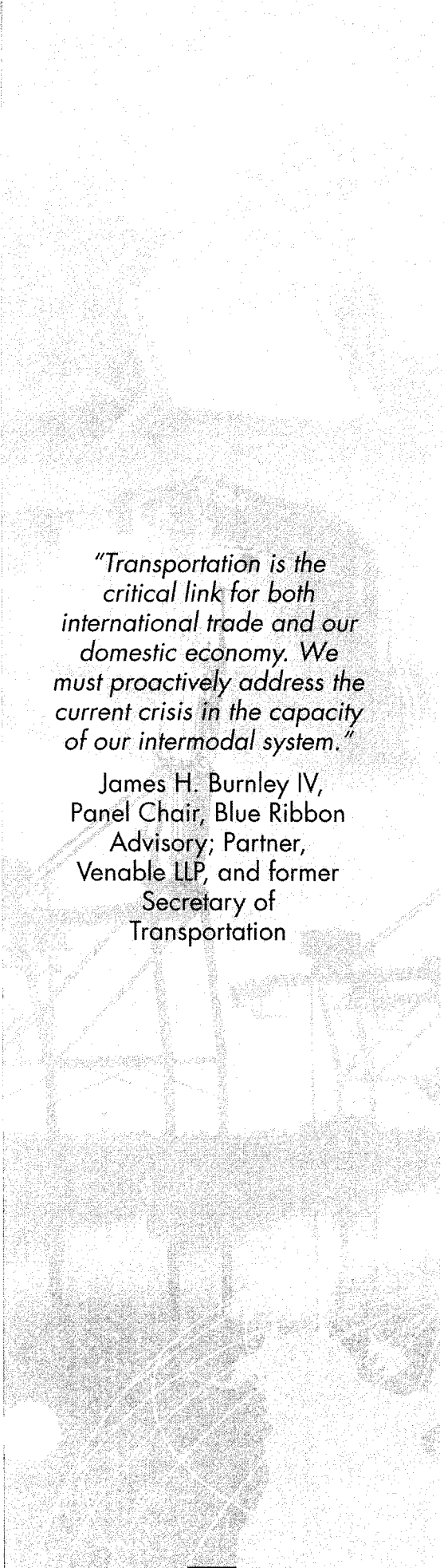
merely an aggregation of multiple, private and public modes, each of which is stovepiped within its own individual areas of activity. That is, each mode has a vertically integrated information system; vertically integrated planning, development, and management programs; and vertically integrated funding mechanisms with minimal "cross-talk" between modes.

Therefore, there must be a comprehensive, national effort with a joint public/private partnership to unify the modes into a coherent intermodal freight transportation system. This study recommends that the actions described below be initiated as soon as possible.

National Freight Policy

The United States must develop a National Freight Policy that will institutionalize and coordinate a separate freight program within the U.S. Department of Transportation (USDOT) to plan and promote a national intermodal system that relies on timely freight data and effective information technology (IT). To accomplish this, a Federal Freight Advisory Committee must be created to produce specific, targeted results in areas where infrastructure shortfalls have been identified:

- A clearly defined freight program within the USDOT
- A national intermodal planning and development initiative



"Transportation is the critical link for both international trade and our domestic economy. We must proactively address the current crisis in the capacity of our intermodal system."

James H. Burnley IV,
Panel Chair, Blue Ribbon
Advisory; Partner,
Venable LLP, and former
Secretary of
Transportation

- A coherent environmental regulatory process
- Freight data and IT
- Labor integrated into national freight policy

Financing Options

New financing options for intermodal freight infrastructure enhancements must be developed to ameliorate existing and future impediments to an effective intermodal freight system. This study recognizes that its mission is not only to identify one source of funding but also describe the need for funding, and to present funding options. Among these options are expanded eligibility for existing TEA-21 programs, a National Freight Transportation Bank, or a new series of Transportation Bonds.

U.S. industrial strength has been based on rapid, cheap, but dependable freight transport. However, it is an overloaded system, burdened by parochial planning approaches, and outdated labor and productivity standards that are not in step with the dictates of global trading patterns. The facts presented in this study will demonstrate a potential scenario of catastrophic breakdown in the national cargo delivery system. Although some of these findings are troubling, this study documents economic risks to the nation that have been overlooked far too long. It is imperative that these risks be eliminated before the nation's economic stability and its security are jeopardized.



THE FREIGHT STORY

A National Perspective
on Enhancing Freight Transportation



THE FREIGHT STORY

A National Perspective on Enhancing Freight Transportation

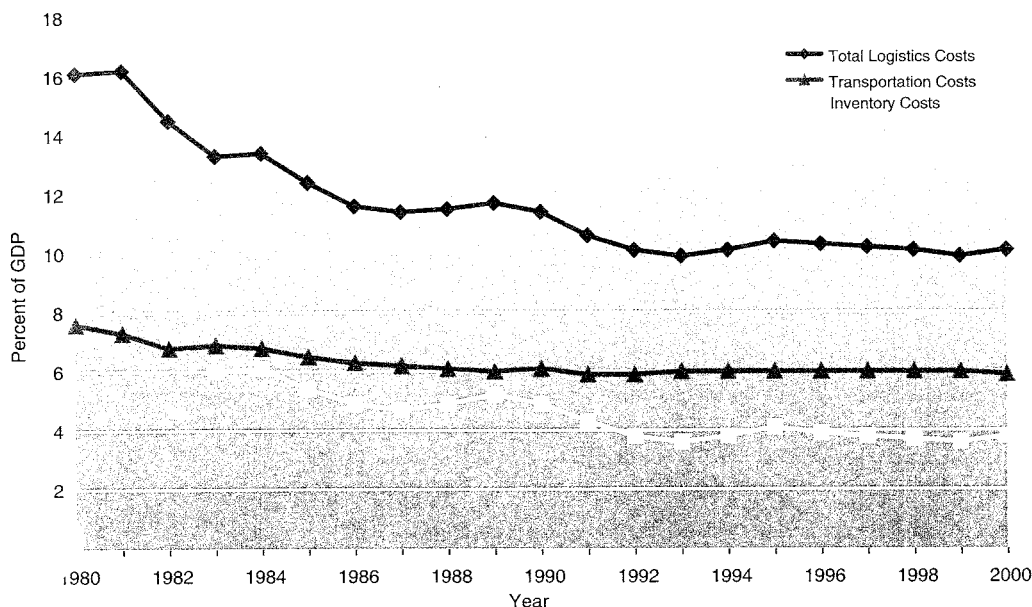
Efficient, safe, and secure freight transportation helps form the foundation upon which our nation's economic strength rests. Improvements in the efficiency and reliability of freight transportation have been the engine of prosperity and competitive advantage. The cost of moving freight dropped from 16.1 percent of U.S. Gross Domestic Product (GDP) in 1980 to approximately 10.0 percent in 2000 (Figure 1) (Cass Information Systems and ProLogis). Business and consumers benefit from these savings. Every corporate dollar

saved in logistics expenditures is available for plant and equipment upgrades, worker training to adapt to changing global markets, basic and applied research and development, and increased equity value. The *Journal of Commerce* estimates that American households, the ultimate beneficiaries of system improvements, have saved an average of \$1,000 annually since 1980 because of reductions in freight logistics costs.

Although efforts to improve freight transportation efficiency and reliability have been

successful, the U.S. transportation system is now facing challenges that, unless addressed, may jeopardize its reliability. Allowing transportation system reliability to erode would add additional pressure to U.S. companies operating in an increasingly competitive international market and place more burdens on communities seeking

Figure 1. Business Logistics Expenditures as a Percent of U.S. Gross Domestic Product (GDP)



Source: Prologis and Cass Information, Inc., 12th Annual State of Logistics Report, June 4, 2001.



to sustain their economic base and quality of life. Improved logistics has thus far been able to address the corrosive effects of the loss of system reliability. Unfortunately, the ability of logistics to provide additional offsetting savings appears to be nearing its limit, as are the savings attributable to deregulation. Unless these challenges are addressed, more discretionary income will be devoted to moving materials and products, businesses will be constrained in their adoption of innovative strategies to maintain global competitiveness, quality of life—as measured by congestion—will suffer, and safety and security could be jeopardized.

These outcomes are not inevitable. The U.S. system of governance, technical know-how, and ability to respond when national goals are threatened are strengths that can be mobilized to address a set of compelling, but manageable, problems.

This report summarizes three years of work conducted by the Federal Highway Administration (FHWA), in cooperation with the U.S. Department of Transportation's (USDOT's) other modal administrations, and the Secretary's Office of Intermodalism. This work involved the development of an integrated freight data and analytical system, called the Freight Analysis Framework (FAF), and extensive outreach to freight stakeholders aimed at improving the understanding of the

nature of freight movement, identifying challenges to improving freight productivity and security, and developing strategies to increase freight productivity. This report is not a definitive federal document describing specific approaches to be undertaken or policies to be adopted. Rather, it is a point of departure for further examination of policies, programs, and initiatives that might be undertaken by decisionmakers at all levels of government, in cooperation with the private sector, to meet the challenge of sustaining system reliability and the promise it holds for the nation's future.

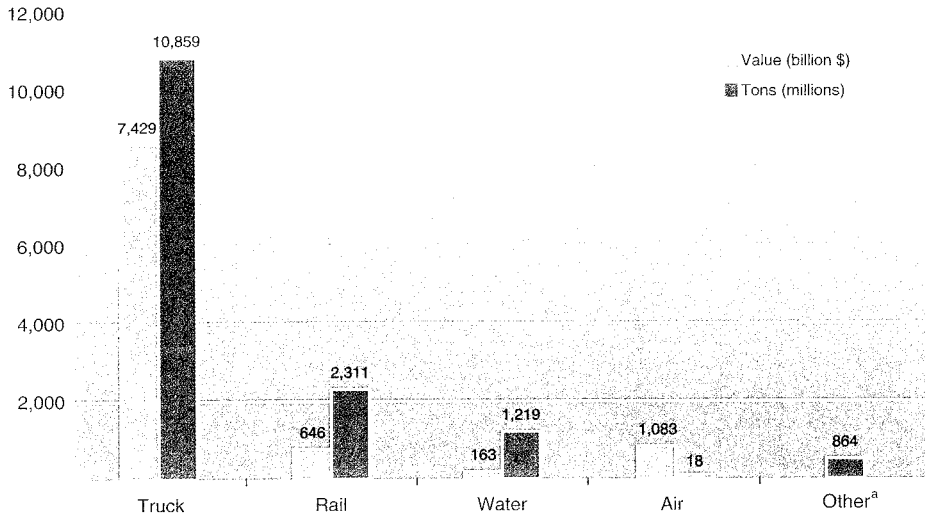
FREIGHT TRANSPORTATION TODAY

The U.S. freight transportation network moves a staggering volume of goods each year. Over 15 billion tons of goods, worth over \$9 trillion, were moved in 1998 (USDOT FHWA 2002a). This translates into 310 pounds of freight moved daily for each U.S. resident. That's a lot of stuff.

