EXECUTIVE SUMMARY

Introduction

Major airports located in metropolitan areas present a fundamental challenge to the airport planners and policy makers who must ultimately decide their future. The challenge is one of achieving balance between providing needed improvements and capacity and reducing adverse environmental impacts from the airport. Because these urban airports are, by definition, located efficiently and conveniently close to the highly concentrated populations they serve, they also have impacts on the people who live nearby and on the surrounding environment.

In the case of Los Angeles International Airport (LAX), a key question facing decision makers is how best to meet the economic and transportation needs of the five-county region centered on the nation's second largest city, while at the same time dealing with the impacts that any large airport would have on the communities that have grown up around it.

- The future economic health of the Los Angeles region will be influenced by the availability of sufficient aviation services, of the right type, at the right place, and at the right time to accommodate the demand for passenger travel and air cargo, both international and domestic.
- Airport neighbors have important concerns about environmental impacts such as aircraft noise, airport-related traffic, and air quality. Many of them work at the airport or at businesses directly related to the airport and also have a big stake in changes that affect their jobs and businesses.

In preparing the LAX Master Plan to study and provide for the future development of LAX, airport planners have considered a number of options to achieve an appropriate balance between the economic and transportation needs of the Los Angeles region and the impacts from the airport on the surrounding communities. This Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) describes the purpose of and need for Master Plan improvements at LAX, presents a range of proposed alternatives for the airport's future, discloses the potential adverse and beneficial impacts for each alternative, and proposes mitigation measures and other environmental commitments that would reduce or eliminate negative impacts.

By comparing these factors for each alternative, the Final EIS/EIR also serves as a basis for gathering public comments and agency responses to the proposed project. This input will help the City of Los Angeles, the Federal Aviation Administration (FAA), and the Federal Highway Administration (FHWA) make a decision about whether to proceed with improvements to LAX and, if so, which of the Master Plan alternatives should be chosen.

The Final EIS/EIR, called a joint NEPA/CEQA document, has been produced to conform to both the federal National Environmental Policy Act (NEPA), which uses the EIS terminology, and the state California Environmental Quality Act (CEQA), which uses the EIR terminology. The resulting joint document analyzes and compares the alternatives for improving LAX on the basis of two legally defined benchmarks:

- In accordance with the "no project" definition set forth in Section 15126.6(e) of the *State CEQA Guidelines*, the No Action/No Project Alternative describes existing conditions at and near LAX as modified by what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. This alternative involves the continuation of the existing plans, policies and operations at LAX into the future and assumes that certain projects (e.g., LAX Northside and Continental City) initiated under the existing plan will continue. These projects have fully vested entitlements (an approved development agreement and an approved final subdivision map, respectively) that have been the subject of previous EIR evaluation. The NEPA definition of the "no action" alternative is fully consistent with the *State CEQA Guidelines* of the "no project" alternative, and, under NEPA, this alternative constitutes a principal comparison benchmark used in the environmental analysis of this Final EIS/EIR.
- Pursuant to Section 15125 of the *State CEQA Guidelines*, the environmental baseline for this Final EIS/EIR's environmental analysis normally describes existing conditions as of the June 1997 date on which the Notice of Preparation (NOP) was published. When a full year's worth of data is appropriate for describing the existing environmental setting, data is normally used from 1996 - the last full year

before the date of the June 1997 NOP. In certain instances, data from earlier years is used when that is the only available data. In other instances, data from later years (e.g., 1999 or 2000) is used when it is considered appropriate to use more recent data. This Final EIS/EIR includes for informational purposes discussions and analyses based on Year 2000 conditions.

- The draft environmental analysis and a supplement to that draft analysis were widely distributed to the public and to various local, state, and federal government agencies so that they could comment on the project alternatives and the impact analysis during public hearings and in writing. Los Angeles World Airports (LAWA) and FAA have prepared written responses to the comments received during the public review period. The collected input and responses are included as part of this Final EIS/EIR for the project.

Regional Context

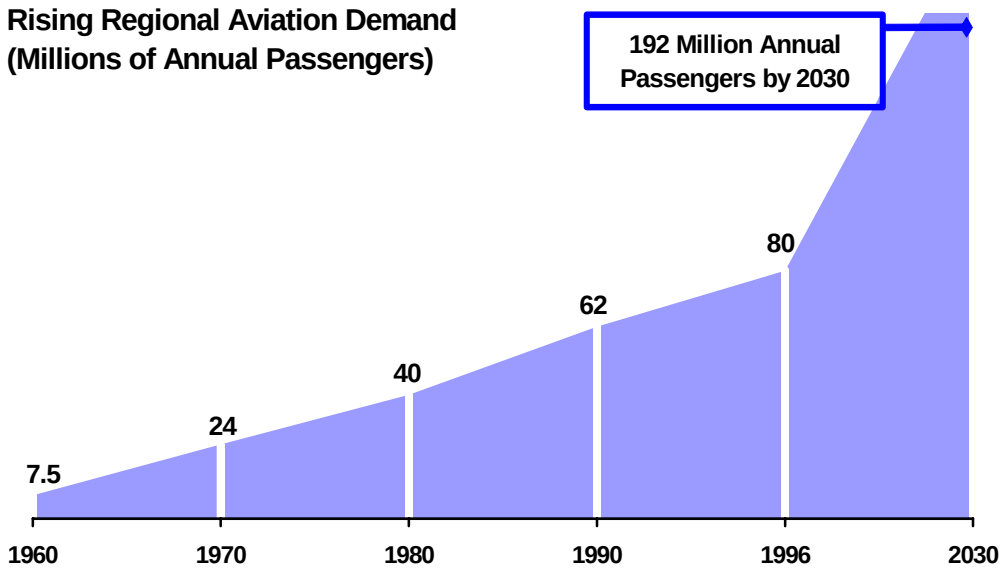
Planners studying options for the future of LAX had to address some central context questions in the process of defining the specific role of LAX in the region's airport system.

- What is the projected future demand for passenger and air cargo aviation services in the five-county region (Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties)?
- Given projected patterns of population growth and economic development, how will that demand be spread across the region's airports?
- What portion of the demand, and what type of aviation services, should LAX be expected to accommodate as its share of the regional need?
- What portion of the demand, if any, can only be accommodated at LAX?

Projected Economic Growth: Fundamentally, economic as well as population growth considerations drive demand for aviation services. Projected increases in regional population, employment levels and per-capita income all point to substantially increased demand for passenger and air cargo services according to the Southern California Association of Governments (SCAG) in the Association's Regional Transportation Plan (RTP). Population and regional employment are each forecasted to grow substantially through 2030.

Projected Growth in Aviation Demand: Based on the projected economic growth, the SCAG RTP predicts that demand for passenger and air cargo services will rise sharply. The SCAG's Draft 2004 RTP projects that passenger demand will increase to 192 million annual passengers (MAP) under "unconstrained scenario" and to 170 MAP under Preferred Aviation Plan in 2030. The Draft 2004 RTP also projects that cargo demand will increase to 8.7 million annual tons in 2030.

LAWA's and SCAG's regional aviation analysis shows that the region's airports, including LAX, do not presently have the capacity to accommodate this projected need for air services. Given the predicted rapid rate of growth in demand, there is an urgent need to improve the ability of the region's commercial airports to serve the demand.



The region's aviation services demand has been climbing sharply for many decades and the SCAG Regional Transportation Plan projections show that the trend will continue. Over the next two decades, passenger and cargo demand will increase substantially.

Nature of Air Transportation Demand: Analysis of total regional aviation services demand provides only an overview of future aviation needs. To understand the role that LAX or any of the region's other airports plays in accommodating the air services demand, it is also necessary to analyze the nature of the need: domestic or international; connecting service or origin/destination service; passenger or air cargo; business or leisure travel. SCAG and LAWA use a computer model called the Regional Air Demand Allocation Model (RADAM) to conduct this analysis. The model takes into account not only the economic factors that predict overall growth in aviation demand, but also analyzes the type of service, the supply of airline/airport services, and the relative accessibility of each airport.

Airline Market Decisions: Airlines, rather than the government, decide which airports will be served. This has been true since 1978 when the Civil Aeronautics Board was disbanded with the passage of the federal Airline Deregulation Act. In fact, under federal law, there are no legal means available to local, regional, or federal officials to force airlines to serve one airport over the other or to "cap" the number of flights at an airport. The practical effect of this regulatory environment is that airlines, free to follow market forces, generally give priority to serving airports that are conveniently located in the highest concentrations of potential customers.

Economies of scale also drive airlines to concentrate service at one large airport because staff and facilities can serve many flights, and connecting service can efficiently feed passengers and cargo into an airline's global flight network. Airlines add service at secondary regional airports only when they have optimized service at the primary airport and only when the secondary airport offers a sufficient market or some other competitive advantage.

Primary Regional Airport: LAX has long been, and continues to be, the primary airport in the Los Angeles region, accommodating 75 percent of total passengers, virtually all of the international air service, two-thirds of the domestic air service, and 80 percent of all cargo.

Over 50 percent of the region's passengers and shippers are located within 60 minutes driving time to LAX. Billions of dollars in existing facilities investments mean that LAX has more terminals, freight handling, customs, and other facilities than any other airport in the five-county region. To take advantage of this market opportunity, and to capitalize on these existing investments, the airlines offer frequent flights and connections at LAX that are far superior to any of the region's airports.

Forecasts of aviation demand by SCAG and LAWA planners make it clear that economic, geographic and market conditions will force LAX to serve as the region's primary airport for the foreseeable future.

One reason that LAX has historically served as the region's primary airport is concentration of population. By 2015, roughly 75 percent of the region's population will be living in just 18 percent of the region's land area, a concentration of population that is centered near LAX.

Allocation of Regional Demand: Aviation demand forecasts by SCAG demonstrate clearly that demand and the need for new capacity will increase at all the region's airports, not just at the region's primary airport.

In fact, other regional airports will be under even greater pressure than LAX to provide an increased level of passenger and air cargo service to meet projected future demands for their facilities. Demand at Ontario International Airport in San Bernardino County is expected to grow from 6 MAP to nearly 30 million per year by 2030. El Toro was planned to accommodate up to 30 MAP in the 2025 time frame; however, the voters of Orange County rejected El Toro's conversion to a civilian commercial airport in 2002, and it is no longer being considered for use as a commercial airport. Burbank Airport in the next decade may serve an additional 5 million per year for a total of approximately 9-10 MAP. Other airports in the outlying area of the region could potentially develop air service in the future to respond to increased demand throughout the region.

Even though the raw numbers show that passenger and freight demand will rise sharply at LAX in absolute terms, the primary airport's overall share of the regional aviation demand will actually drop from 75 percent in the 1996 baseline year to 68 percent in 2015. Nevertheless, despite the declining share of regional demand projected for LAX, the total projected demand for services at LAX will far exceed the airport's present ability to serve that demand. Currently, with changes to larger aircraft and other operational adjustments, LAX has the ability to serve approximately 78.7 MAP and 3.1 million annual tons of cargo. The LAX Master Plan has forecast a demand at LAX for 97.9 MAP (over half of which will be international) and 4.2 million tons of cargo in 2015.

International Gateway Service: The fastest growing component of increased aviation demand for the region, and especially at LAX, is demand for international passenger and air cargo service. This factor has been a key aspect of Master Planning for LAX because, as the region's primary airport, LAX also serves as one of the nation's three principal international gateway airports (along with John F. Kennedy International in New York and Miami International in Florida).

International gateways are much more than airports with international flights. For example, international gateway airports are large enough to have many domestic connecting flights that can move international passengers to their final destinations within the destination country. They also have built up around them a well-developed set of specialized and investment-intensive import-export facilities such as customs processing, warehouses, and international packing services.

International gateway service at LAX brings substantial economic value to the region. The direct value of international gateway passenger and cargo activity has been estimated at nearly $26 billion, and is associated with nearly 180,000 jobs (Environmental Baseline year, 1996). It is estimated that these totals will roughly double by the year 2015.

Regional Need to Compete for International Gateway Service: Other regions in the West compete with Los Angeles for the economic benefits of international service and have been rapidly building the airport capacity and other specialized facilities required to serve as full international gateways. A multiple scenario analysis (called a sensitivity analysis) conducted by SCAG in 1998 found that if LAX capacity were to be somehow constrained in an effort to "force" demand to other regional airports, a portion of the traffic would instead relocate outside the region to airports in cities such as San Francisco, Denver, and Dallas.

This loss of traffic would take place largely because none of the Los Angeles region's secondary airports could practically be in a position to provide competitive international gateway service. They could not in the near future develop the volume of connecting flights, specialized import-export facilities, and other international gateway qualities that only a primary airport can provide.

Regional Need for LAX Improvements: Aside from international gateway service considerations, the region's overall projected aviation services demand far exceeds the region's projected capacity. Even with maximum capacity expansion at the region's secondary airports, unless improvements are made at LAX to increase the airport's ability to meet its portion of the demand, the region is projected to face a shortfall against the projected demand.

To reduce the amount of this regional shortfall, LAX will need to accommodate some portion of the projected demand. However, the existing facilities at LAX are already straining to accommodate the current level of demand for aviation services. Without improvements, the airport cannot accommodate the increased future demand without major delays and a resulting very poor level of service, which would trigger the loss of economic and job opportunities.

Purpose and Need Statement for the Project

The purpose of the LAX Master Plan is to help provide a level of airport passenger and freight improvements that will support the future economic growth and vitality of the five-county Los Angeles region. An overarching consideration during the planning process has been to achieve the project objectives in an environmentally sound manner. In particular, the Master Plan project objectives are to:

- Respond to **local and regional demand** for air transportation during the period 2000-2015, taking into consideration the amount, type, location, and timing of such demand.

- Ensure that new investments in airport capacity are efficient and cost-effective, maximizing the return on **existing infrastructure capital**.
- Sustain and advance the international trade component of the regional economy and the **international commercial gateway** role of the City of Los Angeles.

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 originally stated, 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 the Final EIS/EIR, while at the same time enhancing security and safety at the airport and substantially reducing environmental impacts from airport operations to the surrounding communities.

The Need to Respond to Growing Demand: 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.

One of the most challenging barriers to LAX meeting its share of the future regional demand for aviation services is the already strained passenger terminals, curbside roadways and other non-airfield facilities. Without improvement, these facilities would become even more congested. Inadequate public parking, rent-a-car space, and transit facilities also limit the long-term usability of the airport. The lack of freeway access to the terminals slows trips to the airport and forces more traffic onto neighborhood streets. Congested conditions also have important environmental consequences, because increased traffic congestion, both in the terminal area and on the surrounding streets and freeways, increases air pollution from vehicles idling in stop-and-go traffic.

Without improvements in airport facilities, traffic on and off the airport will become even more crowded and congested.

Inefficient runways and taxiways are another barrier to accommodating projected future aviation demand at LAX. An airfield designed to accommodate the quantity and types of aircraft anticipated to be using the airport in the next 15 to 20 years would improve the flow of airfield traffic and increase takeoff and landing capacity. Increased airfield efficiency would also reduce air pollution from idling jet engines.

Increased delays due to airfield inefficiencies generate additional air pollution.

The Need to Maximize Return on Existing Investments: Existing capital investment in LAX and the surrounding airport-related commercial facilities totals tens of billions of dollars in both private and public funds. In addition to the terminal and air cargo investments on the airport itself, the off-airport investments include warehouses, customs brokerages, air freight handlers, parking lots, rental car lots, hotels, tour operators, international trading companies, restaurants, and airport-convenient corporate offices.

These features could not be reasonably duplicated elsewhere. 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. By making some incremental investments in capacity at LAX, the return on existing invested capital can be maximized, helping the region to avoid making less productive investments in duplicative facilities.

The Need to Sustain and Advance the LAX International Gateway Role: As described in Chapter 1, *Regional Context,* international gateway service is essential to the economic health of the region. Of the region's airports, LAX is the only feasible option for accommodating the predicted increase in demand for regional gateway services during the project planning horizon. An important aspect of meeting that demand will be improvements to accommodate the new large aircraft that will be a key component of future international service. Failure to meet international gateway service demand would drive passengers and shippers to other regions, and the Los Angeles region would suffer a major loss of economic benefits.

Description of Alternatives Studied in Detail

The alternatives evaluated in this Final EIS/EIR are the end result of nine years of the Master Plan process, ongoing scientific study, several hundred informal community meetings, and an extensive formal public comment period for identification of project issues for the environmental analysis (scoping). In addition to the No Action/No Project Alternative, this Final EIS/EIR analyzes a total of four "build" alternatives.

Table ES-1, Summary of Activity - Comparison of Alternatives, and **Table ES-2**, Summary of Features - Comparison of Alternatives, present key physical characteristics and projected activity levels of each build alternative as an aid to comparison to the No Action/No Project Alternative, the CEQA Environmental Baseline, and the "unconstrained" airport (e.g., number of runways, number of passengers accommodated, tons of air freight accommodated, daily flights, land acquisition).

Table ES-1

Summary of Activity - Comparison of Alternatives

Activity/Facility	Environmental Baseline (1996)	Planning Year 2015					
		Unconstrained Forecast	Alternative				
			NA/NP[7]	A	B	C	D
Passenger Activity[1]							
Million Annual Passengers (MAP)	58.0	97.9	78.7	97.9	97.9	89.6	78.9
Domestic MAP (w/ Commuters)	43.9	60.9	49.9	60.9	60.9	54.9	48.6
International MAP	14.0	37.1	28.9	37.0	37.0	34.6	30.3
Design Day[2] Passengers	186,512	326,380	262,329	326,329	326,329	298,588	262,758
Peak Hour Passengers	16,682	30,218	20,884	28,142	28,142	24,519	20,404
Passengers per Departure	90.76	122.98	127.47	133.09	133.09	145.09	127.68
Cargo Activity (Tons per year)	1,896,764	4,172,000	3,120,000	4,172,000	4,172,000	4,172,000	3,120,000
Aircraft Activity							
Total Annual Aircraft Operations[3]	763,866	1,004,591	783,430	935,140	935,140	797,249	784,126
Total Domestic (incl. Hawaii)	386,733	421,138	383,245	431,390	431,390	401,669	350,791
International	91,641	217,818	168,773	217,818	217,818	203,393	179,592
Commuter	233,832	280,335	160,437	200,632	200,632	108,905	182,767
All Cargo	23,682	48,300	35,994	48,300	48,300	48,300	35,994
General Aviation	27,978	37,000	34,982	37,000	37,000	34,982	34,982
Design Day Operations[4]	2,235	2,921	2,279	2,719	2,719	2,319	2,279
All Weather Peak Hour Operations[5]	150	N/A	144	176	181	145	146
Three Hour Average Operations[6]	145	N/A	140	172	172	138	141
Annual Cancellations	2,050	N/A	10,126	15,586	9,108	15,910	9,719
All Weather Average Delay (minutes per operation)	8.69	N/A	13.33	9.86	10.88	13.81	11.56

1 Totals may not add due to rounding.
2 A Design Day is a 24-hour period at LAX representing an average day of the peak activity month.
3 Total Annual Aircraft Operations includes air carrier, cargo, general aviation, and military operations for the baseline or planning year.
4 Design Day Operations are the operations that make up the 24-hour period at LAX representing an average day of the peak activity month.
5 All Weather Peak Hour Operations are the weighted averages of the maximum number of operations in an hour in each operating configuration under the alternative.
6 Three Hour Average Operations are the weighted averages of each of the operating configuration's maximum average number of operations in a 3-hour time period.
7 NA/NP = No Action/No Project Alternative.

Source: Landrum & Brown, 1999, 2003.

Table ES-2

Summary of Features - Comparison of Alternatives

Facility	1996 Baseline	Planning Year 2015 Alternative: Unconstrained	NA/NP[1]	A	B	C	D
Runway Development							
North Airfield							
(6L/24R)	8,925 ft	6 runways 3 independent approaches 2,500-3,400 foot lateral runway separation.	8,925 ft	6,700 ft (new runway)	10,000 ft (relocate 135 ft north, extend 600 ft to the east and 475 ft to the west)	9,400 ft (relocate 340 ft north, extend 500 ft to west)	10,420 ft (extend 1,495 ft to west)
(6C/24C)	none	Takeoff runway length of 10,000-12,000 feet. Landing runway length of 9,000-10,000 feet.	none	12,000 ft (reconstruct 6L/24R, move 400 ft south, extend 3,075 ft to the east)	none	none	none
(6R/24L)	10,285 ft	Commuter runway length of 6,000 feet.	10,285 ft	12,000 ft (relocate 500 ft south, extend 1,715 ft to the east)	12,000 ft (relocate 35 ft north, extend 1,715 ft to the east)	12,000 ft (extend 2,900 ft to east shorten west end by 1,185 ft)	11,700 ft (extend 135 ft to west extend 1,280 ft east, move 340 ft south of existing centerline)
South Airfield							
(7L/25R)	12,091 ft		12,091 ft	12,000 ft	12,000 ft (relocate 555 ft north, shorten east end 91 ft)	12,091 ft	12,091 ft
(7C/25C)	none		none	none	12,000 ft (relocate 7R/25L, 500 ft north and 950 ft east)	none	none
(7R/25L)	11,096 ft		11,096 ft	12,000 ft (relocate 156 ft south)	6,700 ft (new runway)	11,096 ft (relocate 50 ft south of existing centerline)	11,096 ft (relocate 50 ft south of existing centerline)

Table ES-2

Summary of Features - Comparison of Alternatives

Facility	1996 Baseline	Planning Year 2015 Alternative: Unconstrained	NA/NP[1]	A	B	C	D
Terminals							
Central Terminal Area							
Nominal Aircraft Gates	133		115	78	77	97	153
Narrow Body Equivalent Gates (NBEG)[3]	150.9		148.3	93.9	92.5	121.6	178.9
Square Feet (SF) of Building Space	3,997,000		3,997,000	4,149,000	3,542,000	4,224,000	6,550,000
Remote Gates (nominal/NBEG)[3]	32/41.3		48/55.1	N/A	N/A	N/A	N/A
New West Terminal Area							
Nominal Aircraft Gates	N/A	N/A	N/A	121	122	71	N/A
Narrow Body Equivalent Gates (NBEG)[3]	N/A	N/A	N/A	162.5	164	100.6	N/A
Square Feet of Building Space	N/A	N/A	N/A	6,270,000	6,170,000	3,095,000	N/A
Total All Terminals							
Nominal Aircraft Gates	165	214	163	199	199	168	153
Narrow Body Equivalent Gates (NBEG)[3]	192.2	276	194.2	256.5	256.5	222.2	178.9
GTC Building Area	N/A	N/A	N/A	N/A	N/A	N/A	200,000 [2]
ITC Building Area	N/A	N/A	N/A	N/A	N/A	N/A	50,000 [2]
Total Square Feet of Terminal Building Space	3,997,000	7,786,800	3,997,000	10,419,000	9,712,000	7,319,000	6,800,000 [2]
Transit							
Green Line Transit	to El Segundo	N/A	to El Segundo	to West Terminal	to West Terminal	to West Terminal	to ITC
Parking Stalls							
On-Airport Short-Term	8,441	16,000	9,127	15,500	15,500	15,500	13,380
On-Airport Long-Term	12,985	12,500	12,985	12,514	12,514	12,514	8,732
Off-Airport Long-Term	12,500	15,750	13,500	8,607	6,387	11,477	12,890
Total Public Stalls	33,926	44,250	35,612	36,621	34,401	39,441	35,002
Employee Parking Stalls	8,990	12,400	8,990	12,000	13,748	14,265	13,600

Table ES-2

Summary of Features - Comparison of Alternatives

Facility	1996 Baseline	Planning Year 2015 Alternative: Unconstrained	NA/NP[1]	A	B	C	D
On-Airport Rent-A-Car Acres[7]	52	101	82	78	78	78	180
Cargo							
Annual Tons	1,896,764	4,172,000	3,120,000	4,172,000	4,172,000	4,172,000	3,120,000
Square Feet of Building Space	1,910,752	4,735,305	2,342,052	4,518,000	4,871,000	4,903,000	2,342,000
Acres of Apron/Ramp Space	77	159	77	128	104	164	77
Total Cargo Acres	197	473	197	436	450	473	197
Ancillary (acres)							
General Aviation	14	14	14	5	4	6	6
Ground Services	9	13	9	4	6	9	4
Airline Admin & Maintenance	295	415	295	72	92	87	31
LAWA & FAA	30	43	30	8	7	6	5
Flight Kitchens	10	18	10	13	16	11	2
Fuel Farm	20	36	20	13	off-site	32	14
Aircraft Rescue and Firefighting	1	1	1	2	1	2	1
Miscellaneous[8]	5	10	5	9	8	11	9
Total Ancillary Acres	384	550	384	126	134	164	72
Land Acquisition							
Total Net Acres		N/A	148	273	345	216	77
Single Family Dwelling Units		N/A	279	57	57	57	0
Multiple Family Dwelling Units		N/A	2,285	27	27	27	0
Library		N/A	N/A	N/A	N/A	N/A	N/A
Schools		N/A	98th St. School	Private elementary (1) and vacant comm. college	Private elementary (1) and vacant comm. college	Private elementary (1) and vacant comm. college	Private elementary (1) and Hollywood CPR
Remote Airport Parking Stalls		N/A		4,893	7,113	2,023	3,676
Rent-A-Car Space		N/A		47 acres	35 acres	52 acres	9 acres
Number of Businesses		N/A		330	323	239	38
Office Use Acquired (SF)		N/A		997,936	1,140,000	603,020	240,607
Retail Use Acquired (SF)		N/A		151,806	126,586	199,707	57,943
Hotel Use (SF)/Rooms Acquired		N/A		1,330,622/1,929	1,404,933/2,083	374,653/729	63,595/154

Table ES-2

Summary of Features - Comparison of Alternatives

Facility	1996 Baseline	Planning Year 2015 Alternative					
		Unconstrained	NA/NP[1]	A	B	C	D
Bus. Park/Light Industrial (SF) Acquired		N/A		868,262	1,921,164	895,217	96,901
Freight Light Industrial (SF)		N/A		1,724,486	1,784,799	686,138	146,867
Total SF of Commercial Building Space		N/A		5,164,540	6,468,930	2,758,735	605,913
Estimated Market Value		N/A		$1.06 billion	$1.36 billion	$743.5 million	$155.9 million
Collateral Development							
LAX Northside		N/A	4.5 MSF[4]	N/A	N/A	N/A	4.5 MSF[4,5]
Westchester Southside		N/A	N/A	2.62 MSF[4]	2.62 MSF[4]	2.62 MSF[4]	N/A
Continental City		N/A	3.1 MSF[4]	airport use	airport use	airport use	airport use
Manchester Square		N/A	vacant	Independent LAWA development[6]	airport use	airport use	airport use
Belford		N/A	vacant	airport	airport use	airport use	vacant

1 NA/NP = No Action/No Project Alternative.
2 Estimated future building space requirement. Actual building size will be refined as part of project-level design activities.
3 This table uses methodology for calculating NBEG based on a wingspan size factor for each nominal gate position based on the largest aircraft that can be accommodated on a particular gate.
4 MSF = Million Square Feet.
5 Under Alternative D, the existing vehicle trip cap for LAX Northside would be reduced to limit vehicle trips to a level comparable to that of the Westchester Southside project. As such, full development of the 4.5 million square feet of uses currently entitled for LAX Northside would not occur under Alternative D. As the exact nature and amount of land uses have not been specified to correspond with this cap, it is assumed, for purposes of impacts analysis that LAX Northside would be fully built out relative to all environmental topics except traffic and traffic-related issues such as air pollutant emissions and noise.
6 Under Alternative A, Manchester Square is assumed to be redeveloped with commercial/light industrial uses independent of the Master Plan.
7 Only ready-return (does not include storage support).
8 Includes airport police, central utility plant, LNG/CNG station, ground run-up enclosures, and Coast Guard building.

Source: Landrum & Brown, 2000, 2003.

The *Environmental Analysis* section of this Executive Summary provides a comparison of the alternatives, describing each of the alternatives in terms of various types of impacts (e.g., noise, air quality, on- and off-airport traffic, employment and economics, relocation of homes and businesses). The *Environmental Analysis* section also includes an alternative impacts comparison table, included at the end of this Executive Summary.

No Action/No Project Alternative

This alternative is provided as a benchmark for comparison of the four build alternatives. The No Action/No Project Alternative was initially defined at the outset of the environmental analysis, and was subsequently refined based on October 1998 revisions to the State CEQA Guidelines relative to how the no project alternative should be defined. The No Action/No Project Alternative includes, but is not limited to, anticipated operational changes such as the introduction of larger aircraft, all projects that are fully entitled, approved, those improvements that are entitled, approved, under construction or have been completed between 1997 (the baseline year), and the release of the Draft EIS/EIR. This includes taxiway improvements, passenger terminal improvements, reconstruction of an on-airport auto parking structure, cargo facility improvements, demolition of facilities on acquired real estate, and collateral development. Passenger and cargo volumes would continue to increase in response to projected demand. In addition, the No Action/No Project Alternative includes additional projects and actions consistent with the 1981 Interim Plan, that would reasonably be expected to occur in the foreseeable future if the LAX Master Plan is not approved and/or that are predictable responses to increasing congestion at LAX that would be implemented in the absence of FAA action. For example, this alternative includes anticipated operational changes, such as the introduction of new larger aircraft. For the purpose of the EIS/EIR analysis, these improvements associated with the No Action/No Project Alternative, which did not exist at the time of the environmental baseline, are assumed to be completed by 2015, notwithstanding the fact that some of those improvements have now been completed, some may not be completed as planned, and some new improvements have been, or may be in the future, introduced. The assumptions used for the No Action/No Project Alternative include the known and reasonably foreseeable projects as applied consistently throughout the analyses in the Draft EIS/EIR and in the Supplement to the Draft EIS/EIR, which provide the basis of this Final EIS/EIR. The No Action/No Project Alternative also evaluates land use and the regional transportation infrastructure as forecast for the plan year 2015.

This alternative involves the continuation of the existing plans, policies and operations at LAX into the future and assumes that certain projects (e.g., LAX Northside and Continental City) initiated under the existing plan will continue. See **Figure ES-1**, No Action/No Project Alternative - 2015.

