

APRIL 2016

ECONOMIC IMPACT ANALYSIS
**LOS ANGELES
INTERNATIONAL
AIRPORT**
IN 2014

LAEDC

LOS ANGELES COUNTY
ECONOMIC DEVELOPMENT CORPORATION

LAX

LOS ANGELES INTERNATIONAL AIRPORT IN 2014

ECONOMIC IMPACT ANALYSIS

INSTITUTE FOR APPLIED ECONOMICS
Los Angeles County Economic Development Corporation
444 S. Flower Street, 37th Floor ♦ Los Angeles, CA 90071
(888) 4-LAEDC-1 ♦ www.LAEDC.org

Christine Cooper, Ph.D.
Somjita Mitra, Ph.D.

APRIL 2016



This report was commissioned by the Los Angeles World Airports.

The LAEDC Institute for Applied Economics offers objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in water, transportation, infrastructure and environmental policy.

Every reasonable effort has been made to ensure that the data contained herein reflect the most accurate and timely information possible and they are believed to be reliable.

The report is provided solely for informational purposes and is not to be construed as providing advice, recommendations, endorsements, representations or warranties of any kind whatsoever.

EXECUTIVE SUMMARY

The Los Angeles County Economic Development Corporation (LAEDC) has quantified the total economic impact in the six-county Southern California region of Los Angeles International Airport (LAX) and activities related to airport services, as well as of its capital improvement program.

Ongoing Activity in 2014

The airport is a hive of activity. In 2014, the airport carried 70.7 million passengers on over 578,000 domestic and international flights, and moved 2 million tons of mail and cargo. Together, on- and off-airport services supported 142,970 jobs in 2014. Arriving visitors spent almost \$10 billion at the region's many hotels, restaurants, theme parks and retail outlets. More than \$45.6 billion of merchandise flown to international destinations from the airport was manufactured by regional firms, whose employees and suppliers, in turn, benefited from these sales.

The total economic and fiscal impact of this activity in the six-county Southern California region, including direct, indirect and induced impacts, is shown in Exhibit E-1.

- ▶ 620,610 jobs in Southern California;
- ▶ \$37.3 billion in labor income;
- ▶ \$126.6 billion in output (business revenues); and
- ▶ \$6.2 billion in state and local taxes, and \$8.7 billion in federal tax revenues.

Exhibit E-1

Activity Related to LAX in 2014 Economic and Fiscal Impacts in Southern California

| | Ongoing Activities | Visitor Spending | International Exports | Total * |
|---|--------------------|------------------|-----------------------|------------|
| Total Economic Impact: | | | | |
| Output (\$ millions) | \$ 29,558 | \$ 16,177 | \$ 80,848 | \$ 126,583 |
| Employment (jobs) | 142,970 | 155,640 | 322,000 | 620,610 |
| Labor income (\$ millions) | \$ 9,058 | \$ 6,304 | \$ 21,848 | \$ 37,271 |
| Total Fiscal Impact (\$ millions): | | | | |
| Federal taxes | \$ 2,129 | \$ 1,447 | \$ 5,104 | \$ 8,693 |
| State and local taxes | 1,991 | 1,114 | 3,102 | 6,214 |

* May not sum due to rounding
Source: Estimates by LAEDC



Capital Improvements

The airport is in the midst of a multi-billion dollar capital improvement program, which is expected to continue through 2023. Several projects are in the planning stage, including the landside automated people mover, the consolidated rental car facility, two intermodal transportation facilities and roadway improvements. Other projects are related to airfield and terminal improvements, and those involving tenant improvements at the terminals. It is estimated that the overall capital investment will reach \$10.1 billion.

This investment's total economic and fiscal impact in the six-county Southern California region over the duration of the program, including direct, indirect and induced impacts, is shown in Exhibit E-2.

- ▶ 121,640 annual jobs in Southern California;
- ▶ \$7.6 billion in regional labor income;
- ▶ \$20.3 billion in output (business revenues); and
- ▶ \$966 million in state and local taxes, and \$1.6 billion in federal tax revenues.

Exhibit ES-2

Overall Capital Improvement Program at LAX Economic and Fiscal Impacts in Southern California

| | In Planning | Projects in Development | Tenant Improvements | Total * |
|---|-------------|-------------------------|---------------------|-----------|
| Expenditures (\$ millions) | \$ 5,500 | \$ 2,970 | \$ 1,649 | \$ 10,119 |
| Total Economic Impact: | | | | |
| Output (\$ millions) | \$ 10,943 | \$ 5,951 | \$ 3,425 | \$ 20,306 |
| Employment (annual jobs) | 65,160 | 35,970 | 20,510 | 121,640 |
| Labor income (\$ millions) | \$ 4,117 | \$ 2,239 | \$ 1,224 | \$ 7,580 |
| Total Fiscal Impact (\$ millions): | | | | |
| Federal taxes | \$ 875 | \$ 475 | \$ 292 | \$ 1,643 |
| State taxes | 508 | 281 | 177 | 966 |

* May not sum due to rounding
Source: Estimates by LAEDC

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1 INTRODUCTION

1.1 Los Angeles International Airport

The Los Angeles International Airport (LAX) is a complex and vibrant center of diverse activity, much like a small city. On any single day, more than 150,000 passengers walk through one of the terminals, often accompanied by greeting friends or relatives, stopping to purchase a snack or a souvenir on their way to the departure gate, or hailing a cab or shuttle bus to take them to their home, their business appointment, their hotel or their parked car. Thousands of employees arrive at work at the airport each day, booking passengers into departing flights, serving meals or refreshments to passengers and other employees, providing maintenance services to airlines and to the airport administration, guarding against security risks and handling cargo.

This report quantifies the regional economic effects of the airport by analyzing how regional residents and businesses benefit from the services provided at LAX by both on- and off-airport firms that cater to airport users. These firms include domestic and international airlines, cargo services, food and beverage establishments, newsstands and other retailers, ground transportation, off-airport parking, government agencies and maintenance firms. In the region surrounding the airport, additional activity that caters to airport users include hotels, restaurants, freight forwarders, warehouses, small manufacturers, gas stations, travel agencies and cargo handlers. Additional activity is generated in the region by the spending of the domestic and international passengers who arrive and stay a few nights to enjoy local amenities and cultural attractions.

This report also includes an analysis of the economic impacts of the manufacturing of goods that are exported through the airport to international destinations.

Each of these firms hire workers from around the region, paying wages and benefits which circulate throughout the local and regional economy, and purchase millions of dollars worth of goods and services, much of which is provided by other local suppliers.

The extent to which the original demand from airport users circulates through the economy into additional economic activity in the six-county Southern California region is significant. ❖



1.2 Economic Impact Analysis

Economic impact analysis is used to estimate the overall economic activity, including the spill-over and multiplier impacts, which occurs as a result of a particular business, event, or geography.

The initial economic impact of the activity occurring at the airport is the purchase of goods and services from local vendors and the wages and benefits paid to local workers. This injection of funds into the region circulates from the initial recipients to the owners and employees of establishments that help supply them with goods and services for purchase.

For example, airlines purchase large amounts of jet fuel, food and catering supplies, janitorial services and operating supplies, from paper goods to computer services. They also pay the wages and benefits of their own workers, including ticket agents and flight crews.

The suppliers of all the goods and services sold to the airlines in turn hire their own staff and purchase parts and other inputs in order to fill the orders received from the airlines.

Workers at the airlines and at the supplier companies spend a portion of their incomes on groceries, rent, vehicle expenses, healthcare, entertainment, and so on.

The recirculation of the original expenditures multiplies the initial impact through these indirect and induced effects.

The extent to which the initial expenditures multiply is estimated using economic models that depict the relationships between industries (such as construction and its suppliers) and among different economic agents (such as industries and their employees). These models are built upon actual data of expenditure patterns that are reported to the U.S. Bureau of Labor Statistics, the U.S. Census Bureau and the Bureau of Economic Analysis of the U.S. Department of Commerce. Data is regionalized so that it reflects and incorporates local conditions such as prevailing wages rates, idiosyncratic expenditure patterns, and resource availability and costs.

The magnitude of the multiplying effect differs from one region to another depending on the extent to which the local region can fill the demand for all rounds of supplying needs. For example, the automobile manufacturing industry has high multipliers in Detroit and Indiana since these regions have deep and wide supplier networks, while the same industry multiplier in Phoenix is quite small. In another example, the jobs multiplier for the construction industry is higher in, say, Arkansas, than in California because the same amount of spending will purchase fewer workers in Los Angeles than in Little Rock.

Multipliers can also differ from year to year as relative material and labor costs change and as the production “recipe” of industries change. For example, the IT revolution significantly reduced the job multiplier of many industries (such as automotive manufacturing, accounting, architecture and publishing) as computers replaced administrative and production workers. ❖

1.3 Approach and Methodology

Economic impact analysis typically begins with an increase in final demand for an industry’s output, such as a purchase of construction services, or an inflow of out-of-town visitors who spend money at local accommodations and retail outlets. In the case of an airport, this would encompass a wide variety of activity, including not only the terminal services provided by Los Angeles World Airports (LAWA) but also retail, food and beverages, automated teller machines, phone and internet service, parking, rental cars, taxi and limousine services, and government services such as security and immigration and customs agents.

The diversity of activity at the airport presents a challenge in defining the parameters of the activity to include in an economic impact analysis.

Our approach is to define the geographic area for which we are estimating the economic impact. We begin by estimating the impact of LAWA operations at the airport. LAWA pays the salaries of thousands of local workers and purchases millions of dollars worth of goods and services, most of which originates in the region, during the course of ongoing, regular airport operations.

We follow this with an analysis of all other on-airport activity, including retail, food and beverages, maintenance, airline services and ground transportation. Finally, we expand the analysis to include off-airport activity occurring in a circumscribed region adjacent to the airport.

We consulted a variety of data sources to determine the direct activity occurring in each geographic unit. Our estimates for LAWA operations at LAX are produced using data from LAWA’s Annual Financial Report for the fiscal year ending June 30, 2014. Passenger data are for the calendar year ending December 31, 2014.

Our estimates of direct activity for on-airport operations and off-airport operations adjacent to LAX were developed using GIS mapping of the airport property and the surrounding region. These maps were overlaid with Census Bureau data on employment by place of work for the 2013 calendar year. This employment data is taken from official unemployment insurance payroll returns filed by all covered businesses, and identifies the numbers of jobs in each industry sector within the defined geography. While accurate insofar as the data is defined, these returns will underestimate government employment which is not covered by the unemployment insurance system, and will not count employees who work at the airport but whose official business address is elsewhere.

Export data produced by the U.S. Census Bureau is used to estimate the manufacturing activity related to the goods that are exported through the airport.

To estimate the local spending of domestic and international visitors to the region, we use data published by the Los Angeles Tourism and Convention Board and the California Travel and Tourism Commission on overnight visitors and their spending patterns, as described in the narrative.

The distribution of impacts by City Council District and Supervisorial District is estimated as described in the narrative.

Spending estimates for the airport's capital improvements program were also provided by LAWA.

Once the initial direct activity was determined, indirect and induced impacts were estimated using models developed with data and software from IMPLAN Group, LLC. Our region of interest is the six-county Southern California region (consisting of the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura).

The metrics used to determine the value of the economic impact include employment, labor income and the value of output. Employment numbers include full-time, part-time, permanent and seasonal employees, and the self-employed, and are measured on a job-count basis regardless of the number of hours worked. Labor income is a measure of all income received by both payroll employees and the self-employed, including wages and benefits such as health insurance and pension plan contributions. Output is the value of the goods and services produced. For most industries, this is simply the revenues generated through sales; for others, in particular retail industries, output is the value of the retail services supplied.