The movement of bulk goods, such as grains, coal, and ores, still comprises a large share of the tonnage moved on the U.S. freight network. However, lighter and more valuable goods, such as computers and office equipment, now make up an increasing proportion of what is moved. Moreover, because of changes in the makeup of the U.S. economy



Figure 2. U. S. Freight Shipments by Mode: 1998



^a Includes international shipments through pipelines and other facilities. Value data are not available for the "other" category.

Note: Although efforts were made to reduce double counting of international shipments, some double counting may still remain.

Source: U. S. Department of Transportation, Federal Highway Administration, Freight Analysis Framework, 2002.

mercial operations, and over 5,000 coastal, Great Lakes, and inland waterway facilities moving cargo.

FREIGHT TRANSPORTATION AND THE ECONOMY

The benefits of freight transportation to the economy are enormous. Freight transportation increases the value of goods by moving them to locations where they worth more and encourages competition and production by extending the spatial bound-

and the dramatic growth in international trade, goods are being transported over longer distances in contrast to a few decades ago. FAF estimates that trucks carried about 71 percent of all tonnage and 80 percent of the value of U.S. shipments in 1998 (USDOT FHWA 2002a). A breakdown of freight shipments by mode is shown in Figure 2.

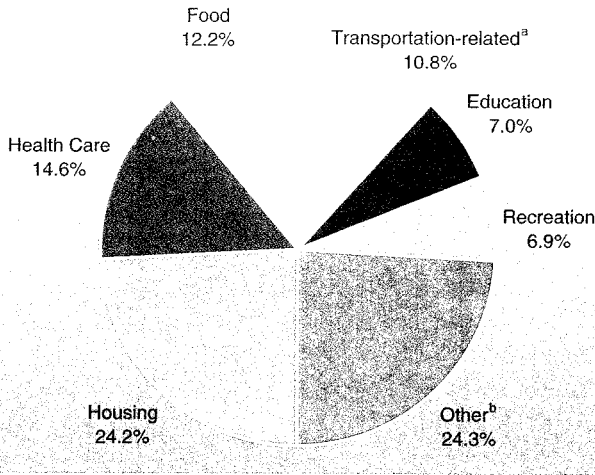
Commodities are moved on an extensive and complex transportation network. The U.S. road system alone extends 4 million miles, railroad operations cover another 100,000 miles, and the natural gas and liquid pipeline networks spread out over 1.4 million miles. There are over 19,000 airports in the United States, with approximately 540 serving com-

aries of commodity and labor markets. Freight transportation also stimulates demand for goods and services and employs millions of people. Freight transportation infrastructure is a significant component of our nation's wealth and productive capacity.

From a macroeconomic perspective, transportation accounts for a significant share of the U.S. GDP. In 2000, purchases of transportation-related goods and services accounted for approximately 11 percent of GDP (USDOT BTS 2002). Only housing, health care, and food accounted for a greater share (Figure 3). For-hire transportation services, which include warehousing, contributed about 3.3 percent (\$303 billion) to GDP.



Figure 3. Transportation's Importance to GDP: 2000



^a Includes all consumer and government purchases of transportation-related goods (vehicles and fuel), services (for-hire transportation and auto insurance), and exports related to transportation. ^b Includes entertainment, personal care products and services, and payments to pension plans.

Source: U. S. Department of Transportation, Bureau of Transportation Statistics, *Pocket Guide to Transportation*, BTS-02-02, February 2002.

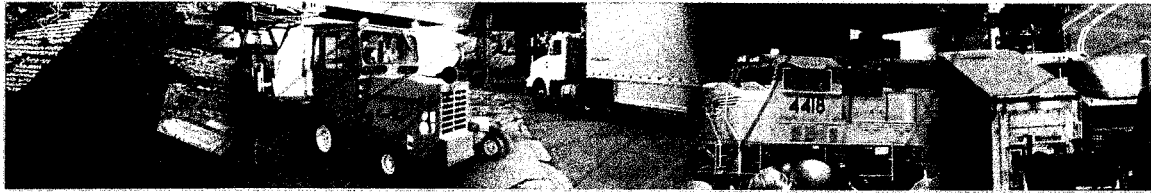
Many industries and businesses depend on their own transportation operations (primarily trucking) to move goods. These "in-house" transportation services contributed an additional \$142 billion to the economy (USDOT BTS 2001b).

Freight transportation also contributes to the economy by providing jobs to millions of people—an important indicator of economic growth. In 2000, more than 10 million people were employed in transportation-related industries, including for-hire services, vehicle manufacturing, and parts suppliers. Of that total, for-hire transportation (including ware-

housing) employed more than 4.4 million workers, a majority of whom worked in freight-related jobs. Another 5.5 million people worked in transportation occupations in nontransportation industries, such as truck drivers for grocery stores (USDOT BTS 2001b). Truck drivers, alone, accounted for nearly 70 percent of the total number of transportation occupational workers (USDOT BTS 2002b).

Improvements in freight productivity help the United States maintain its competitive position in the world economy. The

Bureau of Labor Statistics reports that productivity for the intercity trucking, railroad, air transport, and petroleum pipeline industries has improved over the last 20 years. The railroad industry has posted the most impressive gains, followed by the pipeline industry. Improvements in railroad productivity resulted primarily from deregulation, divestiture of uneconomic lines, reductions in labor force, and changes in technology and logistics. Productivity improvements in trucking resulted primarily from public investments in a high quality national road network and deregulation.



Transportation infrastructure is a significant part of the nation's wealth. With the exception of railroads and pipelines, transportation infrastructure relies heavily on public investment and joint partnerships between the public and private sectors. The Bureau of Economic Analysis estimated that public stock in highways and streets, alone, was worth \$1.42 trillion in 2000 (USDOC BEA 2001). Not only are roads, airports, and railroads part of the national wealth, but the transportation system also stores or carries large volumes of the economy's inventory. At any given time, billions of dollars worth of inventory are either moved via truck, train, ship, or barge, or held in a yard for transport or distribution.

THE BOTTOM LINE FOR BUSINESS

Freight is big business. It is a necessity, not a luxury. When transportation system performance decreases, freight-related businesses and their customers are affected in two ways.

- First, freight assets become less productive.
- Second, more freight transportation must be consumed to meet the needs of a thriving and expanding economy. Thus, when freight transportation under-performs, the economy pays the price.

Reliable, predictable travel times are especially important in an economy where many goods are expensive and are needed in tightly

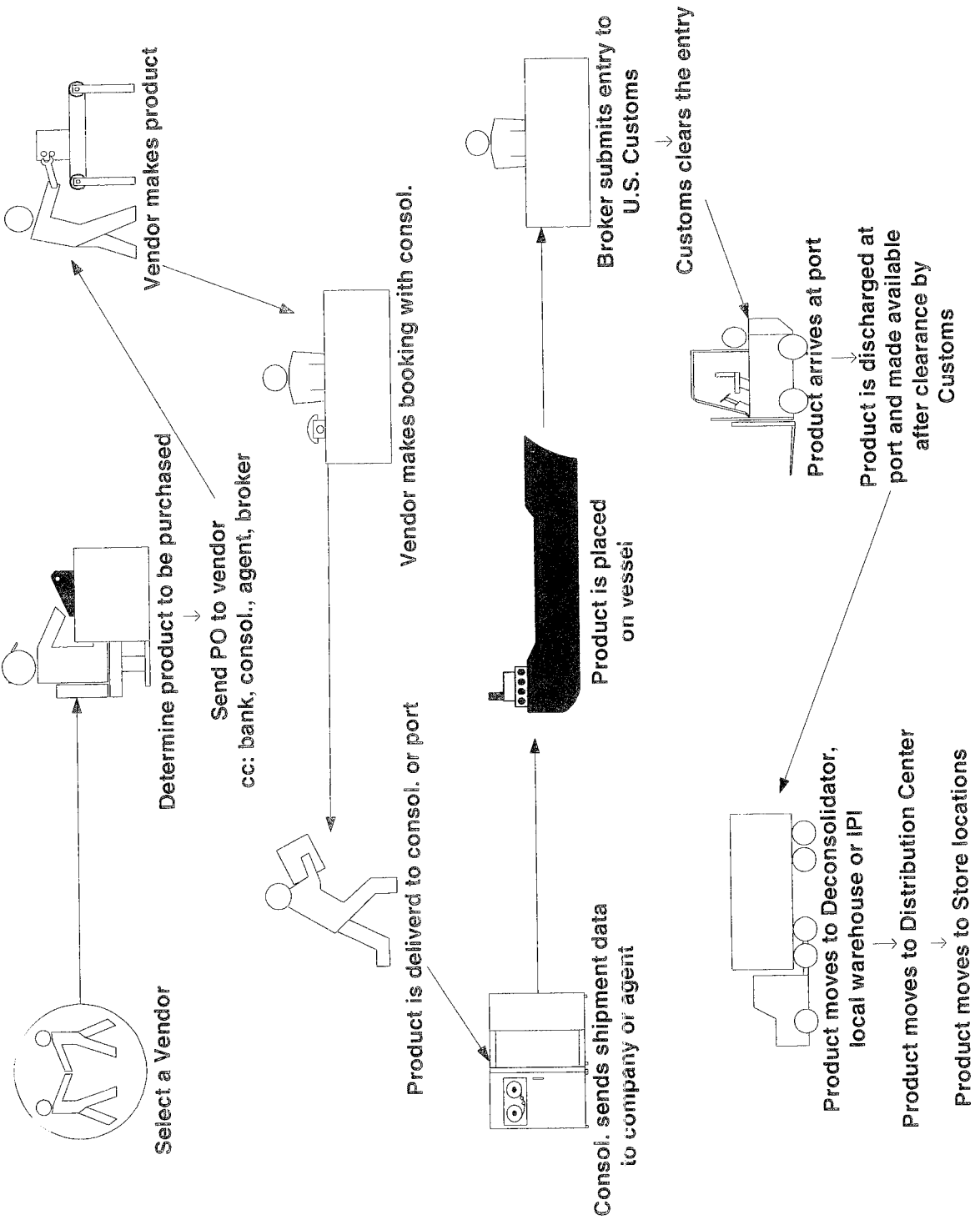
scheduled manufacturing and distribution systems. Late arrivals can have significant economic costs for factories waiting for parts to assemble and for carriers who are missing guaranteed delivery times.