This alternative would fall far short of meeting the projected demand for aviation services at LAX by accommodating approximately 78.7 MAP (a shortfall of approximately 19.2 million) and 3.1 million tons of cargo (a shortfall of approximately 1 million tons) in 2015.

The entire LAX Northside project on 340 acres of vacant land would be developed with 4.5 million square feet of airport-related industrial and commercial uses. Also, the Continental City project at the southeast corner of the airport would be developed with approximately 3.1 million square feet of office and retail uses. The Manchester Square area is being purchased for noise mitigation purposes as part of an ongoing action by LAWA; for this alternative, it is assumed that the purchased property would remain undeveloped.

This alternative is required to be evaluated in an EIS in compliance with Section 1502.14 of the President's Council on Environmental Quality Regulations (Title 40, Code of Federal Regulations 1500-1508), the implementing regulations for the National Environmental Policy Act (NEPA) of 1969. Moreover, the No Action/No Project Alternative serves as the basis for determining environmental effects of the build alternatives under NEPA.

The California Environmental Quality Act (CEQA) also requires evaluation of a "no project" alternative. In accordance with Section 15126.6(e)(3)(A) of the *Guidelines for California Environmental Quality Act*, the "no project" alternative should describe the existing conditions as modified by "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." The No Action/No Project Alternative evaluated in this Final EIS/EIR fully complies with both NEPA and CEQA requirements.

Added Runway North (Alternative A)

A new runway would be added to the north airfield complex, and three existing runways would be lengthened; all runways would be further separated from one another (see **Figure ES-2**, Alternative A - 2015, Added Runway North). This alternative differs from the other build options because it would not develop the Manchester Square property acquired as part of the LAX noise mitigation program. (For purposes of the analysis, it is assumed that this property would be redeveloped with commercial and light industrial uses independent of the Master Plan).

This alternative would fully meet the projected demand for aviation services at LAX by accommodating approximately 97.9 MAP and 4.17 million tons of cargo in 2015.

As with Alternatives B and C, a new passenger terminal complex would be constructed at the west end of the airport on Pershing Drive connected to the I-105 and I-405 freeways by a ring road encircling the airport. An LAX Expressway would be built along side the I-405 and would provide direct freeway access to the airport via a connection to the ring road. New midfield concourses would be connected to the West Terminal and the existing Central Terminal Area (CTA) by an Automated People Mover (APM). New air cargo facilities would be built on newly acquired land east of the airport (see **Figure ES-2**, Alternative A - 2015, Added Runway North).

The LAX Northside project would be reconfigured into a smaller, 2.62-million-square-foot mixed use development and would be renamed the Westchester Southside project. The Continental City site would be used for air cargo facilities.

Added Runway South (Alternative B)

A new runway would be added to the south airfield complex, and two existing runways would be lengthened; all runways would be further separated from one another.

This alternative would fully meet the projected demand for aviation services at LAX by accommodating approximately 97.9 MAP and 4.17 million tons of cargo in 2015.

As with Alternatives A and C, a new passenger terminal complex would be constructed at the west end of the airport on Pershing Drive connected to the I-105 and I-405 freeways by a ring road encircling the airport. An LAX Expressway would be built along side the I-405 and would provide direct freeway access to the airport via the Metropolitan Transportation Authority (MTA) railroad right-of-way adjacent to Florence Avenue, and a connection to the ring road. New midfield concourses would be connected to the West Terminal and the existing CTA by an APM. New air cargo facilities would be built on newly acquired land east of the airport (see **Figure ES-3**, Alternative B - 2015, Added Runway South). Under Alternative B, the fuel farm would be relocated off-airport to either the Scattergood Electric Generating Station located in Los Angeles or the oil refinery located south of the airport in El Segundo.

Again, the LAX Northside project would be reconfigured into a smaller, 2.62-million-square-foot mixed use development and would be renamed the Westchester Southside project. The Continental City site would be used for air cargo facilities.

No Additional Runway (Alternative C)

The number of runways would stay the same at four. Two existing runways would be moved, two runways lengthened and all runways further separated from one another to improve operational efficiency.

This alternative would not fully meet the projected demand for aviation services at LAX. It would fully accommodate the cargo demand of 4.2 million tons in 2015. However, it would accommodate approximately 89.6 MAP (a shortfall of approximately 8.3 MAP i.e., the difference between projected demand of 97.9 MAP and capacity of Alternative C, 89.6 MAP) in 2015.

As with Alternatives A and B, a new passenger terminal complex would be constructed at the west end of the airport on Pershing Drive connected to the I-105 and I-405 freeways by a ring road encircling the airport. An LAX Expressway would be built along side the I-405 and would provide direct freeway access to the airport via a connection to the ring road. New midfield concourses would be connected to the West Terminal and the existing CTA by an APM. New air cargo facilities would be built on newly acquired land east of the airport (see **Figure ES-4**, Alternative C - 2015, No Additional Runway).

LAX Master Plan Final EIS/EIR	**No Action/No Project Alternative (2015)**	Figure **ES-1**

LEGEND

- Airport Property Boundary Line
- Airfield/Airport Open Space
- ET Existing Terminal Buildings
- EC Existing Cargo Building
- EM Existing Maintenance Facility
- EA Existing Ancillary Facility
- ESP Existing Short-Term Public Parking
- Existing Roadways
- Existing El Segundo Blue Butterfly Habitat Restoration Area
- Existing Light Rail Transit
- Proposed Light Rail Transit (Above Grade)
- Proposed Light Rail Transit (Below Grade)
- Proposed Runways
- Proposed Taxiways/Aircraft Aprons
- PT Proposed Terminals
- PC Proposed Cargo Building
- PM Proposed Maintenance Facility
- PA Proposed Ancillary Facility
- PSP Proposed Short-Term Public Parking
- Proposed Airport Service Pavement
- PFF Proposed Fuel Farm
- Proposed Airside Service Roads
- Proposed People Mover
- PCV Proposed Commercial Vehicle Holding Area
- PEP Proposed Employee Parking
- PLP Proposed Long-Term Public Parking
- PRAC Proposed Rental Car Facility
- Berms
- Medium Density Commercial (Hotel, Office, Retail)
- R/D Business Park
- Airport Related
- GC Golf Course/Recreation
- Open Space/Landscape Buffers
- Residential ANMP Acquisition
- Navigational Aids

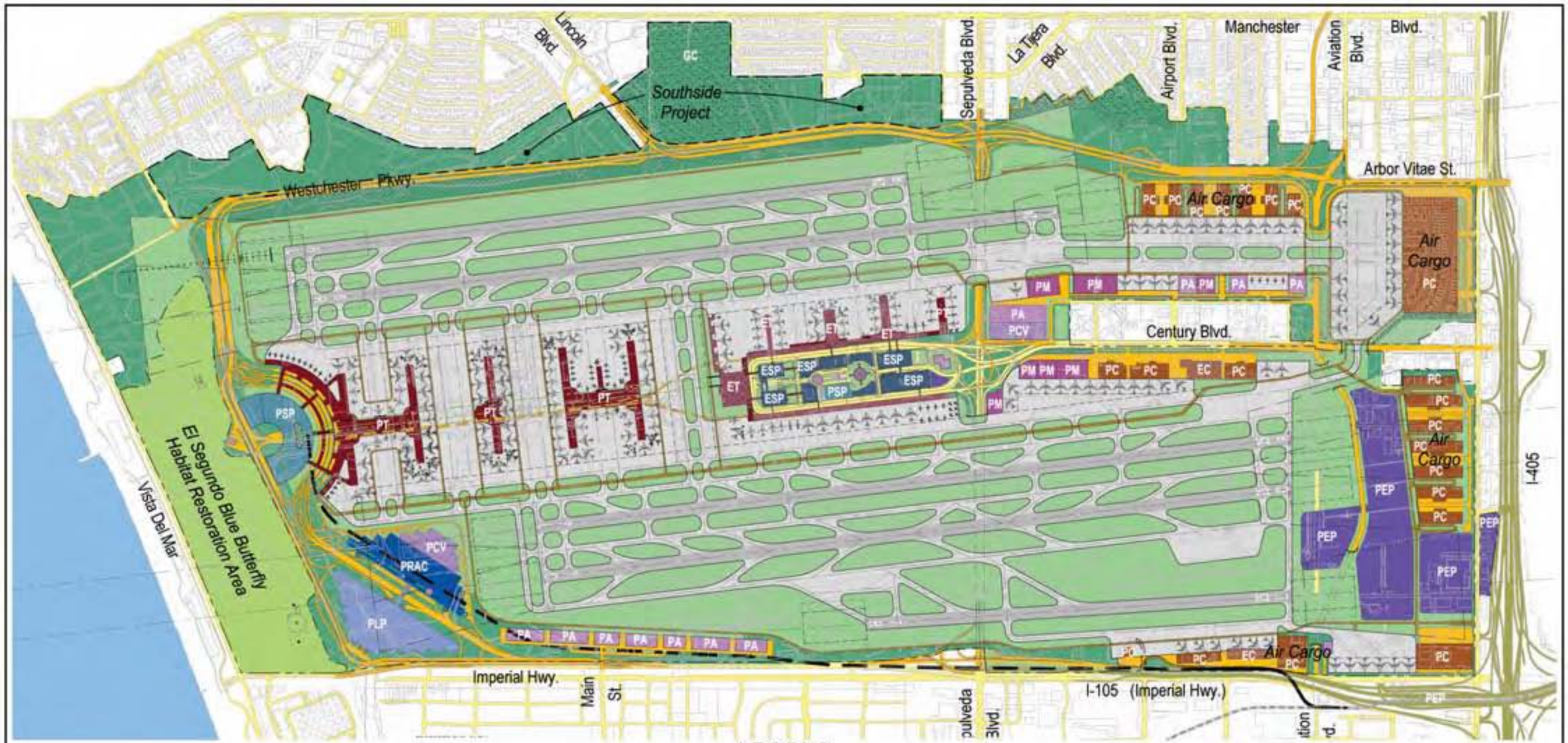
400' 800' 2,400' 800' 0 1,600'

Prepared by: Landrum & Brown, October 2000

LAX Master Plan Final EIS/EIR

Alternative A - 2015
Added Runway North

Figure
ES-2



LEGEND

- Airport Property Boundary Line
- Airfield/Airport Open Space
- ET Existing Terminal Buildings
- EC Existing Cargo Building
- EM Existing Maintenance Facility
- EA Existing Ancillary Facility
- ESP Existing Short-Term Public Parking
- Existing Roadways
- Existing El Segundo Blue Butterfly Habitat Restoration Area
- Existing Light Rail Transit
- Proposed Light Rail Transit (Above Grade)
- Proposed Light Rail Transit (Below Grade)
- Proposed Runways
- Proposed Taxiways/Aircraft Aprons
- PT Proposed Terminals
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- PFF Proposed Fuel Farm
- Proposed Airside Service Roads
- Proposed People Mover
- PCV Proposed Commercial Vehicle Holding Area
- PEP Proposed Employee Parking
- PLP Proposed Long-Term Public Parking
- PRAC Proposed Rental Car Facility
- Berms
- Medium Density Commercial (Hotel, Office, Retail)
- R/D Business Park
- Airport Related
- GC Golf Course/Recreation
- Open Space/Landscape Buffers
- Navigational Aids

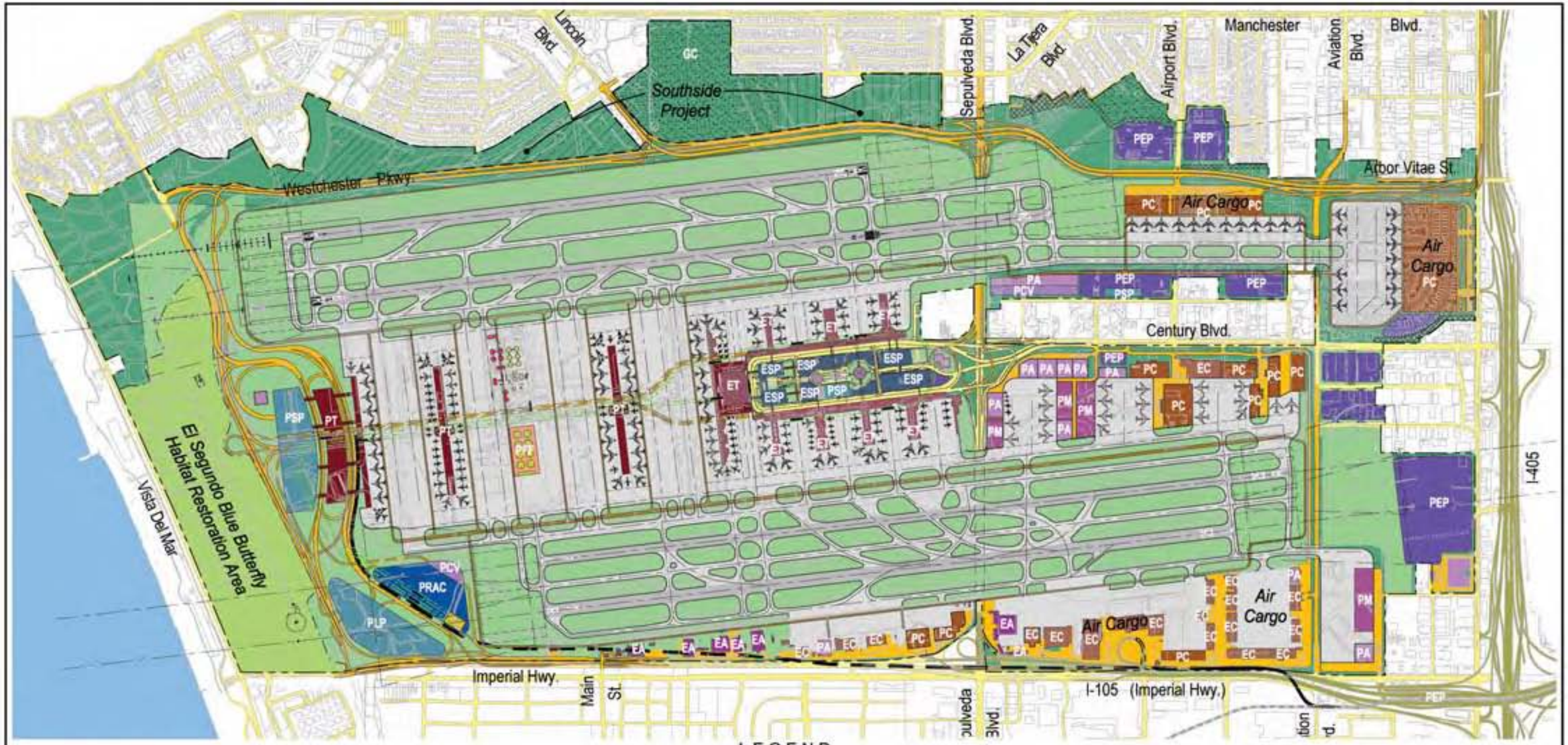
400' 800' 2,400' 800' 0 1,600'

Prepared by: Landrum & Brown, October 2009

LAX Master Plan Final EIS/EIR

Alternative B - 2015
Added Runway South

Figure
ES-3



LAX Master Plan Final EIS/EIR	**Alternative C - 2015** **No Additional Runway**	Figure **ES-4**

The LAX Northside project would be reconfigured into a smaller, 2.62-million-square-foot mixed use development and would be renamed the Westchester Southside project. The Continental City site would be used for maintenance and ancillary facilities.

The Enhanced Safety and Security Plan (Alternative D)

Following the publication of the Draft LAX Master Plan and the Draft EIS/EIR in January 2001, public comment received during the review period for the Draft EIS/EIR called for a regional approach alternative, whereby growth at LAX would be planned so as to encourage other airports to accommodate future air travel demand. The terrorist attacks that occurred on September 11, 2001, greatly elevated the issue of airport security. In response to these events, the newly elected Mayor of Los Angeles directed the Los Angeles Board of Airport Commissioners to develop a new LAX Master Plan alternative that, consistent with public comment calling for a regional approach alternative, would be designed to accommodate passenger and cargo activity levels at LAX that would approximate those of the No Action/No Project Alternative, have fewer environmental impacts than the No Action/No Project Alternative and, in light of the events of September 11, 2001, would be designed to enhance airport safety and security. Alternative D, the Enhanced Safety and Security Plan, was developed in consultation with LAWA staff and the FAA as a fifth alternative within the existing Master Plan process. Alternative D is the LAWA staff-preferred alternative. The FAA has not yet identified its preferred alternative and, in accordance with its regulations, the FAA will identify a preferred alternative in the Final EIS.

Enhanced airfield safety would be achieved through airfield facility modifications that would mitigate the primary causes of runway incursions at LAX. The number of runways would stay the same at four. Two existing runways would be moved, two runways would be lengthened, and all runways further separated from one another to improve operational efficiency and safety.

Alternative D emphasizes the maintenance of LAX's role as an international gateway and encourages a long-term regional approach to serving air traffic demand in the Los Angeles basin by designing facilities at LAX to accommodate passenger and cargo activity levels equivalent to the No Action/No Project Alternative activity level, but would be designed to allow air carriers to emphasize international routes at LAX.

Alternative D would enhance security by limiting access by private vehicles to the main airport infrastructure to reduce the risk to airport users. The public parking structures in the CTA would be relocated and would be replaced by new centralized passenger terminals. The existing Terminals 1 through 7 would be reconfigured. The Tom Bradley International Terminal (TBIT) would be reconfigured with the addition of a new North/South Linear Concourse. A West Satellite Concourse would be built west of the TBIT.

A new Ground Transportation Center (GTC) and an Intermodal Transportation Center (ITC) would be constructed east of Aviation Boulevard and would be the primary access points for all passenger drop-off and pick-up and vehicle parking. Passengers and employees would access the CTA via an APM system from new GTC, ITC and consolidated Rent-A-Car (RAC) facilities. Intersection improvements would be made to the off-airport transportation network to accommodate the shift in traffic patterns from the CTA to the GTC and ITC areas. Some cargo facilities would be modified under Alternative D, with the overall square footage being equivalent to the No Action/No Project Alternative (see **Figure ES-5**, Alternative D - 2015, Enhanced Safety and Security Plan).

Alternative D would require the acquisition of approximately 77 acres of property, the least amount of land acquisition of all the proposed build alternatives. The 340-acre, LAX Northside project described in the No Action/No Project Alternative that is currently entitled (i.e., recognized within the City's current General Plan and Zoning) for 4.5 million square feet of development, would be developed for Alternative D; however, under Alternative D, the existing trip cap that exists for LAX Northside would be reduced to limit vehicle trips to a level comparable to that associated with the 2.6-million-square-foot Westchester Southside development proposed under Alternatives A, B, and C.

Development Phases

Alternatives A, B, and C

Phase I (2005 or five years following Master Plan approval); Alternatives A, B, and C each include an initial phase of development. Each alternative is very similar during this initial phase, which was scheduled for completion within approximately five years after approval of the Master Plan.

The runway in the north airfield complex closest to the terminals (Runway 6R/24L) would be extended to the east across Sepulveda Boulevard for a total length of 12,000 feet. This length is necessary to accommodate large turbojet aircraft departures to overseas destinations. The new West Terminal with access roads and one mid-field concourse would be completed. New cargo areas would be developed in the northeast or southeast corner of the airport.

Phase II (to 2015): The remainder of the Master Plan improvements would be implemented during the second phase, scheduled for completion by 2015.

Additional airfield, terminal, cargo, and support facilities would be completed as described for each of the build alternatives (A, B, and C). In addition, the direct connections from the freeway to the airport via the rind road would be completed, including the expressway on the north from the I-405 freeway.

Alternative D

Alternative D would be implemented in three phases, with the individual projects listed in their approximate order of construction.

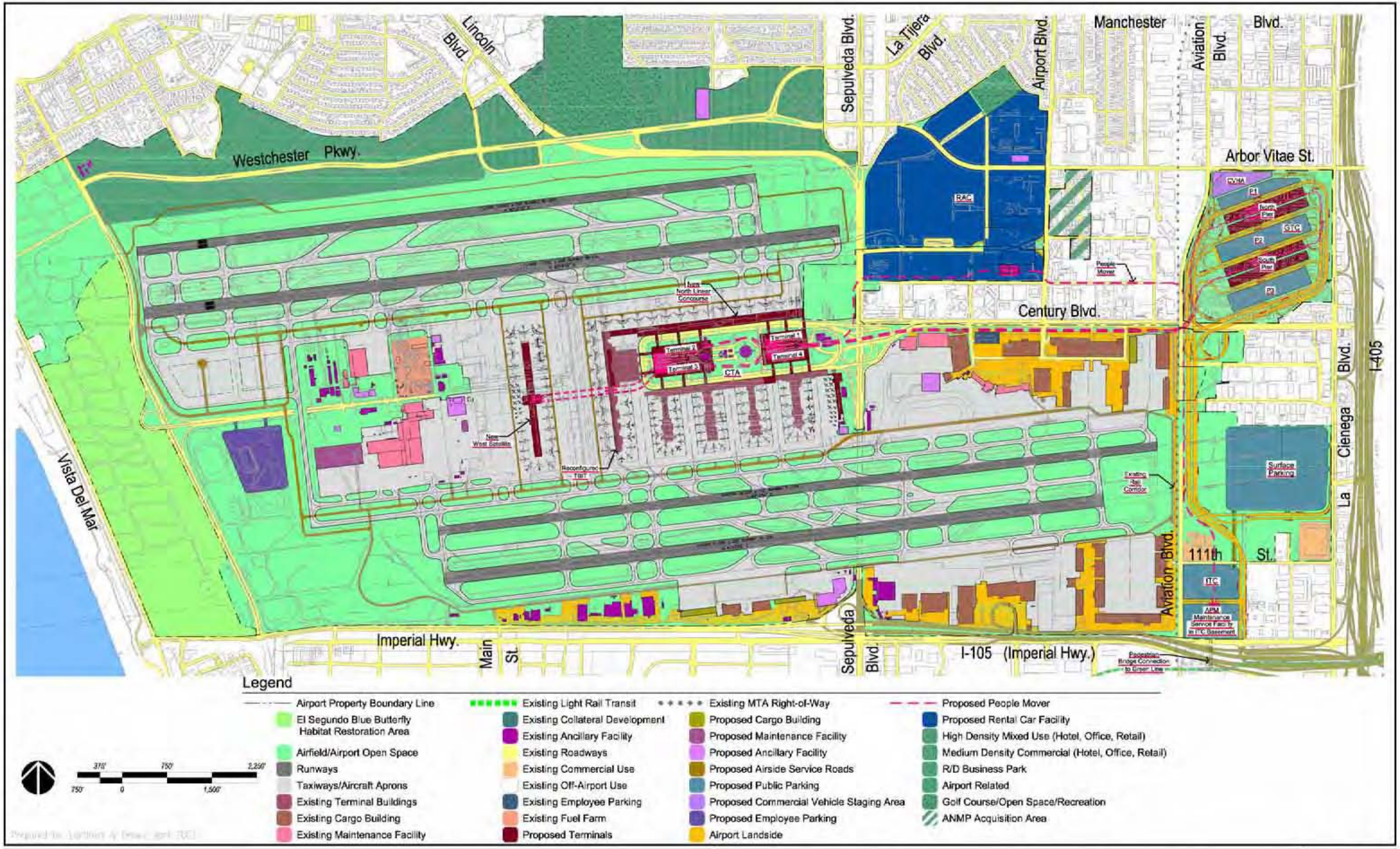
Phase I would include completion of south airfield improvements, employee and public parking improvements, redevelopment of the Continental City property into the new ITC, the demolition of the existing parking structures in the CTA and, in their place, development of new terminal buildings related to the processing of passengers and baggage, and additional off-site roadway improvements. It would also include construction of a new GTC with a baggage tunnel to the existing CTA. A new consolidated RAC facility and a new access roadway system would be constructed to provide access to/from the GTC. A new APM would be constructed linking the ITC, GTC, RAC, and the CTA; new baggage security screening and distribution systems would be installed in the CTA and the GTC.

Phase II would include clearing midfield airline maintenance and remote commuter aircraft boarding areas and site preparation and construction of the future West Satellite Concourse west of the TBIT building. Replacement airline maintenance and airport ancillary facilities that were displaced by the new West Satellite Concourse would be constructed. Construction of an underground APM and baggage system tunnel from the West Satellite Concourse to the redeveloped CTA would be phased to coincide with apron and taxiway reconstruction.

Phase III would be the final phase, which would include reconfiguration of the existing fuel farm, TBIT, and the phased demolition of Terminals 1, 2, and 3 to facilitate the construction of the new North Linear Concourse and associated aircraft-parking apron. The existing south CTA concourses would be renovated. North airfield improvements, including modifications to the existing runways and construction of a new center taxiway would be completed.

Environmental Analysis

This overview section summarizes key environmental impacts of the four build alternatives, comparing them to the environmental baseline and the No Action/No Project Alternative. The summary also provides an overview of mitigation measures and other environmental commitments designed to reduce or eliminate adverse impacts. Topics covered in this overview have been chosen based on high levels of interest expressed by the public or various permitting and coordinating agencies during the scoping process, at the many informal community meetings held during the development of the Master Plan, and during agency coordination meetings. For the reader's convenience, quantitative comparisons of the impacts associated with each of the Master Plan alternatives are provided in the form of Impact Comparison graphs and tables specific to topics summarized herein. For full details of the analysis for each topic, see Chapter 4, *Affected Environment, Consequences and Mitigation Measures*.



LAX Master Plan Final EIS/EIR	**Alternative D - 2015 Enhanced Safety and Security Plan**	Figure **ES-5**

In addition, a comprehensive summary of potential impacts associated with all environmental disciplines is included at the end of this Executive Summary in an impact comparison table of the build alternatives.

Potential environmental impacts of each alternative are compared to the CEQA thresholds of significance to determine whether they would be significant or less than significant for purposes of CEQA, and are compared to applicable federal standards and criteria, where appropriate, to assess whether such standards would be exceeded. For purposes of determining significance under CEQA, potential impacts are compared to the 1996 baseline conditions or, for certain environmental disciplines, an adjusted environmental baseline. For the analysis of environmental effects under NEPA, the impacts of the build alternatives are compared to the No Action/No Project Alternative conditions. As part of this Final EIS/EIR, in addition to 1996 baseline conditions, more current Year 2000 conditions are evaluated. The analysis of impacts compared to Year 2000 conditions is provided for informational purposes only.

Aircraft Noise

The noise analysis evaluated changes in Community Noise Equivalent Levels (CNEL). The CNEL noise metric is used to assess airport noise impacts in the state of California. The CNEL metric is very similar to the Day/Night Average Sound Level (DNL) used in the rest of the country; however, CNEL applies an additional noise "penalty" to noise events occurring between the hours of 7:00 p.m. and 10:00 p.m. to account for increased sensitivity or annoyance during the evening hours. In addition, based on an August 2001 California Court of Appeal decision, this Final EIS/EIR also evaluates the effects of single event noise for all of the alternatives.

Reduced Total Noise Exposure for Alternatives A, C, and D: The aircraft noise analysis estimated that in 2015, three of the Master Plan development alternatives, Alternatives A, C, D, and the No Action/No Project Alternative would reduce the total number of people exposed to aircraft noise above 65 decibels of CNEL compared to the 1996 baseline[1] and Year 2000[2] conditions. Alternative D would expose fewer people than the No Action/No Project Alternative by approximately 1,400 people.

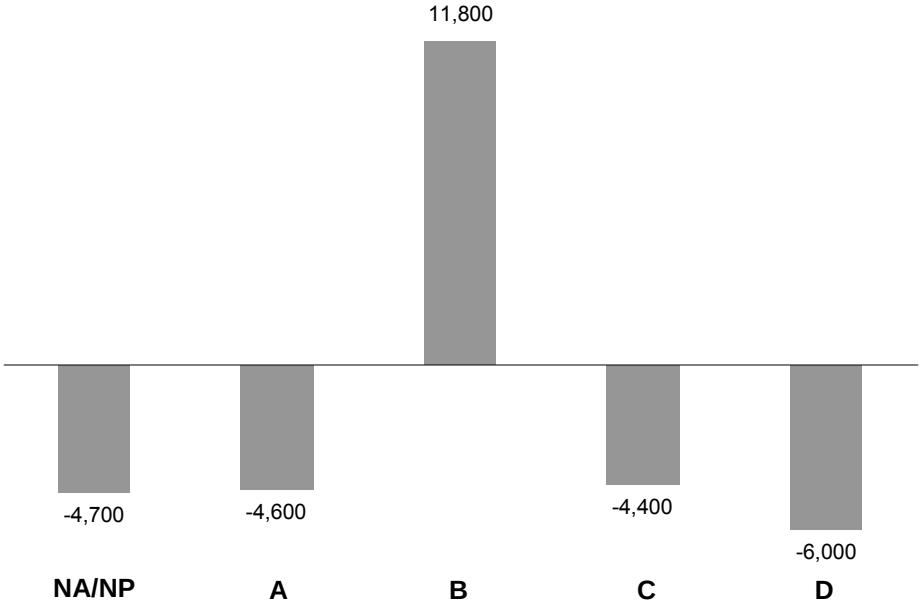
The reduction in noise exposure from 1996 baseline conditions is the result of a federally-mandated phase out of older, noisier Stage 2 jets. The reduction of noise exposure from Year 2000 conditions is the result of the elimination of older Stage 3 and retrofit Stage 2 jets as they age out of the fleet mix. In comparison to the 1996 baseline and Year 2000 conditions respectively, Alternatives A, C, D, and the No Action/No Project Alternative would reduce the total population exposed to noise above 65 CNEL by between approximately 4,400 and 6,000 people (1996 baseline) and between 5,700 and 7,300 people (Year 2000 conditions).

