

ENHANCING SOUTHERN CALIFORNIA'S GLOBAL GATEWAYS:

*Challenges and Opportunities
for Trade Infrastructure
Development*

STEVEN P. ERIE

JUNE 2003



Los
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EXECUTIVE SUMMARY

Greater Los Angeles has become the nation's leading Pacific Rim gateway and a major center for NAFTA trade with Mexico. Although Southern California's sizable domestic market, large Asian Pacific and Latino communities, and strategic location all contribute to its trade prominence, the area's superior infrastructure facilities—the Ports of Los Angeles and Long Beach, L.A. International Airport (LAX), and three transcontinental rail lines—play a significant, albeit underrecognized, catalytic role. As a result, international trade is a major driver of the Southern California economy. Yet today the region's global gateways are under growing stresses, ranging from antagonism from community and environmental opponents of new projects to recent antiterrorist security challenges.¹

Although the overall balance sheet for Southern California's international trade is positive, the region's continued infrastructure advantage is not guaranteed. This report examines the region's once-vaunted international trade infrastructure and what can be done to improve it. Among the key findings:

International trade is a key driver of the Southern California economy.

In 2000, nearly 25 percent (or \$160 billion) of the five-county Los Angeles metropolitan economy depended upon global trade, up from 13 percent in 1972. Southern California's trade and industry profiles differ from those of trade hubs such as the Bay Area and Seattle. First, the area features unusually large service exports in such globally oriented local industries as entertainment, engineering, international tourism, and software development. Second, driven by the area's massive Pacific Rim import activity, a huge logistics, distribution, transportation, and warehousing industry has emerged. L.A.'s global gateways also generate sizable national trade benefits because 50 percent of its imports are shipped elsewhere. Yet, balanced against these dispersed economic benefits are local environmental costs. L.A.'s ports and airports generate significant air and water pollution, traffic congestion and noise.

Southern California requires major trade infrastructure upgrading and rebalancing, especially for airports.

By 2020, the region's trade is expected to more than double, further straining an already congested transportation system. In response, local officials launched the nation's most ambitious program of port, trade corridor, and airport development. Although key port and trade corridor projects are on schedule, airport development has languished. There have been delays and downsizing of the LAX Master Plan along with voter defeat in 2002 of a proposed new international airport at El Toro in Orange County. Airport expansion is particularly critical to the region's high-tech industries. The region's airport—and high-tech—future may be moving to the Inland Empire (San Bernardino and Riverside Counties). There are hopeful signs of cooperative airport planning, however, along with efforts to redress regional infrastructure deficits and transportation imbalances. Policymakers might consider withholding federal transportation funding from counties unwilling to shoulder their fair share of the regional burden for airport development.

Assembling powerful regional, state and federal coalitions to press for scarce federal transportation and security dollars is a looming political challenge.

Regional leaders need to argue that scarce federal transportation dollars should be allocated to Southern California infrastructure projects that promise national benefits. Innovative new revenue sources also are needed. One promising idea is to reinvest increments of future customs duties growth in the trade transportation infrastructure upon which they depend. Forty-five percent of all U.S. customs duties are collected in the L.A. Customs District. Investing in the region's infrastructure projects will yield sizable economic, revenue, and regional and national trade benefits. A similar logic holds for federal security investments in Southern California's vital infrastructure.

PREFACE

Steven Erie's paper on the Southern California region is the fifth in the Pacific Council's project "Mapping the Local Implications of Globalization," which examines major city-regions in the western United States. Earlier papers were *San Diego, Baja California and Globalization: Coming From Behind* by Richard Feinberg and Gretchen Schuck; *Mapping Globalization Along the Wasatch Front* by Earl Fry; *Boeing and Beyond: Seattle in the Global Economy* by Fred Morris; and *Globalization in the San Francisco Bay Area: Trying to Stay at the Head of the Class* by Sarah Bachman. We are publishing two in-depth analyses on Southern California. Erie's report concerns infrastructure for international trade. The other study, by Georges Vernez of Rand, concerns immigration and its impact. An overview report by Gregory F. Treverton, Pacific Council senior fellow and director of the Mapping project, is also forthcoming. We anticipate further papers on Denver and on other functional issues in the region.

Steve Erie traces Los Angeles's meteoric rise—but still uncertain future—as one of the nation's leading trade and transshipment centers. In the postwar era, L.A. built one of the world's great trade transportation complexes. As a result, international trade has become a key driving force of the Southern California economy. Today, however, this once-vaunted infrastructure is under mounting stress. Challenges range from local community and environmental opposition to new infrastructure projects to the need to provide security from terrorist attack. Erie argues that only coordinated action at the regional, state, federal, and binational levels will allow L.A. to expand and protect its superior infrastructure, which benefits both the region and the nation as a whole.

The Pacific Council expresses its appreciation to the Ford Foundation, which had the vision to fund the overall project; to the John Randolph and the Dora Haynes Foundation, which funded the research for earlier drafts by Erie and Vernez; to project director Gregory F. Treverton; to all the authors in this project; and to the many others who have participated in the project's various seminars. Comments on this paper or the project as a whole are welcomed and may be directed to the author, the project director, or me, at the Pacific Council's offices in Los Angeles.

Ian O. Lesser
Vice President, Director of Studies
June 2003

I. INTRODUCTION

“Although L.A.’s sizable domestic market, large Asian Pacific and Latino communities, and strategic Pacific Rim location all have contributed to its trade prominence, the area’s superior trade infrastructure has played a significant, albeit underrecognized, catalytic role.”

Los Angeles is one of the world’s great laboratories for mapping globalization’s multifaceted dynamics. The region is a premier crossroads for immigrants from the Pacific Rim, Mexico, and Latin America. The L.A. area is home to one-fifth of the country’s new immigrants. Home to Hollywood and the multimedia, fashion, and design industries, L.A. is a capital of the global entertainment industry and a leading incubator for innovation. Yet, Southern California also aspires to be the nation’s leading Pacific Rim gateway and a major center for NAFTA trade with Mexico. L.A.’s trade ambitions, and the contributory role of its trade infrastructure, are the focus of this paper.²

This study examines Los Angeles’s meteoric rise—but still uncertain future—as one of the nation’s leading trade and transshipment centers. L.A. has a reputation as a trade underachiever because it lags regions such as the Bay Area and Seattle in goods exports, but its strong service exports and enormous imports warrant its consideration as a major trade center. Although L.A.’s sizable domestic market, large Asian Pacific and Latino communities, and strategic Pacific Rim location all have contributed to its trade prominence, the area’s superior trade infrastructure has played a significant, albeit underrecognized, catalytic role.

In the postwar era, L.A. built one of the world’s great trade transportation complexes: the ports of Los Angeles and Long Beach and Los Angeles International Airport (LAX). Southern California also built major trade corridors, such as the landmark Alameda Corridor separated-grade rail system from the ports to the downtown railyards, and the “NAFTA network” of border ports-of-entry and highways linking California to Mexico. More than most regions, L.A. relies on its superior trade infrastructure; its other trade development efforts pale in comparison. In the global economy, a world-class trade infrastructure can confer substantial regional advantage by lowering transportation costs that, in a just-in-time economy, now include shipping time and reliability.

Today, however, L.A.’s once-vaunted trade infrastructure is under mounting stress. From 2000 to 2020, the region’s trade is expected to more than double, further straining an already congested transportation system. In response, local officials launched the nation’s most ambitious program of port, trade corridor, and airport development. To date, the results of these efforts have been uneven. Port development is generally on schedule, the Alameda Corridor rail project has been completed, and several major NAFTA (North American Free Trade Agreement) border projects are nearing completion. But other regional rail and highway projects are experiencing severe difficulties. Airport development has languished with delays and downsizing in the LAX Master Plan, along with voter defeat in 2002 of a proposed new international airport at El Toro in Orange County.

Infrastructure projects now encounter major obstacles. There has been serious erosion in regional leadership, the growth consensus, and public financing. The collapse of the region’s once-sturdy growth regime has revealed the soft political underbelly of these projects. Their costs—traffic, noise, air pollution—are geographically concentrated, whereas their economic benefits are widely dispersed. Given this incentive structure, it is much easier to organize project

opponents, particularly nearby residents, than supporters. NIMBY (“Not-in-My-Backyard”) community as well as environmental opposition has thwarted major projects. Since September 11, 2001, there has been the daunting new challenge of protecting ports, trade corridors, and airports against terrorist attack. With federal military priorities, a growing national budget deficit, and a massive state budget crisis, the region can expect limited help from Washington and Sacramento. Southern California must now marshal its political forces even more effectively to secure its fair share of dwindling transportation dollars.

Given growing regional concerns, what are the benefits and costs of L.A.’s trade involvement and infrastructure investments? Premier gateway regions such as L.A. facilitate *both* regional *and* state and national trade. Yet, as Manuel Pastor, Jr., argues, trade can create local strugglers as well as winners.³ Further, although physical infrastructure, such as airports, generates sizable dispersed economic benefits (jobs) in dense, urban environments, it also produces serious environmental costs (noise, traffic, and air pollution).

“With federal military priorities, a growing national budget deficit, and a massive state budget crisis, the region can expect limited help from Washington and Sacramento. Southern California must now marshal its political forces even more effectively to secure its fair share of dwindling transportation dollars.”

Is Southern California up to the challenge of expanding its global gateways? This study explores the linkages between the region’s infrastructure, global trade, economic development, and quality of life. It is organized into eight sections including this introduction. The second surveys the trade-infrastructure connection, both in L.A. and elsewhere. Sections three through five examine the history, status, and pre-9/11 challenges facing the area’s major port, trade corridor, and airport projects, respectively. We consider Los Angeles-Long Beach port development; the Alameda Corridor rail project and successor rail projects, as well as key highway projects (e.g., the I-710 serving the ports and the “NAFTA network” of border crossings and highways); and the LAX Master Plan, El Toro airport proposal, and airport plans for the Inland Empire (San Bernardino and Riverside Counties).

The sixth section examines the new challenge of providing security for trade and infrastructure against terrorist attack. The seventh offers a balance sheet for Greater Los Angeles in terms of the benefits and costs of its trade engagement and infrastructure investments. Finally, we outline a strategy for Southern California trade infrastructure development so that the region can make the most of its global engagement.

Because of its common trade transportation network, Southern California is broadly defined here to include the area from Santa Barbara County to the Mexican border. The Los Angeles-Long Beach port, rail, and airport facilities serve as the Pacific Rim transportation hub not only for the five-county L.A. area (Los Angeles, Orange, Ventura, San Bernardino, and Riverside Counties), but also for Santa Barbara, San Diego, and Imperial Counties, and even for northern Baja California. Because of San Diego’s limited port and airport facilities, the Los Angeles-Long Beach ports and LAX serve California’s trade needs from San Luis Obispo to the Mexican border. Two-thirds of the Golden State’s international trade now passes through L.A.’s global gateways. Because the L.A. region generates much of the NAFTA truck trade crossing the California-Mexico border, we also focus upon the border ports of entry and connecting highways in San Diego and Imperial Counties.⁴

II. TRADE AND INFRASTRUCTURE

L.A. AS TRADE HUB

Once a trade backwater, L.A. in the 1990s challenged New York's historic status as the nation's leading trade hub. From the early 1970s to 2000, Southern California's global trade grew remarkably, increasing at an average rate of 16 percent annually. As a result, in 1994 Los Angeles surpassed New York as the nation's busiest customs district. In less than thirty years, the trade fortunes of the nation's two leading metropolises had dramatically reversed. Between 1972 and 2000, L.A.'s share of the nation's merchandise trade climbed from 6 percent to 14 percent while New York's share dropped from 21 percent to 12 percent.⁵

As measured by customs district of unloading (where goods actually are unloaded), Los Angeles's merchandise trade exceeds all other West Coast trade hubs combined, as well as that of New York. Table 1 shows that L.A.'s goods trade in 2001, \$270 billion, was greater than that of San Francisco, Seattle, and San Diego combined (\$227 billion) and New York (\$215 billion). In all, one-seventh of the nation's merchandise trade (and nearly one-twentieth of all global trade) comes through the L.A. Customs District. What is particularly noteworthy is L.A.'s heavy import activity, representing three-quarters of its merchandise trade. The region serves as the nation's premier gateway for Pacific Rim imports. L.A. also is the chief hub for U.S. waterborne commerce. Twenty-eight percent of total U.S. waterborne commerce (by value) passes through the ports of San Pedro Bay, nearly two-and-one-half times more than goes through the once-mighty New York area ports. Trade through the L.A.-area ports also dwarfs other West Coast facilities. San Pedro Bay handles over 70 percent of all West Coast waterborne trade.⁶

Table 1
Major U.S. Customs Districts Merchandise Trade:
Imports and Exports, 2001
(millions of US\$)

District	Imports*	Exports**	Total
<i>Los Angeles</i>	<i>200,670</i>	<i>69,111</i>	<i>269,781</i>
New York	139,110	76,239	215,349
San Francisco	50,041	45,803	95,844
Seattle	56,404	41,372	97,776
San Diego	20,706	12,342	33,048
U.S. Total	1,141,959	731,026	1,872,985

*Import values for district of unloading.

**Export values exclude shipping charges.

Source: U.S. Bureau of Census, *FT 920 U.S. Merchandise Trade: Selected Highlights* (2002).

L.A.'s trade profile has other important (and underrecognized) dimensions. The region is a growing center for NAFTA trade with Mexico and Canada. In all, NAFTA trade generated nearly 60 percent of the region's export growth from 1993 to 1999. While Los Angeles's goods exports may still lag those of the Bay Area or Seattle, L.A. has a strong service export base. Its service exports (in such industries as entertainment, tourism, and engineering) rival its diverse goods exports in value. Since 2001, however, with a recession and the trade-dampening effects of terrorist attacks, L.A.'s trade growth, as elsewhere in the nation, has been halted—at least temporarily.

Several factors account for L.A.'s trade prominence. A major driver is the sheer size of the Los Angeles market. In 2001, the five-county metropolitan area had a gross regional product of \$651 billion, making it one of the largest economies in the world. One-half of L.A.'s \$201 billion in

imports is destined for this enormous market. Table 2 compares for 2001 the Greater Los Angeles gross regional product relative to the top twenty-five national economies. If Greater Los Angeles were a nation, its gross product would rank ninth in the world, below that of Italy and Canada, and above that of Mexico, Spain, and India. Were L.A. County a separate country, its \$390-billion economy would rank 14th in the world, below Brazil's and South Korea's but above that of the Netherlands, Australia, Russia, and Taiwan. Other contributing factors to the region's trade rise include its large Asian Pacific and Latino communities and its strategic Pacific Rim location.