Congestion is a serious problem for freight transportation. It contributes to making transit times longer and more unpredictable. Unpredictability can hamper just-in-time inventory management and hinder some production processes. As a result, shippers and carriers assign a value to increases in travel time, ranging from \$25 to almost \$200 per hour, depending on the product carried. The value of reliability (i.e., the cost of unexpected delay) for trucks is another 50 percent to 250 percent higher (USDOT FHWA 2001b). Hence, congestion increases the cost of freight and therefore has an effect on the U.S. economy.

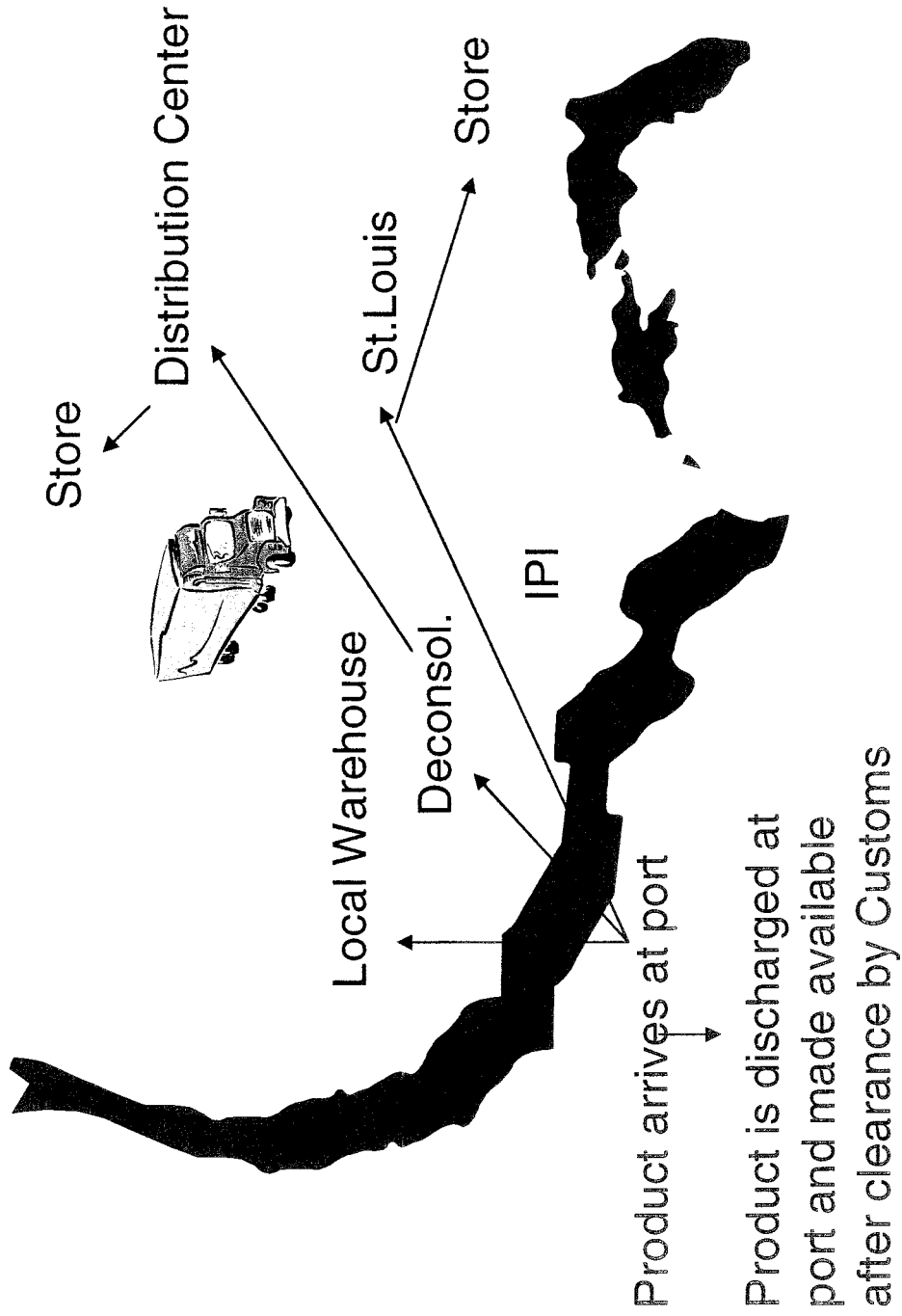
Growing traffic congestion affects the U.S. economy and our quality of life. Source: Washington State Department of Transportation



Supply Chain Overview



Import Supply Chain



Supply Chain Key Concerns

- Point of Vessel Discharge
 - Container availability and visibility for shippers based on discharge date/time.
 - Long dwell time adds to port congestion and impacts availability.

Supply Chain Key Concerns

- Port to Local Warehouse or Deconsolidator
 - Turn time for shippers and truckers close to 60+ minutes a turn.
 - Consistent full services gates on weekends or after hours to shift more activity to non-peak hours.
 - Freeway congestion on 710 and other arteries adds to air quality issues and delays in moving product.
 - Major shippers have local warehouse's in the inland empire resulting in long transit times/added costs.
 - Drivers are not able to get adequate turns to stay in the industry.

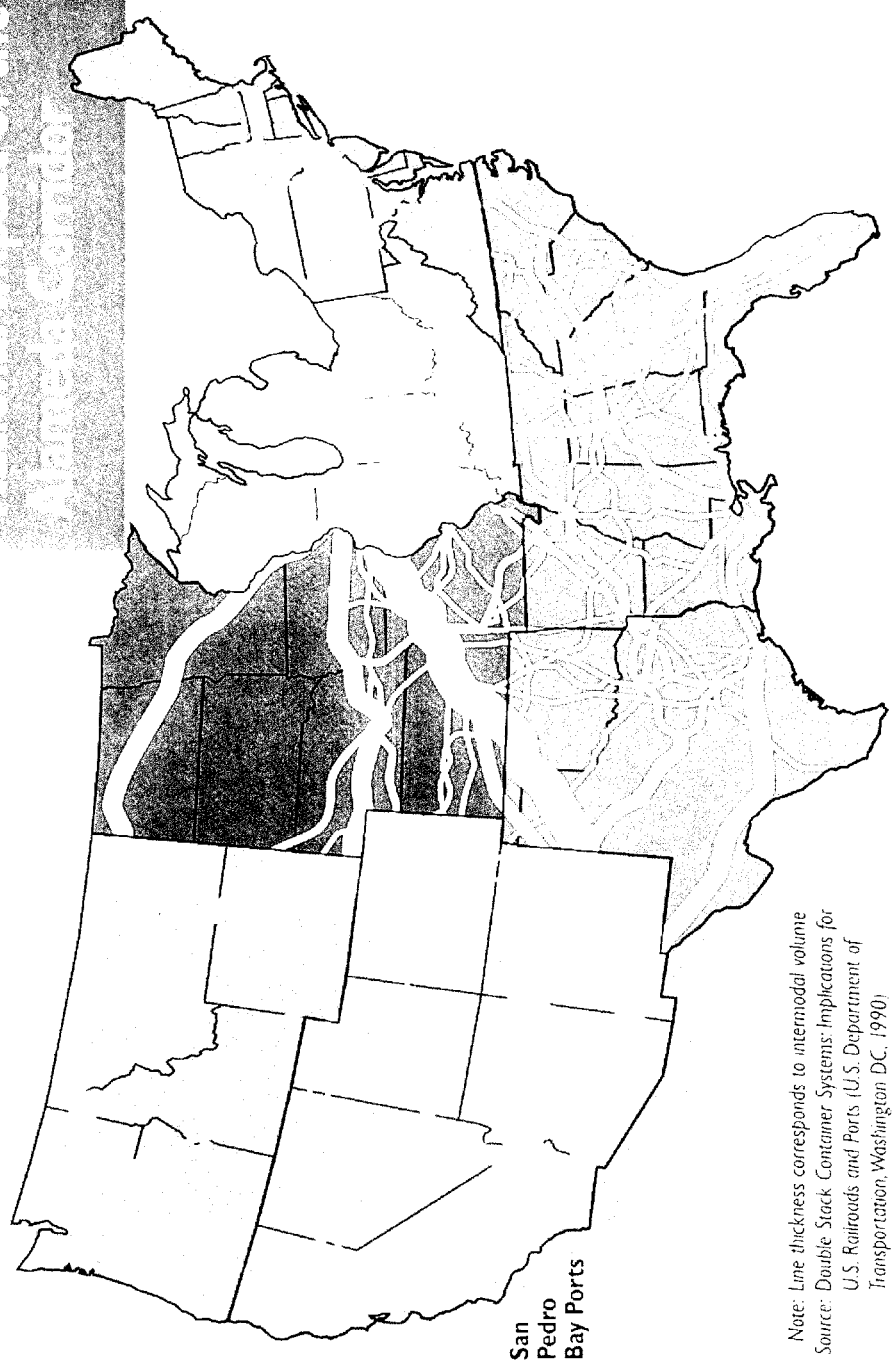
Supply Chain Key Concerns

- Deconsolidators and Transload Agents
 - South Bay/Inland Empire experiencing rapid growth in transload activity versus IPI activity.
 - Deconsolidators setting up operations in communities where after hour truck activity is not welcome.
 - Local operations may not be working nights or weekends to accommodate after hour deliveries.
 - Added pressure on third party deconsolidators to expand hours of operation while getting pressure to minimize truck movement through the community neighborhoods