Increased Total Noise Exposure for Alternative B: Alternative B would expose considerably more total people to 65 CNEL compared to Alternatives A, C, and D and the No Action/No Project Alternative. Although Alternative B also includes the phase-out of Stage 2 jets and aging out of older Stage 3 and retrofit jets, the estimated noise reduction would be more than offset by increased noise exposure due to the relocation of approach paths leading to the new runway from areas southeast of the airport. Compared to the 1996 baseline, Alternative B would increase the total exposed population by about 11,800 people, whereas, when compared to Year 2000 conditions, Alternative B would increase the total exposed population by 10,500.

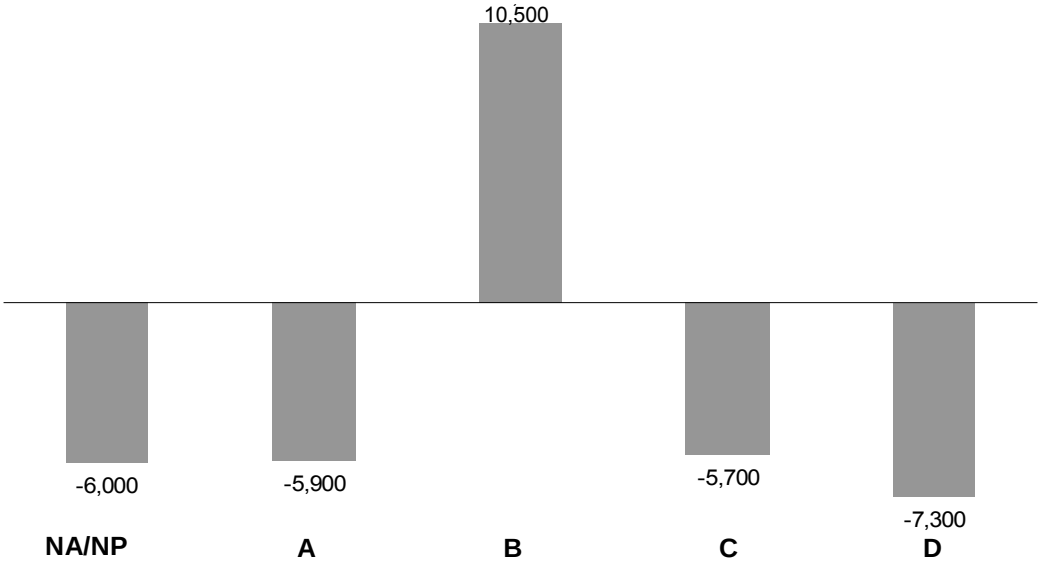
[1] Executive Summary **Table ES-1** and **Table ES-2** population estimates have been rounded to the nearest hundred.

[2] Executive Summary **Table ES-1** and **Table ES-2** population estimates have been rounded to the nearest hundred.

Impact Comparison ES-1
Population Exposed to Noise Above 65 CNEL in 2015
Alternatives Compared Using 1996 Baseline as Benchmark



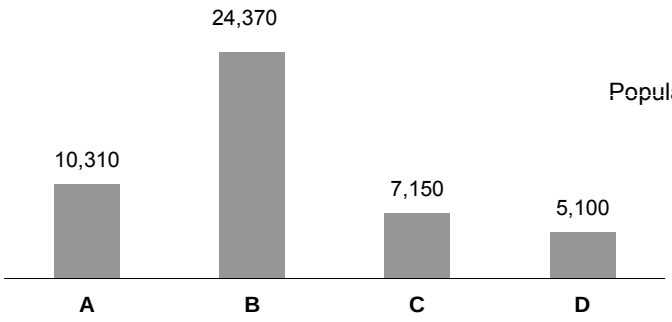
Impact Comparison ES-2
Population Exposed to Noise Above 65 CNEL in 2015 Alternatives
Compared Using Year 2000 Conditions as Benchmark



Shift in Noise Patterns: Although total exposure would drop for three of the Master Plan alternatives, the 65 CNEL map would shift in various ways for each alternative due to runway extensions or additions. As a result of this shift, each of the build alternatives would expose some people to 65 CNEL that had not been previously exposed. Some others, who already live within the 65 CNEL noise contour, would be exposed to a 1.5 decibel or greater increase in noise levels. An increase of 1.5 decibel within the 65 CNEL noise contour would exceed the CEQA significance threshold, which is based on federal standards. A much more substantial shift in flight patterns under Alternative B would create much greater noise impacts than any of the other conditions studied.

Timing of Noise Pattern Shift: The change in noise patterns would not take place immediately, but would take effect over time, as the airport's runway system is modified. Alternative D would newly affect the least amount of people and would be preferable to Alternative A, B, or C in terms of overall impacts.

Impact Comparison ES-3
Population Newly Exposed to 65 CNEL
Compared to 1996 Baseline (2015)



Significant Noise Impacts on Population
Compared to 1996 Baseline

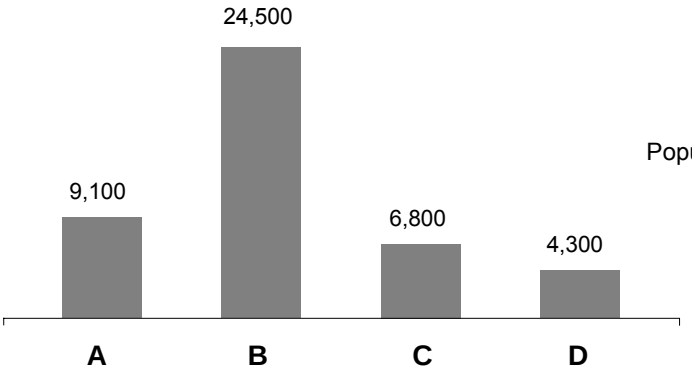
Population Newly Exposed Above 65 CNEL

	2015
Alt. A	10,310
Alt. B	24,370
Alt. C	7,150
Alt. D	5,100

Population Exposed to 1.5 CNEL Increase Above 65 CNEL

	2015
Alt. A	18,300
Alt. B	37,310
Alt. C	5,100
Alt. D	5,000

Impact Comparison ES-4
Population Newly Exposed to 65 CNEL
Compared to Year 2000 Conditions (2015)



Significant Noise Impacts on Population
Compared to Year 2000 Conditions

Population Newly Exposed Above 65 CNEL

	2015
Alt. A	9,100
Alt. B	24,500
Alt. C	6,800
Alt. D	4,300

Population Exposed to 1.5 CNEL Increase Above 65 CNEL

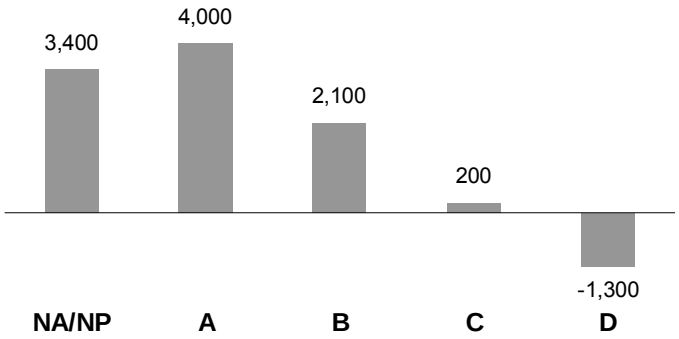
	2015
Alt. A	13,400
Alt. B	34,700
Alt. C	6,700
Alt. D	4,400

Nighttime Awakenings: Based on a 2001 California Court of Appeal decision interpreting CEQA, which is referred to in this Executive Summary as the "Berkeley Jets" case, analyzes potential nighttime awakenings caused by "single event" Aircraft noise. The CEQA threshold of significance for single event awakenings has been selected by LAWA to be an exterior single event Sound Exposure Level (SEL) of 94 dBA decibels during nighttime hours, occurring at an average frequency of once every ten days.[3] This level of exposure was mapped with a noise contour. The noise analysis shows that there would be a

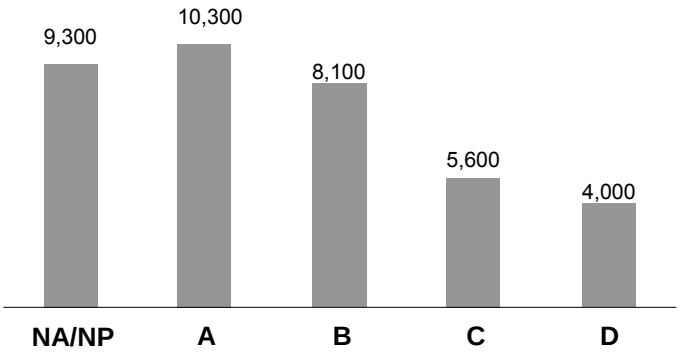
[3] There are no regulatory standards or conclusive scientific evidence that define the threshold of significance relative to the effect of single event noise, including as related to nighttime awakenings. In light of a 2001 CEQA court case ruling, LAWA developed thresholds of significance for single event noise effects based on careful review of existing literature and studies pertaining to single event noise effects.

substantial number of dwellings and persons being newly exposed to Sound Exposure Levels of 94 decibels in all the build alternatives compared to current 1996 baseline and Year 2000 conditions due to noise shifts as a result of runway extensions or additions. Each of the build alternatives would expose some people to 94 dBA SEL that had not been previously exposed. A more substantial shift in flight patterns under Alternative A would create greater noise impacts than any of the other conditions studied. All future alternatives do show significant single event impacts; however, as is the case with the CNEL comparisons, Alternative D would result in the fewest total impacts in terms of nighttime awakening potential by single events.

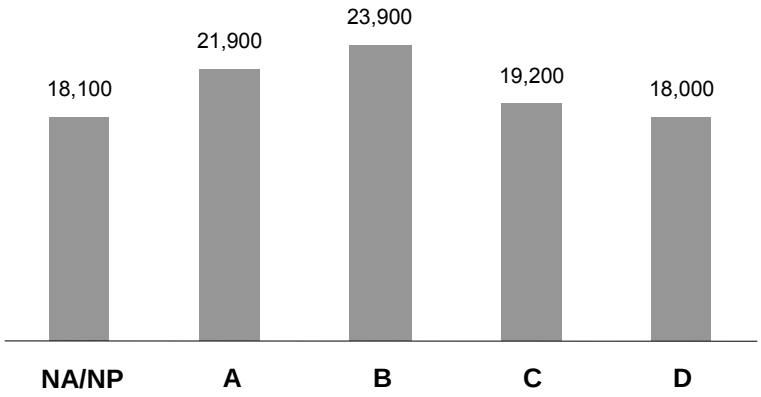
Impact Comparison ES-5
Estimated Population Within 94 dBA SEL Contour of Nighttime Noise Compared to 1996 Baseline



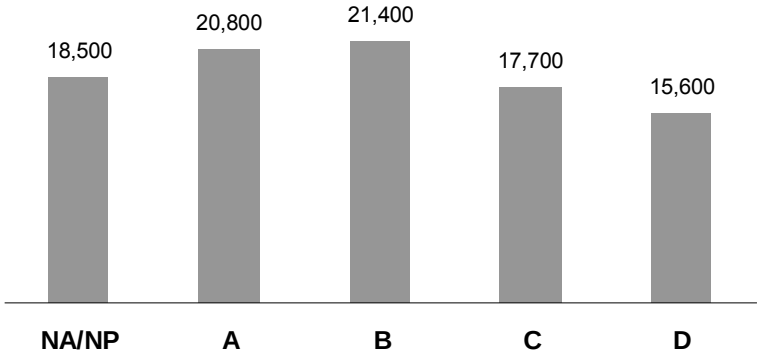
Impact Comparison ES-6
Estimated Population Within 94 dBA SEL Contour of Nighttime Noise Compared to Year 2000 Conditions



Impact Comparison ES-7
Estimated Newly Exposed Population Within 94
SEL Contour of Nighttime Noise 2015
Compared to 1996 Baseline



Impact Comparison ES-8
Estimated Newly Exposed Population Within 94
SEL Contour of Nighttime Noise 2015
Compared to Year 2000 Conditions



School Disruption: Based on a recent California State Court decision interpreting CEQA, this Final EIS/EIR analyzes potential school disruption caused by "single events." While the Court did not establish standards of significance to evaluate impacts, thresholds to address classroom disruption were developed by LAWA as presented in Section 4.1, *Noise* (subsection 4.1.4.1.1). The thresholds of significance for single event noise levels that would result in momentary speech interference (i.e., 3 seconds or greater) in a classroom teaching situation between the hours of 8:00 a.m. to 4:00 p.m. were identified for LAX as exterior single event maximum noise levels of 84 dB (for general classroom teaching) and 94 dB (for small group learning). These exterior noise levels would result in respective interior noise levels of 55 dBA L_{max} and 65 dBA L_{max}. Another threshold identified was an exterior hourly noise level during school hours (i.e., 8:00 a.m. to 4:00 p.m.) of 64 decibels of $L_{eq(h)}$ resulting in sustained interruption in classroom teaching through interior noise levels in excess of 35 L_{eq} during an hour. The evolution of specific thresholds of significance for single event noise levels at LAX is disclosed in Appendix S-C1, *Supplemental Aircraft Noise Technical Report*. The thresholds of significance for single event aircraft noise were developed and tailored for LAX because: (1) there are no "standard" thresholds

of significance, and (2) *Berkeley Jets* and the CEQA Guidelines allow the lead agency to establish suitable thresholds. These thresholds are applicable only to the specific conditions at LAX and should not be generally applied to single event evaluations at other locations.

All future alternatives show significant single event impacts; however, as is the case with the CNEL comparisons, Alternative D would result in the fewest total impacts, in terms of disruptions of schools by single events.

Impact Comparison ES-9

Significant Single Event Impacts of All Future Alternatives
Number of Schools Newly Exposed to Interior Noise

	NA/NP	A	B	C	D
55 dB L_{max}	2	10	8	5	2
65 dB L_{max}	0	1	1	1	0
35 dB $L_{eq(h)}$	6	9	11	8	8

Environmental Action Plan for Aircraft Noise: The fundamental design of the LAX airfield substantially reduces noise impacts on local communities by taking advantage of the airport's ocean side location and predominant wind conditions. Roughly 95 percent of aircraft takeoffs at LAX and nearly all late-night takeoffs and landings are over the ocean, placing much of the 65 CNEL exposure pattern over the ocean away from populated areas. The four Master Plan build alternatives have been designed to continue this noise reduction advantage, taking maximum feasible advantage of the ocean takeoff noise impact reduction benefits.

The keystone of aircraft noise mitigation measures at LAX is the LAWA sound insulation and property acquisition program which, to date, has expended or committed approximately $400 million. This Aircraft Noise Mitigation Program (ANMP) would be expanded to include all areas significantly impacted by the proposed project.

Mitigation of the areas newly exposed to significant levels of nighttime single events would be sought through two techniques. The first would be the preparation of an application to the FAA to limit the number of operations east of the airport during the night hours. The second would be that any area remaining within the newly exposed area of significant exposure would become eligible for sound insulation through expansion of the boundaries of the ANMP where necessary.

Mitigation is being proposed to address aircraft noise impacts on schools that would result in classroom disruption. The funding and implementation of mitigation measures are subject to LAWA's ability to use airport revenue to the extent permissible under federal law and policies or to develop other state or federal funding sources. A new study will be undertaken to arrive at an acceptable threshold of significance for classroom disruption. With the new threshold, those qualifying schools determined to be significantly impacted by the LAX Master Plan would be eligible for soundproofing. Schools that are subject to an existing avigation easement and have been provided with noise mitigation funds would not be eligible for mitigation being proposed to address significant impacts associated with aircraft noise.

On-Airport Surface Transportation

Congestion fills the roadways in the airport's Central Terminal Area (CTA) during much of the day, and traffic exceeds capacity at 16 of the 18 terminal curbs during peak hours.

The last surface transportation improvements at the airport were made 20 years ago, for the 1984 Olympics in Los Angeles. At that time, circulation on the access road loop in the CTA was considerably improved by adding an upper departure level roadway to the terminal system. However, since those improvements, passenger activity has increased about 54 percent and projections for aviation demand indicate that passenger traffic will continue to increase substantially above existing levels through 2015.

In addition to the airfield and terminal-related improvements that are customarily the focus of airport plans, each of the Master Plan build alternatives includes a congestion relief package designed to address the current stressed terminal access system and provide for future needs. For Alternatives A, B, and C, the congestion relief package include direct freeway access to the airport via the ring road, combined with positioning of the new West Terminal and other facilities to spread traffic density throughout the CTA. Other on-airport congestion relief factors relate to reduction of traffic in the CTA by consolidating shuttle services and extending the Green Line rail system onto the airport. For Alternative D, the congestion relief package includes the three remote ground access facilities (i.e., GTC, ITC, and the consolidated RAC) and their connections to the CTA via an APM.

Alternatives A, B, and C

On-Airport Projected Effect of Congestion Relief Package: The congestion relief package would dramatically improve on-airport traffic circulation. Traffic modeling projects that peak hour trips would drop by anywhere from 21 percent to 34 percent in the CTA if any one of these Master Plan alternatives is implemented. By contrast, under the No Action/No Project Alternative the number of peak hour trips in the CTA would increase by 22 percent.

Overall, all curbs and roads within and providing access to the CTA would operate better in 2015 than they do today for Alternatives A and B. Alternative C is also better in 2015 than the baseline conditions, except that it would slightly increase traffic volumes on the northbound-to-westbound ramp from Sepulveda Boulevard to the CTA compared to the Environmental Baseline, resulting in a significant impact.

Construction traffic associated with Alternatives A, B, and C would disrupt normal roadway operations, resulting in unavoidable significant impacts.

Alternative D

Projected Growth: Because the annual passenger growth (i.e., Million Annual Passengers, or MAP) for Alternative D would be substantially the same as in the No Action/No Project Alternative, the number of passenger ground access trips would also be similar. However, peak hour trips are not directly proportional to change in MAP because peak hour vehicle trips is a much different metric than MAP. Peak hour trips are dependant on such variables as origin/destination vs. connecting passengers, changes in peak month/average day activity, vehicle mode splits, peak hour factors, etc., none of which affect MAP. In the No Action/No Project Alternative, inbound and outbound passenger-related trips during the year 2015 airport peak hour would be about 17,600, whereas in Alternative D, there would be about 20,600 inbound and outbound passenger-related trips during the airport's peak hour. However, during the a.m. and p.m. peak hours, respectively, inbound and outbound passenger-related trips for the No Action/No Project Alternative would be about 13,100 and 14,300, whereas Alternative D would only have about 11,500 and 12,600 inbound and outbound trips.

On-Airport Projected Effect of Congestion Relief Package: Like Alternatives A, B, and C, the congestion relief package for Alternative D would also improve on-airport traffic circulation. The primary landside feature of Alternative D would be the relocation of all passenger ground access facilities from the existing CTA to the east side of the airport, near I-405. The effect of this relocation would be removal of all passenger ground access trips from the CTA except FlyAway buses, which would have exclusive passenger-related access to the CTA. Almost 60 percent of the peak hour ground access trips would be traveling to or from the future GTC. The GTC would be the future airport's primary ground access location, and would have direct access to Century Boulevard, La Cienega Boulevard, and Imperial Highway. Almost 30 percent of passenger trips would access the ITC located at the northeast corner of the Imperial Highway/Aviation Boulevard intersection. The ITC would provide parking facilities and would have a covered walkway connection to the MTA Green Line station at Aviation Boulevard. The remaining 10 percent of passenger trips would either be FlyAway buses or rental cars. Rental car passengers would use a new consolidated RAC located on the northwest corner of Airport Boulevard and 98th Street. All of the remote ground access facilities (GTC, ITC, and the consolidated RAC) would be connected to the CTA with an APM.

Under Alternative D, all of the airport's future passenger ground access facilities would be newly constructed. The plan's design would ensure that all internal airport ground access facilities would operate at acceptable levels of service in 2015 (one segment would operate at level of service (LOS) D

and all others would operate at LOS C or better). This is a better level of service than would exist under the No Action/No Project Alternative for the CTA "horseshoe" and the ramps feeding the CTA, where almost all CTA curbs and access ramps would operate at LOS F, or breakdown conditions. In fact, Alternative D would also provide a better level of service in 2015 than exists today in the CTA. As a result, the overall level of on-airport roadway performance under Alternative D would be substantially better than the No Action/No Project Alternative. Although both the No Action/No Project Alternative and Alternative D accommodate a comparable number of annual passengers in 2015, both being substantially less than the levels of annual passengers associated with Alternatives A, B, and C, the level of service associated with Alternative D would be substantially better than that of the No Action/No Project Alternative.

Construction traffic associated with Alternatives A, B, and C would disrupt normal roadway operations, resulting in unavoidable significant impacts.

Off-Airport Surface Transportation

The congestion relief package also plays a role in relieving projected future off-airport traffic conditions. The Master Plan congestion relief measures would be one of the dominant construction features of the Master Plan alternatives.

Alternatives A, B and C

Projected Growth: It is important to note that all of the alternatives would be implemented in a context of regional background growth that is unrelated to the airport. It will not be possible for the congestion relief package and the mitigation measures to eliminate additional non-airport traffic that will be generated by ongoing regional population growth and economic development unrelated to activity at LAX. In addition, the analysis of the No Action/No Project Alternative shows that, even without implementation of the Master Plan, airport-related surface traffic would continue to increase, not only because of increased demand for aviation services at LAX, but also because of the continued growth of population and the economy.

Off-Airport Projected Effect of Congestion Relief Package: Largely as a result of the airport access components of the congestion relief package, each of the three Master Plan alternatives would substantially reduce airport-related traffic impacts on off-airport streets and freeways compared to the No Action/No Project Alternative in 2015.

Congestion: A primary feature of the congestion relief package is the direct connection it provides between the regional freeway system and LAX. (LAX is presently one of the only major airports in the United States without a direct freeway connection.) This freeway/airport connection improves the overall quality of traffic flow throughout the airport area. A comparison between the No Action/No Project Alternative and Alternative C shows that in an area generally bounded by the Marina Freeway, the San Diego Freeway, Rosecrans Avenue, and Vista del Mar:

- Hours spent traveling on arterial streets would be reduced by over 9 percent.
- Average arterial speed would be improved by about 3 percent.
- The number of arterial lane miles at Level of Service (LOS) grade F would be reduced by over 10 percent.

Construction: Disruption of airport area roads will take place during construction. Analysis reveals that the process of constructing improvements to the airport will result in a significant impact that cannot be completely mitigated. Under the construction phasing assumed for Alternatives A, B, and C, the most intense period of impact will take place three to four years into the project.

Environmental Action Plan: The design of the congestion relief package under Alternatives A, B, and C is intended to enhance freeway access directly into the airport. Presently, the freeways that pass by the airport are congested by increased general traffic levels in the region. Consequently, motorists headed for the airport cut through surrounding residential areas on surface streets. Key components of the congestion relief package link the regional freeway system to the airport, thus reducing off-airport congestion.

- An Expressway would provide direct access to LAX from the San Diego Freeway (I-405) north of the airport.
- The Century Freeway (I-105) would be extended onto the airport from the south.
- All the freeway connections would tie into a ring road that connects motorists directly to all parts of the airport, including the proposed new West Terminal.

In addition to the project design features, the traffic impact analysis identified specific intersections, road segments, freeway segments, and freeway ramps where the alternatives would have significant impacts if the project is approved. Design modifications and adjustments have been proposed and a package of mitigation measures has been developed to deal with airport-related impacts at each of the identified traffic facilities. These mitigation measures would eliminate all remaining significant impacts of the Master Plan alternatives by 2015 except for 6-8 intersections (six under Alternatives A and B, and eight under Alternative C). The location-specific mitigation measures include added traffic lanes, provisions for turn lanes, street widening and other improvements, as well as modified timings for traffic signals.

Alternative D

Projected Growth: As indicated above, all of the alternatives would be implemented in a context of regional background growth that is unrelated to the airport. It will not be possible for the congestion relief package and the mitigation measures to eliminate additional non-airport traffic that will be generated by ongoing regional population growth and economic development unrelated to activity at LAX. In addition, the analysis of the No Action/No Project Alternative shows that, even without implementation of the Master Plan, airport-related surface traffic would continue to increase, not only because of increased demand for aviation services at LAX, but also because of the continued growth of population and the economy.

Off-Airport Projected Effect of Congestion Relief Package: Similar to Alternatives A, B, and C, largely as a result of the airport access components of the congestion relief package; Alternative D would reduce airport-related traffic impacts on off-airport streets and freeways compared to the No Action/No Project Alternative in 2015. Because Alternative D would accommodate the fewest passengers of the four Master Plan build alternatives and would reduce the density of the LAX Northside property compared to the No Action/No Project Alternative, it would generate the fewest trips of all the alternatives on airport area arterials and freeways, about 35 percent fewer than the No Action/No Project Alternative during the 2015 p.m. peak hour.

Congestion: A primary component of Alternative D's congestion relief package is the relocation of almost all of the passenger-related vehicle activity to the east of the CTA, via the new GTC, the ITC, and the consolidated RAC. These new facilities are located near the I-405 and/or I-105, which helps to encourage airport-related traffic to stay on these major freeways all the way to the airport, rather than shift to adjacent arterial streets. The relief package also includes a series of other off-airport surface transportation improvements that are designed to improve facilities on the primary routes to the future landside areas.

Much like Alternatives A, B, and C, these landside improvements would benefit the overall quality of traffic flow throughout the airport area. A comparison between the No Action/No Project Alternative and Alternative D shows that during the evening peak hour in an area generally bounded by the Marina Freeway, the San Diego Freeway, Rosecrans Avenue, and Vista del Mar:

- Hours spent traveling on freeways would be reduced by about 10 percent.
- Average freeway speed would be improved by about 1.5 percent.
- The number of freeway and arterial lane miles operating at LOS F would be reduced by about 2.6 percent.

Construction: Like Alternatives A, B, and C, disruption of traffic on airport area roads would take place during construction with Alternative D. Analysis reveals that the process of constructing improvements to the airport results in significant impacts, as defined by state law, that cannot be completely mitigated. Under the currently recommended construction phasing, the most intense period of construction traffic impact would take place in about year 2008.

Environmental Action Plan: Two mitigation plans have been developed, both of which would address off-airport traffic impacts associated with Alternative D. The primary mitigation plan, which is presented and discussed in Section 4.3.2, *Off-Airport Surface Transportation*, of this Final EIS/EIR, would provide a direct route to the future airport ground access facilities to and from the I-405 and I-105. (The secondary mitigation plan is presented in Technical Report S-2b, *Supplemental Off-Airport Surface Transportation Technical Report*, and would be implemented if the primary mitigation plan could not be developed.) The primary plan includes a new I-405 interchange at Lennox Boulevard that would provide direct access to and from both the GTC and the ITC, allowing traffic north or south on I-405 to easily access the airport without stopping. Further, a new fly-over ramp would be provided to and from I-105 over Imperial Highway, which would provide unimpeded GTC and ITC access to I-105 east. Traffic modeling shows that these facilities would encourage airport-bound motorists to stay on I-405 and I-105 rather than off-load onto adjacent arterial streets, much like the LAX Expressway would do in Alternatives A, B, and C. This would help to alleviate some of the traffic that would otherwise use Lincoln Boulevard, Sepulveda Boulevard, Imperial Highway, and other arterials around LAX.

In addition to the project design features, the traffic impact analysis identified specific intersections, road segments, freeway segments, and freeway ramps where the alternatives would have significant impacts, as defined by state law, if the project were approved. The new I-405 interchange at Lennox Boulevard and the I-105 fly-over ramps would mitigate many of these significant impacts; however, the package of mitigation measures would address airport-related impacts at each of the identified traffic facilities. These mitigation measures would eliminate all remaining CEQA significant impacts of Alternative D by 2015 except for three intersections. The location-specific mitigation measures include street widening and/or restriping to accommodate additional traffic lanes, traffic signal equipment upgrades, traffic signal phasing improvements, and transit enhancements.

Employment/Socio-Economics

The passenger and air freight traffic made possible by a major commercial airport generates jobs and economic output (gross sales) for the region it serves. Under 1996 baseline conditions, LAX was directly related to over 408,000 jobs and $60 billion of the total economic output of the five-county region. In Year 2000, activity at LAX accounted for $65 billion in total direct economic output in the region and approximately 425,000 jobs.

Overview of Employment/Socio-Economic Impacts: The No Action/No Project Alternative would directly support about 350,110 jobs in the Los Angeles region in 2015. The decline in total jobs over the planning period, which reflects a net decrease of 9,273 on-airport jobs, would result from productivity increases over time that would outweigh the net additional jobs associated with the limited growth in annual passenger and cargo levels under this alternative. LAX would also have a $63.7 billion direct impact (in terms of gross sales) on the economy of the Los Angeles region in 2015.

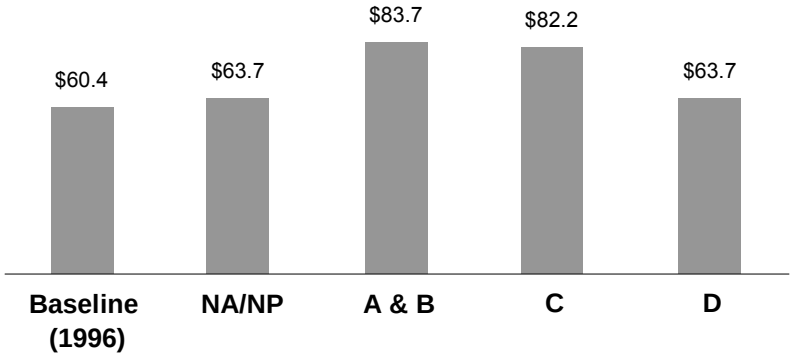
In 2015 Alternatives A and B would support an estimated 448,083 jobs in the Los Angeles region, with net growth of 11,824 on-airport jobs. Under Alternatives A and B, LAX would also have an $83.7 billion direct impact on the economy of the Los Angeles region in 2015. The cumulative effects of Alternatives A and B are considered beneficial based on the substantial employment growth projected by SCAG for the five-county region between 1996 and 2015.

In 2015 Alternative C would support an estimated 425,369 jobs in the Los Angeles region, with net growth of 6,421 on-airport jobs. Under Alternative C, LAX would also have an $82.2 billion direct impact on the economy of the Los Angeles region in 2015. Similar to Alternatives A and B, Alternative C would have a beneficial cumulative impact in light of projected job growth in the five-county region between 1996 and 2015.

