
2. PURPOSE AND NEED FOR THE PROPOSED ACTION

This chapter sets forth the underlying purpose, objectives, and needs for the proposed actions contained in the Master Plan recommendations for Los Angeles International Airport (LAX). The Council on Environmental Quality (CEQ) regulations, implementing the National Environmental Policy Act (NEPA), state that: "The [environmental impact] statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing alternatives including the proposed action."

The guidelines for the implementation of the California Environmental Quality Act (CEQA) contained in the California Public Resources Code state that an Environmental Impact Report (EIR) shall include: "A statement of the objectives sought by the proposed project." This chapter serves to satisfy those requirements by describing the purpose and objectives of the proposed Master Plan, discussing the underlying need for additional airport capacity in the region and identifying the specific elements of the proposed Master Plan intended to address this need.

2.1 The Purpose and Objectives of the Proposed Project

The purpose and objectives of the Master Plan are to provide, in an environmentally sound manner that is compatible with surrounding land uses, sufficient airport capacity for passengers and freight in the Los Angeles region to sustain and advance the economic growth and vitality of the Los Angeles region. In particular, the proposed project intends to achieve these objectives:

- ◆ To respond to local and regional demand for air transportation during the period 2000 to 2015, taking into consideration the amount, type, location, and timing of such demand.
- ◆ To ensure that new investments in airport capacity are efficient and cost-effective, maximizing the return on existing infrastructure capital.
- ◆ To sustain and advance the international trade component of the regional economy and the international commercial gateway role of the City of Los Angeles.

2.1.1 Responding to Demand

As explained in Chapter 1, *Regional Context*, a necessary component of any successful strategy for responding to the region-wide demand for commercial air transportation services is to improve the capacity and facilities at LAX. Regional demand is expected to increase by approximately 54 percent between 1996 and 2015. These projected increases in the regional demand for air transportation services have been further identified in terms of when and where they are likely to occur and the type of airport capacity increments that will be required to meet them. As described in Chapter 1, *Regional Context*, airport proprietors are limited in their ability to redirect demand for air transportation to other facilities. Other commercial service airports in the region will accept a growing proportion of the region's demand for air service, but considerable demand nevertheless remains at LAX, most notably for international air service. The extensive system of general aviation airports in the region also can not alleviate the commercial service and air cargo problem at LAX because there is very little general aviation traffic at LAX that could be relocated to other airports and because those general aviation airports are not properly equipped to handle commercial service. Passengers, shippers, and airlines will continue to place additional demands for air service on LAX.

As this chapter later explains, some level of improvements are needed at LAX in order to meet a portion of the increasing demand in the region. The City of Los Angeles, the project sponsor, has reviewed the potential contributions of the existing and planned commercial service airports in the region to meet the increased demand and has concluded that LAX needs some level of improvement.

2.1.2 Cost Effective Investments

Public and private capital investment in LAX and airport-related commercial facilities totals tens of billions of dollars. As the first jet facility in the Los Angeles region, LAX was already well established by the time the region had grown to develop and support a multiple airport system. Many businesses in the region

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that depend on air transportation chose to locate near LAX and made substantial investments in facilities and improvements. There is an extensive network of warehousing, customs brokers, and air freight handlers in and around LAX. Vehicle parking, rental car agencies, hotels, tour operators, international trade enterprises, and similar airport-dependent businesses have developed around LAX.

The airport's proximity to the Los Angeles Central Business District is also a great advantage to the corporations and institutions that have chosen to locate there. These circumstances could not be duplicated today at any cost. Furthermore, evidence from other regions and nations indicates that attempts to relocate activity from an established airport to new facilities may result in failure and a loss of millions of dollars. (See Chapter I of the Draft LAX Master Plan's, *Air Transportation in the Los Angeles Region*.) By making incremental investments in improvements at LAX, Los Angeles World Airports (LAWA) can maximize the return on that invested capital and help the region avoid making less productive investments in duplicative facilities.

2.1.3 The International Trade Component

The importance of international trade to the region's economy and air transportation's role in supporting international trade was described in detail in Chapter I, *Air Transportation in the Los Angeles Region*, of the Draft LAX Master Plan. The recent surge in the absolute amount and the relative importance of international trade to the Los Angeles regional economy is likely to continue during the next two decades but only if enough airport capacity exists in the region. To the degree that such capacity is not added in the right place and in a timely manner, economic activity, jobs, and investment would likely locate in, or relocate to, other metropolitan areas, as confirmed by the findings of a 1998 multiple scenario analysis (called a sensitivity analysis) conducted by the Southern California Association of Governments (SCAG).

Chapter 1, *Regional Context*, demonstrates that international air service is essential to the economic health of the region and that only LAX can be expected to provide substantial international air service during the project planning horizon. LAWA has considered ways to create the additional capacity that would maintain LAX's role as an international commercial gateway.

2.2 The Need for the Proposed Project

The need for additional airport capacity in the Los Angeles region during the 2000 to 2015 period has been widely acknowledged, as discussed in Chapter 1, *Regional Context*, of this Final EIS/EIR and Chapter I of the Draft LAX Master Plan. LAWA has reviewed the potential contributions of the existing and planned commercial service airports in the region for meeting the increased demand, as well as other modes of transportation and communications, and has concluded that at least some portion of the increased demand would be met at LAX if the region is to sustain its economic growth.

After the public release of the Draft EIS/EIR, several significant events prompted the Mayor of the City of Los Angeles, LAWA, and many citizens to reassess the future development of LAX. For example, after publication of the Draft EIS/EIR, SCAG issued a new regional transportation plan indicating that the trend in meeting regional aviation demand should be towards a decentralized regional commercial airport system, whereby future aviation demand should be accommodated at airports where population and job growth over the next two decades are expected to be strong, and not through the expansion of airports located in highly urbanized areas such as LAX. Also, many public comments received on the Draft EIS/EIR stated that LAWA and the FAA should develop a new "regional approach" alternative that would provide improved services and fewer environmental impacts than the No Action/No Project Alternative and Alternatives A, B, and C without increasing capacity. Several members of Congress and other government officials reinforced the call for a "regional" approach. Finally, the terrorist attacks of September 11, 2001, have required all airports to carefully consider airport design and projects to enhance airport safety and security.

The purpose and need as stated in this chapter remains valid today. However, LAWA and the FAA are taking into account the events and circumstances outlined above in considering alternatives for meeting this purpose and need.

As outlined in Chapter 3, *Alternatives*, of this Final EIS/EIR, Alternative D, the "Enhanced Safety and Security Plan" alternative, offers a well-planned and rational "regional approach" alternative for improvement of LAX. Alternative D would respond to future demand for air transportation by encouraging, but not requiring, other airports in the Los Angeles area to increase capacity to make up for

the limitations of LAX. It would allow airlines to accommodate the demand for international aviation at LAX to the greatest extent possible without otherwise increasing capacity of the airport generally. It would also maintain the return on existing capital investments at LAX. Thus, Alternative D would allow the Los Angeles region to realize some of the important economic benefits outlined in this Final EIS/EIR, while at the same time enhancing security and safety at the airport and significantly reducing environmental impacts from airport operations to the surrounding communities.

2.2.1 Aviation Demand at LAX

As demonstrated in Chapter 1, *Regional Context*, there is a growing demand for more air transport throughout the Los Angeles region. This demand results from growth in population, employment, and personal income; from the economy's increasing reliance on air cargo; and the increasing economic importance of international air transportation. In the past, LAX has served the largest share of the region's air travel demands. In the future, other airports throughout the region are expected to serve a larger share of the regional air travel demands. As stated in the previous section, the terrorist attacks on September 11, 2001 and the subsequent down turn in aviation activity have required that airports reconsider their previous planning. With regard to aviation demand in Southern California, the long-term outlook is very strong despite the recent trend. International passenger and cargo activity have remained strong, particularly at LAX. Prior to 2001, total passenger activity at LAX was outpacing the Master Plan forecast. As such, LAWA anticipates that aviation demand will rebound to levels consistent with its 2015 forecast based on long-term socioeconomic trends coupled with continued growth in international activity.

Chapter 1, *Regional Context*, and Chapter I of the Draft LAX Master Plan also demonstrate that, despite the expected growth at other regional airports and the availability of other modes of transportation, there will be a growing demand for air service at LAX. This demand is fueled by two primary sources: 1) the residents and businesses closely located to LAX who constitute over 50 percent of the total regional demand; and 2) the international travelers and shippers from throughout the region.