Intermodal Goods Movement

Intermodal (Ship+Rail Transport) Trade Volume Today

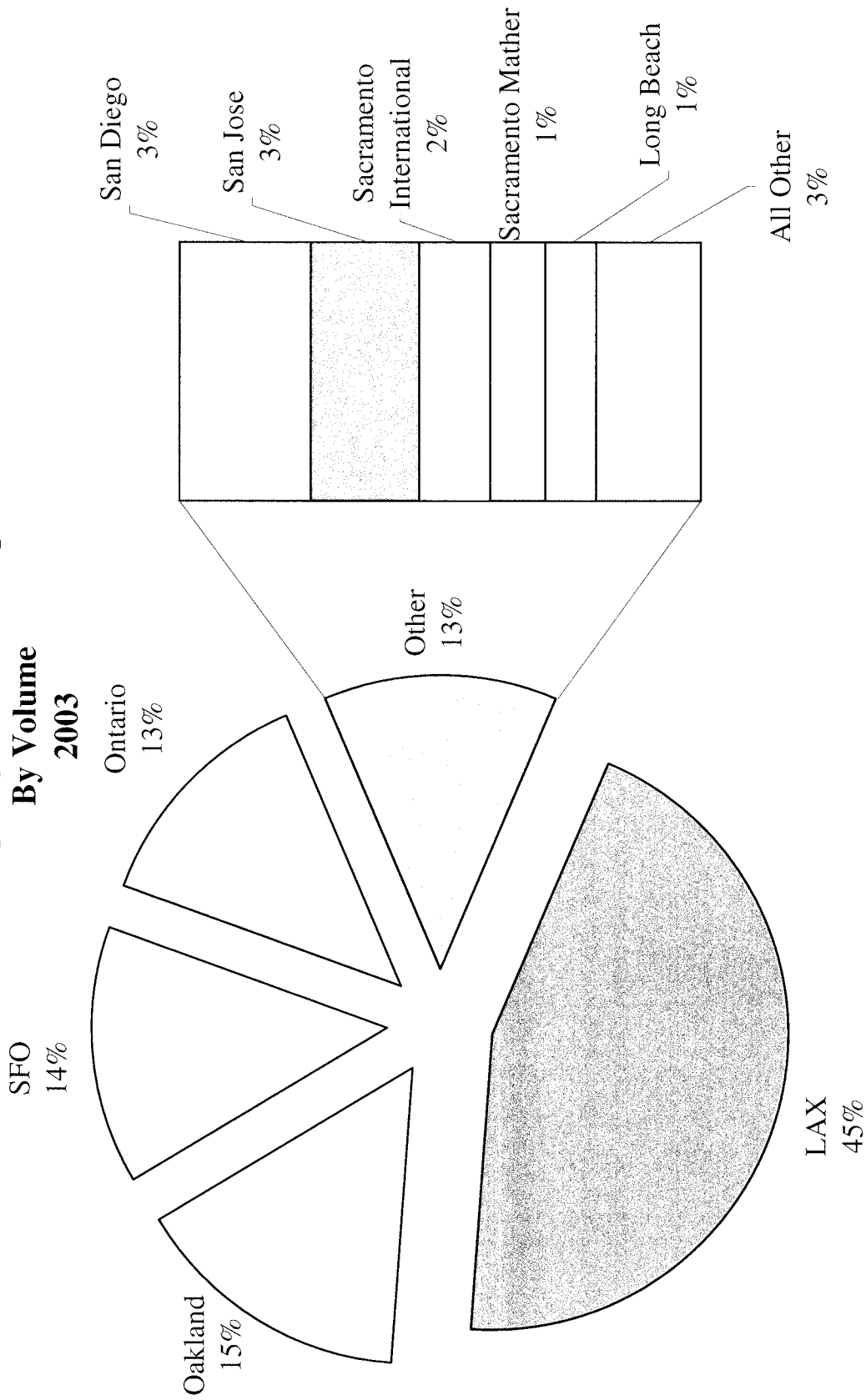
National Impact of the
Alameda Corridor



San
Pedro
Bay Ports

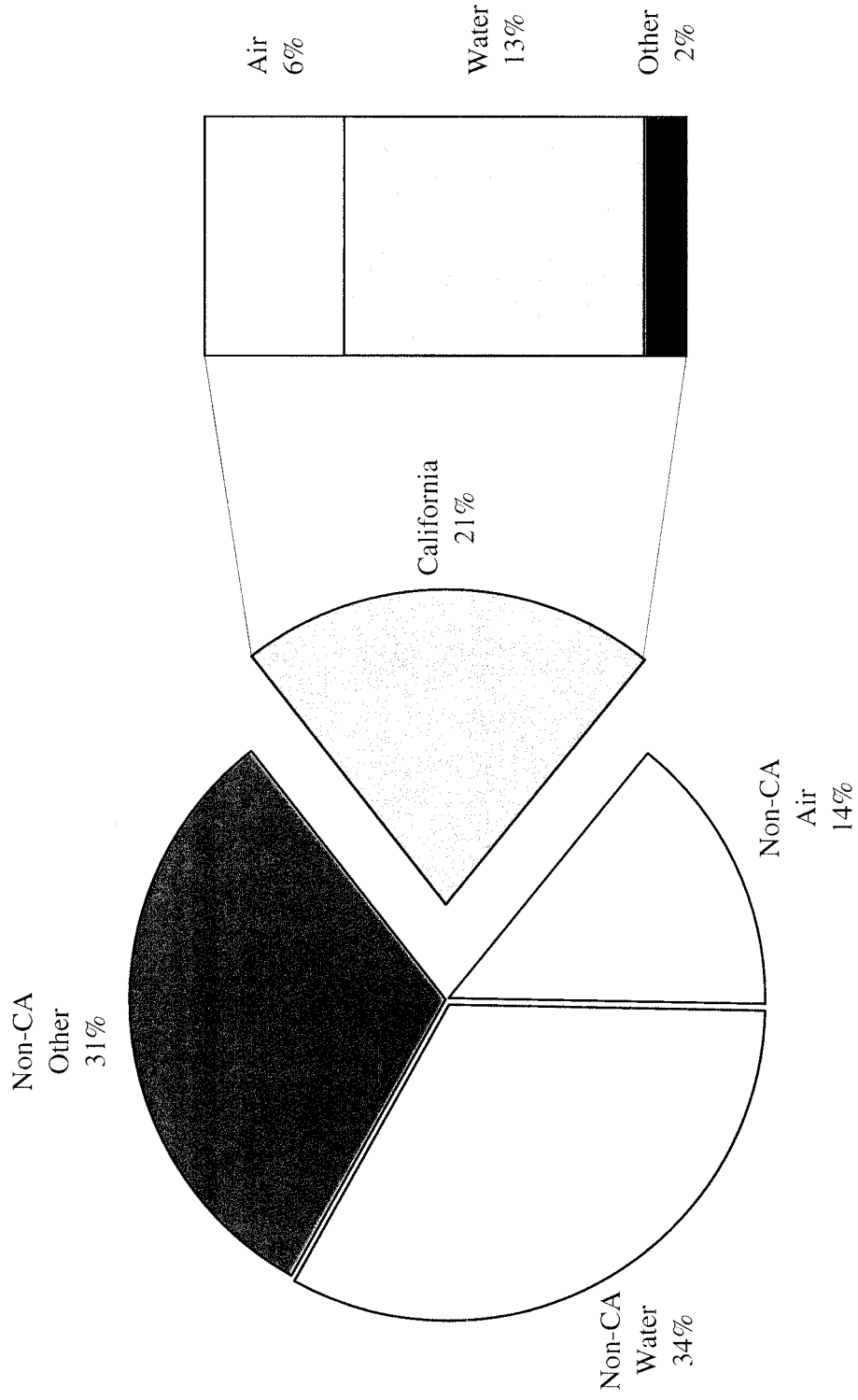
Note: Line thickness corresponds to intermodal volume
Source: Double Stack Container Systems: Implications for
U.S. Railroads and Ports (U.S. Department of
Transportation, Washington DC, 1990)

Air Cargo, By California Airport By Volume 2003



Source: Caltrans Office of Goods Movement

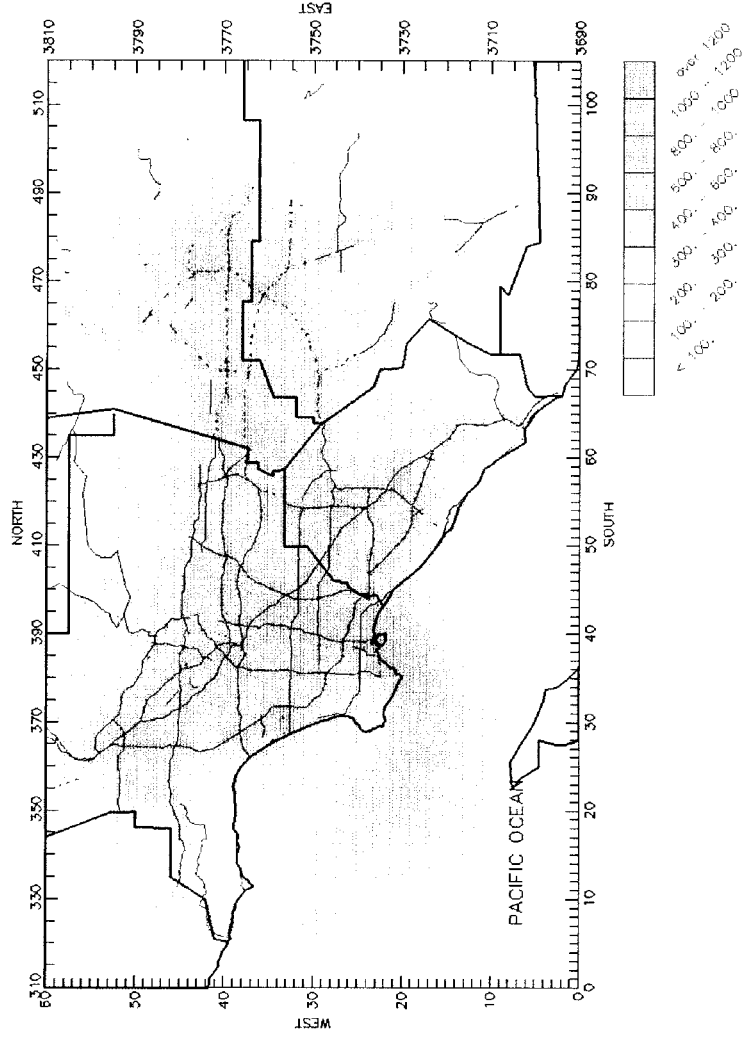
**Value of Import and Export Freight
California vs. Other States, by Type of Port
2002**



Sources: Caltrans Office of Goods Movement.

Modeled Cancer Risk: All Sources

Maximum Value = 5800.21
Minimum Value = 184.34



U.S. Chamber of Commerce, / National Chamber
Foundation U.S. and Canadian Port Study

The "Port" One of the Many Diverse Constituencies in the Cargo Transportation Logistics Chain

Port

Railroads

Shipping Agents

Motor Carriers/
Truckers

Shippers

Objective:

Freight Forwarders/
Brokers

A multimodal
"Seamless" integrated
world wide cargo
conveyance system.