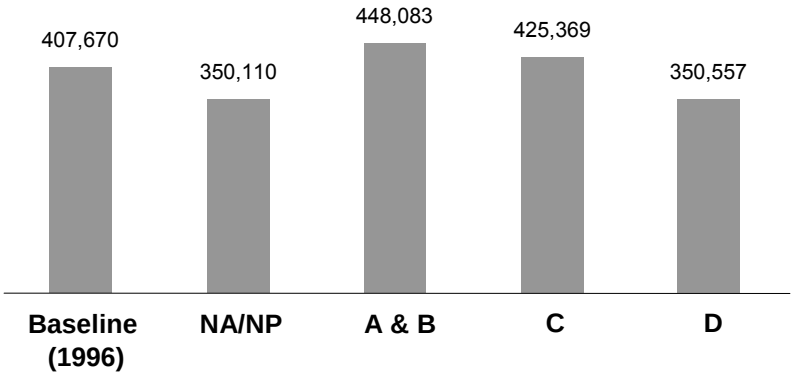
Alternative D would directly support about 350,557 jobs in the Los Angeles region in 2015. The decline in total jobs over the planning period, which reflects a net decrease of 9,261 on-airport jobs, would result from productivity increases over time that would outweigh the net additional jobs associated with the limited growth in annual passenger and cargo levels under this alternative. LAX would also have a $63.7 billion direct impact (in terms of gross sales) on the economy of the Los Angeles region in 2015. Although overall contributions to the regional economy under Alternative D would on balance be modest, cumulative employment effects and associated economic output in combination with related projects would be beneficial.

- **Overall Comparison of Alternatives:** In general, the projected economic and job benefits of each of the Master Plan alternatives matches the projected growth in passenger and air freight activity levels.
- The No Action/No Project Alternative displays some natural growth in economic activity but falls short of the Master Plan build alternatives. In particular, employment falls off from the environmental baseline year due to erosion from the effects of productivity gains. The lack of supporting aviation services would hold back economic activity in the region.
- The added runway alternatives, Alternatives A and B, accommodate more passengers and air freight and, thus, produce the most economic activity and jobs by 2015.
- Alternative C, the No Additional Runway option, fully accommodates projected international demand for passengers and cargo. Alternative C also accommodates most of the projected regional demand at LAX, but does not produce as much economic activity and employment as Alternatives A and B due to a lower level of passenger activity.
- Alternative D, the Enhanced Safety and Security Plan, displays growth in economic activity similar to that of the No Action/No Project Alternative due to constrained passenger and cargo activity levels.

Impact Comparison ES-10
LAX-Related Economic Activity for Entire Los Angeles Region Comparing the Alternatives at 2015
(Economic Activity in Billions of 1996 Dollars)



Impact Comparison ES-11
LAX-Related Jobs for Entire LA Region Comparing the Alternatives at 2015



Construction: Construction of the Master Plan build alternatives would generate a substantial number of jobs over the course of the development period as the proposed airport and access improvements are designed and constructed. The construction of Alternative A would involve direct expenditures, not including land acquisition and relocation costs, of approximately $11.9 billion (in 1997 dollars) by 2015, translating into an estimated 91,337 jobs directly involved in design and construction of the improvements and yielding $21.2 billion in economic output in Los Angeles County.

The construction of Alternative B would involve direct expenditures of approximately $13.4 billion (in 1997 dollars) by 2015, translating into an estimated 102,614 jobs directly involved in design and construction of the improvements and $23.8 billion in economic output in the County.

By 2015, the construction of Alternative C would involve direct expenditures of approximately $10.6 billion (in 1997 dollars), generating an estimated 81,279 direct jobs and $18.9 billion in economic output in the County.

The construction of Alternative D would involve expenditures, not including land acquisition and relocation costs, of approximately $6.4 billion (in 1997 dollars) by 2015, translating into an estimated 48,778 jobs directly involved in design and construction of the improvements in Los Angeles County and $11.3 billion in economic output.

Relocation of Residents or Businesses

Large development projects typically require acquisition of land, often developed land, in order to provide room for the proposed improvements. Thus, this Final EIS/EIR assesses the potential impacts of the acquisition process associated with the Master Plan alternatives on residents and businesses in the vicinity of LAX.

Relocation Context: Independent of the LAX Master Plan, LAWA has an existing relocation program underway to mitigate aircraft noise impacts on area residences, as part of LAWA's Aircraft Noise Mitigation Program (ANMP).[4] Over 2,500 houses and apartments in the Manchester Square and Belford residential areas will ultimately be acquired and the residents relocated under the program existing plan. Voluntary property acquisition commenced in the spring of 1998.[5]

Under federal law, all relocated homeowners, renters, and businesses are entitled to compensation and relocation assistance. All relocation must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and implementing regulations (Uniform Act). For example, the Uniform Act states explicitly that no resident will be required to move until comparable, decent, safe, and sanitary housing is made available. The Uniform Act also requires that fair compensation or adequate assistance be provided.

Overview of Business Relocation Impacts: Alternative A would necessitate the acquisition of approximately 273 acres occupied by a total of 330 light industrial, air freight, office, and retail businesses. Impacts associated with light industrial uses, including air freight, would be significant, as would short-term impacts on hotels. With implementation of mitigation measures described under the proposed Environmental Action Plan, Alternative A impacts on business acquisition and relocation would be mitigated to less than significant levels. Impacts relative to acquisition-related employment, annual property taxes, and business tax revenues would also be less than significant. In addition, under Alternative A, proposed mitigation would reduce cumulative impacts affecting airport-dependent industrial businesses to a less than significant level.

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4 Under the ANMP, LAWA will acquire the Belford and Manchester Square areas 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. The existing acquisition activities were previously approved as part of LAWA's *Final Relocation Plan -- Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford,* June 2000 (referred to within the relocation analysis as the Existing ANMP Relocation Plan).

5 Besides voluntary negotiations leading to acquisition, the LAX Master Plan anticipates that properties designated by the various build alternatives as potential acquisition areas, including the Manchester Square and Belford areas, will be acquired by the most appropriate and practical measures available to ensure that the designated areas are vacant and available at a time consistent with the Construction Sequencing Plan. This would potentially include, for example, voluntary acquisition, leasing, and/or public condemnation.

Alternatives B and C would involve the acquisition of approximately 345 acres with 323 businesses and 216 acres with 239 businesses, respectively. Alternative B involves more extensive acquisition and relocation of businesses and would have significant impacts on industrial/business park, air freight, and hotel uses that could not be fully mitigated. Under Alternative C, the deficit in space available on the airport for industrial/business park uses is considered a significant impact. The impact of Alternative C would be mitigated to less than significant levels, except for effects on air freight uses. Impacts relative to acquisition-related employment, annual property taxes, and business tax revenues would also be less than significant. Cumulative impacts associated with industrial uses, however, would be considered significant under Alternatives B and C, despite mitigation, due to the potential shortfall of suitable business relocation sites.

Alternative D would necessitate the acquisition of approximately 77 acres of light industrial, air freight, office, and retail uses occupied by a total of 38 businesses, most of which could be accommodated either on the airport or in airport-owned developments, including LAX Northside. The effects of acquisition activities on affected businesses would be less than significant, with the exception of impacts on air freight uses. With implementation of the proposed mitigation measures, however, impacts on air freight businesses would be reduced to less than significant levels. Impacts relative to acquisition-related employment, annual property taxes, and business tax revenues would also be less than significant. Proposed mitigation would reduce cumulative impacts affecting industrial uses, including air freight businesses, to a less than significant level under Alternative D.

Overview of Residential Relocation Impacts: Alternatives A, B, and C each involve the acquisition of 84 dwelling units, including single- and multi-family housing. An inventory of available rental housing and homes for sale shows that there would be an adequate supply of housing to accommodate the residential relocation needs for these three build alternatives. Implementation of a Relocation Program in compliance with the Uniform Act, as described in the Environmental Action Plan, would mitigate the residential impacts. Although replacement housing compensation and various forms of relocation assistance would be provided by the Uniform Act, it is acknowledged that relocation may present a potential hardship or inconvenience for some residents. Overall cumulative impacts from residential relocation, combined with other independent projects and project-induced housing demand, are considered to be less than significant. Under the No Action/No Project Alternative, relocation of residents in the Manchester Square and Belford neighborhoods would continue under LAWA's Existing ANMP Relocation Plan.

Residential acquisition is not proposed under Alternative D. However, approval and implementation of surface transportation Mitigation Measure MM-ST-13, involving creation of a new interchange at I-405 and Lennox Boulevard, could, if adopted, necessitate the acquisition of 9 to 12 homes. Compliance with the Uniform Act would ensure that any such impacts would be less than significant. In addition, under Alternative D cumulative impacts related to residential relocation are considered to be less than significant.

Impact Comparison ES-12

Acquisition and Relocation Overview Comparing the Alternatives

	A	B	C	D
Acres of Land	273	345	216	77
Businesses	330	323	239	58
Developed Business Space (square feet)	5,164,540	6,468,930	2,850,123	605,913
Hotel Rooms	1,929	2,083	729	154
Jobs to be Relocated	9,568	11,272	3,681	5,907
Dwelling units	84	84	84	0
% Increase Over Existing Residential Noise Mitigation Acquisition	3.27%	3.27%	3.27%	0%
Residents to be Relocated	172	172	172	0

Note: Based on preliminary engineering plans for the LAX Expressway and improvements to State Route 1, it is possible that additional land acquisition may occur under Alternatives A, B, and C. The environmental consequences of these proposed transportation improvements are discussed in Appendix K, *Supplemental Environmental Evaluation for LAX Expressway and State Route Improvements*. Under Alternative D, approval and implementation of Mitigation Measure MM-ST-13 could necessitate the acquisition of 9 to 12 residences.

Environmental Action Plan: LAWA will implement a Residential and Business Relocation Plan in full compliance with federal law regarding compensation and assistance to relocated residents and businesses. The plan will have a number of objectives, including fully informing those to be relocated, providing referrals to comparable housing, and lending special assistance to businesses that wish to remain close to the airport.

The lack of available relocation sites on the airport during the acquisition period, combined with the tight industrial real estate market around the airport, would place a hardship on airport-dependent air freight businesses under all of the build alternatives. To mitigate this impact, the project phasing would be adjusted. Acquisition of air freight properties would be delayed as long as possible so that replacement sites on the airport could be made available to serve airport-dependent businesses. Mitigation measure MM-RBR-2 has also been proposed to further address potential project-level and cumulative impacts associated with business relocation. This mitigation measure, in combination with the Master Plan commitment, would serve to facilitate the relocation of acquired uses, where feasible, to airport property, neighboring jurisdictions, or sites that could become available through LAWA's ANMP activities. As a result, under Alternative A, impacts after mitigation would be considered less than significant. Under Alternatives B and C, however, impacts would remain significant and unavoidable. Under Alternative D, impacts would be mitigated to a less than significant level.

Residential housing relocation impacts under Master Plan Alternatives A, B, and C would be addressed through compliance with the Uniform Act. The surplus supply of existing housing inventory will make it possible to relocate all those affected by the acquisition program. Availability of residential relocation sites and compliance with the Uniform Act would avoid potentially significant impacts associated with residential acquisition and as a result, no mitigation measures are necessary.

Environmental Justice

"Environmental Justice" refers to the concept that minority or low-income populations should not be disproportionately exposed to environmental impacts. To prevent this outcome, federal Executive Order 12898 directs each federal agency "*to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.*" In addition, the State of California enacted legislation establishing environmental justice as an aspect of state law. Although there is no requirement or specific guidance for addressing environmental justice under CEQA, the analysis provided in this Final EIS/EIR has been prepared in recognition of applicable state law and the principles of environmental justice. It should be noted that conclusions summarized herein regarding environmental justice impacts and recommended mitigation measures and benefits have been determined by the City of Los Angeles for purposes of the Final EIR to be used in the City's decision-making process. The Final EIS to be approved by the FAA subsequent to

completion of the City's decision-making process will present the environmental justice conclusions reached by the FAA, in accordance with the requirements of NEPA and other federal laws.

Public Involvement: A fundamental principle of environmental justice is public participation in the decision-making process. Public meetings held prior to release of the Draft EIS/EIR are highlighted in that document. Subsequent to the release of the Draft EIS/EIR, LAWA held a series of community workshops on Environmental Justice beginning in May 2001. Four workshops were held in the communities of Inglewood, Lennox, and South Los Angeles. Notices and key documents, including a comprehensive summary of the Draft EIS/EIR, were translated into Spanish. In addition, important community input on the issue was also received during the more than 9-month, public circulation period for the Draft EIS/EIR.

In association with public circulation of the Supplement to the Draft EIS/EIR, three additional environmental justice workshops, using outreach methods and a format similar to the earlier workshops, were held in Inglewood, Lennox, and South Los Angeles during July and August of 2003. Further input was also obtained during the public circulation period at twelve public hearings conducted for the Supplement to the Draft EIS/EIR, and more recently, a LAWA environmental justice working group in conjunction with the Mayor's office conducted additional outreach to local organizations, environmental groups, civic, religious and business leaders in adjacent communities.

Defining an Environmental Justice Impact: A "disproportionately high and adverse human health and environmental effect on minority and low-income populations" means an adverse effect that:

(1) Is predominantly borne by a minority population and/or a low-income population; or

(2) Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low-income populations.

Mitigation and enhancement measures and offsetting benefits may be taken into account in determining whether there is a disproportionate effect.

Key Conclusions: The findings of the environmental justice analysis are based on detailed analysis available in relevant sections of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. From those sections, the significant environmental impacts and recommended mitigation measures associated with the CEQA analysis and the adverse impacts identified in the NEPA evaluation are re-evaluated for purposes of environmental justice, to determine if they disproportionately affect minority and low-income communities.

The key findings of the analysis are outlined below:

Noise - Projected future increases in aviation activity at LAX would have a disproportionate impact from aircraft noise on minority and low-income communities east of LAX under Alternatives A, B, C, and D. Traditional noise mitigation programs may not be adequate to fully mitigate these impacts. Suggested measures for further reducing noise impacts to minority and low-income communities include accelerating or expanding sound insulation offered under the existing LAX Aircraft Noise Mitigation Program, through such means as providing additional technical assistance to local jurisdictions for their noise mitigation programs and reducing, or eliminating to the extent feasible, structural and building code compliance constraints to mitigation of sub-standard housing.

Air Quality and Health Effects - Under Alternative D incremental cancer risks and non-cancer chronic health hazards would be reduced compared to the No Action/No Project Alternative and Alternatives A, B, and C. In addition Alternative D might reduce cumulative effects to non-cancer chronic and acute non-cancer health hazards, which would be a beneficial effect. Although air quality effects associated with criteria air pollutants under Alternative D would be reduced when compared to Alternatives A, B, and C, and for certain pollutants compared to the No Action/No Project Alternative, these impacts would remain significant and unavoidable for all of the alternatives. Health effects associated with these pollutants, particularly chronic respiratory diseases such as asthma, have been found to be more prevalent among certain minority populations who may also have less access to healthcare. Although it cannot be quantified in the absence of long-term health studies whether such impacts would have a disproportionately severe human health effect on minority and low-income populations, it is conservatively assumed that these effects would be more severe for minority and low-income populations.

Surface Transportation - Surface transportation impacts do not appear to disproportionately fall on minority and low-income populations under Alternatives A, B, C, or D. However, LAWA will take into consideration the special needs of minority and low-income individuals who rely heavily on public transportation in implementing traffic mitigation measures. Project design features and air quality and traffic mitigation measures that enhance the convenience and affordability of public transportation to encourage decreased use of private automobiles could also benefit minority and low-income individuals who rely on public transportation.

Relocation - Minority and low-income communities would not be disproportionately affected by relocation of residents and businesses. However, minority-owned businesses or businesses with a high proportion of minority employees or minority/low-income customers may face special challenges that would be addressed by LAWA in implementation of a Business Relocation Plan. Acquisition mitigation may also provide benefits to minority and low-income communities through relocation of airport dependent uses in areas impacted by noise, while also supporting local employment and economic development.

Environmental Justice Program: The environmental justice community outreach process was developed to assure an effective dialogue with minority and low-income communities affected by LAX in order to best respond to the needs of the various communities as environmental justice benefits and mitigation measures associated with the LAX Master Plan are developed and implemented. LAWA is continuing to make progress in adjacent communities addressing environmental issues associated with LAX operations. Since publication of the Draft EIS/EIR, a Memorandum of Understanding (MOU) between the City of Los Angeles and the City of Inglewood began a new level of cooperation to pursue, study and implement such measures as suspension of requirements for avigation easements; a pilot program for noise insulation in areas that do not currently qualify for assistance; provision of air conditioning for residences to be insulated; as well as conducting studies to improve compliance with over-the-ocean takeoff and night-time over-ocean requirements and policies.

All potential mitigation measures recommended during the environmental justice community outreach process conducted in association with the Draft EIS/EIR and Supplement to the Draft EIS/EIR were reviewed and consolidated into a list of recommendations that was instrumental in defining the benefit and mitigation proposals presented in this Final EIS/EIR that will be used in the City of Los Angeles' decision-making process on the project.

The Environmental Justice Program includes mitigation measures and certain benefits tailored to meet the specific needs of low-income and minority communities, as defined through the public involvement program.

In addition to the mitigation measures outlined in this Final EIS/EIR that address noise, land use, air quality, air toxics, and relocation impacts, benefits are also proposed to address environmental justice concerns. These benefits are intended to go beyond the comprehensive mitigation measures provided throughout this Final EIS/EIR to reduce or offset disproportionately high and adverse effects on minority and low-income communities associated with the proposed LAX Master Plan, particularly those that would remain significant after implementation of mitigation measures. Although adoption of the these programs may be influenced by funding constraints, such as legal limitations placed on the use of airport revenue, LAWA will investigate, pursue, and implement environmental justice benefits as feasible and allowable by law. The programs proposed for implementation include the following:

- Expand existing programs at the Jobs Outreach Center including, but not limited to the following:
  - DBE Loan Assistance Program to provide assistance to DBEs in identifying a wide range of available commercial and governmental loans and contacts for securing loans.
  - Construction Job Placement to provide assistance to local residents and/or DBEs to find construction-related jobs resulting from the LAX Master Plan.
  - Small Business and Job Opportunities Program to match job, procurement, and vending opportunities arising from the LAX Master Plan with local applicants and DBEs.
- Expand Gateway LAX Improvements/Greening of Impacted Communities to the east along Century Boulevard through the City of Inglewood.
- Aviation Curriculum to provide education to local high school students in low-income and minority communities near LAX with regard to aviation-related topics.

- Aviation Academy to provide an educational facility at LAX or on LAWA property for high school or college age students interested in pursuing careers in the aviation industry.
- Nature Center to provide an environment for conducting research and educating the public about the coastal dune habitat, the endangered El Segundo blue butterfly, and local plant and animal species.
- Air Toxics Study to monitor runway emissions and compare such emissions with levels determined to be present in local neighborhoods.
- Health Risk Assessments to compare collected data from the Air Toxics Study against existing toxics data from SCAQMD in order to calculate theoretical excess cancer cases as well as other chronic diseases and/or ailments near LAX.
- School Air Filters may be required at existing schools and public buildings in the immediate vicinity of LAX.
- Mobile Health Clinic to ensure that residents in the communities surrounding LAX have access to proper health care.
- Community Mitigation Monitoring through an Agency/Community cooperative to ensure agency compliance, accountability, and community involvement in implementation of all final Mitigation Measures Master Plan Commitments and Benefits.

Related Topics: More than a dozen environmental disciplines are relevant to the environmental justice topic. The sections of the Final EIS/EIR that served as a starting point for this analysis are:

- 4.1, *Noise*
- 4.2, *Land Use*
- 4.3, *Surface Transportation*
- 4.6, *Air Quality*
- 4.9, *Historic, Architectural, Archaeological/Cultural and Paleontological Resources*
- 4.18, *Light Emissions*
- 4.20, *Construction Impacts*
- 4.21, *Design, Art and Architectural Application/Aesthetics*
- 4.24, *Human Health and Safety*
- 4.26, *Public Services*
- 4.27, *Schools*

Air Quality

The alternatives would affect air quality by changing the amount of emissions released by sources at or near LAX, as well as by changing the locations of those emission sources. The changes can be positive or negative. Airport infrastructure development in some cases can support increases in activity levels at the airport (such as the number of aircraft operations and the number of vehicles accessing the airport) and, thus, increase emissions. However, infrastructure improvements can also reduce congestion (through airfield and roadway changes) and the need for aircraft to idle at the gates (by providing ground-based electrical power and air conditioning).

One of the criteria used to develop the LAX Master Plan alternatives was to mitigate or reduce, to the extent feasible, the environmental impacts associated with airport operations. Therefore, various design features were incorporated into the alternatives to reduce air quality impacts. For example, in all of the build alternatives:

- Improvements to the roadways and improved parking facilities would reduce automobile idling time, which in turn would reduce motor vehicle air emissions.
- Modifications to the airfield taxiways and runways would reduce airfield delay and congestion, thus decreasing aircraft idling times and air emissions.
- Installation of preconditioned air and electrical power hookups at terminal gates would allow airlines to minimize the use of auxiliary power units (on-board turbines).

- Increased separation of aircraft and ground support equipment from vehicles accessing the airport (such as automobiles and shuttles) would reduce the airport-generated peak air pollutant concentrations in community locations.

In addition to the design features associated with the Master Plan, LAWA has prepared an extensive list of mitigation measure components that it proposes to implement. These mitigation components were developed from reviews of mitigation measures and plans used at other airports, extensions of ongoing LAWA environmental policies, and public comments received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. These mitigation measures include the following general approaches to reduce air quality impacts:

- *LAX Master Plan Mitigation Plan for Air Quality* to expand and revise the existing air quality mitigation programs at LAX in consultation with FAA, the U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the South Coast Air Quality Management District (SCAQMD).
- *Transportation-Related Measure* to develop and construct at least eight additional FlyAway service terminals; other components may be included.
- *Operations-Related Measure* to convert ground support equipment to electric power (or extremely low emission technology such as electric power, fuel cells, or future technology developments); other components may be included.
- *Construction-Related Measure* to reduce construction equipment and activity emissions. LAWA would implement steps to reduce fugitive dust and engine emissions from construction activities. These steps would include: requiring the use of emissions-reduction engine and fuel technology; requiring watering or soil stabilization; paving on-site construction routes; covering truck beds; requiring construction-vehicle wheel washing facilities at entrances to public roads; minimizing the use of portable generators; specifying clean diesel technology with emission control devices for all portable generators; and using an on-site rock crushing facility to reuse rock/concrete, thus reducing off-site haul truck trips.

Approach to Analysis: Five criteria pollutants were evaluated, including sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM_{10}), nitrogen dioxide (NO_2), and ozone (O_3). The evaluation of O_3 was conducted using the standard practice of evaluating volatile organic compounds (VOC) and nitrogen oxides (NO_X), which are key components in the formation of ozone. Although lead (Pb) is a criteria pollutant, it was not included in the analysis since airport operations are expected to have negligible emission potential for this pollutant.

Data collection studies and modeling analyses have been conducted to estimate the impact that LAX activities would have on future air quality around the airport. Data on existing aircraft operations, traffic counts, and other airport tenant operations were collected for 1996 baseline conditions. Supplemental information was collected to characterize Year 2000 conditions. Forecasts of future year activity were developed and emission inventories were estimated for the 1996 baseline, Year 2000 conditions, and future conditions under the No Action/No Project Alternative and the four build alternatives. Both unmitigated and mitigated emission inventories were developed for each build alternative.

The emission inventories were used with air dispersion models to predict future ambient air pollutant concentrations. The calculated incremental emissions, relative to the 1996 baseline inventories, were compared to CEQA significance thresholds, and modeled air pollutant concentrations were compared to California Ambient Air Quality Standards (CAAQS). These comparisons were made to evaluate the significance of each build alternative with respect to CEQA thresholds. For NEPA purposes, estimated emissions for each build alternative were compared to those for the No Action/No Project Alternative, and modeled pollutant concentrations for each build alternative were compared to National Ambient Air Quality Standards (NAAQS).

The impact that the design features and recommended air quality mitigation measures for the Master Plan have on air quality is best seen by comparing the estimated future emission inventories for each build alternative to those for the environmental baseline (CEQA) and to those for the No Action/No Project Alternative (NEPA) as well as by comparing the resulting air pollutant concentrations predicted for each build alternative (including future background concentrations) to the relevant ambient air quality standards.

Emissions: Alternatives A, B, C, and D would have lower total (on-airport plus off-airport) CO and VOC emissions in 2015 than the environmental baseline or the No Action/No Project Alternative. In addition, Alternative D would have lower PM_{10} emissions in 2015 than the environmental baseline and the No Action/No Project Alternative and lower NO_X and SO_2 emissions in 2015 than the No Action/No Project Alternative. Finally, Alternative D would have the lowest criteria pollutant emissions of the four build alternatives.

Comparing the mitigated operation and construction emissions to CEQA significance thresholds for any year analyzed indicates that:

- On-airport emissions of CO, VOC, and PM_{10} are less than significant for Alternatives A, B, C, and D.
- On-airport emissions of NO_X and SO_2 are significant for Alternatives A, B, C, and D.
- Off-airport emissions of SO_2 are less than significant for Alternatives A, B, C, and D.
- Off-airport emissions of CO, VOC, NO_X, and PM_{10} are significant for Alternatives, A, B, C, and D.
- Construction emissions of SO_2 are less than significant for Alternative D, and are significant for Alternatives A, B, and C.
- Construction emissions of CO, VOC, NO_X, and PM_{10} are significant for Alternatives A, B, C, and D.

Ambient Air Pollutant Concentrations: Alternative D is the only build alternative that meets (is less than) the NAAQS for all criteria pollutants in all years analyzed. For the interim year of 2005, Alternatives A, B, and C would exceed the NAAQS for both PM_{10} and NO_2, and Alternative A would exceed the CO standard.

None of the alternatives, including the No Action/No Project Alternative, would meet the CAAQS for PM_{10}. However, Alternatives B and D would have lower PM_{10} concentrations in 2015 than either the 1996 environmental baseline or the No Action/No Project Alternative. In the interim year, Alternative A would exceed the 8-hour averaged CO CAAQS. For 2015, Alternative C would exceed the 1-hour averaged CO CAAQS.

Conformity Applicability: A demonstration of conformity with the purpose of the State Implementation Plan (SIP) must be made for a proposed federal action (the selected alternative) in a federal nonattainment or maintenance area when incremental emission rates attributable to the proposed federal action would exceed the general conformity applicability thresholds. The attainment status of the South Coast Air Basin with respect to the NAAQS is addressed in subsection 4.6.3.2. For the LAX Master Plan, Alternative D is the LAWA staff-preferred alternative; the FAA has not yet selected an alternative as the proposed federal action. As the incremental emissions of NO_X, NO_2, and PM_{10} attributable to Alternative D are greater than the general conformity applicability thresholds, a general conformity determination was required to demonstrate that Alternative D conforms to the SIP. A draft general conformity determination was published by FAA on January 9, 2004.

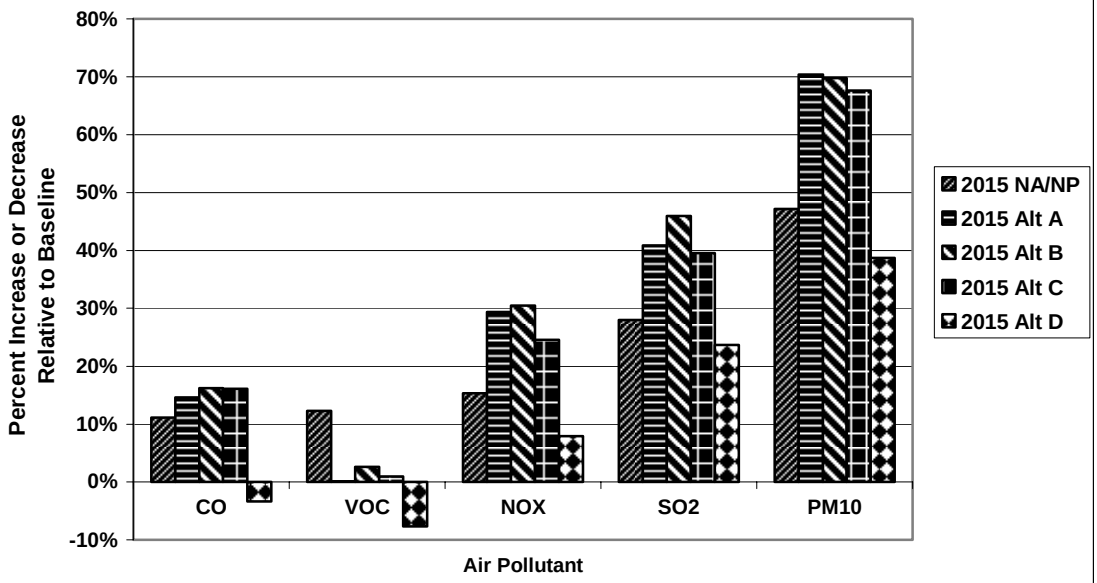
Differences between emissions and dispersion analysis results between the alternatives are explained by several factors that each contribute to impacts in different areas around the airport:

- Alternatives A, B, C, and D would allow more efficient aircraft operations and improved traffic flows on and near LAX compared to the No Action/No Project Alternative. The result would be fewer emissions from aircraft taxi/idle, Ground Support Equipment (GSE), and gasoline and diesel vehicles when compared to the No Action/No Project Alternative.
- Alternative D CO, VOC, NO_X, SO_2, and PM_{10} emissions would be lower than those emissions for Alternatives A, B, and C, due to lower passenger levels and fewer aircraft operations.
- Fence line and runway configurations vary among the alternatives. The concentration differences associated with Alternative D are due in large part to the runway configuration. The runway configuration proposed under Alternatives A, B, and C would result in runways that would be closer to residences than the configuration proposed under Alternative D. Alternative D does not include the

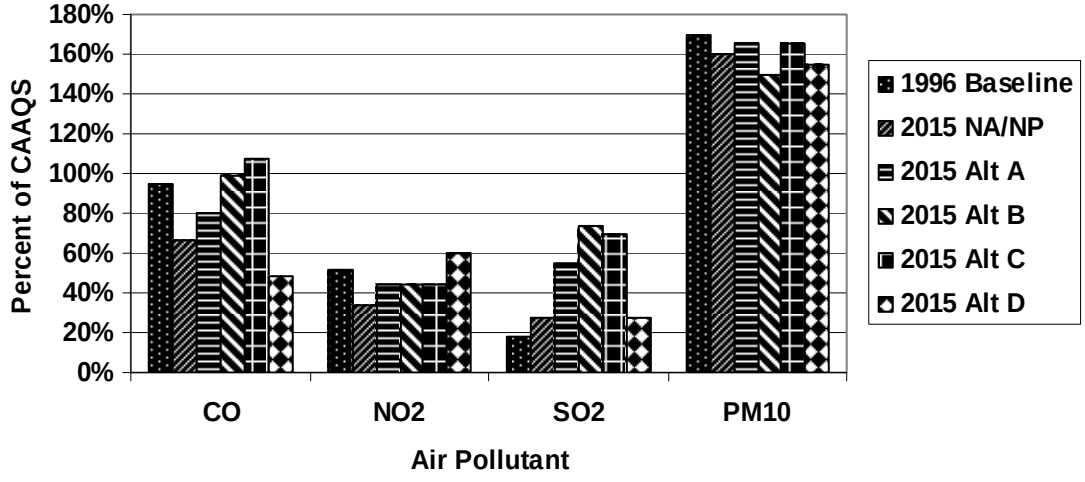
proposed West Terminal Area (WTA) that is included in Alternatives A, B, and C and has little to no traffic traveling to the existing Central Terminal Area (CTA). Parking and traffic emissions would primarily occur around the proposed Ground Transportation Center (GTC) and Intermodal Transportation Center (ITC), unique to this build alternative.