The total impacts include direct, indirect and induced effects, as the examples above illustrate. Direct employment is the personnel hired by the airport administration and by the airlines, the concessionaires and other related companies in their ongoing operations, including ticket agents, engineers, maintenance workers, administrative, management, parking attendants, and so on. Direct output is the value of the services provided by each business firm or entity. Indirect effects are those which stem from the employment and output motivated by the purchases made by each direct company. For example, indirect jobs are sustained by the suppliers of the office supplies and insurance purchased by LAWA, American Airlines, and Wolfgang Puck Express. Induced effects are those generated by the household spending of employees whose wages are sustained by both direct and indirect spending.

Our estimates for labor income and output are reported in 2015 dollars. Employment estimates are reported on an annual basis, i.e., the number of full- and part-time jobs supported in one year. ❖

2 ONGOING ACTIVITIES AT LAX IN 2014

2.1 Airport Activity

The estimation of the economic impact of ongoing operations at LAX is taken in three parts. First, the annual operations of Los Angeles World Airports (LAWA) at LAX is analyzed. Thereafter, all other on-airport activity is reviewed, followed by off-airport activity adjacent to the airport.

LAWA Operations at LAX

In 2014, the airport carried 70.7 million passengers on more than 578,000 domestic and international flights, and moved 2 million tons of mail and cargo. This activity generated operating revenue of \$961.7 million and resulted in the employment of 3,500 workers with salaries and benefits of \$356.7 million. Financial data for LAX for the fiscal year are shown in Exhibit 2-1.

Exhibit 2-1

LAWA Operations at LAX Financial Summary FY2014

| | |
|--|-----------------|
| Operating Revenue (\$ millions): | |
| Aviation revenue (landing fees, building / land rentals, etc.) | \$ 628.5 |
| Concession revenue | 331.3 |
| Other operating revenue | 1.9 |
| Total | \$ 961.7 |
| Operation Expenses (\$ millions): | |
| Salaries and benefits | \$ 356.7 |
| Contractual services | 161.8 |
| Materials and supplies | 45.7 |
| Utilities | 39.1 |
| Other operating expenses (incl. allocated admin charges) | 6.7 |
| Total * | \$ 610.0 |

* Does not include depreciation and amortization
Source: LAWA Annual Financial Report FY2014

Approximately two-thirds of LAWA's operating revenue at LAX originates from landing fees, building rent and land rental. Concession revenue, including terminal retail and food concessions, non-aviation parking and commercial ground transportation revenues, generated the majority of the remaining operating revenue.

LAWA spent almost \$357 million on salaries and benefits for its employees, and an additional \$161.8 million on contracted services for parking, maintenance



and professional services. It purchased \$45.7 million in materials and supplies, and paid \$39 million in utility services, many of which are sourced from the local and regional economy.

Other On-Airport Activity at LAX

LAWA is the operator and landlord of airport property, which includes more than the terminals and runways. With thousands of employees and hundreds of thousands of passengers moving through the airport on a daily basis, a myriad of businesses delivering on-airport services have located on the premises. Examples of businesses delivering on-airport services include domestic and international airlines (carrying passengers and/or cargo), airport tenants performing services to airlines, retail establishments, food and beverage establishments, public agencies engaged in air traffic control and providing security, and emergency services.

A large number of employees who work at LAX are not directly employed by LAWA but are employed by firms contracted to operate at LAX.

Badge counts provide a picture of other employees that work at the airport: many providers of freight and passenger air transportation locate their operations at LAX—FedEx itself employs approximately 3,000 workers at LAX, and airline companies alone employ an additional 12,000 people.

City and county employees number 970. The U.S. Department of Homeland Security staffs the Transportation Security Administration (TSA), Customs and Border Protection (CBP) and Immigration and Customs Enforcement (ICE) with 4,000 employees. Other federal agencies with staff at the airport include General Services Administration, the Department of Agriculture, the Federal Bureau of Investigation, Fish and Wildlife, the State Department, the Drug Enforcement Agency, and the Food and Drug Administration.

Total employment related to on-airport businesses may not be fully represented by badge data. For example, employees who work for firms located in publicly-accessible areas of the airport do not require badges.

To obtain complete detailed employment and payroll data estimates across all industries for the on-airport services, unrelated to LAWA, we defined LAX as a custom site using GIS software. Specialized reports containing place of work data can be obtained using the defined custom geography. A map of the custom site of LAX property is shown in Exhibit 2-2.

Using the map, payroll data for employment by place of work is estimated for each business location within the defined geography. The summary of employment by industry sector within the property is shown in Exhibit 2-3.

Exhibit 2-3

Jobs in Other On-Airport Activity at LAX

| | Jobs |
|--|---------------|
| Utilities | 55 |
| Construction | 17 |
| Manufacturing | 22 |
| Wholesale trade | 792 |
| Retail trade | 456 |
| Transportation and warehousing | 20,842 |
| Information | 85 |
| Finance and insurance | 89 |
| Real estate and rental and leasing | 604 |
| Professional, scientific, technical services | 174 |
| Management of companies | 1 |
| Administrative and waste management services | 319 |
| Educational services | 62 |
| Health care and social assistance | 98 |
| Arts, entertainment and recreation | 34 |
| Accommodation and food services | 3,425 |
| Other services | 584 |
| Government | 2,508 |
| Total * | 34,940 |

* May not sum due to rounding

Source: U.S. Census Bureau Local Employment Dynamics 2013

Exhibit 2-2

Map of LAX Property



Sources: ESRI, LAEDC

Most employees are in the transportation sector, which includes not only airlines but also airport support services such as cabin service, and freight handling. Other measureable employment is found in the accommodation and food services and in the public sector, which would include TSA employees and US Customs and Border Protection.

This summary does not include LAWA's employment since that was estimated in the previous section. All other on-airport activities provide 34,940 jobs in addition to LAWA's employment.

LAX-Adjacent Activity

In addition to on-airport business activity, a variety of businesses operate within close proximity to the airport for the purpose of catering to airport users. Examples of such businesses include hotels, restaurant, freight forwarders, ground transportation, rental car agencies, ticket agents, truck transportation, warehouses, manufacturers and local maintenance services.

In this section, we estimate the economic impact of all businesses within a prescribed geographic region of the airport, since their livelihood is dependent on proximity. For example, hotels within the area host many conventions and business meetings for both domestic and international travelers, with attendees staying onsite. This spending is directly related to the convenience of the aviation services provided at the airport.

Similarly, convention facilities utilized near the airport are chosen specifically for their proximity and ease of access for arriving visitors. These are included in our estimates of direct activity because we believe that they would essentially vanish if the airport were not there.

The boundaries of the LAX-adjacent area are Imperial Highway to the south, Manchester Avenue to the north, Aviation Boulevard to the east, and the Pacific Ocean to the west. A careful examination of a much broader area indicates that this LAX-adjacent geography is appropriate. A map of the region is shown in Exhibit 2-6. Note the darker region in the exhibit is the LAX airport property.

Using the map, payroll data for employment by place of work is estimated for each business location within the defined geography. The summary of employment by industry sector within the property is shown in Exhibit 2-5. This summary does not include LAWA's employment or other on-airport employment shown in Exhibit 2-3.

Exhibit 2-5

Jobs in LAX-Adjacent Activity

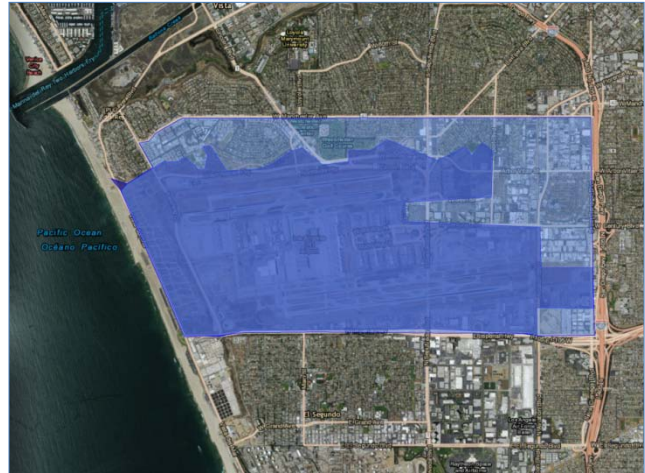
| | Jobs |
|--|---------------|
| Agriculture | 27 |
| Mining | 1 |
| Utilities | 17 |
| Construction | 275 |
| Manufacturing | 1,073 |
| Wholesale trade | 1,601 |
| Retail trade | 1,851 |
| Transportation and warehousing | 5,262 |
| Information | 360 |
| Finance and insurance | 476 |
| Real estate and rental and leasing | 2,237 |
| Professional, scientific, technical services | 1,428 |
| Management of companies | 379 |
| Administrative and waste management services | 2,405 |
| Educational services | 1,130 |
| Health care and social assistance | 1,358 |
| Arts, entertainment and recreation | 216 |
| Accommodation and food services | 6,080 |
| Other services | 1,264 |
| Government | 58 |
| Total * | 27,500 |

* May not sum due to rounding

Source: U.S. Census Bureau Local Employment Dynamics 2013

Exhibit 2-4

Map of LAX-Adjacent Area



Sources: ESRI, LAEDC

Most employees are in the transportation sector, which includes not only airlines but also airport support services such as cabin service, and freight handling. Other measureable employment is found in the accommodation and food services and in administrative and waste management services. ❖

2.2 Economic Impact of Airport Activity

Using the financial data for LAWA operations, and employment estimates by industry for other activities on airport property and at businesses adjacent to the airport, the economic and fiscal impact of the overall ongoing activity occurring at LAX is estimated for the Southern California region. These impacts are shown in Exhibit 2-6.

To avoid double-counting of impacts, such as those which occur when airport employees purchase food and beverages from concessionaires on airport property, we have discounted the actual employment recorded in the region.

Exhibit 2-6
Ongoing Activities at LAX
Economic and Fiscal Impacts in Southern California

| | LAWA Operations | Other On- Airport Activity | LAX- Adjacent Activity | Total * |
|---|--------------------|----------------------------------|------------------------------|------------------|
| Total Economic Impact: | | | | |
| Output (\$ millions) | \$ 1,882 | \$ 18,787 | \$ 8,889 | \$ 29,558 |
| Employment (jobs) | 10,100 | 82,900 | 49,980 | 142,970 |
| <i>Direct</i> | <i>3,150</i> | <i>31,450</i> | <i>24,750</i> | <i>59,350</i> |
| <i>Indirect</i> | <i>3,730</i> | <i>26,780</i> | <i>11,680</i> | <i>42,190</i> |
| <i>Induced</i> | <i>3,220</i> | <i>24,670</i> | <i>13,550</i> | <i>41,440</i> |
| Labor income (\$ millions) | \$ 705 | \$ 5,394 | \$ 2,960 | \$ 9,058 |
| Total Fiscal Impact (\$ millions): | | | | |
| Federal taxes | \$ 150 | \$ 1,279 | \$ 701 | \$ 2,129 |
| State and local taxes | 79 | 1,274 | 638 | 1,991 |
| Total Fiscal Impact | \$ 228 | \$ 2,553 | \$ 1,338 | \$ 4,120 |

* May not sum due to rounding
Source: Estimates by LAEDC

It is estimated that ongoing activities at the airport during the year supported 142,970 jobs with total labor income of \$9.1 billion in the Southern California region. This activity generated \$29.6 billion in economic output (more generally, business revenues for regional firms), and \$4.1 billion in total tax revenues.

The economic impacts spill across industry sectors in the region through indirect and induced effects. These are shown in Exhibit 2-7.