To determine more precisely the extent of that increased demand, the Master Plan developed detailed forecasts. The FAA and SCAG have also developed forecasts for future demand at LAX. These forecasts are important to determining the type and character of facilities required at LAX. This section presents and compares the Master Plan, SCAG, and FAA forecasts of aviation demand. Each of the forecasts presented in this section has been prepared by aviation professionals following acceptable industry standards. However, the results vary because of either the purpose and scope of the forecast or the approach and assumptions. Understanding these issues is important to understanding the utility and limitations of the aviation activity forecast. Important considerations are:

- ◆ Purpose and scope - Each of the forecasts was prepared for a particular purpose. Understanding its purpose and scope will help in reviewing its results compared to other forecasts.
- ◆ Approach and assumptions - The assumptions and level of detail provided in each of the forecasts vary depending upon the purpose of the forecasts. For example, the FAA forecasts do not distinguish between origin-destination (O&D) and connecting passengers because this level of detail is not needed for the intended purpose of those forecasts. Similarly, the SCAG forecasts have only general assumptions about O&D and connecting passengers. On the other hand, the Draft LAX Master Plan forecasts include a detailed evaluation of the different passenger types and even forecasts each component separately to recognize the independent variables that affect each passenger type differently.
- ◆ Interpretation of results - A key limitation in the interpretation and use of aviation forecasts is the tendency to over-simplify the results. The public debate regarding Los Angeles regional passenger demand forecasts has focused on the million annual passenger (MAP) level at each of the airports in the region and how the demand should be reallocated. This ignores the distinctions between the need of the different types of users and over-simplifies the process by which decisions are made to provide airline service. As presented in Chapter 1, *Regional Context*, airport operators are limited in their ability to control how passenger demand is allocated among airports within the region.

2.2.1.1 Master Plan Forecasts for LAX

The forecasts for LAX were developed early in the Master Plan process, as documented in Chapter III of the Draft LAX Master Plan, *Forecasts of Aviation Demand*, and then refined throughout the Master Plan process. Chapter III provides detail on growth trends, airport accessibility, the role of O&D passengers,

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cargo requirements, and the other components of aviation demand. Additional forecast modeling was conducted to consider, although uncertain, the potential development of other regional airports. The outcome of that analysis is presented in this Final EIS/EIR, Chapter 1, *Regional Context*, in Table F1-13, Los Angeles Region Airport System Scenarios 2015 Passenger Activity Forecasts. The final forecasts used as a basis for the Master Plan and to develop the facility requirements for LAX are presented below in **Table F2-1**, Master Plan Forecasts of Unconstrained Demand for Aviation Service at LAX. (Unconstrained forecasts assume that all facilities will be provided to serve the market demand.) The measurements of aviation activity presented in this table serve as an important factor in the design and sizing of capacity improvements such as runways, taxiways, terminals, and roadways.

Table F2-1

Master Plan Forecasts of Unconstrained Demand for Aviation Service at LAX

	Actual	Forecast		
	1997	2005	2010	2015
Annual Passengers				
Domestic	40,355,800	43,815,000	46,476,000	48,746,000
International ^{1/}	19,786,788	30,381,000	39,169,000	49,214,000
Total Annual Passengers	60,142,588	74,196,000	85,645,000	97,960,000
Annual O&D Passengers	34,813,554	50,839,000	57,672,000	64,742,000
Daily and Hourly Passengers				
Peak Month Average Week Day	190,505	248,582	286,139	326,380
Peak Hour	13,069	20,127	23,289	27,056
Annual Aircraft Operations				
Domestic	633,530	658,400	679,800	701,500
International	93,756	140,300	177,000	217,800
All-Cargo	24,228	41,400	44,600	48,300
Gen. Aviation/Military	19,978	36,500	36,700	37,000
Total Annual Aircraft Operations	771,492	876,600	938,100	1,004,600
Daily and Hourly Aircraft Operations				
Average Day Operations	2,114	2,402	2,570	2,752
Peak Month Average Week Day	2,257	2,565	2,736	2,921
Peak Hour	144	188	202	220
Annual Air Cargo Tonnage	2,064,897	3,120,000	3,615,000	4,172,000

¹ Includes domestic to international connections categorized as domestic activity in LAWA records.

Source: Landrum & Brown, 1999.

2.2.1.2 SCAG Forecasts for LAX

As presented in Chapter 1, *Regional Context*, the SCAG forecast in the 1998 Regional Transportation Plan (RTP) was 94.2 MAP for LAX in 2020. The LAX Master Plan Draft EIS/EIR incorporated SCAG's forecasts and policy into plans for LAX at that time. At that time, the policy framework and allocation of future aviation activity levels at commercial airports throughout the region anticipated substantial growth at LAX by 2015-2020. The formulation and analysis of Alternatives A, B, and C occurred within that regional context. Since then, two updates to SCAG's policy framework and growth projections have been published. LAWA has worked closely with SCAG staff to understand the revised policy and to adjust the range of alternatives for LAX to include an additional alternative, Alternative D, that reflects SCAG's more recent regional objectives. LAWA has also undertaken planning at its two other commercial service airports, Ontario and Palmdale, to prepare each for the projected activity SCAG suggests in its current plan.

SCAG's shift in the regional aviation policy framework from the 1998 RTP to the 2001 RTP update provided for numerous demand distribution scenarios developed at that time, including the chosen scenario to limit LAX passenger activity to 79 MAP and redistribute passenger demand throughout the

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region. The development and analysis of Alternative D, as presented in the Supplement to the Draft EIS/EIR in July 2003, reflects SCAG's shift in the regional policy framework as related to LAX.

After the 2001 RTP update was published, voters in Orange County approved Measure W, which removed the former Marine Corps Air Station El Toro from further consideration as a civilian airport. This proposed facility was projected to accommodate 30 MAP in 2025. Without this facility, SCAG subsequently revised their regional passenger demand distribution again while maintaining their policy limit on LAX. This new forecast projects that passenger demand will increase to 170 MAP in 2030 and is reflected in the 2004 Draft RTP update. The Draft 2004 RTP update is acknowledged in the Supplement to the Draft EIS/EIR, as well as in the responses to comments on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, and in this Final EIS/EIR.

This Final EIS/EIR describes and addresses a complete range of alternatives that respond to the regional context, including SCAG's policy framework, that has evolved over the past several years. The range of alternatives addressed herein include alternatives (Alternatives A, B, and C) that provide substantial improvements to, and new facilities at, LAX in order to increase the overall capacity of the airport in accommodating future increases in regional aviation demand, as reflected in the 1998 RTP, and an alternative (Alternative D) that provides substantial improvements to existing facilities at LAX that will improve the overall level of service at LAX, particularly as related to the airport's role as a major international gateway, but yet be designed to serve a future activity level comparable to that of the No Action/No Project Alternative, as reflected in the 2001 RTP and the Draft 2004 RTP.

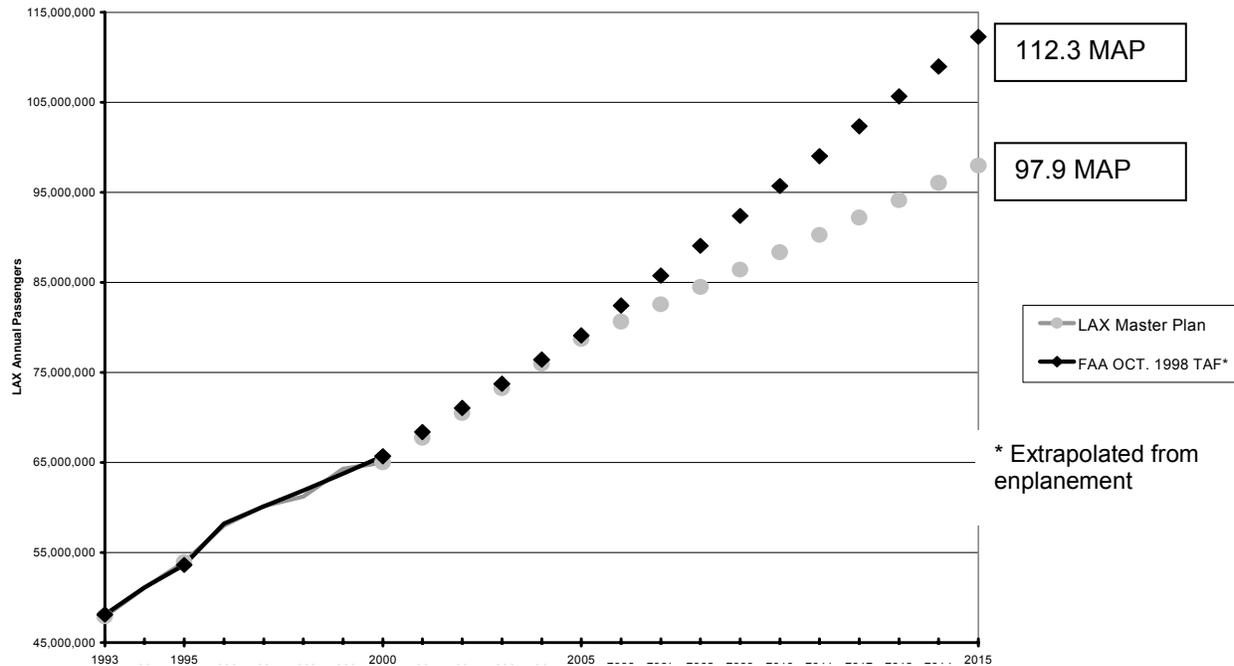
2.2.1.3 FAA Terminal Area Forecasts for LAX

The FAA annually prepares a national aviation forecast and Terminal Area Forecasts (TAF) for more than 400 airports and approach control facilities. The FAA states that the purpose of the TAF is to "assist the FAA with its planning, budget, and staffing requirements." The methodology employed by the FAA includes a straight-line regression analysis based on historical trends and includes an assumption that all required facility or airspace improvements will be made. This methodology may be modified on a case-by-case basis if other evidence suggests that it may be warranted. The FAA forecasts growth based on enplaned passengers, which are the number of departing passengers from an airport. This differs from other forecasts, which reflect both arriving and departing passengers. Historically, the number of MAP at LAX is 2.05 times the number of enplaned passengers because more passengers arrive at LAX, but stay in the region or depart from other airports or on other modes of transportation, than enplane at LAX. A comparison of the Master Plan and the FAA's October 1998 TAF is shown in **Figure F2-1**, Comparison of 1998 FAA Terminal Area Forecasts with Master Plan Forecasts in Million Annual Passengers.

