# Memorandum

**To:** Chairman and Commissioners **Date:** May 23, 2001

**From:** Robert I. Remen **File No:** K-48
BOOK ITEM 4.4
ACTION

**Ref:** ALAMEDA CORRIDOR - EAST TRADE CORRIDOR PLAN

AB 2928, the Transportation Congestion Relief Program (TCRP), provided funding for three grade separation projects along the freight rail lines in eastern Los Angeles County, San Bernardino County and Orange County. AB 2928 also required that before grants from the TCRP may be allocated to any of the three Alameda Corridor East projects, a report on the regional mobility needs as well as regional, state, and national economic impacts of the corridor must be completed and submitted to the Commission. The report must be submitted to the Commission within one year of the operative date of the TCRP.

The report required in this legislation is attached and will be presented on June 7, 2001 at the Commission meeting in San Jose. The specific language in AB 2928 regarding the three Alameda Corridor East projects and the report is given below for your information.

*GOVERNMENT CODE Section 14556.40. (a) The following projects are eligible for grants from the fund for the purposes and amounts specified:*

*(54) Alameda Corridor East; build grade separations on Burlington Northern-Santa Fe and Union Pacific Railroad lines, downtown Los Angeles to Los Angeles County line in Los Angeles County. One hundred fifty million dollars ($150,000,000). The lead applicant is the San Gabriel Valley Council of Governments.*

*(55) Alameda Corridor East; build grade separations on Burlington Northern-Santa Fe and Union Pacific Railroad lines, with rail-to-rail separation at Colton through San Bernardino County. Ninety-five million dollars ($95,000,000). The lead applicant is the San Bernardino Associated Governments.*

*(73) Alameda Corridor East; (Orangethorpe Corridor) build grade separations on Burlington Northern-Santa Fe line, Los Angeles County line through Santa Ana Canyon in Orange County. Twenty-eight million dollars ($28,000,000). The lead applicant is the Orange County Transportation Authority.*

*14556.52. (a) Before grants from the fund may be allocated to any of the three Alameda Corridor East Projects identified in paragraphs (54), (55), and (73) of subdivision (a) of Section 14556.40, a report shall be completed and submitted to the Commission within one year of the operative date of this section. The report shall be prepared by a team consisting of the lead applicants for those projects and the Riverside County Transportation Commission. The report shall address regional mobility needs as well as regional, state, and national economic impacts of the corridor. The team shall also evaluate and assess the technical merits, determine the phasing and delivery schedule, and identify a financing strategy for the proposed corridor improvements. Based on the good faith participation of the stakeholders, the Commission shall allocate some or all of the available funds to one or more of the lead applicants for specific projects within the corridor that meet the requirements under this chapter.*

*(b) Funds may be allocated from the fund to produce the report required under this section.*

4-4ACEstudyJun01/winword/co

# ALAMEDA CORRIDOR - EAST TRADE CORRIDOR PLAN

ALAMEDA CORRIDOR - EAST CONSTRUCTION AUTHORITY

SAN BERNARDINO ASSOCIATED GOVERNMENTS

RIVERSIDE COUNTY TRANSPORTATION COMMISSION

ORANGE COUNTY TRANSPORTATION AUTHORITY

Orange North-American Trade Rail Access Corridor Authority

CITY OF PLACENTIA

*April 2001*

April 26, 2001

Mr. Bob Remen
Executive Director
California Transportation Commission
1120 N. Street, Room 2229
Sacramento, CA 95814

Dear Bob:

Pursuant to the requirements of AB 2928, we are pleased to transmit the Alameda Corridor-East (ACE) Trade Corridor Plan. The attached Plan was prepared under the direction of our four agencies and with consultant assistance from the Los Angeles Economic Development Corporation and Korve Engineering. We have appreciated your input as well as that of other transportation officials at the AB 2928 Advisory Committee meetings. We believe the report addresses the comments we have received from your office, the Secretary of Transportation's Office, as well as other transportation agencies affected by goods movement in Southern California.

We look forward to attending the California Transportation Commission meeting on June 6-7th to discuss the Plan with the Commission. Please feel free to contact us if we can be of further assistance on this important transportation matter.

Sincerely,

Rick Richmond
Chief Executive Officer
ACE Construction Authority

Norm King
Executive Director
SANBAG

Chris Becker
Executive Director
ONTRAC

Eric Haley
Executive Director
RCTC

cc: Larry Magid, BT & H
Jeff Brown, Senate office Research

## TABLE OF CONTENTS



*NOT INCLUDED IN THIS BOOK ITEM

## LIST OF TABLES

## LIST OF FIGURES

# ALAMEDA CORRIDOR-EAST TRADE CORRIDOR PLAN

## I. EXECUTIVE SUMMARY

This report examines the status, significance, project needs and priorities of goods movement through the Ports of Los Angeles and Long Beach (San Pedro Bay ports) and along the Alameda Corridor-East (ACE) Trade Corridor, extending from the downtown Los Angeles rail yards through the Cajon Pass in San Bernardino County and into central and eastern Riverside County. The estimated cost of the total program is $3.070 billion, with $561 million in funds committed, including AB 2928 revenues; this leaves an unfunded need of $2.509 billion. The enactment of AB 2928, along with SCR 96 calling for the creation of a "Global Gateways Development Program," represents a recognition by the Legislature and Governor that the State has a major responsibility for making strategic infrastructure investments in the ACE Trade Corridor.

Section 14556.52 of AB 2928 state legislation (amended by SB 1662) requires that "before grants from the fund may be allocated to any of the three Alameda Corridor East Projects identified in Section 14556.40, a report shall be completed and submitted to the commission within one year of the operative date of the section. The report shall be prepared by a team consisting of the lead applicants for those projects. The report shall address regional mobility needs as well as regional, state, and national economic impacts of the corridor. The team shall also evaluate and assess the technical merits, determine the phasing and delivery schedule, and identify a financing strategy for the proposed corridor improvements."

In response to the legislation, the lead applicants—San Gabriel Valley Council of Governments, San Bernardino Associated Governments, Orange County Transportation Authority, and the Riverside County Transportation Commission—developed a plan to address the impacts of current and future goods movement on the major rail and truck routes emanating from the ports eastward through the counties of Los Angeles, San Bernardino, Orange, and Riverside. The lead agencies drew on current and available data to address the requirements of the AB 2928.

Demonstrating a regional approach to project planning, the report addresses the requirements associated with the growing conflict between trains, trucks, and cars along the ACE Trade Corridor. This report provides a policy and technical framework for state decision-makers responsible for developing a comprehensive state goods movement strategy and plan, and a TEA-21 congressional reauthorization program.

Projected growth in the global economy during the twenty-first century offers critical opportunities for the $1.3 trillion California economy, the world's sixth largest. International trade is a leading growth sector in the state, Southern California and national economies.

The vitality of the state's trade sector, and the future competitiveness of the region, state, and nation in a just-in-time economy, increasingly depends upon its global gateways – its international seaports and airports – and the major trade corridors which serve as strategic intermodal linkages and provide needed goods movement mobility throughout the region,

state, and nation. Improving the major trade corridors such as the ACE Trade Corridor, which serve the San Pedro Bay ports, is essential to preserving California's and the nation's global competitiveness. A map of the ACE Trade Corridor and rail lines are attached (See Figures 1-A and 1-B).

**Regional, State and National Impacts**: The ACE Trade Corridor's economic benefits to the region, state and nation, both now and projected to 2020, are substantial. They accrue from the corridor's ability to facilitate trade flow to and from the San Pedro Bay ports, which account for 81% of California's and 30% of the nation's maritime trade activity. Benefits include the value of goods shipped, employment and wages, and the tax revenues accruing to different levels of government.

International trade flowing through the San Pedro Bay ports, Los Angeles International Airport (LAX), and Ontario International Airport (ONT) in the future is of growing importance to the five-county Southern California economy. International trade through the Los Angeles Customs District is likely to nearly triple, 2000 to 2020, from $230 billion to $661 billion if unconstrained by transportation bottlenecks. For the region, trade-based employment (both direct and indirect) is forecast to increase by 128%, to 2.5 million jobs, in the next 20 years. Based upon a trade-related regional earnings increase (2000 to 2020), state tax revenues from the burgeoning Southern California trade sector are likely to *grow* by over $10 billion, local government revenues by over $8 billion, and U.S. government tax receipts by over $25 billion. These are conservative estimates, but depend upon public and private investment in planned and needed trade infrastructure projects such as the ACE Trade Corridor.

Economic Growth Projections: 2000-2020
Five-County Southern California Area*

| | 2000 | 2020 | % Increase |
|---|---|---|---|
| Population (millions) | 16.7 | 21.5 | 28.6% |
| Employment (millions) | 6.7 | 9.7 | 44.1 |
| Two-Way Trade (billions of $)** | $230 | $661.0 | 187.5% |

*Los Angeles, Orange, Riverside, San Bernardino, and Ventura
**Los Angeles Custom District includes Ports of Los Angeles and Long Beach, and other ports in Ventura County, International Airports in the Five-County Southern California Area, and McCarran International Airport in Las Vegas.

The trade activity specifically within the San Pedro Bay ports creates additional state and federal benefits both within and outside of Southern California. For example, in 1992 the ports generated 500,000 trade-related jobs in California, resulting in $3 billion annually in state and local tax revenues. Nationwide, between 1992 and 2020, the ports are forecast to create at least 3.2 million new jobs, and nearly $20 billion in increased annual federal tax revenue. These too are conservative estimates. Should projects like the ACE Trade Corridor not be built in a timely fashion, these regional, state and national benefits will be reduced.

**Regional Mobility Needs**: Maintaining adequate regional mobility has become Southern California's premier transportation challenge. Regional population growth that will add five million new people by 2020 – the equivalent of another Los Angeles and San Diego – will coincide with rising trade volumes at the ports and airports. Already strained to capacity, the region's transportation infrastructure – its highways, airports, ports, and rail lines – will face dramatic increases in demand.

Rising trade volumes will contribute to a projected 70% increase in daily truck trips along nine major routes in the region, 1995 to 2020, from 600,000 trips per day to more than 1,000,000. Population growth will generate an additional 2.7 million cars competing with trucks on the region's notoriously congested freeway system.

At the San Pedro Bay ports, container traffic, 2000 to 2020, is projected to grow by 175%, from nearly 7 million loaded twenty-foot equivalent units (TEUs) to over 19 million TEUs. A mere five years ago – when container traffic was *less than half* its current level - the ports generated an average of 16,500 truck trips per day. Today, there are more than 25,000 daily trips and the major truck route serving the ports – the I-710 Freeway – is rapidly nearing gridlock with no relief in sight. On the other hand, rail cargo will soon speed from the ports to downtown via the Alameda Corridor, scheduled for completion in 2002.

Beyond the Alameda Corridor, however, the ACE Trade Corridor's three rail corridors – two Union Pacific lines and the Burlington Northern/Santa Fe line through Los Angeles, Northern Orange, San Bernardino, and Riverside Counties – face growing bottlenecks affecting both the movement of goods and people. Just as port activity leads to more freight trains, population growth and crowded freeways create demand for more commuter trains that share these tracks. Along the BNSF, the average number of daily freight and passenger trains, 2000 to 2020, is forecast to grow from 59 to 150. During this period, traffic on the UPRR promises to grow at a similar rate, from 67 trains per day to 168.

The primary mobility issue for the ACE Trade Corridor's rail lines is growing at-grade conflicts between trains, trucks and cars. The sheer number of corridor trains by 2020 – more than one every ten minutes along the more heavily used portion of the rail network – will inevitably cause greater vehicle delays, vehicle emissions, grade crossing accidents and noise impacts if not mitigated by the ACE Trade Corridor's grade-separation projects.

**Study Methodology**: Projections of traffic growth through the San Pedro ports were developed on the basis of assumptions about imports and exports, including population and employment growth in the local economy, prospects for major trading partners in Asia and Latin America, and investments in cargo-handling capacity at the ports. Loaded TEUs are forecast to increase by 175% between 2000 and 2020 – a major determinant of freight train and truck traffic. The current 50/50 split between rail and truck was assumed to be unchanged over the 20-year period. Ninety percent of the Ports' rail traffic is expected to head east via the BNSF and UPRR. A split of rail traffic between the two lines was estimated. The resulting updated, uniform rail traffic projections for the entire corridor were then used to adjust earlier 2020 grade crossing impact data (vehicle hours of delay) from previous county studies.

**Proposed Improvement Plan**: The ACE Trade Corridor improvement plan proposes grade separations and improvements at 130 crossings along the 282 mile Trade Corridor, plus 22 crossing improvements. The estimated cost of the total program is $3.070 billion. With $561 million in funds committed, including AB 2928 revenues, this leaves an unfunded need of $2.509 billion. This is broken down by county as follows: (a) Los Angeles County: $1.309 billion (43 grade separations); (b) Orange County: $476 million (11 grade separations); (c) San Bernardino County: $560 million (29 grade separations, plus 11 safety/capacity improvements); and (d) Riverside County: $725 million (47 grade separations, 11 safety improvements, and one closure).

**Project Financing**: This report recommends that the remaining $2.509 billion be secured from local, state, and federal government sources, as well as private sector beneficiaries of the improved corridors. Constant dollars were used in developing the $2.509 billion unfunded cost estimate for the ACE Trade Corridor Improvement Program (except for a portion of the SGVCOG program). Adding an allowance for a 2.5% average annual inflation rate to the approximate mid point of the overall program (2010) would increase the cost by $624 million.

The source of local contributions will be determined at the discretion of the lead agencies, but could include city and county transportation agency funds along with railroad contributions. Specific sources of future state support would have to be decided during the normal legislative process, but might include transportation programs such as the Interregional Transportation Improvement Program (ITIP). The most likely source of federal funds will be the successors to the Transportation Efficiency Act for the 21st Century (TEA-21).

| Summary – ACE Trade Corridor Program | | | | |
|---|---|---|---|---|
| Agency | # Grade Separations # Unfunded | Unfunded # Miscellaneous Crossing Improvements | Cost** | Unfunded Costs |
| | | | | |
| SGVGOC including Gateway Cities | 43/31 | * | $1.309 Bil | $924 M |
| OCTA/ONTRAC | 11/10 | - | $476 M | $439 M |
| RCTC | 47/46 | 11 | $725 M | $719 M |
| SANBAG | 29/23 | 11 | $560 M | $427 M |
| Total | 130/110 | 22 | $3.070 Bil | $2.509 Bil |

*44 Crossings are under construction for safety improvements that are not included in program.
**All costs except SGVCOG in current dollars (2001).

**Project Benefits**: The ACE Trade Corridor is an extension of private and public infrastructure necessary to connect the Ports of Los Angeles and Long Beach and the Alameda Corridor to the transcontinental rail network through the nation's second largest metropolitan area:

- Trade through the Los Angeles Customs District, which includes the Ports, is valued at $230 billion annually; expected to grow to $661 billion annually by 2020.

- International trade accounts directly for 475,000 jobs in Southern California today and is expected to increase to over 1 million by 2020; its share of total employment has doubled since 1980 and is expected to go up another 70% by 2020.
- Statewide, more than 500,000 jobs are attributable to trade through the Ports of Los Angeles and Long Beach alone.
- Nationally, the Ports of Los Angeles and Long Beach are responsible for more than 2.5 million trade related jobs (1992), a number expected to exceed 5.7 million within 10 years.
- Major importers and exporters in every one of the 48 contiguous states send or receive goods through the Los Angeles and Long Beach ports.
- Federal government revenues from duties and taxes attributable to the Los Angeles/Long Beach ports are conservatively estimated to total $36.8 billion by 2010.
- State and local tax revenue generated by the Port activity are expected to grow to $11.6 billion by 2010.

Additionally, the ACE Trade Corridor Plan will enhance public safety in Southern California by virtually eliminating pedestrian and vehicle conflicts at 130 crossings. The 13,000 vehicle hours of delay will be reduced by 2020 in an environment of huge increases in train and vehicular traffic, thus improving the delivery of goods and services to local businesses. About 320 annual accidents would be eliminated by the proposed improvements. The Plan will also help to reduce 287 tons of pollutant emissions, thereby having a positive impact on the quality of life in the region and contributing to attainment of Federal air quality standards.

**Need for a Broader Strategy**: The ACE Trade Corridor Plan addresses the mobility impacts of the ACE Trade Corridor. The Plan does not assess the broader goods movement mobility needs of the region, nor does it attempt to prioritize these needs in relation to existing state and federal funds, or alternative financing strategies. An analysis of the adequacy of port and railroad infrastructure capacity in relation to the projected rail demand is not within the scope of this study. Capacity increases are clearly needed to accommodate the growth projected in this report to maintain service reliability and to meet obligations to commuter rail service and certain shippers.

While beyond the scope of this study, however, these issues are now the focus of another planning study, with participation from the railroad companies, funded by the Southern California Association of Governments scheduled to commence in May 2001.

The Plan addresses grade separation needs only – not the full range of goods movement mitigation needed in these four counties. The region's mobility needs, as identified through SCAG's draft 2001 Regional Transportation Plan for the 10 year planning horizon, include: over $3 billion in public financing for truck lanes on SR 60 alone, and significant additional funding for arterial/freeway interchanges, ground access improvements to airports and intermodal facilities, and highway improvement projects proposed in regional sales tax Measure Programs which are dependent on future STIP allocations to complete.