Carriers/
NYOCCs

Customs Agencies

Stevedores/
Terminal Operators

Warehousing/
CFS Operators

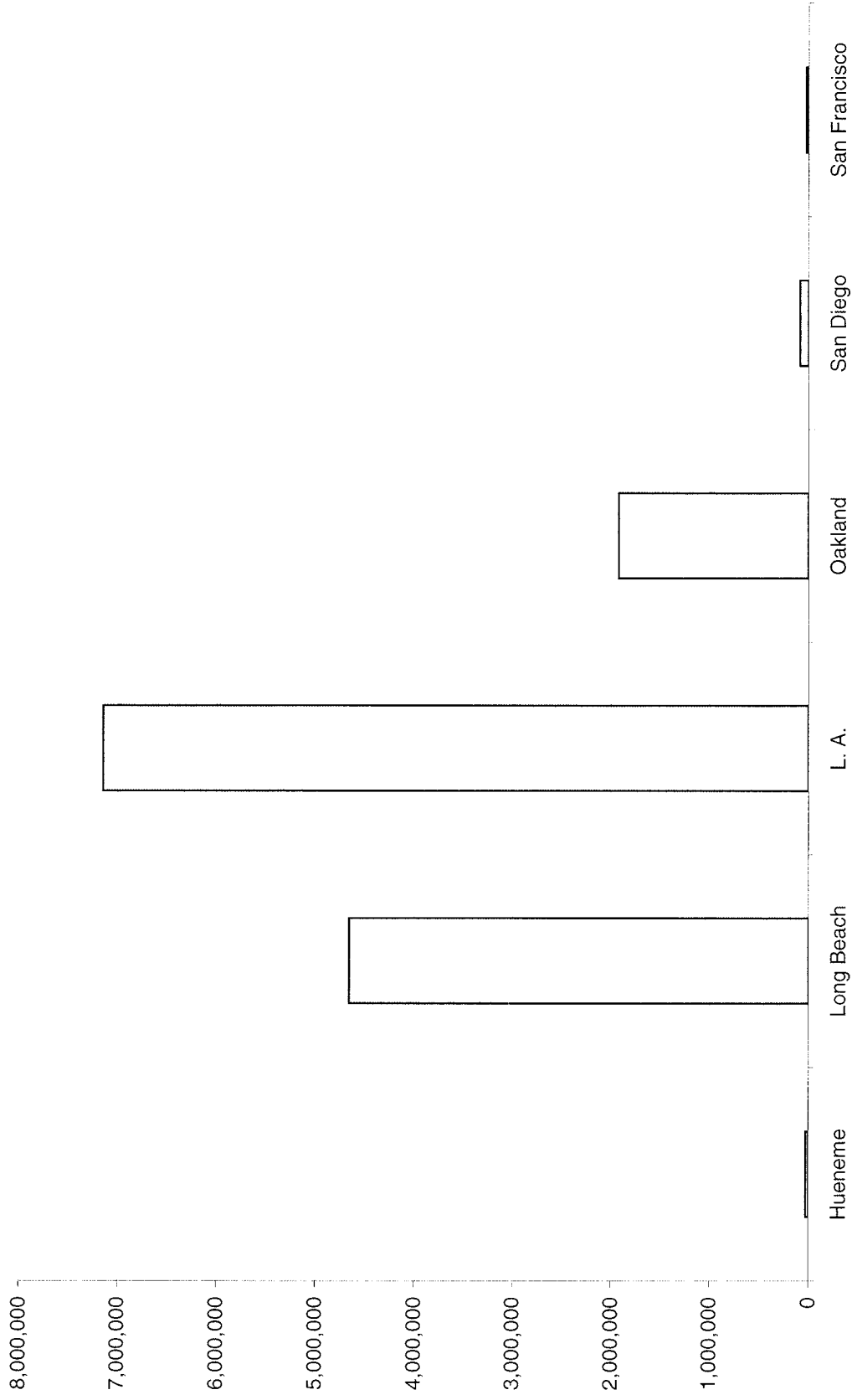
Longshore Labor

Pilottage/Luggage

Governmental Regulation/
Compliance

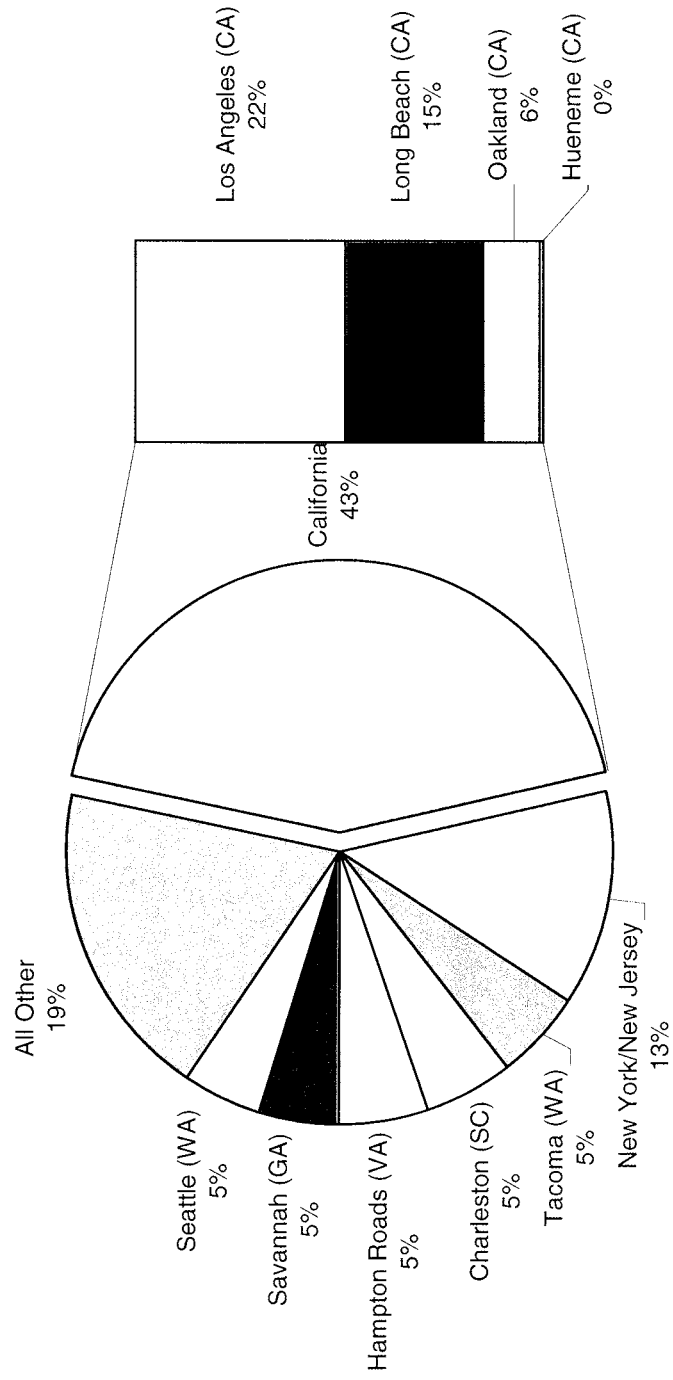


2003 Container TEUs in California



Source: Caltrans, Office of Goods Movement.

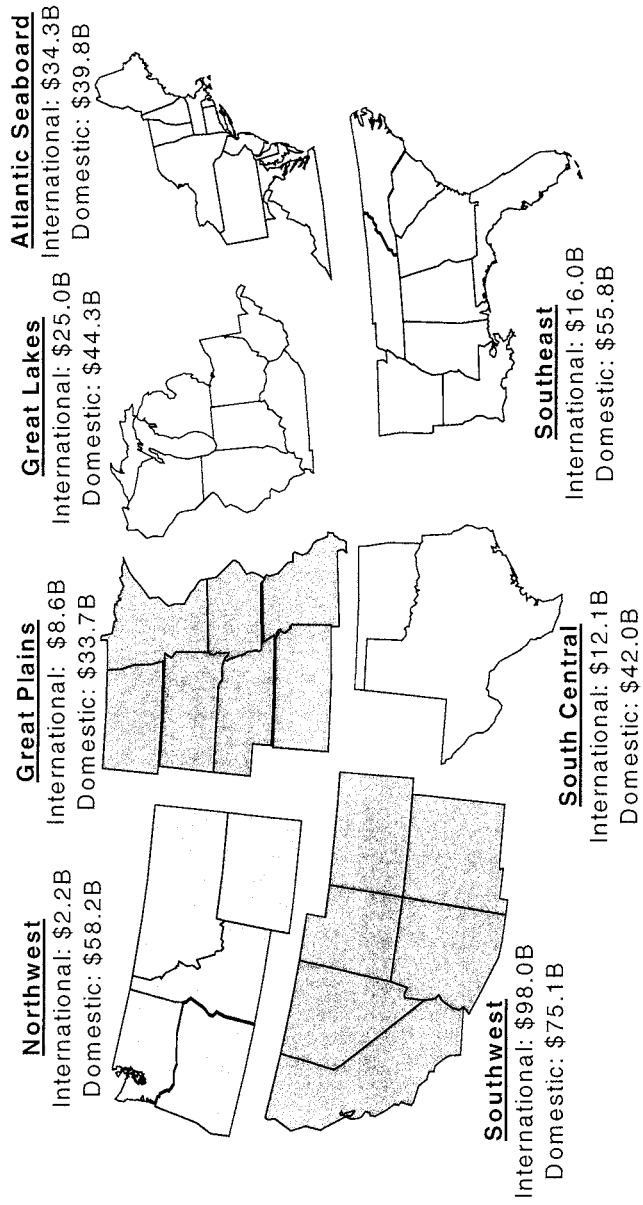
2003 Seaport TEUs, By Port



Source: U.S. Department of Transportation, *Waterborne Databank*, as cited in *California's Global Gateways: Trends and Issues*, Public Policy Institute of California, 2004.