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Figure F2-1

Comparison of 1998 FAA Terminal Area Forecasts with Master Plan Forecasts in Million Annual Passengers



As shown in **Figure F2-1**, the FAA's 1998 Terminal Area Forecast for LAX anticipates a slightly higher demand level for air service from LAX than was forecast by the Master Plan. The TAF passenger projection is about 0.5 percent higher than the Master Plan in the year 2005, and 14.7 percent greater in 2015. The higher FAA forecast is attributed to the straight-line forecast methodology used by the FAA.

2.2.1.4 Comparison of Forecasts for LAX

The review of the forecasts reveals that the Master Plan forecasts of 97.9 MAP for LAX in 2015 are about 13 percent below the FAA TAF for 2015. The SCAG forecast for LAX in 2020 is 105.7 MAP if El Toro is not developed.

Taking into consideration the many variables and assumptions used in generating these forecasts, the FAA and LAWA have determined that the forecasts and activity contained in **Table F2-1** are reasonable and adequate to determine the need for improvements at LAX. Accordingly, the FAA and LAWA have authorized their use in the preparation of this Final EIS/EIR.

2.2.1.5 Recent Trends at LAX

Aviation activity during the period between 1995 and 2000 is consistent with the forecasts completed in 1996, a period of unprecedented economic prosperity and corresponding growth of air travel. Regional totals in air passengers increased 7.29 MAP -- from 78.026 MAP in 1996 to 85.313 MAP in 1999 - an increase of 9.3 percent or approximately 3 percent per year. LAX accounted for 87 percent of that increase. Air passengers at LAX increased 6.31 MAP from 57.975 MAP in 1996 to 64.28 MAP in 1999. That is an increase at LAX of nearly 11 percent or 3.6 percent per year. The Master Plan forecast an average rate of increase of 2.84 percent. Partial data for 2000 indicates that this trend continues.

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Air cargo exhibited similar patterns of increases. Regional totals in air cargo increased by 337,249 Annual Cargo Tons (ACT) - from 2,422,724 ACT in 1996 to 2,759,973 ACT in 1999 - an increase of nearly 14 percent or approximately 4.6 percent per year. However, due to the Asian economic crisis in 1998, air cargo actually decreased .07 percent that year. When that anomaly is factored out, the annual rate of increase is 6.9 percent. LAX accounted for 80 percent of the increase in regional air cargo. Air cargo at LAX increased 270,104 ACT -- from 1,896,000 ACT in 1996 to 2,165,855 ACT in 1999; an increase of 14.25 percent or 4.7 percent per year (7.05 percent without the 1998 anomaly). The Master Plan forecasts an average rate of increase for air cargo at 6 percent per year.

Recent aircraft operations activity is also consistent with the Master Plan forecasts. Between 1996 and 1999 total annual air carrier operations increased by only 1,700 (0.23 percent per year), but annual international air carrier operations increased by over 10,000 (3.6 percent per year). Correspondingly, annual domestic air carrier operations decreased by 8,300 during the period. This data is consistent with Master Plan assumptions regarding the use of larger aircraft by the airlines and cargo carriers and the increasing proportion of international traffic at LAX.

2.2.2 Existing Capacity Constraints at LAX

Current facilities at LAX cannot adequately serve the flights, passengers, and cargo projected to occur at LAX in 2015, as reflected by the aviation forecasts shown in Table F2-1. An analysis conducted during the Draft Master Plan preparation indicates that current airport facilities are capable of serving approximately 79 MAP and 3.1 million tons of cargo in 2015, but only under extremely congested and inconvenient conditions. The details of the airport's existing capacity are provided in Chapter 3, *Alternatives*, in the description of the No Action/No Project Alternative. The constraints that prevent LAX from serving the unconstrained demand include nearly every facility at the airport. The number and configuration of the existing four runways are inadequate to serve current and projected demand. Only one of the four runways (25R on the south airfield) is sufficiently long to serve the largest aircraft when they are fully loaded during adverse weather conditions (hot days with little wind). Aircraft departing from gates in the north airfield often need to use that runway and endure a long taxi distance with significant airfield congestion along the way.

The difference in runway lengths between the north and south airfield complexes creates an imbalance in operations, preventing traffic from being evenly distributed. The north pair of runways is separated by 700 feet and the south pair of runways is separated by 750 feet. These runway separations require that each pair be operated dependently, with greater aircraft separations and hold times to allow safety margins for weather and wake turbulence. This dependent operation reduces the number of planes that can use the runways at any given time and thus limits their capacity. The runways are too closely spaced to allow center taxiways so aircraft can clear the runways sooner and so that following aircraft can land at shorter intervals, thereby, decreasing airfield congestion and the risk of runway incursions.

The airport's most limiting constraints are in the areas other than the airfield. The passenger terminal space and the number and size of the aircraft gates are inadequate to accommodate not only the number of passengers and aircraft, but also the large aircraft now being used and those that the airlines expect to introduce in the next couple of decades. On-airport circulation roads and off-airport access roads currently operate at unacceptably low levels of service and are inadequate to handle the forecast number of vehicles. There is no direct freeway or transit access to the airport. Air cargo building space, aircraft parking, and truck docks are inadequate to accommodate the forecast activity. Support facilities such as auto parking and rental car space are also inadequate.

The collection of system components that make up LAX -- the runways, taxiways, terminals, roads, and parking lots -- must have complementary capacity to maintain the entire system's ability to move people and goods. If the airport's components, or system *links*, are not in balance, then the highest capacity that the system can realize is that of its weakest link. For example, if LAX were to increase airfield capacity but make no changes to terminals and roads, the capacity of the airport would be limited to the capacity of those terminals and roads.

In Alternatives A, B and C, LAWA has evaluated a range of potential project components that would balance the airport system, including additional runways; relocation/extensions of existing runways; an improved taxiway system; new passenger terminal facilities; an automated people mover system; expanded cargo facilities; improvements to the ground access system and connections to the regional highway and transit networks; relocation of ancillary uses; and land acquisition necessary for each

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concept. Alternative D provides another build alternative that is intentionally designed as an unbalanced system in which the gates constrain the overall capacity substantially below the runways' capacity. The Draft LAX Master Plan Chapter IV, *Facility Requirements*, supplemented by other referenced documents, provides a detailed description of the facilities needed at LAX to improve its capacity sufficiently to fully accommodate the unconstrained demand forecast. The Draft LAX Master Plan Addendum and Chapter 3, *Alternatives*, of this Final EIS/EIR provide a detailed description of the facilities and activity results expected from Alternative D.

2.3 Consequences of Not Improving LAX

As referred to in Chapter 1, *Regional Context*, and detailed in Chapter I of the Draft LAX Master Plan, a consequence of not improving LAX would be the loss of potential air service and the resulting economic benefits to other regions in the nation. Section 4.4.1, *Employment/Socio-Economics*, indicates that the difference between fully improving LAX and not improving LAX would be the annual loss to the Los Angeles region of \$20 billion in economic activity and 98,000 jobs. Detailed accounting of the economic impacts is contained in Section 4.4.1, *Employment/Socio-Economics*.

The following sections discuss the consequences in terms of changes in air service, activity, and airport operations if LAWA were to forego specific improvements.

2.3.1 Air Service and Activity

Without airport improvements, airport activity at LAX will continue to grow; although several components of the airport may be near their practical capacity.¹⁵ The practical capacity differs from throughput capacity¹⁶ in that it recognizes the practical effect of delay on demand. As this trend continues into the future, the system will reach its practical capacity. This practical capacity acts as a barrier to growth in activity because airport users (airlines and passengers) will not tolerate excessive levels of delay or reduced levels of service. Over time, airport users will change their behavior. For example, the airlines may alter their air service patterns in several ways:

- ◆ Adjust their flight schedule to shift activity from congested hours to non-congested hours (referred to as "depeaking").
- ◆ Change the service patterns by reducing flights to less profitable routes and increasing flights on ones that are more profitable.
- ◆ Increase the aircraft size where possible.
- ◆ Shift connecting passengers to other airports in their networks.
- ◆ Increase pricing to reflect the limited supply in the market.