## Trade Corridor Study Area – North and East Portion

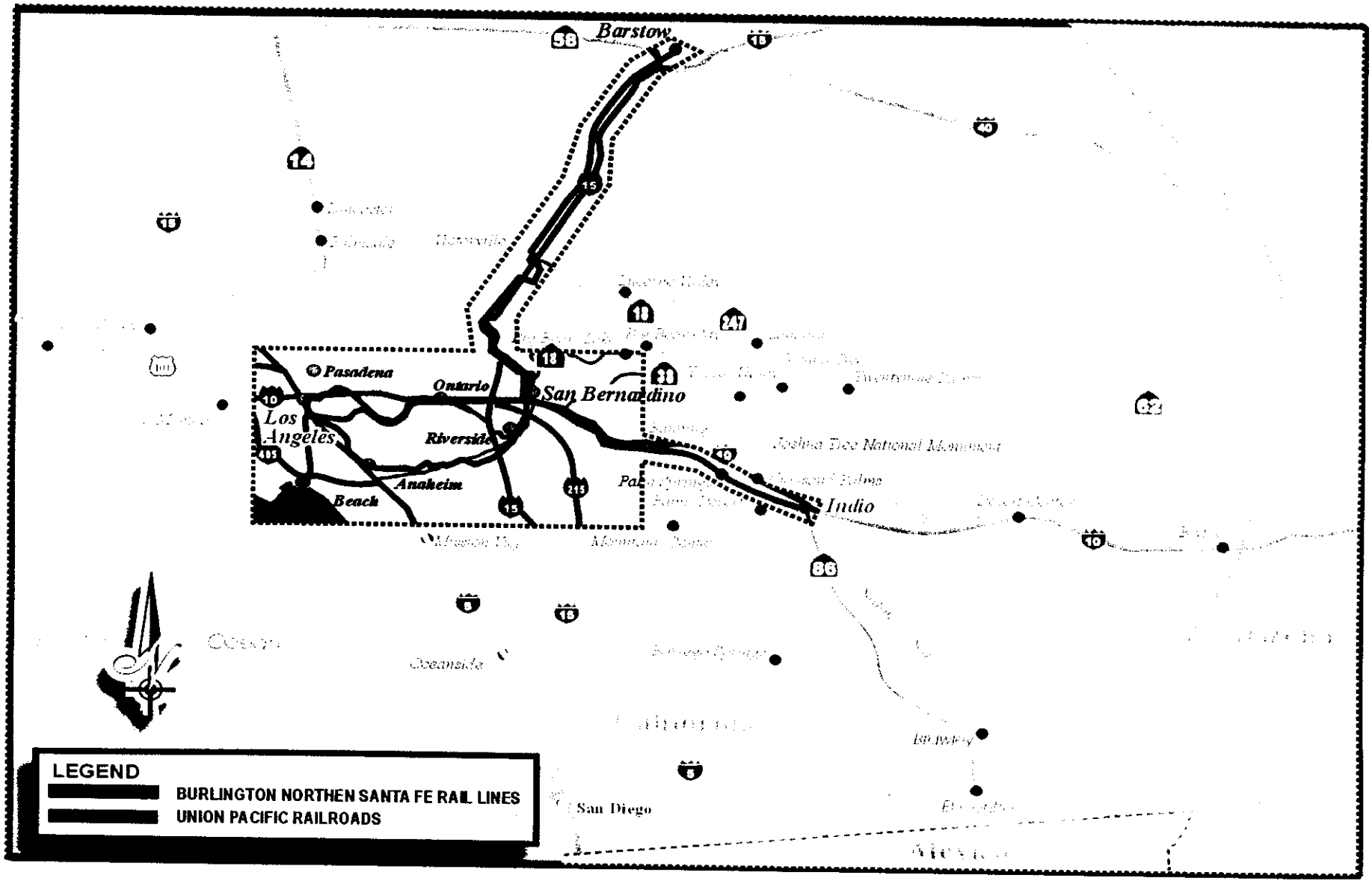
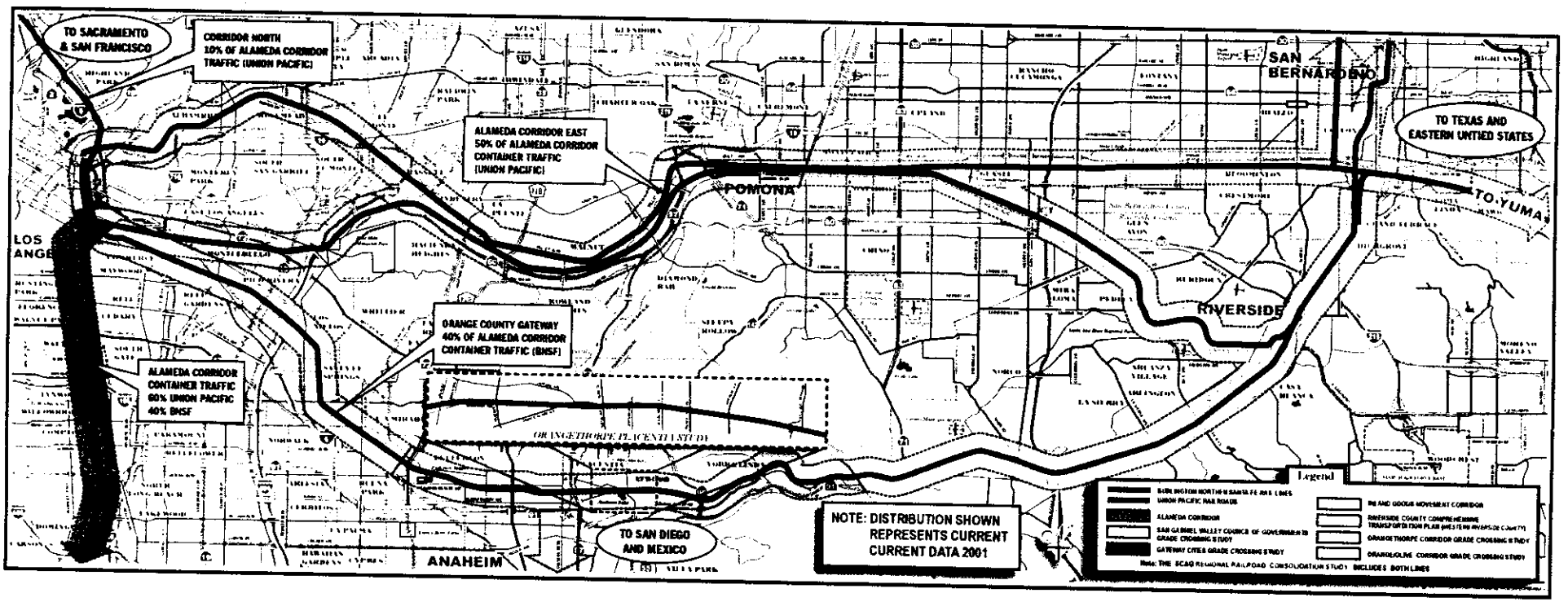



**Figure 1-A**

## Trade Corridor Study Area – Central Portion




Note: Distribution shown represents current data (1/7/01).

**Figure 1-B**

## II. BACKGROUND ECONOMIC CONDITIONS

### Regional Economic Growth

In order to estimate the impact of international trade on the regional economy, forecasts of population and employment growth to 2020 were applied.

Population The population of the 5-County Southern California Area is estimated to increase by almost 5 million residents between 2000 and 2020, over 13% in each decade. This will nearly match the increases registered in the 1970s and 1990s. The very large bulge in the region's population in the 1980s reflects the region's strong economy that attracted large inflows of domestic and foreign immigrants. In addition, birth rates rose as the Hispanic population became a proportionally larger component (Table 1-A, 1-B and 1-C).

Employment Consistent with the projected population growth in the region, fairly stable labor participation ratios, and industry mix, close to 3 million additional jobs are projected by 2020. Greater attention will be placed on education and training to prepare the 21st century labor force. The industry and job categories that will benefit the most from an acceleration in international trade expansion will be those that are "logistics-related," such as transportation, warehousing, communications, finance and insurance (Table 2 and Figures 2, 3 and 4).

### Los Angeles/Long Beach Port Growth

International trade activity at the San Pedro Bay Ports is documented in the following exhibits:

- Monetary Value of Imports and Exports moving through the Los Angeles Customs District.
- International container traffic, measured by Twenty-foot Equivalent Units (TEUs).
- Cargo traffic measured by Metric Revenue Tons (MRTs).

Value of Imports and Exports An important measure of the size and growth of international trade in the region is the monetary value of imports and exports. A useful data set applies to the Los Angeles Customs District, which includes international air cargo as well as waterborne cargo in the entire region (excluding San Diego). Overland trade with Canada and Mexico is counted in other customs districts. The current 2000 value of two-way trade in the LA Customs District is $230 billion, a phenomenal increase of 116.4% over the 1990 level (Table 3).

In developing a forecast of international trade over a long horizon, (2020), a range of outcomes was examined. The *high forecast* is based on "optimistic" assumptions, including:

- no severe and prolonged recessions
- no financial crises in various regions of the world, especially Asia. Gross Domestic Product (GDP) increases averaging 5% to 6% in certain Asian economies through 2020 and 2% to 3% in Japan and other countries in the region
- no major military engagements
- no serious oil shock or embargo on supply

By contrast, the *low forecast* attaches a higher probability of occurrence to one or more of the above events.

The "most likely case" (the mid-point between the high and low forecasts) suggests that two-way trade (imports and exports combined) will increase to $661 billion by 2020, representing an increase of 187% over the 2000 value. All further analyses are done with "most likely case" assumptions.

Container Traffic at San Pedro Bay Ports Measured by *loaded TEUs*, international container traffic at the Ports of Los Angeles and Long Beach has doubled in the past ten years, to nearly 7.0 million in 2000. This volume is projected to nearly triple to 19.2 million TEUs by 2020, an increase of 175% over the traffic volume in 2000 (Table 4 and Figure 5).

The *unconstrained* "demand-side" factors driving this growth are:

- Population and employment expansion in the Southern California region
- Expansion of the economies of major trading partners, especially in Asia
- Greater awareness of the benefits of international trade
- More emphasis on supply-chain, "just-in-time" inventory management

Figure 5 illustrates the steep increase in container traffic in 1999, a trend that has continued in 2000.

Additional capacity of the transportation infrastructure is expected to be ramped up by expenditures (both public and private).

Cargo Traffic: An estimated 229 million metric revenue tons moved through the San Pedro Ports in 2000. This represented a very strong increase of 10.6% over 1999's cargo volume. Based on projected growth of consumer and business markets in Southern California and the nation, as well as the Asian-Pacific countries, this volume of cargo tonnage should increase to 607 million metric revenue tons by 2020. This represents an increase of 165% over the volume in 2000 (Table 5).

## Table 1-A

### Population Estimates
### Five-County Southern California Area*

| | (000) | 10-Year Increase |
|---|---|---|
| 1970 | 10,016 | |
| 1980 | 11,549 | 15.3% |
| 1990 | 14,621 | 26.6 |
| 2000 (estimate) | 16,724 | 14.4 |
| 2010 (forecast) | 18,936 | 13.2 |
| 2020 (forecast) | 21,510 | 13.6 |
| Increase: 2000-2020 | 4,786 | 28.6% |

Source: State of California, Department of Finance "Race/Ethnic Population with Age and Sex Detail, 1970-2040," Sacramento, CA, December 1998

* Los Angeles County, Orange County, Riverside County, San Bernardino County, Ventura County

Note: The addition of nearly 5 million residents in the five-county area will increase the demand for imports used (consumed) in the "internal" market, as opposed to the logistical activity of moving goods through the region, to the Midwest and East Coast.

## Table 1-B

## Population Estimates
## By County

| | Los Angeles County | | Orange County | |
|---|---|---|---|---|
| | (000) | 10-Year Increase | (000) | 10-Year Increase |
| 1970 | 7,055.8 | | 1,431.9 | |
| 1980 | 7,500.3 | 6.3% | 1,944.8 | 35.8% |
| 1990 | 8,901.9 | 18.7 | 2,417.6 | 24.3 |
| 2000 (estimate) | 9,838.9 | 10.5 | 2,833.2 | 17.2 |
| 2010 (forecast) | 10,604.5 | 7.8 | 3,163.8 | 11.7 |
| 2020 (forecast) | 12,737.1 | 9.2 | 3,431.9 | 8.5 |
| Increase: 2000-2020 | 2,898.2 | 29.4% | 598.7 | 21.1% |

Source: State of California, Department of Finance "Race/Ethnic Population with Age and Sex Detail, 1970-2040," Sacramento, CA, December 1998

## Table 1-C

## Population Estimates
## By County

| | Riverside County | | San Bernardino County | |
|---|---|---|---|---|
| | (000) | 10-Year Increase | (000) | 10-Year Increase |
| 1970 | 461.6 | | 685.3 | |
| 1980 | 669.8 | 45.1% | 902.2 | 31.7% |
| 1990 | 1,194.6 | 78.4 | 1,436.7 | 59.2 |
| 2000 (estimate) | 1,570.9 | 31.5 | 1,727.5 | 20.2 |
| 2010 (forecast) | 2,125.5 | 35.3 | 2,187.8 | 26.6 |
| 2020 (forecast) | 2,773.4 | 30.5 | 2,747.2 | 25.6 |
| Increase: 2000-2020 | 1,202.5 | 76.5% | 1,019.7 | 59.0% |

Source: State of California, Department of Finance "Race/Ethnic Population with Age and Sex Detail, 1970-2040," Sacramento, CA, December 1998

## Table 2

## Non-Farm Employment
## Five-County Southern California Area*

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 5,043.6 | |
| 1990 | 6,248.8 | 23.9% |
| 2000 | 6,740.9 | 7.9 |
| 2010 (forecast) | 7,953.0 | 18.0 |
| 2020 (forecast) | 9,714.0 | 22.1 |
| Increase: 2000-2020 | 2,973.1 | 44.1% |

Source: Employment Development Department, State of California, Sacramento, CA (2000); Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation (December 2000)

Note: 1990s affected by the California recession and the decline in the aerospace industry.

* Employment data and forecasts are broken down in the following: Table 2-A (Los Angeles), Table 2-B (orange County, Table 2-C (Riverside/San Bernardino Counties), and Table 2-D (Ventura County).

## Table 2-A

## Non-Farm Employment
## Los Angeles County

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 3,610.3 | |
| 1990 | 4,133.3 | 14.5% |
| 2000 | 4,084.5 | -1.1 |
| 2010 (forecast) | 4,709.5 | 15.3 |
| 2020 (forecast) | 5,332.6 | 13.2 |
| Increase: 2000-2020 | 1,248.1 | 30.6% |

Source: Employment Development Department, State of California, Sacramento, CA (2000); Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation (December 2000)

Note: 1990s affected by the California recession and the decline in the aerospace industry.

## Table 2-B

## Non-Farm Employment
## Orange County

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 836.4 | |
| 1990 | 1,172.4 | 40.2% |
| 2000 | 1,390.7 | 18.6 |
| 2010 (forecast) | 1,820.7 | 30.9 |
| 2020 (forecast) | 2,225.7 | 22.2 |
| Increase: 2000-2020 | 835.0 | 60.0% |

Source: Employment Development Department, State of California, Sacramento, CA (2000); Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation (December 2000)

Note: 1990s affected by the California recession and the decline in the aerospace industry.

## Table 2-C

## Non-Farm Employment
## Riverside/San Bernardino Counties

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 443.9 | |
| 1990 | 712.6 | 23.6% |
| 2000 | 991.5 | 39.1 |
| 2010 (forecast) | 1,396.5 | 40.8 |
| 2020 (forecast) | 1,791.5 | 28.3 |
| Increase: 2000-2020 | 800.0 | 80.7% |

Source: Employment Development Department, State of California, Sacramento, CA (2000); Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation (December 2000)

Note: 1990s affected by the California recession and the decline in the aerospace industry.

## Table 2-D

## Non-Farm Employment
## Ventura County*

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 153.0 | |
| 1990 | 230.3 | 50.5% |
| 2000 | 274.2 | 19.1 |
| 2010 (forecast) | 319.2 | 16.4 |
| 2020 (forecast) | 364.2 | 14.1 |
| Increase: 2000-2020 | 90.0 | 32.8% |

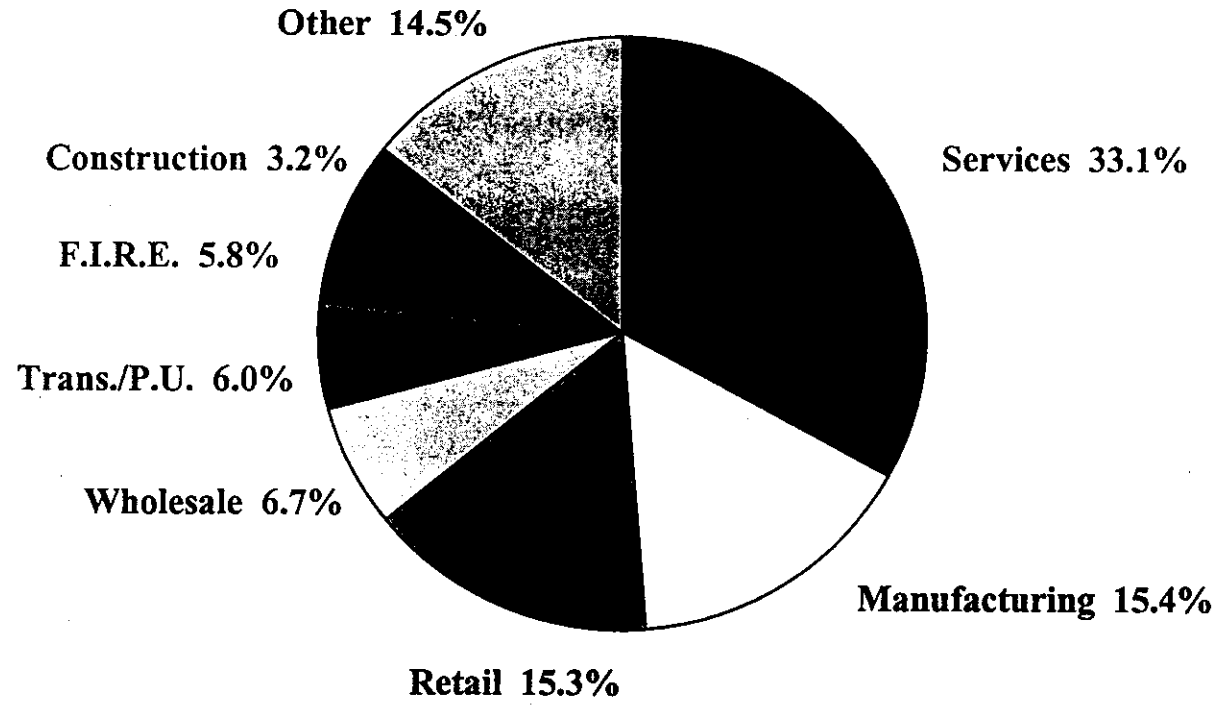
Source: Employment Development Department, State of California, Sacramento, CA (2000); Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation (December 2000)

Note: 1990s affected by the California recession and the decline in the aerospace industry.

* Shown for information only – Ventura County is not included in the study area. It is an integral part of the 5-county region.

# Los Angeles County Non-farm Employment By Industry Shares -- 2000e

(% Share of Total)

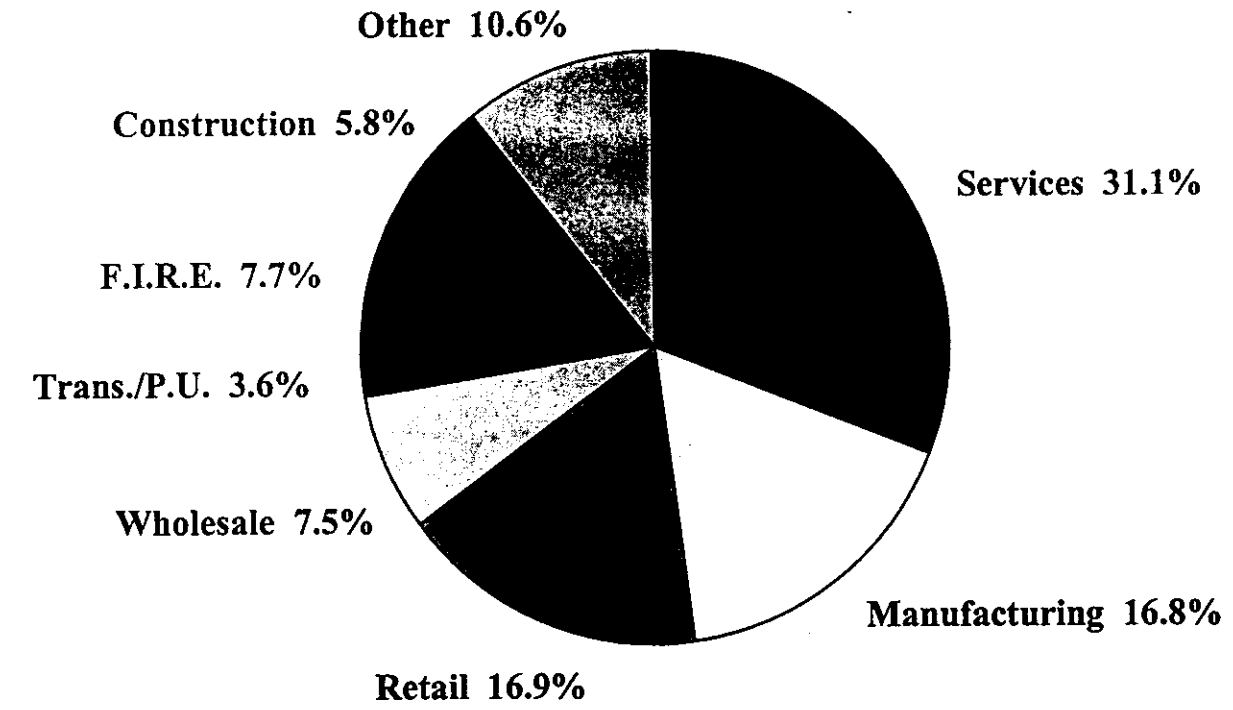



Source: LAEDC

**Figure 2**

# Orange County Non-farm Employment By Industry Shares -- 2000e

(% Share of Total)

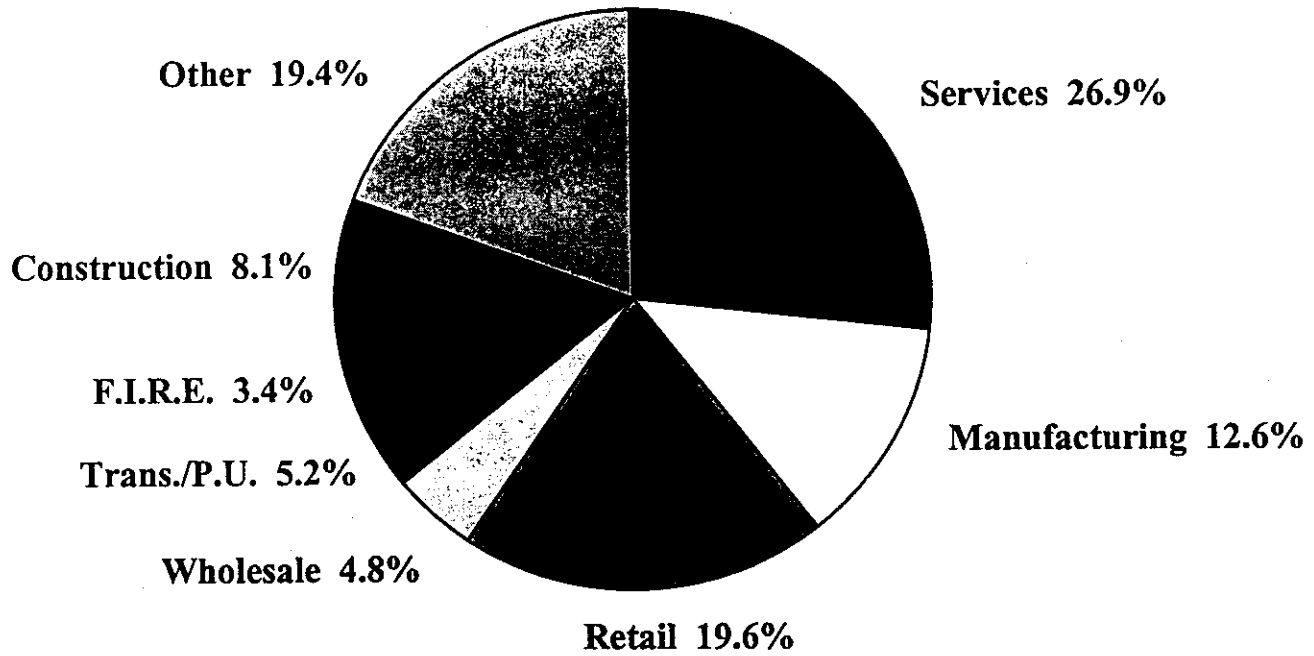



Source: LAEDC

**Figure 3**

# Riverside-San Bernardino County
# Non-farm Employment
# By Industry Shares -- 2000e

(% Share of Total)




Source: LAEDC

**Figure 4**

## Table 3

## Total Imports and Exports through the Los Angeles Customs District [1]

| | (billions of dollars) | 10-Year Increase |
|---|---|---|
| 1990 | $106.3 | |
| 2000 | 230.0 | 116.4% |
| 2010 (forecast) | 412.0 | 79.1 |
| 2020 (forecast) | 661.0 | 60.4 |
| Increase: 2000-2020 | $431.0 | 187.5% |

Source: U.S. Department of Commerce; Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation

Note: [1] Los Angeles Customs District includes Ports of Los Angeles and Long Beach, and other ports in Ventura, international airports in Five-County Southern California Area, and McCarran International Airport in Las Vegas.