Year 2000 Two-Way Surface Trade Between California and Regions of the United States

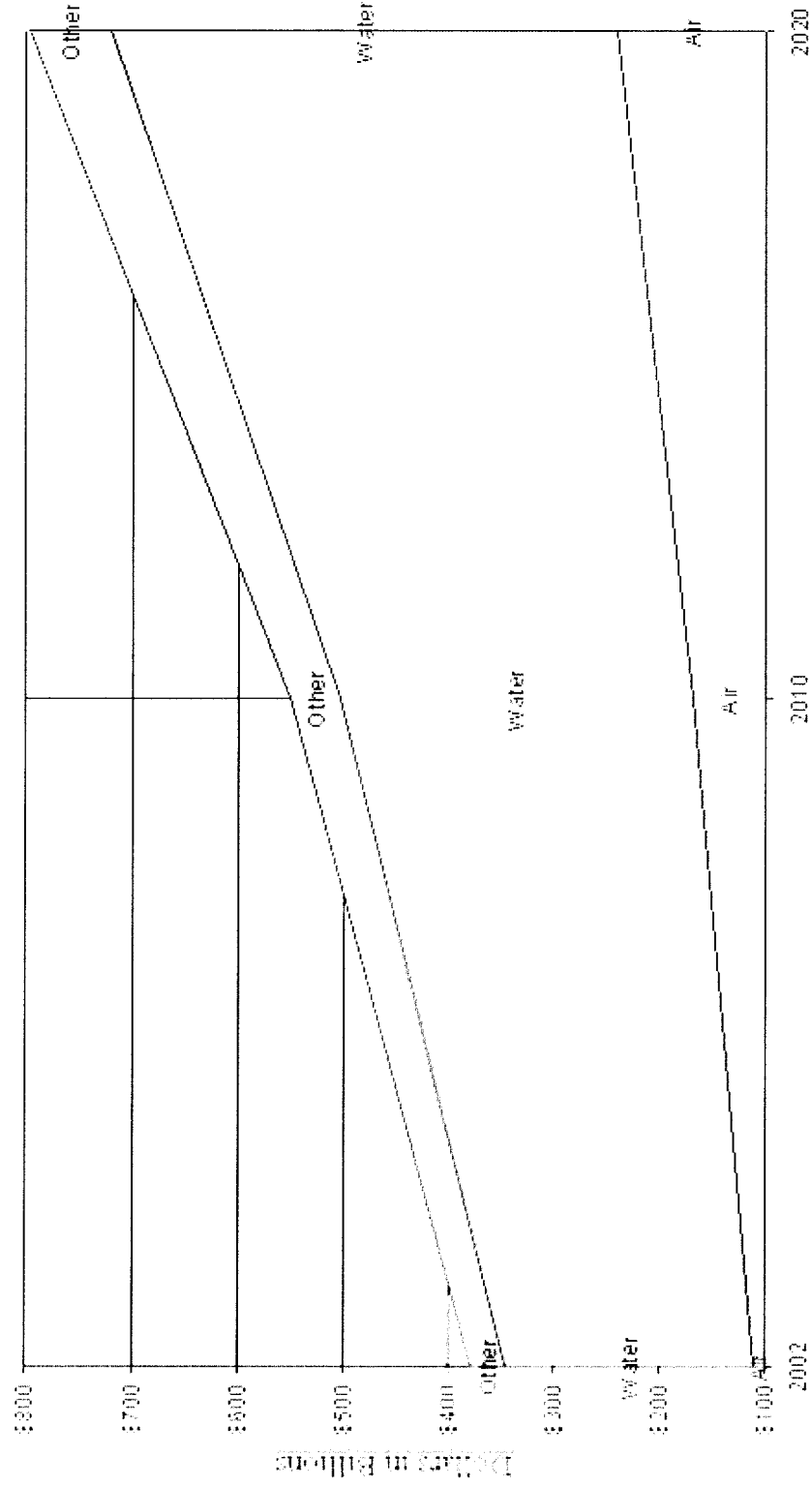
(International via Alameda Corridor East &
Domestic via all Trade Corridors)



*Southwest international total includes CA's overseas trade; the domestic total excludes CA's \$535 billion trade with itself.

Source: OnTrac Trade Impact Study (final).

Growth in California Freight, by Type of Port 2002-2020



Source: Authors' estimates. 2002 data are from U.S. Census Bureau, *U.S. Exports/Imports of Merchandise* (2002), as cited in *California's Global Gateways: Trends and Issues*, Public Policy Institute of California, 2004.

Mexico Envisions a Seaport to Rival

L.A.'s

Officials say the Baja plan comes in response to queries from major shipping companies amid fast-growing trade from Asia.

By Chris Kraul and Deborah Schoch
Times Staff Writers

April 30, 2005

MEXICO CITY — Desert scrub, rows of broccoli and a few scattered Airstream trailers are about all that dot the seaside landscape at Punta Colonet. But Mexican officials hope an ambitious development plan will transform the Baja California cove into a seaport as busy as that in Los Angeles.

The site, 120 miles south of Tijuana, is where the Mexican government and major shipping and freight concerns envision a massive ocean freight container port to compete with those north of the border. Next year, government officials hope to begin receiving construction bids from major global shipping companies to start work on the harbor, berths and terminals.

Mexican officials hope the port will open in 2012 and will include about 20 slips for container cargo ships, Mexican port and merchant marine coordinator Cesar Reyes Roel said.

He says the plan calls for the port to ultimately receive as much cargo as the Los Angeles port does now, and would result in a new Baja city linked to the U.S. by a 180-mile railroad.

The driving force behind the proposal is the "surprising and consistent" growth in Asian maritime cargo to North America, Roel said. Moving forward will depend on receiving private capital from the shipping and terminal companies, he added.

Los Angeles and Long Beach are the U.S. gateways for Asian goods, and some officials at those ports are skeptical that Punta Colonet could handle 7 million cargo containers a year, as does the Port of Los Angeles, the largest U.S. seaport. "We think it's ambitious," Port of Los Angeles spokesman Arley Baker said.

There is enough interest in Mexican ports, Roel said, that major global shipping companies have asked the government about establishing or expanding ports not only in Punta Colonet, but also Ensenada, El Sauzal, Guaymas and Lazaro Cardenas.

The Punta Colonet plan emerged after a citizens group in Ensenada began seeking an alternative to a Baja California state proposal to expand that city's port and build a railroad link to the border town of Tecate.

"We knew that we couldn't just say no to the government," said Antonio Martinez-Pastor, the Ensenada planner whom the civic group hired to scout other locations for a port and railroad.

A months-long survey led Martinez-Pastor to the almost uninhabited cove of Punta Colonet, 60 miles to the south outside the town of Colonet, home to about 14,000 residents.

The land on which the port is proposed is owned by several *ejidos*, communal landowner groups that typically consist of peasants or indigenous groups. Mexico is in the process of determining the size of the port, which would require massive public works investment, including a breakwater.

The port project and the rail link would cost \$2 billion, Roel said.

Roel and other sources said Union Pacific had expressed interest in building the rail line. A Union Pacific spokesman said Friday that it was too early to comment on that prospect.

The proposal has provoked concern at the ports of Los Angeles and Long Beach and among California state officials about losing valuable cargo trade to Mexico. Sacramento is studying how to speed cargo through the Los Angeles area. New night and weekend port hours are to be added this summer. Expansion of the two ports is limited by land-use and environmental restrictions and overtaxed roads and rail lines.

*

Kraul reported from Mexico City and Schoch from Long Beach

Port Clean-Air Plan Nearly Set

Experts ready proposals for pushing pollution back to 2001 levels with strict rules, growth cap.

By Deborah Schoch
Times Staff Writer

March 3, 2005

A road map to cleaner air in and around the Port of Los Angeles could be crafted today as a high-powered panel of experts wrestles with how to roll back air pollution to 2001 levels at the country's largest seaport.

Officials overseeing the effort said Wednesday evening that they are increasingly optimistic that the panel will move ahead today to approve a preliminary plan to slash pollution from ships, trains, trucks and yard equipment over the next 20 years.

The push to create the first-in-the-nation clean-air plan for a seaport comes amid mounting public concern that the fast-growing Los Angeles-Long Beach port complex has become the region's worst air polluter.

Diesel fumes and other contaminants created by moving cargo through the ports are fouling the air, not only in the Harbor area, but along freeways and railroad lines east to the warehouses of Riverside and San Bernardino counties.

Measures being weighed include stringent regulations and voluntary steps, but one little-noticed proposal, known as "03" — on Page 104 of the draft plan — would impose a growth cap if pollution grew above certain levels.

"That's the ultimate backstop," said port environmental expert Christopher Patton. He is helping lead the task force appointed last summer by Mayor James K. Hahn with orders to determine how to reduce pollution to 2001 levels.

But the panelists learned Wednesday that even the barrage of more than 60 cutting-edge measures in their plan would take five years or longer to roll back pollution to 2001 levels.

For the first time, they also saw charts showing how two major types of contaminants — particulate matter and nitrogen oxides — would continue to mount until 2010 or later, despite the ambitious curbs, some of which would require new laws or still-to-be-perfected technology.

Hahn's effort to create a clean-air plan gained momentum when three major agencies that regulate Southern California air quality — the South Coast Air Quality Management District, the state Air Resources Board and the U.S. Environmental Protection Agency — dispatched some of their top technical staff to work with port experts and consultants on a working group advising the larger task force.

They have devised the preliminary plan now being reviewed by task force members at a marathon two-day session at the Sheraton in San Pedro. Those members include representatives of the railroad and shipping industry, community and environmental groups, and unions.

Several members said they were encouraged by the convivial atmosphere of the Wednesday meeting. "We got consensus on most issues," said Port Commissioner Thomas Warren, co-chairman of the group.

Gail Ruderman Feuer, senior attorney for the Natural Resources Defense Council, said she was "very encouraged. I'm optimistic that this task force will deliver to the mayor a strong plan that will achieve no net increase."

But a controversial measure to rein in pollution from railroad locomotives will be discussed this morning, and a representative from Union Pacific railroad expressed concerns Wednesday that a railroad representative had not been included in the working group.

Some members voiced disappointment that the adjacent Port of Long Beach, the nation's second-largest port, did not accept an invitation from rival Los Angeles to join the task force deliberations that began last fall.

Richard Steinke, executive director of the Port of Long Beach, confirmed Wednesday that his port received an invitation, but he said the port's harbor commissioners chose to develop their own "green port" plan adopted in January.

Los Angeles task force members said that is not enough.

"There needs to be a level playing field. It's unfair to do it in Los Angeles and not in Long Beach," Feuer said.

Hahn is seeking to fulfill his 2001 vow to hold the line on emissions at the city-owned port.

Box storage abuses adding to congestion

Shippers, terminals urged to coordinate on forecasting

Updated 9:45 a.m. ET, Fri Jan 28, 2005

By Bill Mongelluzzo

The JOURNAL of COMMERCE ONLINE

LONG BEACH, Calif. -- Two of the nation's largest shippers said that importers who use marine terminals (schedules) for free storage of containers are contributing to congestion at major seaports and should end the practice.