Each of these actions will have an effect on the level and character of demand. This effect will impact the components of the airport differently. For example, an increase in the size of the aircraft (and presumably an increase in the number of passengers) would have little effect on the airfield system but would increase demand on the terminal and access system. Similarly, a reduction in the percentage of connecting passengers would not impact the airside system as the number of operations and the number of passengers using the terminals would not increase. Under the deregulated air transportation system, airlines can make changes in air service at an airport to meet their strategic objectives regardless of the impact on the particular airport. Their success in implementing air service changes depends on the reaction of the marketplace - the passengers.

The passengers' option, at a constrained or unconstrained airport, is to accept the service offered by the airlines or choose not to use that airport. The second option would entail using another airport, another mode of travel, or not making the trip at all.

Under the No Action/No Project Alternative, the Master Plan analysis determined that there was sufficient market potential at LAX such that the airlines would make air service modifications to maximize their

¹⁵ Practical capacity is the maximum activity that can be processed by the facility over a specific period at a specific level of delay.

¹⁶ Maximum throughput capacity is the maximum activity that can be processed by the facility over a specific period without regard to delay.

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opportunities even under constrained conditions. Accordingly, the following air service changes are predicted in the Master Plan to occur over the 15-year planning horizon:

- ◆ Airlines with both international and domestic air service will give highest priority to growth in the highly profitable international air service. As much demand as can be served within the practical capacity of the facilities will be served. These airlines will also structure their flight networks and pricing strategies to ensure that they accommodate the local O&D passengers first. Domestic to international connecting passengers will be accommodated to the extent that capacity is available; otherwise, these passengers will be connected via another gateway city airport.
- ◆ The major domestic airlines will reduce the commuter air service in order to provide airfield capacity for increases in air service to other markets, particularly international ones. This change may result in less service to the same number of existing markets or it may also include elimination of service to the smallest markets.
- ◆ Airlines will reduce air service on short-haul markets with high levels of air service (such as San Francisco and Las Vegas). Alternatively, or in addition, they may increase the size of the aircraft serving these markets.

The implication of these air service changes with respect to aircraft operations will be an overall increase in the average size of the aircraft using the airport while the total number of flights will not increase. The number of flights will remain within the limits of the airfield's practical capacity based on maximum tolerable average delays of 10 to 15 minutes. This level of delay was used to define the practical capacity because delays increase exponentially above this level of activity. While the Master Plan assumes a maximum average delay of 15 minutes, the airport will experience fluctuations from year to year, including periods where average delays may exceed this maximum level. However, it is unlikely that average delays over 15 minutes would be sustainable over the 15-year forecast horizon.

The other significant implication of these air service changes will be the loss of opportunity of potential improvements in international air service. While international air service will increase even without LAX improvements, 23 percent of the unconstrained potential increases in international air service will be lost to the region. As explained in Chapter 1, *Regional Context*, other Los Angeles region airports are at a competitive disadvantage to capture international air service not accommodated at LAX. Airlines will likely focus more of their LAX international air service on O&D passengers and shift more of their connecting international passengers to other gateways in their network. They could shift these passengers to flights connecting through another U.S. gateway or to a major overseas gateway using new long-range aircraft such as the Boeing 777.

Even if terminal and access facilities are improved, as in Alternatives C and D (briefly described in the Executive Summary and described in detail within Chapter 3, *Alternatives*), without airfield improvements the airlines would be faced with a similar situation in which an air service change would be required to increase the passenger activity level. Assuming a similar shift in air service, increased capacity of the terminal and access system would permit passenger activity to increase to 89.6 MAP in Alternative C and 78.9 MAP in Alternative D over existing passenger levels. The 8.3 MAP shortfall, i.e., the difference between projected demand of 97.9 MAP, as shown in **Figure F2-1**, and capacity of Alternative C (89.6 MAP), with Alternative C is due to the airfield limitations and would be primarily international passenger demand. With this airfield limitation, as much as 7 percent of the international air service would still be lost to the region. Alternative D has a constraint on the aircraft gate frontage at the terminals and represents a shortfall of 19.0 MAP in 2015 below the Master Plan passenger forecast.

These air service changes, with or without terminal and access improvements, will occur gradually over time and will depend on the passengers' acceptance of these changes. Part of the consideration for passengers' acceptance will be the quality of the experience for the remainder of their journey through the airport. This experience will depend on the level of service provided by the terminal and access components of the system. Through the Master Plan analysis, it was determined that even with changes in air service, the terminal and access system would reach practical capacity at 79 MAP.

It is important to note that these activity levels are dependent on the collective decisions of the airlines to make the air service adjustments predicted in the Master Plan under the No Action/No Project Alternative to alleviate the negative effects of system pressure for all users. However, it is also possible, given the competitive nature of the marketplace, that these shifts may not be realized, in which case the resulting delays would be higher and the demand served would be lower. Consequently, these air service and

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activity levels should be viewed as the maximum practical levels under the No Action/No Project Alternative, Alternative C, and Alternative D.

Without Master Plan improvements, air service and activity will be constrained. While it is likely that the airlines will adjust their air service to maximize their return on investment, the overall effect to the region will be unrealized potential improvements in air service. This lower air service and activity potential will mean an annual loss to the region of \$20 billion in economic activity and 98,000 jobs as described in Section 4.4.1, *Employment/Socio-Economics*. The changes in air service could also mean a reduction or loss of air service to smaller and less profitable markets.

Even with the adjustments in air service that are predicted in the Master Plan, there are many implications of not improving LAX. The following sections present the major impacts to airport facilities and other considerations if LAX is not improved.

2.3.2 Airfield Facilities

In 1996, airport operations were near the practical capacity of the airfield with average aircraft delays of 9 minutes. As delays increase in the future, airlines will have to consider adjustments to their flight schedules and other changes to accommodate more passengers within the limits of the existing airfield facilities. Even with the air service adjustments predicted in the Master Plan, average aircraft delays will likely range from 10 to 15 minutes. With these high average delays, over 5 percent of the flights will experience delays in excess of 30 minutes. In addition, flow control will be implemented approximately 30 percent of the time. Under flow control, flights will be held at the origin airport until there is sufficient capacity at LAX to accommodate them. These flow control delays would be approximately 27 to 28 minutes per operation during these conditions. Delays in excess of these high levels are likely during peak periods and inclement weather conditions. If the airlines do not adjust their air service, then delays will increase to even higher levels or passenger demand will not reach the 79 MAP level predicted under the No Action/No Project Alternative.

Without Master Plan improvements, increases in passenger activity can only be achieved by airline changes in air service. Even with such changes in air service, assuming Master Plan improvements to the terminal and access systems, the four-runway airfield will limit airport capacity to a maximum of 89.6 MAP in 2015. As described in Chapter 3, Section 3.2.5, *No Action/No Project Alternative*, without terminal and access improvements, the airfield capacity will limit the airport's passenger capacity to 79 MAP in 2015. Chapter 3, Section 3.1, *Activity Forecasts and Facility Constraints*, of the Draft Master Plan Addendum, provided additional information on the relationship between facility constraints and activity demand forecasts.

2.3.3 Passenger Facilities

Passenger terminal space for ticket counters, baggage claim, departure lounges, holdrooms, federal inspection services, concessions, and other amenities are currently overburdened and are inadequate to serve future demand. Public space within the existing terminals totals 1,030,609 square feet and the Master Plan forecasts a need for 2,819,800 square feet in 2015 -- almost a threefold increase. Rental car space on the airport is very limited, and much of this service is provided off-airport, requiring passengers to take shuttle buses. Currently, 23 acres of rental car space is located on the airport; the Master Plan forecasts a need for 101 acres in 2015. While more rental car space is currently located off the airport, which is expected to continue, it is scattered in many areas. There remains a demand for consolidated space on the airport to reduce the need for shuttle buses and to increase efficiency and passenger convenience. Passengers using new terminals and rental car space would be better served with Automated People Movers (APM) rather than shuttle buses (which contribute to congestion and air pollution). Accordingly, there is a need to provide advanced APM technology for the safety and convenience of passengers, benefits featured in those airports that are most highly rated for efficiency.

Without the Master Plan improvements, congestion and reduced levels of service will be experienced in all of the passenger facilities at LAX through 2015. This impact, particularly with respect to curbside facilities, will limit the airport's practical capacity to 79 MAP in 2015.

2.3.4 Aircraft Gates Capacity

The existing gate facilities at LAX are inadequate to handle projected demand. There were 165 nominal¹⁷ gates, equivalent to 192.2 narrow-body equivalent gates (NBEG),¹⁸ for aircraft parking in 1996. The 2015 demand for gates is 214 nominal or 276 NBEG. Additional gates to remedy this discrepancy are needed to accommodate projected demand. Gate facilities must also accommodate changes in the aircraft fleet at LAX. The number of widebody and jumbo aircraft in the fleet is forecast to grow from 332 in 1996 to 813 in 2015.

As widebody aircraft were introduced after the original design of LAX, modifications have been made to taxiways and terminals over the years to accommodate widebody aircraft in the airport's operation. These improvements continue to lose their effectiveness, however, as the number and proportion of those aircraft operations increase. Many international flights, for example, and almost all commuter flights park and unload passengers on remote aprons where passengers then ride buses to the terminals. This operation is expensive, inconvenient, and time-consuming, particularly for connecting passengers. The bus traffic on the airfield adds to the congestion on service roads already burdened with baggage carts and service vehicles. By developing new terminals with the right number and size of gates to match airlines' schedules, LAX would be able to better serve flights, alleviate taxiway and service road congestion, and accommodate additional widebody aircraft with gates directly connected to the passenger terminal. The City could choose to limit development of additional gates at LAX in order to encourage a more equitable distribution of air traffic throughout the region.