## III. CONTRIBUTION OF TRADE TO LOCAL / STATE / NATIONAL ECONOMY

The benefits of international trade accrue to Southern California, the State of California and the nation as a whole. Primary among these benefits are the value of imported or exported goods being consumed or produced, the employment and wages generated by the trade moving through the San Pedro ports, and the tax revenues accruing to different levels of government.

### Contributions of All International Trade to Southern California

The following data documents the employment and tax revenue attributable to all international trade going into and out of Southern California (i.e. airborne and waterborne), all Southern California Points of Entry (including Las Vegas), and estimates the growth of these factors to the year 2020.

#### Direct International Trade Jobs

The total number of jobs directly attributed to the movement (not production) of goods imports and exports through Southern California is estimated at 475,400 in 2000. These include warehousing, trucking, rail, freight forwarders, dockworkers, wholesale trade, finance, insurance, shipping, and others. This represents a 7.1% share of total employment—double its share in 1980. Based on the region's heightened awareness of opportunities in foreign markets, its growing demand for consumer goods, intermediate inputs to production, and the higher average pay levels in trade-related jobs, direct employment in this sector is projected to climb to over 1,000,000 jobs by 2020, double the current level (Figure 6 and Table 6).

#### Indirect Impact in 2000

In evaluating the current impact of international trade on the 5-County Southern California region, multipliers from the RIMS 11 Input/Output Model (U.S. Department of Commerce) were applied to first calculate "indirect jobs." This results in a total job count of 1,093,420 in 2000. Indirect jobs are supported by the spending of workers in direct jobs and need to be included in estimates of total impact. Based on the various job and industry categories that make up the employment universe of estimated trade-related jobs, an annual average earning of $50,000 is estimated. This produces the revenue amounts shown in the Table 7, using current tax rates on personal income and sales.

#### 2020 Impact

The same procedure is used to calculate the projected number of jobs, income, and tax revenues for 2020. This results in 2.5 million jobs, $204.3 billion in income, state tax revenues of $13.8 billion, and local tax revenues of $11.3 billion. In addition, $34.7 billion of additional income tax revenues is estimated to be paid to the national government. An important assumption implicit in the income and tax estimates (and one that may be somewhat conservative) is that the underlying inflation rate will average 2.5% annually over the 20-year period. The effect of compounding pushes up the average annual earnings of workers by 63.9% over the 20-year period (Table 8).

**Contributions of San Pedro Ports to State and National Economy**

In narrowing the focus to the contributions made by trade activity at the San Pedro Ports, the most current and relevant data available was compiled in 1992 in support of the Alameda Corridor Project[1]. The following estimates of economic benefits, therefore, significantly understate the present contributions of Ports activity.

Nevertheless, the following demonstrates both the magnitude and geographic reach of the economic benefits of trade through the Ports of Los Angeles and Long Beach. The growth rates already experienced and projected for the future discussed earlier will substantially inflate the numbers reported below.

**State of California Benefits From San Pedro Ports**

| | |
|---|---|
| Value of Goods Consumed or Exported | $36 billion |
| Trade Related Employment | 500,000 |
| Annual State and Local Tax Revenues | $3 billion |

[1] "The Alameda Corridor Project Linking the United States Economy to the World"

## Table 4

## International Container Traffic at Ports of Los Angeles and Long Beach (Loaded TEUs)

| | (000) | 10-Year Increase |
|---|---|---|
| 1993 | 3,169.7 | |
| 2000 | 6,977.5 | 120.1% |
| 2010 (forecast) | 12,600.0 | 80.6 |
| 2020 (forecast) | 19,188.0 | 52.3 |
| Increase: 2000-2020 | 12,210.5 | 175.0% |

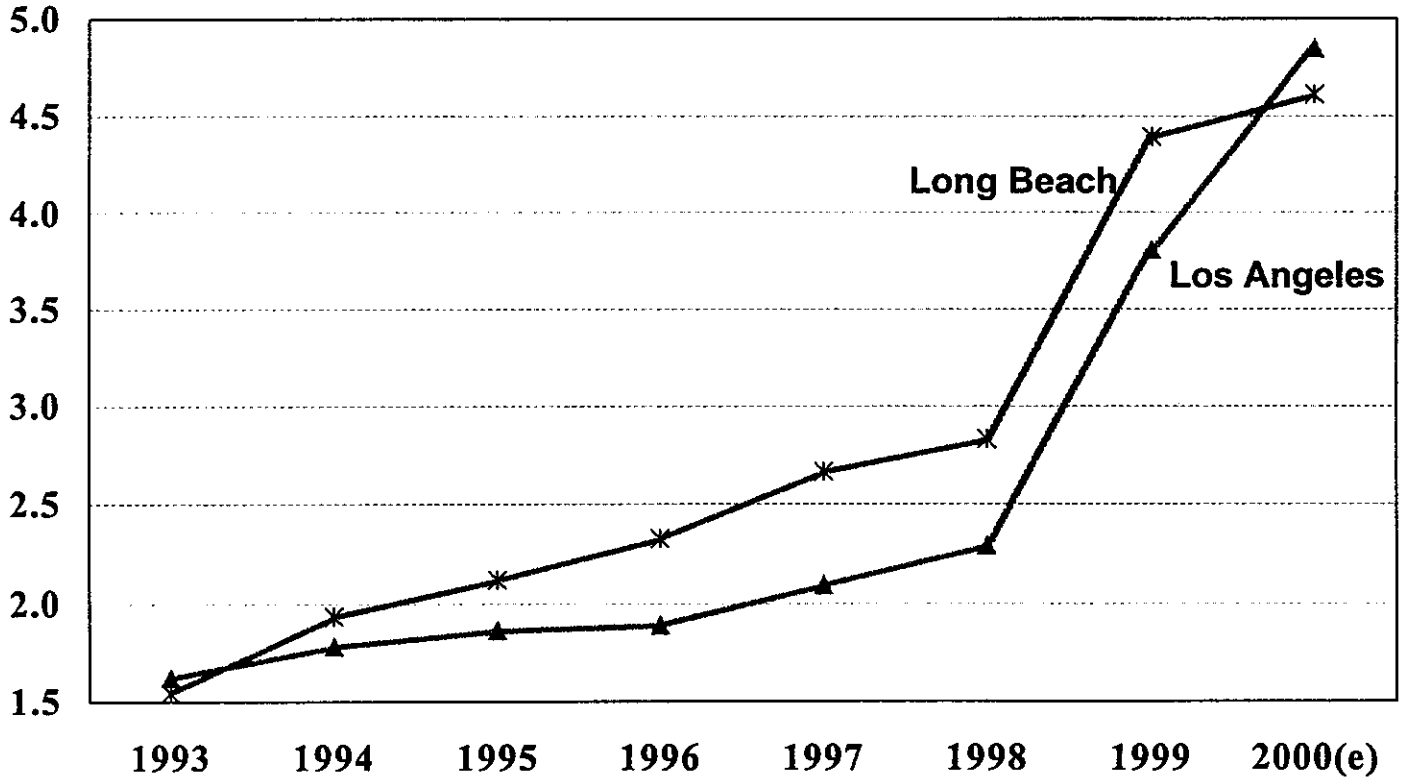
Source: Port of Los Angeles; Port of Long Beach; Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation, December 2000

Note: (1) Both San Pedro Bay Ports are engaged in major expansion of facilities to handle projected increases in container traffic. These include landfills, land acquisition, re-development, on-dock rail and investment in equipment.

(2) Alameda Corridor documents and 1999 Annual Reports of the Port of Long Beach and the Port of Los Angeles indicate a "tripling" of cargo activity between 2000 and 2020.

# International Container Traffic at San Pedro Ports

(Total TEUs in millions)




Source: Ports Import/Export Reporting Service (PIERS)

**Figure 5**

## Table 5

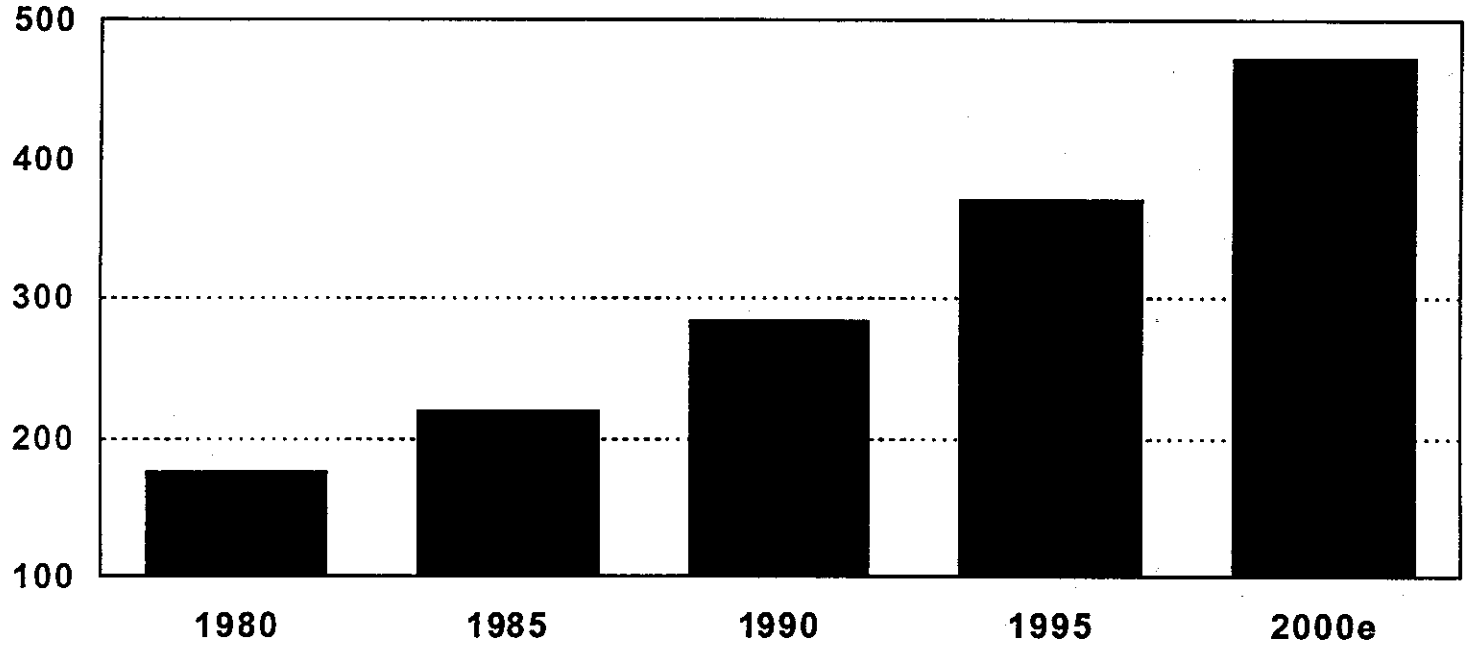
## Cargo Tonnage Through San Pedro Ports (Metric Revenue Tons in Millions)

| | (Millions) | 10-Year Increase |
|---|---|---|
| 1993 | 143.5 | |
| 2000 (estimate) | 229.0 | 59.6% |
| 2010 (forecast) | 400.0 | 74.7 |
| 2020 (forecast) | 607.0 | 51.8 |
| Increase: 2000-2020 | 378.0 | 165.1% |

Source: Port of Los Angeles; Port of Long Beach; Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation, December 2000

# Direct International Trade Employment
# Southern California 5 Counties

(thousands)




Source: California Employment Development. Dept.,
Los Angeles County Economic Development Corporation (LAEDC)

**Figure 6**

## Table 6

## Direct Employment in International Trade
## Five-County Southern California Area

| | (000) | 10-Year Increase |
|---|---|---|
| 1980 | 174.7 | |
| 1990 | 282.6 | 61.8% |
| 2000 (estimate) | 475.4 | 68.2 |
| 2010 (forecast) | 756.0 | 59.0 |
| 2020 (forecast) | 1,084.0 | 43.4 |

Source: Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation, December 2000

Note: (1) Ratio of non-farm employment to population ranges between 40.2% (2000) and 43.7% (1980). Mid-point of 42.0 is applied to 2010 and 2020 to estimate "total employment."

(2) International trade employment has moved up from 3.5% in 1980, and 4.5% in 1990, to 7.1% in 2000 as a share of total employment. The share has been raised to 9.5% in 2010 and 12.0% in 2020.

## Table 7

## Current 2000 Impact of International Trade on Southern California Five-County Area (Annual Amounts)

| | |
|---|---|
| Direct Jobs: | 475,400 |
| Indirect Jobs: | 618,020 |
| Total Jobs: | 1,093,420 (1) |
| (1) 2·3 multiplier | |
| | Billions |
| Total Earnings | $54.7 (2) |
| (2) Based on average annual earnings/worker of $50,000 | |
| Estimated Income Tax Revenue to State: | $2.9 |
| Estimated Sales Tax Revenue to State: | 0.8 |
| | $3.7 |
| Estimated Local (Cities and Counties) Tax Revenues from Sales Tax and State General Fund:* | $3.1 |
| Estimated Income Tax Revenue to U.S. Government: | $9.3 |

Source: Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation, December 2000

Note: Multiplier calculations based on RIMS II Input/Output Model, U.S. Department of Commerce

*Share of Sales Tax comes back to cities and to regional transportation authorities. Public universities and colleges are funded by the State General Fund.

## Table 8

## Future 2020 Impact of International Trade on Southern California Five-County Area (Annual Amounts)

| | |
|---|---|
| Direct Jobs: | 1,084,000 |
| Indirect Jobs: | 1,409,200 |
| Total Jobs: | 2,493,200 (1) |
| (1) 2·3 multiplier | |
| | Billions |
| Total Earnings (direct & indirect) | $204.3 (2) |

(2) Based on average earnings/worker of $81,931, derived from a compounded average annual inflation rate of 2·5% for 20 years.

| | |
|---|---|
| Estimated Income Tax Revenue to State: | $11.0 |
| Estimated Sales Tax Revenue to State: | 2.8 |
| | $13.8 |
| Estimated Local (Cities and Counties) Tax Revenues from Sales Tax and State General Fund:* | $11.3 |
| Estimated Income Tax Revenue to U.S. Government: | $34.7 |

Source: Forecasts to 2010 and 2020 by Los Angeles Economic Development Corporation, December 2000

Note: Multiplier calculations based on RIMS II Input/Output Model, U.S. Department of Commerce

*Share of Sales Tax comes back to cities and to regional transportation authorities. Public universities and colleges are funded by the State General Fund.

# IV. TRANSPORTATION IMPACTS

## Rail and Truck Traffic

Both rail and truck traffic in and out of the ports is projected to increase over the next 10-20 years as the volume of international trade expands. Whether expansion of the transportation infrastructure will be sufficient to meet this demand is in question.

**Rail:**

- Today approximately 59-trains/day move through the Orangethorpe Corridor (Orange County Gateway), on the Burlington Northern Santa Fe line. This line continues east through Corona in Western Riverside County, then north through Riverside and Colton, where it crosses the UPRR line. From prior studies, the Orange County Gateway (OCG) Cost-Benefits Study (October 1999), rail volume on the Orangethorpe Corridor is projected to increase to 150 trains/day (freight and passenger) by 2020.

- An estimated 67-trains/day move through the UP line, from the north end of the Alameda Corridor at Redondo Junction (East Los Angeles) through the San Gabriel Valley. This line continues through Western San Bernardino County and through Colton, with one branch going north to Barstow and the other going east to Palm Springs. Applying an "unconstrained" forecast to the San Gabriel Valley Corridor (absent supply/capacity factors), the number of trains (freight and passenger) will reach an estimated 168 by 2020.

**Trucking**:

- Various studies conducted in the past three years have shown that truck-container traffic in and out of the ports is approximately 25,000 trips daily. Eighty per cent of this traffic uses the Long Beach (I-710) Freeway.

- By 2020, expected demand for daily truck trips in and out of the ports is likely to more than double. Based upon daily volumes on four other freeway routes in the study area, average daily truck trips could also rise from 10,000 trips to 20,000 trips.

- Trucking will command important advantages over trains in such areas as flexibility in routing, "short distance" (less than 500 miles) trips, and adjusting to peak seasonal demand.

Daily Freeway Truck Volume Data

The various studies that were reviewed indicated an increase in truck volume in the future:

1. San Gabriel Valley Truck Study (30 cities) concludes that between the 1994 base year and the 2020 forecasted year there will be a 54% total growth in daily truck trips of which 50% will be of heavy-duty trucks in the study area.
2. Gateway Cities Trucking Study (26 cities) concludes that between the 1995 base year and the 2020 forecasted year there will be a 136% to 160% growth in trucks or from 22,000 truck trips to 57,000 truck trips in the study area.

3. Orange County Goods Movement Study concludes that between the 1995 base year and the 2015 forecasted year, there will be a 20% growth in truck traffic attributed to North American Free Trade Agreement (NAFTA) in the study area.

All the studies reviewed indicate that there will be a substantial increase in commuter traffic along with the truck traffic growth in the study area.