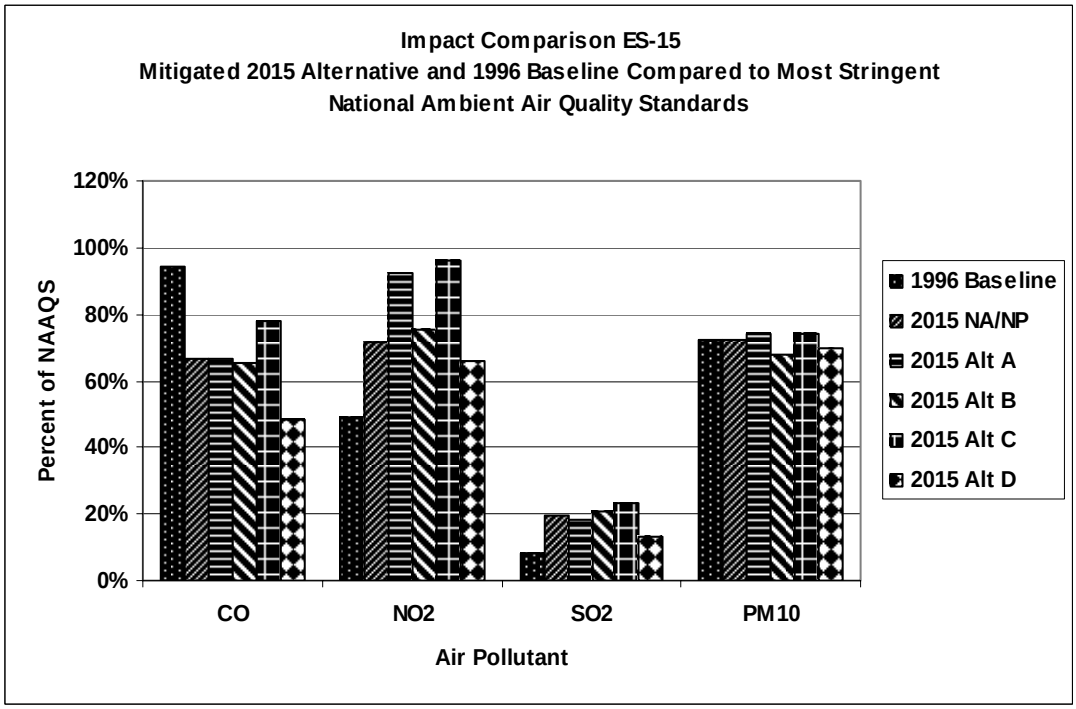
- Alternative D has lower passenger levels and fewer overall aircraft operations than Alternatives A, B, or C, resulting in generally lower impacts to air quality than the other build alternatives.

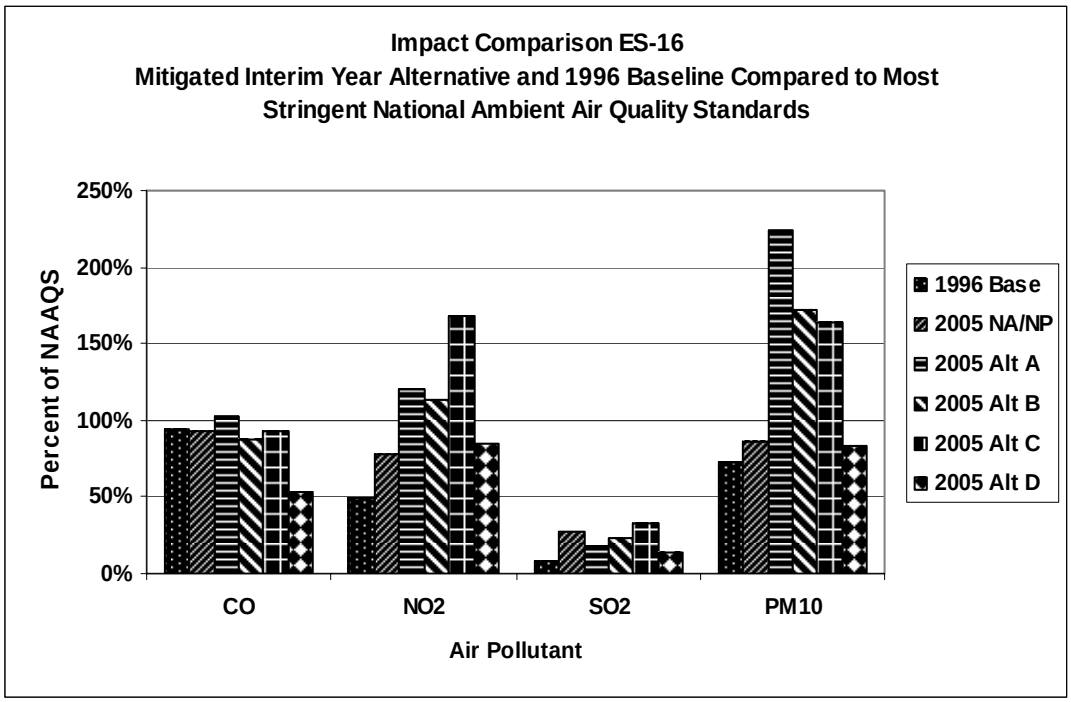
Impact Comparison ES-13
Relative Increase/Decrease in Airport Operational Emissions in 2015 Compared to Baseline



Impact Comparison ES-14
Mitigated 2015 Alternative and 1996 Baseline Compared to Most Stringent California Ambient Air Quality Standards







Hydrology and Water Quality

Drainage: Approximately 83 percent of the area within the Master Plan boundary is already characterized as impervious surface. Surface runoff flows to an extensive network of Los Angeles City and County drainage facilities that discharge either directly to Santa Monica Bay or to San Pedro Bay via the Dominguez Channel. Storm water runoff from within the airport property drains to the Dominguez Channel as well as to the Argo Drain, the Imperial Drain, and the Culver Drain, which are sub-basins of

the Santa Monica Bay Watershed. The storm drain system at LAX is generally able to convey surface runoff volumes from low intensity rainfall events. Recent hydrologic analyses indicate that the Argo and Imperial sub-basins can convey peak runoff rates associated with the LADPW 50-year design storm, while flooding would occur in parts of the Dominguez Channel Watershed under the same conditions.

Increases in impervious area and storm water peak flow rates under all of the Master Plan alternatives could potentially exceed the capacity of local drainage facilities, resulting in flooding. Moreover, development of the Master Plan alternatives, in conjunction with runoff and peak flows from cumulative development, may not be able to be accommodated by the regional drainage infrastructure, particularly that serving the Dominguez Channel.

Recharge: Groundwater beneath LAX is not used for municipal or agricultural purposes, and industrial and process uses are limited to the removal of small amounts of groundwater extracted incidental to free hydrocarbon product (FHP) recovery. Therefore, any impact of the Master Plan alternatives on the groundwater recharge rate would not be significant. However, with construction of new facilities, there would be a change in the amount of impervious land area, with a resulting change in groundwater recharge.

Storm Water Runoff: Storm water runoff from the airport flows into two "receiving water bodies," the Santa Monica Bay and the Dominguez Channel. As the runoff flows across the airport, it has the potential to pick up various types of pollutants that may exist on the site. With mitigation, there would be no significant impacts on water quality from storm water runoff. Storm water pollutant loading for the No Action/No Project and Alternatives A, B, C and D are summarized below.

- The No Action/No Project Alternative would result in the greatest overall increase in annual pollutants in 2015; with increases ranging from approximately 1 to 31 percent compared to 1996 baseline conditions.
- Alternative A would result in pollutant load increases in 2015 of approximately 0.3 to 11 percent for metals, oil and grease, ammonia, and total coliform bacteria when compared to 1996 baseline conditions. All other pollutant loads would decrease relative to baseline conditions. When compared to the No Action/No Project Alternative, estimated loading for Alternative A in 2015 would be from 5 percent lower for total zinc to 29 percent lower for total suspended solids. Total copper, oil and grease, and total fecal coliform bacteria estimated loads would increase from between less than 1 percent to 7 percent, when compared to the No Action/No Project Alternative.
- Alternative B would generate an increased pollutant load in 2015 of 1 to 9 percent for total copper, oil and grease, and total coliform bacteria when compared to baseline conditions. All other pollutant loads would decrease relative to baseline conditions. When compared to the No Action/No Project Alternative, estimated average annual pollutant loading from the project in 2015 would decrease for all constituents except total copper, oil and grease, and total coliform bacteria, which would increase by 6 percent, 2 percent, and less than 1 percent, respectively.
- Alternative C would generate an increase in 2015 pollutant loads compared to 1996 baseline conditions of approximately 1 to 9 percent for metals, oil and grease, and total coliform bacteria. These same constituents would increase when compared to the No Action/No Project Alternative, with the exception of total lead and total zinc, which would decrease by 23 and 5 percent, respectively. Estimated annual pollutant load decreases relative to the No Action/No Project Alternative for the other modeled constituents range from 2 percent to 27 percent.
- Alternative D would generate an increase in 2015 pollutant loads of approximately 2 to 9 percent for all pollutants modeled except for total suspended solids and fecal enterococcus bacteria, which would decrease when compared to baseline conditions. When compared to the No Action/No Project Alternative, estimated pollutant loads of some constituents would increase while others would decrease as a result of Alternative D. Decreases ranging from 1 percent to 18 percent would occur for total suspended solids, total Kjeldahl nitrogen, total lead, 5-day Biochemical Oxygen Demand (BOD_5), Chemical Oxygen Demand (COD), ammonia, and fecal enterococcus bacteria. Increased loads ranging from less than 1 percent to 5 percent would result for the other modeled constituents in 2015 when compared to the No Action/No Project Alternative.

Dry Weather Runoff: Dry weather runoff is generated by activities including outdoor maintenance, landscape irrigation, aircraft, and vehicle washing and servicing, washing of paved areas, etc. Under the build alternatives, many of the existing maintenance facilities at LAX would be relocated off-site,

consequently reducing the number of sources for dry weather pollutants when compared with the 1996 baseline conditions. While the Imperial retention basin would be removed under Alternatives, A, B, and C, this facility would remain under Alternative D, and consequently continue to capture dry and wet weather runoff which is then treated at the Hyperion Treatment Plant. However, should Alternative A, B, or C be selected for construction, the Environmental Action Plan for this topic would compensate for loss of the water quality treatment function of the basin. No significant water quality impacts associated with dry weather flows are expected to occur as a result of any of the alternatives.

Environmental Action Plan: A conceptual drainage plan will be developed. The conceptual drainage plan will assess area-wide drainage flows and identify overall improvements necessary to provide adequate drainage capacity to prevent flooding and control peak flow discharges. In so doing, the drainage impacts associated with each of the build alternatives would be reduced to a level that is less than significant. The conceptual drainage plan will also include a water quality component intended to minimize the effect of airport operations on surface water quality through the implementation of Best Management Practices and prevent a net increase in pollutant loads to receiving water bodies resulting from the selected Master Plan alternative. Measures to be included and applied in conjunction with Master Plan implementation would be based on the California Regional Water Quality Control Board's *Standard Urban Storm Water Mitigation Plan.* With implementation of this Master Plan commitment, the water quality impacts of any build alternative would be reduced to a level that is less than significant.

Department of Transportation Act, Section 4(f) [Recodified at 49 USC 303]

Section 4(f) of the Department of Transportation (DOT) Act of 1966, as amended, provides that the Secretary of Transportation shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, state or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm resulting from the use. Specifically, Section 4(f) precludes "use" of these resources, either directly through a physical taking or indirectly through "constructive use" unless there are no prudent and feasible alternatives, and the project incorporates all possible planning to minimize harm. The Section 4(f) evaluation has been performed in the context of the DOT Act and Section 6(f) of the Land and Water Conservation Fund Act (L&WCF Act). However, all of the resources addressed in the section have been analyzed in expanded detail in their respective sections of this Final EIS/EIR.

Description of 4(f) and 6(f) Resources and Potential Effects of Alternatives: An initial inventory identified 32 public park and recreation areas, one habitat restoration area for a federally listed endangered species, and seven historic properties within the Section 4(f) study area. Evaluation of the Master Plan alternatives and their effects on these resources identified a potential use under Section 4(f) for Alternatives A, B, and D due to displacement of habitat within the El Segundo Blue Butterfly Habitat Restoration Area. While the Habitat Restoration Area is not specifically designated as a Wildlife and Waterfowl Refuge pursuant to Section 4(f), FAA is treating, for the purpose of this analysis, the subject area to be a 4(f) resource because it is used to conserve a federally listed endangered species. It should also be noted that under existing conditions an existing use occurs within the Habitat Restoration Area associated with navigational aids and service roads. Such use would continue to occur under the No Action/No Project Alternative and Alternative C. Under Alternative B there would be a potential use and constructive use of two historic properties. There would be no use or constructive use of any properties protected under Section 4(f) for Alternative C with selection of the preferred split viaduct alignment for the LAX Expressway. Additionally, for all of the build alternatives there would be the potential for unknown archaeological resources to be discovered due to construction activities. If such resources were found to be significant and to have value for preservation in place, a potential use could occur.

None of the three facilities in the study area identified in Section 4.8, *Department of Transportation Act, Section 4(f)*, of this Final EIS/EIR as having received L&WCF funds (i.e., Dockweiler Beach State Park, Jesse Owens County Park, and South Bay Bicycle Trail) would be subject to direct or indirect effects such that they would be converted to non-recreational use by any of the Master Plan alternatives. Therefore, the requirements of Section 6(f) of the L&WCF Act would not apply to any of the Master Plan alternatives.

The following outlines Section 4(f) resources potentially affected by the Master Plan build alternatives and the type of the effect:

Hangar One - Alternative B would require the relocation of Hangar One, a National Register listed historic property. Although retention of the setting, design, materials and feeling of Hangar One and its listing on the National Register are expected to be maintained through the proposed relocation process, relocation of a historic property would still constitute a use under Section 4(f). Alternatives A, C, and D would not require relocation of Hangar One.

Merle Norman Headquarters Complex - The Merle Norman Headquarters Complex is eligible for listing in the National Register. Alternative B would require the acquisition and demolition of this property in order to accommodate a proposed airport ring road. This action would result in a use under Section 4(f). Roadway configurations under Alternatives A, C, and D avoid acquisition and demolition of the Merle Norman Headquarters Complex.

Centinela Adobe - The Centinela Adobe is listed in the National Register. Under Alternatives A and C, the LAX Expressway could encroach onto this historic property but only if the preferred alternative is not selected. The encroachment and associated visual and noise effects would result in both a use and constructive use of the property.

Randy's Donuts - Randy's Donuts appears eligible for listing in the National Register. Under Alternatives A and C (but only if the preferred alignment is not selected), an elevated section of the LAX Expressway would be located in close proximity to the property, resulting in a constructive use due to visual impacts on the resource.

Archaeological/Cultural Resources - None of the alternatives would affect significant known archaeological/cultural resources identified in the study area. However, under all of the build alternatives the disturbance or destruction of potentially significant undiscovered archaeological/ cultural sites during construction would be considered a use under Section 4(f), if these sites are considered to have greater value if preserved in place.

El Segundo Blue Butterfly Habitat Restoration Area - Alternatives A, B, and D would affect the El Segundo Blue Butterfly Habitat Restoration Area due to the installation of replacement or relocation of existing navigational aids within the area, which would result in a use under Section 4(f). The No Action/No Project Alternative and Alternative C would allow the existing navigational aids located in the area to continue.

Measures to Avoid or Mitigate Potential Adverse Effects: LAWA has adopted a Master Plan commitment that ensures any noise insulation conducted on historic properties will be undertaken with the supervision of a qualified architectural historian or historic architect. Enforcement of this policy by LAWA would avoid any adverse Section 4(f) effects on the Academy Theatre in Inglewood, which is considered a National Register eligible property.

Under Section 4(f), mitigation can be used to avoid the constructive use of a resource. If use of a Section 4(f) resource occurs and there are no prudent and feasible alternatives to that use, mitigation can serve to minimize harm to the resource. Effects on Hangar One under Alternative B would be mitigated by relocating the structure to an appropriate site within the original Mines Field boundary and by ensuring that the majority of its character-defining features would be preserved. It is anticipated, as a result of this mitigation measure, that Hangar One would retain its National Register listing and eligibility. Despite mitigation, the relocation would still result in a use under Section 4(f).

The disturbance or destruction of potentially significant undiscovered archaeological resources resulting from development of Alternatives A, B, C, or D would be minimized through archaeological monitoring and several other archaeological mitigation measures identified in Section 4.9.1, *Historic/Architectural and Archaeological/Cultural Resources*.

Regarding the potential use within the Habitat Restoration Area due to placement of navigational aids, several mitigation measures are provided in Section 4.10, *Biotic Communities*, to address this effect, including 1:1 replacement of occupied habitat.

Final Section 4(f) Evaluation: A draft DOT Act Section 4(f) evaluation focusing on Alternative D, identified as the LAWA staff-preferred alternative, was prepared and is provided in Appendix S-F, *Supplemental Department of Transportation Act Section 4(f) Report*. Consultation and coordination with

the U.S. Fish and Wildlife Service and the California Department of Fish and Game regarding biological resources has been undertaken throughout the LAX Master Plan EIS/EIR process, including issues associated with the effects of the Master Plan alternatives on resources within the Habitat Restoration Area. The analysis in Section 4.8, *Department of Transportation Act, Section 4(f)*, constitutes a final Section 4(f) evaluation incorporating the FAA's final determination that implementation of Alternative D would result in a use within the El Segundo Blue Butterfly Habitat Restoration Area pursuant to the DOT Act. The FAA has determined that the Section 4(f) use within the Habitat Restoration Area cannot be avoided. The FAA has further determined that no feasible and prudent alternatives exist, and that all possible mitigation measures to minimize harm have been incorporated into the project.

Historic/Architectural and Archaeological/Cultural Resources

A historic properties survey was conducted to identify and evaluate any prehistoric and/or historic properties that may be affected by implementation of one or more Master Plan build alternatives. Upon concluding the survey process, 11 properties were either identified as listed in or eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and/or applicable local jurisdiction registers. Of the 11 properties located within the Area of Potential Effects (APE), two would be affected by Alternative D at the state level. However, with the implementation of the Master Plan Commitment HR-1, impacts to one of these properties, the Morningside Park Neighborhood, would be less than significant. For the International Airport Industrial District, for which significant impacts could not be mitigated to a less than significant level without abandoning the project, a Statement of Overriding Considerations would be necessary. At the federal level, pursuant to Section 106 of the National Historic Preservation Act and Section 4(f) of the U.S. Department of Transportation Act, Alternative D would have no effects on those properties on or eligible for listing in the National Register of Historic Places.

Impact Comparison ES-17

Significant Properties Affected (Directly or Indirectly) by the Master Plan Alternatives

Historic/Archaeological Resources	Federal[1]	State[2]/ Local[3]	No Action/ No Project	Alt A	Alt B	Alt C	Alt D
Hangar One	Listed	Listed	No	No	Yes	No	No
Theme Building	Eligible	Listed	No	No	No	No	No
Merle Norman Headquarters Complex	Eligible	Eligible	No	No	Yes	No	No
Academy Theatre	Eligible	Eligible	No	Yes	Yes	Yes	No
CA-LAN-2345 (archaeological)	Eligible	Eligible	No	No	No	No	No
World War II Munitions Storage Bunker	Eligible	Eligible	No	No	No	No	No
Intermediate Terminal Complex	Ineligible	Eligible	No[5]	Yes	Yes	Yes	No
International Airport Industrial District	Ineligible	Eligible	No	Yes	Yes	Yes	Yes
Morningside Park Neighborhood	Ineligible	Eligible	No	Yes	Yes	Yes	Yes
Centinela Adobe[4]	Listed	Listed	No	Yes	No	Yes	No
Randy's Donuts[4]	Eligible	Eligible	No	Yes	No	Yes	No

1 Federal = National Register of Historic Places.
2 State = California Register of Historical Resources.
3 Local = City of Los Angeles Historic Cultural Monument; City of Inglewood Local Landmark or unique archaeological resource, as defined by CEQA Guidelines - Section 15064.5(c) and PRC Section 21083.2(g).
4 The property would only be affected if the preferred LAX Expressway alternative is not selected.
5 Although the double arched hangar located within the Intermediate Terminal Complex would be demolished, it is not a contributor to the complex. Therefore, adverse impact would occur.

Source: FAA and PCR Services Corporation, 2003.

Environmental Action Plan: In recognition of the potential impacts to historic properties, LAWA has adopted a Master Plan commitment that would ensure the preservation of identified historic properties through review of design and development adjacent to those resources and by undertaking any

modifications to those properties in a manner consistent with the Secretary of the Interior Standards for the Treatment of Historic Properties (Standards).[6] Additionally, when noise abatement measures are performed for those historic properties affected under the Aircraft Noise Mitigation Program, LAWA will ensure that such methods are developed with the approval of a qualified architectural historian or historic architect,[7] in compliance with the Standards.

A series of mitigation measures has been developed based on federal, state, and local jurisdiction standards and guidelines established for historic preservation activities. These mitigation measures include, but are not limited to, archaeological monitoring during construction activities, resource recovery/reporting processes, consultation with Native American representatives, development of applicable educational materials, and completion of Historic American Buildings Survey (HABS) recordation documentation.

Biotic Communities

Sensitive biotic communities are flora and fauna that have a local, state, or federal designation under a law or regulation, or a listing by an agency or organization. Examples of designating entities might include a habitat conservation plan, the California Native Plant Protection Act, the Migratory Bird Treaty Act, or California Department of Fish and Game. (A following section covers potential impacts to species listed as threatened or endangered under the state and federal Endangered Species Acts.)

This analysis considers changes to baseline conditions, clarifies the methodology utilized in the Draft EIS/EIR, and analyzes potential indirect impacts to biotic resources from airport operations from air and light emissions and noise.

Results of these analyses have determined that Master Plan alternatives may have significant impacts on state-designated sensitive habitat from construction of navigational aids and associated service roads within the Los Angeles/El Segundo Dunes.

Under Alternatives A, B, and C, installation of navigational aids and associated service roads within the Los Angeles/El Segundo Dunes would result in the conversion of 1.34 acres, 1.16 acres, and 0.69 acre of state-designated habitat, respectively. The amount of conversion occurring within the El Segundo Blue Butterfly Habitat Restoration Area would be 0.70 acre, 0.39 acre, and 0 acre, respectively.

Under Alternative D, installation of navigational aids and associated service roads within the Los Angeles/El Segundo Dunes would result in the conversion of 1.53 acres of state-designated sensitive habitat, including 0.77 acre within the El Segundo blue butterfly Habitat Restoration Area. These impacts under each of the four build alternatives are considered to be a significant impact. The proposed mitigation measures would reduce the impact of this habitat conversion to a less than significant level.

Impact Comparison ES-18

Alternatives Comparison of Potential Impacts on State-Designated Sensitive Habitats (Measured in Acres in 2015)

	NA/NP	A	B	C	D
Impacts on State-Designated Sensitive Habitats from Construction of Navigational Aids and Associated Service Roads within Los Angeles/El Segundo Dunes (including area within Habitat Restoration Area)	0 (0)	1.34 (0.70)	1.16 (0.39)	0.69 (0)	1.53 (0.77)

Source: Sapphos Environmental, Inc. 2003.

6 Weeks and Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings. U.S. Department of the Interior, National Park Service, 1995.

7 One who meets the Secretary of the Interior's Professional Qualifications Standards.

A Mitigation Land Evaluation Procedure (MLEP) was used to evaluate the potential impacts of each proposed alternative on biotic communities and sensitive flora and fauna within the Master Plan boundaries. A MLEP is a method of quantifying habitats using the product of the suitability of the habitat for species in the area, and the areal extent of the habitat. The environmental consequences of each project alternative were quantified in terms of habitat units.

Implementation of Alternatives A, B, and C would result in the potential loss of 61.27 habitat units, 67.81 habitat units, and 49.87 habitat units, respectively, from the conversion of open space to developed areas. The potential loss under the No Action/No Project Alternative would be 17.87 habitat units.

Implementation of Alternative D would result in the potential loss of 45.43 habitat units from the conversion of open space to developed areas.

Impact Comparison ES-19

Alternatives Comparison of Potential Biotic Community Impacts (Measured in Habitat Units in 2015)

	NA/NP	A	B	C	D
Potential Loss of Habitat Units Upon Conversion of Open Space to Landscaped or Developed Areas	-17.87	-61.27	-67.81	-49.87	-45.43

In addition, similar to the other alternatives, Alternative D was evaluated for the potential loss of individual sensitive species. Alternative D would require mitigation of potential significant impacts to Lewis' evening primrose, western spadefoot toad, San Diego black-tailed jackrabbit, loggerhead shrike, and mature trees.

Analysis of the potential indirect impacts to biotic resources from airport operations determined that no significant impacts to sensitive biotic communities and sensitive plant and animal species would occur under the No Action/No Project Alternative or Alternatives A, B, C, and D.

Environmental Action Plan: One of the primary mitigation measures for biotic communities would be a habitat replacement program. Habitat losses were calculated for each alternative and the same number of habitat units would be replaced on a one-to-one basis by restoring existing habitats within the Los Angeles/El Segundo Dunes area. The restored habitat locations would be monitored to ensure the attainment of performance goals in support of long-term habitat viability.

Conservation plans would be prepared and implemented in the habitat replacement program to compensate for the potential loss of individuals of one plant and three animal populations. Success of the plans would be monitored for up to five years.

LAWA will also implement measures to reduce impacts during construction, operations, and maintenance, including implementation of avoidance measures where construction or staging is near the Habitat Restoration Area, as well as environmental monitoring during construction.

Endangered and Threatened Species of Flora and Fauna

The analysis of potential impacts to species officially designated as endangered or threatened was undertaken for Alternative D based on methodology used for Alternatives A, B, and C. In addition, the analysis considers changes to baseline conditions, updated surveys of the American peregrine falcon (*Falco peregrinus anatum*) and El Segundo blue butterfly (*Euphilotes battoides allyni*), and analysis of the potential indirect impacts to the American peregrine falcon from airport operations. Updated surveys for the Riverside fairy shrimp (*Streptocephalus woottoni*) were not required. The American peregrine falcon was delisted by the U.S. Fish and Wildlife Service (USFWS) on August 25, 1999; however, it is a California state-listed endangered species.

Results of these analyses have determined that the Master Plan alternatives may have significant impacts on local populations of two federally listed wildlife species, the Riverside fairy shrimp, and the El Segundo blue butterfly. Proposed mitigation measures would reduce the impact to these species below the level of significance. The USFWS has issued a Biological Opinion which is included in Appendix F-E of this Final EIS/EIR.

Riverside Fairy Shrimp: Cysts of federally endangered Riverside fairy shrimp were found to occupy 1.3 acres of degraded wetland habitat on the airfield.

- Under the No Action/No Project Alternative, environmental impacts to the Riverside fairy shrimp would include 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp, that would be subject to indirect impacts from ongoing airfield operations and maintenance.
- Under Alternatives A, B, and C, impacts to the Riverside fairy shrimp would include 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp that would be directly impacted by the conversion to developed (airfield) uses.
- Under Alternative D, 0.04 acre (1,853 square feet) of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp would be directly affected as a result of construction staging, airfield operations and maintenance, and/or airfield improvements. Potential indirect impacts to 1.26 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp would be avoided through the implementation of construction avoidance measures, including Best Management Practices (BMPs), and the creation of a buffer area around the degraded wetland habitat. Implementation of recommended mitigation measures, which incorporate the conservation measures detailed in the Biological Opinion, would reduce direct and potential indirect impacts on this species to below the level of significance.

El Segundo Blue Butterfly: The federally endangered El Segundo blue butterfly is present within extant and restored Southern Foredune and Southern Dune Scrub within the Los Angeles/El Segundo Dunes.