"We do not believe in using terminals as storage facilities," said Rick Gabrielson, senior manager of import operations at Target Corp.

"If shippers store their containers on the docks, they should be charged for it," said John Isbell, director of corporate delivery logistics at Nike. "Until they are, this abusive behavior will continue," he said.

Gabrielson and Isbell addressed a terminal operators' seminar Thursday sponsored by the American Association of Port Authorities. Their comments were significant because terminal operators often accuse large shippers of leveraging their cargo volumes to demand that shipping lines give them 10 or 15 days of free storage time at marine terminals.

West Coast ports, especially Los Angeles and Long Beach, are experiencing increasing congestion as imports from Asia continue their relentless growth. Storing containers on the docks is a major contributor to terminal congestion, but addressing the problem, known in the industry as container dwell time, is considered one of the quickest and easiest ways to reduce congestion.

Port planning consultant and marine engineer John Vickerman, a principal at TranSystems Inc. in Reston, Va., said the average dwell time for imported containers at U.S. ports is six to eight days. "Cut the dwell time in half and you double throughput without having to build anything," Vickerman said.

Most ports allow imported containers to be stored for free on their docks for a certain period of time. When an importer exceeds the free time, a storage fee, known as demurrage, may be charged. Los Angeles and Long Beach, for example, allow five days of free time, with demurrage fees beginning at \$44 a day after the free time expires.

Although free time and demurrage are listed in the ports' tariffs, marine terminal operators are given the authority to enforce the provisions and collect and retain the fees. However, shipping lines, in order to secure the business of large

shippers, sometimes give importers extended free time and instruct their terminal operators not to collect demurrage.

Terminal operators attending the seminar learned that facilities in busy ports such as Los Angeles and Long Beach are approaching their physical capacity and will not be able to accommodate continued growth of 10 percent or more per year under current operating practices.

Gabrielson noted that many shippers do not understand how marine terminals work because their business relationship historically has been with shipping lines, not the terminals. He said marine terminal operators should educate shippers about how their actions, such as demanding extended free time, contribute to congestion at the ports.

Isbell added that shippers and terminal operators should establish lines of communication so the terminals can plan for anticipated cargo volumes and avoid being caught short of labor and equipment. That happened last year when terminals planned for growth of less than 5 percent and imports increased by almost 12 percent.

If terminal operators each year ask the top 25 shippers for their cargo projections, terminals will get an accurate idea of how much cargo volumes will grow and what their equipment and labor needs will be, he said.

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No let-up for West Coast ports

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By Bill Mongelluzzo

The JOURNAL of COMMERCE ONLINE

West Coast ports in January began the year the way they ended 2004, with double-digit growth in containerized imports from Asia.

Imports through the West Coast in January increased about 10.4 percent over January 2004, with the northern ports such as Oakland, Seattle and Tacoma showing especially impressive gains. Carriers since last summer redeployed some of their services from Southern California to the northern ports to escape congestion in Los Angeles-Long Beach.

Shipping executives predict that containerized imports in 2005 will increase at least 12 percent over last year's record numbers as U.S. trade with China continues to grow unabated.

Seattle led the West Coast in growth in January with a 57.4 percent increase in imports over January 2004. Imports increased 26 percent in Tacoma, 32.4 percent in Oakland and 25.4 percent in Long Beach.

Los Angeles, the nation's largest container port, was the only major West Coast gateway to experience a decline in cargo volume. Imports were down 12.5 percent, due in part to the diversion of vessels to the northern ports.

Also, four carrier groups introduced new-generation 8,000-TEU vessels into the trans-Pacific trade this past year. With marine terminals in Los Angeles approaching capacity, the four vessel strings called in neighboring Long Beach.

Exports, while only about half the volume of imports, also increased strongly in January. Exports were up 54 percent in Seattle, 8.5 percent in Tacoma, 10.2 percent in Oakland and 11.8 percent in Long Beach. Exports through Los Angeles decreased 14.3 percent compared to January 2004.

Shipping executives have been warning port authorities, marine terminal operators and rail carriers that 2005 will be another record year for containerized imports from Asia, and the shipping industry is concerned that the port and inland infrastructure will be incapable of handling the 12 percent growth that is projected.

Carriers are scheduled to take delivery of about 53 post-Panamax vessels in 2005. Although many of the mega-ships will enter service in the Asia-Europe trade, some will be used in new services in the trans-Pacific.

Also, vessels of 8,000-TEU capacity or greater will displace other post-Panamax vessels of 5,000 to 6,600-TEU capacity, which will likely enter service to West Coast ports. Post-Panamax ships are too large to transit the Panama Canal and cannot be used in all-water services to the East Coast via the Panama route.

East Coast ports, however, are bracing for the arrival of post-Panamax ships through the Suez route from Asia. The mega-ships place a tremendous strain on marine terminals and longshore labor as well as intermodal rail and trucking companies as they attempt to accommodate the cargo surges generated by the large vessels.

Los Angeles-Long Beach last year experienced five months of congestion because of capacity constraints on the intermodal rail networks and a shortage of longshore labor.

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Major Port Proposed for Baja Region Shippers want to build in Mexico because of logjams at the complex in L.A. and Long Beach.

By Chris Kraul and Deborah Schoch
Times Staff Writers

April 9, 2005

MEXICO CITY — A coalition of shipping and freight concerns announced plans Friday for a \$1-billion port on deserted seaside farmland about 150 miles south of Tijuana on the Baja peninsula. They hope to link the Mexican port to California with a new rail line connecting to the Imperial Valley and compete with the Los Angeles and Long Beach ports for a share of the multibillion-dollar West Coast shipping business.

If it materializes, the Punta Colonet facility would be one of the largest public works projects undertaken in Mexico, requiring the construction of roads, housing, public buildings and other infrastructure where none now exists.

The firms have begun lobbying the Mexican government, telling officials there would be enough cargo traffic and investment dollars to underwrite a major portion of the cost to build the port and a new city to serve it.

At stake is a share of the estimated \$200 billion in revenue generated annually by shipping through California.

"We have to get Colonet developed," said Walter J. Romanowski, an executive with Los Angeles-based Marine Terminals Corp., a holding company owned by Evergreen and Yang Ming shipping lines of Taiwan, Hanjin of South Korea and China Shipping of Shanghai, all among the world's largest shipping firms. "There are no other viable West Coast options."

Romanowski said he wanted the right to build a complex of berths, warehouses and cranes that by 2012 could be running 1 million standard container units a year, about one-seventh the current volume at the Los Angeles port. Construction of the proposed Mexican port would take at least five years, the shipping companies say.

Port officials in Long Beach and Los Angeles said Friday that the project was news to them, although rumors have circulated for months about potential new port developments in Mexico.

Traffic at the two ports is so backed up that as many as 50 ships are kept waiting offshore as long as a week at a time. Environmental and other restrictions limit the ports' expansion, and other West Coast shipping terminals are becoming just as crammed.

Shipboard container traffic out of China is growing at an explosive rate — 15% or more per year — overwhelming the Long Beach and Los Angeles port complex, the world's third-largest.

Tie-ups at the L.A.-Long Beach ports last year sparked international anxiety when a flood of Asian cargo clogged docks, rail lines and highways, forcing giant container ships to idle offshore.

The logjam was blamed for delaying the delivery of holiday goods nationwide. Now, with January container traffic in Long Beach up 35% over last year, the shippers fear that such blockages could become an annual problem, forcing freighters to less congested ports in Seattle and British Columbia.

Southern California port officials worry about losses in jobs and revenue if shipping traffic shifts to competing regions.

But there is little room for the ports to grow. Expansion of the Los Angeles-Long Beach complex also is complicated by mounting community opposition. The twin ports are the region's largest source of air pollution.

The shipping industry soon will have no choice but to expand out of the Los Angeles Basin, and Mexico is the best alternative, said Al Fierstine, former Los Angeles port business development director who is now an advisor to Marine Terminals Corp.

Mexican Sen. Hector Osuna Jaime said the project would promote much needed growth in jobs and industry in Baja California. A new port, he said, would spur investors to build factories, possibly reversing a trend in recent years that has seen manufacturing jobs leave Mexico for China.

One political hurdle facing approval of the proposed port is the 150-mile rail link to connect with the United States. Mexican laws bar foreign ownership of such a line.

Also, Mexican officials traditionally authorize public works projects that they can see completed before their terms expire. President Vicente Fox leaves office at the end of 2006, long before the Punta Colonet project would receive its first ship.

The row over the California ports' environmental impacts spawned a proposal in Sacramento to limit emissions, as well as an ongoing initiative, launched by Los Angeles Mayor James K. Hahn, to slash Port of Los Angeles pollution to 2001 levels.

Last year's logjam of ships occurred just two years after the autumn 2002 lockout of dockworkers by the Pacific Maritime Assn., representing West Coast shipping lines.

At its worst, the 10-day lockout created a lineup of 129 ships waiting to deliver cargo at the Los Angeles-Long Beach complex.

Dockworkers' fears of losing jobs to automation helped spark the lockout, and some predicted a contract ratified by their union a few months later would mean a severe drop-off in high-paying longshore jobs.

Instead, the number of jobs increased, with 3,000 added at the complex.

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Kraul reported from Mexico City and Schoch from Los Angeles

Capacity crisis awaits U.S. box ports, says Maersk exec

Infrastructure "a national crisis" for rail, truck

Updated 2:58 p.m. ET, Fri Jan 28, 2005

By Bill Mongelluzzo
The JOURNAL of COMMERCE ONLINE

LONG BEACH, Calif. -- Ports in the United States by 2010 will be unable to accommodate the projected growth in container volumes if they do not expand their physical infrastructure, a top Maersk Sealand executive said today.

Philip V. Connors, Maersk Sealand's executive vice president at the carrier's U.S. headquarters in Madison, N.J., told a terminal operators' seminar sponsored by the American Association of Port Authorities that while the capacity constraints at ports are bad, infrastructure limitations in the rail and trucking industries are even worse.

"It is, in my opinion, a national crisis," Connors said.

Connors said Maersk Sealand compared container volume projections with capacity figures at the major U.S. container gateways including Los Angeles-Long Beach, the Pacific Northwest, the North Atlantic and the South Atlantic and Gulf Coast ports. In each case, regional port capacity by 2010 will fall short of projected container volumes.