INFRASTRUCTURE AS CATALYST

Southern California's superior infrastructure has played a significant, albeit unheralded, catalytic role for trade. In the postwar era, L.A. built one of the world's great trade transportation complexes: the ports of Los Angeles and Long Beach, and Los Angeles International Airport (LAX). Today, they are the world's third busiest port complex and fourth busiest airport facility. Southern California also has invested in major trade corridors, such as the Alameda Corridor rail system from the ports to the downtown railyards. More so than most regions, Southern California trades on its world-class infrastructure; its other trade development efforts pale in comparison.

This transportation network is the legacy of sizable public investments made in the post-WWII era. During the 1950s and 1960s, under the administrations of President Dwight Eisenhower and Governor Pat Brown, federal and state highway dollars helped build the sprawling freeway system. In the 1970s and 1980s, local leaders such as L.A. Mayor Tom Bradley envisioned the region as the Pacific Rim gateway and strenuously pushed port and airport expansion.

Table 2
Placing the Los Angeles Economy in Global Perspective:
Countries Ranked by Gross Domestic Product, 2001
(billions of US\$)

Rank	Country	Gross Product
1	United States	10,208
2	Japan	4145
3	Germany	1849
4	United Kingdom	1431
5	France	1307
6	China	1160
7	Italy	1089
8	Canada	700
	<i>Los Angeles Metropolitan Area*</i>	<i>651</i>
9	Mexico	594
10	Spain	585
11	India	507
12	Brazil	505
13	South Korea	423
	<i>Los Angeles County</i>	<i>390</i>
14	Netherlands	380
15	Australia	355
16	Russia	310
17	Taiwan	282
18	Argentina	260
19	Switzerland	247
20	Belgium	228
21	Sweden	210
22	Austria	188
23	Poland	177
24	Saudi Arabia	170
25	Norway	164

*Los Angeles, Orange, Ventura, San Bernardino and Riverside Counties.
Source: United States Conference of Mayors, *U.S. Metro Economies: The Engines of America's Growth* (Lexington, MA: DRI/WEFA, Inc., 2002), Table 2, p. 10.

“Conventional wisdom holds that international trade flows are driven by global trade agreements, international currency markets, national trade and fiscal policies, and corporate sourcing decisions.

New understandings are emerging of the potent stimulus provided by a superior import-export infrastructure such as that in Los Angeles.”

Billions of dollars were spent to modernize and enlarge the ports of Los Angeles and Long Beach and to build an international terminal and air cargo facilities at LAX. The hallmarks of the postwar growth regime that built these mega-projects were strong political leadership, a regional consensus on growth, and readily available public financing. Today, this regime has broken down.⁷

Conventional wisdom holds that international trade flows are driven by global trade agreements, international currency markets, national trade and fiscal policies, and corporate sourcing decisions. New understandings are emerging of the potent stimulus provided by a superior import-export infrastructure such as that in Los Angeles. In an era of growing free trade, just-in-time manufacturing and delivery, and supply-chain logistics, regions are fast becoming multimodal transportation centers speeding the flow of people, goods, information and finance throughout the world economy. Regions that build a world-class transportation infrastructure lower transportation costs (including time and reliability) for businesses, thus strengthening their competitive advantage in the global economy while raising cost barriers to the entry of competing regions.⁸

A growing body of research attests to the trade-inducing role of regional ports, airports and trade corridors. About Seattle, arguably the most trade-oriented region in the country, Frederic A. Morris notes: “One reason Seattle is home to so many larger multinationals, particularly global technology companies, is its success in creating its own competitive advantage. This edge starts with physical infrastructure [Seattle-Tacoma International Airport, the ports of Seattle and Tacoma], which continues to be an important determinant of success in the globalized economic system.”⁹ In contrast, as Sara Bachman shows for the San Francisco Bay Area and Richard Feinberg demonstrates for San Diego, their respective regional infrastructure deficiencies have led to business and trade losses to Los Angeles, which is advantaged by superior infrastructure.¹⁰

As a result of the telecommunications and dot.com speculative bubbles of the 1990s, it became fashionable to dismiss such transportation systems as somehow antiquated and primitive, and to focus instead upon telecommunications as the new conduit of global trade for the high-flying, high-tech economy. In the so-called new economy, trade was about intellectual property rights—not the physical movement of people and goods. Yet, the now-struggling new economy also fundamentally depends upon the global connectivity supplied by gateway airports such as LAX.

Despite assertions that information technology (IT) renders physical infrastructure obsolete, there is little evidence for a substitution effect between “hard” and “soft” infrastructure. Even in a knowledge-based economy, there are no substitutes for face-to-face meetings and the physical movement of people and goods. Indeed, there appears to be a synergistic relationship between IT and transportation networks. In Southern California, computer-based high-tech industries have some of the highest airport passenger trip and cargo generation rates. Just as the invention of the telephone did not reduce business meetings but rather increased them because of greater contact opportunities, IT increases the demand for movement of people and goods. Given such logistics innovations as supply-chain management in global production and delivery systems, regional competitiveness depends upon providing a seamless multimodal transportation network that efficiently links ports and airports to highway and rail systems.¹¹

THE REGION'S MEGA-PROJECTS

Notwithstanding the new threat of terrorism, global trade promises to play an important role in Southern California's future, placing unprecedented demands on its transportation system. Despite East Asia's financial malaise of the mid-1990s and its still sluggish recovery, up to one-half of the world's economic growth in the early 21st century is projected to occur in East Asian countries (especially China), which are Greater Los Angeles's chief trading partners. As a result, the region's major ports, rail lines, highways, and airports face a doubling, even tripling, of demand in the next 20 years. NAFTA trade with Mexico likely will double, threatening to further congeal already congested north-south and east-west arteries.

With looming capacity constraints threatening to act as bottlenecks on trade growth and regional job creation, public officials have feverishly worked on ambitious port, rail, airport, and highway projects to dramatically increase system capacity well into the early 21st century. These mega-projects include the following:

- The \$4 billion Los Angeles and Long Beach port development program (1995-2020).
- The \$2.4 billion Alameda Corridor separated-grade rail project (1995-2002), designed to facilitate the movement of goods from the San Pedro Bay ports to the downtown L.A. intermodal railyards, and the planned \$3 billion Alameda Corridor East and Orangethorpe Corridor separated-grade rail projects from the downtown railheads to San Bernardino and Colton.
- The \$2.3 billion in "NAFTA network" border infrastructure improvements, such as State Routes 905 and 125 in San Diego; plans for truck-only lanes on selected L.A. freeways, and the proposed "Southwest Compact" strategy designed to improve highway and rail connections between the metropolitan regions of the Southwest and the northern states of Mexico.
- The \$8-12 billion LAX Master Plan (1999-2015), Ontario International Airport expansion, and plans to convert El Toro and other former military air bases in the region into international and air cargo commercial airports.

In 1996-2000, spending for the region's port, rail, and airport mega-projects was \$4.3 billion. This was the nation's largest five-year capital spending program for trade infrastructure. Yet, these mega-projects, designed to enhance regional competitiveness in the global economy, became objects of intense local debate and opposition regarding their regional benefits and costs. They were at the center of escalating conflicts between the forces of globalization and the economy versus community and environment. Although lacking the violence of the anti-globalization protests at the World Trade Organization meetings in Seattle and the G-8 Summit in Genoa, Italy, there has been active community and environmental opposition regarding Los Angeles and Long Beach port terminal projects, the Alameda Corridor rail project, NAFTA border projects, the LAX Master Plan, and a proposed commercial airport at El Toro.

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III. LOS ANGELES AND LONG BEACH PORT DEVELOPMENT

THE 2020 PLAN: DIFFERING VISIONS

Southern California has two mammoth load center ports, Los Angeles and Long Beach, and two small facilities, Port Hueneme and San Diego. By any measure, the ports of San Pedro Bay dominate West Coast shipping. Together, they handle roughly 70 percent of the West Coast's merchandise trade and container cargo. Port Hueneme and the Port of San Diego specialize in niche markets, such as agricultural products and automobiles, and have limited container facilities and constrained expansion possibilities.

As Table 3 shows, in 2001 the ports of San Pedro Bay together ranked behind only Hong Kong and Singapore among the world's top container ports, handling 9.6 million twenty-foot equivalent container units (TEUs). Separately, the Los Angeles and Long Beach ports ranked 7th and 10th worldwide. New York-New Jersey, the next-largest U.S. container port, ranked 14th internationally. L.A.'s nearest competitors for Pacific Rim container trade—the ports of Oakland, Seattle, and Tacoma—ranked 28th, 33rd, and 37th, respectively. No U.S. ports are as import-oriented as Los Angeles and Long Beach. By value, imports account for 84 percent of their trade activity compared with 68 percent for the nation's other ports. Connecting the San Pedro Bay ports to the North American market, L.A.'s two transcontinental rail systems—the best system on the West Coast—handle 70 percent of total West Coast trade shipped by rail.

Historically, the ports of Los Angeles and Long Beach were fierce rivals. In the 1960s and 1970s, the conflict intensified as they actively fought for each other's cargo. As Michael Denning and David J. Olson note, "... as long as Long Beach remained inferior to Los Angeles [in terms of container units and tonnage], it actively sought to capture cargo away from its rival as well as increase its share of new cargo by steeply underpricing its terminals under long term leases. Its pricing behavior in turn fueled the rivalry."¹²

Table 3
World's Top 15 Container Ports Ranked by Traffic, 2001
(millions of TEUs*)

Rank	Port	Country	TEUs
1	Hong Kong	China	17.80
2	Singapore	Singapore	15.57
	Ports of San Pedro Bay	United States	9.64
3	Pusan	South Korea	7.91
4	Kaohsiung	Taiwan	7.54
5	Shanghai	China	6.33
6	Rotterdam	Netherlands	6.10
7	Los Angeles	United States	5.18
8	Shenzhen	China	5.07
9	Hamburg	Germany	4.69
10	Long Beach	United States	4.46
11	Antwerp	Belgium	4.22
12	Port Kelang	Malaysia	3.76
13	Dubai	United Arab Emirates	3.50
14	New York/New Jersey	United States	3.32
15	Bremen/Bremerhaven	Germany	2.92

* Container traffic is measured in twenty-foot equivalent units (TEUs).
Source: *Journal of Commerce Week*, July 8-14, 2002, "Special Report: World's Top 50 Container Ports," pp. 22-27.

By the early 1980s, cooperation and joint action had begun replacing cut-throat competition. Cooperation became possible as the two ports achieved parity in container units and tonnage. Both ports faced similar constraints on future development. These included limited available land for expansion; rail bottlenecks between the ports and the downtown railyards, reflecting the massive increase in intermodal container traffic; and severe highway congestion in the harbor area, seriously affecting truck movements. Common problems encouraged joint solutions. In 1985, the U.S. Army Corps of Engineers launched a joint planning effort with the two ports to create the largest integrated marine-highway-rail transportation hub in the world. The 2020 Plan, as it was called, was designed to develop facilities that would meet projected cargo handling needs—estimated to grow by 250 percent—through the year 2020. At an estimated cost of \$4.8 billion, for 1988-2020, the 2020 Plan was the nation's most ambitious port expansion program.¹³

Since 1991, however, the two ports have pursued different development strategies. The Port of Long Beach forsook a dredge-and-fill strategy in favor of redeveloping existing properties, such as the former Wilmington oil field and the closed U.S. Naval Station and Naval Shipyard. Port officials claimed that their landside approach was cheaper and faster than a dredge-and-fill approach, thus reducing environmental review delays. Yet, Long Beach's plans to build a \$200-million 145-acre cargo terminal at the Naval Station for the China Ocean Shipping Company (COSCO), a subsidiary of the Chinese military, were thwarted, mired in political and environmental controversy.

With fewer landside development options, the Port of Los Angeles continued to work on dredge-and-fill projects in partnership with the Army Corps of Engineers. Although Los Angeles experienced permitting delays, the Pier 300/400 Implementation Program (the first phase of the old 2020 Plan) met its initial 1998 interim completion date and was on target to meet a final completion date of 2010. As with Long Beach, the Port of Los Angeles considered the Alameda Corridor rail project an integral part of its long-range development plans. The two ports contributed \$200 million each toward the \$2.4 billion Alameda Corridor project. As of early 2003, San Pedro Bay port expansion generally was on schedule, but key challenges remained.

CHALLENGES

The San Pedro Bay ports' reputation as the gateway of choice for Pacific Rim trade has been sorely tested by labor disputes. In late 2002, after new contract negotiations failed, a 10-day management lockout of West Coast union dockworkers affected global supply chains and resulted in billions of dollars in business losses. Over 200 ships were idled off the Southern California coast, forcing shippers and retailers to begin rethinking shipping and transportation routes. Other recent San Pedro Bay port labor disputes involved strikes by independent truckers and port pilots. In 1997, a massive dock and rail tie-up resulted from the Union Pacific's troubled takeover of the Southern Pacific railroad system. That tie-up, which led to up to 30 ships being diverted to other West Coast ports, and to threats by businesses to ship elsewhere, revealed the most serious challenge facing the ports: a growing landside transportation bottleneck. Thus, the Alameda Corridor project, designed to improve rail access to the ports, was integral to port development plans.

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In the mid-1990s, the ports successfully overcame two other major challenges: state-authorized revenue diversions to municipal general funds (SB 844) and stiff federal regional air-quality standards and emissions fines proposed under the 1994 Federal Implementation Plan (FIP). The two ports transferred \$90 million under SB 844, but the legislation was not renewed after its first two years. Owing to its short duration, SB 844 did not seriously impair the ports' capital development programs. In addition, strenuous lobbying by California public officials and business groups resulted in the elimination of the FIP.

Despite SB 844's nonrenewal, the cities of Los Angeles and Long Beach, facing continued budget deficits, used their charter authority to effectuate additional port revenue transfers. Los Angeles substantially increased its request for Harbor Department payments for city-provided services, such as fire protection. Charged with enforcing the Tidelands Trust, the State Lands Commission successfully sued the city to recover most of the \$80 million transferred from the harbor fund into the L.A. general fund. The City of Long Beach also sought additional port revenues. These revenue diversions threatened the ports' ambitious capital improvement programs. The ports require prodigious amounts of capital—more than \$3 billion in the next decade. Transfers reduce pay-as-you-go financing and force greater reliance upon debt, driving up capital financing costs. If compelled to absorb higher charges, shippers could divert discretionary cargo—which represents 50 percent of the containerized cargo moving through San Pedro Bay—to other ports. With a severe state budget crisis in 2002-2003 producing large cutbacks in state assistance to local governments, port officials braced for another possible round of revenue diversions.