Heavy-duty trucks (over 33,000 Gross Vehicular Weight) are an important element in comprehensive regional transportation planning. Forecasting truck activity in terms of truck trips linked to goods movement that includes inter-modal facilities (e.g., truck trips generated by airports and seaports), inter-regional truck traffic and intra-regional truck traffic is a difficult task. All types of truck movements are important as they move goods from place to place in different capacities in the local, regional and national economy. Tables 9, 10 and 11 present the 1995 heavy-duty truck traffic generated from seaports and airports based on the Southern California Association of Governments (SCAG) Heavy Duty Truck Model.

The movement of cargo through the Ports of Los Angeles and Long Beach contributes to the rising volume of truck trips in the region. Port truck trips are of two types: Inter-modal trips carrying freight between a port and a rail facility; and Non-inter-modal trips carrying freight between a port and a non-rail destination. Data gathered for the SCAG heavy duty truck model for inter-modal trips indicated four inter-modal facilities as origin/destination: Hobart Yard in the City of Commerce, the Inter-modal Container Transfer Facility (ICTF) in Long Beach, Inter-modal facility in Industry, and the Union Pacific East Los Angeles Inter-modal Facility (ELA). Table 9 provides year 1995 port generated daily truck traffic in and out of these facilities.

**Table 9: Year 1995 Port-generated Daily Truck Traffic (Combined Inbound and Outbound)**

| | Inter-modal Trucks | | | Non-Inter-modal Trucks | Total |
|---|---|---|---|---|---|
| | ICTF | Hobart | ELA | | |
| Port of Los Angeles | 1460 | 518 | 212 | 4504 | 6694 |
| Port of Long Beach | 1208 | 2004 | 818 | 5800 | 9830 |
| | | | | Grand Total: | 16524 |

Source: Heavy Duty Truck Model, SCAG, October 1999.

An analysis of the adequacy of port and railroad infrastructure capacity in relation to the projected rail demand is not within the scope of this study. Capacity increases are clearly needed to accommodate the growth projected in this report to maintain service reliability and to meet obligations to commuter rail service and certain shippers.

While beyond the scope of this study, however, these issues are now the focus of another planning study, with participation from the railroad companies, funded by the Southern California Association of Governments scheduled to commence in May 2001.

In addition to seaport traffic, airport traffic has also been considered when reviewing the trade corridor truck traffic activity. In developing the heavy-duty truck model SCAG collected extensive heavy-duty truck data at all regional airports. Table 10 provides the magnitude of airport cargo heavy-duty truck trip generation that influences the study boundary, particularly the freeway segments.

**Table 10: Year 1995 Airport Air Cargo Heavy Duty Truck Trip Generation**

| Airport | Total Annual Trip Ends | Total Average Daily Trips |
|---|---|---|
| Los Angeles (LAX) | 2,056,732 | 5,635 |
| Long Beach | 97,862 | 268 |
| Orange County | 133,582 | 366 |
| Ontario | 392,606 | 1,076 |
| Palm Springs | 5,942 | 16 |
| San Bernardino | 183,574 | 503 |
| Burbank | 17,516 | 48 |

Source: Heavy Duty Truck Model, SCAG October, 1999.

The SCAG Heavy Duty Truck Model also presents the total truck trips by county. Table 11 provides the total truck trips generated within each of the four counties in the year 1995, including external and internal trips.

**Table 11: Year 1995 Total Truck Trips for Counties in Study Area**

| County | Internal Trips | External Trips | Total Trips |
|---|---|---|---|
| Los Angeles | 607,269 | 21,296 | 628,565 |
| Orange County | 177,964 | 6,198 | 184,162 |
| Riverside | 66,522 | 2,118 | 68,640 |
| San Bernardino | 80,520 | 2,540 | 83,060 |

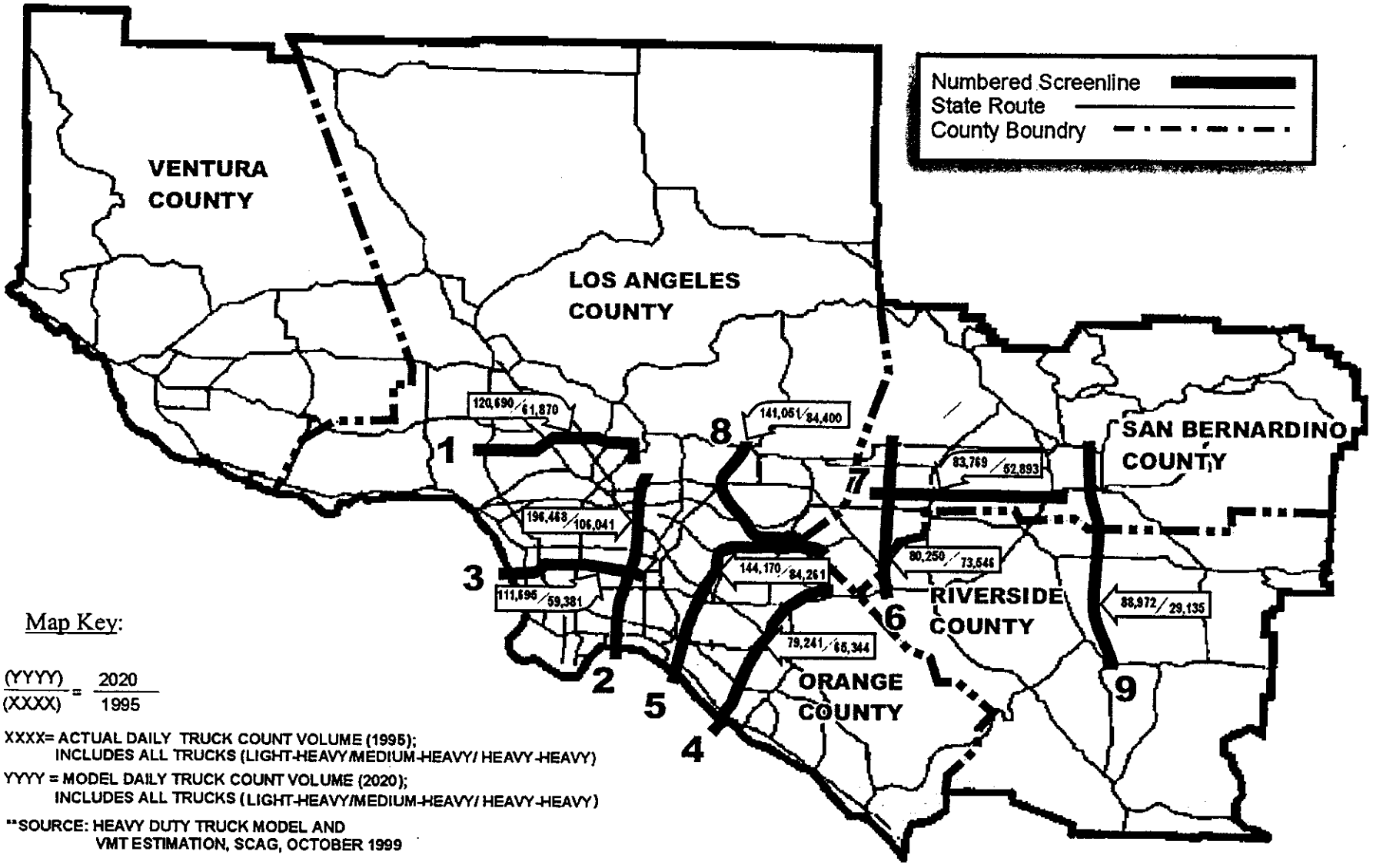
Source: Heavy Duty Truck Model, SCAG 1999.

Figure 7 shows the location of SCAG truck model growth projections along various screen lines. In modeling, screenlines are selected for investigating the reasonableness of the forecast truck volumes in the study area. The screenlines selected capture truck travel along the most prominent corridors within various regions. The north-south oriented screen lines provide the cumulative daily truck traffic volumes along the east-west roadways and include all major arterials and freeways. Similarly the east-west screen lines provide the cumulative daily truck traffic volumes along the north-south roadways and include all major arterials and freeways. For model validation, regional screenlines totals are used and verified with standards established by the National Cooperative Highway Research Program (NCHRP) Report 255.

Figure 7 shows the actual total daily truck volume along screenlines for the year 1995 and the estimated (model) total daily truck volume along screenline's for the year 2020. A comparison of Figures 7 and 8 indicates that the majority of the screenlines truck traffic is along the major freeways. The model forecasts a total of over one million daily truck trips to cross the nine screenlines in the study area in 2020, as compared to over 600,000 daily truck trips in 1995 (actual count). That is an increase of over 400,000 daily truck trips or a 70 percent growth by 2020 across the nine screenlines. Further, the SCAG model report indicates that the growth in individual classes of heavy-duty trucks is 42 percent for light- heavy, 59 percent for medium-heavy and 88 percent for heavy-heavy categories. This is a reflection of anticipated regional growth patterns that show a higher trend towards growth in land uses that generate heavy-heavy truck trips (over 33,000 lbs. gross-weight). Other studies reviewed for this report also indicate the same trend in growth of trucks in the future.

Figure 8 provides the two-way Average Annual Daily Truck (AADT) volumes for the year 1997 on a majority of the freeways in the study area (includes all major freeways). These freeways run parallel to both UP and BNSF mainline tracks as seen in Figure 8. The AADT was obtained from Caltrans and is collected at selected locations by Caltrans from the State Highway System. Truck traffic is classified by axle and the truck volumes shown include 2, 3, 4, 5 and above axle trucks (excludes pickups and vans) using the freeways. The AADT is the total truck volume divided by 365 days. Truck counting is done throughout the study area in a program of continuous sampling. The resulting counts are adjusted to an estimate of AADT traffic by compensating for seasonal influence, weekly variation and other variables, which may be present. Therefore, some volumes shown are verified (counted) and some are estimated.

## FIGURE 7: TRUCK GROWTH PROJECTIONS 1995-2020




Map Key:

$$\frac{(YYYY)}{(XXXX)} = \frac{2020}{1995}$$

XXXX= ACTUAL DAILY TRUCK COUNT VOLUME (1995);
INCLUDES ALL TRUCKS (LIGHT-HEAVY/MEDIUM-HEAVY/ HEAVY-HEAVY)

YYYY = MODEL DAILY TRUCK COUNT VOLUME (2020);
INCLUDES ALL TRUCKS (LIGHT-HEAVY/MEDIUM-HEAVY/ HEAVY-HEAVY)

**SOURCE: HEAVY DUTY TRUCK MODEL AND
VMT ESTIMATION, SCAG, OCTOBER 1999

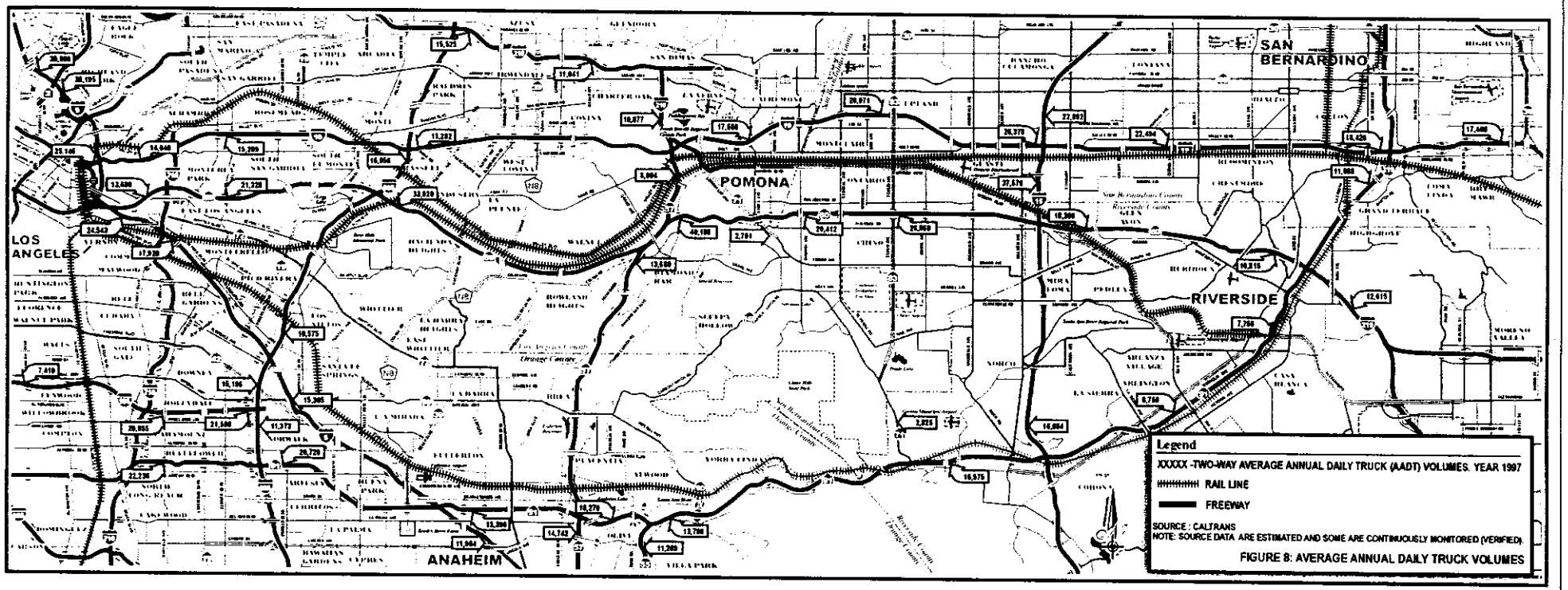



FIGURE 8: AVERAGE ANNUAL DAILY TRUCK VOLUMES

The following is extracted from a recent study by Professor Genevieve Giuliano, School of Policy, Planning, and Development, University of Southern California, entitled, "Changes in the Economy: Impacts on Location and Transportation in California," (November 2000).

> Turning to total VMT, the increase in Los Angeles is substantially greater. The biggest difference between the two regions is in large truck traffic. Between 1982 and 1990 large truck traffic doubled in Los Angeles, but only increased by about 50% in San Francisco. After 1990, large truck traffic declines in San Francisco. These trends must be viewed with caution. The Loma Prieta earthquake damage likely shifted truck traffic off of state facilities, so the post-1990 data likely undercounts relative to previous years. Increases in air passengers were greater in San Francisco than in Los Angeles; like the statewide trend, both regions experienced a steep increase in air passengers after 1993.
>
> Figures A and B show that whatever the impact of the New Economy, trends have been very different between the two regions. Overall, the trends suggest a more service/information based regional economy in San Francisco. In Los Angeles, international trade is likely an explanatory factor as the Los Angeles/Long Beach port has emerged as the major west coast center for international trade. These figures create more questions than they answer. Detailed and careful study would be required to systematically link transport and economic trends. It is clear, however, that transport demand continues to increase, and the increased demand for air transport is especially dramatic. At the very least, the New Economy is as dependent on transport as the old economy.

**Figure A**
**Economic and Transportation Trends: San Francisco CMSA**

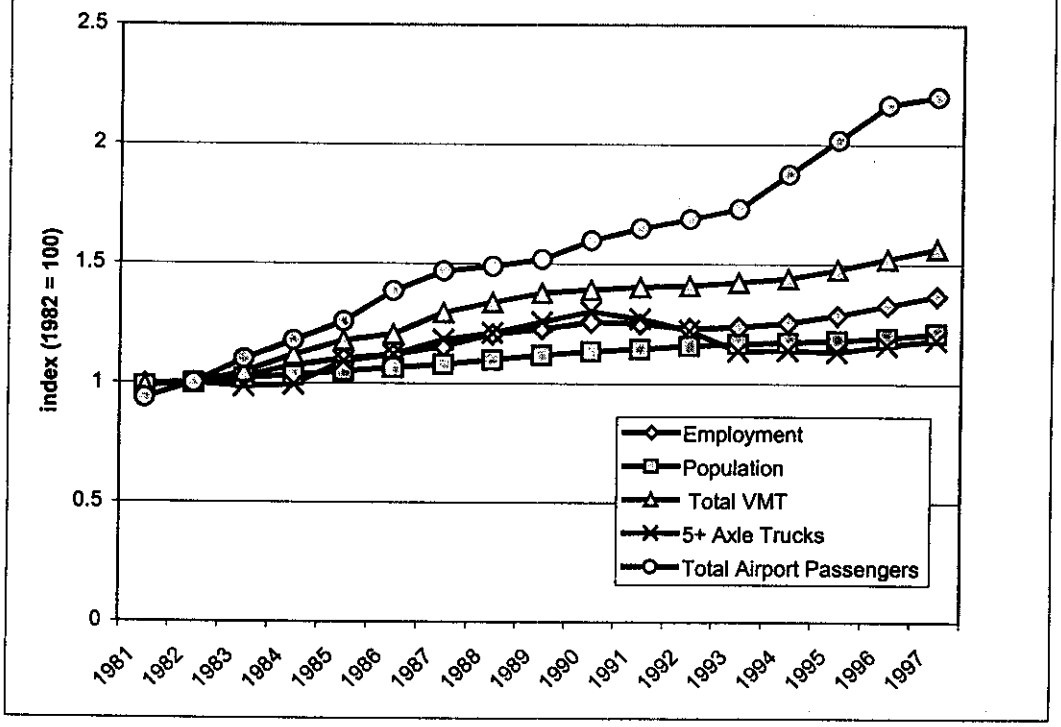
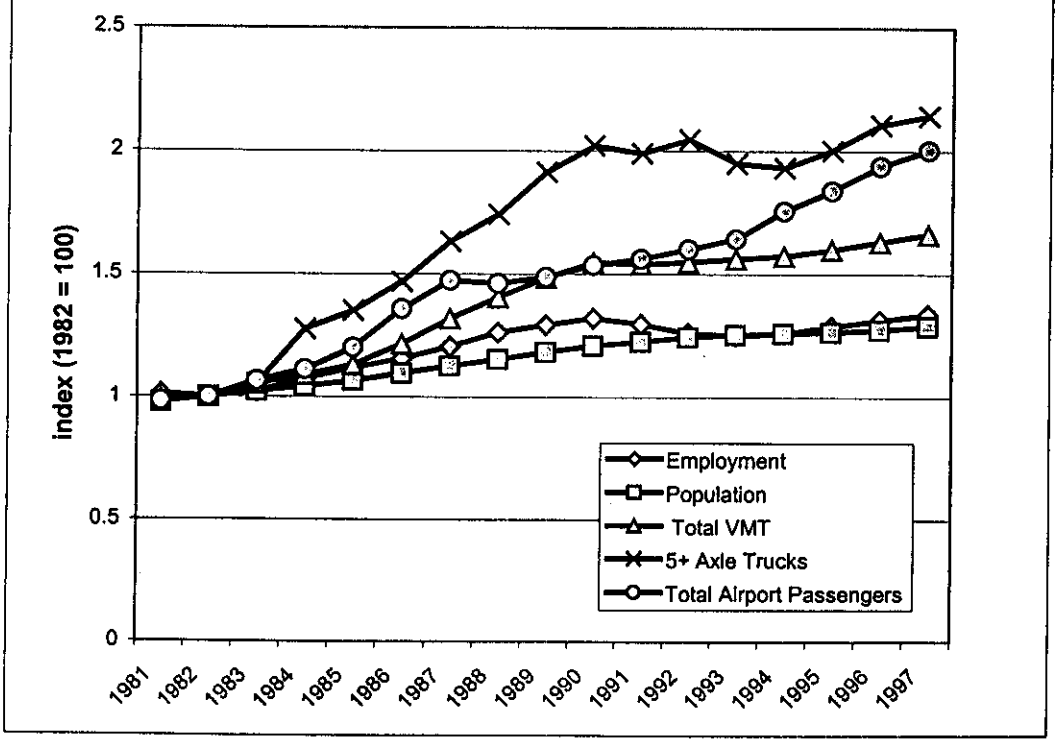



**Figure B**
**Economic and Transportation Trends: Los Angeles CMSA**



## Rail and Highway Capacity

The demand on the roadways and railways in the study area presented throughout this report depicts the volumes of vehicles and trains based on forecasts developed by various agencies in the studies referenced. While these studies represent the demand on rail and truck traffic, they do not assess the capacity of the roadways or railways for the base or forecasted year scenarios.

The objective of this section of the report is to present the general capacity of roadway and railroad systems based on published data. While presenting this information for a roadway is well documented, the capacity analysis for a railroad is more complex due to not only the physical nature of the rail lines, but also because of the business relationships between the railroad companies and the passenger rail carriers. This relationship and the factors that influence rail capacity will be discussed further below.