Single-lane aircraft taxiway cul-de-sacs at each of the Central Terminal Area (CTA) terminals cause added congestion and delays. The previous satellite concourses were linked to the main terminal creating these cul-de-sacs before the era of the widebody aircraft. A single departing aircraft can block as many as 10 to 12 gates when it leaves the terminal area. This is a result of terminal piers that were originally designed for narrow body aircraft and fewer operations than are currently scheduled for the CTA gates. By developing terminals in the future with dual taxi lanes and sufficient additional aircraft gates and passenger loading space, these new terminals would operate more efficiently and relieve the pressure on the existing CTA terminals.

2.3.5 Ground Access

LAX is one of the few major airports in the U.S. that does not have a direct link between its regional roadway system and the airport terminal. The I-105 freeway ends at Sepulveda Boulevard on which vehicles transition to the airport roadways. A large proportion of airport traffic travels on Aviation, Century, Lincoln, and Sepulveda boulevards and other local streets, contributing to congestion, noise, and air pollution in neighboring communities.

The benefits of direct freeway access to LAX would include a segregated flow of traffic from the region to the passenger and cargo terminals. This would reduce the impact of traffic on the airport's local communities by keeping cars bound for the airport out of business districts, which depend on unimpeded access, and out of residential neighborhoods.

Direct rapid transit access is one of the best ways to ensure that employment opportunities associated with the airport are available to all of the region's residents. While transit systems can attract a modest amount of airport passenger traffic, other cities have found that the greatest benefits of rapid transit result from increased accessibility by employees and fewer employee vehicle trips to and from the airport area. A transit link would reduce the need for remote employee parking lots and corresponding shuttle bus traffic. The overall need for roadway improvements would be proportionally reduced.

As described in Chapter 3, Section 3.2.5, *No Action/No Project Alternative*, without airport improvements, the ground access system would reach its practical capacity at 79 MAP. Even at this level of activity, passengers will experience periods of unreasonable congestion and delay. Chapter 3, Section 3.1, *Activity Forecasts and Facility Constraints*, of the Draft Master Plan Addendum, provided additional information on the relationship between facility constraints and activity demand forecasts.

¹⁷ "Nominal" refers to actual specific aircraft gates of varying sizes to accommodate a fleet of aircraft of varying sizes.

¹⁸ Narrow Body Equivalent Gates (NBEG) refers to an equalized measure for comparing aircraft parking gates of varying sizes. Specifically, NBEG equalizes aircraft parking gates to a standard narrow body aircraft. For example, one B747 gate is equal to 1.8 NBEG.

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2.3.6 Cargo Facilities

As a critical component of the Los Angeles region's economy, air cargo relies heavily on LAX for meeting the region's demand. As the world's second largest cargo airport, LAX has become a leader in the efficient movement of time-critical, perishable, and high-value goods to all regions of the globe. (The largest cargo airport, Memphis, is the sorting hub for FedEx, the sole business of which is time-critical cargo.) In 1996, approximately 1,897,000 tons of air cargo moved through LAX's cargo warehouses, on to both passenger and all-cargo aircraft. This volume was handled on 197 acres with 1.9 million square feet of cargo building space and 77 acres of apron area. Air cargo at LAX is forecast to reach 4.2 million tons by 2015.

If adequate cargo processing space is not available at LAX, much of the forecast growth will migrate to cities outside of the Los Angeles region, where new capacity is being added. Because 46 percent of all cargo at LAX is carried in the bellies of passenger aircraft, increasing the cargo lift capacity associated with passenger air service is a strong catalyst to the development of air cargo service. Alternative western U.S. gateways like San Francisco, Portland, Seattle, and Las Vegas are vying for a portion of the spillover demand from LAX. These cities are developing capacity to allow for growth in both international and domestic passenger traffic. As networks for cargo distribution develop in these other regions, all-cargo flights will also be attracted there.

As described in Chapter 3, *Alternatives* and in Section 3.2.5, *No Action/No Project Alternative*, without additional cargo facilities, the cargo facilities will be limited to a practical capacity of 3.12 million annual tons of cargo. Chapter 3, Section 3.1, *Activity Forecasts and Facility Constraints*, of the Draft Master Plan Addendum, provided additional information on the relationship between facility constraints and activity demand forecasts.

2.3.7 New Large Aircraft

The next generation of large, widebody aircraft being designed by Boeing and Airbus are expected to weigh in excess of 1,000,000 pounds, have a wingspan as wide as 262 feet, and carry up to 600 passengers. For airport design purposes, these aircraft are classified as FAA Design Group VI. Their popular name is "New Large Aircraft" or "NLA." As of August 2000, Emirates and Singapore airlines have placed firm orders for these aircraft. Airbus Industries expects that their NLA will begin flying in 2004 with a delivery to the first launch customer in 2006. The Master Plan forecasts identify a potential daily activity demand of 30 NLA operations in 2015, 10 years after the aircraft is expected to be introduced into service.

The development of NLA aircraft is driven by increasing demand and constrained international gateway airports around the world, including LAX. Limited time windows for coordinating travel across many time zones have further narrowed the capacity of these key airports. Development of the NLA will allow these airports to continue to meet the growing demand for travel between primary trading partners. As one of the three major (and busiest) gateway airports in the nation, LAX would be one of the first airports to be served by the NLA. The economic importance of service by NLA to LAX is their lift capacity and their appeal to business travelers from major Pacific Rim cities.

The introduction of the Boeing 747 in the 1960s had much the same ground capacity impact on airports that the NLA development is causing now. Only one runway at LAX, Runway 25L, is sufficiently long and wide to meet Group VI standards and accommodate the NLA. Airfield improvements could allow NLAs to operate with little or no disruption to other aircraft. Without airfield improvements, LAX would face additional operational restrictions to accommodate NLAs. The current plan to accommodate the NLA is sufficient for only four or five operations per day, and this plan would restrict other aircraft operations on the airport.

Without airport improvements, accommodating the NLA will increase delays on the airfield and will provide a lower level of service to the passengers on these aircraft.

2.3.8 Safety and Efficiency

Because FAA airport design standards have changed over time, certain features of the existing airfield do not meet current standards. Examples include less than standard safety area beyond the end of

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runways, and less than standard separation between runways and taxiways. These conditions are documented as part of the airport's certification under FAR Part 139, available through LAWA.

While these conditions do not create an unsafe environment, they do add to airfield congestion as operations increase by imposing slower taxi speeds, which result in an increase in air pollution and aircraft delay. Improvements to runways and terminals at LAX would increase taxiway separations to meet current FAA design standards. Without the improvements to LAX, safety will not be enhanced, and efficiency of the airfield will not be increased. In conjunction with FAA's role regarding safety and efficiency on the airfield, it is also FAA's responsibility to develop air traffic control and airspace management procedures to effect the safe and efficient movement of air traffic to and from the proposed runways, including the development of a system for the routing of arriving and departing traffic and the design, establishment, and publication of standardized flight operating procedures, including instrument approach procedures, and standard instrument departure procedures to serve these runways. All planning within the LAX Master Plan has been undertaken in close coordination with FAA staff to ensure the proper fulfillment of this critical requirement.

2.3.9 Airport-Related Impacts on Adjacent Neighborhoods

LAX affects adjacent neighborhoods both positively and negatively. Minimizing negative impacts and preserving and enhancing the positive impacts on adjacent neighborhoods is an important goal of the Master Plan. Positive impacts include increased employment, tax revenues, and airline service. Negative impacts include noise, air pollution, and automobile traffic. Several aspects of the Master Plan already discussed here are designed to limit those negative impacts.

The Master Plan proposes the use of the now vacant area along the northern boundary of the airport to benefit adjacent neighborhoods and businesses. Currently, this property, known as LAX Northside, is planned for development of airport-related uses. As part of the Master Plan Alternatives A, B, and C, the Westchester Southside Plan would be implemented. A community commercial "village" development would provide a pedestrian-oriented environment for the residents of Westchester and an opportunity for the displaced retail, office, and educational uses to relocate. A business park would preserve the economic benefits of the light industrial uses now located in areas to be acquired. A total reduction in development intensity with a landscaped buffer zone would reduce vehicle traffic and buffer the residential areas of Westchester from potential airport impacts.

The LAX Northside Plan would be developed under Alternative D and the No Action/No Project Alternative as currently entitled for commercial and research/development uses. Compatible businesses displaced by acquisition under Alternative D would be eligible for relocation within LAX Northside. Under Alternative D, the total amount of traffic generation associated with development of LAX Northside would be reduced to the same level of daily vehicle trips that would have resulted from development of Westchester Southside through implementation of a vehicle trip cap, as presented in Chapter 3, *Alternatives*. Without the improvements to LAX, positive aspects of the program cannot be implemented.