Exhibit 2-7
Ongoing Activities at LAX
Total Economic Impacts by Industry Sector

| | Jobs | Labor Income (\$ millions) | Output (\$ millions) |
|------------------------------------|----------------|----------------------------------|-------------------------|
| Agriculture, forestry and fishing | 200 | \$ 10 | \$ 19 |
| Mining | 800 | 117 | 286 |
| Utilities | 240 | 42 | 235 |
| Construction | 2,000 | 144 | 378 |
| Manufacturing | 3,290 | 283 | 2,710 |
| Wholesale trade | 5,010 | 398 | 1,197 |
| Retail trade | 8,660 | 317 | 750 |
| Transportation and warehousing | 36,170 | 3,016 | 10,527 |
| Information | 2,400 | 257 | 1,248 |
| Finance and insurance | 8,930 | 630 | 1,660 |
| Real estate and rental | 8,090 | 386 | 2,446 |
| Professional, scientific technical | 7,920 | 623 | 1,209 |
| Management of companies | 1,380 | 161 | 327 |
| Administrative and waste services | 10,500 | 456 | 952 |
| Educational services | 2,780 | 136 | 242 |
| Health and social services | 9,470 | 552 | 989 |
| Arts, entertainment and recreation | 2,050 | 73 | 157 |
| Accommodation and food services | 17,380 | 531 | 1,272 |
| Other services | 6,960 | 301 | 518 |
| Government | 8,760 | 624 | 2,433 |
| Total | 142,970 | \$ 9,058 | \$ 29,558 |

Source: Estimates by LAEDC

While clearly many of the impacts were felt in the transportation and warehousing industry, many other industries benefited from the ongoing activities at the airport, including administrative and waste management, health and social services, retail trade, real estate and rental services, accommodation and food services and health and social services. Each of these industries will see an increase in business revenues and in the number of jobs as the effects of visitor spending ripple through the economy.

The values in this exhibit should be interpreted as illustrative of the industry effects rather than precise given data and model limitations. ❖

2.3 Sub-Regional Employment Impacts

Estimated employment impacts of ongoing operations at Los Angeles International Airport (LAX) and its adjacent area in Los Angeles County and in the six-county Southern California region were presented above. We use the Los Angeles County impacts for the distribution. These are shown in Exhibit 2-9.

Exhibit 2-9

Ongoing Activities at LAX

Employment Impact in Los Angeles County by Industry Sector

| | Direct Jobs | Indirect/ Induced Jobs | Total Jobs |
|------------------------------------|----------------|------------------------------|----------------|
| Agriculture, forestry and fishing | 20 | 10 | 30 |
| Mining | 0 | 530 | 530 |
| Utilities | 70 | 100 | 170 |
| Construction | 260 | 1,340 | 1,610 |
| Manufacturing | 990 | 890 | 1,880 |
| Wholesale trade | 2,150 | 1,920 | 4,080 |
| Retail trade | 2,080 | 5,400 | 7,480 |
| Transportation and warehousing | 26,640 | 7,410 | 34,060 |
| Information | 400 | 1,810 | 2,221 |
| Finance and insurance | 510 | 6,850 | 7,360 |
| Real estate and rental | 2,560 | 5,120 | 7,680 |
| Professional, scientific technical | 1,440 | 5,360 | 6,810 |
| Management of companies | 340 | 830 | 1,170 |
| Administrative and waste services | 2,450 | 6,760 | 9,210 |
| Educational services | 1,070 | 1,490 | 2,560 |
| Health and social services | 1,310 | 7,500 | 8,810 |
| Arts, entertainment and recreation | 220 | 1,520 | 1,750 |
| Accommodation and food services | 8,560 | 7,860 | 16,410 |
| Other services | 1,660 | 4,700 | 6,360 |
| Government | 6,610 | 1,360 | 7,960 |
| Total | 59,350 | 68,780 | 128,120 |

Source: Estimates by LAEDC

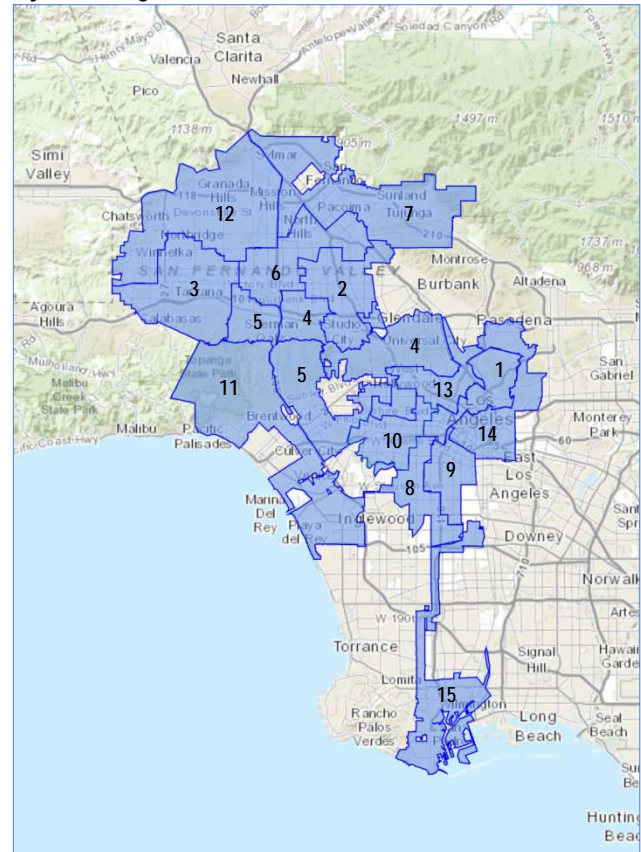
Impacts by City Council District

LAX is located in the City of Los Angeles, which overall represents approximately forty percent of the county employment. City Council Districts are outlined in Exhibit 2-10.

Employment and population is not equally distributed across districts. Exhibit 2-11 presents the overall distribution of employment in the County and in the City by Council District.

Exhibit 2-10

City of Los Angeles Council Districts



Sources: ESRI, LAEDC

Exhibit 2-11

LA City Jobs by Council District

| Council District | Jobs | % of All Jobs in City | % of All Jobs in County |
|------------------|------------------|-----------------------|-------------------------|
| 1 | 90,644 | 5.4 | 2.1 |
| 2 | 67,075 | 4.0 | 1.6 |
| 3 | 104,920 | 6.2 | 2.4 |
| 4 | 131,893 | 7.8 | 3.1 |
| 5 | 228,960 | 13.6 | 5.3 |
| 6 | 77,249 | 4.6 | 1.8 |
| 7 | 51,161 | 3.0 | 1.2 |
| 8 | 232,191 | 1.4 | 0.5 |
| 9 | 57,047 | 3.4 | 1.3 |
| 10 | 67,403 | 4.0 | 1.6 |
| 11 | 160,481 | 9.5 | 3.7 |
| 12 | 107,793 | 6.2 | 2.4 |
| 13 | 111,141 | 6.6 | 2.6 |
| 14 | 351,923 | 20.8 | 8.2 |
| 15 | 61,252 | 3.6 | 1.4 |
| Total* | 1,692,165 | 100.0 | 39.5 |

* May not sum due to rounding

Source: U.S. Census Bureau Local Employment Dynamics 2013

District 14 has the most payroll jobs, followed by District 5 and District 11.

Each district has its own characteristics, with varying concentrations of residential neighborhoods and business activity. As such, employment impacts will not be received the same for all districts. As the airport is located in District 11, the direct employment will occur mostly in that district. Nevertheless, it is expected that all Council Districts will benefit to some extent from the indirect and induced effects of the activity at LAX and its adjacent area, and each district has residents who are employed at the airport or who are employed by vendors and contractors servicing the airport.

Based upon the industrial composition of employment of each district, and using the Census Bureau Local Employment Dynamics data, the total employment impacts can be distributed across the fifteen Los Angeles City Council Districts.

Total employment impacts can be estimated for the City of Los Angeles and for each of the 15 Council Districts using county-wide employment shares. These are shown in Exhibit 2-12.

Exhibit 2-12

Total Employment Impacts by City Council District

| Council District | Jobs Impact | % of City Jobs Impact | % of County Jobs Impact |
|------------------|---------------|-----------------------|-------------------------|
| 1 | 2,530 | 5.0 | 2.0 |
| 2 | 1,650 | 3.3 | 1.3 |
| 3 | 2,610 | 5.2 | 2.0 |
| 4 | 3,180 | 6.3 | 2.5 |
| 5 | 5,240 | 10.4 | 4.1 |
| 6 | 2,320 | 4.6 | 1.8 |
| 7 | 1,080 | 2.1 | 0.8 |
| 8 | 580 | 1.2 | 0.5 |
| 9 | 1,300 | 2.6 | 1.0 |
| 10 | 1,670 | 3.3 | 1.3 |
| 11 | 9,370 | 18.5 | 7.3 |
| 12 | 2,250 | 4.5 | 1.8 |
| 13 | 2,420 | 4.8 | 1.9 |
| 14 | 12,220 | 24.2 | 9.5 |
| 15 | 2,090 | 4.1 | 1.6 |
| Total* | 50,530 | 100.0 | 39.4 |

* May not sum due to rounding
Source: Estimates by LAEDC

With the most payroll jobs, District 14 is also the district with the largest employment impact from LAX. As noted above, this is due to the industrial composition of the employment in the districts and the industrial distribution of the overall employment impact.

Districts with high employment concentrations will have larger values, while districts that contain large residential areas may have more residents than jobs. Larger employment impacts will occur in areas where there is existing concentrations of employment due to the existing structure and infrastructure of each area.

Impacts by County Supervisorial District

Beyond the city borders, other areas of the county benefit from the direct, indirect and induced effects of activity occurring at LAX and its adjacent area. Supervisorial Districts are outlined in Exhibit 2-13.

Exhibit 2-13

Los Angeles County Supervisorial Districts



Sources: ESRI, LAEDC

Exhibit 2-14 presents the overall distribution of employment in the County by Supervisorial District. District 1 has the most payroll jobs, followed by District 3 and District 4. The airport is located in District 4, so we would expect most of the direct payroll jobs associated with the airport to be located in that District.

Exhibit 2-14**LA County Jobs by Supervisorial District**

| Supervisorial District | Jobs | % of All Jobs in County |
|------------------------|------------------|-------------------------|
| 1 | 994,181 | 23.2 |
| 2 | 604,436 | 14.1 |
| 3 | 1,019,995 | 23.8 |
| 4 | 829,676 | 19.4 |
| 5 | 834,534 | 19.5 |
| Total* | 4,282,822 | 100.0 |

* May not sum due to rounding

Source: U.S. Census Bureau Local Employment Dynamics 2013

Based upon the industrial composition of employment of each district, and using the Census Bureau Local Employment Dynamics data, the total employment impacts are distributed across the five Supervisorial Districts. Exhibit 2-15 shows the total employment impacts of ongoing activities at LAX in each district.

Exhibit 2-15**Total Employment Impacts by Supervisorial District**

| Council District | Jobs Impact | % of County Jobs Impact |
|------------------|----------------|-------------------------|
| 1 | 31,780 | 24.8 |
| 2 | 18,210 | 14.2 |
| 3 | 26,980 | 21.1 |
| 4 | 31,600 | 24.7 |
| 5 | 19,560 | 15.3 |
| Total* | 128,120 | 100.0 |

* May not sum due to rounding

Source: Estimates by LAEDC

Districts 1 and 4 experienced that largest employment impacts from the airport, followed closely by District 3.