### Highway Capacity

Highway capacity is primarily based on the number of lanes of a roadway. The 1995 Model Validation Report, developed by the Los Angeles County Metropolitan Transportation Authority in June 1996, presents the highway capacity of a freeway as 1,950 vehicles/hour/lane for urban, suburban, mountain and rural freeways. This value is reduced to 1,900 vehicles/hour/lane for freeways in the Central Business District. These capacity values can generally be applied to freeways to determine the capacity along various routes.

The projections of truck traffic in Southern California, contained in SCAG's "Heavy Duty Truck Model," October 1999, should be considered a call to action. On the main north-south and east-west freeways in Los Angeles County, the average daily volume of truck trips is expected to approximately double by 2020. On Orange County, Riverside, and San Bernardino freeways, the truck count is predicted to also increase by roughly 50% to 100% by 2020. Without adequate investment in freeway capacity, both goods movement and people movement will approach gridlock before 2020.

Apart from the mobility and congestion issues, transportation planners and economic development leaders also need to be concerned about (a) degradation of the quality of life of local residents from noise pollution and long commuting times; (b) air pollution's impact on health; and (c) threats to public safety from a higher incidence of vehicular accidents. The ability of the region's infrastructure to handle the projected rise in international cargo through the ports and airports would be seriously in question without the proposed improvements.

### Railroad Capacity

Railway capacity is not well documented in the prior studies that were reviewed as part of this report. Railway capacity is based on various factors, primarily, the physical features of the railway, the business relationships of the railroads operating on the tracks, and the length and speed of the trains being operated. Other factors include the horsepower-to-weight ratio of the locomotive and cars of the train.

The physical features that determine the capacity of the railway include, but are not limited to:

- the number of tracks,
- the location and length of sidings,
- the geometric features of the track and geography that determine maximum operating speed, and
- the location and efficiency of rail yards.

For example, a railway with two main line tracks may provide twice the capacity of a railway with only one mainline track. However, a railway with three main line tracks offers only a limited increase in capacity over the railway with two main line tracks. While this example is general in nature, it presents some of the unique characteristics of railway capacity.

Another important and influential factor that determines the capacity of the railway is the business relationships of the railroads that operate on the railway. This is a key factor when passenger rail service utilizes the same tracks as freight rail service. The timetables and frequency of passenger rail service, particularly commuter rail, impact the capacity of the railway due to the need to adhere to published schedules.

Substantial freight rail capacity currently exists on the three rail routes, the UP Alhambra Subdivision (former Southern Pacific), the UP Los Angeles Subdivision, and the BNSF San Bernardino Subdivision. All routes operate under modern Central Traffic Control (CTC) conditions allowing for maximum management and prioritization of rail traffic. While the BNSF San Bernardino route already possesses a majority of double track alignment, the Fullerton to Commerce segment will shortly expand to a third main track capacity, thanks to cooperative arrangements between the rail parties using this line segment. Generally speaking ample right of way exists on all routes to allow for carrier investment in capacity improvements involving additional sidings, double and triple tracking enhancements, though in some cases (i.e. bridges) major infrastructure investment will be necessary.

Each corridor segment is impacted by additional considerations with respect to contractual comments made to Amtrak and the Southern California Regional Rail Authority, as well as reciprocating joint freight rail carrier usage rights. These issues are further impacted by the overall rail terminal capacity availability in both the immediate Port area, as well as in outlying satellite terminal facilities. Ultimately, rail terminal fluidity is an important consideration, for without this assurance of prompt accessibility or dispatch capacity, the discussion of rail capacity becomes moot as traffic stagnates on the corridor.

Both the Burlington Northern Santa Fe and Union Pacific have taken steps to facilitate close corridor coordination and cooperation by opening the joint San Bernardino Dispatch Center where dispatchers of the two carriers are housed in a single facility. This rail carrier coordination coupled with the enhancements of the Alameda Corridor (Redondo Junction to the Port) will promote the overall ability to handle the projected rail traffic levels over the three line segments.

Additional future rail carrier management decisions regarding locomotive horsepower per ton considerations, train length averages as driven by corporate operating philosophies and outlying off-corridor siding capacities, as well as future technological advancements in the area of positive train separation, could all provide further influences in rail capacities.

A detailed capacity analysis of the rail lines would be necessary to determine the actual capacity of the rail network, and its ability to handle the projected demand. This analysis would also require a comprehensive analysis of the existing railway physical features, business relationships, and operational strategies of the railroads operating on each particular railway. An initial review of the corridor indicates that the three main west-east lines in the study area, (UP Alhambra Subdivision, UP Los Angeles Subdivision, and BNSF San Bernardino Subdivision) could handle the forecasted demand, although infrastructure, operational improvements, and additional agreements would be required.

# V. RAIL TRAFFIC FORECAST

## Mode Splits – Rail vs. Truck

Over a time horizon as long as 20 years, a number of factors can, and are likely to, intervene to change the competitive positions of rail versus truck transportation. The current distribution of trade traffic (TEUs, coal, autos, dry bulk, liquid bulk) is 50% by rail and 50% by truck. As the logistics world evolves over the next 20 years, technology, cost, regulation and other factors will impact the split between rail and trucks. Among these factors are:

- The magnitude of infrastructure expansion and improvements on rail corridors, in particular, the Alameda Corridor, the Orange County Gateway, and the Alameda Corridor East.
- Increased speed of trains (grade crossing improvements and technology), longer trains, and more efficient staging platforms.
- Trucks will be disadvantaged by issues of parking, pavement deterioration, traffic near residential communities, and freeway congestion. A one-time cost will be incurred in order to comply with new Federal air pollution standards (sulfur-free diesel fuel and catalytic converters).
- A positive factor for trucks includes greater demand by manufacturers for "just-in-time" inventory and more efficient supply-chain logistics as well as intelligent transportation systems that can help in hauling empty containers.

No change in the historic 50/50 split between trains and trucks is assumed over the 20-year time horizon of this report.

## Updating Forecasts of Rail Usage

Based on the update of port traffic activity and the share likely to move via rail, it is possible to update and make consistent prior forecasts made for BNSF and UPRR usage and their impacts.

Step 1: As established earlier, the following growth factors were developed for Port-related traffic over the next 20 years: 187% for the dollar value of imports and exports; 175% for international containers; and 165% for cargo traffic measure in metric revenue tons.

Step 2: The growth factor (175%) for international containers was applied as the most representative of these three measures. This is further refined to reflect a 90/10 split between Port-related (90%) and non-Port-related traffic (10%), based on estimates from SCRRA.

Step 3: A *weighted average* is derived as follows:

| | | | | | |
|---|---|---|---|---|---|
| International | 175% | x | .90 | = | 157.5 |
| Domestic (Employment) | 44.1% | x | .10 | = | 4.4 |
| | | | | | 161.9 |

Based on this methodology, the forecast of Freight Trains in 2020 is as follows:

| | | |
|---|---|---|
| 2000 current daily average on both corridors | = | 97 |
| 2020 Forecast: 97 increased by 161.9% | = | 254* |

*Increased investment in rail capacity will be needed to accommodate this forecast of train volume.

**Updating BNSF and UPRR Usage Forecasts**

The overall train forecasts for the study region need to be distributed between the BNSF and UPRR, the two main rail carriers serving Southern California, which would affect relative usage by 2020.

The BNSF line moves east and south from Redondo Junction, east of downtown Los Angeles. The route is closest to the Gateway Cities, and intersects with the I-710 and I-605 before traversing Orange County and Riverside County.

The UPRR line parallels two major east-west freeways, the I-10 and SR-60, and intersects with the I-15 in San Bernardino County.

Current 2000 Usage of Rail Lines[1]:

| | Freight | Passenger [2] | Total |
|---|---|---|---|
| BNSF | 42 [3] | 17 | 59 |
| UPRR | 55 [4] | 12 | 67 |
| | 97 | 29 | 126 |

Projected 2020 Usage of Rail Lines

| | | | |
|---|---|---|---|
| BNSF | 110 [5] | 40 | 150 |
| UPRR | 144 [5] | 24 [6] | 168 |
| | 254 | 64 | 318 |

*(1) The above figures represent a comparison of 90% of the total freight train traffic. The remaining 10% moves on the UP line north, not represented here.*
*(2) Excludes Los Angeles and Fullerton passenger trains destined to and coming from San Diego/Orange County South*
*(3) Source: OCG Study*
*(4) Source: SGVCOG Study*
*(5) Reflects most likely scenario, based on projected cargo traffic levels and distribution percentages among corridors.*
*(6) Any increase in passenger train volumes over current service levels would require significant public agency involvement and funding for UP infrastructure.*

## VI. UPDATED GRADE CROSSING IMPACTS

"Daily Vehicle Hours of Delay" was chosen as the comparative parameter between the studies reviewed in this report. However, because the various studies were conducted within a five year window, the 2020 train volume forecasts differ throughout the studies. In general the studies conducted earlier forecasted a lower volume of trains in 2020, whereas the more recent studies utilized updated information and forecasted higher train volumes. To account for this difference, and to utilize the latest train volume forecast information (presented in the previous section), an economic refinement factor (ERF) was developed to update the 2020 vehicle-hours of delay forecast. This update is based on the projected train volume forecast described in the previous section. The ERF is a multiplier that adjusts the train volume referenced from the studies included in this report for the year 2020, based on the updated train volume forecast. The ERF is obtained using the following formula:

$$ERF = (F_P + EF_P)/(F_R + EF_R)$$

Where:

$F_P$ = Number of 2020 Freight Trains in the updated forecast.
$EF_P$ = Number of 2020 Equivalent Freight Trains in the updated forecast . (i.e. passenger trains, where 5 passenger trains = 1 Equivalent Freight Train)
$F_R$ = Number of 2020 Freight Trains reported in the initial studies
$EF_R$ = Number of 2020 Equivalent Freight Trains reported in the initial studies

The ERF is subsequently multiplied by the initial forecasted (2020) vehicle hours of delay reported in the studies referenced in this report, resulting in an updated value for daily vehicle hours of delay for the four counties analyzed. The ERF has been utilized to update the forecasted train volume values in order to provide a consistent value for vehicle hours of delay among all of the studies referenced in the report. The original values for projected delay, and other factors included in the original studies can be found in Appendix A of this report. Appendix A also lists the differences in the previous studies relating to the delay forecast.

The crossing gate lowering time and crossing gate raise time is uniform among the calculations for ERF, with the delta value reflecting the difference between the actual gate down time for a typical 5 car (600 ft) passenger train versus gate down time for a typical freight train (8,000 ft). This allows the ERF to incorporate an Equivalent Freight Train value that is equal to five passenger trains.

The above formula produced individual multipliers for the data from the respective local studies which were applied on a per study basis to achieve normalization of existing data. This was done to account for the update in train forecasts. These changes are reflected in Table 12, which applies the multipliers to the total daily vehicle hours of delay for each crossing. The specific ERF values for each alignment are as follows:

Los Angeles County
- UP Alhambra – 1.84
- UP Los Angeles – 1.83
- BNSF San Bernardino – 1.08

San Bernardino County
- UP Alhambra – 1.40
- UP Los Angeles – 1.24
- BNSF San Bernardino – 1.65
- BNSF Cajon – 2.28
- BNSF Cutoff – 1.27
- UP Yuma – 1.50

Orange County
- BNSF San Bernardino (OCTA) – 2.09
- BNSF San Bernardino (Placentia) – 1.01

Riverside County
- BNSF San Bernardino – 1.56
- UP Los Angeles – 1.14
- BNSF & UP Riverside – 1.39
- BNSF & UP San Bernardino – 1.47
- UP Yuma – 1.57

**Grade Separation Warrants, Average Daily Traffic (ADT), and Vehicle Delay**

Grade Separation Warrants. Through the six independent studies referenced in this report, grade separations are recommended at a significant number of rail crossings located along the Alameda Corridor-East Trade Corridor study area, which extends from the Los Angeles and Long Beach ports to the Cajon Pass in San Bernardino County. These recommendations were based on warrants created by four different impacts that occur at grade crossings: 1) delay to motor vehicles, 2) increased vehicles emissions, 3) grade crossing accidents, and 4) noise impacts (specifically train whistles).

A number of formulas have been developed, including the California Public Utilities Commission's equations, for arriving at a warrant for grade separation. Although many factors may be considered in such formulas, including community value considerations, the biggest weight in such formulas is given to motor vehicle delay.

Impacts created by motor vehicle delay, and its resulting emissions, at grade crossings are dependent upon the volumes of traffic, both rail and vehicle, occurring at the crossing and traffic forecasts developed for at-grade crossings along the rail lines for horizon years. Grade crossing accident impacts are also dependent upon the levels of traffic at grade crossings along the main lanes

Grade crossing delay analysis identifies the level of vehicle delay that occurs at each of the grade crossings in the study area. Because this measure considers delay as well as vehicles, it is measured in terms of vehicle-hours of delay. The measure of daily vehicle

hours of delay is a very important quantity since it characterizes the total delay impact of crossing gate activity.

By definition, one vehicle hour of delay is generated if one automobile is delayed by one hour. One vehicle hour of delay can also be expressed as delaying 60 vehicles by one minute.

The vehicle hours of delay have been identified on a daily basis for each of the crossings in the study area. These calculations were conducted by various agencies throughout the past six years and are included in the Appendix A. The updated values utilized for comparison have been normalized through the use of the ERF, and are included in Table 12.

## Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **San Gabriel Valley Council of Governments** | | | | | | | |
| Arden Dr. | El Monte | Alhambra (UP) | 1 | 54 | 13 | 1.84 | 23 |
| Baldwin Ave. | El Monte | Alhambra (UP) | 2 | 54 | 40 | 1.84 | 73 |
| Cogswell Rd. | El Monte | Alhambra (UP) | 3 | 99 | 12 | 1.84 | 21 |
| Cypress Ave. | El Monte | Alhambra (UP) | 4 | 99 | 8 | 1.84 | 15 |
| Ramona Blvd. | El Monte | Alhambra (UP) | 5 | 99 | 29 | 1.84 | 53 |
| Temple City Blvd | El Monte | Alhambra (UP) | 6 | 54 | 20 | 1.84 | 38 |
| Tyler St. | El Monte | Alhambra (UP) | 7 | 99 | 9 | 1.84 | 17 |
| 7th Ave. | Industry | Los Angeles (UP) | 8 | 35 | 42 | 1.83 | 76 |
| Bixby Dr. | Industry | Los Angeles (UP) | 9 | 35 | 2 | 1.83 | 3 |
| Brea Canyon Rd. | Industry | Alhambra (UP) | 10 | 61 | 25 | 1.84 | 47 |
| Brea Canyon Rd. | Industry | Los Angeles (UP) | 11 | 35 | 18 | 1.83 | 33 |
| California Ave. | Industry | Alhambra (UP) | 12 | 57 | 18 | 1.84 | 32 |
| Fairway Dr. | Industry | Alhambra (UP) | 13 | 61 | 50 | 1.84 | 91 |
| Fairway Dr. | Industry | Los Angeles (UP) | 14 | 35 | 54 | 1.83 | 99 |
| Fullerton Rd. | Industry | Alhambra (UP) | 15 | 61 | 34 | 1.84 | 63 |
| Fullerton Rd. | Industry | Los Angeles (UP) | 16 | 35 | 22 | 1.83 | 40 |
| Lemon Ave. | Industry | Alhambra (UP) | 17 | 61 | 37 | 1.84 | 68 |
| Lemon Ave. | Industry | Los Angeles (UP) | 18 | 35 | 13 | 1.83 | 24 |
| Mission Mill Rd. | Industry | Los Angeles (UP) | 19 | 34 | 0 | 1.83 | 1 |
| Nogales Ave. | Industry | Alhambra (UP) | 20 | 61 | 89 | 1.84 | 164 |
| Nogales Ave. | Industry | Los Angeles (UP) | 21 | 35 | 42 | 1.83 | 76 |
| Orange Ave. | Industry | Alhambra (UP) | 22 | 57 | 12 | 1.84 | 23 |
| Puente Ave. | Industry | Alhambra (UP) | 23 | 57 | 50 | 1.84 | 93 |
| Rose Hills Rd. | Industry | Los Angeles (UP) | 24 | 34 | 10 | 1.83 | 18 |
| Stimson Ave. | Industry | Los Angeles (UP) | 25 | 35 | 12 | 1.83 | 22 |
| Sunset Ave. | Industry | Alhambra (UP) | 26 | 57 | 54 | 1.84 | 99 |
| Temple Ave. | Industry | Alhambra (UP) | 27 | 99 | 45 | 1.84 | 83 |
| Turnbull Canyon | Industry | Los Angeles (UP) | 28 | 35 | 8 | 1.83 | 15 |
| Vineland Ave. | Industry | Alhambra (UP) | 29 | 57 | 13 | 1.84 | 24 |
| Workman Mill Rd. | Industry | Los Angeles (UP) | 30 | 34 | 6 | 1.83 | 11 |
| Boca Ave. | Los Angeles | Alhambra (UP) | 31 | 54 | 21 | 1.84 | 39 |
| San Pablo St. | Los Angeles | Alhambra (UP) | 32 | 54 | 10 | 1.84 | 18 |
| Valley Blvd. | Los Angeles | Alhambra (UP) | 33 | 54 | 91 | 1.84 | 167 |
| Vineburn Ave. | Los Angeles | Alhambra (UP) | 34 | 54 | 3 | 1.84 | 6 |
| Montebello Blvd. | Montebello | Los Angeles (UP) | 35 | 35 | 24 | 1.83 | 44 |
| S. Greenwood Ave | Montebello | Los Angeles (UP) | 36 | 35 | 4 | 1.83 | 7 |
| S. Maple Ave. | Montebello | Los Angeles (UP) | 37 | 35 | 4 | 1.83 | 7 |
| S. Vail Ave. | Montebello | Los Angeles (UP) | 38 | 35 | 8 | 1.83 | 15 |
| Durfee Ave. | Pico Rivera | Los Angeles (UP) | 39 | 35 | 11 | 1.83 | 20 |
| *East End Ave.** | *Pomona* | *L.A. - Alhambra (UP)* | *40* | *109* | *48* | *1.84* | 88 |
| *Hamilton Blvd.** | *Pomona* | *L.A. - Alhambra (UP)* | *41* | *97* | *22* | *1.84* | 40 |
| *Main St.** | *Pomona* | *L.A. - Alhambra (UP)* | *42* | *99* | *4* | *1.84* | 7 |
| *Palomares St.** | *Pomona* | *L.A. - Alhambra (UP)* | *43* | *99* | *12* | *1.84* | 22 |
| *Park Ave.** | *Pomona* | *L.A. - Alhambra (UP)* | *44* | *97* | *22* | *1.84* | 40 |
| Pomona Blvd. | Pomona | Alhambra (UP) | 45 | 61 | 15 | 1.84 | 28 |
| *Reservoir St.** | *Pomona* | *L.A. - Alhambra (UP)* | *46* | *109* | *31* | *1.84* | 57 |
| *San Antonio Ave.** | *Pomona* | *L.A. - Alhambra (UP)* | *47* | *109* | *24* | *1.84* | *44* |

## Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **San Gabriel Valley Council of Governments** | | | | | | | |
| Temple Ave. | Pomona | Alhambra (UP) | 48 | 61 | 59 | 1.84 | 108 |
| Walnut Grove Ave | Rosemead | Alhambra (UP) | 49 | 54 | 15 | 1.84 | 27 |
| Del Mar Ave. | San Gabriel | Alhambra (UP) | 50 | 54 | 44 | 1.84 | 81 |
| Mission Dr. | San Gabriel | Alhambra (UP) | 51 | 54 | 49 | 1.84 | 89 |
| Ramona St. | San Gabriel | Alhambra (UP) | 52 | 54 | 92 | 1.84 | 170 |
| San Gabriel Blvd | San Gabriel | Alhambra (UP) | 53 | 54 | 64 | 1.84 | 117 |
| Encinita Ave. | Temple City | Alhambra (UP) | 54 | 54 | 10 | 1.84 | 18 |
| Lower Azusa Ave. | Temple City | Alhambra (UP) | 55 | 54 | 24 | 1.84 | 44 |

San Gabriel Valley Council of Governments – Grade Crossing Study

- Existing (2000) conditions refers to 1994.
- Train speed documented in report is allowable train speed based on track speed. Actual train speed may be less.
- Existing and future train data obtained from SCAG Regional Railroad Consolidation Study.
- ADT forecast uses SCAG model.