- Alternative A would result in the conversion of 8,514 square feet (0.20 acre) of occupied habitat of the El Segundo blue butterfly in the Habitat Restoration Area from installation of navigational aids and associated service roads; Alternative B would result in the conversion of 2,316 square feet (0.05 acre) of occupied habitat in the Habitat Restoration Area. These are considered to be significant impacts. The proposed mitigation measures would reduce the impact of this habitat conversion to a less than significant level.
- No conversion of occupied habitat would occur under the No Action/No Project Alternative or under Alternative C.
- Alternative D would result in the conversion of 10,597 square feet (0.24 acre) of occupied habitat of the El Segundo blue butterfly in the Habitat Restoration Area from installation of navigational aids and associated service roads. This conversion is considered to be a significant impact. The proposed mitigation measures which incorporate the conservation measures detailed in the Biological Opinion would reduce the impact of this habitat conversion to a less than significant level.

Environmental Action Plan: Habitat replacement and relocation techniques would be utilized to mitigate the impact on the two affected species below the threshold of significance.

- To mitigate impacts to the Riverside fairy shrimp under Alternatives A, B, and C, the entire 1.3 acres of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp would be replaced at a 3:1 ratio at a suitable alternative location where the Riverside fairy shrimp would be able to complete its life cycle. Under Alternative D, 0.04 acre (1,853 square feet) would be replaced at a mitigation ratio of 3:1 at a suitable alternative location. The 1.26 acres retained on the LAX airfield would be avoided through the implementation of construction avoidance measures, including BMPs and the creation of a buffer area around the degraded wetland habitat. The replacement habitat has been identified in coordination with the U.S. Fish and Wildlife Service (USFWS). Values of the new habitat will be higher than the current values of the existing habitat.
- To mitigate impacts to the El Segundo blue butterfly, suitable replacement habitat would be created in conformance with the Biological Opinion to compensate for the loss of currently occupied habitat. El Segundo blue butterfly pupae will also be relocated in coordination with the USFWS in order to minimize impacts to the butterfly within the Habitat Restoration Area. Construction would be scheduled outside the flight season of the butterfly.

Wetlands

This analysis focuses on areas within the Master Plan study area that fit the legal definition of wetlands as they are defined and protected under federal law. LAX is partially located within an area that historically consisted of a relatively flat plain containing a mix of native grasslands and coastal scrub habitats interspersed with vernal pools. Unlike the marshes, swamps, or bogs that people normally associate with wetland habitats, vernal pools are shallow pools that are seasonally inundated. The vernal pool complex that was present on-site through the 1930s has been converted as a result of repeated grading, stockpiling, and recontouring.

Of the 52 sites evaluated for presence or absence of wetlands, 9 sites with a total area of 1.3 acres met the United States Army Corps of Engineers (USACOE) criteria for wetland hydrology.

- Under the No Action/No Project Alternative, the existing 1.3 acres of wetlands located within the western Airport Operations Area (AOA) would be subject to routine operations and maintenance activity. Long-term operations and maintenance of the western AOA would result in the loss of habitat values and functions normally associated with wetlands.
- Under Alternatives A, B, and C, 1.3 acres of area subject to the jurisdiction of the USACOE would be directly affected as a result of being converted to airfield uses. This impact would be significant.
- Under Alternative D, 0.04 acre (1,853 square feet) of area subject to the jurisdiction of the USACOE would be directly affected as a result of construction staging, airfield operations and maintenance, and/or airfield improvements. Direct impacts to 0.04 acre (1,853 square feet) is considered to be a significant impact. Potential indirect impacts to 1.26 acres of jurisdictional wetlands would be avoided through the implementation of construction avoidance measures, including BMPs and the creation of a buffer area around the wetland sites. Implementation of recommended mitigation measures would reduce direct and potential indirect impacts to wetlands to below the level of significance.
- **Environmental Action Plan:** Measures to mitigate for the disturbance and conversion of these wetlands would reduce the impacts to a less than significant level. The recommended mitigation would include the replacement of 1.3 acres of impacted wetlands under Alternatives A, B, and C and 0.04 acre (1,853 square feet) of impacted wetlands under Alternative D with habitat in another suitable location at a ratio of 3:1. The replacement habitat has been identified in coordination with the USFWS and habitat values will be higher than those of wetted areas within Master Plan boundaries.

Construction Impacts

Master Plan commitments and mitigation measures would be implemented to reduce or avoid potentially significant impacts from construction associated with the build alternatives. In most cases, mitigation would reduce the impacts below the threshold of significance. However, there would be significant but unavoidable construction impacts for noise, land use, surface transportation, community disruption and alteration of surface patterns, air quality, and schools.

Noise: Construction activities would generate potential noise impacts related to the operation of equipment required for demolition and construction of various facilities. Noise impacts would depend on the distance of the listener from the construction area, type, and number of pieces of equipment, duration of equipment operation, and the time of construction. It is anticipated that construction activities would result in noise levels 5 dBA L_{eq} over ambient levels near sensitive residential and school uses. Mitigation measures proposed to reduce impacts include the use of noise control devices on construction equipment, staging of construction operations as far from noise sensitive uses as feasible, and timing the noisiest on-site construction activities to avoid sensitive times of the day as feasible. Despite the use of these mitigation measures, construction operations are anticipated to result in significant noise impacts that cannot be fully mitigated.

Land Use: Construction effects associated with noise, air emissions, degraded views, and surface transportation disruption would impact land uses surrounding the Master Plan boundaries. Mitigation measures proposed for these related environmental disciplines would reduce impacts to surrounding land uses. However noise, air quality, and construction-related traffic impacts would remain significant.

Surface Transportation: Truck traffic to transport materials to and from the construction sites and construction workers commuting to jobsites would have a significant impact on local traffic. Incoming

traffic may be rerouted due to road closures and would lower the level of service at some of the affected roadway intersections. LAWA has identified Master Plan commitments for the establishment and use of haul routes; separation of construction traffic from regular "airport" traffic; development of a detour plan; and establishment of a traffic coordination office to ensure that construction traffic is coordinated and impacts are minimized.

Community Disruption and Alteration of Surface Transportation Patterns: During construction for the build alternatives, several improvements would take place along the primary arterials and roadways surrounding the airport. During this period, there would be the potential for temporary detours and congestion that would compromise access to community facilities, services, residences, and businesses. The Master Plan commitments and mitigation measures identified under Surface Transportation would also reduce community disruption impacts. However, construction-related traffic impacts that would impact access to community services and facilities would remain significant.

Air Quality: Construction activities would result in emissions from construction equipment, haul vehicles, earth-moving activities, and employee vehicles. These emissions would exceed the South Coast Air Quality Management District's (SCAQMD's) construction emissions threshold for carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), and particulate matter (PM_{10}). Emissions for Alternatives A, B, and C would exceed the SCAQMD's emission threshold for SO_2. Mitigation measure MM-AQ-2 proposes to reduce impacts through the use of six required elements: fugitive dust source controls, on-road mobile source controls, non-road mobile source controls, stationary point source controls, mobile and stationary source controls, and administrative controls.

Schools: Four (Alternatives A, B, and C) or three (Alternative D) public schools would be potentially impacted by noise associated with construction activities. Mitigation measures proposed to reduce impacts to schools are described above under Noise.

Human Health Risk Assessment (CEQA)

The purpose of the Human Health Risk Assessment (HHRA) is to address potential human health impacts from inhalation of TAPs related to implementation of the LAX Master Plan, including both cancer risks and non-cancer health hazards. Conclusions regarding the significance of impacts provided in the HHRA are strictly for the purposes of CEQA. Risk assessment is an evolving and highly uncertain process. Large uncertainties exist in the estimation of emissions of toxic air pollutants (TAPs) from airport mobile sources (particularly emissions of acrolein from aircraft), the dispersion of such TAPs in the air, actual human exposure to such TAPs and the health effects associated with such exposures. This HHRA relied upon the best data and methodologies available.

Like other facilities that accommodate vehicles that consume fuel, operations at LAX may release TAPs to the air in the vicinity of the airport. These TAPs may come from aircraft, ground support equipment (GSE), on- and off-airport traffic, maintenance facilities, and other sources. Potential impacts to human health associated with releases of TAPs may include increased cancer risks and increased chronic (long-term) and acute (short-term) non-cancer health hazards from inhalation of TAPs.

As part of the CEQA analysis, health implications of implementing the LAX Master Plan were evaluated. Although no regulations exist that establish thresholds of significance for an entire facility such as LAX, LAWA developed, for the purpose of the CEQA analysis of the Master Plan alternatives, human health risk assessment significance thresholds based on recent SCAQMD policies. The CEQA significance thresholds used in the analysis include: (1) an increased incremental cancer risk greater than 10 in one million for potentially exposed residents or school children; (2) a total incremental chronic hazard index greater than 5 for any target organ system at any receptor location; (3) a total incremental acute hazard index greater than 1 for any target organ system at any receptor location; and (4) exceedance of Permissible Exposure Limits - Time Weighted Average for Workers.

It should be noted that there is very little current data, research information, and analysis on TAPs resulting from airport operations. This is particularly true relative to TAP emission factors for aircraft. The basis for most of the TAP emission factors developed by USEPA and CARB for commercial aircraft is from data derived from the testing of one aircraft type conducted about 20 years ago. These published emission factors were intended for the development of state and regional emission inventories and were not envisioned for use in atmospheric dispersion modeling of TAPs from individual airports. This risk assessment also used additional, more recent information on engine testing (the most recent from 1990),

but a great deal of uncertainty remains concerning emissions factors for newer engines using commercial jet fuels. Moreover, the combined human health and environmental effects of airport-related TAPs with TAPs from other sources are also not well documented. For these and other reasons, the results of the analysis discussed below are based on the best data, information, and modeling techniques currently available but still potentially subject to a high degree of imprecision and uncertainty.

The primary findings, including CEQA conclusions regarding significant impacts, of the human health risk assessment are as follows:

- Health risks for the majority of nearby residents (cancer, non-cancer chronic, and non-cancer acute) would be lower for Alternative D without mitigation than for 1996 baseline or for Year 2000 conditions. Some health risks for maximally exposed individuals (cancer [1996 baseline] and non-cancer chronic [Year 2000]) for Alternative D without mitigation would increase slightly in small areas adjacent to the airport compared to 1996 baseline and Year 2000 conditions; however, the increase would be less than significant.
- Health risks for nearby residents (cancer, non-cancer chronic and non-cancer acute) would be lower for Alternative D without mitigation in 2013 and 2015 than they would be if no Master Plan improvements were undertaken (i.e., the No Action/No Project Alternative).
- Lower predicted health risks for Alternative D are due to more efficient aircraft operations and improved traffic flows on and near LAX compared to the No Action/No Project Alternative and reduced airport activity (fewer annual passengers) when compared to other build alternatives. Increased airport efficiency would result in fewer emissions from aircraft, particularly because of reduced idling and taxi times for heavy aircraft. In fact, because aircraft emissions are so important in determining noncancer health hazards, reduced emissions from aircraft result in noncancer hazards being less for Alternative D than for 1996 baseline. Also, relatively small increases in MAP and associated vehicle traffic limit any increases in diesel emissions associated with Alternative D. These emissions are responsible for most potential incremental cancer risk. Small increases in diesel emissions result in small increases in potential cancer risk for Alternative D compared with 1996 baseline conditions and limited increases in emissions from vehicles associated with higher levels of passenger activity.
- Some health risks (cancer, non-cancer chronic, and non-cancer acute) for Alternatives A, B, and C after mitigation would increase in some locations compared to 1996 baseline and Year 2000 conditions. In some cases (non-cancer chronic and non-cancer acute), these increases would be greater than CEQA thresholds of significance. However, health risks would decrease for most locations near the airport. For the most part, health risks would be lower for these three build alternatives in future years with or without mitigation than under the No Action/No Project Alternative.
- If no airport improvements were undertaken (the No Action/No Project Alternative), health risks for nearby residents from airport-related sources would increase from 1996 to 2015, due to increased airport activity and continuing congestion.
- Cumulative cancer risks would increase slightly for all alternatives. Areas where cumulative risks would increase are small, and the contribution of the alternatives would be very low compared to total risks from all sources in the area.
- Cumulative non-cancer hazards (chronic and acute) could only be evaluated in a general way. Possible cumulative hazards under Alternative D may be less than 1996 baseline and Year 2000 conditions. Possible cumulative hazards for the other build alternatives would increase above 1996 levels.

The basis for these conclusions is briefly summarized below.

Methods for Estimating Impacts to Human Health: An HHRA for TAPs released from LAX during airport operation was conducted as defined in California Environmental Protection Agency (CalEPA) and U.S. Environmental Protection Agency (USEPA) guidance. An HHRA examines the potential for long-term exposure (exposure over many years) to increase both cancer risks and non-cancer hazards. In addition, the HHRA evaluates the potential for short-term (1-hour) exposures to cause immediate, or acute, health impacts.

The HHRA found that most potential risk and hazard to human health could be attributed to releases of only a few chemicals, including diesel particulates, 1,3-butadiene, benzene, and acrolein. The HHRA

also found that inhalation of these TAPs was the only notable way in which people living near LAX might be exposed.

In light of the uncertainties associated with risk assessment noted above, and consistent with state and federal guidance on risk assessment in other contexts, the methods used in the HHRA were conservative. That is, methods were used that are more likely to overestimate than underestimate possible health risks and hazards.

For example, cancer risks were calculated for hypothetical individuals living at locations where TAP concentrations are predicted to be highest. These individuals are assumed to be exposed for 24 hours per day on almost all days of the year and for 30 or 70 years (essentially a lifetime) to maximize estimates of how much chemical a person might inhale while living near LAX. In addition, people are assumed to be outdoors where TAP concentrations in air are highest during the entire time that exposure takes place, despite the fact that persons spend considerably more time indoors than outdoors. Cancer risk estimates based on these conservative exposure assumptions represent upper bound, or worst case, predictions that may be associated with breathing chemicals released from LAX during and after implementation of the Master Plan. Actual members of the population near LAX that are not as highly exposed would be expected to face lower health risks.

Possible Project Impacts on Human Health: Estimates of possible cancer risk or non-cancer hazard as incremental impacts relative to 1996 baseline and Year 2000 conditions were developed for this analysis. This approach allows direct comparison of the relative impacts of the build alternatives and the No Action/No Project Alternative.

Cancer Risks - Comparing the mitigated TAP releases to CEQA significance thresholds indicates that:

- After mitigation measures are implemented, incremental cancer risks for Alternatives A, B, and C in 2005 are less than significant. In all areas, cancer risks would actually be less than those for 1996 baseline conditions resulting in beneficial impacts under Alternatives A, B, and C in 2005.
- After build out in 2015, incremental cancer risks for Alternatives A, B, and C are estimated to be less than significant and even larger areas near the airport might experience reduced cancer risks.
- Estimated incremental cancer risks would decrease for Alternative D from those for the 1996 baseline for almost all locations in the vicinity of the airport for both interim and build out years. Slight increases in estimated incremental cancer risks are predicted for a very small area adjacent to the airport compared to 1996 baseline; however, these increases would be less than significant.

Non-Cancer Hazards - Comparing the mitigated TAP releases to CEQA significance thresholds indicates that:

- After implementation of mitigation measures, chronic non-cancer health hazards in 2015 would be significant compared to 1996 levels for Alternatives B and C.
- Chronic non-cancer health hazards for Alternative A would be less than significant in 2015.
- Non-cancer hazards for Alternatives A, B, and C would not be significant in the interim year, during construction.
- Acute non-cancer health hazards would be significant compared to 1996 levels in 2015 for Alternatives A, B, and C. Nearly all non-cancer hazard is caused by acrolein, and possible effects to people exposed to this TAP are limited to mild irritation of eyes and mucous membranes. More serious effects on health are not anticipated at the low concentrations predicted in air near LAX.
- Non-cancer chronic and acute hazards would decrease under Alternative D from 1996 baseline conditions for all locations in the vicinity of the airport for both interim and build out years. The beneficial impacts of Alternative D would occur even at locations where TAP concentrations might be highest.

Comparison to Year 2000 Conditions - Incremental cancer risks and non-cancer hazards were also estimated using Year 2000 conditions as a basis of comparison. Airport activity in the Year 2000 included about 9 million additional annual passengers above activity observed in 1996. The difference in TAP emissions between Year 2000 conditions and the alternatives was therefore less than the difference between 1996 baseline and the alternatives. As a consequence, incremental cancer risk and non-cancer hazard estimates are less when Year 2000 conditions are used as the reference for almost all receptors and locations within the study area.

Cumulative Project Impacts: Cumulative impacts of the four build alternatives were evaluated by comparing possible incremental cancer risks from the Master Plan alternatives with estimates of total air pollution cancer risks from all sources conducted by the SCAQMD in the "MATES-II" study. Cumulative impacts for chronic and acute non-cancer health hazards were evaluated using data from the USEPA. The cumulative impact analysis found that:

- Alternative D would reduce cumulative cancer risks compared to 1996 baseline conditions. Alternatives A, B, and C would reduce cumulative risks in some locations and increase them in others. In areas where cumulative risks would increase, the contribution of these alternatives to cumulative impacts would be very low compared to total risks from all sources in the area.
- Alternatives A, B, and C could cause an increase in relative non-cancer hazards for both chronic and acute exposures, for some areas near the airport. In other larger areas, changes to the airport might result in a net decrease in cumulative hazards.
- Impacts associated with Alternative D are predicted to reduce cumulative hazards at all locations around the airport for both chronic and acute non-cancer health effects.

Comparison of Build Alternatives and the No Action/No Project Alternative: The No Action/No Project Alternative assumes that no substantial changes are made to current LAX facilities, and is based on projections of growth in airport activity between 1996 and 2015. Airport congestion during this time is expected to grow worse without additional capital improvement. A comparison of the build alternatives to the No Action/No Project Alternative found that:

- In all cases, the build alternatives are expected to relieve current and predicted future congestion by making airport operations, particularly aircraft operations, more efficient. As a result, after implementation of mitigation measures, the build alternatives would generally reduce predicted impacts to human health compared with the No Action/No Project Alternative.
- Implementation of any of the build alternatives is therefore anticipated to reduce future health impacts for most people living, working, or going to school near the airport.
- For all of the build alternatives, with or without mitigation, cancer risks would be lower than those associated with the No Action/No Project Alternative.
- Predicted chronic non-cancer human health impacts for maximally exposed residents under Alternatives B and C may be slightly higher than those predicted with the No Action/No Project Alternative.
- Predicted acute human health impacts for Alternative D with or without mitigation would be lower than those associated with the No Action/No Project Alternative. Acute impacts under the other build alternatives, with or without mitigation, would be higher than the No Action/No Project Alternative.

Safety (CEQA)

Risk of Upset: The "risk of upset" analysis evaluates the potential for, and consequences of, a major incident at LAX involving the accidental release of large quantities of flammable or acutely hazardous materials.

The Master Plan contemplates new, relocated, or expanded facilities that would handle large volumes of flammable or toxic materials.

- The Central Utility Plant (CUP) provides chilled water and hot water for use in heating and air conditioning at LAX, and uses sulfuric acid in the treatment of cooling tower water.
- The LAX fuel farm on the airport currently maintains approximately 26 million gallons of Jet A fuel in 15 above-ground storage tanks (ASTs).
- The existing LAWA-operated Liquefied Natural Gas (LNG)/Compressed Natural Gas (CNG) facility at LAX includes three LNG tanks and three CNG tanks (vessels). A separate CNG station consists of six CNG tanks (vessels).

Numerous safeguards are required by law or are otherwise provided in the materials handling process to minimize any hazards to people or property. These safeguards are designed to minimize the potential for an accident and to minimize the effects of an accident, should one occur.

- Under the No Action/No Project Alternative, given that existing stringent safety provisions employed at LAX have been effective in the past and that these practices would continue, the likelihood of such an event occurring in the future is very small.
- Each of the Master Plan build alternatives would continue to apply these stringent safety provisions as specified in federal, state, and local safety regulations and standards. Therefore, under each of the Master Plan build alternatives, the likelihood of a major incident would remain small.

Aviation Incidents and Accidents: The FAA is charged with regulating, promoting, developing, and ensuring the safety of civil airports, including LAX. As a result of these efforts, aviation is one of today's safest forms of public transportation. LAWA, as operator of LAX, also serves a lead role in providing for, and maintaining, the high level of aviation safety that exists at the airport.

FAA's Airport Design Standards establish, among other things, land use related guidelines to protect people and property on the ground. These include the designation of safety zones that keep areas near runways free of objects that could interfere with aviation activities and that provide smooth, flat areas around the boundaries of a runway. Additionally, the FAA provides standards for runway, taxiway, and taxi lane design, including width, length, separation, radius of turns, layout, and pavement material composition. These standards are published in FAA Advisory Circular 150/15300-13, *Airport Design*.

For the most part, the current design and operation of LAX are responsive to FAA Airport Design Standards. However, the size of today's larger aircraft has resulted in the need to employ some special procedures for such aircraft to operate safely on the ground in areas that were originally designed for relatively smaller aircraft. LAX was originally designed to serve the first commercial passenger jet aircraft, such as the Boeing 707 and Douglas DC-8. Today's commercial aircraft fleet includes larger aircraft, such as the Boeing 747-400 with a wingspan approximately 50 percent longer than those earlier jet aircraft.

- Under the No Action/No Project Alternative, no runway extensions, relocations, or additions are proposed. LAX would continue to operate safely with the existing runway configurations and the special operational procedures and limitations would continue to be implemented. With the anticipated increase in daily flight operations, the ongoing departures from design standards would enable operations to continue to meet FAA safety requirements, but may reduce operational efficiencies due to the associated flight delays.
- Under the Master Plan build alternatives, all new and/or redesigned runways and taxiways would satisfy FAA airport design requirements and increase the operational efficiency of the airfield. The proposed improvements would increase runway and taxiway separations for larger aircraft by adding parallel taxiways between runways, and by increasing safety areas to meet current FAA standards. These changes would reduce controller workload and the associated risk of runway incursions, as well as reduce the risk of aircraft damage in the event of a runway overrun. As a result of these proposed changes, no adverse impacts with respect to aviation incidents and accidents would occur under the Master Plan build alternatives.

Airport Security: In the aftermath of the terrorist attacks on September 11, 2001, the President of the United States signed into law the Aviation and Transportation Security Act (ATSA), which among other things established the new Transportation Security Administration (TSA) within the Border and Transportation Security directorate of the U.S. Department of Homeland Security. The TSA has statutory responsibility for security of all of the nation's airports.

New security measures were immediately implemented at LAX in response to the events of September 11, 2001. The requirements of the TSA continue to evolve and LAWA officials are working with TSA to determine and accommodate the needs of the administration. LAWA met the Congressionally mandated deadline that all checked baggage on passenger flights be screened for explosives after December 31, 2002 through the implementation of a number of interim measures at the existing LAX terminals. These measures include the installation of explosive detection and explosive trace detection systems in the existing ticket lobbies of the terminals. Longer-term plans are being developed to install explosive detection systems into the existing baggage sortation systems in each of the terminals at LAX. These "in-line" systems will greatly improve the efficiency of the explosive screening process and will relieve the space congestion in the ticket lobbies that was created by the present short-term solution.

In addition to the requirements of screening baggage for explosives, the TSA is in the process of developing additional recommendations and requirements to increase security at the nation's airports. LAWA will incorporate any future airport security requirements set forth by the federal government.

- The ability to accommodate future federal airport security requirements under the No Action/No Project Alternative may be constrained by the space limitations of existing facilities, particularly the CTA. While it is anticipated that LAWA would comply with the mandated requirements, and consequently an adverse impact related to airport security would not occur, there are likely to be other resultant adverse impacts related to airport operations, passenger processing, etc.
- It is too early to determine the details of how future federal requirements would be fully accommodated under Alternatives A, B, and C; however, inasmuch as all three of these alternatives propose a substantial amount of new development including new, larger terminal facilities, new parking areas, new surface transportation facilities, and various airfield improvements, it is anticipated that an extensive array of security features and operational practices as required by the federal government could be accommodated within the final plans and provisions of any of the three alternatives. Given that current security requirements have been accommodated within the existing airport facilities, it is clear that accommodating those requirements would not represent a material change in the basic characteristics of Alternatives A, B, and C.
- Alternative D is specifically designed to protect airport users and critical airport infrastructure, to incorporate federal security recommendations as they are developed to the greatest extent possible, and to enhance on-airport presence of law enforcement and emergency response teams. By limiting access to private vehicles to the main airport infrastructure, significant threats can be identified and mitigated in new facilities designed for the new security environment. This approach reduces the risk to airport users while also protecting the airport infrastructure and its link to the economy. By creating additional space for passenger terminals, efficient passenger and baggage screening facilities can be implemented at the airport. Flexibility of the new passenger space created would allow for space to implement evolving changes in airport security technology while also being responsive to the identified security threats.

Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D

Following is a comprehensive summary of potential impacts associated with the build alternatives (**Table ES-3**, Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance). This table is inclusive of all disciplines addressed in Chapter 4, *Affected Environment, Consequences, and Mitigation Measures,* of this Final EIS/EIR. The table identifies all potential impacts prior to mitigation, including those that would be adverse but not significant, as well as those that would be significant pursuant to CEQA thresholds. Master Plan commitments and mitigation measures that would reduce or avoid potential impacts are listed. The level of significance after mitigation is also identified. Where pre-mitigation impacts would be adverse but not significant, the level of significance after mitigation is noted as "less than significant." Where pre-mitigation impacts would be potentially significant, but mitigation measures would reduce those impacts to a less than significant level, the level of significance after mitigation is noted as "less than significant with mitigation." Impacts that would be beneficial or that would remain significant after mitigation are also identified.

In cases where the impact being described does not apply to a particular build alternative(s), a dashed line is indicated. For example, development of the LAX Fuel Farm could be incompatible with adjacent residential uses. This improvement is proposed only under Alternative B; hence, the summary table describes the Master Plan commitments, mitigation measures, and CEQA level of significant after mitigation as relevant to Alternative B, and indicates "--" for all other alternatives.