Larger employment impacts will occur in areas where there is existing concentrations of employment, due to the existing structure and infrastructure of each area. ❖

3 VISITORS ARRIVING THROUGH LAX

3.1 Visitor Spending

The Los Angeles International Airport is one of the busiest airports in the world, with almost 71 million enplanements and deplanements in 2014. Many of those arriving here are transiting to other locales or are local residents returning home. However, millions more are visitors to Southern California for business or leisure purposes attracted by the entertainment, dining, shopping, sports and business opportunities available in the area.

For the past decade, LAX has been the port of entry for approximately ten percent of all non-resident overseas arrivals. In 2014, there were 132 international flights arriving daily, carrying a total of 4.5 million international visitors. According to Airports Council International, in 2014 LAX was the fifth busiest airport internationally and the second busiest in the United States.

Visitors who arrive into Southern California through LAX and stay for a length of time enjoy the local amenities and cultural attractions, stay in local hotels, visit museums and theme parks, shop at retail establishments and dine at the many famous restaurants in the region. This spending on accommodation, ground transportation, food, retail, and entertainment generates significant economic impact.

International Visitors

Passenger traffic between LAX and its top international airport partners are shown in Exhibit 3-1. Note that the number of passengers includes both arrivals from and departures to the partner airport.

The top 15 airports have changed little since 2011 and account for approximately 62 of total international passenger movement.

While this data shows passenger arrivals to LAX and departures from LAX, it does not provide information about whether arriving passengers transferred to a domestic flight on the same day, or whether passengers stayed in the Los Angeles area for any length of time. Nor does it identify local residents returning home.



Exhibit 3-1
Top International Airport Connections

| Airport | Passengers in 2014 | Passengers in 2011 | % Change in Passengers |
|---------------------------------|--------------------|--------------------|------------------------|
| Heathrow (London) | 1,452,031 | 1,447,630 | 0.3% |
| Narita (Tokyo) | 1,351,629 | 1,114,251 | 21.3% |
| Incheon (Seoul) | 1,049,924 | 896,055 | 17.2% |
| Sydney (Australia) | 1,033,921 | 1,104,245 | -6.4% |
| Taoyuan (Taipei) | 905,673 | 894,670 | 1.2% |
| Vancouver (Canada) | 897,297 | 805,000 | 11.5% |
| Guadalajara (Mexico) | 746,017 | 693,928 | 7.5% |
| Benito Juarez (Mexico City) | 725,575 | 696,657 | 4.2% |
| Toronto Pearson (Canada) | 619,399 | 538,047 | 15.1% |
| Charles de Gaulle (Paris) | 590,488 | 568,912 | 3.8% |
| Hong Kong (China) | 582,856 | 497,927 | 17.1% |
| Pudong Airport (Shanghai) | 482,953 | 379,677 | 27.2% |
| Auckland (New Zealand) | 432,797 | 490,631 | -11.8% |
| Los Cabos (Mexico) | 389,962 | 359,913 | 8.3% |
| Melbourne (Australia) | 385,523 | 320,542 | 20.3% |
| <i>All Others</i> | <i>7,459,622</i> | <i>5,923,240</i> | <i>25.9%</i> |
| International Passengers | 19,105,667 | 16,731,324 | 14.2% |

Source: U.S. Department of Transportation T-100 Segment Data; LAWA

The Los Angeles Tourism and Convention Board provides estimates for the number of overnight visitors to the Los Angeles area, by country of origin. This data is presented in Exhibit 3-2, showing the change in the number of visitors by country of origin since 2011.

Approximately 6.5 million international visitors arrived in the Los Angeles area in 2014. Not all of these visitors arrived through LAX. Some may have arrived by other modes of transportation including auto, bus, train or even through another local gateway airport such as Ontario.

Exhibit 3-2**Overnight International Visitors (All Modes)**

| Country of Origin | Visitors in 2014 | Visitors in 2011 | % Change in Visitors |
|-------------------------------|------------------|------------------|----------------------|
| Mexico | 1,755,000 | 1,609,000 | 9.1% |
| Canada | 737,000 | 675,000 | 9.2% |
| China | 668,000 | 338,000 | 97.6% |
| Australia | 412,000 | 383,000 | 7.6% |
| United Kingdom | 334,000 | 372,000 | -10.2% |
| Japan | 297,000 | 289,000 | 2.8% |
| France | 271,000 | 335,000 | -19.1% |
| South Korea | 250,000 | 240,000 | 4.2% |
| Germany | 245,000 | 241,000 | 1.7% |
| Brazil | 128,000 | 107,000 | 19.6% |
| <i>All Others</i> | <i>1,368,000</i> | <i>1,273,000</i> | <i>7.5%</i> |
| International Visitors | 6,465,000 | 5,862,000 | 10.3% |

Source: Los Angeles Tourism and Convention Board

To estimate the number of international visitors arriving through LAX alone, data collected by the Department of Homeland Security (DHS) is used. A completed Form I-94 is collected from all residents of foreign nations visiting the United States. In 2014, there were 3,589,791 non-US residents arriving through the LAX port of entry.

However, this data excludes visitors from Canada and Mexico who, together, constitute approximately 40 percent of visitors to the region. To estimate the number of visitors from Canada and Mexico, data from the 2014 *Marketing and Planning Resource Book* produced by the Los Angeles Tourism and Convention Board (LATCB) is used. For 2014, the report forecasts 1.76 million visitors from Mexico and 740,000 visitors from Canada.

While these numbers include all modes of transportation, the report estimates that approximately 18.5 percent of visitors from Mexico and 74 percent of

visitors from Canada arrived by air in 2013. Assuming these proportions did not change significantly in 2014, it is estimated that 325,210 visitors from Mexico and 547,600 visitors from Canada arrived through LAX in 2014.

Spending for overseas and Mexican visitors was obtained from the *Overseas and Mexican Visitors to California* report from the California Travel and Tourism Commission. Canadian spending was obtained from the Los Angeles Tourism and Convention Board's *Marketing and Planning Resource Book*. Using these sources, it is estimated that international visitors and Mexican visitors arriving into Southern California through LAX spend, on average, \$2,094 each during their stay while visitors from Canada spend, on average, \$630 during their stay.

The estimated number of visitors and their estimated spending is summarized in Exhibit 3-3.

Exhibit 3-3**International Visitors through LAX in 2014**

| | Number of Visitors | Average Local Spend per Visitor | Total Local Spending (\$ millions) |
|-------------------------------|--------------------|---------------------------------|------------------------------------|
| Overseas visitors | 3,589,790 | \$ 2,094 | 7,517 |
| Visitors from Mexico | 325,210 | 2,094 | 681 |
| Visitors from Canada | 547,600 | 630 | 345 |
| International Visitors | 4,462,600 | \$ 1,914 | \$ 8,543 |

Sources: California Travel and Tourism Commission; Los Angeles Tourism and Convention Board 2014 Marketing and Planning Resource; Estimates by LAEDC

In total, it is estimated that approximately 4.5 million international visitors to Southern California arrived in the region through LAX in 2014. These visitors spent an estimated \$8.5 billion on a variety of goods and services including accommodations, food and beverages, retail purchases, ground transportation, and so on. The distribution of spending by category for these groups of visitors is shown in Exhibit 3-5.

The largest expenditures in the aggregate are for accommodations, followed by purchases of gifts and souvenirs, dining and personal care services such hair care, spas and health care.

Exhibit 3-5**International Visitor Spending in 2014**

| | Overseas and Mexican Visitors (\$ millions) | Visitors from Canada (\$ millions) | Total Local Spending (\$ millions) |
|------------------------------|---|------------------------------------|------------------------------------|
| Lodging | \$ 2,568 | \$ 90 | \$ 2,658 |
| Gifts and souvenirs | 1,933 | 86 | 2,019 |
| Dining | 1,571 | 76 | 1,647 |
| Personal care | 556 | 14 | 570 |
| Amusement and theme parks | 538 | 24 | 562 |
| Ground transportation | 494 | 31 | 525 |
| Other entertainment spending | 323 | 14 | 337 |
| Sightseeing | 215 | 10 | 225 |
| Total Spending * | \$ 8,198 | \$ 345 | \$ 8,543 |

* May not sum due to rounding

Sources: U.S. Department of Commerce, ITA, National Travel and Tourism Office; California Travel and Tourism Commission; Los Angeles Tourism and Convention Board 2014 Marketing and Planning Resource; Estimates by LAEDC

Domestic Visitors

International visitors are not the only source of tourist spending in the region. Almost 26 million domestic passengers arrived in the Southern California region through LAX. Many of these certainly spent time in Los Angeles, either for business or leisure purposes.

The Los Angeles Tourism and Convention Board estimates that there were approximately 22 million overnight domestic visitors to the Los Angeles area in 2014, arriving through all modes of entry including ground transportation. The city of origin of domestic visitors is shown in Exhibit 3-6.

Data provided by the Los Angeles Tourism and Convention Board includes total non-resident domestic arrivals to the region through three local airports, including LAX, Burbank Bob Hope and the Long Beach Airport. The distribution of domestic and non-domestic arrivals is assumed to be consistent for the three airports. Hence, based on the total domestic arrivals at LAX, it is estimated that 8.7 million domestic visitors arrived through LAX in 2014. Of these, 5.4 million were overnight visitors who spent on average \$160 per visit, and 3.3 million were daytrippers who spent on average \$64 per visit. In total, domestic visitors therefore spent \$1.1 billion in the regional economy.

Exhibit 3-6**Overnight Domestic Visitors**

| Domestic Origin | Visitors in 2014 | Visitors in 2011 | % Change in Passengers |
|------------------------------------|-------------------|-------------------|------------------------|
| San Francisco | 2,636,120 | 3,024,000 | -12.8% |
| San Diego | 1,787,200 | 2,016,000 | -11.3% |
| Sacramento | 871,260 | 1,113,000 | -21.7% |
| Fresno | 759,560 | 588,000 | 29.2% |
| All Other California | 5,249,900 | 4,998,000 | 5.0% |
| New York | 1,653,160 | 1,428,000 | 15.8% |
| Phoenix | 1,049,980 | 987,000 | 6.4% |
| Chicago | 781,900 | 756,000 | 3.4% |
| Seattle | 737,220 | 693,000 | 6.4% |
| La Vegas | 625,520 | 777,000 | -19.5% |
| Portland | 424,460 | 335,000 | 26.7% |
| <i>All Others</i> | <i>5,763,720</i> | <i>4,285,000</i> | <i>34.5%</i> |
| Domestic Overnight Visitors | 22,340,000 | 21,000,000 | 6.4% |

Source: Los Angeles Tourism and Convention Board

The distribution of this spending by category was also obtained from the Los Angeles Tourism and Convention Board, and is presented in Exhibit 3-7.

Exhibit 3-7**Domestic Visitor Spending in 2014**

| | Total Local Spending (\$ millions) | % of Total |
|------------------------------|------------------------------------|--------------|
| Lodging | \$ 217 | 20.1 |
| Ground transportation | 196 | 18.2 |
| Dining | 287 | 26.6 |
| Sightseeing | 25 | 2.4 |
| Amusement and theme parks | 64 | 5.9 |
| Other entertainment spending | 38 | 3.5 |
| Gifts and souvenirs | 173 | 16.0 |
| Personal care | 80 | 7.4 |
| Total Spending * | \$ 1,080 | 100.0 |

* May not sum due to rounding

Sources: Los Angeles Tourism and Convention Bureau; Estimates by LAEDC

International Flight Crew

In addition to international and domestic visitors to the region, the flight operations of international airlines necessitates many flight crew to spend the night in Los Angeles before departing on another flight on the following day. Many international carriers require overnight stays for their flight crew given the geographic distance that they travel.