* At some of the cross streets, more than one rail line is present. These crossings are italicized and the vehicle delay at the crossing on both lines were combined when determining total vehicle delay at the crossing.

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **Gateway Cities Council of Governments** | | | | | | | |
| Passons Blvd. | Pico Rivera | San Bernardino (BNSF) | 1 | 188 | 28* | 1.08 | 30* |
| Norwalk Blvd. | Santa Fe Springs | San Bernardino (BNSF) | 2 | 188 | 37 | 1.08 | 40 |
| **Gateway Cities Council of Governments - Supplemental Grade Crossing Study** | | | | | | | |
| Valley View Ave. | Santa Fe Springs | San Bernardino (BNSF) | 1 | 188 | 72 | 1.08 | 78 |
| Rosecrans Ave. | Santa Fe Springs | San Bernardino (BNSF) | 2 | 188 | 46 | 1.08 | 50 |

Gateway Cities Council of Governments - Grade Crossing Study

- Existing (2000) conditions refers to 1999.
- Train speed documented in report is allowable train speed based on track speed. Actual train speed may be less.
- ADT forecast uses SCAG model.
- Existing and future train data obtained from SCAG Regional Railroad Consolidation Study, and passenger train timetables.

* Vehicle Hours of Delay on Passons Boulevard grade crossing may be greater due to queuing on Slauson Ave (immediately adjacent to the crossing).

## Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **San Bernardino Associated Governments** | | | | | | | |
| E St. | Colton | San Bernardino (BNSF) | 1 | 89 | 0 | 1.65 | 0 |
| H St. | Colton | San Bernardino (BNSF) | 2 | 89 | 0 | 1.65 | 0 |
| Laurel St. | Colton | San Bernardino (BNSF) | 3 | 89 | 128 | 1.65 | 211 |
| Olive St. | Colton | San Bernardino (BNSF) | 4 | 89 | 70 | 1.65 | 116 |
| Valley Blvd. | Colton | San Bernardino (BNSF) | 5 | 89 | 83 | 1.65 | 137 |
| Main St | Grand Terrace/Riv. Co. | San Bernardino (BNSF) | 6 | 89 | 53 | 1.65 | 87 |
| Beaumont Ave. | Loma Linda | Yuma (UP) | 7 | 68 | 16 | 1.50 | 25 |
| Whittier Ave. | Loma Linda | Yuma (UP) | 8 | 68 | 10 | 1.50 | 15 |
| *Monte Vista Ave.** | *Montclair* | *L.A. - Alhambra (UP)* | 9 | *135* | *123* | *1.32* | *162* |
| *Ramona Ave.** | *Montclair* | *L.A. - Alhambra (UP)* | 10 | *135* | *251* | *1.32* | *331* |
| Archibald Ave. | Ontario | Los Angeles (UP) | 11 | 67 | 42 | 1.24 | 52 |
| *Bon View Ave.** | *Ontario* | *L.A. - Alhambra (UP)* | *12* | *135* | *32* | *1.32* | *42* |
| *Campus Ave.** | *Ontario* | *L.A. - Alhambra (UP)* | 13 | *135* | *90* | *1.32* | *119* |
| Grove Ave. | Ontario | Los Angeles (UP) | 14 | 67 | 265 | 1.24 | 329 |
| Milliken Ave. | Ontario | Alhambra (UP) | 15 | 68 | 315 | 1.40 | 441 |
| Milliken Ave. | Ontario | Los Angeles (UP) | 16 | 67 | 80 | 1.24 | 99 |
| *San Antonio Ave.** | *Ontario* | *L.A. - Alhambra (UP)* | 17 | *135* | *43* | *1.32* | *57* |
| *Sultana Ave.** | *Ontario* | *L.A. - Alhambra (UP)* | *18* | *135* | *24* | *1.32* | *32* |
| *Vine Ave.** | *Ontario* | *L.A. - Alhambra (UP)* | *19* | *135* | *35* | *1.32* | *46* |
| Vineyard Ave. | Ontario | Alhambra (UP) | 20 | 68 | 114 | 1.40 | 160 |
| Vineyard Ave. | Ontario | Los Angeles (UP) | 21 | 67 | 14 | 1.24 | 18 |
| Alessandro Rd. | Redlands | Yuma (UP) | *22* | 68 | 31 | 1.50 | 46 |
| San Timoteo Rd. | Redlands | Yuma (UP) | *23* | 68 | 52 | 1.50 | 78 |
| Hunts Ln. | San Bern./Colton | Yuma (UP) | *24* | 68 | 59 | 1.50 | 89 |
| Palm Ave. | San Bernardino | Cajon (BNSF) | *25* | 70 | 249 | 2.28 | 569 |
| Rialto Ave. | San Bernardino | San Bernardino (BNSF) | *26* | 89 | 293 | 1.65 | 483 |
| State/University | San Bernardino | Cajon (BNSF) | *27* | 70 | 248 | 2.28 | 565 |
| Glen Helen Pkwy. | San Bernardino Co. | Cajon (BNSF) | *28* | 70 | 126 | 2.28 | 287 |
| Hinkley (1) | San Bernardino Co. | Cajon (BNSF) | *29* | 70 | 38 | 2.28 | 87 |
| Indian Trail (1) | San Bernardino Co. | Cajon (BNSF) | *30* | 70 | 5 | 2.28 | 12 |
| Johnson Rd. | San Bernardino Co. | Cutoff (UP) | *31* | 13 | 2 | 1.27 | 2 |
| Lenwood (1) | San Bernardino Co. | Cajon (BNSF) | *32* | 70 | 286 | 2.28 | 652 |
| Phelan | San Bernardino Co. | Cutoff (UP) | 33 | 13 | 31 | 1.27 | 40 |
| Ranchero Rd. | San Bernardino Co. | Cutoff (UP) | 34 | 13 | 93 | 1.27 | 118 |
| Vista (1) | San Bernardino Co. | Cajon (BNSF) | 35 | 70 | 133 | 2.28 | 304 |

SANBAG – Inland Goods Movement Corridor Study: Rail Crossing Improvement Plan

- Existing (2000) conditions refers to 1999.
- Existing and Future train data obtained from SCAG Regional Railroad Consolidation Study, passenger train timetables, and discussion with railroads.
- SCAG RIVSAN CTP model used for roadway traffic forecast.

* At some of the cross streets, more than one rail line is present. These crossings are italicized and the vehicle delay at the crossing on both lines were combined when determining total vehicle delay at the crossing.

(1) ADT growth from 1999 to 2020 was estimated.

## Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay | Adjusted Depressed Segment 2020 Delay* |
|---|---|---|---|---|---|---|---|---|
| **City of Placentia** | | | | | | | | |
| Bradford | Placentia | San Bernardino (BNSF) | 1 | 135 | 28 | 1.01 | 28 | |
| Jefferson | Placentia | San Bernardino (BNSF) | 2 | 135 | 36 | 1.01 | 37 | 99.1 |
| Kellogg Dr | Placentia | San Bernardino (BNSF) | 3 | 135 | 36 | 1.01 | 37 | 99.1 |
| Kraemer | Placentia | San Bernardino (BNSF) | 4 | 135 | 152 | 1.01 | 153 | 99.1 |
| Lakeview | Placentia | San Bernardino (BNSF) | 5 | 135 | 172 | 1.01 | 174 | 99.1 |
| Melrose | Placentia | San Bernardino (BNSF) | 6 | 135 | 33 | 1.01 | 33 | |
| Orangethorpe | Placentia | San Bernardino (BNSF) | 7 | 135 | 119 | 1.01 | 120 | 99.1 |
| Richfield | Placentia | San Bernardino (BNSF) | 8 | 135 | 48 | 1.01 | 49 | 99.1 |
| Rose/Tustin | Placentia | San Bernardino (BNSF) | 9 | 135 | 184 | 1.01 | 186 | 99.1 |
| Placentia | Placentia | San Bernardino (BNSF) | 10 | 135 | 44 | 1.01 | 44 | |
| Van Buren | Placentia | San Bernardino (BNSF) | 11 | 135 | 38 | 1.01 | 38 | 99.1 |

City of Placentia – Traffic Delay Analysis for the Orangethorpe County Gateway Project

- Existing (2000) conditions refers to 1995.
- Delay values were updated following an evaluation of the original data.
- Roadway traffic forecast was obtained using 1% per year growth, as identified by City Traffic Engineer.
- Existing train counts based on field observations during AM and PM peak periods in 1998. The report uses 170% increase in future (2020) train volume based on LAEDC forecast.

* Adjusted Depressed Segment 2020 Delay is an average of the Adjusted 2020 Delay for the 8 crossings involved in the depressed segment

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **Orange County Transportation Authority** | | | | | | | |
| Imperial Highway | Anaheim | San Bernardino (BNSF) | 1 | 135* | 254* | 1.01* | 279* |
| Acacia Ave | Fullerton | San Bernardino (BNSF) | 2 | 135* | 49* | 1.01* | 50* |
| Raymond Ave | Fullerton | San Bernardino (BNSF) | 3 | 135* | 150* | 1.01* | 152* |
| State College Blvd | Fullerton | San Bernardino (BNSF) | 4 | 135* | 162* | 1.01* | 164* |

OCTA – Orangthorpe Corridor Grade Crossing Study

- Existing (2000) conditions refers to 1995.
- Existing traffic data collected from cities. Forecast ADT methodology not referenced in the report.
- Existing and future train data obtained from SCAG Regional Railroad Consolidation Study and discussion with railroads.

* Total Daily Delay 2020, is based on values extrapolated from a comparison to the City of Placentia Study, not on standard delay equation. As such, the number of trains and the ERF also represents the City of Placentia values.

## Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **Riverside County Transportation Commission** | | | | | | | |
| 22nd St | Banning | Yuma (UP) | 1 | 68 | 36 | 1.57 | 57 |
| Hargrave St | Banning | Yuma (UP) | 2 | 68 | 99 | 1.57 | 156 |
| San Gorginio Ave | Banning | Yuma (UP) | 3 | 68 | 19 | 1.57 | 30 |
| Sunset Ave | Banning | Yuma (UP) | 4 | 68 | 30 | 1.57 | 46 |
| California Ave | Beaumont | Yuma (UP) | 5 | 68 | 127 | 1.57 | 200 |
| Pennsylvania Ave | Beaumont | Yuma (UP) | 6 | 68 | 92 | 1.57 | 145 |
| Viele Ave | Beaumont | Yuma (UP) | 7 | 68 | 4 | 1.57 | 5 |
| San Tim. Can. Rd | Calimesa | Yuma (UP) | 8 | 68 | 49 | 1.57 | 76 |
| Avenue 50 | Coachella | Yuma (UP) | 9 | 68 | 59 | 1.57 | 93 |
| Avenue 52 | Coachella | Yuma (UP) | 10 | 68 | 40 | 1.57 | 63 |
| Avenue 54 | Coachella | Yuma (UP) | 11 | 68 | 2 | 1.57 | 3 |
| Auto Center Drive | Corona | San Bernardino (BNSF) | 12 | 98 | 88 | 1.56 | 137 |
| Cota St | Corona | San Bernardino (BNSF) | 13 | 98 | 39 | 1.56 | 61 |
| Joy St | Corona | San Bernardino (BNSF) | 14 | 98 | 31 | 1.56 | 49 |
| McKinley St | Corona | San Bernardino (BNSF) | 15 | 98 | 190 | 1.56 | 296 |
| Radio Rd. | Corona | San Bernardino (BNSF) | 16 | 98 | 2 | 1.56 | 3 |
| Railroad St | Corona | San Bernardino (BNSF) | 17 | 98 | 69 | 1.56 | 107 |
| Sheridan St | Corona | San Bernardino (BNSF) | 18 | 98 | 21 | 1.56 | 32 |
| Smith Ave | Corona | San Bernardino (BNSF) | 19 | 98 | 50 | 1.56 | 78 |
| Ave 48/Dillon Rd | Indio/Coachella | Yuma (UP) | 20 | 68 | 193 | 1.57 | 303 |
| 3rd St | Riverside | San Bernardino (BNSF & UP) | 21 | 139 | 106 | 1.47 | 155 |
| 7th St | Riverside | San Bernardino (BNSF & UP) | 22 | 139 | 71 | 1.47 | 104 |
| Adams St | Riverside | San Bernardino (BNSF) | 23 | 98 | 53 | 1.56 | 83 |
| Brockton Ave | Riverside | Los Angeles (UP) | 24 | 71 | 27 | 1.14 | 31 |
| Buchanan St | Riverside | San Bernardino (BNSF) | 25 | 98 | 30 | 1.56 | 47 |
| Chicago Ave | Riverside | San Bernardino (BNSF & UP) | 26 | 139 | 97 | 1.47 | 142 |
| Columbia Ave | Riverside | San Bernardino (BNSF & UP) | 27 | 139 | 68 | 1.47 | 101 |
| Cridge St | Riverside | Riverside (BNSF & UP) | 28 | 169 | 51 | 1.39 | 71 |
| Gibson St | Riverside | San Bernardino (BNSF) | 29 | 98 | 5 | 1.56 | 8 |
| Harrison St | Riverside | San Bernardino (BNSF) | 30 | 98 | 38 | 1.56 | 59 |
| Iowa Ave | Riverside | San Bernardino (BNSF & UP) | 31 | 139 | 110 | 1.47 | 161 |
| Jackson St | Riverside | San Bernardino (BNSF) | 32 | 98 | 32 | 1.56 | 49 |
| Jane St | Riverside | San Bernardino (BNSF) | 33 | 98 | 15 | 1.56 | 24 |
| Jefferson St | Riverside | San Bernardino (BNSF) | 34 | 98 | 15 | 1.56 | 24 |
| Kansas Ave | Riverside | San Bernardino (BNSF & UP) | 35 | 139 | 44 | 1.47 | 65 |
| Madison St | Riverside | San Bernardino (BNSF) | 36 | 98 | 28 | 1.56 | 43 |
| Magnolia Ave | Riverside | Los Angeles (UP) | 37 | 71 | 55 | 1.14 | 62 |
| Mary St | Riverside | San Bernardino (BNSF) | 38 | 98 | 87 | 1.56 | 136 |
| Mountain View Ave | Riverside | Los Angeles (UP) | 39 | 71 | 5 | 1.14 | 5 |
| Palm Ave | Riverside | Los Angeles (UP) | 40 | 71 | 14 | 1.14 | 16 |
| Palmyrita Ave | Riverside | San Bernardino (BNSF & UP) | 41 | 139 | 16 | 1.47 | 24 |
| Panorama Rd | Riverside | Los Angeles (UP) | 42 | 71 | 12 | 1.14 | 13 |
| Pierce St | Riverside | San Bernardino (BNSF) | 43 | 98 | 28 | 1.56 | 43 |
| Riverside Ave | Riverside | Los Angeles (UP) | 44 | 71 | 40 | 1.14 | 46 |
| Spruce St | Riverside | San Bernardino (BNSF & UP) | 45 | 139 | 82 | 1.47 | 120 |
| Streeter Ave | Riverside | Los Angeles (UP) | 46 | 71 | 35 | 1.14 | 40 |
| Tyler St | Riverside | San Bernardino (BNSF) | 47 | 98 | 59 | 1.56 | 93 |
| Washington St | Riverside | San Bernardino (BNSF) | 48 | 98 | 30 | 1.56 | 47 |

**Table 12: Adjusted 2020 Total Daily Vehicle Hours of Delay**

(Major investment in infrastructure is required to achieve the forcasted Total Daily trains for 2020.)

| Cross-Streets | City | Rail Line | Crossing No. | Daily Trains (Frt. & Pass.) 2020 | Total Daily Delay 2020 | Economic Refinement Factor | Adjusted 2020 Delay |
|---|---|---|---|---|---|---|---|
| **Riverside County Transportation Commission** | | | | | | | |
| Airport Road | Riverside Co. | Yuma (UP) | 49 | 68 | 20 | 1.57 | 32 |
| Apache Trail | Riverside Co. | Yuma (UP) | 50 | 68 | 5 | 1.57 | 8 |
| Avenue 66 | Riverside Co. | Yuma (UP) | 51 | 68 | 8 | 1.57 | 12 |
| Belgrave Ave | Riverside Co. | Los Angeles (UP) | 52 | 71 | 15 | 1.14 | 17 |
| Broadway | Riverside Co. | Yuma (UP) | 53 | 68 | 12 | 1.57 | 19 |
| Center St | Riverside Co. | San Bernardino (BNSF & UP) | 54 | 139 | 43 | 1.47 | 64 |
| Clay St | Riverside Co. | Los Angeles (UP) | 55 | 71 | 32 | 1.14 | 37 |
| Jurupa Rd | Riverside Co. | Los Angeles (UP) | 56 | 71 | 22 | 1.14 | 26 |
| Magnolia Ave | Riverside Co. | San Bernardino (BNSF) | 57 | 98 | 90 | 1.56 | 140 |
| Main St | Riverside Co. | San Bernardino (BNSF & UP) | 58 | 139 | 10 | 1.47 | 15 |
| Rutile St | Riverside Co. | Los Angeles (UP) | 59 | 71 | 8 | 1.14 | 10 |

Riverside County Transportation Commission – Western Riverside County Grade Crossing Analysis

- Existing (2000) conditions refers to 1999.
- SCAG RIVSAN CTP model used for roadway traffic forecast.
- Existing and future train data obtained from SCAG Regional Railroad Consolidation Study, and passenger train timetables.

## VII. TRADE CORRIDOR IMPROVEMENT PLAN

In consideration of the magnitude of grade crossing improvements needed to address the aforementioned impacts of future growth in rail traffic, the four Trade Corridor lead agencies have developed a program for addressing the needs for grade crossing improvement. The program was based on the updated data on projected congestion levels (Table 12) as well as any special considerations within each jurisdiction which affected local priorities, such as unusual peaking characteristics, geographic distribution of separated crossings or other impacts not fully reflected in the vehicle hours of delay measurement.

Consistent with the emphasis of AB2928, following is a summary of the grade separations being recommended within each jurisdiction. Four counties recommended grade separations that have 20 or more vehicle hours of delay. In some cases, other mitigation measures such as safety improvements or use of Intelligent Transportation Systems (ITS) strategies are also part of the local plan.

**Los Angeles County (BNSF and UPRR)**

**Grade Separations**: On the BNSF and UPRR, 43 grade separations are proposed in the plan, consistent with the adopted Alameda Corridor-East (ACE) Project of the San Gabriel Valley Council of Governments and the priorities of the Gateway Cities Council of Governments (See Table 13).

**Other Mitigations**: The ACE Project has already funded and begun safety improvements for virtually all crossings in its jurisdiction and a pilot ITS project for crossings in the City of Pomona.

**Post Plan**: Fifteen grade crossings will remain even after completion of the program. If rail traffic growth materializes as projected, most of these crossings will warrant separation before 2020.

**San Bernardino County (BNSF and UPRR)**

**Grade Separations**: Within San Bernardino County, the Trade Corridor is composed of six freight rail segments totaling 167 miles of main line track operated by BNSF and UPRR. Along the 167 miles of main line track, 29 crossings are proposed to be grade separated in the Trade Corridor Plan. The project development timeframes reported in the table below, outside of the "baseline" projects identified in Appendix B of this report, are indicative of a project's relative priority and complexity, and are subject to the availability of funds not yet identified nor secured.

**Other Mitigations**: The proposed "Colton Junction" improvement would grade separate the intersection of the BNSF and UPRR tracks in the City of Colton. Nearly all rail-borne freight destined for points outside the Los Angeles Basin must pass the Colton Junction. The proposed rail-to-rail grade separation will be required to provide the rail capacity to serve the freight and passenger train demand forecast in the Trade Corridor Plan. The updated cost estimate of $60 million, provided by BNSF representatives, represents a revision to estimated costs generated in a Project Study Report dated January 1999.