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Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance

Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
4.1 Noise												
Aircraft Noise (2015)												
1. Total population/dwellings newly exposed to aircraft noise above 65 CNEL would decrease under the No Action/No Project Alternative and Alternatives A, C, and D and increase under Alternative B.	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-1**. Reserve Runway 6L/24R for Arrival Traffic Only. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-2**. Reserve Runway 25L for Arrival Traffic. **MM-N-3**. Reserve Runway 7R for Departure Traffic. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**
2. Sensitive uses newly exposed to aircraft noise above 65 CNEL would decrease under the No Action/No Project Alternative and Alternative D and increase under Alternatives A, B, and C.	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-1**. Reserve Runway 6L/24R for Arrival Traffic Only. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-2.** Reserve Runway 25L for Arrival Traffic. **MM-N-3.** Reserve Runway 7R for Departure Traffic. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**
3. Population/dwellings in the 65 CNEL would be newly exposed to increases of 1.5 CNEL.	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-1**. Reserve Runway 6L/24R for Arrival Traffic Only. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-2**. Reserve Runway 25L for Arrival Traffic. **MM-N-3**. Reserve Runway 7R for Departure Traffic. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**

Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance

Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4. Population would be newly exposed to 65 CNEL.	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-1.** Reserve Runway 6L/24R for Arrival Traffic Only. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-2.** Reserve Runway 25L for Arrival Traffic. **MM-N-3.** Reserve Runway 7R for Departure Traffic. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration. **MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program.	**Significant and unavoidable.**
5. Sensitive locations in the 60-65 CNEL would be exposed to increases of 3.0 CNEL.[2]	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-1**. Reserve Runway 6L/24R for Arrival Traffic Only. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Not applicable[2]**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-2.** Reserve Runway 25L for Arrival Traffic. **MM-N-3**. Reserve Runway 7R for Departure Traffic. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Not applicable[2]**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Not applicable[2]**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Not applicable[2]**
6. Single Event Noise Effects – Newly Exposed Awakenings	None Applicable.	**MM-N-5**. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory. **MM-LU-2**. Incorporate Residential Dwelling Units Expose to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-LU-5**. Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-N-5**. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory. **MM-LU-2.** Incorporate Residential Dwelling Units Expose to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-N-5.** Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory. **MM-LU-2.** Incorporate Residential Dwelling Units Expose to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-N-5.** Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory. **MM-LU-2**. Incorporate Residential Dwelling Units Expose to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**

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Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
7. Single Event Noise Effects – Newly Exposed School Disruption	None Applicable.	**MM-LU-3**. Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4**. Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise. **MM-LU-5**. Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-LU-3.** Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4.** Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise**.** **MM-LU-5**. Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-LU-3.** Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4.** Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**	None Applicable.	**MM-LU-3**. Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4.** Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program.	**Significant and unavoidable**
Roadway Noise												
8. Roadway noise increases would exceed the 5 dB L_{eq} threshold for peak noise hour levels at two noise sensitive receptors, due to increased traffic on the southern portion of the LAX ring road (Alternatives A, B, and C)	None applicable.	**MM-N-6.** Construct Noise Barrier (Soundwall) Adjacent to Areas Significantly Impacted by Road Traffic Noise.	**Less than significant with mitigation.**	None applicable.	**MM-N-6.** Construct Noise Barrier (Soundwall) Adjacent to Areas Significantly Impacted by Road Traffic Noise.	**Less than significant with mitigation.**	None applicable.	**MM-N-6.** Construct Noise Barrier (Soundwall) Adjacent to Areas Significantly Impacted by Road Traffic Noise.	**Less than significant with mitigation.**	--	--	--
9. Roadway noise would exceed 67 Leq at noise sensitive receptors in proximity to LAX Expressway and State Route 1 Improvements[1] (Alternatives A, B, and C)	None applicable.	See Appendix K.	**Less than significant with mitigation.**	None applicable.	See Appendix K.	**Less than significant with mitigation.**	None applicable.	See Appendix K.	**Less than significant with mitigation.**	--	--	--
Construction Noise												
10. Construction noise would exceed ambient levels by 5 dBA L_{eq} or more at noise sensitive locations.	None applicable.	**MM-N-7.** Construction Noise Control Plan. **MM-N-8**. Construction Staging. **MM-N-9.** Equipment Replacement. **MM-N-10.** Construction Scheduling.	**Significant and unavoidable.**	None applicable.	**MM-N-7.** Construction Noise Control Plan. **MM-N-8.** Construction Staging. **MM-N-9**. Equipment Replacement. **MM-N-10**. Construction Scheduling.	**Significant and unavoidable.**	None applicable.	**MM-N-7.** Construction Noise Control Plan. **MM-N-8.** Construction Staging. **MM-N-9.** Equipment Replacement. **MM-N-10**. Construction Scheduling.	**Significant and unavoidable.**	None applicable.	**MM-N-7.** Construction Noise Control Plan. **MM-N-8.** Construction Staging. **MM-N-9**. Equipment Replacement. **MM-N-10**. Construction Scheduling.	**Significant and unavoidable.**
APM Noise												
11. Noise associated with operation of the Automated People Mover (APM) could impact noise-sensitive uses.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	**MM-N-11**. Automated People Mover (APM) Noise Assessment and Control Plan.	**Less than significant with mitigation.**

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	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4.2 Land Use												
1. Residential and other noise sensitive uses may be newly exposed to high noise levels or experience significant increases in existing high noise levels.	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program. **MM-N-4.** Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Significant and unavoidable.**	**N-1**. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-5**. Upgrade and Expand Noise Monitoring Program. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Significant and unavoidable.**	**N-1.** Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program.	**MM-LU-1**. Implement Revised Aircraft Noise Mitigation Program. **MM-LU-5.** Upgrade and Expand Noise Monitoring Program. **MM-N-4**. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration.	**Significant and unavoidable.**
2. Land use incompatibilities could result from acquisition and reuse of land to the east and to the north of the airport and with development of LAX Northside/Westchester Southside and the ring road/SR-1 realignment under Alternatives A, B, and C.	**LU-1.** Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-2**. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion. **LU-4**. Neighborhood Compatibility Program. **RBR-1**. Residential and Business Relocation Program. **LI-3**. Lighting Controls. **DA-1.** Provide and Maintain Airport Buffer Areas. **DA-2.** Update and Integrate Design Plans and Guidelines.	**MM-LI-1.** LAX Expressway Lighting Assessment.	**Less than significant with mitigation.**	**LU-1.** Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-2**. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion. **LU-4.** Neighborhood Compatibility Program. **RBR-1**. Residential and Business Relocation Program. **LI-1**. Ring Road Landscaping. **LI-3.** Lighting Controls. **DA-1**. Provide and Maintain Airport Buffer Areas. **DA-2.** Update and Integrate Design Plans and Guidelines.	**MM-LI-1**. LAX Expressway Lighting Assessment.	**Less than significant with mitigation.**	**LU-1.** Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-2**. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion. **LU-4**. Neighborhood Compatibility Program. **RBR-1.** Residential and Business Relocation Program. **LI-3.** Lighting Controls. **DA-1**. Provide and Maintain Airport Buffer Areas. **DA-2.** Update and Integrate Design Plans and Guidelines.	**MM-LI-I.** LAX Expressway Lighting Assessment.	**Less than significant, with mitigation.**	**LU-1.** Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] Zoning Conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-2**. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion. **LU-4.** Neighborhood Compatibility Program. **RBR-1.** Residential and Business Relocation Program. **LI-3**. Lighting Controls. **DA-1**. Provide and Maintain Airport Buffer Areas. **DA-2.** Update and Integrate Design Plans and Guidelines.	None required.	**Less than significant.**
3. Development of the ring road could result in the removal of the existing bicycle path/lane along Imperial Highway and result in a temporary closure and detour of the bicycle lanes on Westchester Parkway during construction.	**LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **ST-18**. Construction Traffic Management Plan.	None required.	**Less than significant.**	**LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **ST-18**. Construction Traffic Management Plan.	None required.	**Less than significant.**	**LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **ST-18**. Construction Traffic Management Plan.	None required.	**Less than significant.**	--	--	--

Table ES-3
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		Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4.	Development of the ring road would conflict with the LAX Street Frontage and Landscape Development Plan and could result in incompatible land use.	None applicable.	None required.	**No impact.**	**LI-1.** Ring Road Landscaping. **DA-2**. Update and Integrate Design Plans and Guidelines.	None Required.	**Less than significant.**	None applicable.	None required.	**No impact.**	--	--	--
5.	Development of the LAX Fuel Farm at the Scattergood site could be incompatible with adjacent residential uses.	--	--	--	None applicable.	**MM-DA-3(a).** Scattergood Visual Effects. **MM-DA-3(b).** Scattergood Visual Effects.	**Less than significant with mitigation.**	--	--	--	--	--	--
6.	The LAX Expressway could be incompatible with adjacent residential uses and some local plans.	None applicable.	**MM-LI-1.** LAX Expressway Lighting Assessment. **MM-DA-2.** LAX Expressway View Analysis. See also Appendix K.	**Less than significant with mitigation.**	None applicable.	**MM-LI-1**. LAX Expressway Lighting Assessment. **MM-DA-2.** LAX Expressway View Analysis. See also Appendix K.	**Less than significant with mitigation.**	None applicable.	**MM-LI-1.** LAX Expressway Lighting Assessment. **MM-DA-2.** LAX Expressway View Analysis. See also Appendix K.	**Less than significant with mitigation.**	--	--	--
7.	Construction/relocation of navigational aids would impact state-designated sensitive habitat.	None applicable.	**MM-BC-10**. Replacement of State-Designated Sensitive Habitat. **MM-ET-2**. El Segundo Blue Butterfly Conservation: Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-BC-11**. Replacement of State-Designated Sensitive Habitat. **MM-ET-2**. El Segundo Blue Butterfly Conservation: Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-BC-12.** Replacement of State-Designated Sensitive Habitat.	**Less than significant with mitigation.**	None applicable.	**MM-BC-13.** Replacement of State-Designated Sensitive Habitat. **MM-ET-4**. El Segundo Blue Butterfly Conservation: Habitat Restoration.	**Less than significant with mitigation.**
8.	Construction-related traffic, lane closures, and detours would temporarily impede access to community services and other amenities from some portions of adjacent communities.	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19.** Construction Traffic Measures.	See Section 4.20, *Construction Impacts*.	**Significant and unavoidable.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. Construction Traffic Measures.	See Section 4.20, *Construction Impacts*.	**Significant and unavoidable.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. Construction Traffic Measures.	See Section 4.20, *Construction Impacts.*	**Significant and unavoidable.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9, ST-12, ST-14, and ST-16 through ST-22.** Construction Traffic Measures.	See Section 4.20, *Construction Impacts.*	**Significant and unavoidable.**
9.	High construction noise levels would affect residential and noise sensitive uses within 600 feet of construction sites.	None applicable.	**MN-N-7 to MN-N-10.** See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MN-N-7 to MN-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MM-N-7 to MM-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MM-N-7 to MM-N-10.** See Section 4.1, *Noise.*	**Significant and unavoidable.**

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	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
10. Residential uses may be newly exposed to single event aircraft noise levels that would result in nighttime awakenings.	None applicable.	**MM-LU-2.** Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-N-5**. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory.	**Significant and unavoidable.**	None applicable.	**MM-LU-2.** Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-N-5**. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory.	**Significant and unavoidable.**	None applicable.	**MM-LU-2**. Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-N-5**. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory.	**Significant and unavoidable.**	None applicable.	**MM-LU-2**. Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program. **MM-N-5.** Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory.	**Significant and unavoidable.**
11. Schools may be newly exposed to single event aircraft noise levels that would result in classroom disruption.	None applicable.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-3**. Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4**. Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.	**Significant and unavoidable.**	None applicable.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-3.** Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4**. Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.	**Significant and unavoidable.**	None applicable.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-3**. Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4.** Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.	**Significant and unavoidable.**	None applicable.	**MM-LU-1.** Implement Revised Aircraft Noise Mitigation Program. **MM-LU-3.** Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn. **MM-LU-4.** Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise.	**Significant and unavoidable.**
12. Development of transportation improvements associated with Alternative D has the potential to preclude bicycle access to the GTC, ITC, and major parking lots and compromise extension of existing bicycle facilities as identified in the City of Los Angeles Transportation Element Bicycle Plan.	--	--	--	--	--	--	--	--	--	**LU-5**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	None required.	**No impact.**
4.3 Surface Transportation												
4.3.1 On-Airport												
1. Vehicle demand on various roads would change.	**ST-1**. Adequate West Terminal Design.	None required.	**Beneficial impact.**	**ST-1**. Adequate West Terminal Design.	None required.	**Beneficial impact.**	**ST-1.** Adequate West Terminal Design.	None required.	**Beneficial impact.**	**ST-7**. Adequate GTC, ITC, and APM Design.	None required.	**Beneficial impact.**
2. Demand on inbound, upper level ramps in CTA increase.	--	--	--	--	--	--	None applicable.	None available.	**Significant and unavoidable.**	--	--	--
3. Curb demand would change.	**ST-1.** Adequate West Terminal Design.	None available.	**Beneficial impact.**	**ST-1.** Adequate West Terminal Design.	None available.	**Beneficial impact.**	**ST-1**. Adequate West Terminal Design.	None required.	**Beneficial impact.**	**ST-7.** Adequate GTC, ITC, and APM Design.	None required.	**Beneficial impact.**
4. Additional public parking would be required.	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-7**. Adequate GTC, ITC, and APM Design.	None required.	**Less than significant.**

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Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
5. Additional employee parking would be required.	**ST-1**. Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1**. Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
6. Additional rental car area would be required.	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1**. Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1**. Adequate West Terminal Design.	None required.	**Less than significant.**	None applicable.	None required.	**Beneficial impact.**
7. Additional travel would be required for pedestrians.	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1.** Adequate West Terminal Design.	None required.	**Less than significant.**	**ST-1**. Adequate West Terminal Design.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
8. Construction traffic would disrupt normal roadway operations.	**ST-2 through ST-6.** Construction Traffic Measures.	None available.	**Significant and unavoidable.**	**ST-2 through ST-6.** Construction Traffic Measures.	None available.	**Significant and unavoidable.**	**ST-2 through ST-6.** Construction Traffic Measures	None available.	**Significant and unavoidable.**	**ST-2 and ST-8.** Construction Traffic Measures	**MM-ST-1 through MM-ST-3.** Construction Traffic Measures	**Significant and unavoidable.**
4.3.2 Off-Airport												
1. Vehicle demand through various street links would change.	None applicable.	**MM-ST-4 through MM-ST-10** Street and Intersection Improvements.	**Less than significant with mitigation.**	None applicable.	**MM-ST-4 through MM-ST-11** Street and Intersection Improvements.	**Less than significant with mitigation.**	None applicable.	**MM-ST-4 through MM-ST-10** Street and Intersection Improvements.	**Less than significant with mitigation.**	None applicable.	**MM-ST-6 through MM-ST-8, MM-ST-10, MM-ST-12, MM-ST-13, MM-ST-15, and MM-ST-16.** Street and Intersection Improvements.	**Less than significant with mitigation.**
2. Change in demand through various intersections.	None applicable.	**MM-ST-4 through MM-ST-10** Street and Intersection Improvements.	**Significant and unavoidable.**	None applicable.	**MM-ST-4 through MM-ST-11** Street and Intersection Improvements.	**Significant and unavoidable.**	None applicable.	**MM-ST-4 through MM-ST-10** Street and Intersection Improvements.	**Significant and unavoidable.**	None applicable.	**MM-ST-6 through MM-ST-8, MM-ST-10, MM-ST-12, MM-ST-13, MM-ST-15, and MM-ST-16.** Street and Intersection Improvements.	**Significant and unavoidable.**
3. Change in vehicle demand through various freeway segments.	None applicable.	None required.[4]	**Less than significant.**	None applicable.	None required.[4]	**Less than significant.**	None applicable.	None required.[4]	**Less than significant.**	None applicable.	**MM-ST-6 through MM-ST-8, MM-ST-10, MM-ST-12, MM-ST-13, MM-ST-15, and MM-ST-16.** Street and Intersection Improvements.	**Less than significant.**
4. Change in demand on various freeway ramps.	None applicable.	None required.[4]	**Less than significant.**	None applicable.	None required.[4]	**Less than significant.**	None applicable.	None required.[4]	**Less than significant.**	None applicable.	**MM-ST-6 through MM-ST-8, MM-ST-10, MM-ST-12, MM-ST-13, MM-ST-15, and MM-ST-16.** Street and Intersection Improvements.	**Less than significant.**

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	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
5. Construction traffic would disrupt normal roadway operations.	**ST-9 through ST-19**. Construction Traffic Measures. **C-1.** Establishment of Ground Transportation/ Construction Coordination Office. **LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	**MM-ST-14.** Ground Transportation/ Construction Coordination Office Outreach Program.	**Significant and unavoidable.**	**ST-9 through ST-19**. Construction Traffic Measures. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan	**MM-ST-14**. Ground Transportation/ Construction Coordination Office Outreach Program.	**Significant and unavoidable.**	**ST-9 through ST-19.** Construction Traffic Measures. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan	**MM-ST-14.** Ground Transportation/ Construction Coordination Office Outreach Program.	**Significant and unavoidable.**	**ST-9, ST-12, ST-14, and ST-16 through ST-22.** Construction Traffic Measures. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **LU-5**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	**MM-ST-14.** Ground Transportation/ Construction Coordination Office Outreach Program.	**Significant and unavoidable.**
4.4 Social Impacts												
4.4.1 Employment/Socio-Economics												
1. Employment associated with LAX would increase under Alternatives A, B, and C and would decrease over time under Alternative D due to constrained LAX capacity and increases in productivity with new technology.	None applicable.	None required.	**Not Applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]
2. Economic output associated with LAX would increase substantially under Alternatives A, B, and C and would increase slightly under Alternative D.	None applicable.	None required.	**Not Applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]	None applicable.	None required.	**Not applicable.**[3]
4.4.2 Relocation of Residences or Businesses												
1. Residents would be displaced due to airport acquisitions.	**RBR-1.** Residential and Business Relocation Program.	None required.	**Less than significant.**	**RBR-1**. Residential and Business Relocation Program.	None required.	**Less than significant.**	**RBR-1.** Residential and Business Relocation Program.	None required.	**Less than significant.**	--	--	--
2. Businesses would be displaced due to airport acquisitions.	**RBR-1**. Residential and Business Relocation Program.	**MM-RBR-1.** Phasing for Business Relocations. **MM-RBR-2.** Relocation Opportunities through Aircraft Noise Mitigation Program.	**Less than significant with mitigation.**	**RBR-1.** Residential and Business Relocation Program.	**MM-RBR-1.** Phasing for Business Relocations. **MM-RBR-2.** Relocation Opportunities through Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**RBR-1.** Residential and Business Relocation Program.	**MM-RBR-1.** Phasing for Business Relocations. **MM-RBR-2.** Relocation Opportunities through Aircraft Noise Mitigation Program.	**Significant and unavoidable.**	**RBR-1.** Residential and Business Relocation Program.	**MM-RBR-1.** Phasing for Business Relocations. **MM-RBR-2.** Relocation Opportunities through Aircraft Noise Mitigation Program.	**Less than significant with mitigation.**
4.4.3 Environmental Justice												
1. Disproportionately high and significant adverse human health and environmental impacts on minority and low-income communities due to aircraft noise. Potential disproportionate impacts associated with air quality and health effects.	**RBR-1.** Residential and Business Relocation Program.	See Sections 4.1.8, 4.2.8, 4.4.8 and 4.6.8.	**Disproportionately High and Adverse Significant and Unavoidable.**	**RBR-1.** Residential and Business Relocation Program.	See Sections 4.1.8, 4.2.8, 4.4.8, and 4.6.8.	**Disproportionately High and Adverse Significant and Unavoidable.**	**RBR-1**. Residential and Business Relocation Program.	See Sections 4.1.8, 4.2.8, 4.4.8, and 4.6.8.	**Disproportionately High and Adverse Significant and Unavoidable.**	**RBR-1**. Residential and Business Relocation Program.	See Sections 4.1.8, 4.2.8, 4.4.8 and 4.6.8.	**Disproportionately High and Adverse Significant and Unavoidable.**

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Impacts by Discipline[1]	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
4.4.4 Community Disruption from Alteration of Surface Transportation Patterns												
1. Changes in access to westbound Imperial Highway from residential neighborhoods in El Segundo would increase automobile access time to coastal recreation areas.	**C-1.** Establishment of Ground Transportation/ Construction Coordination Office.	None required.	**Less than significant.**	**C-1.** Establishment of Ground Transportation/ Construction Coordination Office.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office.	None required.	**Less than significant.**	--	--	--
2. Disruption of adjacent communities due to temporary changes in circulation patterns during construction.	**C-1.** Establishment of a Ground Transportation/ Construction Coordination Office. **LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **RBR-1.** Residential and Business Relocation Program. **ST-9 through ST-19**. Construction Traffic Measures.	None available.	**Significant and unavoidable.**	**C-1.** Establishment of a Ground Transportation/ Construction Coordination Office. **LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **RBR-1.** Residential and Business Relocation Program. **ST-9 through ST-19**. Construction Traffic Measures.	None available.	**Significant and unavoidable.**	**C-1.** Establishment of a Ground Transportation/ Construction Coordination Office. **LU-3.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **RBR-1.** Residential and Business Relocation Program. **ST-9 through ST-19**. Construction Traffic Measures.	None available.	**Significant and unavoidable.**	**C-1.** Establishment of a Ground Transportation/ Construction Coordination Office. **LU-5.** Comply with City of Los Angeles Transportation Element Bicycle Plan. **RBR-1.** Residential and Business Relocation Program. **ST-8, ST-9, ST-12 through ST-14, and ST-16 through ST-22**. Construction Traffic Measures.	None available.	**Significant and unavoidable.**
4.5 Induced Socio-Economic Impacts (Growth Inducement)												
1. Physical impacts could occur resulting from direct or indirect population or economic growth, which would require new land uses, public facilities, or infrastructure.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. Obstacles to growth could be removed, which would lead to physical effects on the environment.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.6 Air Quality												
1. Air pollutant emissions from on-airport operational emission sources would increase.	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**
2. Construction activities would cause air pollutant emissions.	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure.	**Significant and unavoidable.**

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	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
Impacts by Discipline[1]	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
3. Changes in airport operational activity and construction-related activities, combined, would affect ambient air quality pollutant concentrations.	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-2.** Construction-Related Measure. **MM-AQ-4.** Operations-Related Measure.	**Significant and unavoidable.**
4. Regional traffic emissions would increase.	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-3.** Transportation-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-3.** Transportation-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-3.** Transportation-Related Measure.	**Significant and unavoidable.**	None applicable.	**MM-AQ-1.** LAX Master Plan-Mitigation Plan for Air Quality. **MM-AQ-3.** Transportation-Related Measure.	**Significant and unavoidable.**
5. Increases in airport related traffic have the potential to cause CO concentration hotspots at affected traffic intersections.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
6. Increases in on-airport operational emissions and construction emissions for the preferred alternative (Alternative D) would trigger conformity requirements.	--	--	--	--	--	--	--	--	--	None applicable.	None required.	**Conformity determination required under Federal Clean Air Act.**
4.7 Hydrology and Water Quality												
1. Increased peak flows would exacerbate existing flooding problems.	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required..	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**
2. Increases in impervious area would cause surface recharge volumes to decrease.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. Changes in land use may increase the pollutant load discharged to receiving water bodies via storm water runoff.	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**
4. Dry weather flows may increase and therefore increase the pollutant load discharged to receiving water bodies.	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**	**HWQ-1**. Conceptual Drainage Plan.	None required.	**Less than significant.**
5. Construction activities can generate additional sources for pollution and increase the pollutant load discharged to receiving water bodies.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
6. The combined impacts of Master Plan development, in conjunction with other area projects, could result in cumulative drainage impacts.	None applicable	**MM-HWQ-1**. Upgrade Regional Drainage Facilities.	**Less than significant with mitigation.[6]**	None applicable.	**MM-HWQ-1**. Upgrade Regional Drainage Facilities.	**Less than significant with mitigation.[6]**	None applicable.	**MM-HWQ-1**. Upgrade Regional Drainage Facilities.	**Less than significant with mitigation.[6]**	None applicable.	**MM-HWQ-1**. Upgrade Regional Drainage Facilities.	**Less than significant with mitigation.[6]**

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Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4.8 DOT, Section 4(f)												
1. A use pursuant to DOT Section 4(f) would occur due to relocation of Hangar One, a significant historic resource at the federal level.	--	--	--	None applicable.	**MM-HA-3.** Hangar One Relocation.	Not applicable.	--	--	--	--	--	--
2. A use pursuant to DOT Section 4(f) would occur due to acquisition and demolition of the Merle Norman Headquarters Complex, a significant historic resource at the federal level.	--	--	--	None applicable.	**MM-HA-1.** Historic American Buildings Survey (HABS) Document.	Not applicable.	--	--	--	--	--	--
3. A use pursuant to DOT Section 4(f) would occur due to installation of navigational aids/loss of habitat within the Habitat Restoration Area.	None applicable.	**MM-BC-10**. Replacement of State-Designated Sensitive Habitat.	Not applicable.	None applicable.	**MM-BC-11**. Replacement of State-Designated Sensitive Habitat.	Not applicable.	--	--	--	None applicable.	**MM-BC-13.** Replacement of State-Designated Sensitive Habitat (Alternative D).	Not applicable.
4. A use or constructive use pursuant to DOT Section 4(f) would occur due to potential encroachment vibration and visual effects on the Centinela Adobe and Randy's Donuts if the non-preferred split viaduct alignment for the LAX Expressway is selected.	**HR-1**. Preservation of Historic Resources.	See Appendix K.	Not applicable.	--	--	--	**HR-1**. Preservation of Historic Resources.	See Appendix K.	Not applicable.	--	--	--
5. A use pursuant to DOT Section 4(f) could occur due to damage or loss of undiscovered archaeological resources during construction if such resources are federally significant and have value for preservation in place.	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	Not applicable.	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	Not applicable.	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	Not applicable.	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	Not applicable.
4.9 Historic/Architectural and Archaeological/Cultural and Paleontological Resources												
4.9.1 Historic/Architectural and Archaeological/Cultural Resources												
1. Demolition of the Intermediate Terminal Complex to accommodate new cargo development would be significant at the state and local level.	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	--	--	--

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Impacts by Discipline[1]	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
2. Redevelopment of the Imperial Cargo Complex would result in the relocation of Hangar One, which would be significant at the federal, state, and local level.	--	--	--	None applicable.	**MM-HA-3**. Hangar One Relocation.	**Significant and unavoidable.**	--	--	--	--	--	--
3. The introduction of the ring road would affect the Merle Norman Headquarters Complex, which would be significant at the federal, state, and local level.	--	--	--	None applicable.	**MM-HA-10**. Historic American Buildings Survey (HABS) Document.	**Significant and unavoidable.**	--	--	--	--	--	--
4. Development of certain Master Plan improvements, depending on the particular alternative, would require full or partial acquisition and demolition of the International Airport Industrial District, which would be considered significant at the state and local level.	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**	None applicable.	**MM-HA-1**. Historic American Buildings Survey (HABS) Document. **MM-HA-2**. Historic Educational Materials.	**Significant and unavoidable.**
5. The Academy Theatre and portions of the Morningside Park neighborhood would experience noise levels above 65 dB CNEL, before qualifying for noise mitigation. Sound insulation could result in the alteration of significant character-defining features.	**HR-1**. Preservation of Historic Resources.	None required.	**Less than significant.**	**HR-1**. Preservation of Historic Resources.	None required.	**Less than significant.**	**HR-1**. Preservation of Historic Resources.	None required.	**Less than significant.**	**HR-1**. Preservation of Historic Resources.	None required.	**Less than significant.**
6. Development of the LAX Expressway, Split Viaduct alternative, would encroach upon the Centinela Adobe property and the Randy's Donut's property, thereby resulting in the potential loss of these resources (would only occur if the preferred LAX Expressway Alternative is not selected).	**HR-1**. Preservation of Historic Resources.	See Appendix K.	**Significant and unavoidable.**	--	--	--	**HR-1**. Preservation of Historic Resources.	See Appendix K.	**Significant and unavoidable.**	--	--	--
7. Damage or loss of undiscovered archaeological resources may occur from construction-related activities.	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	**Less than significant with mitigation.**	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	**Less than significant with mitigation.**	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	**Less than significant with mitigation.**	None applicable.	**MM-HA-4**. Discovery. **MM-HA-5**. Monitoring. **MM-HA-6**. Excavation and Recovery. **MM-HA-7**. Administration. **MM-HA-8**. Archaeological/ Cultural Monitor Report. **MM-HA-9**. Artifact Curation. **MM-HA-10**. Archaeological Notification.	**Less than significant with mitigation.**

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	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4.9.2 Paleontological Resources (CEQA)												
1. Construction-related ground disturbing activities could damage or destroy paleontological resources.	None applicable.	**MM-PA-1**. Paleontological Qualification and Treatment Plan. **MM-PA-2**. Paleontological Authorization. **MM-PA-3**. Paleontological Monitoring Specifications. **MM-PA-4**. Paleontological Resources Collection. **MM-PA-5**. Fossil Preparation. **MM-PA-6**. Fossil Donation. **MM-PA-7**. Paleontological Reporting.	**Less than significant with mitigation.**	None applicable.	**MM-PA-1**. Paleontological Qualification and Treatment Plan. **MM-PA-2**. Paleontological Authorization. **MM-PA-3**. Paleontological Monitoring Specifications. **MM-PA-4**. Paleontological Resources Collection. **MM-PA-5**. Fossil Preparation. **MM-PA-6**. Fossil Donation. **MM-PA-7**. Paleontological Reporting.	**Less than significant with mitigation.**	None applicable.	**MM-PA-1**. Paleontological Qualification and Treatment Plan. **MM-PA-2**. Paleontological Authorization. **MM-PA-3**. Paleontological Monitoring Specifications. **MM-PA-4**. Paleontological Resources Collection. **MM-PA-5**. Fossil Preparation. **MM-PA-6**. Fossil Donation. **MM-PA-7**. Paleontological Reporting.	**Less than significant with mitigation.**	None applicable.	**MM-PA-1**. Paleontological Qualification and Treatment Plan. **MM-PA-2**. Paleontological Authorization. **MM-PA-3**. Paleontological Monitoring Specifications. **MM-PA-4**. Paleontological Resources Collection. **MM-PA-5**. Fossil Preparation. **MM-PA-6**. Fossil Donation. **MM-PA-7**. Paleontological Reporting.	**Less than significant with mitigation.**
4.10 Biotic Communities												
1. Biotic communities would be affected.	None applicable.	**MM-BC-1**. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.	**Less than significant with mitigation.**	None applicable.	**MM-BC-1**. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.	**Less than significant with mitigation.**	None applicable.	**MM-BC-1**. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.	**Less than significant with mitigation.**	None applicable.	**MM-BC-1**. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area.	**Less than significant with mitigation.**
2. Individuals of Lewis' evening primrose, a sensitive plant species, would be affected.	None applicable.	**MM-BC-2**. Conservation of Floral Resources: Lewis' Evening Primrose.	**Less than significant with mitigation.**	None applicable.	**MM-BC-2**. Conservation of Floral Resources: Lewis' Evening Primrose.	**Less than significant with mitigation.**	None applicable.	**MM-BC-2**. Conservation of Floral Resources: Lewis' Evening Primrose.	**Less than significant with mitigation.**	None applicable.	**MM-BC-2**. Conservation of Floral Resources: Lewis' Evening Primrose.	**Less than significant with mitigation.**
3. LAX Northside/Westchester Southside would result in the removal of a number of mature trees.	None applicable.	**MM-BC-3**. Conservation of Floral Resources: Mature Tree Replacement.	**Less than significant with mitigation.**	None applicable.	**MM-BC-3**. Conservation of Floral Resources: Mature Tree Replacement.	**Less than significant with mitigation.**	None applicable.	**MM-BC-3**. Conservation of Floral Resources: Mature Tree Replacement.	**Less than significant with mitigation.**	None applicable.	**MM-BC-3**. Conservation of Floral Resources: Mature Tree Replacement.	**Less than significant with mitigation.**
4. Ephemerally wetted habitat and adjacent upland habitat occupied by the sensitive western spadefoot toad would be affected on the western airfield, west of the north runway.	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-9**. Conservation of Faunal Resources.	**Less than significant with mitigation.**
5. Loggerhead shrike, a sensitive bird species, would be affected by the conversion of open areas located to the west of the southern airfield.	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-9**. Conservation of Faunal Resources.	**Less than significant with mitigation.**

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	Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
6.	San Diego black-tailed jackrabbit individuals and their habitat would be affected by conversion of open areas located in the southern portion of the airfield.	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-4**. Conservation of Faunal Resources.	**Less than significant with mitigation.**	None applicable.	**MM-BC-9**. Conservation of Faunal Resources.	**Less than significant with mitigation.**
7.	Implementation of Alternative A would result in the loss of 61.27 habitat units.	None applicable.	**MM-BC-5**. Replacement of Habitat Units.	**Less than significant with mitigation.**	--	--	--	--	--	--	--	--	--
8.	Implementation of Alternative B would result in the loss of 67.81 habitat units.	--	--	--	None applicable.	**MM-BC-6**. Replacement of Habitat Units.	**Less than significant with mitigation.**	--	--	--	--	--	--
9.	Implementation of Alternative C would result in the loss of 49.87 habitat units.	--	--	--	--	--	--	None applicable.	**MM-BC-7**. Replacement of Habitat Units.	**Less than significant with mitigation.**	--	--	--
10.	Implementation of Alternative D would result in the loss of 45.43 habitat units.	--	--	--	--	--	--	--	--	--	None applicable.	**MM-BC-8**. Replacement of Habitat Units.	**Less than significant with mitigation.**
11.	Implementation of Alternative A would result in the loss of 1.34 acres of state-designated sensitive habitats within the Los Angeles/El Segundo Dunes, including 0.70 acre within the Habitat Restoration Area, resulting from the construction of navigational aids.	None applicable.	**MM-BC-10**. Replacement of State-Designated Sensitive Habitat.	**Less than significant with mitigation.**	--	--	--	--	--	--	--	--	--
12.	Implementation of Alternative B would result in the loss of 1.16 acres of state-designated sensitive habitats within the Los Angeles/El Segundo Dunes, including 0.39 acre within the Habitat Restoration Area, resulting from construction of navigational aids.	--	--	--	None applicable.	**MM-BC-11**. Replacement of State-Designated Sensitive Habitat.	**Less than significant with mitigation.**	--	--	--	--	--	--
13.	Implementation of Alternative C would result in the loss of 0.69 acre of state-designated sensitive habitats within the Los Angeles/El Segundo Dunes, with no impacts to the Habitat Restoration Area resulting from construction of navigational aids.	--	--	--	--	--	--	None applicable.	**MM-BC-12**. Replacement of State-Designated Sensitive Habitat.	**Less than significant with mitigation.**	--	--	--
14.	Implementation of Alternative D would result in the loss of 1.53 acres of state-designated habitat within the Los Angeles/El Segundo Dunes, including 0.77 acres within the Habitat Restoration Area, resulting from construction of navigational aids.	--	--	--	--	--	--	--	--	--	None applicable.	**MM-BC-13**. Replacement of State-Designated Sensitive Habitat.	**Less than significant with mitigation.**