The number of nights spent in the Southern California region by international flight crews was estimated using data collected by LAWA from international carriers. Assuming that the length of overnight stays was exactly one night, it is estimated that there were 571,190 overnight stays in the Southern California region by international flight crew including pilots and flight attendants.

The spending patterns of flight crew members are not comparable to those of international visitors. For example, they are unlikely to engage in spending on theme parks or major retail excursions, and will spend less on food and beverages and on hotel stays than international leisure and business passengers. To estimate the total local spending of overnight international flight crew, *per diem* rates established by the U.S. General Services Administration (GSA) for airline crew members in the Los Angeles area are used as a reasonable proxy for all flight crew. In 2014, the GSA established \$133 as the maximum lodging rate per night, \$66 as the maximum reimbursement for food and an additional \$5 per night for incidental expenses.

Over 571,190 overnight stays, it is estimated that international flight crew spent approximately \$117 million in 2014.

This estimate does not include domestic flight crew or cargo flight crew that may be required to overnight in the region (which may be a significant number) and hence underestimates the local spending of flight crew.



3.2 Economic Impact of Visitor Spending

Exhibit 3-8 presents the economic impact of visitor spending facilitated by the airport, including the impact of international and domestic visitor spending and the overnight spending of international flight crew.

Exhibit 3-8
Visitor Spending
Economic and Fiscal Impacts in Southern California

| | Int'l Visitors | Domestic Visitors | Int'l Flight Crew | Total * |
|---|-------------------|----------------------|----------------------|-----------|
| Total Spending (\$ millions) | \$ 8,543 | \$ 1,080 | \$ 117 | \$ 9,740 |
| Total Economic Impact: | | | | |
| Output (\$ millions) | \$ 14,090 | \$ 1,869 | \$ 219 | \$ 16,177 |
| Employment (jobs) | 135,630 | 17,970 | 2,040 | 155,640 |
| <i>Direct</i> | 92,200 | 12,240 | 1,390 | 105,840 |
| <i>Indirect</i> | 18,270 | 2,390 | 270 | 20,830 |
| <i>Induced</i> | 25,160 | 3,340 | 380 | 28,870 |
| Labor income (\$ millions) | \$ 5,493 | \$ 728 | \$ 83 | \$ 6,304 |
| Total Fiscal Impact (\$ millions): | | | | |
| Federal taxes | \$ 1,262 | \$ 165 | \$ 20 | \$ 1,447 |
| State taxes | 974 | 125 | 15 | 1,114 |
| Total Fiscal Impact | \$ 2,236 | \$ 290 | \$ 34 | \$ 2,560 |

* May not sum due to rounding
Source: Estimates by LAEDC

It is estimated that the 13.8 million visitors and flight crew visiting the Southern California region in 2014 spent \$9.7 billion during their stay. Visitor spending contributed \$16.2 billion to the regional economy and supported 155,640 jobs with a total labor income of \$6.3 billion.

This activity is estimated to have generated \$1.1 billion in state and local tax revenues, and \$1.4 billion in federal tax revenues.

Industry Breakdown

The total economic impact spills across industries through indirect and induced effects. These are shown in Exhibit 3-9.

Exhibit 3-9

Visitor Spending

Total Economic Impacts by Industry Sector

| | Jobs | Labor Income (\$ millions) | Output (\$ millions) |
|------------------------------------|----------------|----------------------------------|-------------------------|
| Agriculture, forestry and fishing | 170 | \$ 8 | \$ 16 |
| Mining | 100 | 14 | 35 |
| Utilities | 90 | 16 | 82 |
| Construction | 770 | 55 | 146 |
| Manufacturing | 1,460 | 101 | 753 |
| Wholesale trade | 1,550 | 123 | 371 |
| Retail trade | 21,380 | 650 | 1,463 |
| Transportation and warehousing | 8,960 | 424 | 943 |
| Information | 1,140 | 148 | 623 |
| Finance and insurance | 3,890 | 274 | 732 |
| Real estate and rental | 5,660 | 210 | 1,647 |
| Professional, scientific technical | 3,720 | 276 | 584 |
| Management of companies | 990 | 115 | 233 |
| Administrative and waste services | 5,220 | 198 | 370 |
| Educational services | 1,240 | 55 | 92 |
| Health and social services | 6,450 | 394 | 639 |
| Arts, entertainment and recreation | 14,710 | 542 | 1,157 |
| Accommodation and food services | 65,310 | 2,225 | 5,413 |
| Other services | 11,750 | 368 | 631 |
| Government | 1,070 | 105 | 244 |
| Total | 155,640 | \$ 6,304 | \$ 16,177 |

Source: Estimates by LAEDC

Of the 155,640 jobs generated, over one-third were in accommodations and food services along with one-third of the total output generated. However, other industry sectors are also significantly impacted including: retail trade, real estate and rental services, health and social services and administrative and waste services. Each of these industries will see an increase in business revenues and in the number of jobs as the effects of visitor spending ripple through the economy.

The values in this exhibit should be interpreted as illustrative of the industry effects rather than precise given data and model limitations. ❖

4 GOODS EXPORTED THROUGH LAX

4.1 Exports Through LAX

Los Angeles International Airport is one of the nation's main trade hubs, for both domestic and international trade. Each year, billions of dollars worth of goods and merchandise are transported to destinations around the nation and the globe. As the main cargo airport for Southern California, approximately 1,000 flights carrying cargo exclusively or in the cargo hold of passenger planes come in to and leave LAX each day.

Along with cargo shipments, LAX also processed almost 80,000 tons of mail of which 44 percent were arrivals into the airport. Generally, the term *cargo* refers to any goods, materials or merchandise that is carried onboard a ship, aircraft, train or truck. The term *freight* is often used interchangeably with *cargo* but is also used to refer to the value of the goods being transported.

LAX ranked 15th internationally in total freight traffic and 5th in the United States (according to Airports Council International) with more than \$96.3 billion worth of goods moved in 2014. Since 2004, LAX has averaged about 1.9 million total metric tons of air cargo in both domestic and international departures and arrivals. In terms of exports alone, in 2014 LAX handled more than 500,000 tons of freight that were exported internationally as well as over 400,000 tons of domestic freight.

International Exports

In 2014, LAX exported almost \$46 billion worth of goods and merchandise to destinations around the world. LAX alone accounted for almost 3 percent of the \$1.64 trillion worth of goods that was exported in 2014, signifying its importance as an international hub and gateway to the Pacific Rim.

The top five export partners for LAX are China, Japan, Hong Kong, India and South Korea. Together, these nations received 43 percent of exports through LAX in 2014.

Total export data was taken from the U.S. Census Bureau *USA Trade Online* which provides detailed trade data for about 400 ports around the world, including LAX as well



as for the United States as a whole. Port data includes the value and shipping weight including the method of transportation (air, vessel and containerized vessel).

LAX export data was presented for all commodities at the two-, four- and six- digit Harmonized System (HS) level. The Harmonized Commodity Description and Coding System is comprised of 5,000 commodity groups identified by a six-digit code and provides the basis for export classification in the United States as well as in over 200 countries to organize tariffs and to compile trade statistics.

LAX exports were then converted to NAICS codes using the Exports Concordance provided by the U.S. Census. NAICS is the North American Industry Classification System which uses a 6-digit hierarchical coding system. Using industry codes rather than the export data HC commodity codes allows for consistent modeling of the economic impact of these goods.

The total exports are presented in Exhibit 4-1, sorted by total air export value in 2014, and compared to exports of the same goods in 2004.

The total value of exports grew by 34.5 percent from \$33.9 billion in 2004 to \$46.6 billion in 2014. Several

commodities saw significant export growth during the period, including primary metals, miscellaneous manufactured products, arts, media and sports goods, and fabricated metals.

Exhibit 4-1
International Exports through LAX

| | Total Value in 2014 (\$ millions) | Total Value in 2004 (\$ millions) | % Change |
|----------------------------------|---|---|-------------|
| Computer and electronic products | \$ 14,187 | \$ 17,134 | -17.2 |
| Miscellaneous products | 8,910 | 2,039 | 337.0 |
| Transportation equipment | 7,024 | 5,242 | 34.0 |
| Machinery | 4,044 | 3,592 | 12.6 |
| Chemical products | 3,085 | 2,119 | 45.6 |
| Primary metals | 2,390 | 226 | 959.5 |
| Electrical eqmt. and components | 1,571 | 1,172 | 34.0 |
| Fabricated metal products | 1,372 | 512 | 167.7 |
| Arts, media, sports products | 572 | 194 | 195.0 |
| Apparel products | 529 | 342 | 54.7 |
| Agricultural crop products | 418 | 183 | 128.6 |
| Plastics and rubber products | 352 | 215 | 63.7 |
| Beverage and tobacco products | 205 | 238 | -14.0 |
| Leather and allied products | 196 | 103 | 90.6 |
| Manufactured food products | 127 | 82 | 54.2 |
| Nonmetallic mineral products | 117 | 99 | 18.8 |
| Printing and related activities | 117 | 144 | -18.9 |
| <i>All Others</i> | 414 | 285 | 45.3 |
| Total * | 45,628 | 33,920 | 34.5 |

* May not sum due to rounding
Source: USA Trade Online; Estimates by LAEDC

Computer and electronic products accounted for more than 31 percent of the total value of exported goods. Miscellaneous manufactured goods accounted for another 20 percent and transportation equipment another 15 percent. Together, these three commodity groups made up two-thirds of the value of all international exports out of LAX to international destinations.

The three commodity groups are quite broad. A more detailed picture of the top ten exported commodities is presented in Exhibit 4-2.

Exhibit 4-2
Top Detailed International Exports through LAX

| | Total Value in 2014 (\$ millions) | Total Value in 2004 (\$ millions) | % Change |
|---|---|---|--------------|
| Semiconductors and other electronic components | \$ 6,802 | \$ 9,135 | -25.5 |
| Other miscellaneous products | 6,387 | 793 | 705.4 |
| Aerospace products and parts | 6,081 | 4,784 | 27.1 |
| Navigational, measuring, electromedical and control instruments | 2,986 | 2,001 | 49.2 |
| Computer and peripheral equipment | 2,527 | 3,345 | -24.5 |
| Medical equipment and supplies | 2,526 | 1,247 | 102.6 |
| Nonferrous metals (except aluminum) | 2,097 | - | n/a |
| Processing commercial and service industry machinery | 1,236 | 838 | 47.5 |
| Communications equipment | 1,192 | 1,426 | -16.4 |
| Pharmaceutical and medicines | 2,175 | 1,605 | 35.5 |
| Other general purpose machinery | - | 905 | -100.0 |
| <i>All Others</i> | 11,618 | 7,840 | 48.2 |
| Total * | 45,628 | \$ 33,920 | 134.5 |

* May not sum due to rounding
Source: USA Trade Online; Estimates by LAEDC

Semiconductors and electronic components such as printed circuit boards and electronic connectors, are the number one export commodity through LAX by value. This is followed by other miscellaneous products, which includes a variety of products such as jewelry, sporting goods, toys, coin-operated amusement machines and musical instruments.

The total economic impact spills across industries through indirect and induced effects. These are shown in Exhibit 4-3.

Many industries are impacted by the goods exported through LAX, particularly manufacturing industries in the region.