2.4 Los Angeles World Airports Proposed Projects

The LAWA-proposed Master Plan projects are the various components of Alternative D. These are the projects to be considered for approval, permitting, and entitlement as part of this Final EIS/EIR. A detailed description of the facilities and aviation activity associated with Alternative D is presented in Chapter 3, *Alternatives*. The rationale for selection of this as the sponsor's preferred alternative is also discussed in Chapter 3.

The proposed project (Alternative D) would be implemented in three phases. Phase I would include the first five to six years after approval and, for planning purposes, is scheduled for completion in 2009. Phase II would include 5 years of development commencing in 2007 and is scheduled for completion in 2011. Phase III would also include about 5 years of development commencing in 2010 and is scheduled to be completed in 2014. In 2015, the LAWA staff-preferred alternative is expected to accommodate 78.1 percent of unconstrained operations demand, 80.6 percent of passenger demand, and 74.8 percent of the cargo demand. The primary elements of the proposed project are summarized below in the sequence proposed by LAWA.

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Phase I

- ◆ Reconstruct and recrown Runway 7R/25L approximately 50 feet to the south, construct a new full-length parallel taxiway between Runways 7R/25L and 7L/25R, and install the navigational aids associated with Runway 7R/25L.
- ◆ Redevelop the Continental City lot into a new Intermodal Transportation Center (ITC) containing 9,127 parking stalls. This facility would provide short-term parking and would contain a physical link to the existing Green Line transit station at the corner of Aviation Boulevard and Imperial Highway. The link would provide power-assisted moving walkways to assist passengers transferring to and from the APM system.
- ◆ Reconfigure the existing long-term parking Lot B west of and adjacent to La Cienega Boulevard. This facility would contain approximately 5,470 parking spaces. Passengers using this lot would be shuttled by bus to the ITC and transferred to the APM for connection to the CTA.
- ◆ Begin relocation of existing off-site utility infrastructure impacted by development program.
- ◆ Construct a baggage tunnel from the site of the future Ground Transportation Center (GTC) to the existing CTA.
- ◆ Construct a new access roadway system east of Aviation Boulevard including Century Boulevard overpasses. These roads would provide access to/from the ITC, GTC, and the Rent-A-Car (RAC) facility.
- ◆ Construct a new consolidated RAC facility in the general location of the existing long-term parking lots C and D. A 150,000-square foot customer service center, including a 9,000-stall, four-level ready/return-parking garage, would be located north of 98th Street. This project would be completed in two phases. Upon the completion and opening of the GTC, the public parking component of Lot C would be transferred to the GTC, and a series of maintenance facilities and vehicle storage lots would be distributed to the north of the service center. In the period between the completion of the RAC service facility and the opening of the GTC, rental car companies would shuttle vehicles from the existing lots to the new customer service/ready return garage.
- ◆ Construct the West Employee Parking Garage. The new facility would contain a total of approximately 12,400 parking stalls. A consolidated employee security screening facility could be developed as part of this project. Shuttle buses would transport employees between this lot and their respective employer locations.
- ◆ Demolish the existing parking structures in the CTA, relocate necessary utilities, and complete site preparation for new terminal facilities.
- ◆ Construct off-site roadway improvements required for Alternative D.
- ◆ Construct a new passenger-processing center (terminal) in the area currently occupied by the parking garages in the CTA. This new facility would provide ticketing, baggage claim, concessions, level two (Transportation Security Administration [TSA]) security screening for both passengers and baggage, and new meet/greeter areas. New pedestrian bridges would link the new processing building with the existing passenger concourses.
- ◆ Construct a new aboveground APM from the CTA to the RAC, GTC, and ITC. An associated APM maintenance facility and test track would be located in the basement of the ITC.
- ◆ Install new baggage security and distribution systems in the CTA and the GTC, including linkage between the two facilities.
- ◆ Construct a new GTC north of Century Boulevard and south of Arbor Vitae Street, between Aviation and La Cienega Boulevards. This GTC would serve all commercial and private vehicular traffic for departing and arriving passengers at LAX. This would also include the construction of three new parking garages containing a total of approximately 7,515 parking spaces. A new commercial vehicle staging area would be developed north of the northern-most parking structure at the GTC.

Phase II

- ◆ Construct replacement airline maintenance facilities for the American Airlines High Bay maintenance facility, which would be displaced by the construction of the West Satellite Concourse. The new facility would encompass approximately 275,000 square feet of enclosed space.

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- ◆ Construct replacement ancillary facilities for midfield facilities displaced by the future West Satellite Concourse. These facilities include two Aircraft Rescue and Firefighting (ARFF) facilities, two 90,000-square foot ground run-up enclosures (GREs) and associated apron space. The first GRE would be located immediately east of the replacement airline maintenance facilities and the second located on the existing Delta Airlines maintenance apron.
- ◆ Clear midfield airline maintenance areas, including the American High and Low Bay hangars, the former TWA hangar, and US Airways maintenance building. Complete site preparation for the future West Satellite Concourse.
- ◆ Construct an underground tunnel for APM and baggage systems from the future West Satellite Concourse to the redeveloped CTA. Construction should be phased to coincide with apron and taxiway reconstruction.
- ◆ Construct, light, and mark new cross-field taxiways west of the new satellite building. Build the aircraft parking apron associated with the satellite concourse. Relocate Taxiways Q and S that are located immediately to the west of the Tom Bradley International Terminal (TBIT) building. Construct the aircraft parking apron associated with the future new TBIT gates.
- ◆ Construct a new West Satellite Concourse west of the TBIT building in the area formally occupied by the TWA, US Airways, and American Airlines aircraft maintenance hangars.
- ◆ Complete the underground APM from the West Satellite Concourse to the redeveloped CTA.
- ◆ Install a new baggage system from West Satellite Concourse to the redeveloped CTA.

Phase III

- ◆ Reconfigure the existing fuel farm to accommodate future north airfield runway and taxiway configuration.
- ◆ Reconfigure the TBIT. The components of this reconfiguration include the addition of holdrooms and departure gates on the west side of the TBIT and the demolition of a portion of the north concourse.
- ◆ Reconfigure Terminals 1, 2, and 3 on the north side of the CTA into one linear facility capable of a continuous Group VI flight line.
- ◆ Relocate and reconstruct the aircraft parking apron associated with the reconstructed north concourses. Relocate and extend the dual taxiway system south of Runway 6R/24L.
- ◆ Reconstruct, widen, extend, light, install associated navigational aids, and mark the existing Runway 6R/24L with a centerline approximately 340 feet south of the existing 6R/24L centerline. The extended runway would be approximately 11,700 feet long and 200 feet wide.
- ◆ Renovate the existing south CTA concourses to accommodate the relocated carriers' operational needs.
- ◆ Demolish West Remote Gate facilities and associated bus loading docks. Aircraft parking apron, lighting and marking to remain for general aircraft parking and holding purposes.
- ◆ Construct, light, and mark a new full length Group VI taxiway between Runways 6R/24L and 6L/24R.
- ◆ Extend, light, and mark the existing Runway 6L/24R approximately 1,450 feet to the west with minimum paved shoulders 50 feet wide.
- ◆ Demolish portions of the existing west remote pad.

2.5 LAX Development with Independent Utility

Several improvement projects on the airport are already approved and will be or have been completed independent of any development proposed in the Master Plan. These projects are included in the LAWA capital improvement plans and have received both environmental clearance and funding as of August 2000. Some of these projects have been underway during the preparation of this document and will be in various stages of completion depending on the date of release of this Final EIS/EIR. These projects include passenger lounges, taxiways, remote terminal improvements, public parking, cargo roads/parking, and land acquisition. These projects are included in the No Action/No Project Alternative and are illustrated in Figure F3-7, No Action/No Project Alternative (2015), in Chapter 3, *Alternatives*. These independent projects are:

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- ◆ **Taxiway Facilities:** Taxiways WG, WF, and T will be constructed on the south airfield. The first two will provide high-speed exits from Runways 7L and 7R in east flow. Taxiway T will provide an additional high-speed exit from Runway 25L. Taxiway EE will be constructed on the north airfield. It will be a high-speed exit taxiway off the end of Runway 24R to provide more efficient use of this runway by adding a third turn-off for widebody aircraft. Taxiway C will be improved and widened by extending the Sepulveda Boulevard tunnel to the north.
- ◆ **Passenger Terminal Gate Use Plan:** Additional remote boarding lounges similar to the five recently completed will be constructed in the remote boarding area on the west side of the airport for use during the construction of terminal improvements. The project does not increase the total number of aircraft parking positions on the airport, but it does improve passenger service and comfort. The remote aircraft parking positions are served by the passenger processing facilities at TBIT, and the passengers are transported to the remote sites by bus. Another portion of the project consists of facilities to serve the aircraft at the remote boarding lounges: a 400 Hz power supply, new loading bridges, and a pre-conditioned air system. The use of these facilities would be discontinued when terminal improvements in Alternative D are completed.
- ◆ **Remote Parking of Commuter Aircraft:** With busing to the main terminals, remote parking of commuter aircraft will also occur to permit increased use of existing jetways by larger air carrier aircraft at the main terminals. The use of these facilities would be discontinued when terminal improvements in Alternative D are completed.
- ◆ **Passenger Terminal Improvements:** Renovations to Terminals 2, 4, 7, and 8 will be completed to improve passenger comfort and convenience. Portions of TBIT to be remodeled include the food and beverage concessions, the interline baggage area, the in-transit lounge, the building power supply and the reconfiguration of aircraft parking areas to accommodate alternative aircraft types at various times of the day, including the Airbus A380 and other New Large Aircraft (NLA)s as they enter the fleet serving LAX. This project will improve the bus terminal on the west side of the building and will increase the flexibility of the aircraft parking plan but will not add any aircraft parking positions.
- ◆ **Public Parking Facilities:** Two projects increase the number of public parking stalls beyond the 1997 inventory. A parking structure with 949 stalls across from Terminal 6 has been reconstructed after having been demolished for inadequate earthquake safety. This adds 686 close-in stalls to the inventory conducted in 1997. Off the airport, a private operator completed a 1,000-stall remote parking structure in 1999 on the northwest corner of the intersection of Bellanca Street and Century Boulevard.
- ◆ **Cargo:** Various improvements to cargo facilities are scheduled to be constructed, or in some cases have been completed, that would increase the inventory beyond those existing in 1997. This development will involve the demolition of more than 434,000 square feet of existing older and functionally obsolete air freight facilities and the development of 865,300 square feet for a net gain of 431,300 square feet.
- ◆ **Air Cargo Employee Parking:** Parking spaces for the new cargo facilities described above will be provided on-site at a ratio of approximately one stall per 1,000 square feet of building area to serve customers and administrative staff. Additional parking at the ratio of 0.5 stalls per 1,000 square feet of building will be provided in the airport employee parking areas and accessed via airport shuttles.
- ◆ **Air Cargo Roadway System:** To serve planned improvements to the Century Cargo Area, a new frontage roadway will be developed along the south side of Century Boulevard. The frontage road will be 50 feet wide with two lanes in each direction and will make direct connections to the cargo complexes along Aviation and Century Boulevards to reduce cargo truck use of Century Boulevard. Airport Boulevard, south of Century, will be closed. A 50-foot landscaped setback area will be provided to screen the cargo activities from Century Boulevard and hotel/office land uses on the north side. This setback area may also provide space for street widening and turning lanes.
- ◆ **Land Acquisition:** Under the Aircraft Noise Mitigation Program, LAWA will acquire the Belford area (583 dwelling units in 49 parcels) and the Manchester Square area (1,981 dwelling units in 514 parcels) east of and adjacent to the airport. These properties are heavily impacted by noise, traffic, and incompatible adjacent land uses. Residents in those areas approached the airport and requested that their properties be acquired rather than soundproofed.

2.6 Non-LAX Development Having Cumulative Impact

Both NEPA and CEQA require that cumulative impacts be analyzed in an EIS and EIR. Under NEPA, cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes those actions." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.¹⁹ Under the CEQA guidelines, cumulative impacts are described as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."²⁰

This Final EIS/EIR uses an approach to cumulative impacts based on applicable planning documents designed to evaluate regional and area-wide conditions. This approach relies on regional projections prepared and adopted by SCAG. This method was selected due to the regional nature of the project and the project's planning horizon, which extends to the year 2015. Due to the span of years addressed in the impact analysis (1996 to 2015), the option of using a list of anticipated projects was not selected as such lists typically cover and remain valid for a two to five year period.

The 1996 baseline and future conditions established for the cumulative impact analysis are primarily based on socio-economic forecasts developed to support SCAG's 1998 RTP. This forecast data was developed by SCAG with both local and regional governmental input and, therefore, reflects recent growth trends and existing development potential in the region. The forecast data has a base year of 1994 and is forecast by five-year increments through the year 2020. The data includes population, households (single/multi-family), and employment (retail/non-retail) forecasts for several geographic areas, including five counties, cities, transportation analysis zones, and census tracts in the Los Angeles region.

While the traffic analysis also uses a 1996 baseline with socio-economic data derived from SCAG forecasts, an additional step was taken to ensure all present and probable future projects were accounted for. This effort, undertaken by the project traffic consultant, involved the compilation of a list of related projects through direct consultation with the cities of Los Angeles, El Segundo, Inglewood, Hawthorne, Manhattan Beach, Redondo Beach, Culver City, and Santa Monica during August and September of 1999. Following review and approval by the City of Los Angeles Department of Transportation, the projects on the list were evaluated against SCAG's RTP forecast data by traffic analysis zone. If it appeared that projects were not fully accounted for in the forecast numbers, the forecast numbers were adjusted upward to fully account for the projects. All such projects formulated or contemplated as of October 1999, are listed by jurisdiction in Appendix L to Chapter V of the Draft LAX Master Plan. Some 200 separate projects, including over 18,000 dwelling units, 5 million square feet of retail space, and 21 million square feet of office/commercial space will occur in the west part of the City of Los Angeles and other cities nearby LAX during the 2000 to 2015 planning period. This Final EIS/EIR assesses the cumulative impacts of these projects in combination with the No Action/No Project Alternative and the build alternatives addressed in Chapter 4, *Affected Environment, Consequences and Mitigation Measures*. A sampling of the larger projects included in that list of 200 are presented below.

- ◆ Playa Vista, City of Los Angeles - This mixed use "new town" development is located one and one-half miles directly north of LAX. Plans originally called for over 13,000 dwelling units, over 4 million square feet of office space (including studio uses), 640,000 square feet of retail, and 750 hotel rooms. In November 2002, subsequent to the publication of the LAX Master Plan Draft EIS/EIR, the development plan for Playa Vista, specifically the Second Phase (buildout) portion of the project, was substantially reduced. With the reduced plan, the current proposal for Playa Vista would provide for a total of approximately 5,800 dwelling units, approximately 3.4 million square feet of office space (including studio uses), 185,000 square feet of retail uses, and 160,000 square feet of community-serving uses.
- ◆ Sony Pictures Studio, Culver City - This facility located 2 miles north of LAX on Washington Boulevard is a 1.1 million square foot movie studio.

¹⁹ NEPA 40 CFR Sec.1508.7.

²⁰ State CEQA Guidelines Section 15355.

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- ◆ Howard Hughes Center, City of Los Angeles - This commercial development is located two miles north of LAX where Sepulveda Boulevard meets the I-405. Plans call for 1.5 million square feet of office space and 100,000 square feet of retail space.
- ◆ Costco Center, Culver City - This is a 225,000 square foot retail center located 3 miles north of LAX at Washington Boulevard and Glencoe Street just north of Marina del Rey.
- ◆ Fox Hills Mall expansion, Culver City - This is a 160,000 square foot addition to the existing mall located 2.5 miles north of LAX on Sepulveda Boulevard north of the I-405.
- ◆ Hawthorne Gateway Center, City of Hawthorne - Located 2.5 miles southeast of LAX where Rosecrans Avenue meets the I-405, this development includes 450,000 square feet of mixed retail and 300 hotel rooms.
- ◆ 4251-4750 Lincoln Apartments, City of Los Angeles - These two multiple family residential developments are located 2 miles north of LAX and include a total of 1,312 units.
- ◆ Loyola Marymount University, City of Los Angeles - This institution, located 1 mile north of LAX, is planning to add 673 dwelling units and 135,000 square feet of school building space.
- ◆ Marina del Rey, County of Los Angeles - The local coastal plan allows for an additional 2,420 single family dwellings, 1,070 hotel rooms, and 500,000 square feet of studio/office space in this area, located 2 miles north of LAX.
- ◆ Manhattan Beach Studios, City of Manhattan Beach - This project located on Rosecrans Avenue 2 miles south of LAX, includes 483,000 square feet of studio/office space.
- ◆ Media Center, City of El Segundo - This project was conceived during 2000 and is located on a 47 acre site on North Douglas Street north of Rosecrans Avenue and includes 1.5 million square feet of studio/office space.
- ◆ Manchester Square, City of Los Angeles - This 128-acre residential area bounded by La Cienega, Aviation and Century Boulevards as well as Arbor Vitae Street is being acquired and cleared by LAWA under the Aircraft Noise Mitigation Program.
- ◆ El Segundo Corporate Campus, El Segundo - This project includes approximately 405,000 square feet of retail use and approximately 6.6 million square feet of office use located just south of LAX at 700-800 North Nash Street.
- ◆ Residential Development Project, Long Beach - This 2,200 dwelling unit residential project is proposed near Long Beach Airport.
- ◆ New Hotel, Marina del Rey - A new hotel to be included as part of the Local Coastal Plan amendment proposed for Marina del Rey.

2.7 Proposed Federal, State and Local Actions and Required Permits

Regardless of the development alternative pursued, actions will be required at the federal, state, and local levels of government. This section summarizes the applicable laws requiring governmental actions.