By the late 1990s, transportation bottlenecks and higher shipping charges had begun to threaten the two ports' dominance of Pacific Rim trade. Competition for discretionary cargo grew, not only from West Coast rivals such as Seattle-Tacoma (a day's shorter sail from Japan) but also from Houston and such East Coast ports as New York, Norfolk, and Charleston. It took Asian cargo three days longer to reach Houston via the Panama Canal than to reach L.A., but the price to Houston ran \$400 less per container. East Coast ports, which had once dominated U.S. trade, also made a concerted effort to capture Asian shipping. The ports of New York, Baltimore, and Boston dropped their rates by up to 30 percent to encourage shippers to send Asian cargo through the Suez Canal to the East Coast.¹⁴

Port projects also faced a growing array of environmental and community challenges. At the Port of Long Beach, the COSCO terminal project, which required the burying of tons of contaminated silt offshore, was halted in part because of environmental concerns. At the Port of Los Angeles, environmentalists and community residents protested a new coal exporting facility that featured open-air storage of enormous coke piles, which they claimed posed serious health hazards. In Wilmington and San Pedro (separate cities until annexed to Los Angeles in 1909), secession movements were launched, buoyed by a 1997 state law making secession easier by removing city council veto power. Adopting as a model El Segundo—a South Bay city whose refinery generates sizable municipal revenues—secession groups such as the New Wilmington Committee wanted to use port and refinery revenues for community redevelopment and recreation projects. Although the Local Agency Formation Commission, which determines the economic feasibility of new cities, refused to put Harbor district secession on the 2002 ballot, port-community tensions remain.

IV. TRADE CORRIDORS

The region's major trade-corridor projects also faced challenges, particularly funding. Their price tag was steep. In all, the region needed \$4.5 billion for rail projects, billions more for truck and goods-movement highway upgrades, and \$2.3 billion for border infrastructure improvements. With Proposition 13-era constraints on local government finances, a sluggish national and state economy, and limited federal and state transportation dollars, innovative financing strategies needed to be devised. Projects such as the 20-mile-long Alameda Corridor crossed multiple city boundaries and thus also needed innovative governance mechanisms to secure cooperation from affected stakeholders. Yet, trade-corridor initiatives generally faced a supportive regulatory environment because they promised environmental benefits such as reduced traffic congestion, noise, and air pollution.

What drove the flurry of high-priced regional trade-corridor projects were forecasts of robust trade growth and attendant train and truck traffic increases that threatened massive congestion and delays. Between 2000 and 2020, the value of port-of-entry merchandise trade through the L.A. Customs District was projected to grow nearly 200 percent, from \$230 billion to \$661 billion. Container traffic through the San Pedro Bay ports was forecast to increase 175 percent, from 7 million loaded TEUs (twenty-foot equivalent units) in 2000 to 19.2 million TEUs in 2020. One-half of these containers would be put on railcars for shipment to eastern destinations. The remaining containers were trucked to destinations in the huge Southern California market. By 2020, heavy-duty truck traffic in the region was expected to grow by 65 percent relative to 1995 and to double on key routes such as Interstate 710, which link the ports with downtown. Overall, travel times on freeways serving the airports and ports likely would double by 2020.¹⁵

At the same time, burgeoning NAFTA trade with Mexico (90 percent of it trucked across the border) created a new set of demands upon the region's already congested transportation system. The L.A. metropolitan area accounted for 60 percent of California truck traffic crossing the Mexican border. For the L.A. area, NAFTA truck traffic with Mexico was projected to grow 300 percent from 1992 to 2015.¹⁶

Cooperative approaches marked trade corridor projects (especially rail initiatives) in terms of planning, governance, and finance. The Southern California Association of Governments (SCAG), the transportation planning agency for metropolitan L.A., and the San Diego Association of Governments (SANDAG), the comparable agency for San Diego County, took the lead in regional freight-movement planning. The region's three major rail mega-projects—the Alameda Corridor and two successor projects from the downtown rail yards to the eastern fringes of the L.A. metropolitan area—featured innovative use of another regional mechanism: the joint powers authority (JPA) for project financing and governance.¹⁷

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THE ALAMEDA CORRIDOR: A “TOLL ROAD FOR TRAINS”

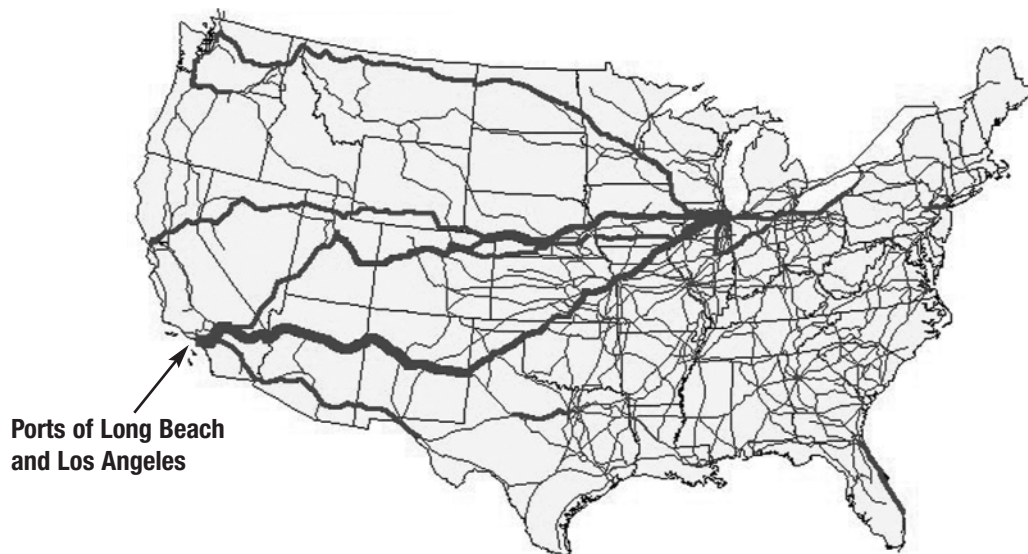
In the 1990s, railroads became critical linchpins in the global transportation system. Panamax and post-Panamax cargo ships—those too large to pass through the Panama Canal—called at fewer ports and relied upon rail transport to distribute cargo to inland and transconti-

mental destinations. Today, railroads handle over one-quarter of total U.S. trade. Yet, the weak link in the railroad system was the seaport connection. Throughout the country, poor railroad connections choked ports. Problems ranged from too few tracks, to too many bridges or tunnels blocking the best routes, to too many at-grade highway crossings. The 1990s trade boom at the nation's largest ports placed an enormous strain on a rail infrastructure that had not been significantly expanded in fifty years because of slim profit margins on containerized cargo.

At the San Pedro Bay ports, a growing rail bottleneck loomed as the major challenge to port development. Here, two Class 1 railroads—the merged Burlington Northern Santa Fe (BNSF) and Union Pacific-Southern Pacific systems (UP)—operate three transcontinental rail lines linking the ports with the rest of North America. Figure 1 shows the preeminent role of the ports in the nation's intermodal rail transportation system. Handling nearly one-third of the nation's international waterborne commerce and shipping one-half of this enormous container volume inland, the ports and their rail connections serve as the country's premier gateway for Pacific Rim imports.¹⁸

Foreseeing such a bottleneck, port and regional planners took the lead in developing the Alameda Corridor project, the largest intermodal project in the nation. Its purpose was to facilitate rail and truck access to and from the ports of San Pedro Bay while mitigating such adverse aspects of port growth as rail and truck congestion and air pollution. Port train traffic was projected to grow from 29 trains per day in 1991 to 97 trains by 2020—a 234 percent increase. The project consolidated 90 miles of rail lines intersected by 200 at-grade road crossings into a single uninterrupted 20-mile high-speed grade-separated rail system linking the ports with the transcontinental railyards located near downtown Los Angeles. Because of delays in finalizing the rail right-of-way purchase agreement, initial construction of the \$2.4 billion project did not begin until 1995. The project was completed in April 2002.

Figure 1: Rail Intermodal Flows (Freight Density in Tons, 1998)



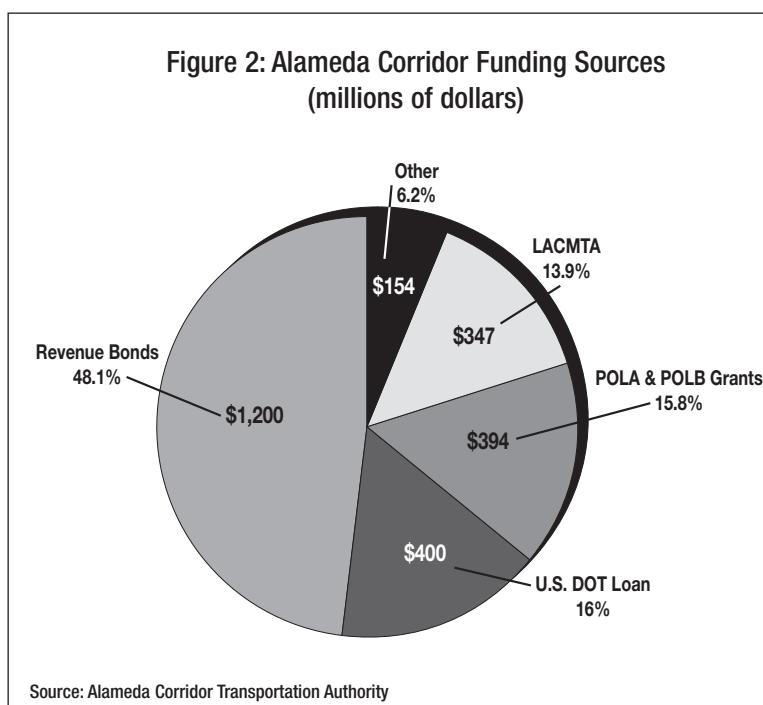
Source: Federal Highways Administration Office of Freight Management and Operations

At the opening ceremony, U.S. Transportation Secretary Norman Mineta called it “one of America’s most significant transportation projects . . . a model of innovative financing, cooperation and good government.”¹⁹ Yet this was not always so. In the mid-1990s, the project was beset with serious financing difficulties and sharp conflicts between the ports and several corridor communities. The Alameda Corridor project raised important questions concerning who benefits from infrastructure and who should pay for it. The project also raised governance and policy questions regarding who should be represented (affected corridor communities versus resource constituencies like the ports) and who should bear responsibility for mitigation and community development.

The project’s origins can be traced back to 1981, when SCAG created a Port Advisory Committee. In 1989, the cities of Los Angeles and Long Beach used their joint-powers authority to set up a consolidated rail corridor agency, the Alameda Corridor Transportation Authority (ACTA). Although the initial plans did not give the corridor cities seats on the governing board, six of the affected cities demanded and secured board representation. However, in a later settlement of a lawsuit brought by the corridor cities over control of project financing, the corridor cities lost their board seats. The ACTA board now has representatives from the three major financial stakeholders: Los Angeles, Long Beach, and the Los Angeles County Metropolitan Transportation Authority (LACMTA).

One of the project’s chief challenges was financial. Early on, the corridor faced an \$800 million shortfall—33 percent of its final cost—with uncertain federal and state funding prospects. ACTA crafted a funding strategy that relied primarily upon the federal government. A key factor behind this decision involved the corridor’s national economic benefits. To aid its congressional lobbying efforts, ACTA borrowed a page from defense procurement funding strategy and developed estimates of the project’s trade, employment, and government revenue benefits for every congressional district. The project’s federal lobbying strategy also involved demonstrating widespread regional and statewide support for the project. Reflecting California’s importance in an election year, both the President and Congress in 1996 approved a \$400 million Department of Transportation corridor loan guarantee.²⁰

In this way, the project cobbled together an innovative financing package. Sponsors claimed that the Alameda Corridor was essentially a “toll road for trains.” Over 80 percent of the project’s \$2.4 billion final cost would be covered by revenue bonds (backed by container fees and wharfage charges), federal loans (similarly backed), and port contributions (funded by tariff and wharfage charges). In contrast, less than one-fifth of the project was funded by federal and state transportation grants. Figure 2 shows a detailed breakdown of project funding sources.

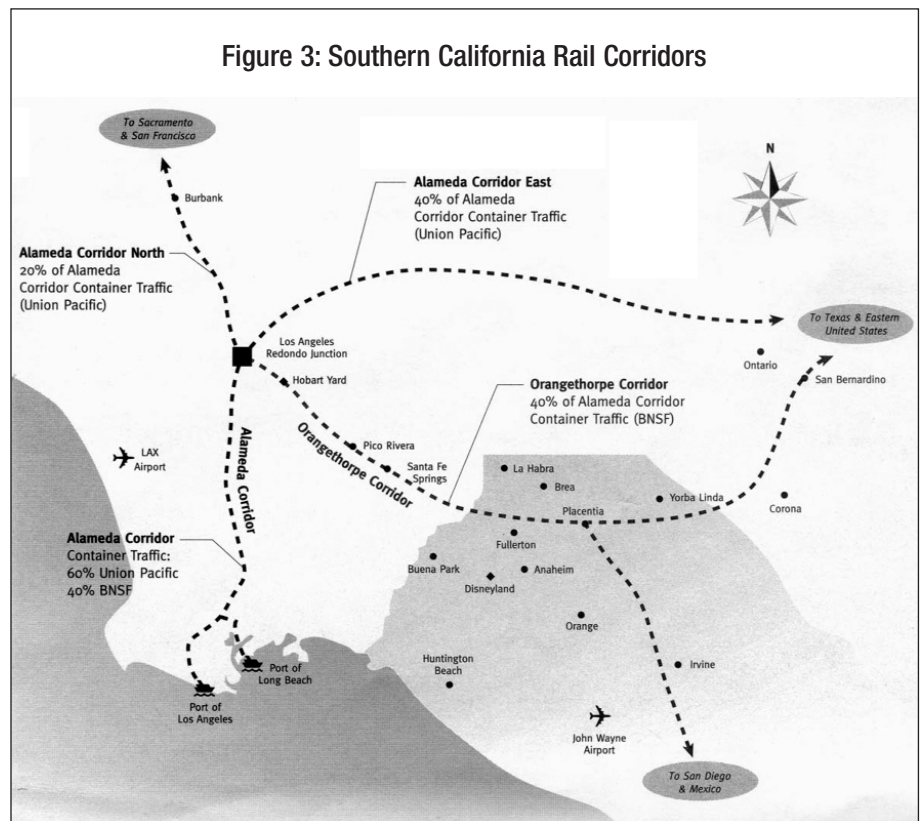


Another major challenge involved managing port-corridor city conflicts. The corridor cities were concerned about the project's concentrated costs and dispersed benefits. Because the project directed rail and truck traffic through their business districts and neighborhoods, these cities bore most of the burdens. They also feared the project was inattentive to their economic needs. These communities, located between the ports and downtown in southern Los Angeles County—a once-vibrant manufacturing center hollowed out by recession, deindustrialization, and defense downsizing—had large African American and Latino populations with high unemployment and poverty rates. They looked to the corridor for salvation. Yet, given the project's focus upon creating national benefits, they feared that local benefits would not be forthcoming. Such fears led the corridor cities to file lawsuits, which they subsequently lost, to mitigate the adverse effects of port expansion and to ensure greater community control over project decision making. Yet the litigation also yielded some corridor-city payoffs. The ports pledged millions of dollars in economic development monies to lawsuit cities, such as Compton, and even to non-lawsuit cities, such as Carson.