The values in this exhibit should be interpreted as illustrative of the industry effects rather than precise given data and model limitations. ❖

Exhibit 4-3**International Exports through LAX in 2014
Total Economic Impacts by Industry Sector**

| | Jobs | Labor Income (\$ millions) | Output (\$ millions) |
|------------------------------------|----------------|----------------------------------|-------------------------|
| Agriculture, forestry and fishing | 6,020 | \$ 269 | \$ 457 |
| Mining | 430 | 57 | 175 |
| Utilities | 380 | 65 | 315 |
| Construction | 2,440 | 175 | 463 |
| Manufacturing | 130,660 | 10,755 | 51,662 |
| Wholesale trade | 17,750 | 1,409 | 4,241 |
| Retail trade | 16,430 | 634 | 1,473 |
| Transportation and warehousing | 11,020 | 661 | 1,643 |
| Information | 4,180 | 505 | 2,188 |
| Finance and insurance | 14,120 | 965 | 2,517 |
| Real estate and rental | 8,420 | 236 | 3,668 |
| Professional, scientific technical | 16,820 | 1,281 | 2,641 |
| Management of companies | 8,380 | 980 | 1,983 |
| Administrative and waste services | 21,800 | 826 | 1,480 |
| Educational services | 4,010 | 181 | 301 |
| Health and social services | 19,620 | 1,105 | 1,871 |
| Arts, entertainment and recreation | 7,910 | 439 | 1,004 |
| Accommodation and food services | 16,630 | 479 | 1,119 |
| Other services | 12,290 | 559 | 963 |
| Government | 2,690 | 267 | 684 |
| Total | 322,000 | \$ 21,848 | \$ 80,848 |

Source: Estimates by LAEDC

Domestic Exports

Not only is LAX a major hub for international exports but its location on the West Coast also makes it a significant source for domestic trade.

Domestic trade data is obtained from results of the Economic Census, which is conducted once every five years. The latest year for which complete domestic trade information is available is 2007.

To measure trade flows, the Freight Analysis Framework (FAF) was developed by the Federal Highway Administration (FHWA) and the Bureau of Transportation Statistics (BTS). The FAF builds upon the Commodity Flow Survey to estimate freight flows to, from and within the United States. Air shipments include those that are moved by just air or by air and truck as the trucks are needed to transport goods to and from the airport.

The value of goods exported through LAX to domestic destinations is presented in Exhibit 4-4.

Exhibit 4-4**Domestic Trade from Los Angeles CSA (2007)**

| Commodity Description | Total Value in 2007 (\$ millions) | % of Domestic Trade |
|--------------------------------------|---|---------------------------|
| Electronics | \$ 4,027 | 31.5% |
| Transport equipment | 2,660 | 20.8% |
| Precision instruments | 1,318 | 10.3% |
| Miscellaneous manufacturing products | 1,303 | 10.2% |
| Motorized vehicles | 573 | 4.5% |
| Machinery | 538 | 4.2% |
| Nonmetal mineral products | 522 | 4.1% |
| Articles-base metal | 343 | 2.7% |
| Textiles/leather | 282 | 2.2% |
| Other agricultural products | 183 | 1.4% |
| Mixed freight | 164 | 1.3% |
| Pharmaceuticals | 162 | 1.3% |
| Live animals/fish | 162 | 1.3% |
| Plastics/rubber | 126 | 1.0% |
| Base metals | 117 | 0.9% |
| Chemical prods. | 96 | 0.8% |
| Meat/seafood | 64 | 0.5% |
| Basic chemicals | 44 | 0.3% |
| Furniture | 33 | 0.3% |
| Printed products | 30 | 0.2% |
| Newsprint/paper | 7 | 0.1% |
| Other foodstuffs | 4 | 0.0% |
| Wood products | 3 | 0.0% |
| Paper articles | 1 | 0.0% |
| Total * | \$ 12,765 | 100.0 |

* May not sum due to rounding

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, Freight Analysis Framework

As with international exports, electronics constitute almost a third of domestic goods transported out of the region to other parts of the country.

The data provided by the Freight Analysis Framework encompasses the Los Angeles Combined Statistical Area, which includes several other local airports. The share for LAX of total domestic goods traded was estimated to be approximately 56 percent. Therefore, LAX domestic trade exported to other regions can be estimated to have been \$7.2 billion in 2007.

Domestic data is not included in the analysis below given the vintage of the data. Nevertheless, it provides a picture of the importance of domestic trade in the economic activity occurring in the region. The economic impact of this trade is likely to be significant. ❖

4.2 Economic Impact of International Exports through LAX

The manufacturing and distribution activity associated with the goods that were exported internationally through LAX supported hundreds of thousands of jobs with billions of wages at regional companies. The total economic impact of these exports are presented in Exhibit 4-5.

Exhibit 4-5
International Exports through LAX in 2014
Economic and Fiscal Impact in Southern California

| | |
|---|-----------|
| Total International Exports (\$ millions) | \$ 45,628 |
| Total Economic Impact: | |
| Output (\$ millions) | \$ 80,848 |
| Employment | 322,000 |
| <i>Direct</i> | 119,690 |
| <i>Indirect</i> | 102,260 |
| <i>Induced</i> | 100,050 |
| Labor income (\$ millions) | \$ 21,848 |
| Total Fiscal Impact: | |
| State / local taxes (\$ millions) | \$ 3,102 |
| Federal taxes (\$ millions) | 5,104 |

Source: Estimates by LAEDC

Almost \$46 billion worth of exports were delivered from LAX to international destinations in 2014. These exports supported 322,000 jobs with a total labor income of \$22 billion and generated \$80.8 billion in economic output in the Southern California region consisting of the counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura.

Total tax revenues collected exceeded \$8 billion related to this activity occurring in Southern California, including \$5 billion in federal taxes and \$3 billion in state and local taxes.

Industry Breakdown

Total output, employment and compensation impacts are disaggregated by industry sector in the exhibit below. This allows an estimation and industry identification of “follow-on” jobs and business revenues.

Exhibit 4-6
International Exports through LAX in 2014
Total Economic Impacts by Industry Sector

| | Jobs | Labor Income (\$ millions) | Output (\$ millions) |
|------------------------------------|----------------|-------------------------------|-------------------------|
| Agriculture, forestry and fishing | 6,020 | \$ 269 | \$ 457 |
| Mining | 430 | 57 | 175 |
| Utilities | 380 | 65 | 315 |
| Construction | 2,440 | 175 | 463 |
| Manufacturing | 130,660 | 10,755 | 51,662 |
| Wholesale trade | 17,750 | 1,409 | 4,241 |
| Retail trade | 16,430 | 634 | 1,473 |
| Transportation and warehousing | 11,020 | 661 | 1,643 |
| Information | 4,180 | 505 | 2,188 |
| Finance and insurance | 14,120 | 965 | 2,517 |
| Real estate and rental | 8,420 | 236 | 3,668 |
| Professional, scientific technical | 16,820 | 1,281 | 2,641 |
| Management of companies | 8,380 | 980 | 1,983 |
| Administrative and waste services | 21,800 | 826 | 1,480 |
| Educational services | 4,010 | 181 | 301 |
| Health and social services | 19,620 | 1,105 | 1,871 |
| Arts, entertainment and recreation | 7,910 | 439 | 1,004 |
| Accommodation and food services | 16,630 | 479 | 1,119 |
| Other services | 12,290 | 559 | 963 |
| Government | 2,690 | 267 | 684 |
| Total | 322,000 | \$ 21,848 | \$ 80,848 |

Source: Estimates by LAEDC

Most of the impact will occur in the manufacturing industry with over 40 percent of the jobs generated and over 60 percent of the total output generated accruing to firms in the industry. However, other industry sectors are also significantly impacted including: administrative and waste services, wholesale trade, retail trade, health and social services and professional and scientific and technical services.

The values in this exhibit should be interpreted as illustrative of the industry effects rather than precise given data and model limitations. ❖

5 CAPITAL IMPROVEMENT PROGRAM AT LAX

The airport is in the midst of a multi-billion dollar capital improvements program which is expected to continue through 2023. Among the projects underway are terminal improvements and upgrades, roadway improvements, runway and taxiway rehabilitation and improvement and utilities and infrastructure components. Several projects are in the planning stage, including the landside automated people mover, the consolidated rental car facility and the intermodal transportation facility.

In this section, the budgeted expenditures and the estimated economic impacts of the overall capital improvement program is presented.

5.1 Budgeted Spending

The projects in the capital improvement program are broadly categorized into three groups: those in the planning stage, those involving tenant improvements at the terminals and those in development.

Projects in Planning

Projects in planning are among the largest in terms of capital expenditures, and are also those with the longest horizon. Together they account for \$5.5 billion (or 54 percent) of the overall \$10.1 billion capital improvements budget. The overall rough cost and expected timelines for projects in planning are shown in Exhibit 5-1.

Exhibit 5-1

Capital Improvement Program Projects in Planning Rough Order Cost and Duration

| | Estimated Cost (\$ millions) | Rough Order Timeline |
|---|------------------------------------|----------------------------|
| Landside Automated People Mover | \$ 2,700 | CY2015-23 |
| Consolidated Rental Car Facility (CONRAC) | 1,000 | CY2015-23 |
| Intermodal Transportation Facilities | 600 | CY2017-23 |
| Roadway Access Improvements for LAX | 800 | CY2017-23 |
| Terminal Modifications | 400 | CY2017-23 |
| All Projects in Planning | \$ 5,500 | |

Source: LAWA



Tenant Improvements

Tenant improvements to terminals will occur as part of the overall capital improvement plan. These are expected to account for \$1.65 billion (or 16 percent) of the capital improvement budget. The rough cost of each project and their expected timelines are shown in Exhibit 5-2.

Exhibit 5-2

Tenant Improvements Rough Order Cost and Duration

| | Estimated Cost (\$ millions) | Rough Order Timeline |
|---------------------------------------|------------------------------------|----------------------------|
| Terminal 1 Tenant Improvements | \$ 526 | 5/2014-2/2018 |
| Terminal 2 Tenant Improvements | 80 | 4/2014-7/2015 |
| Terminal 3 Tenant Improvements | 18 | 4/2015-3/2016 |
| Terminal 4 Tenant Improvements | 33 | 4/2015-3/2016 |
| TBIT / Terminal 2 Tenant Improvements | 78 | 10/2014-3/2016 |
| Terminal 5 Tenant Improvements | 247 | 1/2013-3/2016 |
| Terminal 6 Tenant Improvements | 41 | 10/2014-5/2016 |
| Terminal 7 Tenant Improvements | 573 | 3/2014-12/2017 |
| Atlantic Aviation (New Hangar) | 8 | 4/2015-3/2016 |
| Airfield Tenant Improvements (Qantas) | 46 | 4/2015-3/2016 |
| All Tenant Improvements | \$ 1,649 | |

Source: LAWA

Airports Development Group (ADG) Projects in Development

ADG projects in development—many of which are well underway—include terminal improvements and upgrades, roadway improvements, runway and taxiway rehabilitation and improvement and utilities and infrastructure components. Together they account for \$2.97 billion (or 30 percent) of the overall capital improvement budget. The overall rough cost of each project and their expected timelines are shown in Exhibit 5-3. ❖