San Bernardino's grade crossing improvement program includes safety improvements to seven at-grade crossings that will not warrant grade separation within the timeframe of the Trade Corridor Plan. The plan also includes widening and improvement of four existing grade separations that will be inadequate to handle future vehicular travel demand at important commercial and industrial activity centers.

**Post Plan**: If rail traffic materializes as projected, many of the crossings that will not warrant grade separation within the timeframe of this plan may warrant separation in a future program. The project list does not include the improvement of existing or proposed crossings to support expansion of intermodal operations and train consist-yards that will be required to handle the future rail freight traffic projected in the Trade Corridor Plan. Subject to policy determination, public participation in the construction of these facilities may be required to optimize the goods movement mode split between truck and rail so as to reduce projected demand on the regional highway system.

**Orange County (BNSF)**

**Grade Separations**: Based upon the studies of OCTA and the City of Placentia, 12 crossings are recommended for improvement. 11 of these crossings are in the cities of Placentia and Anaheim on the BNSF line. One street will be closed. A 5-mile trench (covering 8 crossings) to lower the tracks between Bradford Avenue and Imperial Highway will be constructed (See Table 13).

**Other Mitigations**: Two grade separation projects were funded locally.

**Post Plan**: If rail traffic growth exceeds projected delay, the remaining grade crossings will be re-evaluated to determine the need for future grade separations.

**Riverside County (BNSF and UPRR)**

Within Riverside County, The ACE Trade Corridor is composed of the BNSF and UPRR freight corridor serving both Metrolink passenger and freight goods movement. Safety improvements would be made at 11 crossings; one street would be closed; and 47 grade separation projects would be implemented totaling 59 projects. The proposed plan was approved by the RCTC (See Table 13).

**Other Mitigations**: The RCTC proposes safety upgrades/spot widening for 11 additional grade crossings and one crossing for closure.

**Post Plan**: If rail traffic growth exceeds projected delay and additional congestion results, the remaining 11 grade crossings will be re-evaluated to determine the need for future grade separations.

**Program Summary**

Table 13 identifies the proposed projects in the Trade Corridor Plan. The cost estimates included for each project are, for the most part, based on concept level plans without specific designs, detailed right of way requirements, etc., though provisions have been made for all right of way and "soft costs" as well as construction. Further, except for the San Gabriel Valley projects, costs are in year 2000 (i.e. unescalated) dollars, since schedules do not exist for all projects.

Constant dollars were used in developing the $2.509 billion unfunded cost estimate for the ACE Trade Corridor Improvement Program (except for a portion of the SGVCOG program). Adding an allowance for a 2.5% average annual inflation rate to the approximate mid point of the overall program (2010) would increase the cost by $624 million.

## Table 13: AB 2928 ACE CORRIDOR PLAN

### Los Angeles County Improvement Plan

| Project Description | Total Project Cost | Schedule | | | |
|---|---|---|---|---|---|
| | | Environmental | Design | Right-of-Way | Construction |
| Baldwin Avenue/SP – El Monte | $29.2M | Summer 2001 | Spring 2002 | Summer 2002 | Fall 2004 |
| East End Avenue/SP&UP – Pomona | $30.8M | Spring 2000 | Fall 2001 | Fall 2001 | Winter 2004 |
| Fairway Drive/UP – Industry | $37.6M | Fall 2001 | Spring 2002 | Fall 2002 | Spring 2005 |
| Nogales Street/SP – Industry | $47.6M | Winter 2001 | Fall 2001 | Winter 2002 | Spring 2004 |
| Nogales Street/UP – Industry | TBD | N/A | Summer 2001 | Fall 2001 | Fall 2003 |
| Ramona Blvd./SP – El Monte | $18.8M | Spring 2001 | Winter 2002 | Winter 2002 | Spring 2004 |
| Reservoir Street/SP&UP – Pomona | $30.0M | Winter 2001 | Summer 2002 | Winter 2003 | Fall 2005 |
| Sunset Avenue/SP – Industry | $55.2M | Summer 2001 | Summer 2002 | Summer 2002 | Fall 2004 |
| Temple Avenue/SP – Pomona | $29.4M | Spring 2001 | Spring 2002 | Spring 2002 | Summer 2004 |
| Montebello Blvd./UP – Montebello | $65.6M | Spring 2002 | Spring 2003 | Spring 2003 | Spring 2004 |
| Valley Blvd./SP – Los Angeles | $23.3M | Spring 2002 | Spring 2003 | Spring 2003 | Spring 2004 |
| Brea Canyon Road/UP – Industry | $46.1M | To Be Determined | FY2003 | FY2004 | FY2006 |
| Fairway Dr./SP – Industry | $45.0M | To Be Determined | FY2005 | To Be Determined | FY2008 |
| Puente Avenue/SP – Industry | $49.7M | To Be Determined | FY2004 | To Be Determined | FY2006 |
| Ramona St.-San Gabriel Blvd./SP – San Gabriel | $250.8M | To Be Determined | FY2004 | To Be Determined | FY2008 |
| Rose Hills/UP – Industry | $30.1M | To Be Determined | FY2003 | FY2004 | FY2006 |
| Turnbull Canyon Road/UP - Industry | $37.3M | To Be Determined | FY2003 | FY2004 | FY2006 |
| Passons Blvd./BNSF – Pico Rivera | $29.2M * | 4 Month | 9 Month | 12 Month | 24 Month |
| Rosecrans Ave./BNSF - Santa Fe Spring | $25.64M * | Spring 2002 | Spring 2002 | Spring 2002 | Summer 2004 |
| Valley View Ave./BNSF – Santa Fe Spring | $27.5M * | Spring 2002 | Spring 2002 | Fall 2002 | Fall 2004 |
| Temple Ave./SP - Industry | $16.0M * | FY2012 | FY2013 | FY2014 | FY2016 |
| Lemon Ave./SP - Industry | $15.0M * | FY2012 | FY2013 | FY2014 | FY2016 |

| Project Description | | Total Project Cost | Schedule | | | |
|---|---|---|---|---|---|---|
| | | | Environmental | Design | Right-of-Way | Construction |
| Fullerton Rd./SP - Industry | | $16.0M * | FY2012 | FY2013 | FY2014 | FY2016 |
| Brea Canyon Rd./SP - Industry | | $16.0M * | FY2012 | FY2013 | FY2014 | FY2016 |
| San Antonio Ave./SP&UP - Pomona | | $17.0M * | FY2012 | FY2013 | FY2014 | FY2016 |
| Lower Azusa Rd./SP – Temple City | | $17.0M * | FY2014 | FY2015 | FY2016 | FY2018 |
| Fullerton Rd./UP - Industry | | $18.0M * | FY2014 | FY2015 | FY2016 | FY2018 |
| Hamilton Blvd./SP&UP - Pomona | | $19.0M * | FY2014 | FY2015 | FY2016 | FY2018 |
| Park Ave./SP&UP - Pomona | | $18.0M * | FY2014 | FY2015 | FY2016 | FY2018 |
| Norwalk/BNSF – Santa Fe Springs/Gateway | | $18.0M * | FY2014 | FY2015 | FY2016 | FY2018 |
| Temple City Blvd./SP – El Monte | | $20.0M * | FY2016 | FY2017 | FY2018 | FY2020 |
| California Ave./SP - Industry | | $22.0M * | FY2016 | FY2017 | FY2018 | FY2020 |
| Walnut Grove Ave./SP - Rosemead | | $20.0M * | FY2016 | FY2017 | FY2018 | FY2020 |
| Lemon Ave./UP - Industry | | $21.0M * | FY2016 | FY2017 | FY2018 | FY2020 |
| Vineland Ave./SP – Industry | | $22.0M * | FY2016 | FY2017 | FY2018 | FY2020 |
| Arden Dr./SP – El Monte | | $23.0M * | FY2019 | FY2020 | FY2021 | FY2023 |
| Stimson Ave./UP – Industry | | $24.0M * | FY2019 | FY2020 | FY2021 | FY2023 |
| Palomares St./SP&UP - Pomona | | $25.0M * | FY2019 | FY2020 | FY2021 | FY2023 |
| Cogswell Rd./SP – El Monte | | $26.0M * | FY2019 | FY2020 | FY2021 | FY2023 |
| Durfee Ave./UP – Rico Rivera | | $27.0M * | FY2019 | FY2020 | FY2021 | FY2023 |
| **TOTALS** | | | | | | |
| **LA County Total Projects:** | **40** | **$1.309 Bil** | | | | |

Shade = Funded
* Without inflation

## Table 13: AB 2928 ACE CORRIDOR PLAN

# Orange County Improvement Plan

| | Project Description | | Total Project Cost | Schedule | | | |
|---|---|---|---|---|---|---|---|
| | | | | Environmental | Design | Right of Way | Construction |
| 1 | Melrose Street Undercrossing / Bradford Avenue Closure | | $14.0M | March 2001 | Sept 2001** | March 2002 | April 2003 |
| 2 | Placentia Avenue Undercrossing | | $23.7M | March 2001 | Nov 2001 | Oct 2002 | Feb 2004 |
| 3 | Advance Flood Control Improvements | | $16.0M | Jan 2002 | May 2002 | N/A | May 2003 |
| 4 | Advance Utility Relocations | | $23.4M | April 2002 | April 2003 | N/A | Sept 2004 |
| 5 | Bypass Track Construction | | $30.0M | April 2003 | Dec 2003 | June 2004 | May 2005 |
| 6 | Trench/Track Construction | | $340M | April 2003 | July 2002 | Dec 2003 | March 2007 |
| 7 | State College Boulevard Undercrossing | | $29.2M | June 2004 | Dec 2004 | May 2005 | June 2007 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTALS | | | | | | | |
| **Total Projects:** | | **7** | **$476.3M** | | | | |

Shade = Funded

*All cost estimates are in year 2000 dollars without inflation

**For all non-funded projects, development timeframes are speculative subject to availability of funds not yet identified nor secured.

## Table 13: AB 2928 ACE CORRIDOR PLAN

### San Bernardino County Improvement Plan

| Project Description | Total Project Cost* | SCHEDULE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Prelim. Design/ Environmental | | Final Design | | Right-of Way | | Construction | |
| | in $ Million | Time Frame | Est. Cost | Time Frame | Est. Cost | Time Frame | Est. Cost | Time Frame | Est. Cost |
| GroveAve./Los Angeles-Ontario | $ 12.0 | FY 97 | 0.18 | FY 99 | 1.50 | FY 00 | 1.56 | FY 02 | 8.76 |
| Widen Grove Ave. G.S./Alhambra - Ontario | $ 2.5 | FY 98 | 0.04 | FY 99 | 0.31 | FY 01 | 0.30 | FY 02 | 1.90 |
| Ramona Ave./Alhambra & L.A.- Montclair | $ 12.0 | FY 99 | 0.05 | FY 00 | 0.90 | FY 02 | 1.60 | FY 02 | 9.50 |
| Rialto Ave./San Bernardino – San Bernardino | $ 16.1 | FY 02 | 0.24 | FY 02 | 2.01 | FY 02 | 2.09 | FY 03 | 11.75 |
| Milliken Ave./Alhambra - Ontario | $ 34.2 | FY 02 | 0.70 | FY 04 | 4.28 | FY 04 | 4.45 | FY 06 | 24.97 |
| State/University/Cajon – San Bernardino | $ 16.8 | FY 02 | 0.25 | FY 03 | 2.10 | FY 03 | 2.18 | FY 04 | 12.26 |
| Monte Vista Ave./Alhambra & L.A. - Montclair | $ 16.8 | FY 02 | 0.25 | FY 03 | 2.10 | FY 03 | 2.18 | FY 05 | 12.26 |
| Laurel St./San Bernardino - Colton | $ 17.1 | FY 02 | 0.26 | FY 03 | 2.14 | FY 04 | 2.22 | FY 05 | 12.48 |
| Hunts Ln./Yuma - San Bern. County | $ 17.2 | FY 03 | 0.26 | FY 04 | 2.15 | FY 05 | 2.24 | FY 06 | 12.56 |
| Vineyard Ave./Alhambra - Ontario | $ 18.6 | FY 03 | 0.28 | FY 04 | 2.33 | FY 05 | 2.42 | FY 06 | 13.58 |
| Archibald Ave./Los Angeles - Ontario | $ 19.5 | FY 03 | 0.29 | FY 04 | 2.44 | FY 05 | 2.54 | FY 06 | 14.24 |
| Lenwood/Cajon - San Bernardino | $ 16.7 | FY 04 | 0.25 | FY 05 | 2.09 | FY 06 | 2.17 | FY 08 | 12.19 |
| Campus Ave./Alhambra & L.A. - Ontario | $ 19.8 | FY 04 | 0.30 | FY 05 | 2.48 | FY 06 | 2.57 | FY 07 | 14.45 |
| Glen Helen Pkwy./Cajon - San Bern. Co. | $ 17.6 | FY 04 | 0.26 | FY 05 | 2.20 | FY 06 | 2.29 | FY 07 | 12.85 |
| Milliken Ave./Los Angeles - Ontario/Riverside Co. | $ 16.1 | FY 05 | 0.24 | FY 06 | 2.01 | FY 07 | 2.09 | FY 08 | 11.75 |
| Palm Ave./Cajon – San Bernardino | $ 16.8 | FY 05 | 0.25 | FY 06 | 2.10 | FY 07 | 2.18 | FY 08 | 12.26 |
| Valley Blvd./San Bernardino - Colton | $ 19.6 | FY 05 | 0.29 | FY 06 | 2.45 | FY 07 | 2.55 | FY 08 | 14.31 |
| Olive St./San Bernardino - Colton | $ 16.1 | FY 06 | 0.24 | FY 07 | 2.01 | FY 07 | 2.09 | FY 08 | 11.75 |
| Vineyard Ave./Los Angeles - Ontario | $ 16.9 | FY 06 | 0.25 | FY 07 | 2.11 | FY 07 | 2.20 | FY 08 | 12.34 |
| Alessandro Rd./Yuma - Redlands | $ 15.8 | FY 06 | 0.24 | FY 07 | 1.98 | FY 07 | 2.05 | FY 09 | 11.53 |

Shade = Funded

*All cost estimates are in year 2000 dollars without inflation

**For all non-funded projects, development timeframes are speculative subject to availability of funds not yet identified nor secured.

## Table 13: AB 2928 ACE CORRIDOR PLAN

### San Bernardino County Improvement Plan

| Project Description | Total Project Cost* in $ Million | SCHEDULE: Prelim. Design/ Environmental Time Frame | Prelim. Design/ Environmental Est. Cost | Final Design Time Frame | Final Design Est. Cost | Right-of Way Time Frame | Right-of Way Est. Cost | Construction Time Frame | Construction Est. Cost |
|---|---|---|---|---|---|---|---|---|---|
| Main St./San Bernardino - Grand Terrace | $ 17.1 | FY 06 | 0.26 | FY 07 | 2.14 | FY 07 | 2.22 | FY 08 | 12.48 |
| Vista/Cajon - San Bern. County | $ 16.1 | FY 07 | 0.24 | FY 07 | 2.01 | FY 08 | 2.09 | FY 09 | 11.75 |
| San Antonio Ave./Alhambra & L.A. - Ontario | $ 19.9 | FY 07 | 0.30 | FY 08 | 2.49 | FY 08 | 2.59 | FY 09 | 14.53 |
| Bon View Ave./Alhambra & L.A. - Alhambra - Ontario | $ 15.8 | FY 07 | 0.24 | FY 08 | 1.98 | FY 08 | 2.05 | FY 09 | 11.53 |
| Ranchero Rd./Cutoff - San Bernardino Co. | $ 15.3 | FY 07 | 0.23 | FY 08 | 1.91 | FY 08 | 1.99 | FY 09 | 11.17 |
| Hinkley/Cajon - San Bernardino Co. | $ 15.3 | FY 08 | 0.23 | FY 09 | 1.91 | FY 09 | 1.99 | FY 10 | 11.17 |
| Beaumont Ave./Yuma - Loma Linda | $ 15.3 | FY 08 | 0.23 | FY 10 | 1.91 | FY 10 | 1.99 | FY 11 | 11.17 |
| Vine Ave./Alhambra & L.A. - Ontario | $ 15.9 | FY 09 | 0.24 | FY 10 | 1.99 | FY 10 | 2.07 | FY 12 | 11.61 |
| Sultana Ave./Alhambra & L.A. - Ontario | $ 15.8 | FY 09 | 0.24 | FY 10 | 1.98 | FY 10 | 2.05 | FY 12 | 11.53 |
| Colton Junction/BNSF & UP | $ 60.0 | FY 08 | 0.90 | FY 09 | 7.50 | FY 09 | 7.80 | FY 10 | 43.80 |
| San Timoteo Rd.(Safety)/Yuma - Redlands | $ 1.2 | FY 03 | 0.02 | FY 03 | 0.15 | FY 03 | 0.16 | FY 03 | 0.88 |
| Phelan(Safety)/Cutoff - San Bernardino County | $ 0.9 | FY 03 | 0.01 | FY 03 | 0.11 | FY 03 | 0.12 | FY 03 | 0.66 |
| Johnson Rd.(Safety)/Cutoff - San Bernardino Co. | $ 0.1 | FY 03 | 0.00 | FY 03 | 0.01 | FY 03 | 0.01 | FY 03 | 0.06 |
| Indian Trail(Safety)/Cajon - San Bernardino Co. | $ 0.1 | FY 03 | 0.00 | FY 03 | 0.01 | FY 03 | 0.01 | FY 03 | 0.06 |
| Whittier Ave.(Safety)/Yuma - Loma Linda | $ 0.2 | FY 03 | 0.00 | FY 03 | 0.03 | FY 03 | 0.03 | FY 03 | 0.15 |
| E St.(Safety)/San Bernardino - Colton | $ 0.1 | FY 03 | 0.00 | FY 03 | 0.02 | FY 03 | 0.02 | FY 03 | 0.09 |
| H. St.(Safety)/San Bernardino - Colton | $ 0.1 | FY 03 | 0.00 | FY 03 | 0.02 | FY 03 | 0.02 | FY 03 | 0.09 |
| Widen Central Ave. G.S./Alhambra & L.A. - Montclair | $ 2.9 | FY 08 | 0.04 | FY 09 | 0.36 | FY 09 | 0.38 | FY 10 | 2.12 |
| Widen Mount Vernon G.S./Alhambra - Colton | $ 3.5 | FY 08 | 0.05 | FY 09 | 0.44 | FY 09 | 0.46 | FY 11 | 2.56 |
| Improve Oro Grande G.S./Cajon - San Bernardino Co. | $ 6.0 | FY 08 | 0.09 | FY 10 | 0.75 | FY 10 | 0.78 | FY 12 | 4.38 |
| **Total:** | $ 559.8 | | | | | | | | |

Shade = Funded

*All cost estimates are in year 2000 dollars without inflation

**For all non-funded projects, development timeframes are speculative subject to availability of funds not yet identified nor secured.