NEW RAIL INITIATIVES

Although the Alameda Corridor was designed to improve the capacity and efficiency of the rail system from the ports to the downtown railyards, it did nothing for freight traffic continuing inland from the railyards via the main UP and BNSF rail lines through the San Gabriel Valley, northern Orange County, and San Bernardino and Riverside Counties. Beyond the Alameda Corridor, the main lines featured another 141 highway-rail at-grade crossings needing separation (via trench or overpass) and other safety improvements. With San Pedro Bay port and other intermodal train traffic projected to grow by 160 percent from 2000 to 2020, grade-improvement projects offered many benefits: reduced vehicle congestion and delays, improved safety, better air quality, and possibly greater freight efficiency.

In the late 1990s, local officials in the San Gabriel Valley and northern Orange County launched two ambitious rail initiatives designed to streamline freight rail movement through the entire metropolitan region at an estimated cost of \$3 billion. Figure 3 shows the two projects—the Alameda Corridor East and the OnTrac (Orange North-American Trade Rail Access



Source: OnTrac Joint Powers Authority, *The Orange County Gateway* (2000), p. 8.

Corridor Authority) Orangethorpe Corridor—in relation to the Alameda Corridor and the smaller Alameda Corridor North.

Although they borrowed governance mechanisms and funding strategies from the Alameda Corridor, the two eastward extension projects had different origins and grassroots relations. The initiative for these projects came not from the ports but from affected communities concerned with the negative externalities of port and rail traffic growth. The ports, already saddled with their own multi-billion-dollar development projects and \$400 million in Alameda Corridor funding, made it clear that they lacked the wherewithal to be major contributors. They saw the projects as essentially grade-separation measures that would reduce local vehicular traffic delays but have only modest benefits in freight capacity compared to the Alameda Corridor. Grassroots tensions were limited because these middle-class communities were most concerned with the projects' promise of traffic-congestion relief and related environmental and safety benefits.

The "Southwest Passage" strategy was an even more ambitious rail-trade corridor initiative. Launched in the late 1990s, this SCAG-sponsored initiative was designed to transform east-west rail and highway routes along the U.S.-Mexico border into a seamless freight transportation system from Southern California to Texas. The Union Pacific's Sunset Route, the BNSF rail line, and the I-8 and I-10 interstate highways would serve as a mini-land bridge linking the San Pedro Bay ports with the Ports of Houston and Corpus Christi. Thus, the Los Angeles and Long Beach ports would be able to maintain their dominance in Pacific Rim trade, whereas Asian imports destined for Europe would be shipped over the land bridge and placed on vessels in Houston and Corpus Christi. The strategy also called for strengthening north-south rail and highway links in the four southwestern border states to capture greater Mexican trade.²¹

These new initiatives face several challenges. First, they need railroad support. Cooperation is made difficult by state policy requiring the railroads to pay a share of project costs. As a result, the railroads remain uncommitted. In addition, financing is uncertain. Only one-quarter of the \$3 billion-plus four-county Alameda Corridor East Trade Corridor Plan is currently funded. The Southwest Passage has received only token planning funding. With federal and state budget deficits and the post-9/11 reordering of funding priorities, these projects face major delays if new funding sources are not found.

HIGHWAY PROJECTS

Transportation planners and policymakers in Southern California now confront another set of choke points in the goods-movement system: highways congealed by truck traffic. One emerging bottleneck involves the freeways connecting the San Pedro Bay ports to downtown L.A. and to the fast-growing warehousing and distribution centers in the "Inland Empire" of western San Bernardino and Riverside Counties. Fully one-half of the containers unloaded at the ports are placed on trucks for transportation and distribution to the huge Southern California market. Spurred by NAFTA, a second bottleneck has emerged at California's border crossings with Mexico. With 90 percent of the state's NAFTA trade transported by truck and 60 percent originating in or destined for metropolitan Los Angeles, the commercial ports of entry and connecting highways are experiencing mounting congestion and delays. Given NAFTA's state and national

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trade benefits, there is growing debate over who should pay for border improvements.

The already crowded Southern California highway system faces a dramatic increase in truck traffic, and funding for needed highway improvements is inadequate. With 9,000 lane miles of freeways and 15,000 lane miles of principal arterial streets, Southern California has one of the nation's most extensive and complex highway systems. This network serves the region's ports, airports, manufacturing, intermodal, distribution, and warehousing facilities and connects them to the U.S. hinterland, Mexico, and Canada via the interstate highway system.

Driven by a projected 65 percent rise in regional freight tonnage by 2020, the combined increase in truck and automobile traffic threatens to paralyze the highway system. The most affected routes are those serving the ports, airports, and railroad and truck warehousing-distribution-transfer facilities. These trade arteries now handle 30-45 percent of the region's total truck traffic. In particular, Interstates 710 (the ports), 5 (the major north-south thoroughfare), 15 (the east-west thoroughfare), and State Routes (SR) 60 and 91 to the Inland Empire suffer the most acute truck congestion. The I-710 freeway from the ports to downtown could see a 250 percent increase in truck traffic by 2020, leading to more traffic congestion, delays, and accidents during peak periods, as trucks compete with passenger vehicles for shrinking freeway capacity.²²

Public highway funding has not kept pace with the regional and national growth in truck tonnage and traffic. Undaunted, the Southern California Association of Governments has embarked upon an ambitious goods-movement planning program. Two promising SCAG planning initiatives are truck-only lane proposals for major trade corridors—I-5, I-15, I-710 and SR-60—and a low-cost, high-impact IT-based "Jump Start" program to improve access to intermodal facilities and relieve traffic congestion at at-grade rail crossings by means of intelligent transportation systems, signal synchronization, and safety improvements. Dedicated truck lanes would be established along the outer perimeter of existing freeways. A more controversial initiative is SCAG's proposed \$6.2 billion high-speed rail system to serve the region's airports. Today, SCAG's regional trade transportation projects remain in the planning stages with funding uncertain.

NAFTA INITIATIVES

After the implementation of NAFTA, the Southern California-Mexico border quickly became a new bottleneck in the region's trade transportation system. In 1996, Southern California's four commercial land ports of entry (POEs)—Otay Mesa, Tecate, East Calexico and Andrade—handled 1.5 million trucks, a 67 percent increase over 1993. Projections to 2020 were for robust NAFTA-induced growth in border truck traffic—to 4.3 million trucks, representing a nearly 200 percent increase over 1996. Baja California's *maquiladoras* (manufacturing concerns) generated much of the cross-border truck traffic growth.²³ Regional planners in San Diego County estimated that their border transportation improvements would cost upwards of \$1.5 billion. Yet, by 2000 they had only cobbled together a \$1 billion funding package.

In the period from 1993 to 2001, four major border improvement projects were proposed. First and foremost, the \$250-million SR 905 freeway project was touted as a vital new link from San Diego's Otay Mesa commercial border crossing to the I-805 and I-5 freeways and the Southern California market. By 2000, combined federal, state, and local project funding had climbed to \$175 million—or 70 percent of the \$250 million needed. Environmental reviews were successfully completed, and the target date for the four-lane expressway was moved up to 2005 from 2015, with a planned expansion to six lanes. Along with tax incentives under state enterprise zone and

foreign trade zone legislation for businesses in the border region, SR 905 was also considered a vital catalyst to Otay Mesa's future as a center for high-tech research and manufacturing.²⁴

A second planned border link was State Route 125, a nine-mile tollway and two-mile state connector financed with \$400 million in private capital and \$130 million in regional and federal funds. This eight-lane north-south route would connect the Otay Mesa border crossing with the regional interstate highway system. SR 125 is also integral to Baja California's proposal for a new commercial border crossing two miles east of the Otay Mesa POE that would link up with a Mexican highway running through the heart of the maquiladora district. Despite environmental opposition, SR 125's environmental review was completed in 2000. With private construction financing, an initial four-lane highway could open in 2004.²⁵

Third, in the Tecate region, 35 miles east of San Diego, vocal opposition by rural residents seeking to limit truck traffic stalled proposals for widening SR 94 (a mountainous highway serving the Tecate border crossing) and for renovation and enlargement of the Tecate POE. Here, the cross-border traffic jam has substantially worsened, from 7,000 vehicles per day in 1996 to 50,000 per day in 2002.

Finally, a new Calexico border crossing built in the 1990s in Imperial County, equipped with advanced vehicle inspection and drug-search technologies, made Mexicali increasingly competitive with Tijuana as a cross-border manufacturing center. Yet, the Calexico port's economic future hinged on completion of the so-called Tijuana Loop—a private-venture Mexican toll road connecting the Otay Mesa crossing with the Ensenada toll road, Tijuana, Tecate and Mexicali—which remained on the drawing board due to lack of funds.

Cross-border infrastructure development depends upon binational cooperation between San Diego and Baja California. Here, there have been promising signs. SANDAG launched an extensive binational planning program with its Mexican counterparts. Caltrans crafted cooperative agreements with Mexican federal and state transportation agencies on cross-border transportation planning. What remained to be seen was whether binational planning initiatives could be translated into joint action on border infrastructure development.²⁶

The new millennium dawned with a mixed track record for Southern California's major trade corridor projects. Both rail and highway projects embodied regional planning approaches, but with different governance and development trajectories. Rail initiatives utilized the joint-powers authority, which facilitated both grassroots conflict resolution and innovative public-private funding partnerships. As a result, rail projects enjoyed some success. In contrast, highway projects featured more-decentralized institutional arrangements that involved a host of regional, state and federal agencies. NAFTA projects generally fared well, but port highway projects were beset with inadequate funding and coordination mechanisms, resulting in delays.

“In contrast to the progress on regional port and trade corridor projects, international airport projects have been largely stalled owing to fierce community and environmental opposition.”

V. INTERNATIONAL AIRPORTS

In contrast to the progress on regional port and trade corridor projects, international airport projects have been largely stalled owing to fierce community and environmental opposition. Ironically, the era began with high hopes for the airports. In the 1990s, the long-delayed LAX master planning process was restarted, a terminal expansion program was launched at Ontario airport, and the potential for a new airport at Palmdale was explored. In addition, the federal government handed over four military air bases in Southern California—El Toro in Orange County and three Inland Empire facilities—that could be turned into commercial airports. This “peace dividend”—the silver lining of a deep local recession induced by defense cutbacks—offered an unparalleled opportunity to help solve the region’s pressing aviation needs.

New airport capacity was needed to handle the region’s projected dramatic growth in aviation demand, particularly for international travel and air cargo. In the six-county SCAG planning region, air passenger travel was forecast to nearly double from 1993 to 2015, from 66 million annual passengers (MAP) to 123 MAP. Air cargo, much of it from the Pacific Rim, was projected to grow at a much faster rate: from 1.5 million tons in 1995 to 4.8 million in 2010. Subsequent projections to 2025 forecast even more explosive growth—to 167 MAP and 9.5 million air cargo tons. Without new runways, by the early 21st century the region’s airport system would experience a serious physical capacity shortfall relative to the burgeoning demand—exacerbated by noise and air-quality policy constraints.²⁷

Failure to resolve this looming shortfall, particularly for international service, threatens Southern California’s future as a global export center. One-half of regionally produced merchandise exports (by value) are shipped by air. Airborne exports add more in value to the local economy than do waterborne exports. High-technology, high-value-added manufactured products are especially conducive to air shipment. Airborne exports also include services, which account for one-fifth to one-quarter of total trade activity. In Southern California, service exports are especially important in such rapidly growing industries as tourism, entertainment, and professional/business services.

DOWNSIZING LAX EXPANSION

Southern California has one fully international airport, Los Angeles International Airport (LAX). Limited global service is provided at Ontario International Airport and San Diego’s Lindbergh Field. Three other local airports—John Wayne, Burbank, and Long Beach—provide short- and medium-haul domestic service. Unlike the Bay Area, which has three international airports (San Francisco, Oakland and San Jose), Southern California faces severe imbalances in international and air cargo service, with the most serious problems concentrated in Orange and San Diego Counties. These areas are among the fastest growing in the region, with heavy emphasis on high-tech manufacturing, tourism, and international trade. Owing to the deficiencies of Orange County’s John Wayne Airport and San Diego’s Lindbergh Field, LAX handles nearly all of Southern California’s international passenger and global air freight service. Overall, LAX accounts for 77 percent of the region’s air cargo shipments, both domestic and international, while Ontario handles another 17 percent.

Tables 4 and 5 rank the world's leading airports. They show that in 2001 LAX was the world's third busiest passenger and fourth largest air cargo facility, respectively. In terms of passenger traffic, LAX ranked behind Atlanta and Chicago but ahead of London, Tokyo, Dallas-Fort Worth, Tokyo, and Frankfurt. In terms of air cargo handled, LAX ranked behind Memphis (the FedEx hub), Hong Kong, and Anchorage but ahead of Narita (Tokyo), Miami, Frankfurt, and Paris. LAX handles nearly one-half of California's global air cargo, and one-sixth of the nation's total. Los Angeles World Airports (LAWA), a municipal proprietary department like the L.A. Harbor Department, operates LAX and Ontario as well as the Van Nuys and Palmdale airports. The last LAX Master Plan was produced in 1971-1972 and projected a maximum capacity of 40 million annual passengers—a figure surpassed in 1986. As the demand for air passenger and cargo facilities at LAX grew, officials struggled to keep up. As a result, a new LAX master planning effort was launched in 1989. Airport officials acknowledged the need to address planning from a regional perspective. Hence, LAWA started an expansion project at Ontario Airport. This fast-tracked \$250-million project created a new 24-gate terminal complex and major ground-access improvements, ready for operation in late 1998. LAWA also studied Palmdale's feasibility as a major airport.