Exhibit 5-3

Capital Improvement Program ADG Projects in Development Rough Order Cost and Duration

| | Estimated Cost (\$ millions) | Rough Order Timeline |
|---|------------------------------------|----------------------------|
| West Aircraft Maintenance Area | \$ 101 | 8/2014-4/2016 |
| Runway 25L Safety Area Improvements / Temporary Repairs | 24 | 11/2014-11/2015 |
| LAX Runway 6L-24R RSA Improvements / Rehabilitation | 40 | 7/2015-11/2015 |
| Runway 6R-24L Safety Area Improvement | 72 | 10/2015-11/2016 |
| Runway 7L-25R RSA / Twy B Rehabilitation | 164 | 2/2016-10/2017 |
| Second Level Roadway Expansion Joint and Deck Repairs | 35 | 2/2014-1/2016 |
| New Face of the CTA Phase II Electrical, Communications, Water Utility Ext.: 5 th Feeder Project | 79 | 2/2014-1/2016 |
| Orange Line Busway | 1 | 7/2015-11/2015 |
| Manchester Square/Belford Demolition Phase II | 2 | 11/2014-5/2015 |
| CTA Departure Level Security Bollards | 5 | 2/2016-10/2016 |
| Imperial Cargo Complex Water Main Replacement | 8 | 2/2016-10/2016 |
| ADA Accessibility Improvements – Phase 2 | 7 | 10/2014-10/2016 |
| Construction Access Gates 21, 23 and 236 | 7 | 9/2015-5/2016 |
| West RON Electrification Project | 5 | 9/2016-4/2017 |
| Taxi Holding Lot Relocation | 8 | 6/2015-11/2015 |
| Drainage / Expansion Joint Seal Improvements for Parking 1, 3, 4, 6 | 6 | 11/2015-5/2016 |
| Storm Water Connection to North Central Outfall Sewer (NCOS) | 3 | 6/2016-5/2017 |
| Elevators & Escalators | 243 | 10/2014-11/2016 |
| Concessions Enabling | 3 | 1/2012-7/2015 |
| Passenger Boarding Bridge Relocations | 27 | 9/2013-11/2015 |
| Terminal 2 Improvement Program | 205 | 2/2014-1/2018 |
| Terminal 4 Connector | 114 | 6/2013-4/2016 |
| Terminal 3 Improvements | 6 | 9/2015-8/2016 |
| Terminal 6 Electrical Upgrades | 33 | 12/2014-12/2016 |
| Bradley West Core Renovation/East Ramp/Concourse Demo Project | 358 | 11/2013-10/2015 |
| Terminal MPOE/IT Rooms | 29 | 5/2015-4/2017 |
| Terminal Fire/Life Safety Improvements Project | 29 | 6/2016-5/2018 |
| Midfield Satellite Concourse Enabling | 76 | 9/2014-8/2017 |
| Midfield Satellite Concourse (North Gates) | 1,248 | 4/2015-3/2020 |
| Building Roof Replacement | 3 | 10/2015-4/2016 |
| Terminal Wide Improvements | 2 | 8/2015-4/2016 |
| All Projects in Development | \$ 2,970 | |

Source: LAWA

5.2 Economic Impacts

The exhibit below summarizes the economic impact in the six-county Southern California region generated by all projects during the entire period of the capital improvement program at LAX.

Exhibit 5-4

Overall Capital Improvement Program at LAX Economic and Fiscal Impacts in Southern California

| | In Planning | Projects in Development | Tenant Improvements | Total * |
|---|-------------|-------------------------|---------------------|-----------|
| Expenditures (\$ millions) | \$ 5,500 | \$ 2,970 | \$ 1,649 | \$ 10,119 |
| Total Economic Impact: | | | | |
| Output (\$ millions) | \$ 10,943 | \$ 5,951 | \$ 3,425 | \$ 20,306 |
| Employment (annual jobs) | 65,160 | 35,970 | 20,510 | 121,640 |
| <i>Direct</i> | 32,320 | 17,630 | 8,910 | 58,860 |
| <i>Indirect</i> | 14,010 | 8,100 | 5,990 | 28,100 |
| <i>Induced</i> | 18,830 | 10,240 | 5,610 | 34,680 |
| Labor income (\$ millions) | \$ 4,117 | \$ 2,239 | \$ 1,224 | \$ 7,580 |
| Total Fiscal Impact (\$ millions): | | | | |
| Federal taxes | \$ 875 | \$ 475 | \$ 292 | \$ 1,643 |
| State taxes | 508 | 281 | 177 | 966 |
| Total Fiscal Impact | \$ 1,383 | \$ 757 | \$ 469 | \$ 2,609 |

* May not sum due to rounding
Source: Estimates by LAEDC

Total spending, expected to be over \$10.1 billion, will generate almost \$20.3 billion in economic output in the six-county Southern California region, adding 121,640 annual jobs with labor income of \$7.6 billion.

Total tax revenues collected will reach \$2.6 billion on activity occurring in Southern California, including \$1.6 billion in federal taxes and \$966 million in state and local taxes.

LAWA expects to spend \$5.5 billion on projects currently in planning. Together, these projects will generate economic impact of \$10.9 billion in the six-county region of Southern California and generate 65,160 annual jobs with labor income of \$4.1 billion. This activity will contribute \$508 million in state and local taxes.

An additional \$2.97 billion is projected to be spent on ADG projects related to airfield and terminal improvements. It is estimated that these projects will generate almost \$5.95 billion in economic output and create 35,970 annual jobs with labor income of \$2.2

billion. This activity is expected to generate \$281 million in state and local taxes.

Tenant improvements are expected to cost \$1.65 billion, which will generate \$3.4 billion in economic output and create 20,510 annual jobs with labor income of \$1.2 billion and \$177 million in state and local taxes.

Industry Breakdown

Total output, employment and compensation impacts are disaggregated by industry sector in the exhibit below. This allows an estimation and industry identification of “follow-on” jobs and business revenues.

Exhibit 5-5

Capital Improvement Program at LAX Total Economic Impacts in Southern California by Industry Sector

| | Annual Jobs | Labor Income (\$ millions) | Output (\$ millions) |
|-------------------------------------|----------------|----------------------------|----------------------|
| Agriculture | 130 | \$ 7.4 | \$ 14.3 |
| Mining | 290 | 35.3 | 97.8 |
| Utilities | 100 | 13.6 | 66.3 |
| Construction | 59,370 | 4,240.8 | 10,217.1 |
| Manufacturing | 4,610 | 310.8 | 1,295.9 |
| Wholesale trade | 3,940 | 311.9 | 938.6 |
| Retail trade | 12,210 | 427.6 | 1,101.3 |
| Transportation and warehousing | 3,190 | 199.1 | 491.7 |
| Information | 930 | 112.9 | 520.4 |
| Finance and insurance | 3,870 | 266.1 | 712.6 |
| Real estate and rental and leasing | 3,520 | 123.4 | 1,314.5 |
| Professional, scientific, technical | 4,770 | 386.8 | 724.8 |
| Management of companies | 650 | 78.1 | 158.0 |
| Administrative and waste services | 4,280 | 161.6 | 296.5 |
| Educational services | 1,410 | 63.4 | 105.8 |
| Health and social services | 6,770 | 382.2 | 647.2 |
| Arts, entertainment and recreation | 1,340 | 48.3 | 104.8 |
| Accommodation and food services | 5,400 | 155.9 | 364.4 |
| Other services | 4,060 | 183.8 | 318.3 |
| Government | 730 | 71.3 | 186.3 |
| Total * | 121,640 | \$ 7,580 | \$ 20,306 |

* May not sum due to rounding
Source: Estimates by LAEDC

Much of the impact will occur in the construction industry, with approximately half of the total jobs and output generated accruing to firms in the industry. However, other industries are also significantly impacted, including: retail trade, health care and social assistance, professional and scientific services and accommodations and food services. Each of these

industries will see an increase in business revenues and in the number of jobs as the effects of the increase in construction activity due to the LAX projects ripple through the regional economy. The values in the exhibit should be interpreted as illustrative of the industry effects rather than precise given model and data limitations.

Annual Employment Impacts

Annual employment impacts are a combination of direct, indirect and induced jobs. The decomposition of employment impacts by type by fiscal year is detailed in the following exhibit. Note that only one project began in 2012 and as such the job impacts were quite small during that year. ❖

Exhibit 5-6

Overall Capital Improvement Program at LAX
Annual Employment Impact of All Projects

| Fiscal Year | Direct | Indirect | Induced | Total * |
|----------------|---------------|---------------|---------------|----------------|
| 2012 | 5 | 2 | 3 | 10 |
| 2013 | 723 | 472 | 454 | 1,650 |
| 2014 | 4,150 | 2,614 | 2,583 | 9,350 |
| 2015 | 10,291 | 5,506 | 6,187 | 21,980 |
| 2016 | 8,322 | 4,258 | 4,958 | 17,540 |
| 2017 | 8,013 | 3,285 | 4,710 | 16,550 |
| 2018 | 5,710 | 2,332 | 3,269 | 11,310 |
| 2019 | 5,531 | 2,212 | 3,157 | 10,900 |
| 2020 | 4,331 | 1,819 | 2,503 | 8,650 |
| 2021 | 3,931 | 1,688 | 2,285 | 7,900 |
| 2022 | 3,931 | 1,688 | 2,285 | 7,900 |
| 2023 | 3,931 | 1,688 | 2,285 | 7,900 |
| Total * | 58,860 | 28,100 | 34,680 | 121,640 |

* May not sum due to rounding
Source: Estimates by LAEDC

5.3 Total Impacts by Project

The total economic and fiscal impacts for each project are detailed in Exhibit 5-8 on the following page. ❖

5.4 Fiscal Impacts

The economic activity in Southern California due to the capital improvements program at LAX will generate significant state, local and federal tax revenues. Income taxes will be collected on the earnings of workers, both direct and indirect, as are unemployment insurance and disability insurance taxes. Sales taxes will be generated on the purchases of materials by the construction contractors and of goods and services by all the workers whose earnings are sustained by the transportation projects.

The estimated tax revenues by level of government are detailed in Exhibit 5-7.

Exhibit 5-7

Overall Capital Improvement Program at LAX
Detailed Fiscal Impacts in Southern California

| | In Planning | Projects in Develop- ment | Tenant Improve- ments | Total * |
|---|-----------------|---------------------------------|-----------------------------|-----------------|
| State and Local Taxes (\$ millions): | | | | |
| Income taxes | \$ 139 | \$ 76 | \$ 54 | \$ 269 |
| Sales taxes | 160 | 90 | 53 | 303 |
| Property tax | 137 | 77 | 46 | 259 |
| Social insurance | 13 | 7 | 4 | 23 |
| Fees and fines | 32 | 18 | 12 | 62 |
| Other taxes | 26 | 14 | 9 | 49 |
| Total state / local taxes | \$ 508 | \$ 281 | \$ 177 | \$ 966 |
| Federal Taxes (\$ millions): | | | | |
| Personal income taxes | \$ 328 | \$ 179 | \$ 126 | \$ 633 |
| Social insurance | 439 | 237 | 124 | 800 |
| Corporate income taxes | 64 | 35 | 27 | 127 |
| Fees and other payments | 15 | 8 | 5 | 28 |
| Other taxes | 29 | 16 | 10 | 54 |
| Total federal taxes | \$ 875 | \$ 475 | \$ 292 | \$ 1,643 |
| Total Fiscal Impact | \$ 1,383 | \$ 757 | \$ 469 | \$ 2,609 |

* May not sum due to rounding
Source: Estimates by LAEDC

It is estimated that direct, indirect and induced workers will pay \$633 million in federal income taxes, \$269 million in state income taxes and \$303 million in sales taxes in California.