The growth of the U.S. container trades is a reflection of the rapid increase in the global container trade. Connors noted that the world gross domestic product since 1980 has increased at an average annual rate of 2.8 percent, while growth in the global container trade has averaged 8.7 percent a year.

That scenario is likely to continue given the massive shift of global manufacturing to Asia, and especially China, which is attracting massive amounts of foreign direct investment. China's share of North American imports from Asia increased to 68.5 percent last year from 41.4 percent in 1995.

With 8,000-TEU vessels now operating in the trans-Pacific and Asia-Europe trades, and the first order placed this week for 10,000-TEU ships, marine terminal operators will be stretched to handle the growth that will occur over the next five years.

As handling at major U.S. gateways approach capacity, the opportunity is arising for secondary gateways to establish their niche in the container trade, said Erik Stromberg, a consultant with Booz Allen Hamilton and former president of the

AAPA. The smaller ports that move the quickest and offer the smartest solutions will help to relieve pressure on the large gateways, Stromberg said.

Connors is even more concerned, though, about the rail and highway systems in the U.S. "The real problem is infrastructure. When we talk about infrastructure, you better be worried," he said.

Intermodal traffic is increasing faster than the ability of the railroads to build tracks and add equipment to their fleets, he said. Furthermore, projects such as double- and triple-tracking of routes and building intermodal transfer facilities take years to complete and are hugely expensive.

Trucking is even more problematic and extend beyond obvious infrastructure needs such as expanding the I-710 freeway, the main artery serving LA-Long Beach. Adding truck-only lanes to the 1950's-era freeway is estimated to cost more than \$4 billion. Construction would not begin until around 2015.

The main problem affecting harbor trucking is a shortage of drivers. Connors said the national fleet of owner-operators offering drayage services has declined to 110,000 from 160,000 five years ago because of low pay and delays at marine terminals that reduce drivers' earning power, Connors said.

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Growth demanding creative port solutions

Productivity must rise by 40 percent, say experts

Updated 9:45 a.m. ET, Tue Mar 1, 2005

By Bill Mongelluzzo

The JOURNAL of COMMERCE ONLINE

LONG BEACH, Calif. -- West Coast ports (schedules) have enough latent capacity to accommodate the projected growth in cargo volume for the next 10 years if they increase their throughput per acre by about 40 percent, according to marine engineers.

However, capacity constraints on the intermodal rail and trucking infrastructure could prevent the ports from growing to their full potential, said Tom Ward, a principal at JWD Group in Oakland. Ward told the 5th Annual Trans-Pacific Maritime Conference sponsored by The Journal of Commerce that continued rapid growth in container volume will tax the inland transportation infrastructure beginning at the gates of the marine terminals.

The average productivity of West Coast marine terminals is about 4,000 to 4,800 TEUs per acre per year. Last year the ports handled 19.8 million TEUs. If the terminals increase their throughput to 6,500 TEUs per acre, they could handle 31 million TEUs, said Larry Nye, port projects manager at Moffatt & Nichol in Long Beach.

Since a few terminals have achieved consistent throughput of 6,000 to 7,000 TEUs per acre by stacking containers higher and utilizing information technology, most terminals should be able to handle throughput of 6,500 TEUs per acre, Nye said.

The engineers said terminals could increase throughput by stacking containers six high rather than three high; reducing the time that containers sit idle on the docks from five to four days, and moving empty chassis off the docks.

Even greater productivity can be obtained through technology, such as installing cameras and optical character readers at terminal gates and on container cranes, and implementing computerized yard management systems. Extending gate hours to nights and weekends, as terminal operators in Los Angeles-Long Beach plan to do this summer, will increase throughput even more.

Such measures could boost LA-Long Beach capacity by 4.7 million TEUs a year. If the ports build out their master plans that include some landfill projects and construction of another terminal in Long Beach, they could accommodate growth of about 12 million TEUs, Nye said.

The West Coast as a whole could probably continue to grow on its existing footprint until 2015. Ward said that Oakland, which handled 2 million TEUs last year, could accommodate up to 6 million TEUs. Seattle has unused capacity at its existing terminals, but little land beyond that for further growth. Tacoma could build at least one and probably two more large terminals. Portland has unused capacity at its Terminal 6 and room to expand that facility.

The ports' major chokepoints are not at the marine terminals, but at the terminal gate connections to the inland rail and truck networks. Projects to expand the I-710 freeway in Southern California, construction of additional near-dock rail yards and expanding the capacity of mainline rail routes will cost billions of dollars and will take five to 10 years to complete.

Ward said that if the ports are going to continue to grow while these costly capital projects are being constructed, they will have to make better use of the existing road and rail infrastructure. They will have to extend the gate hours at the terminals and shippers and receivers will also have to keep their facilities open at nights and on weekends.

The ports must make better use of their on-dock rail yards, establish effective appointment systems for truckers and consider creative measures such as virtual container yards where containers are exchanged between importers and exporters outside of the port area.

Big ships mean big shakeups for ports, railroads

Twenty miles of trucks. And six double-stack trains. That's what Ed DeNike will be looking at each time an 8,000-TEU container ship disgorges a full load of boxes at SSA Marine's Long Beach terminal. These big ships, replacing vessels about half their size in the trans-Pacific trade (schedules), are arriving in force at West Coast ports for the first time this year.

The larger ships are staying in port twice as long as the ships they're replacing, and making twice the demand on rail and truck capacity. When possible, SSA puts six gantry cranes to work on the ships round-the-clock. Even then, it takes three days. With a rough 50-50 split between rail and truck moves, each of the ships fills about a half-dozen stacktrains and 2,000 truck chassis, which with their tractors are enough to stretch approximately 20 miles.

The stress on ports, marine terminals and inland infrastructure will only get greater. China Ocean Shipping Co. last month ordered four 10,000-TEU vessels for delivery in 2008 and 2009. Other lines have ordered a total of 34 ships with a capacity of 9,000 to 9,500 TEUs. In all, global shipping lines have firm orders for more than 150 vessels with capacities of at least 8,000 TEUs.

While these vessels are too large to transit the Panama Canal and cannot call at East Coast ports via that route, East Coast ports nevertheless anticipate that they will be welcoming a steady stream of post-Panamax vessels by 2006 or 2007. Shipping lines could launch five or six all-water services to the East Coast via the Suez Canal over the next two years. East Coast ports must therefore deepen their channels to as much as 50 feet as well as expand the capacity of their marine terminals if they plan to cash in on the mega-ship boom.

Shipping industry executives are concerned that U.S. ports can't accommodate the vessels scheduled for delivery over the next three years. Ron Widdows, chief executive of APL Ltd., said recently that ports on both coasts are struggling to handle their current volumes, let alone the growth that is projected.

"Difficulties will exist for quite some time on the U.S. West Coast," Widdows said. And he noted that ports in the Northeast are heavily congested and may have trouble accommodating proposed all-water services from Asia.

The first 8,000-TEU vessels entered the trans-Pacific trade in 2004. Four strings of the big ships are calling in Long Beach, and that number could increase this fall. BRS Alphaliner reports that as many as 15 strings of 8,000-TEU class ships will sail in the trans-Pacific by 2008.

The first trickle of 8,000-TEU ships arrived at West Coast ports last year and were a minor

contributor to the congestion that gripped the Los Angeles-Long Beach during the summer-fall peak season. The new ships produce concentrated demand for terminal space, labor and intermodal rail and truck capacity.

Terminal operators say they need 100 to 140 acres devoted to a single vessel of that size. Many ports do not yet have terminals that big. Longshore labor also is stretched to handle the big ships. Working a vessel for two or three shifts each day requires dozens of skilled crane drivers and other heavy equipment operators. To avoid shortages that cropped up last year, waterfront employers and the International Longshore and Warehouse Union have hired 5,000 additional part-time workers and promoted 1,750 existing casual workers to registered status. The hiring is expected to continue this year, although at a reduced rate.

The two western railroads, Union Pacific and BNSF Railway, which were already stretched thin, found their tracks and intermodal yards clogged during the peak season. Although both railroads are increasing their intermodal capacity by about 10 percent this year, capacity will remain tight. Container-ized imports from Asia are projected to grow by at least 12 percent.

Most of the marine terminals in Los Angeles-Long Beach have on-dock railyards, which help to reduce the number of truck moves at their gates. However, even the largest vessels can assemble full trains only to major hubs such as Chicago and New York. That means hundreds of containers must be trucked to near-dock and off-dock intermodal yards, where trains are assembled for secondary destinations.

With the large ships also generating about 2,000 truck moves for imports, and the same number of exports and empty containers returning to Asia, the harbor trucking industry is struggling to keep up with the demand for drivers.

The booming U.S. trade with China is responsible for much of the cargo volume. That trade will continue to soar as more global manufacturing shifts to China. John Vickerman, a principal at TranSystems Inc., said container volume at China's ports have increased an average of 27 percent a year over the past five years. China's gross domestic product will double by 2010, with much of the investment going into export-oriented industries.

Vickerman said cargo volume through major U.S. gateways will at least double by 2010. He said that by 2020, volume could triple through the largest ports, such as Los Angeles-Long Beach and New York-New Jersey.

Most ports' current configuration and operating practices will leave them far short of capacity by 2020, Vickerman said. To handle projected demand with current practices, Los Angeles-Long Beach would have to develop 3,624 acres of new terminal space, but the ports can supply only a fraction of that acreage without environmentally difficult landfill.

Marine terminal and transportation infrastructure projects take five to 10 years to complete from the time the initial environmental impact studies begin. With some ports already approaching capacity, several more years of 10 percent growth will push them beyond their limits under existing operating conditions.

That is why terminal operators are seeking technology and operational changes. Vickerman noted that the most efficient U.S. ports average about 6,000 TEUs per acre per year, while Asian ports average three to four times that productivity. Asian ports run full operations round-

the-clock and do not have the restrictive labor practices that U.S. ports face.

U.S. terminal operators have begun to address these limitations with contracts that allow for the use of more technology. Also, Los Angeles-Long Beach will squeeze more productivity out of existing terminals by keeping five terminal gates open longer each week, beginning in June. Terminal operators are also looking to off-dock container yards to decongest their marine terminals.

In another move to stretch capacity, the ports of Los Angeles and Long Beach in early March are expected to reduce free time - the period that importers can store containers on the docks before demurrage is charged - to four days from five.

Terminal operators say these measures may buy them enough time to complete longer-range capital projects such as expanded marine terminals, large inland container depots and rail shuttles to serve inland distribution centers. In the meantime, carriers are also looking to secondary ports that have not yet played an important role in the Asian trades to help relieve pressure on the major gateways.