For LAX, planners evaluated a series of design alternatives for a large 94-98-MAP airport featuring new runways. In response, nearby

Table 4
World's 10 Busiest Passenger Airports
Ranked by Passenger Volume, 2001
(millions of passengers)

Rank	Airport	Country	Passengers
1	Atlanta (ATL)	United States	75.85
2	Chicago (ORD)	United States	66.81
3	Los Angeles (LAX)	United States	61.02
4	London (LHR)	Great Britain	60.74
5	Tokyo (HND)	Japan	58.69
6	Dallas/Ft. Worth (DFW)	United States	55.15
7	Frankfurt (FRA)	Germany	48.56
8	Paris (CDG)	France	48.00
9	Amsterdam (AMS)	Netherlands	39.53
10	Denver (DEN)	United States	36.09

Source: Airports Council International (ACI), *Traffic Data: World Airports Ranking by Total Passengers-2001*.

Table 5
World's 10 Busiest Cargo Airports
Ranked by Freight Volume, 2001
(millions of metric tons)

Rank	Airport	Country	Metric Tons
1	Memphis (MEM)	United States	2.63
2	Hong Kong (HKG)	China	2.10
3	Anchorage (ANC)	United States	1.87*
4	Los Angeles (LAX)	United States	1.77
5	Tokyo (NRT)	Japan	1.68
6	Miami (MIA)	United States	1.64
7	Frankfurt (FRA)	Germany	1.61
8	Paris (CDG)	France	1.59
9	Singapore (SIN)	Singapore	1.53
10	Louisville (SDF)	United States	1.47

* Includes transit freight.
Source: Airports Council International (ACI), *Traffic Data: World Airports Ranking by Total Cargo - 2001*.

“The fight over El Toro quickly became the biggest and most expensive land-use conflict in California. Orange County’s “civil war” pitted a generally pro-airport north county against a vehemently anti-airport south county.”

communities filed environmental lawsuits. The specter of an environmental justice lawsuit was also raised because minority communities under the LAX flight path would bear the brunt of the project’s adverse environmental and health effects. In the face of mounting community opposition, officials then proposed a smaller 89-MAP LAX plan with no new runways. After the 9/11 terrorist attack, newly elected L.A. Mayor James Hahn proposed a modest 78-MAP design that focused on modernization and security rather than new capacity.

Critics charged that LAWA did not seriously examine other potential airport sites besides LAX. This became a rallying cry for a potent region-wide anti-LAX coalition that ranged from the South Bay to the Inland Empire. In classic NIMBY fashion, foes contended that LAX expansion would produce unmitigable traffic congestion, noise, and air pollution, thus threatening property values. Their chief contribution was to regionalize the debate, claiming that outlying airports such as those in Palmdale, Ontario, and El Toro—areas

projected to grow rapidly—could better serve the region’s future aviation needs than could LAX.

EL TORO: ORANGE COUNTY’S “CIVIL WAR”

In the early 1990s, El Toro Marine Corps Air Station in south Orange County became an intense new airport battlefield. Originally developed during World War II, El Toro was encircled by suburban development as the county’s postwar population exploded from 130,000 in 1945 to 2.8 million in 2000. Scheduled for closure in 1999, the 4,700-acre El Toro facility (larger than LAX) became expendable as population encroachment threatened its military mission. Regional aviation planners hailed El Toro’s potential to relieve congestion at LAX. El Toro had the greatest air passenger-service potential of any proposed new regional airport. Unlike remote Palmdale, El Toro was located in the middle of Orange County, the nation’s eleventh largest metropolitan economy with \$130 billion in regional output. The size of the small, 500-acre John Wayne Airport had been capped by a noise settlement agreement at 8.4 MAP, and the airport offered only minimal air-cargo service. Orange County was therefore highly underserved.²⁸

The fight over El Toro quickly became the biggest and most expensive land-use conflict in California. Orange County’s “civil war” pitted a generally pro-airport north county against a vehemently anti-airport south county. Airport supporters included the County (a narrow three-to-two pro-airport majority on the Board of Supervisors), the City of Newport Beach (seeking to limit growth at nearby John Wayne Airport), leading business organizations, and a group of nine north county cities.

Airport opponents featured a powerful well-organized NIMBY coalition of seven south county cities (led by the City of Irvine), organized as the second El Toro Reuse Planning Authority (ERTPA) and concerned with noise, traffic congestion, and property values. Environmental groups and some south county business firms with quality-of-life concerns later joined them. Over a nine-year span (1994-2002), the conflict spawned four ballot measures, numerous lawsuits, and full-time employment for a cadre of lawyers, consultants, and pollsters. In arguably the nation’s foremost example of ballot-box planning, the two sides spent \$90 million in public monies to determine the future of El Toro with voter initiatives, lawsuits, and environmental reviews.²⁹

At base, the El Toro conflict featured competing visions of Orange County’s future. For airport supporters, the area’s future was as a high-tech, world-trade center and high-end resort destination.

A proposed 28-MAP Orange County International Airport (OCX) would serve as a crucial catalyst for continued diversification of the county's economy into high-tech, knowledge-based research and manufacturing, professional services, and tourism. OCX promised to be a major pillar of the region's economy, generating an estimated \$14-18 billion in economy activity by 2020, representing 7-10 percent of the area's projected economic output. A large share of the high-tech jobs would be near the airport, benefiting the south county.³⁰

In contrast, the opponents' vision stressed suburban quality-of-life and environmental concerns. They made classic NIMBY arguments about unfairly bearing the burden of airport noise, air pollution, and traffic congestion. They stressed that other El Toro land uses—a large park, college campus, stadium, or mixed residential and commercial development—were more compatible with the area's suburban lifestyle. For them, an international airport conjured up images of LAX and a feared “Los Angelesization” of the area with attendant smog, congestion and crime. Further, they questioned the need for El Toro (claiming that proponents' demand forecasts were overblown), and that other regional airports could handle the demand. Orange County voters ultimately agreed. In March 2002, they approved Measure W, the so-called “Great Park” initiative, which rezoned El Toro for such popular non-airport uses as a large park. Thus ended the once-considerable promise of a new international airport for the region.

“Given that future regional airport growth likely will occur at Inland Empire airports such as Ontario, ready ground-access to L.A. and Orange Counties (where most air travelers and aviation-dependent businesses are located) will become a key challenge.”

THE FAILURE OF REGIONALISM

Despite the apparent bounty of airports in the Los Angeles region, the effective options for expansion at existing or newly converted airports are surprisingly limited. LAX will remain the region's chief airport for the foreseeable future, particularly for international service. The short-haul domestic market is shifting to Burbank, Long Beach, John Wayne, and Ontario Airports. Yet most of these airports have little or no room for expansion because of physical limits, noise curfews, and legally enforceable limits on operations (the product of sharp conflicts with their neighbors).

With El Toro's demise, LAWA's Ontario Airport (ONT) has become the main international airport alternative to LAX. Having undergone a recent major terminal expansion, it is the region's second-largest airport for domestic passenger and air cargo service and could expand to over 20 MAP if state air-quality ceilings on flight operations are relaxed. In 2001, it resumed international air service to Mexico. In 2003, a new ONT master planning effort was launched. Given that future regional airport growth likely will occur at Inland Empire airports such as Ontario, ready ground-access to L.A. and Orange Counties (where most air travelers and aviation-dependent businesses are located) will become a key challenge. Palmdale, once touted as the next international airport, will likely remain a small commuter airport—absent an unlikely multi-billion-dollar investment in highways and high-speed rail access to more-populated areas.

Other expansion possibilities are offered by three recently closed or realigned military bases in the Inland Empire: March, Norton, and George. Yet these sites suffer from the same market and transportation difficulties as remote Palmdale. As a result, they are initially billing themselves as industrial airports serving cargo, corporate and charter aviation activities. Local boosters also have embraced the chimera of high-speed rail connections to urban centers. California's Intercity High Speed Rail (IHSR) Commission has recommended a statewide network 676 miles long, including a Palmdale-Los Angeles link. Massive public funding (requiring difficult-to-

obtain voter approval) will be needed for the \$20-30 billion in estimated construction costs. SCAG has proposed its own high-speed rail system to serve outlying airports, featuring magnetic levitation (Maglev) trains that would connect airports such as Ontario and March. The public sector would provide the right of way, and the private sector would finance, build, and operate the system. At a projected cost of \$6.2 billion, Maglev's prospects are highly uncertain.

Southern California airport planners face a frustrating paradox. Although demand for passenger and air cargo service (even after 9/11) could double by 2025, there is no regional consensus regarding where to place new airports. The airline industry favored expansion of LAX and expressed interest in an El Toro airport. Located in densely developed areas, these sites were attractive to the airlines because they were near housing and job centers. Yet, plans for LAX and El Toro were thwarted by opposition from nearby residents, who argued that new airport capacity should be located on the fast-growing periphery of the region. While communities around Palmdale, March, Norton, and George welcomed airports as potent development tools, the airlines were opposed to these remote sites, where demand had not yet reached critical mass. As Neil Bennett, Western Regional Director of the Air Transport Association, observed, "It's a Catch-22. In order to have demand, you have to have population density. And when you have population density, you have conflict."³¹

There was strong agreement among local public officials and community activists concerning the need for greater coordination among the region's airports. Those interested in international trade cited the need for coordination so the region could be competitive in the global market place. Those concerned with quality-of-life issues supported greater regional planning as a means of diffusing the adverse environmental and health impacts of airports.³²

Yet few institutional mechanisms existed to improve coordination and resolve the region's looming capacity shortfall. LAWA could only make decisions for its own airport system. Constraints on LAX and market- and ground-access challenges for Palmdale left Ontario as the only airport where near-term expansion was possible. Although SCAG was the lead agency for regional transportation planning (including aviation), it lacked the land-use and financial authority needed to develop and operate airports. Finally, the promise of the Southern California Regional Airport Authority (SCRAA), created in 1983 and revived in 1999, largely remained illusory. It has the appearance of real authority but functions in reality as a voluntary association comprised of the City of Los Angeles and the counties of L.A., Orange, San Bernardino, and Riverside, with SCAG participating as a nonvoting member. When Orange County finally joined SCRAA in 1992, it did so on the condition that each member had veto power over the authority's decisions. Veto power severely limited the agency's regional airport development authority. By 2003, SCRAA was being disbanded.

The failure of international airport development in Southern California threatens to have serious consequences. As the new millennium begins, the region faces a growing airport capacity crisis threatening its trade future, with few institutional mechanisms to help resolve it. The combined land size for the region's five commercial airports (7,900 acres) is only slightly larger than Chicago-O'Hare Airport (7,700 acres), and is dwarfed by Dallas-Fort Worth (18,000 acres) and Denver International (34,000 acres). Without new runways, the region would experience a 50 percent capacity shortfall by 2025—the greatest among the nation's major metropolitan areas. L.A.'s nearest rivals—the Bay Area, Phoenix and Las Vegas—all have ambitious airport expansion projects and are poised to capture a growing share of its global business. Airports thus are becoming the Achilles' heel of Southern California's global transportation infrastructure.

VI. A NEW CHALLENGE: SECURITY AGAINST TERRORISM

Southern California, as the nation as a whole, faced a daunting new challenge after September 11, 2001: protecting its trade, infrastructure, and economy from terrorist attack. The same properties that make global supply chains so valuable—the swift, seamless, intermodal connection of goods and people across continents and oceans—also make them vulnerable. Airports and ports, linchpins in the supply chain, are tempting targets because they offer the potential for inflicting enormous economic damage.³³

AVIATION

In terms of transportation systems, the terrorist attacks and new security measures have had a steep price tag. The airlines were hardest hit, and security at the nation's 429 commercial airports was federalized. The estimated immediate cost of 9/11 to the nation's airports in 2001-2002 was placed at \$4 billion, owing to increased security, reduced passenger traffic (which reduced federal funding), and lost concession revenues. To meet new federal mandates, airports would need to shoulder significant new security costs. At LAX, the cost was estimated at \$120 million. As did other major airports, LAX experienced a sharp drop in passenger traffic and revenues after 9/11. In 2002, LAX traffic fell 9 percent relative to 2001, threatening airport finances. LAX officials feared a \$100-million-plus revenue loss from parking lots, concessions, and landing fees. As a result, a nervous Wall Street placed major international airports like LAX on credit watch for a possible downgrade of their credit ratings, thus increasing their borrowing costs.³⁴

LAX also was a prime terrorist target. Already in December 1999, an Algerian trained in Afghan terrorist camps had been caught fortuitously, crossing from Canada to Washington State in a car loaded with bomb-making materials. He and his confederates intended to blow up LAX during the millennium celebrations. Yet it took September 11th to end the working assumption among regional airport planners that LAX was “a no-threat theater of operations.” In the wake of the attacks, LAX instituted the nation's most stringent controls on vehicular traffic of any major airport. Strictly applying the FAA's restrictions on parking within 300 feet of airline terminals, the airport initially closed the access road and all nearby parking structures. After weeks of protests from laid-off aviation workers and concessionaires, the airport board finally agreed (with FAA approval) to reopen the garages and roadway in the central terminal area. LAX security concerns were heightened once again in mid-2002, when an Egyptian-born immigrant opened fire at the El Al Airlines ticket counter, killing two and wounding several others before being killed himself.³⁵

Airlines and airports also faced serious challenges protecting air cargo shipments. Although the federal government primarily focused on screening passengers and luggage, the risk of a terrorist bomb in air cargo increased. Studies warned that “cargo is likely to become—and may already be—the primary threat vector in the short term.”³⁶ Air freight costs increased on average between 5 and 12 percent owing to “war risk” surcharges that cost the airlines over \$1.5 billion. The cumulative negative effects of 9/11 threatened to reduce worldwide annual air cargo growth over the next decade from 5 percent to 3 percent. At LAX, air cargo tonnage sharply fell after 9/11, though it later rose. Overall, for 2002 LAX air freight grew by 5 percent, to 1.9 million tons.³⁷

“Southern California, as the nation as a whole, faced a daunting new challenge after September 11, 2001: protecting its trade, infrastructure, and economy from terrorist attack. The same properties that make global supply chains so valuable—the swift, seamless, intermodal connection of goods and people across continents and oceans—also make them vulnerable. Airports and ports, linchpins in the supply chain, are tempting targets because they offer the potential for inflicting enormous economic damage.”