2.7.1 Requested Federal Actions

U.S. Department of Transportation Federal Aviation Administration (FAA). Key actions by the FAA include:

- ◆ A determination under 14 CFR Part 157 (49 USC 40113(a)) as to whether or not the FAA objects to the airport development proposal from an airspace perspective, based on aeronautical studies;
- ◆ Decisions under the authority of 49 USC 40103(b) to develop air traffic control and airspace management procedures to effect the safe and efficient movement of air traffic to and from the proposed runways, including the development of a system for the routing of arriving and departing traffic and the design, establishment, and publication of standardized flight operating procedures, including instrument approach procedures, and standard instrument departure procedures;

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- ◆ A determination, through the aeronautical study process, under 14 CFR 77²¹ regarding obstructions to navigable airspace;
- ◆ Decisions regarding project eligibility for federal grant-in aid funds²² or Passenger Facility funds²³ for land acquisition, site preparation, runway and taxiway construction, environmental, and mitigation;
- ◆ Final approval of a revised airport layout plan²⁴ and environmental approval;^{25, 26}
- ◆ Certification of air quality conformance of the proposed facility with applicable air quality limitations under section 176 (c)(1) of the Clean Air Act as amended²⁷ and state ambient air quality standards;
- ◆ Approval for navigational aids,²⁸ and
- ◆ Certification that the proposed facility is reasonably necessary for use in air commerce or for the national defense.²⁹

U.S. Department of Transportation Federal Highway Administration (FHWA). Key actions by the FHWA include:

- ◆ Record of Decision for the Environmental Impact Statement for the State Route 1 (SR 1) and the LAX Expressway (for Alternatives A, B and C only).

U.S. Army Corps of Engineers (USACOE). Key actions by the USACOE include:

- ◆ Issuance of Section 404 permits as needed for impacts to jurisdictional wetlands.

U.S. Fish and Wildlife Service (USFWS). A key action by the USFWS includes:

- ◆ Issuance of a Biological Opinion from the Section 7 Formal Consultation for potential impacts to federally-listed threatened and endangered species.

2.7.2 State and Regional Actions

A number of state actions would be required before improvements could be undertaken at LAX, including:

- ◆ **California Department of Transportation (Caltrans):** The California Public Utilities Code notes that Caltrans must "encourage, foster, and assist in the development of aeronautics in this state and encourage the establishment of airports and air navigation facilities."³⁰ The California Public Utilities Code also places responsibility for several permits and approvals of airport projects with Caltrans. Such requirements of the utilities code are:
 - ◆ Plan of Expansion - Before acquisition of land for airport expansion, Section 21661.6(a) requires that the "acquiring entity shall submit a plan of such expansion or enlargement to the board of supervisors of the county, or the city council of the city, in which the property is located." Acquisition cannot proceed until the jurisdiction approves the plan.
 - ◆ Airport Permit - Section 21664 requires an airport sponsor to request a permit from Caltrans for "every expansion of an existing airport." The permit can be granted as long as five conditions are met: 1) The site meets or exceeds airport standards; 2) Safe air traffic patterns have been established; 3) The approach zones meet airport standards; 4) Appropriate conditions have been met to "effectuate the purposes of this article."; and 5) The advantages to the public of the proposed airport expansion outweigh the disadvantages to the environment.

In addition, the LAX improvements would require compliance with the State Airport Noise Standards. However, as most air carrier airports in the state, such as LAX, operate under a variance from the

²¹ 49 USC 40103(b), 40113.

²² 49 USC 47101, et seq.

²³ 49 USC 40117.

²⁴ 49 USC 47107 (a)(16).

²⁵ 42 USC 4321-4327.

²⁶ 40 CFR 1500-1508.

²⁷ 42 USC 7506(e).

²⁸ 49 USC 44502 (a) (1).

²⁹ 49 USC 44502(b).

³⁰ California Public Utilities Code, Section 21241.

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State Noise Standard, it is likely that the needed improvements would also result in continuation of the variance status but could result in reduced population and housing exposed to significant aircraft noise exposure.

- ◆ **California Coastal Commission**: The California Coastal Act of 1976 grants the authority to regulate development and related resource-depleting activities within the Coastal Zone Boundary. This boundary extends inland 1,000 feet from the mean high tide line in developed areas.
- ◆ **California State Historic Preservation Officer (SHPO)**: The State Historic Preservation Officer is a member of the California State Parks Department, Office of Historic Preservation. It is expected that the SHPO will participate in the Section 106 consultation process concerning all historic sites affected by the LAX improvements.
- ◆ **State Water Resources Control Board (SWRCB)**: The Porter-Cologne Act is the primary statute covering the quality of water in California. It is established and is administered by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards. The State Water Resource Control Board is responsible for several programs:
 - ◆ National Pollutant Discharge Elimination System (NPDES) - Industrial Activities Storm Water Permit
 - ◆ General Construction Activity NPDES Storm Water Permit
 - ◆ The Los Angeles Regional Water Quality Control Board, acting under the State Water Resource Control Board, will continue to supervise cleanup of contaminated soil and groundwater at LAX over the course of and after LAX Master Plan activities, primarily through issuance of Cleanup and Abatement Orders under the Porter-Cologne Act.
 - ◆ Issuance of 401 Permit for potential impacts to the Centinela Creek/Ballona Creek by the LAX Expressway (for Alternatives A, B and C only). Section 401 Water Quality Certification from California is necessary for any Section 404 permit from the Corps of Engineers needed to fill a jurisdictional wetland.
- ◆ **South Coast Air Quality Management District (SCAQMD)**: The South Coast Air Quality Management District is the regional agency empowered to regulate air pollutant emissions from stationary sources in the air basin. Regulatory oversight occurs through issuance of permits for stationary sources as well as through participation in the planning and review activities associated with major new development. As was noted earlier, it is likely that the LAX improvements will require that the projects be shown to conform to the State Implementation Plan. It would be expected that the South Coast Air Quality Management District would participate in the discussions concerning conformity, and issue any permits for stationary sources that may be required under the Clean Air Act Title V or XIII requirements.

2.7.3 Local Actions

The LAX Master Plan will be subject to a series of actions by various City of Los Angeles departments as part of the review and approval process. Actions to be taken by the city include, but are not limited to, the following:

- ◆ Certification of the LAX Master Plan Improvements Final EIR. This action by the City Council would include the adoption of the Mitigation Monitoring and Reporting Program to ensure project mitigation is carried out as the project is implemented.
- ◆ Approval of the LAX Master Plan, LAX Specific Plan, and LAX Plan.
- ◆ Los Angeles City General Plan Amendment and modifications to other city plans and programs, including updates or replacements to:
 - ◆ City of Los Angeles Transportation Element of the General Plan. This includes classification of the surface transportation facilities developed as part of the LAX Master Plan
 - ◆ City of Los Angeles Noise Element of the General Plan to update new noise contours and other related information.
 - ◆ Los Angeles Coastal Transportation Corridor Specific Plan
 - ◆ Los Angeles International Airport Master Plan Goals and Objectives Framework

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- ◆ Los Angeles International Airport Interim Plan
- ◆ LAWA Aircraft Noise Mitigation Program
- ◆ Westchester-Playa del Rey District Plan
- ◆ Zoning Code Changes to support the General Plan Amendment, including the addition of the new LAX Zone and any references to that zone that may be pertinent in other sections of the Los Angeles Zoning Code. This would address the range of zoning variances and conditional use permits that currently exist throughout the airport property, as well as properties to be newly acquired for the project.
- ◆ Approval of Tentative Tract Maps
- ◆ Approval of the LAX Master Plan Program Relocation Plan
- ◆ Approval of the Airport Layout Plan

2.7.4 Miscellaneous Actions

Other permits and approvals of specified types, but as yet unknown, may be issued to implement various aspects of the LAX Master Plan project.

2.8 Funding

Implementation of the proposed projects in the first phase (2005) of the LAWA staff-preferred Alternative D is expected to cost approximately \$5.2 billion. Implementation of the entire Alternative D projects (2015) is projected to cost approximately \$8.9 billion.³¹ The development could be financed using a combination of private, state, local, and federal funding. Potentially, federal funding for airfield and other public-use improvements may be requested from the Airport Improvement Program, a federal grant-in-aid program authorized by the Airport and Airway Improvement Act of 1982, as amended,³² administered by the FAA and financed from the Aviation Trust Fund. Funding from the Aviation Trust Fund could provide funds for the capacity and airfield-related projects. The Aviation Trust Fund is derived primarily from a nationwide tax on airline passenger tickets, cargo shipments, aviation fuel, and tires.

FAA approval may also be requested for authority to impose Passenger Facility Charges collected by the airlines directly from passengers using LAX. Federal funding for roadway improvement projects may also be pursued through the Transportation Efficiency Act of the 21st Century (TEA-21). State funding may be requested from Caltrans through the Regional Transportation Improvement Program administered by SCAG or from the Metropolitan Transportation Authority through its call-for-projects process. Local funding may be derived from the issuance of new debt, tenant funds, and airport funding. In addition to the capital projects themselves, the structure of the financing plan will ultimately affect the cost of implementation.

³¹ These costs include estimated soft costs, contingency and acquisition costs and escalation as of January 2002, but they do not include financing costs.

³² Recodified at Title 49 USC 47107 et seq.

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