All together, over \$2.6 billion in tax revenues will be collected in relation to the capital improvements program. Approximately 63 percent of this will be earned at the federal level and 37 percent at the state and local level. ❖

Exhibit 5-8**Overall Capital Improvement Program at LAX
Economic Impact in Southern California by Project**

| | Output (\$ millions) | Employment (Annual jobs) | Labor Income (\$ millions) | Tax Revenues (\$ millions) |
|---|--------------------------------|------------------------------------|--------------------------------------|--------------------------------------|
| Projects in Planning | | | | |
| Landside Automated People Mover | \$ 5,446.6 | 32,265 | \$ 2,018.0 | \$ 679.0 |
| Consolidated Rental Car Facility (CONRAC) | 1,941.8 | 12,000 | 764 | 255.3 |
| Intermodal Transportation Facilities | 1,165.1 | 7,200 | 458.4 | 153.2 |
| Roadway Access Improvements for LAX | 1,553.4 | 9,600 | 611.2 | 204.3 |
| Terminal Modifications | 836.5 | 4,120 | 265.6 | 91.1 |
| Total Projects in Planning * | \$ 10,943 | 65,160 | \$ 4,117 | \$ 1,383 |
| ADG Projects in Development | | | | |
| West Aircraft Maintenance Area | \$ 210.4 | 1,259 | \$ 74.9 | \$ 26.0 |
| Runway 25L Safety Area Improvements and Temporary Repairs | 50.0 | 299 | 17.8 | 6.2 |
| LAX Runway 6L-24R RSA Improvements and Rehabilitation | 83.3 | 499 | 29.7 | 10.3 |
| Runway 6R-24L Safety Area Improvement | 150.0 | 898 | 53.4 | 18.5 |
| Runway 7L-25R RSA/Twy B Rehabilitation | 341.7 | 2,045 | 121.6 | 42.2 |
| Second Level Roadway Expansion Joint and Deck Repairs | 73.1 | 415 | 26.2 | 8.5 |
| New Face of the CTA Phase II | 153.4 | 948 | 60.4 | 20.2 |
| Electrical, Communications and Water Utility Ext--5th Feeder Project | 52.4 | 324 | 20.6 | 6.9 |
| Orange Line Busway | 2.0 | 12 | 0.7 | 0.3 |
| Manchester Square/Belford Demolition Phase II | 3.9 | 24 | 1.5 | 0.5 |
| CTA Departure Level Security Bollards | 9.7 | 60 | 3.8 | 1.3 |
| Imperial Cargo Complex Water Main Replacement | 16.7 | 100 | 5.9 | 2.1 |
| ADA Accessibility Improvements-Phase 2 | 14.6 | 87 | 5.2 | 1.8 |
| Construction Access Gates 21, 23 and 236 | 14.6 | 87 | 5.2 | 1.8 |
| West RON Electrification Project | 9.7 | 60 | 3.8 | 1.3 |
| Taxi Holding Lot Relocation | 15.5 | 96 | 6.1 | 2.0 |
| Drainage & Expansion Joint Seal Improvements for Parking Structures 1, 3, 4 & | 12.5 | 75 | 4.4 | 1.5 |
| Storm Water Connection to North Central Outfall Sewer (NCOS) | 5.8 | 36 | 2.3 | 0.8 |
| Elevators and Escalators | 490.2 | 2,904 | 181.6 | 61.1 |
| Concessions Enabling | 6.1 | 36 | 2.2 | 0.8 |
| Passenger Boarding Bridge Relocations | 54.5 | 323 | 20.2 | 6.8 |
| Terminal 2 Improvement Program | 413.5 | 2,450 | 153.2 | 51.6 |
| Terminal 4 Connector | 230.0 | 1,362 | 85.2 | 28.7 |
| Terminal 3 Improvements | 12.1 | 72 | 4.5 | 1.5 |
| Terminal 6 Electrical Upgrades | 66.6 | 394 | 24.7 | 8.3 |
| Bradley West Core Renovation/East Ramp and Concourse Demo Project | 745.9 | 4,464 | 265.4 | 92.0 |
| Terminal MPOE/IT Rooms | 58.5 | 347 | 21.7 | 7.3 |
| Terminal Fire/Life Safety Systems Improvements Project | 60.4 | 362 | 21.5 | 7.5 |
| Midfield Satellite Concourse Enabling | 147.6 | 912 | 58.1 | 19.4 |
| Midfield Satellite Concourse (North Gates) | 2,423.4 | 14,976 | 953.5 | 318.6 |
| Building Roof Replacement | 5.8 | 36 | 2.3 | 0.8 |
| Terminal Wide Improvements | 4.0 | 24 | 1.5 | 0.5 |
| Total ADG Projects in Development* | \$ 5,951 | 35,970 | \$ 2,239 | \$ 757 |
| Tenant Improvements | | | | |
| Terminal 1 Tenant Improvements | \$ 1,095.9 | 6,559 | \$ 389.9 | \$ 135.2 |
| Terminal 2 Tenant Improvements | 165.6 | 991 | 58.9 | 66.2 |
| Terminal 3 Tenant Improvements | 35.7 | 220 | 14.0 | 4.7 |
| Terminal 4 Tenant Improvements | 64.1 | 396 | 25.2 | 8.4 |
| TBIT, Terminal 2 Tenant Improvements | 513.8 | 3,075 | 57.6 | 19.9 |
| Terminal 6 Tenant Improvements | 85.8 | 514 | 30.5 | 10.6 |
| Terminal 7 Tenant Improvements | 1,194.5 | 7,149 | 425.0 | 147.0 |
| Atlantic Aviation, New Hangar | 15.3 | 91 | 5.7 | 1.9 |
| Airfield Tenant Improvements (Quantas) | 92.4 | 548 | 34.2 | 11.5 |
| Total Tenant Improvements* | \$ 3,425 | 20,510 | \$ 1,224 | \$ 469 |
| Total * | \$ 20,306 | 121,640 | \$ 7,580 | \$ 2,609 |

* May not sum due to rounding
Source: Estimates by LAEDC

APPENDIX

Description of Industry Sectors

The industry sectors used in this report are established by the North American Industry Classification System (NAICS). NAICS divides the economy into twenty sectors, and groups industries within these sectors according to production criteria. Listed below is a short description of each sector as taken from the sourcebook, *North American Industry Classification System*, published by the U.S. Office of Management and Budget (2012).

Agriculture, Forestry, Fishing and Hunting: Activities of this sector are growing crops, raising animals, harvesting timber, and harvesting fish and other animals from farms, ranches, or the animals' natural habitats.

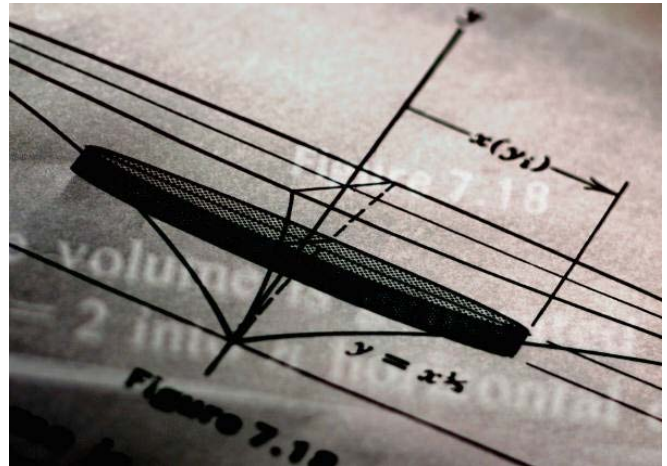
Mining: Activities of this sector are extracting naturally-occurring mineral solids, such as coal and ore; liquid minerals, such as crude petroleum; and gases, such as natural gas; and beneficiating (e.g., crushing, screening, washing and flotation) and other preparation at the mine site, or as part of mining activity.

Utilities: Activities of this sector are generating, transmitting, and/or distributing electricity, gas, steam, and water and removing sewage through a permanent infrastructure of lines, mains, and pipes.

Construction: Activities of this sector are erecting buildings and other structures (including additions); heavy construction other than buildings; and alterations, reconstruction, installation, and maintenance and repairs.

Manufacturing: Activities of this sector are the mechanical, physical, or chemical transformation of material, substances, or components into new products.

Wholesale Trade: Activities of this sector are selling or arranging for the purchase or sale of goods for resale; capital or durable non-consumer goods; and raw and intermediate materials and supplies used in production, and providing services incidental to the sale of the merchandise.



Retail Trade: Activities of this sector are retailing merchandise generally in small quantities to the general public and providing services incidental to the sale of the merchandise.

Transportation and Warehousing: Activities of this sector are providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.

Information: Activities of this sector are distributing information and cultural products, providing the means to transmit or distribute these products as data or communications, and processing data.

Finance and Insurance: Activities of this sector involve the creation, liquidation, or change of ownership of financial assets (financial transactions) and/or facilitating financial transactions.

Real Estate and Rental and Leasing: Activities of this sector are renting, leasing, or otherwise allowing the use of tangible or intangible assets (except copyrighted works), and providing related services.

Professional, Scientific, and Technical Services: Activities of this sector are performing professional, scientific, and technical services for the operations of other organizations.

Management of Companies and Enterprises: Activities of this sector are the holding of securities of companies and enterprises, for the purpose of owning controlling interest or influencing their management decision, or administering, overseeing, and managing

other establishments of the same company or enterprise and normally undertaking the strategic or organizational planning and decision-making of the company or enterprise.

Administrative and Support and Waste Management and Remediation Services: Activities of this sector are performing routine support activities for the day-to-day operations of other organizations, such as: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

Educational Services: Activities of this sector are providing instruction and training in a wide variety of subjects. Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home through correspondence, television, or other means.

Health Care and Social Assistance: Activities of this sector are operating or providing health care and social assistance for individuals.

Arts, Entertainment and Recreation: Activities of this sector are operating facilities or providing services to meet varied cultural, entertainment, and recreational interests of their patrons, such as: (1) producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) preserving and exhibiting objects and sites of historical, cultural, or educational interest; and (3) operating facilities or providing services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

Accommodation and Food Services: Activities of this sector are providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

Other Services (except Public Administration): Activities of this sector are providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services. ❖

Study Authors

Christine Cooper, Ph.D.

Senior Vice President

Dr. Cooper leads the LAEDC Institute for Applied Economics whose work involves research in regional issues such as economic impact studies, regional industry analysis and forecasts, workforce development analysis and policy studies. Her fields of expertise include development economics, environmental economics, regional analysis and urban sustainability.

Prior to joining the LAEDC, Dr. Cooper was co-founder of a start-up company in Hong Kong concentrating on equity transactions software and computer accessories manufacturing, which expanded production into the special economic zone of Shenzhen, China and distributed products throughout the United States and Asia. With her business partner, she also established the first authorized Apple Computer retailer in China. She has been a lecturer at California State University, Long Beach and at the Pepperdine Graziadio School of Business and Management.

Dr. Cooper is a citizen of the United States and Canada. She earned a Bachelor of Arts in Economics from Carleton University in Ottawa, Canada, and a Ph.D. in Economics from the University of Southern California. With funding from the National Science Foundation, she earned a Graduate Certificate in Environmental Sciences, Policy and Engineering. Her current research includes industry cluster performance in the regional economy, commuting and job allocation patterns and workforce development issues.

Somjita Mitra, Ph.D.

Economist

Somjita Mitra joined the LAEDC Institute for Applied Economics as an Economist in June 2013. She is involved in planning, designing and conducting research and analysis for consulting clients and local businesses and governments, as well as for LAEDC's internal departments. Her focus is in regional analysis, economic impact studies and the industrial and occupational structure of local economies.

Before joining the LAEDC, Dr. Mitra was an Economist for a local economic research and litigation consulting company evaluating economic damages, estimating lost profits, identifying key economic issues and developing necessary analytical and empirical frameworks. Prior to this, Dr. Mitra was Project Director for a consumer research firm in Los Angeles where she managed projects that identified and analyzed key market issues for local firms as well as multinational corporations.

Dr. Mitra received her Bachelor of Arts in Economics and Political Science from the University of California, Los Angeles and her Master of Arts in Politics, Economics and Business as well as her Ph.D. in Economics from Claremont Graduate University. Dr. Mitra enjoys volunteering in the local community and is actively involved in both women's welfare and animal rescue organizations. ❖



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444 S. Flower Street, 37th Floor
Los Angeles CA 90071