After September 11th, Southern California's estimated 400 air freight forwarder companies, forced to pay higher shipping charges, also saw their survival threatened by the increase in the time needed to get a package on an international jet—from 2-4 hours to 24 hours. Orange County's Western Digital Corporation (WDC), a maker of computer disk drives, demonstrated how tightened security procedures adversely affected local firms dependent on swift global air shipments. Prior to 9/11, WDC was the beneficiary of the Custom Service's "paperless release" program at LAX, which permitted immediate low-risk trans-Pacific shipments. Afterwards, it took up to two days for WDC's imported Malaysian components to clear customs, and the plant risked a shutdown. A troubling irony was that increased delays resulting from new safety rules meant that shipments were parked for longer periods in relatively insecure off-airport warehouses in cities like Inglewood and Carson.³⁸

MARITIME, SHIPPING, AND FREIGHT INDUSTRIES

These industries, too, were significantly affected by September 11th, though less so than air freight. In terms of tonnage, seaborne traffic through the nation's 361 seaports accounts for 90 percent of U.S. imports and exports. Yet maritime containerization of cargoes—a prerequisite of the supply-chain management revolution—has proven to be an economic triumph but a security nightmare. Stretched thin, the U.S. Customs Service was able to inspect only 2 percent of the seven million arriving containers. In fact, it was standard practice to allow containerized cargo that entered American ports and was then linked intermodally to truck or rail carriers to be hauled around the country for up to thirty days without any declaration of contents, specification of contents, or identification of final destination.³⁹

After 9/11, the Coast Guard began inspecting all arriving vessels, checking manifests and crew lists. The new antiterrorism focus came at the expense of the agency's other duties, such as drug interdiction. All ships entering U.S. ports also were required to provide a 24-hour notification of their pending arrival. At the ports of Los Angeles and Long Beach, the Coast Guard instituted 24-hour patrols to board and inspect cruise liners, container ships, and tankers. All inbound vessels had to wait at anchorage pending inspection. Tightened security resulted in a loss of eight hours (or one stevedoring shift) in getting vessels to berth. Despite the economic doldrums of 2001, trade surged in 2002 at the ports of San Pedro Bay as a result of increased consumer spending, a rebound in demand from U.S. trading partners, and the looming threat of a West Coast dockworkers' strike.⁴⁰

The terrorist attacks also shook up the container shipping industry (already in the doldrums because of the sagging global economy), as well as businesses dependent upon global supply chains. Shipping costs and times rose as insurers imposed war-risk premiums on coverage and security checks slowed cargo movements. Shipping industry talks turned to mergers and even bankruptcies. Even though the complex global supply chain appeared to return to near normality within weeks of the terrorist attacks, many companies began rethinking just-in-time delivery systems and lean inventories. Initial estimates of U.S. business costs included \$18 billion to carry additional inventory and \$2 billion for heightened security by shippers, including truckers. Together, these costs constituted a 2-percent add-on to the nation's annual freight hauling bill.⁴¹

The nation's railroad and trucking industries, linked intermodally to the ports and airports, were thus affected. After 9/11, U.S. railroads stepped up security around bridges, tunnels, freight offices, and telecommunications facilities. Trucking companies installed new screening, training,

and identification systems. Intermodal shippers, whether using trains or trucks, were under increasing pressure to pay for new technology to embed “transparent” tracking features in their transportation systems that would make it possible to monitor the progress of shipments all the way from “points of origin” where goods were loaded to “points of entry” where deliveries were made.⁴²

BORDER CROSSINGS

Finally, the nation’s borders became dramatic, albeit temporary, chokepoints. After the attacks, a Level 1 alert, calling for “sustained intensive antiterrorism operations,” was imposed on the U.S.-Mexico border. Customs and Immigration and Naturalization Service (including Border Patrol) officers stepped up inspections of all traffic crossing the 2,000-mile-long border. At the San Diego-Tijuana border crossing, vehicular wait times worsened as new bomb checks aggravated an average delay that had already tripled since 1997. Border businesses were particularly hard hit, as northbound traffic declined by 30 percent. A local congressman pleaded with the President and California’s Governor to declare a border state-of-economic emergency, making affected businesses eligible for low-cost loans. Cross-border trade further declined as the U.S. economic downturn caused the Mexican maquiladora manufacturing output to drop significantly. Responding to growing complaints, the federal government substantially increased spending for border security and tightened the visa entry system. The new legislation was designed to speed up border flows while enhancing security.⁴³

Balancing the efficient movement of commerce with security needs at the nation’s airports, ports and borders will be a formidable challenge. The choices made will have major repercussions for global trade and the economy, both regionally and nationally. The terrorist attacks resulted in a significant increase in federal responsibility for protecting the nation’s vital trade infrastructure. The new Transportation Security Administration, the Coast Guard, Customs, and the Immigration and Naturalization Service (including the Border Patrol) are to be housed in the newly created federal Department of Homeland Security. Yet local officials in places such as Los Angeles still retain major responsibilities for the nation’s ports and airports—potent but now vulnerable sites for trade and regional development. In the wake of 9/11, they too struggle to find the appropriate balance between commerce and security, and must figure out how to pay for enhanced security.

VII. A REGIONAL BALANCE SHEET

TRADE

“How has global trade (broadly defined) transformed the Southern California economy? In 2000, upwards of 25 percent (or \$160 billion) of the Greater Los Angeles \$650-billion economy depended upon global trade, up from 13 percent in 1972.”

What have been the benefits, costs, and tradeoffs for Greater Los Angeles of becoming a major trade and transportation center? Trade has complex direct and indirect effects upon the economy. The few existing regional-level trade-impact studies focus upon goods exports to the exclusion of service exports and imports. Yet Southern California is a poster child for a broader conceptualization of trade performance, which helps dispel its image as a trade underachiever. Its service exports, such as motion picture production and tourism, are as important as its merchandise exports. Trade is reshaping employment opportunities away from manufacturing and toward service industry jobs. Nowhere is this truer than in Southern California.⁴⁴

Further, imports can even generate domestic employment gains. Although import competition can result in direct job losses in the manufacturing sector, mitigating factors can counteract this effect. One such factor involves the expansion of overall demand as import competition encourages greater efficiency and lower prices from domestic manufacturers. Imported inputs can also promote expansion of domestic production and employment. Thus, computer-industry imports encourage domestic job growth in related service-sector industries. Finally, and of paramount importance to Southern California, the warehousing and transshipment of large volumes of imports can produce significant employment in a burgeoning logistics industry.

How has global trade (broadly defined) transformed the Southern California economy? In 2000, upwards of 25 percent (or \$160 billion) of the Greater Los Angeles \$650-billion economy depended upon global trade, up from 13 percent in 1972. International trade involves two distinct kinds of industries in the region. The first is the production of goods and services for export. Here, L.A.’s export profile is different from other leading trading regions. Unlike “export monoculture” regions with a dominant export industry, such as Seattle, the Bay Area, or Detroit, Southern California has a highly diversified manufacturing base. Its exports reflect that diversity. The region’s most export-dependent sectors are located at opposite ends of the technological spectrum—high value-per-unit computer equipment and aerospace components on one end and low-value primary metals, wastepaper, petrochemicals, and leather products on the other.⁴⁵

Compared to Seattle or the Bay Area, Los Angeles exports fewer manufactured goods, such as aircraft or computer parts, but generates unusually large service exports (up to one-half of the region’s exports, compared to one-quarter nationwide) in such globally oriented local industries as entertainment, engineering, international tourism, and software development. According to best estimates, goods-and-services exports directly and indirectly generate 15-20 percent of L.A.-area economic activity and employment.⁴⁶

The second type of trade-related industry involves logistics, distribution, and transportation of cargo moving into and out of the region. This is an unheralded engine of regional job growth. Whereas imports are usually conceived of in terms of domestic job losses (nationally in the automobile, steel, and shoe industries, and in Southern California in such import-sensitive sectors as apparels and canning), the distribution and/or transshipment of imported goods, and the jobs

thus created, can generate regional economic benefits. That may be the case for the Inland Empire, which in recent years has been transformed into a major warehouse and distribution center serving the entire Southwest. However, balanced against these benefits are costs: a welter of low-paying warehouse jobs, inefficient land use, and growing truck-generated traffic congestion and air pollution.⁴⁷

Southern California has become one of the world's great trade entrepôts: a gigantic warehouse, distribution, logistics, and transportation complex of port- and airport-related industries and users, ranging from freight forwarders to local distributors who receive foreign goods for resale. Freight handling likely generates directly or indirectly another 5-8 percent of overall regional economic activity. This appears to be a much higher share of gross regional product than for near-pure trade entrepôts such as Buffalo and New Orleans, where only a small fraction of exports are locally produced and, similarly, few imports are locally consumed. Although the region's massive domestic market, sizable Asian Pacific and Latino communities, and strategic Pacific Rim location have all contributed to L.A.'s rapid rise as a trade mecca, its extensive port, rail, airport, and highway network has played a significant, albeit underrecognized, catalytic role.

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Balanced against sizable regional trade benefits, however, are claims of trade-induced job displacement and wage losses. In particular, NAFTA has sparked a sharp debate about potential dislocations in Southern California, and its effect upon the region's economy remains contested. Some claim that NAFTA has caused a net loss of more than 80,000 jobs in California (presumably over half located in Southern California). In contrast, notwithstanding earlier pessimistic assessments, UCLA's North American Integration and Development Center estimates NAFTA's national impact at more than 100,000 jobs in the plus column, with California garnering a significant share.⁴⁸

NAFTA's regional balance sheet also appears to have had a positive side. Imports frequently enter market niches that complement domestically produced goods. These compensating local job increases are concentrated in high-end, high-tech jobs, especially among firms specializing in exports of intermediate goods to the Mexican maquiladora industry. Even in the manufacturing sector, there have been improvements. Rebuilding its manufacturing base, Southern California has shifted from high-wage, high-skilled jobs in large aerospace firms to high-wage design-based industries (medical instruments, automobiles) as well as smaller, lower-wage shops producing clothing, furniture, and other nondurable products. By the late 1990s, over 50,000 regional jobs depended upon exports to Mexico. Mexican trade (as well as the South American markets to which it is the gateway) has taken on added regional importance as an "insurance policy" against Asian downturns. Overall, there is little evidence of significant NAFTA-induced job loss in Southern California, although the trade pact is not the panacea touted by its supporters.⁴⁹

INFRASTRUCTURE

L.A.'s global performance can be approached in yet another way: by gauging the effects of the region's massive investments in trade infrastructure. On the economic side, these global gateways serve as major engines of regional job creation and business development. Today, the job-generating potential of infrastructure is particularly important in what is shaping up as a "jobless recov-

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ery.” For instance, the two ports claim to support 500,000 regional jobs and 7 percent of local economic activity in the port industry and related construction, tenants, and users. As for LAX, in the mid-1990s the airport’s direct benefits were estimated at \$43 billion in regional economic activity (10 percent of the region’s then total output) and 400,000 jobs. These benefits affected the air transportation sector, passenger spending (consumption), and cargo-related production of goods and services. Critics, however, charge that these estimates are inflated because they do not include substitution effects—shipping through other ports and airports had L.A. global gateways not been built. However, such effects are mitigated by the capacity constraints and distance of other West Coast ports and airports. San Diego’s diminutive port and airport system cannot pick up L.A.’s slack without major expansion. The Bay Area’s facilities—the Port of Oakland and San Francisco International Airport—feature greater trade transportation capacity but are located nearly 500 miles away.⁵⁰

Regarding the Alameda Corridor, a conservative 1994 study (which included substitution effects) suggested that, at a minimum, tandem port and rail development would generate 185,000 new jobs nationwide, either directly or indirectly, by the year 2020. However, the full impact could be 20 times

greater—3.7 million jobs. Yet there has been no separate analysis of port/corridor projected impacts for the five-county region. This was a crucial omission. Much of the local policy debate has concerned the extent and geographic distribution of corridor economic benefits within Greater Los Angeles. The corridor cities, for example, were fearful that the economic benefits would bypass them while they absorbed the bulk of the project’s costs. By extrapolation, combined port and rail development could yield as few as 35,000 regional jobs and as many as 700,000 jobs. A reasonable estimate probably lies nearer the lower end—100,000 new regional jobs.⁵¹

If expansion of L.A.’s major international port, rail, and airport projects were unconstrained, this would likely generate, for the period 1994-2020, about one-quarter of the employment increase in the five-county area’s core economic base: professional services, transportation and wholesale trade, diversified manufacturing, high-tech manufacturing, tourism and entertainment, defense-related employment, and resource-related industries. SCAG estimates that regional employment in the core base would increase from 6.6 million jobs in 1994 to 10.6 million in 2020. Of the four million new jobs added, roughly one million would likely be trade-related.⁵²

The failure to build a new 30-MAP international airport at El Toro and the substantial downsizing of LAX expansion from 98 MAP to 78 MAP places a major crimp in these regional forecasts. With unconstrained expansion, these two airports likely would generate over \$50 billion in new regional output and over 500,000 new jobs by 2020. Even with substitution effects (for instance, heavier utilization of other regional airports such as Ontario), the El Toro no-build scenario and constrained LAX expansion at the very least threaten to cost the region over \$15 billion in new economic activity and up to 150,000 jobs. Much of the loss is tied to international trade and related employment.⁵³

Terrorist attacks also threaten grave harm to the region’s trade-based economy. In the aftermath of 9/11, SCAG estimated that aviation-related losses (in air transportation, exports, tourism, and aircraft manufacturing) cost the region 145,000-171,000 jobs and over \$6 billion in

lost income. Attacks on the region's trade "crown jewels" could be far more costly. The ports of San Pedro Bay and LAX are at the top of the state's list of potential terrorist targets in California.⁵⁴

Finally, there are very real environmental costs associated with L.A.'s global transportation infrastructure: significant air and water pollution, traffic congestion, and noise. The ports of San Pedro Bay are the region's worst polluters. Vessels entering and leaving the two ports add more to regional smog than does any other local site, but are little regulated. The ports are largely unregulated by regional agencies because of lack of jurisdiction over foreign-flagged ships and local fears of losing trade. Heavy diesel train and truck traffic at the ports further contribute to air pollution. Neighborhoods in the harbor area bear the brunt of diesel exhaust, subjecting local residents to a significantly greater cancer risk than people living elsewhere in the Southland. Similarly, LAX is the region's third largest smog source, much of it coming from jet engines. Jet noise is another major LAX problem. Although jets currently are unregulated, there remains the future possibility of more stringent federal environmental standards for ships, locomotives, airplanes and trucks. The ports and LAX also are plagued with heavy traffic congestion. These environmental costs are geographically concentrated whereas the economic benefits are dispersed, producing a distinct political dynamic that encourages the opposition to organize and become more vocal.⁵⁵

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STATE AND NATIONAL BENEFITS

Any cost-benefit calculus of L.A.'s global gateways also needs to include the trade activity and job growth they facilitate outside of the metropolitan area. These nonregional economic benefits are substantial. For example, the Los Angeles-Long Beach port, rail, and airport system serves as the Pacific Rim trade and transportation hub for San Diego and Imperial Counties and northern Baja California. L.A.'s early overbuilding of regional infrastructure encouraged the rest of Southern California, including San Diego, to act as free riders and not to expand their own facilities. As a result, San Diego's inadequate airport, port, and rail systems force that region (at \$113 billion, it is the world's 35th largest economy) into heavy reliance on L.A.'s superior facilities.