## Table 13: AB 2928 ACE CORRIDOR PLAN

### Riverside County Improvement Plan

| *Project Description* | Total Project Cost | Schedule | | | |
|---|---|---|---|---|---|
| | | Environmental | Design | Right-of-Way | Construction |
| 3rd Street/BNSF & UP – Riverside | $15.9 M | FY 05 | FY 06 | FY 07 | FY 09 |
| Iowa Avenue/BNSF & UP – Riverside | $18.7 M | FY 04 | FY 05 | FY 06 | FY 07 |
| Avenue 48/Dillon Rd/UP – Coachella/Indio | $6.4 M | FY 03 | FY 04 | FY 05 | FY 06 |
| McKinley Street/BNSF – Corona | $17.9 M | FY 06 | FY 07 | FY 08 | FY 09 |
| Magnolia Avenue/BNSF – Riverside County | $15.7 M | FY 04 | FY 05 | FY 06 | FY 08 |
| Avenue 50/UP – Coachella | $7.1 M | FY 03 | FY 04 | FY 05 | FY 06 |
| Chicago Avenue/BNSF & UP – Riverside | $15.9 M | FY 07 | FY 08 | FY 09 | FY 11 |
| Streeter Avenue/UP – Riverside | $15.7 M | FY 04 | FY 05 | FY 06 | FY 08 |
| Spruce Street/BNSF & UP – Riverside | $15.9 M | FY 07 | FY 08 | FY 09 | FY 11 |
| Magnolia Avenue/UP – Riverside | $16.0 M | FY 06 | FY 07 | FY 08 | FY 09 |
| Riverside Avenue/UP – Riverside | $15.0 M | FY 04 | FY 05 | FY 06 | FY 08 |
| Mary Street/BNSF – Riverside | $15.7 M | FY 05 | FY 06 | FY 07 | FY 09 |
| Columbia Avenue/BNSF & UP – Riverside | $18.3 M | FY 05 | FY 06 | FY 07 | FY 09 |
| Cridge Street/BNSF & UP – Riverside | $15.3 M | FY 07 | FY 08 | FY 09 | FY 11 |
| Avenue 52/UP – Coachella | $15.7 M | FY 07 | FY 08 | FY 09 | FY 11 |
| Auto Center Drive/BNSF – Corona | $15.7 M | FY 05 | FY 06 | FY 07 | FY 09 |
| Sunset Avenue/UP – Banning | $15.4 M | FY 05 | FY 06 | FY 07 | FY 09 |
| Jurupa Road/UP – Riverside County | $15.6 M | FY 06 | FY 07 | FY 08 | FY 09 |
| Washington Street/BNSF – Riverside | $14.8 M | FY 07 | FY 08 | FY 09 | FY 11 |
| Center Street/BNSF & UP – Riverside County | $15.3M | FY 08 | FY 09 | FY 10 | FY 11 |
| Hargrave Street/UP – Banning | $13.8M | FY 09 | FY 10 | FY 11 | FY 12 |
| Brockton Avenue/UP – Riverside | $14.7M | FY 08 | FY 09 | FY 10 | FY 11 |
| Kansas Avenue/BNSF & UP – Riverside | $14.0M | FY 09 | FY 10 | FY 11 | FY 12 |
| Tyler Street/BNSF – Riverside | $14.7M | FY 08 | FY 09 | FY 10 | FY 11 |
| Adams Street/BNSF – Riverside | $14.7M | FY 09 | FY 10 | FY 11 | FY 12 |
| Madison Street/BNSF – Riverside | $14.7M | FY 08 | FY 09 | FY 10 | FY 11 |
| San Timoteo Canyon Rd/UP – Calimesa | $13.8M | FY 09 | FY 10 | FY 11 | FY 12 |
| California Avenue/UP – Beaumont | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Smith Avenue/BNSF – Corona | $14.7M | FY 09 | FY 10 | FY 11 | FY 12 |
| 7th Street/BNSF & UP – Riverside | $15.3M | FY 08 | FY 09 | FY 10 | FY 11 |
| Railroad Street/BNSF – Corona | $14.9M | FY 09 | FY 10 | FY 11 | FY 12 |
| Broadway/UP – Riverside County | $14.0M | FY 08 | FY 09 | FY 10 | FY 11 |
| Pierce Street/BNSF – Riverside | $14.7M | FY 09 | FY 10 | FY 11 | FY 12 |
| Buchanan Street/BNSF – Riverside | $14.7M | FY 08 | FY 09 | FY 10 | FY 11 |
| Joy Street/BNSF – Corona | $14.9M | FY 09 | FY 10 | FY 11 | FY 12 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Palm Avenue/UP – Riverside | | $14.7M | FY 08 | FY 09 | FY 10 | FY 11 |
| Jackson Street/BNSF – Riverside | | $14.7M | FY 09 | FY 10 | FY 11 | FY 12 |
| 22nd Street/UP – Banning | | $13.3M | FY 08 | FY 09 | FY 10 | FY 11 |
| Harrison Street/BNSF – Riverside | | $13.8M | FY 09 | FY 10 | FY 11 | FY 12 |
| Jefferson Street/BNSF – Riverside | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Cota Street/BNSF – Corona | | $13.8M | FY 09 | FY 10 | FY 11 | FY 12 |
| Bellgrave Avenue/UP – Riverside County | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Clay Street/UP – Riverside County | | $14.7M | FY 09 | FY 10 | FY 11 | FY 12 |
| Pennsylvania Avenue/UP – Beaumont | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Rutile Street/UP – Riverside County | | $0.5M | FY 09 | FY 10 | FY 11 | FY 12 |
| San Gorgonio Avenue/UP – Yuma Main | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Airport Road/UP – Riverside County | | $0.5M | FY 09 | FY 10 | FY 11 | FY 12 |
| Main Street/BNSF & UP – Riverside County | | $14.0M | FY 08 | FY 09 | FY 10 | FY 11 |
| Gibson Street/BNSF – Riverside | | $1.21M | FY 09 | FY 10 | FY 11 | FY 12 |
| Jane Street/BNSF – Riverside | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Viele Avenue/UP – Beaumont | | $0.5M | FY 09 | FY 10 | FY 11 | FY 12 |
| Sheridan Street/BNSF – Corona | | $13.8M | FY 08 | FY 09 | FY 10 | FY 11 |
| Panorama Road/UP – Riverside | | $13.3M | FY 09 | FY 10 | FY 11 | FY 12 |
| Palmyrita Avenue/BNSF & UP - Riverside | | $0.5M | FY 08 | FY 09 | FY 10 | FY 11 |
| Mountain View Avenue/UP – Riverside | | $0.1M | To Be Closed By City | | | |
| Avenue 66/UP – Riverside County | | $0.5M | FY 09 | FY 10 | FY 11 | FY 12 |
| Avenue 54/UP – Coachella | | $0.5M | FY 08 | FY 09 | FY 10 | FY 11 |
| Apache Trail/UP – Riverside County | | $0.5M | FY 09 | FY 10 | FY 11 | FY 12 |
| Radio Road/BNSF - Corona | | $0.5M | FY 08 | FY 09 | FY 10 | FY 11 |
| TOTALS | | | | | | |
| **Riverside County Total Projects:** | **59** | **$725.71 M** | | | | |

Shade = Funded

*All cost estimates are in year 2000 dollars without inflation

**For all non-funded projects, development timeframes are speculative subject to availability of funds not yet identified nor secured.

## VIII. FINANCING AND PHASING

The preceding chapters outlined the proposed improvement plan and resulting benefits regionally, within the State and nationwide. The following analysis outlines how the improvements can be financed and constructed.

### ACE Trade Corridor Financing Plan

Total Costs

The improvement program for the ACE Trade Corridor is estimated to cost $3.070 billion as noted below:

| Lead Agency | | Project Costs |
|---|---|---|
| OCTA/ONTRAC | | $476 M |
| SGVCOG | | 1.309 B |
| SANBAG | | 560 M |
| RCTC | | 725 M |
| | **Total** | **$3.070 Billion** |

Cost estimates for each of the projects, project descriptions, and schedules used to derive the following analysis are included in Table 13 and Appendix B. The following analysis summarizes committed or expected to date, additional revenue needed, and use of AB 2928 funds.

### Funded to Date

A portion of the aforementioned year program is funded or reasonably likely to be funded during the current Federal or State authorization period. For purposes of this financing plan, funding from AB 2928 is assumed to be in this category.

| Lead Agency | Total Cost of Program | Portion Funded | Sources |
|---|---|---|---|
| OCTA/ONTRAC | $476 M | $37 M | AB 2928<br>Local City/OCTA |
| SANBAG | 560 M | 133 M | AB 2928<br>Local City/SANBAG<br>Federal (TEA-21)<br>UPRR<br>PUC |
| SGVCOG | 1.309 B | 385 M | Federal (TEA-21)<br>State ITIP<br>Local (MTA)<br>UPRR |
| RCTC | 725 M | 6 M | UPRR<br>PUC |
| **Total** | **$3.070 Billion** | $561 M | |

## Additional Funding Needed for Program

Constant dollars were used in developing the $2.509 billion unfunded cost estimate for the ACE Trade Corridor Improvement Program (except for a portion of the SGVCOG program). Adding an allowance for a 2.5% average annual inflation rate to the approximate mid point of the overall program (2010) would increase the cost by $624 million.

As demonstrated in this report and numerous previous analyses done, there are many beneficiaries of the increased trade activity that this program makes possible. They include all three levels of government (local, state, and federal) and the private sector. It is anticipated that funds needed to complete the ACE Trade Corridor Plan will come from all of these sources. The following briefly discusses the benefits accruing to each sector and potential sources of funds from each.

### Local Government

#### Benefits

Among the most immediate and tangible benefits of grade grossing improvements are congestion relief and improved safety, which are most directly felt by area residents and businesses. A few of the more obvious benefits are:

- Eliminating wait times at crossings
- Eliminating crossing accidents
- Removing pollutants from vehicles waiting at crossings
- Free flow for emergency services vehicles
- Improving the flow of local commerce and enhancing local economic vitality
- Reducing train noise at crossings (horns) and generally enhancing the quality of life for residents

#### Potential Fund Sources

Local government can be expected to use various sources to contribute to the cost of grade separations. They could include:

- City contributions
- County transportation agency funds
- Railroad contributions

### State

#### Benefits

As discussed earlier in this report, there are significant economic and revenue benefits to the State of California from current and increased future trade activities through the San Pedro Bay Ports. They include:

- Direct employment from all Southern California international trade – 475,000 now growing to 1,000,000 by 2020

- Employment attributable to LA/LB Ports only – 500,000 (conservative 1992 estimate)
- Value of goods exported or consumed within the State - $36 billion (conservation 1992 estimate)
- Annual state and local tax revenue - $3 billion (conservative 1992 estimate)
- Accessibility to world markets creating a competitive advantage for California for economic development

Potential Fund Sources

Specific sources of future state support would be determined through the normal state legislative/administrative process. Potential sources of a state contribution include:

- Transportation Congestion Relief Program- Proposed by the Administration and enacted through AB 2928 by State Legislature, the congestion relief funds allocate over $5 billion to high priority congestion relief projects statewide. The legislation provides flexibility to reprogram funds if projects are not implemented or are delayed. The four lead agencies could seek funds that may be freed up and available for reprogramming by the California Transportation Commission (CTC). In addition, it is possible that the State would seek to increase the Congestion Relief Program with additional funds over the next 10 years.

- Interregional Transportation Improvement Program (ITIP) funds- SB 45 legislation also provides 15% of the state's transportation funds, an interregional discretionary program submitted by local applicants to Caltrans, reviewed by the Administration and approved by the CTC. Grade separations are an eligible project in this category of state funds and have been funded in the past.

- State Infrastructure Bank (SIB) Transportation Finance Bank (TFB)- Up to $1 billion in credit is available statewide for advancing funds to large construction projects. The ACE Trade Corridor improvements would be eligible for financing; but would require a payback revenue source for a cash advance.

- New bond initiative similar to Proposition 116- Other state associations have raised the potential for a bond initiative within the next 10 years that would increase funding to large infrastructure projects. The ACE Trade Corridor could be eligible for funding under the bond initiative funding options.

Federal

Benefits

Benefits of LA/LB Ports activity to the nation are similar to those to California, but on a much larger scale. They include:

- Trade related employment growing from 2.5 million jobs to 5.7 million jobs by 2010 (conservative 1992 estimate)
- Ready access to world markets for goods produced anywhere in the 48 contiguous states

- Access for U.S. consumers to goods produced around the world (combined value of imports and exports conservatively estimated to grow to $253 billion by 2010)
- Competitiveness in an increasingly global marketplace
- Federal revenue (duties and taxes) growing to $36.8 billion annually by 2010 (conservative estimate)

Potential Fund Sources

Funding could be provided through future reauthorizations of the federal transportation program. At this point, the structure of reauthorized Federal program is unknown. The legislation may include demonstration projects, as in the past, which this program could compete for, or may incorporate new programs, which are well suited to the ACE Trade Corridor Program. Potential sources of funds from the prior reauthorization included:

- Federal Highway Demonstration Earmark – TEA-21 included a number of earmarks for high priority highway projects, including $135 million for the ACE Project in the San Gabriel Valley.

- Corridors and Borders Discretionary Program – TEA-21 enacted this new program with about $130 million available nationwide annually. This discretionary funding program or one similarly focused on trade related infrastructure would need to be significantly larger for it to be a significant factor in funding the ACE Trade Corridor.

- Railroad Rehabilitation and Improvement Financing – This program is intended to make funding available through loans and loan guarantees for railroad capital improvements. A revenue source must be identified to pay back the loan or loan guarantee.

Private Sector

Benefits

There are many direct and indirect private sector participants whose interests are affected by the efficient delivery of goods through the LA/LB Ports. The most directly involved and readily identifiable parties with a major stake in the smooth functioning of increased trade activity via the rail network are:

- the Ports
- the railroads
- shippers/Receivers
- end consumers

The nature and relative share of benefit will vary but, by definition, each private player will benefit from Ports trade growth or they wouldn't participate in it. A strong argument can be made that a portion of the cost of coping with the pronounced effects of trade growth we are experiencing should be borne by those private entities benefiting from it.

Agreeing on the specifics of how and how much private beneficiaries should contribute will be difficult to achieve, but there is precedent in the financing of the Alameda Corridor infrastructure improvements.

## Use of AB 2928 Funds

$273 million is committed for the ACE Trade Corridor Improvements through AB 2928 and SB 1662. An application must be submitted to the CTC detailing the scope, cost, schedule and funding plan by the lead agencies no later than July 6, 2002. The four lead agencies intend to submit applications with the following use of the AB 2928 funds:

| Lead Agency | AB 2928 Funds | Scheduled Appl. Date | Brief Description of Use |
|---|---|---|---|
| | | | |
| SGVCOG * | $150 Million | June, 2001 | 5 grade crossings |
| SANBAG | $95 Million | June, 2001 | 5 grade crossings |
| OCTA/ONTRAC | $28 Million | June, 2001 | 1 grade crossing and design for railroad lowering |
| RCTC ** | 0 | N/A | N/A |
| **TOTAL** | **$273 Million** | | |

*SGVCOG will apply for a portion of the $150 million and another agency (s) will apply for the portion of the $150 million to be used on Burlington Northern Santa Fe (BNSF) crossings.
**RCTC did not receive funding from AB 2928

## ACE Trade Corridor Phasing Plan

The magnitude of projected rail traffic growth, the extent of the resulting grade crossing impacts, and the size of the recommended mitigation program suggest that, absent a massive new funding source, the recommended improvement program will extend at least to the planning target year (2020) and probably beyond.

Each of the lead agencies recognizes and is prepared to address priorities for project phasing. However, without more definition to the funding sources discussed above, it is difficult to address details of phasing beyond probably overall duration. Each of the lead agencies has defined uses for funds available through FY 2003. As funding sources, amounts and timing for timeframes beyond FY 2003 can be better predicted, the agencies will refine phasing plans for the overall improvement program.

## IX. BENEFITS OF TRADE CORRIDOR PLAN

The ACE Trade Corridor Plan proposes a $3.07 billion improvement plan. 130 grade separations would be completed along the 285 mile ACE Trade Corridor. The following benefits would result as an implementation of the ACE Trade Corridor Plan.

**Facilitate International Trade and Economic Growth**

The ACE Trade Corridor extends the public infrastructure necessary to connect the Ports of Los Angeles and Long Beach and the Alameda Corridor to the transcontinental rail network through the nation's second largest metropolitan area:

- Trade through the Los Angeles Customs District, which includes the Ports is valued at $230 billion annually; expected to grow to $661 billion annually by 2020.
- International trade accounts directly for 475,000 jobs in Southern California today and is expected to increase to over 1 million by 2020; its share of total employment has doubled since 1980 and is expected to go up another 70% by 2020.
- Statewide more than 500,000 jobs are attributable to trade through the Ports of Los Angeles and Long Beach alone.
- Nationally, the Ports of Los Angeles and Long Beach are responsible for more than 2.5 million trade related jobs (1992), a number expected to exceed 5.7 million within 10 years.
- Major importers and exporters in every state in the Union send or receive goods through the Los Angeles and Long Beach ports.
- $13.8 billion in state tax revenues and $11.3 billion in local tax revenues are estimated to be paid as a result of the increased trade. In addition, $34.7 billion of additional income tax revenues are estimated to be paid to the federal government as a result of the increased trade through the Los Angeles Customs District, which includes the Ports.

**Establish a Reliable, Safe Rail Network for Goods Movement Through the Los Angeles Basin**

Eliminating vehicle conflicts at the 130 highest volume crossings will improve rail system reliability, significantly reduce the frequency of crossing accidents and associated public and railroad liability exposure, and further enhance the competitive position of Southern California in attracting international trade.

**Reduce Congestion**

Passenger freight and train traffic is projected to grow by up to 160% over the next twenty years while conflicting vehicle traffic will increase between 46% and 80%, depending on the area. Today, the 130 grade crossings proposed for improvement experience 1.4 million vehicles/trucks per day and will increase to 2.4 million by 2020. Almost 13,000 vehicle hours of delay would be eliminated by 2020 with these improvements.

**Improved Safety**

Collectively, the 130 crossings in the ACE Trade Corridor Program are expected to experience increased daily traffic to 2.4 million per day by 2020. Eliminating future conflicts between approximately 250 trains every day translates into many lives saved and even more serious injuries avoided. Accident data was drawn from the Federal Railroad Administration (FRA) database and procedures. Based upon an average accident rate (2.85) along the corridor, an estimated 370 accidents would be eliminated per year by 2020. This projected accident savings is judged to be conservative because the projected rates are lower than accident experience. (FRA methodology is based upon national experience and Southern California congestion level is higher than the national average.)

**Reduce Emissions**

The congestion avoided by the 130 grade separations will eliminate approximately 288 tons per year of combined reactive organic gas, nitrogen oxides, and carbon monoxide annually in 2010, the attainment deadline for the most polluted air basin in the nation. These emissions data were calculated using MVE176-Draft, the emission factors used as the basis of the federally approved state implementation plan for the South Coast Air Basin. It is important to note that the 2010 vehicle fleet assumed by these factors is much cleaner (produces far fewer emissions) than today's fleet. In addition, the congestion reduction which these figures are based reflects 2010 levels of surface traffic and railroad activity. Use of the 2020 congestion data to calculate emissions would require application of a different set of emission factors and would increase the level of uncertainty.

Of the 288 tons reduced, approximately 240 tons will be reduced by avoidance of congestion at the crossing itself, and an additional 48 tons will be reduced by avoiding congestion on parallel arterials associated with queue spillback through intersections in proximity to the crossings.

**Continued Economic Viability**

The areas through which the ACE Trade Corridor passes account for approximately 6.7 million jobs today; that number is expected to grow to 9.7 million by 2020. The virtual gridlock which will result from unmitigated freight train growth will stifle both the existing economic base and the prospects for future growth.

**Quality of Life**

The areas through which the ACE Trade Corridor passes have a current population of approximately 16 million which is expected to grow to 21 million by 2020. The general congestion, impaired access to community facilities, disruption to emergency services, train noise and other negatives associated with unmitigated freight train growth will make these areas far less attractive for current and prospective residents.

**National Benefits of San Pedro Ports**

Major importers and exporters of all types in all 48 contiguous states utilize the Ports of Long Beach and Los Angeles. The understated (based on actual experience) contributions (current and projected to 2010) to the national economy made in the early 1990s:

| | 1992 | 2010 |
|---|---|---|
| Value of Goods Consumed or Exported | $116 billion | $253 billion |
| Trade-Related Employment | 2.5 million | 5.7 million |
| Federal Revenue (Duties and Taxes) | $17.1 billion | $36.8 billion |

As stated above, all regions of the country are benefiting from San Pedro Ports activity. The following is a regional breakdown, again as of the mid-1990s:

| | Southwest (Inc. California) | Northwest | South Central | Plains | Great Lakes | Southeast | Atlantic Seaboard |
|---|---|---|---|---|---|---|---|
| Value of Trade | $53.6 bil | $650 mil | $5.1 bil | $1.5 bil | $16.6 bil | $5 bil | $14.9 bil |
| Trade Related Jobs | 989,000 | 22,500 | 105,000 | 38,000 | 398,000 | 107,000 | 462,000 |
| State & Local Taxes | $2.5 bil | $30 mil | $240 mil | $70 mil | $760 mil | $23 mil | $680 mil |