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	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
4.11 Endangered and Threatened Species of Flora and Fauna												
1. Embedded cysts of the federally endangered Riverside fairy shrimp would be directly and/or indirectly affected by the conversion of, and/or activities at, 1.3 acres of ephemerally wetted areas.	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside fairy shrimp Habitat Restoration.	**Less than significant with mitigation.**
2. Occupied habitat for the federally endangered El Segundo blue butterfly would be affected by construction of navigational aids and associated service roads.	None applicable.	**MM-ET-2**. El Segundo Blue Butterfly Conservation: Habitat Restoration	**Less than significant with mitigation.**	None applicable.	**MM-ET-2**. El Segundo Blue Butterfly Conservation: Habitat Restoration.	**Less than significant with mitigation.**	--	--	--	None applicable.	**MM-ET-4**. El Segundo Blue Butterfly Conservation: Habitat Restoration.	**Less than significant with mitigation.**
3. Fugitive dust particles related to construction activities would affect the El Segundo blue butterfly.	None applicable.	**MM-ET-3**. El Segundo Blue Butterfly Conservation: Dust Control.	**Less than significant with mitigation.**	None applicable.	**MM-ET-3**. El Segundo Blue Butterfly Conservation: Dust Control.	**Less than significant with mitigation.**	None applicable.	**MM-ET-3**. El Segundo Blue Butterfly Conservation: Dust Control.	**Less than significant with mitigation.**	None applicable.	**MM-ET-3**. El Segundo Blue Butterfly Conservation: Dust Control.	**Less than significant with mitigation.**
4.12 Wetlands												
1. A total of 1.3 acres of area subject to the jurisdiction of the USACOE would be directly and/or indirectly affected in association with construction staging activities and the development of the ring road, runway improvements, airfield operation and maintenance activities, and/or appurtenant facilities.	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**	None applicable.	**MM-ET-1**. Riverside Fairy Shrimp Habitat Restoration.	**Less than significant with mitigation.**
4.13 Floodplains												
1. There are no 100-year floodplain areas within the Master Plan boundaries; therefore, no impacts to floodplains would occur.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
4.14 Coastal Resources												
1. Navigational aids would be placed within the Dunes in the coastal zone. The placement would not conflict with the goals of the California Coastal Act.	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**
2. Sensitive biological resources are present within the Dunes in the coastal zone.	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**	None applicable.	See Sections 4.10, *Biotic Communities*, and 4.11, *Endangered and Threatened Species*.	**Less than significant with mitigation.**
3. Pershing Drive improvements would be located within the coastal zone, but the improvements would not conflict with the goals of the California Coastal Act.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	--	--	--

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	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4. Vehicle access to the coast along east-west and north-south arterials would be altered by construction of the ring road, although coastal access would be maintained.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	--	--	--
5. Bicycle access to the coast along east-west and north-south arterials would be altered by construction of the ring road (including improvements to Imperial Highway and Westchester Parkway).	**LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	None required.	**Less than significant.**	**LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	None required.	**Less than significant.**	**LU-3**. Comply with City of Los Angeles Transportation Element Bicycle Plan.	None required.	**Less than significant.**	--	--	--
6. Pedestrian access to the coast would be maintained and would continue to be limited.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
7. Vehicle, bicycle, and pedestrian access to the coast would be affected by construction activities.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
8. Vehicle, bicycle, and pedestrian coastal access along Vista del Mar would be limited during construction of the off-site fuel farm pipelines.	--	--	--	None applicable.	None required.	**Less than significant.**	--	--	--	--	--	--
4.15 Wild and Scenic Rivers												
1. There are no designated Wild and Scenic Rivers in Los Angeles County.	--	--	--	--	--	--	--	--	--	--	--	--
4.16 Farmlands												
1. There are no designated farmlands or Williamson Act contract lands within the Master Plan boundaries.	--	--	--	--	--	--	--	--	--	--	--	--
4.17 Energy Supply and Natural Resources												
4.17.1 Energy Supply												
1. Electricity and natural gas consumption would increase.	**E-1**. Energy Conservation and Efficiency Program.	None required.	**Less than significant.**	**E-1**. Energy Conservation and Efficiency Program.	None required.	**Less than significant.**	**E-1**. Energy Conservation and Efficiency Program.	None required.	**Less than significant.**	**E-1**. Energy Conservation and Efficiency Program.	None required.	**Less than significant.**
2. Consumption of Jet A fuel would increase.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. Consumption of LNG, CNG, and propane would increase.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. Consumption of gasoline and diesel fuel would increase.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**

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Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
5. Construction activities would require new electrical and natural gas distribution infrastructure, as well as relocation and renovation of on-airport facilities. Construction activities would also occur near existing natural gas and electrical power lines.	**E-2**. Coordination with Utility Providers. **PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**E-2**. Coordination with Utility Providers. **PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**E-2**. Coordination with Utility Providers. **PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**E-2**. Coordination with Utility Providers. **PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**
4.17.2 Natural Resources												
1. There are no actively-mined mineral, timber, or petroleum resources within the Master Plan boundaries.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
2. A low-producing oil and natural gas well located on the Scattergood Fuel Farm site would be plugged and abandoned to allow for the construction of the fuel farm.	--	--	--	None applicable.	None required.	**Less than significant.**	--	--	--	--	--	--
3. Construction of new facilities within the LAX Master Plan boundaries would require aggregate resources.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.18 Light Emissions												
1. Light emissions could spill over onto residential uses located along the proposed right-of-way for the LAX Expressway.	None applicable.	**MM-LI-1**. LAX Expressway Lighting Assessment.	**Less than significant with mitigation.**	None applicable.	**MM-LI-1**. LAX Expressway Lighting Assessment.	**Less than significant with mitigation.**	None applicable.	**MM-LI-1**. LAX Expressway Lighting Assessment.	**Less than significant with mitigation.**	--	--	--
2. Construction of the ring road and associated street lighting could affect nearby residential and other sensitive uses located along the alignment.	None applicable.	None required.	**Less than significant.**	**LI-1**. Ring Road Landscaping.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	--	--	--
3. Proposed LAX facilities would be constructed of building materials that may generate glare.	**LI-2**. Use of Non-Glare Generating Building Materials.	None required.	**Less than significant.**	**LI-2**. Use of Non-Glare Generating Building Materials.	None required.	**Less than significant.**	**LI-2**. Use of Non-Glare Generating Building Materials.	None required.	**Less than significant.**	**LI-2**. Use of Non-Glare Generating Building Materials.	None required.	**Less than significant.**
4. Development of the LAX Northside/Westchester Southside would increase ambient light levels on the site and in its vicinity.	**LI-3**. Lighting Controls. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-4**. Neighborhood Compatibility Program.	None required.	**Less than significant.**	**LI-3**. Lighting Controls. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-4**. Neighborhood Compatibility Program.	None required.	**Less than significant.**	**LI-3**. Lighting Controls. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-4**. Neighborhood Compatibility Program.	None required.	**Less than significant.**	**LI-3**. Lighting Controls. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project. **LU-4**. Neighborhood Compatibility Program.	None required.	**Less than significant.**
5. The introduction of new lighting on airport property has the potential to interfere with airport operations or spillover onto adjacent residential areas.	**LI-3**. Lighting controls.	None required.	**Less than significant.**	**LI-3**. Lighting Controls.	None required.	**Less than significant.**	**LI-3**. Lighting Controls.	None required.	**Less than significant.**	**LI-3**. Lighting Controls.	None required.	**Less than significant.**

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4.19 Solid Waste												
1. A change in solid waste generation would occur.	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**Less than significant.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**Less than significant.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**Less than significant.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**Less than significant.**
2. Compliance with policies and objectives intended to help achieve the requirements of AB 939 would be required.	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**No impact.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**No impact.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**No impact.**	**SW-1**. Implement an Enhanced Recycling Program.	None required.	**No impact.**
3. Construction and demolition within LAX would generate solid waste.	**SW-2**. Requirements for the Use of Recycled Materials During Construction. **SW-3**. Requirements for the Recycling of Construction and Demolition Waste.	None required.	**Less than significant.**	**SW-2**. Requirements for the Use of Recycled Materials During Construction. **SW-3**. Requirements for the Recycling of Construction and Demolition Waste.	None required.	**Less than significant.**	**SW-2**. Requirements for the Use of Recycled Materials During Construction. **SW-3**. Requirements for the Recycling of Construction and Demolition Waste.	None required.	**Less than significant.**	**SW-2**. Requirements for the Use of Recycled Materials During Construction. **SW-3**. Requirements for the Recycling of Construction and Demolition Waste.	None required.	**Less than significant.**
4. Project-related increases in population, in conjunction with other regional projects, would result in cumulative increases in solid waste generation.	None applicable.	**MM-SW-1**. Provide Landfill Capacity to Accommodate Cumulative Solid Waste.	**Less than significant with mitigation.**[6]	None applicable.	**MM-SW-1**. Provide Landfill Capacity to Accommodate Cumulative Solid Waste.	**Less than significant with mitigation.**[6]	None applicable.	**MM-SW-1**. Provide Landfill Capacity to Accommodate Cumulative Solid Waste.	**Less than significant with mitigation.**[6]	--	--	--
4.20 Construction Impacts												
Construction Impacts are listed under the appropriate environmental discipline.												
4.21 Design, Art and Architectural Application/Aesthetics												
1. If not sensitively designed, the Scattergood Fuel Farm could introduce contrasting features into an aesthetically valued area and diminish views from adjacent residential structures.	--	--	--	None applicable.	**MM-DA-3(a)**. Scattergood Visual Effects. **MM-DA-3(b)**. Scattergood Visual Effects.	**Less than significant with mitigation.**	--	--	--	--	--	--
2. Views from homes on Thornburn Street and Midfield Avenue and other residential and sensitive uses adjacent to the I-405 right-of-way could be affected due to the proximity of the proposed LAX Expressway.	None applicable.	**MM-DA-2**. LAX Expressway View Analysis.	**Less than significant with mitigation.**	None applicable.	**MM-DA-2**. LAX Expressway View Analysis.	**Less than significant with mitigation.**	None applicable.	**MM-DA-2**. LAX Expressway View Analysis.	**Less than significant with mitigation.**	--	--	--
3. Without adequate setbacks and landscaping between airport facilities/development and residential and other sensitive uses an adverse aesthetic effect could result.	**DA-1**. Provide and Maintain Airport Buffer Areas.	None required.	**Less than significant.**	**DA-1**. Provide and Maintain Airport Buffer Areas. **LI-1**. Ring Road Landscaping.	None required.	**Less than significant.**	**DA-1**. Provide and Maintain Airport Buffer Areas.	None required.	**Less than significant.**	**DA-1**. Provide and Maintain Airport Buffer Areas.	None required.	**Less than significant.**
4. Construction activities could cause the site to have a temporarily incomplete, disrupted, and unattractive quality.	None applicable.	**MM-DA-1**. Construction Fencing.	**Less than significant with mitigation.**	None applicable.	**MM-DA-1**. Construction Fencing.	**Less than significant with mitigation.**	None applicable.	**MM-DA-1**. Construction Fencing.	**Less than significant with mitigation.**	None applicable.	**MM-DA-1**. Construction Fencing.	**Less than significant with mitigation.**

Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance

	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
Impacts by Discipline[1]	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
5. Without proper guidelines and conditions, the LAX Northside/ Westchester Southside project could have negative aesthetic and view effects on neighborhoods to the north.	**DA-2**. Update and Integrate Design Plans and Guidelines. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**DA-2**. Update and Integrate Design Plans and Guidelines. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**DA-2**. Update and Integrate Design Plans and Guidelines. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**DA-2**. Update and Integrate Design Plans and Guidelines. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside into the LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**
6. Utility lines could have negative aesthetic and view effects along the southern boundary of the airport.	**DA-3**. Undergrounding of Utility Lines.	None required.	**Less than significant.**	**DA-3**. Undergrounding of Utility Lines.	None required.	**Less than significant.**	**DA-3**. Undergrounding of Utility Lines.	None required.	**Less than significant.**	**DA-3**. Undergrounding of Utility Lines.	None required.	**Less than significant.**
4.22 Earth/Geology (CEQA)												
1. Additional structures and people would be exposed to seismically-induced ground shaking.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. A relatively low potential exists for surface rupture and co-seismic ground deformation in the eastern portion of LAX near the projected location of the Charnock Fault, either independently or in conjunction with movement along the Newport Inglewood Fault Zone or other local faults. Surface rupture and co-seismic ground deformation could damage structures and injure people.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. Very localized areas with generally low to moderate susceptibility to liquefaction and seismically induced settlement may be present throughout LAX. Liquefaction and seismically induced settlement could damage structures and injure people.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. New and existing structures could be subject or exposed to settlement induced by the weight of new structures, de-watering, and excavations and tunneling.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
5. New structures could be subject to the effects of expansive soils, which can lead to damage to foundations and engineered structures.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
6. Earth-related construction considerations include grading and earthwork activities (including fill volumes), changes to topography (landforms), erosion, stability of temporary slopes, excavations and tunnels.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**

Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance

Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation	Master Plan Commitments	Mitigation Measures	Level of Significance After Mitigation
7. New permanent slopes can become unstable under certain conditions and slope failure can result.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
8. Although no oil field gases have been previously reported in the LAX area, the presence of oil fields and oil production facilities in the vicinity of LAX makes this a potential concern during construction and operation.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.23 Hazardous Materials												
1. An increase in hazardous materials use and hazardous waste generation at LAX could potentially increase the chances of a spill or release of these substances during handling or storage.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. As part of the general increase in cargo activity, increases in the air transport of hazardous materials could be expected.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. An increase in the amount of hazardous materials and wastes transported to and from LAX by ground vehicles would occur.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. The increased use of hazardous materials would result in an increase in hazardous waste requiring disposal.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
5. The alternatives would not involve the handling of acutely hazardous materials within one-quarter mile of a school.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
6. Substantial alterations made to ground access to, from, and around LAX during construction could impair the effective implementation of adopted emergency response plans by impeding the movement of emergency vehicles.[5]	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19.** See Section 4.3, *Surface Transportation*.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19.** See Section 4.3, *Surface Transportation*.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19.** See Section 4.3, *Surface Transportation*.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9, ST-12, ST-14, and ST-16 through ST-22.** See Section 4.3, *Surface Transportation*.	None required.	**Less than significant.**
7. During construction, contaminated soils could be unearthed, potentially exposing construction workers to hazardous materials.[5]	**HM-2**. Handling of Contaminated Materials Encountered During Construction.	None required.	**Less than significant.**	**HM-2**. Handling of Contaminated Materials Encountered During Construction.	None required.	**Less than significant.**	**HM-2**. Handling of Contaminated Materials Encountered During Construction.	None required.	**Less than significant.**	**HM-2**. Handling of Contaminated Materials Encountered During Construction.	None required.	**Less than significant.**

Table ES-3
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Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
8. Construction of Master Plan improvements and associated demolition of existing facilities have the potential to require the closure of some active remediation systems.[5]	**HM-1**. Ensure Continued Implementation of Existing Remediation Efforts.	None required.	**Less than significant.**	**HM-1**. Ensure Continued Implementation of Existing Remediation Efforts.	None required.	**Less than significant.**	**HM-1**. Ensure Continued Implementation of Existing Remediation Efforts.	None required.	**Less than significant.**	**HM-1**. Ensure Continued Implementation of Existing Remediation Efforts.	None required.	**Less than significant.**
9. Hazardous building materials, such as asbestos, PCBs, and lead-based paint, may be encountered during demolition.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.24 Human Health and Safety (CEQA)												
4.24.1 Human Health Risk Assessment (CEQA)												
1. People living, working, recreating, or attending school in communities near the airport may experience decreased (Alternatives A, B, and C) or increased (Alternative D) incremental cancer risks from exposure to toxic air pollutants (TAPs) in the interim year.	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Beneficial impact with mitigation.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Beneficial impact with mitigation.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Beneficial impact with mitigation.**	None applicable.	None required.	**Less than significant.**
2. People living, working, recreating, or attending school in communities near the airport may experience decreased (Alternative D) or increased (Alternatives A, B, and C) incremental non-cancer chronic health hazards from exposure to TAPs in the interim year.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Beneficial impact.**
3. People working at the airport would not be exposed to concentrations of TAPs in the air in excess of occupational standards as defined by PEL-TWA in the interim year or 2015.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. People living, working, recreating, or attending school in communities near the airport may experience increased incremental cancer risks from exposure to TAPs in horizon year 2015.	None applicable.	None required.	**Less than significant.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Less than significant with mitigation.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
5. People living, working, recreating, or attending school in communities near the airport may experience decreased (Alternative D) or increased (Alternatives A, B, and C) incremental non-cancer chronic health hazards from exposure to TAPs in horizon year 2015.	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Less than significant with mitigation.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Potentially significant and unavoidable.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Potentially significant and unavoidable.**	None applicable.	None required.	**Beneficial impact.**

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Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
6. People living, working, recreating, or attending school in communities near the airport may experience decreased (Alternative D) or increased (Alternatives A, B, and C) incremental non-cancer acute health hazards from exposure to TAPs in the interim year or 2015.	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Potentially significant and unavoidable.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Potentially significant and unavoidable.**	None applicable.	**MM-AQ-1 through MM-AQ-4**. See Section 4.6, *Air Quality*.	**Potentially significant and unavoidable.**	None applicable.	None required.	**Beneficial impact.**
4.24.2 Health Effects of Noise (CEQA)												
1. Increases in operations at LAX would result in changes in the noise contours that may result in adverse health effects.	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	**Potentially significant and unavoidable.**	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	**Potentially significant and unavoidable.**	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	**Potentially significant and unavoidable.**	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	See Section 4.1, *Noise* and Section 4.2, *Land Use*.	**Potentially significant and unavoidable.**
4.24.3 Safety (CEQA)												
1. The Central Utility Plant(s) pose(s) a risk of upset from a potential sulfuric acid release.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. The fuel farm poses a risk of upset from a potential catastrophic fuel release, without subsequent ignition.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. The fuel farm poses a risk of upset from a potential catastrophic fuel release, with subsequent ignition.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. The LNG/CNG facilities pose a risk of upset from a potential release of LNG or CNG, with subsequent ignition.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
5. Changes in existing bird attractants, including the Los Angeles/El Segundo Dunes, the detention basin, and airfield open space could affect the potential for birdstrikes at LAX.[5]	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
6. All new and redesigned runways and taxiways would meet FAA Airport Design Standards, or would otherwise satisfy FAA requirements, and no new variances are anticipated to be necessary.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
7. Aircraft operations would increase; however, there is no statistical correlation between the number of operations and the number of accidents.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**

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Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
8. Mixed uses within Westchester Southside/LAX Northside and Continental City would be built in accordance with the building height restrictions established by the City of Los Angeles to assure the safety of the air approach corridors to the runways at LAX.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
9. LAWA has met all current security requirements and will incorporate any future airport security requirements set forth by the federal government.	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**	None applicable.	None required.	**No impact.**
4.25 Public Utilities (CEQA)												
4.25.1 Water Use (CEQA)												
1. Water use within the Master Plan boundaries would change.	**W-1**. Maximize Use of Reclaimed Water. **W-2**. Enhance Existing Water Conservation Program.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water. **W-2**. Enhance Existing Water Conservation Program.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water. **W-2**. Enhance Existing Water Conservation Program.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water. **W-2**. Enhance Existing Water Conservation Program.	None required.	**Less than significant.**
2. Reclaimed water use would increase.	**W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**
3. Demands for fire flow pressure and its location at LAX would be altered.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4. The build alternatives would require new water distribution infrastructure, as well as relocation and renovation of on-airport facilities.	**PU-1**. Develop a Utility Relocation Program. **W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program. **W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program. **W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program. **W-1**. Maximize Use of Reclaimed Water.	None required.	**Less than significant.**
5. Construction of subsurface structures as part of the build alternatives may interfere with existing water supply and distribution facilities.	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**
6. Water would be required during construction for dust suppression, including dust suppression for construction-related demolition, and the mixing of concrete.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.25.2 Wastewater (CEQA)												
1. Wastewater generation within the Master Plan boundaries would change.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. Industrial wastewater discharges would change.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**

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and CEQA Conclusions Regarding Significance

	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
3. The build alternatives would require new wastewater collection infrastructure, as well as relocation and renovation of on-airport facilities.	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**
4. Construction of subsurface structures as part of the build alternatives may interfere with existing wastewater collection infrastructure.	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**	**PU-1**. Develop a Utility Relocation Program.	None required.	**Less than significant.**
5. The combined impacts of the Master Plan, in conjunction with other area projects, would contribute to cumulative increases in wastewater treatment demand.	None applicable.	**MM-WW-1**. Provide Additional Wastewater Capacity to Accommodate Cumulative Flows.	**Less than significant with mitigation.**[6]	None applicable.	**MM-WW-1**. Provide Additional Wastewater Capacity to Accommodate Cumulative Flows.	**Less than significant with mitigation.**[6]	None applicable.	**MM-WW-1**. Provide Additional Wastewater Capacity to Accommodate Cumulative Flows.	**Less than significant with mitigation.**[6]	None applicable.	**MM-WW-1**. Provide Additional Wastewater Capacity to Accommodate Cumulative Flows.	**Less than significant with mitigation.**[6]
4.26 Public Services (CEQA)												
4.26.1 Fire Protection												
1. The demand for fire protection services at LAX would increase.	**FP-1**. LAFD Design Recommendations. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**
2. Changes in circulation with new and redeveloped airport facilities and increases in surface traffic could hamper emergency access.	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9, ST-12, ST-14, and ST-16 through ST-22**. See Section 4.3, *Surface Transportation*.	Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**
3. Proposed development would increase fire flow needs, which could require improvements to the water system.	**FP-1**. LAFD Design Recommendations.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations.	None required.	**Less than significant.**
4. Without proper coordination and phasing, the process for relocating on-airport fire facilities could temporarily compromise fire protection services.	**FP-1**. LAFD Design Recommendations. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **PS-1**. Fire and Police facility, Relocation Plan.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **PS-1**. Fire and Police facility, Relocation Plan.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **PS-1**. Fire and Police facility, Relocation Plan.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **PS-1**. Fire and Police facility, Relocation Plan.	None required.	**Less than significant.**

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	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
5. Demand for staffing and equipment would increase; however, these needs would be continually evaluated and addressed through standard agency procedures.	**PS-2**. Fire and Police Space and Siting Requirements.	None required.	**Less than significant.**	**PS-2**. Fire and Police Space and Siting Requirements.	None required.	**Less than significant.**	**PS-2**. Fire and Police Space and Siting Requirements.	None required.	**Less than significant.**	**PS-2**. Fire and Police Space and Siting Requirements.	None required.	**Less than significant.**
6. Construction activities and associated traffic congestion would have the potential to hamper or delay emergency response.	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation.*	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation.*	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation.*	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9, ST-12, ST-14, and ST-16 through ST-22**. See Section 4.3, *Surface Transportation.*	None required.	**Less than significant.**
7. Development of LAX Northside/Westchester Southside may increase demand for fire protection, resulting in inadequate service.	**FP-1**. LAFD Design Recommendations. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**	**FP-1**. LAFD Design Recommendations. **LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project.	None required.	**Less than significant.**
4.26.2 Law Enforcement (CEQA)												
1. Demand for law enforcement services at LAX would increase.	**LE-1**. Routine Evaluation of Manpower and Equipment Needs.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs.	None required.	**Less than significant.**
2. Law enforcement staffing, facilities, and equipment must keep pace with future demand.	**LE-1**. Routine Evaluation of Manpower and Equipment Needs. **LE-2**. Plan Review. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs. **LE-2**. Plan Review. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs. **LE-2**. Plan Review. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**	**LE-1**. Routine Evaluation of Manpower and Equipment Needs. **LE-2**. Plan Review. **PS-1**. Fire and Police Facility Relocation Plan. **PS-2**. Fire and Police Facility Space and Siting Requirements.	None required.	**Less than significant.**
3. Traffic congestion would have the potential to degrade emergency response times at the airport and within the traffic analysis study area.	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9 through ST-19**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-9, ST-12, ST-14, and ST-16 through ST-22**. See Section 4.3, *Surface Transportation*.	See Section 4.3, *Surface Transportation*.	**Less than significant with mitigation.**

Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D
and CEQA Conclusions Regarding Significance

	Alternative A - Added Runway North			**Alternative B - Added Runway South**			**Alternative C - No Additional Runway**			**Alternative D - Enhanced Safety and Security Plan**		
Impacts by Discipline[1]	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4. Development of LAX Northside/Westchester Southside and associated increases in employees and visitors would increase demand for law enforcement services.	**LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project. **LE-1**. Routine Evaluation of Manpower and Equipment Needs. **PS-2**. Fire and Police Facilities Space and Siting Requirements.	None required.	**Less than significant.**	**LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project. **LE-1**. Routine Evaluations of Manpower and Equipment Needs. **PS-2**. Fire and Police Facilities Space and Siting Requirements.	None required.	**Less than significant.**	**LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project. **LE-1**. Routine Evaluations of Manpower and Equipment Needs. **PS-2**. Fire and Police Facilities Space and Siting Requirements.	None required.	**Less than significant.**	**LU-1**. Incorporation of City of Los Angeles Ordinance No. 159,526 [Q] zoning conditions for LAX Northside/ Westchester Southside Project. **LE-1**. Routine Evaluations of Manpower and Equipment Needs. **PS-2**. Fire and Police Facilities Space and Siting Requirements.	None required.	**Less than significant.**
5. Without proper coordination and phasing, the relocation process for on-airport police facilities could temporarily compromise law enforcement services.	**PS-1**. Fire and Police Facility Relocation Plan.	None required	**Less than significant.**	**PS-1**. Fire and Police Facility Relocation Plan.	None required.	**Less than significant.**	**PS-1**. Fire and Police Facility Relocation Plan.	None required.	**Less than significant.**	**PS-1**. Fire and Police Facility Relocation Plan.	None required.	**Less than significant.**
4.26.3 Parks and Recreation (CEQA)												
1. Increased demand for public park or recreational facility use from passengers and employees would be small and more than offset by project provision of recreational facilities.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.26.4 Libraries (CEQA)												
1. Demand for library services from passengers and on-airport employment would increase, but could be accommodated through planned and available capacity.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
4.27 Schools (CEQA)												
1. Employee-generated increases in students could result in overcrowding of schools.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
2. Reductions in enrollment or school closure due to residential acquisition could result in a shift in enrollment that would impose capacity constraints on other schools.	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**	None applicable.	None required.	**Less than significant.**
3. Schools may be newly exposed to significant increases in noise levels.	None applicable.	**MM-LU-1, MM-LU-3, and MM-LU-4**. See Section 4.2, *Land Use.* **MM-N-7 through MM-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MM-LU-1, MM-LU-3, and MM-LU-4**. See Section 4.2, *Land Use.* **MM-N-7 through MM-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MM-LU-1, MM-LU-3, and MM-LU-4**. See Section 4.2, *Land Use.* **MM-N-7 through MM-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**	None applicable.	**MM-LU-1, MM-LU-3, and MM-LU-4**. See Section 4.2, *Land Use.* **MM-N-7 through MM-N-10**. See Section 4.1, *Noise*.	**Significant and unavoidable.**

Table ES-3
Summary Comparison of Environmental Impacts from Alternatives A, B, C, and D and CEQA Conclusions Regarding Significance

Impacts by Discipline[1]	Alternative A - Added Runway North			Alternative B - Added Runway South			Alternative C - No Additional Runway			Alternative D - Enhanced Safety and Security Plan		
	Master Plan Commitments	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**	**Master Plan Commitments**	**Mitigation Measures**	**Level of Significance After Mitigation**
4. Changes in traffic circulation patterns may compromise school access and student safety.	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-16**. Designated Haul Routes.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-16**. Designated Haul Routes.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-16**. Designated Haul Routes.	None required.	**Less than significant.**	**C-1**. Establishment of Ground Transportation/ Construction Coordination Office. **ST-16**. Designated Haul Routes.	None required.	**Less than significant.**

[1] See Appendix K for additional details regarding the significance summary of the LAX Expressway and State Route 1 Improvements.
[2] An increase of 3.0 CNEL within the 60-65 CNEL contour does not imply that there is a significant impact under federal or state definitions. The FAA will use this information during its consideration of potential mitigation.
[3] As described in Section 4.4.1, *Employment/Socio Economics* (subsection 4.4.1.4.1), "economic or social effects shall not be treated as significant effects on the environment" under CEQA.
[4] Based on the CMP analyses contained in Technical Reports 3b and S-2b, the application of CMP "credits" would serve to mitigate impacts to freeway segments and ramps. As such, no additional mitigation would be required.
[5] Compliance with existing laws, regulations, codes, and policies will serve to reduce or avoid potential impacts.
[6] Implementation of the mitigation measure proposed to address this potential cumulative impact is the responsibility of another agency (or agencies). If the mitigation measure is not fully implemented, cumulative impacts could remain significant.

Note: "--" designates that the impact is not relevant to the particular alternative.

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