Owing to Lindbergh Field's severe physical constraints (its 525-acre size and single 9,400-foot runway), it can meet only 75 percent of San Diego's air passenger demand and less than one-third of its air cargo needs. Hence, LAX serves many of San Diego's international passenger needs and meets nearly all of its global air cargo demand. Further, over 90 percent of the vessel cargo shipped to and from the cross-border San Diego-Tijuana region goes through the ports of San Pedro Bay rather than through the small niche Port of San Diego. Until NAFTA's new rules of origin took effect in 2001, the component parts for Baja California's maquiladora industry were shipped from East Asia through the L.A. and Long Beach ports and were then transported by truck to border plants.⁵⁶

One can argue that, to date, the cross-border region's reliance on the Los Angeles port, rail and airport system has been efficient. These world-class facilities offer a breadth of service that is unavailable locally. L.A.'s facilities, accessible to the cross-border region, have reduced the need for sizable local capital investments in port, rail, and airport infrastructure. Also avoided are the asso-

ciated environmental costs. Yet this strategy is not without its drawbacks. By piggy-backing upon L.A. facilities and uncertain expansion plans, San Diego and Tijuana forfeited a measure of control over their economies. Lindbergh Field's deficiencies cost the region's economy an estimated \$4-5 billion annually in high-value added activity. This hinders San Diego's aspirations to become a leading export-based high-tech center. That opportunity cost will only grow in the future.⁵⁷

Finally, the ports of San Pedro Bay confer substantial nationwide trade and economic benefits. The twin ports are the nation's leading Pacific Rim import gateway. One-half of the inbound cargo is eventually transported to other markets, mostly by rail. Thus, 60 percent of the imported goods shipped into the Chicago area pass through L.A.-area ports. Table 6 shows the national trade benefits of the two ports in 2000, by region of the country. The ports shipped \$200 billion in port-of-entry merchandise trade between the United States and its trade partners. One-half of this huge trade flow served the Southwestern states, and one third served the Atlantic seaboard and Great Lakes markets.

Table 6
National Trade Benefits:
Two-Way Merchandise Trade Between U.S. Regions and Overseas Trade Partners via San Pedro Bay Ports, 2000

Region	Billions of US\$
Northwest (WA, OR, MT, ID, WY)	2.2
Southwest (CA, NV, AZ, UT, CO, NM)	98.0
Great Plains (ND, SD, NE, KS, MN, IA, MO)	8.6
South Central (TX, OK)	12.1
Southeast (AR, AL, GA, FL, LA, NC, SC, TN, MS)	16.0
Great Lakes (IL, WI, MI, IN, KY, OH, WV)	25.0
Atlantic Seaboard (CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, VA)	34.4
Total	196.3

Source: OnTrac Joint Powers Authority, "Two-Way Trade Between California and Regions of the United States," 2002.

VIII. A STRATEGY FOR SOUTHERN CALIFORNIA

Southern California's ambitious trade infrastructure projects raise a host of complex strategic and policy issues that require coordinated action at the regional, state, federal, and binational levels and involve project priorities, planning, and financing. Should global trade flows be unconstrained, merchandise trade in Southern California is projected to more than double, from 2000 to 2020, to \$661 billion. However, the actual total may be lower than forecast if the region is unable to add sufficient capacity to its trade transportation network. Looming capacity shortfalls—particularly in international air passenger and cargo service, along the rail mainlines, on the freeways, and at intermodal rail yards—threaten to substantially diminish the region's trade growth. Here we highlight key strategic issues and, where appropriate, make policy recommendations.

The relative status and regional benefits of key infrastructure projects raise important questions about the character of Southern California's global future. Debate is growing about whether the area can be a major export-based trade center or merely a gigantic transshipment hub—a West Coast New Orleans—with fewer trade benefits captured by the region. To date, the evidence points to the primacy of transshipment. Imports represent three-quarters of the total value of Los Angeles customs district trade—the largest such share in the nation. Although many of the region's major transshipment projects, such as the San Pedro Bay port expansion and the Alameda Corridor rail project, are on schedule or completed, its export-oriented airport projects are not.

At the ports, the issue is no longer system capacity but rather achieving greater operating efficiency. Port modernization involving labor-saving technologies is a controversial subject and the core of ongoing labor disputes. Another contentious issue involves who should pay for enhanced port security. Landside transportation is now a key port bottleneck. Cargo leaving the ports by truck is delayed by chronic congestion at terminal gates and the need to relieve heavily congested arterials and freeways, most notably I-710, but also I-605 and SR-60.

Rail cargo fares somewhat better, now that the Alameda Corridor has vastly improved rail service to the ports, but challenges remain. Near the docks, more railyards are needed for loading containers onto rail cars. East of the Alameda Corridor terminus, regional rail corridors require capacity upgrades and grade separation. Inadequate funding could delay these projects for years. The looming political challenge is to assemble powerful regional, state, and national goods-movement coalitions to press for scarce federal transportation dollars for trade-corridor projects. The L.A. County Metropolitan Transportation Authority and the L.A. Chamber of Commerce are involved in such a regional coalition-building effort.

Regional leaders need to argue that scarce transportation dollars should be allocated to intermodal projects of national significance such as the Alameda Corridor-East rail projects. A similar logic suggests that federal funds should be made available to pay an equitable share of local environmental mitigation costs for these projects. Port security monies also could be allocated on this basis. Innovative new revenue sources will still be needed. One intriguing possibility is to reinvest increments of future growth in customs duties in the trade transportation infrastructure upon

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“Of all the region’s infrastructure projects, airport development is the furthest behind schedule and faces the greatest completion challenges—but offers the greatest regional benefits.

Southern California’s aspirations to become a leading export-based world trade center—rather than merely the Pacific Rim’s top import transshipment hub—rest, in large measure, upon the uncertain future of its airports.”

which they depend. Forty-five percent of all U.S. customs duties are collected in the L.A. Customs District. Thus, it makes sense to use a substantial portion of such revenue growth for Southern California trade infrastructure projects that will yield greater trade volumes and thus higher customs revenue collections.

Airports threaten, as previously noted, to be the Achilles’ heel of Southern California’s globally based economy. Because their emphasis is on the export of locally produced, high-value-added goods and services, airports contribute more to the region’s economy than do ports. If the region is to become a leading export-based, high-tech trade center, governmental, business, and civic leaders need to refocus their efforts on developing new airport and ground-access capacity. With the downsizing of LAX expansion and the demise of El Toro, the region’s air future appears headed to the Inland Empire. Yet, even with the development of outlying airports, LAX must be expanded in some fashion or the economic cost to the region could be enormous.⁵⁸

If Ontario is to be the region’s second international airport, its plans must include convenient mass transit connections to more-populated centers. There may also be environmental costs. Ontario expansion could include another runway (causing increased environmental impacts on communities) and could require relaxation of state-imposed air-quality ceilings. If Ontario and the Inland Empire’s former military bases can substantially expand their cargo capacity, export-oriented, high-tech businesses may have an incentive to move there. Inland Empire communities, rather than coastal areas (tied to LAX), could be the region’s future trade winners. Inland lures also include affordable housing and commercial real estate. Should San Diego not solve its airport problems, it too could lose some of its high-tech advantage to San Bernardino and Riverside Counties.

There are hopeful signs of cooperative airport planning. Although the Southern California Regional Airport Authority is being dismantled, the City of Los Angeles has pledged to coordinate its Ontario master planning effort with that of other Inland Empire airports. However, should NIMBY and environmental opposition inhibit future airport development, Southern California’s global future could be severely curtailed. Regional rivals with excellent international air service, such as San Francisco, Las Vegas and Phoenix, stand poised to benefit from Southern California’s inability to solve its airport capacity shortfall.⁵⁹

Another major concern for the area’s policymakers should be regional infrastructure deficits and the resulting transportation imbalances. One involves San Diego and northern Baja California. A promising sign is the recent creation of a county-wide regional airport authority in San Diego. San Diego-Tijuana trade infrastructure development—which should be a top regional priority—could yield significant benefits to metropolitan Los Angeles by relieving congestion at L.A.’s ports, airports, and highways. To rectify regional inequities, policymakers might consider legislation to withhold federal transportation funding from recalcitrant counties that are unwilling to shoulder their fair share of the regional transportation burden for such projects as airport development.

Finally, regional policymakers need to make goods-movement planning and priority funding of intermodal projects central elements of a globally oriented regional economic development strategy for the 21st century. This effort should include a regional goods-movement master plan and the inclusion of a funded freight movement program in the County Transportation Commissions' Long Range Transportation and Capital Improvement Programs.

International trade has become a key driving force of the Southern California economy. Transportation investments are essential for global competitiveness and future regional development, such as in high-tech industries. Of all the region's infrastructure projects, airport development is the furthest behind schedule and faces the greatest completion challenges—but offers the greatest regional benefits. Southern California's aspirations to become a leading export-based world trade center—rather than merely the Pacific Rim's top import transshipment hub—rest, in large measure, upon the uncertain future of its airports.

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ENDNOTES

1. This paper is a revised and updated version of research conducted for the Pacific Council on International Policy as part of its "Southern California Global Engagement" project. An earlier version appeared as "Global Gateways and Infrastructure Challenges: The Case of Southern California," in Earl Fry and V. Wallace McCarlie, eds., *Globalization and the Information Technology Revolution: Their Impact on North America's Federal Systems* (Provo, UT: David M. Kennedy Center for International Studies, Brigham Young University, 2002), pp. 26-44. This paper also includes excerpts from the author's forthcoming book, *Globalizing L.A.: Trade, Infrastructure and Regional Development* (Stanford University Press, forthcoming, 2004).
2. See Gregory F. Treverton, *Making the Most of Southern California's Global Engagement* (Los Angeles: Pacific Council on International Policy, 2001); Michael Clough, *Can Hollywood Remain the Capital of the Global Entertainment Industry?* (Los Angeles: Pacific Council on International Policy, 2000); Xandra Kayden with Jennifer Resnik, "The Impact of Globalization on Los Angeles," (draft ms, Pacific Council on International Policy, 2001); and Abraham Lowenthal et al, "International Linkages," in Michael Dear, ed., *Atlas of Southern California*, Volume One (Los Angeles: Southern California Studies Center [SC2], University of Southern California, 1996), pp. 27-33.
3. See Manuel Pastor, Jr., *Widening the Winner's Circle from Global Trade in Southern California* (Los Angeles: Pacific Council on International Policy, 2001).
4. For an overview of California's trade patterns and goods-movement system, see California Department of Transportation and San Diego Association of Governments, *California Trade and Goods Movement Study* (Sacramento, CA: June 1996).
5. Los Angeles County Economic Development Corporation (LAEDC), *International Trade Trends & Impacts: The Los Angeles Region* (Los Angeles: LAEDC, 2001), p. 20; U.S. Bureau of the Census, FT990 Series, *Highlights of U.S. Import and Export Trade 1972-1987* (Washington, DC: Government Printing Office, 1988); U.S. Bureau of the Census, FT920 Series, *U.S. Merchandise Trade: Selected Highlights 2001* (Washington, DC: Government Printing Office, 2002); Evelyn Iritani, "L.A. Surpasses New York City as Top Trade Hub in 1994," *Los Angeles Times*, March 17, 1995, pp. D1, D3.
6. For transshipment hubs such as Los Angeles, district of unloading is a better measure of trade's impacts on a region's transportation system and economy than is port of entry. Thus, for 2000, the L.A. Customs District handled \$230 billion in port-of-entry merchandise trade versus \$285 billion in district-of-unloading trade—a 24 percent difference. Here, we use the FT920 merchandise trade data. Export values are f.a.s. (free alongside ship, or without shipping charges), while import values are by district of unloading. For a discussion of why district-of-unloading data are more useful for regional transportation planning in Los Angeles, see Southern California Association of Governments (SCAG), *SCAG Regional Economic Profile* (1990), pp. 56-58. The Los Angeles Customs District (LACD) includes the ports of Los Angeles and Long Beach, Los Angeles International Airport (LAX), Ventura County's Port Hueneme, and Las Vegas's McCarran Field. Over 90 percent of all LACD trade goes through the ports of San Pedro Bay and LAX.
7. For a history of the region's transportation system and policies, see Martin Wachs, "The Evolution of Transportation Policy in Los Angeles: Images of Past Policies and Future Prospects," in Allen J. Scott and Edward W. Soja, eds., *The City: Los Angeles and Urban Theory at the End of the Twentieth Century* (Berkeley: University of California Press, 1996), pp. 106-159.
8. For the relationship between regional transportation systems and global competitiveness, see David J. Keeling, "Transport and the World City Paradigm," in Paul L. Knox and Peter J. Taylor, eds., *World Cities in a World-System* (New York: Cambridge University Press, 1995), pp. 115-131; Nigel Harris, "The Emerging Global City: Transport," *Cities* 11:5 (October, 1994), pp. 332-336; John Kasarda, "Transportation Infrastructure for Competitive Success," *Transportation Quarterly* 50:1 (Winter, 1995), pp. 35-50.
9. Frederic A. Morris, *Boeing and Beyond: Seattle in the Global Economy* (Los Angeles: Pacific Council on International Policy, 2003), p. 12.
10. S. L. Bachman, *Globalization in the San Francisco Bay Area: Trying to Stay At the Head of the Class* (Los Angeles: Pacific Council on International Policy, 2003), pp. 12-14; and Richard Feinberg with Gretchen Schuck, *San Diego, Baja California and Globalization: Coming From Behind* (Los Angeles: Pacific Council on International Policy, 2001), p. 18. Regarding the importance of regional infrastructure, also see Gregory F. Treverton, *Making the Most of Southern California's Global Engagement*, pp. 9-10; and Earl H. Fry and Wallace McCarlie, *Mapping Globalization Along the Wasatch Front* (Los Angeles: Pacific Council on International Policy, 2002), pp. 19-20.

11. For analyses of multimodalism and the growing synergies between information and transportation technologies, see Kasarda, "Transportation Infrastructure for Competitive Success"; John D. Kasarda and Dennis A. Rondinelli, "Innovative Infrastructure for Agile Manufacturers," *Sloan Management Review* 39:2 (Winter 1998), pp. 73-82; and Dennis A. Rondinelli et al., "The Changing Forces of Urban Economic Development: Globalization and City Competitiveness in the 21st Century," *Cityscape: A Journal of Policy Development and Research* 3:3 (1998), pp. 71-105.
12. Michael Denning and David J. Olson, "Comparative Analysis of West Coast Ports" (unpublished ms, University of Washington, 1988), p. 143.
13. Worldport L.A., *The 2020 Program* (1991); San Pedro Bay Ports of Los Angeles and Long Beach, 2020 *OPI (Operations, Facilities and Infrastructure) Study Summary* (April 1988), pp. 1-15.
14. Evelyn Iritani, "Ports Must Chart New Course in '98," *Los Angeles Times*, December 28, 1997, pp. D1, D4.
15. Alameda Corridor-East Construction Authority et al (ACECA), *Alameda Corridor-East Trade Corridor Plan: Draft Report* (March, 2001), Table 3, p. 13, Table 4, p. 16, p. 35; Los Angeles County Metropolitan Transportation Authority (LACMTA), *Southern California Freight Management Case Study* (February, 2002), pp. 6-7. Also see SCAG, *2001 Regional Transportation Plan* (April, 2001), p. 91. Year 2020 regional trade, container, and train forecasts were furnished by the Los Angeles County Economic Development Corporation.
16. San Diego Association of Governments (SANDAG), *State Route 94 Corridor Tecate Port of Entry: Trade and Truck Traffic* (1997), Table 14; Caltrans, *California Border Briefing* (1999); SCAG, *The NAFTA Transportation Impacts in SCAG Region Study* (1996), Figure 21, p. 42, and Figure 22, p. 43.
17. A JPA has the authority to issue revenue bonds and, by representing affected constituencies, can potentially resolve stakeholder conflicts. The six County Transportation Commissions/Authorities (CTCs) in Southern California, responsible for programming and funding transportation projects, were yet another set of regional entities concerned with freight-movement funding. Thus, the L.A. County Metropolitan Transportation Authority served as a major funding partner for the Alameda Corridor.
18. Daniel Machalaba, "Cargo Hold: As U.S. Seaports Get Busier, Weak Point Is a Surprise: Railroads," *Wall Street Journal*, September 9, 1996, pp. A1, A10; Machalaba, "A Long Haul: America's Railroads Struggle to Recapture Their Former Glory," *Wall Street Journal*, December 5, 1997, pp. A1, A6.
19. Quoted in Louis Sahagun, "Politicians Toot Horns at Rail Corridor Opening," *Los Angeles Times*, April 13, 2001, p. B3.
20. Alameda Corridor Transportation Authority (ACTA), "The National Economic Significance of the Alameda Corridor," (1994), pp. 4-5; and Glenn F. Bunting, "Officials Lobby for Port-to-L.A. Transit Corridor," *Los Angeles Times*, March 16, 1994, p. B3.
21. SCAG, *The Southwest Passage: A Strategic Proposal* (1997); SCAG, *Establish the Southern Compact Region* (2000).
22. SCAG, *CommunityLink 21* (2001).
23. Caltrans, *California Border Briefing* (1999); SANDAG, *2020 Regional Transportation Plan* (2000), pp. 211-19.
24. SANDAG, *State Route 905: Freeway Needed to Otay Mesa Border Crossing* (2001).
25. SANDAG, *State Route 125 South Tollway: New North-South Highway for International Border* (2001).
26. SANDAG, *Border Area Transportation: The Local, State, National and International Connection* (1996), pp. 16-17; SANDAG, *Binational Coordination in the Southern California-Northern Baja California Region* (2002); Steven P. Erie, *Toward a Trade Infrastructure Strategy for the San Diego/Tijuana Region* (San Diego: San Diego Dialogue, 1999), pp. 19-24.
27. SCAG, *Regional Mobility Element: The Long Range Transportation Plan for the SCAG Region*, Volume 2 (1994), 8-1 to 8-13; SCAG, *2001 Regional Transportation Plan* (2001), pp. 98-99.
28. SCAG, *Southern California Military Air Base Study* (1994); William Fulton and Paul Shigley, "Dug In For Battle: El Toro's Land Use Epic," *California Journal* (June, 2001), pp. 34-37.

29. Lorenza Munoz, "Airport Plan a Tough Sell in S. County," *Los Angeles Times*, April 23, 1998, pp. B1, B6; Jean O. Pasco, "Fight Over El Toro Takes Toll on Taxpayers," *Los Angeles Times*, May 14, 2001, p. B4; Fulton and Shigley, "Dug In For Battle," pp. 34-35.
30. Steven P. Erie et al., *A New Orange County Airport at El Toro: An Economic Benefits Study* (Irvine, CA: Orange County Business Council, 1998), pp. 1-5.
31. Quoted in Shelby Grad and Lorenza Munoz, "Southland Airport Planners Face Frustrating Paradox," *Los Angeles Times*, December 29, 1997, pp. A3, A8, A24, A25.
32. Mara A. Marks and Fernando J. Guerra, "Opinions of Southern California's Local Elected Officials Regarding Air Transportation Infrastructure: A Report to Los Angeles World Airports," (unpublished report, June, 2001); Mara A. Marks, "Getting It Together? Local Elected Officials' Opinions Regarding Regionalism," *California Politics & Policy*, 6: 1 (2002).
33. Stephen E. Flynn, "Transportation Security: Agenda for the Twenty-First Century," *TR News* (November-December, 2000), p. 3; "The Road Ahead: Assessing the Impact of September 11," *Journal of Commerce*, 2:38 (September 24-30, 2001); and Stephen E. Flynn, "Beyond Border Control," *Foreign Affairs*, 79: 6 (November-December, 2000), p. 57.
34. Greg Johnson, "Revenue Losses Hit Airport Operators," *Los Angeles Times*, September 26, 2001, p. C1; Ricardo Alonso-Zaldivar, "New Federal Security Mandates Mean Financial Crunch for Major Airports," *Los Angeles Times*, April 13, 2002, p. A19.
35. Mike Armstrong, SCAG Senior Aviation Planner, "Impact of Recent Events on Aviation Forecasts and Allocations," unpublished memo, September 17, 2001; Lee Romney, "Impact of Attacks Felt Around LAX," *Los Angeles Times*, September 22, 2001, pp. C1-C2; Jennifer Oldham, "New Approach at LAX," *Los Angeles Times*, October 10, 2001, p. C1.
36. Quoted in Greg Schneider, "Terror Risk Cited for Cargo Carried on Passenger Jets," *The Washington Post*, June 10, 2001, pp. A1, A10.
37. William Armbruster, "Air-Cargo Shippers Feel Effects," *Journal of Commerce*, September 24, 2001, pp. 22-24.
38. James Granelli and E. Scott Reckard, "Air-Shipment Firms Incur Steep Losses," *Los Angeles Times*, September 28, 2001, pp. C1, C6; May Wong, "Global Commerce Faces Slower Pace," *San Diego Union-Tribune*, October 7, 2001, p. H2.
39. Flynn, "Beyond Border Control," p. 58; Flynn, "Transportation Security," pp. 4-5; Dennis L. Bryant, "Emphasis on Seaport Security Should Be Expected," *Journal of Commerce*, September 24, 2001, p. 10; Louis Sahagun, "Shipping Containers at Security Fore," *Los Angeles Times*, April 20, 2002, p. A14.
40. Bill Mongelluzzo, "Back-Ups at West Coast Ports," *Journal of Commerce*, September 13, 2001, p. 1; Louis Sahagun, "Officials Call for Tighter Security at Harbors," *Los Angeles Times*, October 2, 2001, p. B10; Ricardo Alonso-Zaldivar, "Coast Guard Lists Toward Security Duty," *Los Angeles Times*, August 24, 2002, p. A8; Mongelluzzo, "Cargo Surge Congesting L.A.," *Journal of Commerce*, July 1, 2002, p. 1.
41. Claudia H. Deutsch, "More Security, and More Strain, in Supply Chain," *New York Times*, October 9, 2001, p. C1; Bernard Simon, "Shake-Up in the Shipping Industry," *New York Times*, October 10, 2001, pp. W1, W7; Daniel Machalaba and Rick Brooks, "After Terror Attacks, Shipping Goods Takes Longer and Costs More," *Wall Street Journal*, September 27, 2001, pp. A1, A8.
42. Daniel Machalaba, "State of the Union: America the Vulnerable?" *Wall Street Journal*, September 28, 2001, p. B4; Flynn, "Transportation Security," pp. 5-6; Flynn, "Beyond Border Control," pp. 58-62.
43. Ken Ellingwood, "Gridlock Grips the Border," *Los Angeles Times*, October 6, 2001, pp. A1, A19; Chris Kraul, "After Attacks, Traffic of All Kinds Slows at U.S-Mexico Border," *Los Angeles Times*, October 3, 2001, p. A19; Bob Filner, "The High Cost of Security," *San Diego Union-Tribune*, October 25, 2001, p. B 13.
44. Cynthia A. Kroll et al., *Foreign Trade and California's Economic Growth* (Berkeley: California Policy Seminar, 1998).
45. Los Angeles County Economic Development Corporation, *International Trade Trends & Impacts: The Los Angeles Region* (2001), p. 17; Abraham F. Lowenthal et al., *Strengthening Southern California's International Connections: Trade and Investment Aspects* (Los Angeles: SC2, University of Southern California, 1996) pp. 1, 8.

46. See Lisa M. Grobar, "Export-Linked Employment in Southern California," *Contemporary Economic Policy* 17:1 (January, 1999), pp. 97-108; and LAEDC, *International Trade—Major Growth Industry for Southern California* (2001), p. 1.
47. Gordon Smith, "A Measure of Success: Ontario Warehouses Thrive Thanks to Strategic Location," *San Diego Union-Tribune*, October 11, 2001, pp. C1, C2.
48. Robert E. Scott, "NAFTA's Impacts on the States," *Online Supplement to the EPI Briefing Paper NAFTA at Seven* (2001); Raul Hinojosa-Ojeda, Curt Downs and Robert McCleery, "North American Integration Three Years After NAFTA" (National Law Center for Inter-American Free Trade, 1997), pp. 4-6.
49. Hinojosa-Ojeda et al., "North American Integration Three Years After NAFTA," pp. 4-6; Don Lee, "Taiwan, Mexico Help Fuel State Exports," *Los Angeles Times*, February 21, 1998, p. D1; Paul Harrington and Neeta Fogg, "Growth and Change in the California and Long Beach/Los Angeles Labor Markets," paper prepared for the U.S. Conference of Mayors, May, 2001.
50. Temple, Barker & Sloane, *The Economic Impact of the Ports of Los Angeles and Long Beach* (1989); Hamilton, Rabinovitz & Alschuler (HR&A), "Table 1: Direct Economic Benefits of Expansion of LAX: Phase II-98 Cargo and Passenger Activity Growth to the Year 2015," (1996). For a critical analysis of the region's port, rail and airport economic impact studies, see Steven P. Erie, *International Trade and Job Creation in Southern California: Facilitating Los Angeles/Long Beach Port, Rail and Airport Development* (Berkeley: California Policy Seminar, 1996), pp. 19-22, 38-41, 66-67.
51. ACTA, *The National Significance of the Alameda Corridor* (February 1994), pp. 4-5; Erie, *International Trade and Job Creation in Southern California*, pp. 40-41.
52. For 1994-2020, using SCAG's figures, the region's trade mega-projects could generate between 21 percent (with substitution) and 29 percent (without substitution) of the projected employment increase in the region's core economic base.
53. For El Toro build and no-build scenario impact assessments, see Steven P. Erie et al., *A New Orange County Airport at El Toro: Catalyst for High-Wage, High-Tech Economic Development* (Irvine, CA: Orange County Business Council, 1999), pp. 4-1 to 4-7; SCAG Aviation Staff Memo, "Potential Impacts of Deleting El Toro from the Regional Transportation Plan," April 29, 2002, pp. 1-3. Also see HR&A, "Table 2: Economic Benefits of Expansion of LAX: Phase II-98 Output and Job Benefits in the Year 2015" (1996). The LAX constrained estimate is extrapolated from SCAG's El Toro no-build analysis.
54. SCAG, *Discussion Paper on the Short-Term Economic Impacts and Potential Long-Term Implications for Regional Aviation Following the September 11 Events* (November, 2001), p. 21; Steve Hymon, "LAX Heads State List of Attack Targets," *Los Angeles Times*, February 22, 2003, p. B1.
55. Gary Polakovic, "Finally Tackling L.A.'s Worst Air Polluter," *Los Angeles Times*, February 10, 2002, pp. B1, B8; Marla Cone, "Jet Lag in Pollution Control," *Los Angeles Times*, March 18, 1997, p. B2.
56. Steven P. Erie, "At Competitive Disadvantage: San Diego's Infrastructure," *Metro Investment Report*, II: 11 (April 1995), pp. 1, 12, 13; Jack Kyser, *The Linkages Between San Diego/Tijuana and its Neighbors to the North* (San Diego: San Diego Dialogue, June 2000).
57. Steven P. Erie, *Toward A Trade Infrastructure Strategy for the San Diego/Tijuana Region* (San Diego: San Diego Dialogue, 1999), p. 18; Port of San Diego/San Diego Association of Governments, *Air Transportation and the Future of the San Diego Region* (Fall, 2000), p. 3.
58. Steven P. Erie, "Developing Outlying Airports Won't End Region's Crisis," *Los Angeles Times*, May 10, 1998, p. M6.
59. James Flanigan, "Going Places: Inland Empire Keeps Adding Jobs With Transportation and High Tech," *Los Angeles Times*, March 13, 1996, pp. D1, D6; SCAG, *The New Economy and Jobs/Housing Balance in Southern California* (April, 2001).

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